

# Public Comments – Flood Plain Comments

## Nicole Mardell

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**From:** Carol - COLW <carol@colw.org>  
**Sent:** Wednesday, August 07, 2019 2:50 PM  
**To:** Nicole Mardell  
**Subject:** ACTION ALERT! Tomorrow - Central Oregon Wildlife Needs Your Help



-

**Your opportunity to protect wildlife in 2019 is right now!** Deschutes County is proposing amendments to its comprehensive plan that would significantly reduce protections for Central Oregon wildlife, including **mule deer, songbirds, herons, beavers, otters, mink, foxes, bobcats, quail, grouse, frogs, fish, and many more.**

**TOMORROW, August 8, the County Planning Commission will consider changes to TWO separate zones,** one that threatens Deer Winter Range habitat, and one that threatens riparian and wetlands habitat. It is important to **comment on BOTH proposed amendments.** Look for background and talking points below.

**DESCHUTES COUNTY PLANNING  
COMMISSION HEARINGS**

**Thursday, August 8 - 5:30pm**  
**Deschutes Services Center - Barnes and Sawyer Rooms**  
**1300 NW Wall Street, Bend, OR 97703**

Email the Planning Commission with your comments:  
[PlanningCommission@deschutes.org](mailto:PlanningCommission@deschutes.org)



WILDLIFE AREA COMBINING ZONE AMENDMENTS

The County is proposing changes to the wildlife zone protections that prohibit assemblies of people that are disruptive to wildlife. These assemblies include schools, recreation centers, golf courses and churches, among many others. This amendment proposes that churches should be allowed in the wildlife zone, **opening the door for other assemblies in critical habitat.**

Noisy and disruptive activity is prohibited in the Deer Winter Range for a

reason—**because it is detrimental to our wildlife.** Winter range in the County is already at risk from currently permitted uses.

[According to the Oregon Department of Fish and Wildlife](#) (ODFW), winter range is an essential, limited wildlife habitat. **Any loss in the quality or quantity of winter range will result in the depletion of mule deer herds. The amount of winter range habitat available is already insufficient or barely sufficient to sustain mule deer populations over time.** (See ODFW's 2017 letter regarding winter range protections [here](#).)

If you love Central Oregon wildlife, **make your voice heard TOMORROW at 5:30 before the Planning Commission.** Tell them not to weaken protections for wildlife in Deschutes County.

**(Make sure to keep reading so you can protect the floodplain, too!)**

#### WILDLIFE AREA COMBINING ZONE TALKING POINTS

**“I oppose the County’s proposal to allow assemblies in the deer winter range because...”**

- Our deer population is dwindling. **It is more important than ever to protect habitat from the disruption and degradation associated with assemblies of people.**
- Deer are as much a part of Central Oregon as the Three Sisters and the Deschutes River. Critical habitat should not be lost to further development.
- Allowing religious assemblies in the winter range sets a dangerous precedent for our wildlife. If such assemblies are allowed, other types that are currently prohibited such as **golf courses, schools, public rec centers, and others can argue that they should be allowed in the winter range or other critical habitat, too.** This would quickly erode wildlife habitat protections.

- **Mule deer are protected by Land Use Planning Goal 5.** Making an exception to this goal can lead to other Goal 5-protected resources, such as wetlands and riparian areas, being compromised.
- Mule deer are part of the Central Oregon way of life. The county should stand up to defend its protection of critical habitat.

**SPEAK UP FOR WILDLIFE - SUBMIT COMMENTS**

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## FLOOD PLAIN ZONE AMENDMENTS

The other proposed amendments to the comprehensive plan being considered at tomorrow's hearing are changes to the County's Flood Plain Zone. **These amendments would loosen development restrictions, allowing more dense development along rivers and streams.**

Aside from protecting public and private property from hazards, the Flood Plain Zone conserves important riparian areas along rivers and streams, and preserves significant scenic and natural resources. The [Interagency Wildlife Working Group on the Deschutes Comprehensive Plan](#) states that **approximately 80 percent of all wildlife species depend on riparian areas.**



The floodplain offers invaluable habitat for Central Oregon wildlife including mule deer, songbirds, herons, beavers, otters, mink, foxes, bobcats, quail, grouse, frogs, fish, and many more.

**The Flood Plain Zone is the *most significant* protection these animals have in Deschutes County's code.**

### FLOOD PLAIN ZONE TALKING POINTS

***"I oppose changes to the Flood Plain Zone because..."***

- I care about otters, beavers, mink, bobcats, foxes, fish, songbirds, ducks and the many other species that **depend** on the Flood Plain Zone for protection.
- **Riparian areas along the Deschutes and Little Deschutes are critical habitat for the Oregon Spotted Frog**, a "threatened" species on the Endangered Species list. Development will put this species at risk of becoming endangered.
- Views of the Deschutes and Little Deschutes Rivers and Tumalo Creek are iconic and precious. **Dense development along these rivers is not acceptable.**
- Wildlife are considered a public resource, and as a member of the public, **I want the County to strengthen protections for wildlife, not weaken them.**

**SPEAK UP FOR WILDLIFE - SUBMIT COMMENTS**

**DESCHUTES COUNTY PLANNING  
COMMISSION HEARINGS**

**Thursday, August 8 - 5:30pm**

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1300 NW Wall Street, Bend, OR 97703**

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[PlanningCommission@deschutes.org](mailto:PlanningCommission@deschutes.org)

The County's current protections for riparian areas, wetlands and Deer Winter Range preserve these critical habitats and protect wildlife. Our County's diverse wildlife and the habitats they need to survive are among what people love most about Central Oregon. Take action to protect wildlife TOMORROW.

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Sincerely,

Carol Macbeth  
Staff Attorney

*"This activist loves Oregon more than he loves life. I know I can't have both very long. The trade-offs are all right with me. But if the legacy we helped give Oregon and which made it twinkle from afar—if it goes, then I guess I wouldn't want to live in Oregon anyhow." October 1982, Governor Tom McCall*

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**From:** [Ashley Williams](#)  
**To:** [Nicole Mardell](#)  
**Subject:** FW: Flood Plain Zone Amendments, Wildlife Area Combining Zone  
**Date:** Monday, August 12, 2019 7:39:55 AM  
**Attachments:** [image001.png](#)  
[image002.png](#)  
[image003.png](#)  
[image004.png](#)

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**Ashley Williams | Administrative Assistant**  
**DESCHUTES COUNTY COMMUNITY DEVELOPMENT**

117 NW Lafayette Avenue | Bend, Oregon  
Mail: PO Box 6005 | Bend, Oregon 97708  
Tel: (541) 617-4707 | [www.deschutes.org/cd](http://www.deschutes.org/cd)



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**From:** Wendy Brewer <[wendysbrewer@yahoo.com](mailto:wendysbrewer@yahoo.com)>  
**Sent:** Saturday, August 10, 2019 9:31 AM  
**To:** Planning Commission <[PlanningCommission@deschutes.org](mailto:PlanningCommission@deschutes.org)>  
**Subject:** Flood Plain Zone Amendments, Wildlife Area Combining Zone

**[EXTERNAL EMAIL]**

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Dear Planning Commissioners, Re: 247-19-000530-TA, 533-PA; 247-19-000531-TA; 247-19-000532-TA; and Wildlife Area Combining Zone Amendments I oppose these amendments because wildlife protections are more important than ever with the increasing population. There are certainly better housing location options than the riparian zone. With more severe flooding and extreme weather events that seem to be occurring with climate change, developing the buffers that riparian zones offer in addition to habitat, is a very poor decision to even consider. Flood insurance is covered by tax payers. I could never condone building and development in a riparian area.

**From:** [Ashley Williams](#)  
**To:** [Nicole Mardell](#)  
**Subject:** FW: Flood Plain Zone Amendments, Wildlife Area Combining Zone  
**Date:** Friday, August 09, 2019 7:36:58 AM  
**Attachments:** [image001.png](#)  
[image002.png](#)  
[image003.png](#)  
[image004.png](#)

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**From:** Jeff Pokorny <[jeff.pokorny@icloud.com](mailto:jeff.pokorny@icloud.com)>  
**Sent:** Thursday, August 8, 2019 6:04 PM  
**To:** Planning Commission <[PlanningCommission@deschutes.org](mailto:PlanningCommission@deschutes.org)>  
**Subject:** Flood Plain Zone Amendments, Wildlife Area Combining Zone

Dear Planning Commissioners,

Re: 247-19-000530-TA, 533-PA; 247-19-000531-TA; 247-19-000532-TA; and Wildlife Area Combining Zone Amendments

I oppose these amendments because...

**“I oppose the County’s proposal to allow assemblies in the deer winter range because...”**

- Our deer population is dwindling. **It is more important than ever to protect habitat from the disruption and degradation associated with assemblies of people.**
- Deer are as much a part of Central Oregon as the Three Sisters and the Deschutes River. Critical habitat should not be lost to further development.
- Allowing religious assemblies in the winter range sets a dangerous precedent for our wildlife. If such assemblies are allowed, other types that are currently prohibited such as **golf courses, schools, public rec centers, and others can argue that they should be allowed in the winter range or other critical habitat, too.** This would quickly erode wildlife habitat protections.
- **Mule deer are protected by Land Use Planning Goal 5.** Making an exception to this goal can lead to other Goal 5-protected resources, such as wetlands and riparian areas, being compromised.
- Mule deer are part of the Central Oregon way of life. The county should stand up to defend its protection of critical habitat.

**From:** [Ashley Williams](#)  
**To:** [Nicole Mardell](#)  
**Subject:** FW: Flood Plain Zone Amendments, Wildlife Area Combining Zone  
**Date:** Monday, August 12, 2019 7:39:34 AM  
**Attachments:** [image001.png](#)  
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**From:** miche <michemckay@gmail.com>  
**Sent:** Friday, August 9, 2019 2:36 PM  
**To:** Planning Commission <PlanningCommission@deschutes.org>  
**Subject:** Flood Plain Zone Amendments, Wildlife Area Combining Zone

Re: 247-19-000530-TA, 533-PA; 247-19-000531-TA; 247-19-000532-TA; and Wildlife Area Combining Zone

Dear Planning Commissioners,

I'm writing to express my opposition to proposed changes in the county Flood Plain Zone.

A wide variety of wildlife depends on the Flood Plain Zone, and certain riparian areas are critical habitat for the threatened Oregon spotted frog.

Dense development will put species at risk and negatively impact iconic views along the Deschutes, Little Deschutes, and Tumalo Creek.

As a citizen of Deschutes County, I hope to see the County strengthen protections for wildlife and rivers, not weaken them.

Thank you,  
Michele McKay  
Bend, OR

**From:** [Ashley Williams](#)  
**To:** [Nicole Mardell](#)  
**Subject:** FW: Flood Plain Zone Amendments, Wildlife Area Combining Zone  
**Date:** Thursday, August 08, 2019 7:54:14 AM  
**Attachments:** [image001.png](#)  
[image002.png](#)  
[image003.png](#)  
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**From:** Richard Benson <3893072@gmail.com>  
**Sent:** Wednesday, August 7, 2019 8:24 PM  
**To:** Planning Commission <PlanningCommission@deschutes.org>  
**Subject:** Flood Plain Zone Amendments, Wildlife Area Combining Zone

[EXTERNAL EMAIL]

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Dear Planning Commissioners,

Re: 247-19-000530-TA, 533-PA; 247-19-000531-TA; 247-19-000532-TA; and Wildlife Area Combining Zone Amendments

**We've lived in the Tumalo Winter deer Range since 1990... Please allow your highest awareness and consciousness to surface as you review our area... Allow the spirit within, your higher self, to speak... May the Blessings be, Richard & Debbie Benson**

**From:** [Ashley Williams](#)  
**To:** [Nicole Mardell](#)  
**Subject:** FW: Flood Plain Zone Amendments, Wildlife Area Combining Zone  
**Date:** Thursday, August 08, 2019 7:54:33 AM  
**Attachments:** [image001.png](#)  
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**From:** Janice Castelbaum <waterhealer1@gmail.com>  
**Sent:** Wednesday, August 7, 2019 8:30 PM  
**To:** Planning Commission <PlanningCommission@deschutes.org>  
**Subject:** Flood Plain Zone Amendments, Wildlife Area Combining Zone

Dear Planning Commissioners,

Re: 247-19-000530-TA, 533-PA; 247-19-000531-TA; 247-19-000532-TA; and Wildlife Area Combining Zone Amendments

I totally and absolutely oppose these amendments because...

Because it's the ethical thing to do. PLEASE. We as humans, do not have the "right" to over-archingly take over wildlife habitat and reduce protections. We have already seen the effects of that in the Bend community; particularly with the mule deer population.

I care, my family cares, my friends care, my church cares, my recreational pursuits care..... about all the animals and natural resources of the habitat that this amendment would eliminate protection and conversation of. Wildlife and natural habitat are considered a public resource, and as a member of the public, **I want the County to strengthen protections for**

**wildlife, not weaken them.**

**Regarding the proposed changes to the Flood Plain Zone:  
I absolutely and thoroughly oppose this change because:**

- I care about otters, beavers, mink, bobcats, foxes, fish, songbirds, ducks and the many other species that **depend** on the Flood Plain Zone for protection.
- **Riparian areas along the Deschutes and Little Deschutes are critical habitat for the Oregon Spotted Frog**, a “threatened” species on the Endangered Species list. Development will put this species at risk of becoming endangered.
- Views of the Deschutes and Little Deschutes Rivers and Tumalo Creek are iconic and precious. **Dense development along these rivers is not acceptable.**
- Wildlife are considered a public resource, and as a member of the public, **I want the County to strengthen protections for wildlife, not weaken them.**

Regarding the County’s proposal to allow assemblies in the deer winter range, **I Absolutely and Thoroughly oppose the County’s proposal to allow assemblies in the deer winter range because:**

- Our deer population is dwindling. **It is more important than ever to protect habitat from the disruption and degradation associated with assemblies of people.**
- Deer are as much a part of Central Oregon as the Three Sisters and the Deschutes River. Critical habitat should not be lost to further development.
- Allowing religious assemblies in the winter range sets a

dangerous precedent for our wildlife. If such assemblies are allowed, other types that are currently prohibited such as **golf courses, schools, public rec centers, and others can argue that they should be allowed in the winter range or other critical habitat, too.** This would quickly erode wildlife habitat protections.

- **Mule deer are protected by Land Use Planning Goal 5.** Making an exception to this goal can lead to other Goal 5-protected resources, such as wetlands and riparian areas, being compromised.
- Mule deer are part of the Central Oregon way of life. The county should stand up to defend its protection of critical habitat

Do the right thing. Do Not approve these amendments.

Thank You,

Janice Castelbaum

Bend Resident

**From:** [Ashley Williams](#)  
**To:** [Nicole Mardell](#)  
**Subject:** FW: Flood Plain Zone Amendments, Wildlife Area Combining Zone  
**Date:** Thursday, August 08, 2019 7:56:46 AM  
**Attachments:** [image001.png](#)  
[image002.png](#)  
[image003.png](#)  
[image004.png](#)

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**From:** Alice Elshoff <[calice58@gmail.com](mailto:calice58@gmail.com)>  
**Sent:** Wednesday, August 7, 2019 9:04 PM  
**To:** Planning Commission <[PlanningCommission@deschutes.org](mailto:PlanningCommission@deschutes.org)>  
**Subject:** Flood Plain Zone Amendments, Wildlife Area Combining Zone

[EXTERNAL EMAIL]

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Dear Planning Commissioners,

Re: 247-19-000530-TA, 533-PA; 247-19-000531-TA; 247-19-000532-TA; and Wildlife Area Combining Zone Amendments

I oppose these amendments because they would degrade the quality of life we enjoy here in Bend, and open up our wildlands to more and more degradation. These protections of wildlife habitat are there for a reason. Please do not allow these amendments.

Cal and Alice Elshoff

**From:** [Ashley Williams](#)  
**To:** [Nicole Mardell](#)  
**Subject:** FW: Flood Plain Zone Amendments, Wildlife Area Combining Zone  
**Date:** Thursday, August 08, 2019 9:47:39 AM  
**Attachments:** [image001.png](#)  
[image002.png](#)  
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**From:** Cara Frank <[mtnnsnow@gmail.com](mailto:mtnnsnow@gmail.com)>  
**Sent:** Thursday, August 8, 2019 9:46 AM  
**To:** Planning Commission <[PlanningCommission@deschutes.org](mailto:PlanningCommission@deschutes.org)>  
**Subject:** Flood Plain Zone Amendments, Wildlife Area Combining Zone

[EXTERNAL EMAIL]

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Dear Planning Commissioners,

Re: 247-19-000530-TA, 533-PA; 247-19-000531-TA; 247-19-000532-TA; and Wildlife Area Combining Zone Amendments

I oppose these amendments because of its disruption to wildlife. These are critical habitats that need to be conserved. Let its beauty and compassion carry us through. The amendments are detrimental to our wildlife, thus humankind. Please reconsider and focus on the ultra most importance: conservation and being servants of our future ensuring it's well being.

Thank you,

- Cara Frank

**From:** [Ashley Williams](#)  
**To:** [Nicole Mardell](#)  
**Subject:** FW: Flood Plain Zone Amendments, Wildlife Area Combining Zone  
**Date:** Thursday, August 08, 2019 7:56:55 AM

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Ashley Williams | Administrative Assistant  
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-----Original Message-----

From: Kermit Williams <[kermit.donna@gmail.com](mailto:kermit.donna@gmail.com)>  
Sent: Wednesday, August 7, 2019 9:31 PM  
To: Planning Commission <[PlanningCommission@deschutes.org](mailto:PlanningCommission@deschutes.org)>  
Cc: Kermit and Donna <[kermit.donna@gmail.com](mailto:kermit.donna@gmail.com)>  
Subject: Flood Plain Zone Amendments, Wildlife Area Combining Zone

[EXTERNAL EMAIL]

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Dear Planning Commissioners,

Re: 247-19-000530-TA, 533-PA; 247-19-000531-TA; 247-19-000532-TA; and Wildlife Area Combining Zone Amendments

I strongly oppose these amendments because these assemblies threaten the few winter deer ranges that our mule deer depend on for their LIVES! Where do you propose our mule deer live when you are willing to decimate even one of only three winter deer ranges that exist in Central Oregon for them? Our mule deer are at only 50% of their sustainability. To verify, ask our ODFW wildlife biologists. As planning commissioners, you have to duty to protect and preserve habitat for wildlife under Land Use Goal 5.. People can adapt to almost any habitat, but, unfortunately our deer cannot and rely on native plants, thermal cover, and areas free of human disturbance to survive our winters. If all these are diminished, deer start to look at our urban areas to try to live where uneducated people will try to feed them. This puts them in even more danger as vehicular traffic kills them, people feeding grains and corn cobs that deer's digestive tract cannot handle, causing bacterial toxins which can cause bloat , that will kill them, wildlife unfriendly fencing which can impale them, yard hazards such as hammocks, pails and tomato baskets can hang up in their antlers and harm them, people's pets threaten them, and recreational activities constantly stress them causing increased cortisol levels which affect reproduction. You all have heard these reasons before when public meetings were held to prevent a church from conducting wedding venues in prohibited deer winter range in the Sisters area. But you opened the door to this illegal assembly. Now there will be more and more exceptions made in the name of development. When are you going to realize that our wildlife is a public resource and is one of the reasons why people want to live in central Oregon? Wildlife need all the protection they can get.

The loss of protections for wildlife is another reason that I am strongly opposed to allowing flood plain zone amendments. Floodplains and riparian areas are the lifeblood for much of our wildlife like mule deer, songbirds, beavers , otters, wild carnivores, frogs, fish, and insects. Loosening restrictions on development in these areas is not acceptable. So, I am understanding that you are willing to sacrifice even more wildlife than our mule deer only to

have dense development, more roads, more fences, more activity, more noise, all along precious riparian areas and wetlands ...all threats to all the above species I care about. Please listen to the majority of citizens who desire protections to continue to maintain habitat for those that have no voice...our wildlife.

Respectfully submitted,

Donna Harris D.V.M.

Sent from my iPad

**From:** [Ashley Williams](#)  
**To:** [Nicole Mardell](#)  
**Subject:** FW: I am very concerned: Flood Plain Zone Amendments, Wildlife Area Combining Zone  
**Date:** Thursday, August 08, 2019 7:57:46 AM

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Ashley Williams | Administrative Assistant  
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-----Original Message-----

From: Karen Kassy <[sunnybendgirl@gmail.com](mailto:sunnybendgirl@gmail.com)>  
Sent: Thursday, August 8, 2019 6:38 AM  
To: Planning Commission <[PlanningCommission@deschutes.org](mailto:PlanningCommission@deschutes.org)>  
Subject: I am very concerned: Flood Plain Zone Amendments, Wildlife Area Combining Zone

[EXTERNAL EMAIL]

---

Dear Planning Commissioners,

Re: 247-19-000530-TA, 533-PA; 247-19-000531-TA; 247-19-000532-TA; and Wildlife Area Combining Zone Amendments

I oppose these amendments because what makes Central Oregon special and draws people here is that we have protections for our natural world: the deer winter range habitat and riparian and wetlands habitat protect so many species, including many birds, beavers, otters, minks, foxes, bobcats, frogs and fish (lots of people love to fish here!).

Please keep our area special. You can make a difference for your children, grandchildren and beyond!

Thank you,

Karen Kassy  
Sisters OR

**From:** [Ashley Williams](#)  
**To:** [Nicole Mardell](#)  
**Subject:** FW: Flood Plain Zone Amendments, Wildlife Area Combining Zone  
**Date:** Thursday, August 08, 2019 7:53:25 AM  
**Attachments:** [image001.png](#)  
[image002.png](#)  
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**From:** Mary Ann Kruse <junehog9@gmail.com>  
**Sent:** Wednesday, August 7, 2019 3:16 PM  
**To:** Planning Commission <PlanningCommission@deschutes.org>  
**Subject:** Flood Plain Zone Amendments, Wildlife Area Combining Zone

Dear Planning Commissioners,

Re: 247-19-000530-TA, 533-PA; 247-19-000531-TA; 247-19-000532-TA; and Wildlife Area Combining Zone Amendments

I oppose these amendments for these reasons:

- \* Otters, beavers, mink, bobcats, foxes, fish, songbirds, ducks & many other wildlife species depend on the Flood Plain Zone for protection. These wildlife are Central OR residents, deserving of protection.
- \* Riparian areas along the Deschutes & Little Deschutes Rivers are critical habitat for the OR spotted frog. This threatened species is on the endangered species list. Development will put this species & others @ risk. Please consider this great loss.
- \* Views of the Deschutes & Little Deschutes Rivers & Tumalo Creek are iconic & precious to Central OR, residents & tourists. Dense development along these rivers & creeks is not acceptable & should not be permitted. The reasons residents reside in & tourists visit Central OR is because of our natural areas, rivers, mountains. Once development occurs in the riparian zone & along rivers & creeks, we will have reached the tipping point of no return. Today we will be Central OR, tomorrow we will be Los Angeles. This is not progress.
- \* Wildlife are a public resource. As a resident of Central OR, I am asking the County to strengthen protections for wildlife. Protections have become so weak, habitat encroached upon, development & exceptions for Land Use Rules & Goals in place, that soon, we will not recognize why any of us live here. This is not progress. This is not responsible development.

Thank you for your consideration to this most important issue.

M.A. Kruse

[junehog9@gmail.com](mailto:junehog9@gmail.com)

"The beauty of things was born before eyes and sufficient to itself; the heartbreaking beauty will remain when there is no heart to break for it."  
Robinson Jeffers

**From:** [Ashley Williams](#)  
**To:** [Nicole Mardell](#)  
**Subject:** FW: Flood Plain Zone Amendments, Wildlife Area Combining Zone  
**Date:** Thursday, August 08, 2019 7:50:28 AM  
**Attachments:** [image001.png](#)  
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[image004.png](#)

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**Ashley Williams | Administrative Assistant**  
**DESCHUTES COUNTY COMMUNITY DEVELOPMENT**

117 NW Lafayette Avenue | Bend, Oregon  
Mail: PO Box 6005 | Bend, Oregon 97708  
Tel: (541) 617-4707 | [www.deschutes.org/cd](http://www.deschutes.org/cd)



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---

**From:** Mary Ann Kruse <junehog9@gmail.com>  
**Sent:** Wednesday, August 7, 2019 3:05 PM  
**To:** Planning Commission <PlanningCommission@deschutes.org>  
**Subject:** Flood Plain Zone Amendments, Wildlife Area Combining Zone

Dear Planning Commissioners,

Re: 247-19-000530-TA, 533-PA; 247-19-000531-TA; 247-19-000532-TA; and Wildlife Area Combining Zone Amendments

I oppose these amendments for these reasons:

- \* Our deer population is dwindling probably due to loss & encroachment of habitat as Bend & Deschutes County UGB "fills in". If we don't protect their habitat from disruption & degradation due to human population, our local deer population will be lost.
- \* Deer are as much a part of Central OR as the residents who call this locale home. Critical habitat should not be lost to further development.
- \* Permitting religious & non-secular assemblies in the winter range sets a dangerous precedent for our wildlife. When these assemblies are permitted, next comes permitting golf courses, schools, public recreation centers & more. When these permits erode wildlife habitat protections, all flora & fauna are @ risk.
- \* Mule deer are protected by Land Use Planning Goal 5. Making exceptions to this goal will absolutely lead to other Goal 5-protected resources, including wetlands & riparian areas. Exceptions to established Land Use Goals should not be considered. These Goals have been established for wildlife protection. Issuing exceptions completely obliterates the rationale the Land Use Planning Goals were created.
- \* Mule deer BELONG in Central OR. This is their habitat. Deschutes County needs to take a stand to defend & protect critical habitat.

Thank you for your consideration to these most important issues.

M.A. Kruse

[junehog9@gmail.com](mailto:junehog9@gmail.com)

"Chief Seattle predicted that when the big creatures were all gone, humans would die of loneliness...no number of channels on the TV can fill the frenetic emptiness we've created." Andy Yale

**From:** [Ashley Williams](#)  
**To:** [Nicole Mardell](#)  
**Subject:** FW: Flood Plain Zone Amendments, Wildlife Area Combining Zone  
**Date:** Thursday, August 08, 2019 7:57:04 AM

---

Ashley Williams | Administrative Assistant  
DESCHUTES COUNTY COMMUNITY DEVELOPMENT  
117 NW Lafayette Avenue | Bend, Oregon  
Mail: PO Box 6005 | Bend, Oregon 97708  
Tel: (541) 617-4707 | [www.deschutes.org/cd](http://www.deschutes.org/cd)

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-----Original Message-----

From: DEB QUINLAN <[dquinlan@bendbroadband.com](mailto:dquinlan@bendbroadband.com)>  
Sent: Wednesday, August 7, 2019 9:38 PM  
To: Planning Commission <[PlanningCommission@deschutes.org](mailto:PlanningCommission@deschutes.org)>  
Subject: Flood Plain Zone Amendments, Wildlife Area Combining Zone

[EXTERNAL EMAIL]

---

Dear Planning Commissioners,

Re: 247-19-000530-TA, 533-PA; 247-19-000531-TA; 247-19-000532-TA; and Wildlife Area Combining Zone Amendments

I oppose the Flood Plain Zone AND Wildlife Area Combining Zone amendments because I care about wildlife and consider our animal populations a valuable resource that cannot be ignored.

They are a part of our home in Central Oregon and deserve protections to prevent their population from dwindling. They are a part of our values, as a community that thrives on its natural beauty, streams, wetlands, wildlife and open spaces.

AND They are protected by Land Use Planning Goal 5.

Allowing religious assemblies within critical habitat? Allowing dense development along our rivers? These are decisions that will set a detrimental precedent in our community.

Wildlife is a public resource and as a member of the public, and I am asking the County to stand up for our wildlife , strengthen protections NOT weaken them, and think about how future generations will look back on these decisions. Will we protect the valuable resources for the benefit of our entire community? or deplete them to benefit a few?

Sincerely,  
Deb Quinlan  
Bend, OR resident since 1995

**From:** [Ashley Williams](#)  
**To:** [Nicole Mardell](#)  
**Subject:** FW: Flood Plain Zone Amendments, Wildlife Area Combining Zone  
**Date:** Thursday, August 08, 2019 7:53:17 AM  
**Attachments:** [image001.png](#)  
[image002.png](#)  
[image003.png](#)  
[image004.png](#)

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**Ashley Williams | Administrative Assistant**  
**DESCHUTES COUNTY COMMUNITY DEVELOPMENT**

117 NW Lafayette Avenue | Bend, Oregon  
Mail: PO Box 6005 | Bend, Oregon 97708  
Tel: (541) 617-4707 | [www.deschutes.org/cd](http://www.deschutes.org/cd)



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---

**From:** Betsy Warriner <[warriner@bendcable.com](mailto:warriner@bendcable.com)>  
**Sent:** Wednesday, August 7, 2019 3:07 PM  
**To:** Planning Commission <[PlanningCommission@deschutes.org](mailto:PlanningCommission@deschutes.org)>  
**Subject:** Flood Plain Zone Amendments, Wildlife Area Combining Zone

[EXTERNAL EMAIL]

---

Dear Planning Commissioners,

Re: 247-19-000530-TA, 533-PA; 247-19-000531-TA; 247-19-000532-TA; and Wildlife Area Combining Zone Amendments

I oppose these amendments. First, I oppose the proposal to allow assemblies of people in deer wintering range, because we must protect this habitat for our dwindling deer population. In addition, this proposal would open the door to other protected resources being compromised.

Secondly, amendments to the County's Flood Plain Zone will endanger wildlife species that depend on the riparian habitat to survive. In addition, we should prevent development that encroaches on the beauty of our rivers, a source of nourishment for all of us.

We must also consider the costs of providing infrastructure for rural development.

I count on our County to increase protections for wildlife habitat, not reduce them.

With appreciation for your consideration, Betsy Warriner

-- Betsy Warriner  
-- [warriner@bendcable.com](mailto:warriner@bendcable.com)  
-- 541-317-9065  
-- 119 NW Drake Road  
-- Bend, OR 97703

**From:** [Ashley Williams](#)  
**To:** [Nicole Mardell](#)  
**Subject:** FW: Flood Plain Zone Amendments, Wildlife Area Combining Zone  
**Date:** Thursday, August 08, 2019 10:58:27 AM  
**Attachments:** [image001.png](#)  
[image002.png](#)  
[image003.png](#)  
[image004.png](#)

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**Ashley Williams | Administrative Assistant**  
**DESCHUTES COUNTY COMMUNITY DEVELOPMENT**

117 NW Lafayette Avenue | Bend, Oregon  
Mail: PO Box 6005 | Bend, Oregon 97708  
Tel: (541) 617-4707 | [www.deschutes.org/cd](http://www.deschutes.org/cd)



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---

**From:** Ann Brayfield <[abrayfield@yahoo.com](mailto:abrayfield@yahoo.com)>  
**Sent:** Thursday, August 8, 2019 10:57 AM  
**To:** Planning Commission <[PlanningCommission@deschutes.org](mailto:PlanningCommission@deschutes.org)>  
**Subject:** Flood Plain Zone Amendments, Wildlife Area Combining Zone

Dear Planning Commissioners,

Re: 247-19-000530-TA, 533-PA; 247-19-000531-TA; 247-19-000532-TA; and Wildlife Area Combining Zone Amendments

After recently approving the Westside Transect Zone which includes protecting the deer winter range, it wouldn't be consistent with that protection to now allow churches to assemble in the wildlife zone. Further in allowing one group to assemble in the wildlife zone it is only a matter of time before other groups such as schools, recreation programs and golf courses will expect to be allowed to also assemble in wildlife zones. Currently noisy and disruptive activity is prohibited in the deer winter range because it is detrimental to this population. It is unrealistic to think assemblies even of the best intentioned folks wouldn't create disturbances from which wildlife are currently protected.

As our deer population dwindles it is important to protect habitat from disruption and degradation which would likely happen with assemblies of people. Like the mountains and rivers of Central Oregon our deer are what make Central Oregon what it is. Critical habitat should not be lost. Oregon Department of Fish and Wildlife pointed out in 2017 that the amount of winter range habitat is already insufficient or barely sufficient to sustain mule deer over time.

Mule deer are currently protected by Land Use Planning Goal 5. Making an exception would likely lead to other Goal 5 protected resources such as wetlands and riparian areas being compromised.

I urge the county to continue in a stewardship role by defending its protection of critical habitat.

As to the proposed flood plain zone amendments, I would encourage the Planning Commission not to make these amendments as they would likely lead to the loosening of development restrictions which would allow more dense development along rivers and streams. The flood plain zone currently conserves important riparian areas along rivers and streams and preserves significant scenic and natural resources. The Interagency Wildlife Working Group on the Deschutes Comprehensive Plan states that approximately 80 percent of all wildlife species depend on riparian areas.

Wildlife are a public resource. As a member of the community, I encourage the Planning Commission/County to engage in active stewardship and strengthen rather than weaken protections for the wildlife which make Central Oregon the outdoor paradise that it is.

Thank you,

Ann Brayfield and Joe Emerson  
18991 Park Commons Drive  
Bend OR 97703

**From:** [Ashley Williams](#)  
**To:** [Nicole Mardell](#)  
**Subject:** FW: Flood Plain Zone Amendments, Wildlife Area Combining Zone  
**Date:** Thursday, August 08, 2019 10:42:06 AM  
**Attachments:** [image001.png](#)  
[image002.png](#)  
[image003.png](#)  
[image004.png](#)

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**Ashley Williams | Administrative Assistant**  
**DESCHUTES COUNTY COMMUNITY DEVELOPMENT**

117 NW Lafayette Avenue | Bend, Oregon  
Mail: PO Box 6005 | Bend, Oregon 97708  
Tel: (541) 617-4707 | [www.deschutes.org/cd](http://www.deschutes.org/cd)



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**From:** Pete and Gretchen Pederson <pondhawk2@gmail.com>  
**Sent:** Thursday, August 8, 2019 10:40 AM  
**To:** Planning Commission <PlanningCommission@deschutes.org>  
**Subject:** Flood Plain Zone Amendments, Wildlife Area Combining Zone

Dear Planning Commissioners,

Re: 247-19-000530-TA, 533-PA; 247-19-000531-TA; 247-19-000532-TA; and Wildlife Area Combining Zone Amendments

We urge you to oppose any relaxation of regulations that protect habitat for wildlife and riparian habitats such as winter deer range and flood plains. Numerous species including deer, elk, bobcats, coyotes, birds, otters, and beavers depend on these undeveloped ecosystems.

As 30-year residents of Deschutes County, we have seen many changes that growth has brought to area, including detrimental development of the natural landscapes that have attracted people here for decades.

Deer winter range was zoned that way because deer need habitat not disturbed by assemblies and other extensive human activity. That has not changed. Flood plains also need to be protected, and that was decided long ago. The only change now is that developers are putting pressure on the county to make land available for building and entrepreneurs want to hold money-making gatherings. These locations have far more value to the public as scenic areas beneficial to the wildlife loved by so many who live here. Permitting dense development along river corridors and other flood plain areas is inconsistent with values that make Deschutes County a desirable place to live and to visit. Will Deschutes County someday look like Phoenix? We must protect what attracts people and wildlife to this spectacular place and not allow continued whittling away at well-thought-out existing zoning that has served the county well over the years.

Robert and Gretchen Pederson

Deschutes County Residents

**From:** [Ashley Williams](#)  
**To:** [Nicole Mardell](#)  
**Subject:** FW: Flood Plain Zone Amendments, Wildlife Area Combining Zone  
**Date:** Thursday, August 08, 2019 12:44:29 PM  
**Attachments:** [image001.png](#)  
[image002.png](#)  
[image003.png](#)  
[image004.png](#)

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**Ashley Williams | Administrative Assistant**  
**DESCHUTES COUNTY COMMUNITY DEVELOPMENT**

117 NW Lafayette Avenue | Bend, Oregon  
Mail: PO Box 6005 | Bend, Oregon 97708  
Tel: (541) 617-4707 | [www.deschutes.org/cd](http://www.deschutes.org/cd)



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---

**From:** Marcy Monte <marcylmonte@gmail.com>  
**Sent:** Thursday, August 8, 2019 12:41 PM  
**To:** Planning Commission <PlanningCommission@deschutes.org>  
**Subject:** Flood Plain Zone Amendments, Wildlife Area Combining Zone

[EXTERNAL EMAIL]

---

Dear Planning Commissioners,

Re: 247-19-000530-TA, 533-PA; 247-19-000531-TA; 247-19-000532-TA; and Wildlife Area Combining Zone Amendments

I oppose these amendments because...Bend Areas Animals need our protection. They just can't add comments on their own so we need to speak for them.

The Animals in our area, and earth are sacred. Please step up and protect them.

Sincerely,  
Marcy Monte  
Resident for 31 years  
teacher in Bend La Pine Schools

**From:** [Ashley Williams](#)  
**To:** [Nicole Mardell](#)  
**Subject:** FW: Flood Plain Zone Amendments, Wildlife Area Combining Zone  
**Date:** Thursday, August 08, 2019 7:53:55 AM  
**Attachments:** [image001.png](#)  
[image002.png](#)  
[image003.png](#)  
[image004.png](#)

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**Ashley Williams | Administrative Assistant**  
**DESCHUTES COUNTY COMMUNITY DEVELOPMENT**

117 NW Lafayette Avenue | Bend, Oregon  
Mail: PO Box 6005 | Bend, Oregon 97708  
Tel: (541) 617-4707 | [www.deschutes.org/cd](http://www.deschutes.org/cd)



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---

**From:** Joette Storm <[gjstorm@gmail.com](mailto:gjstorm@gmail.com)>  
**Sent:** Wednesday, August 7, 2019 6:40 PM  
**To:** Planning Commission <[PlanningCommission@deschutes.org](mailto:PlanningCommission@deschutes.org)>  
**Subject:** Flood Plain Zone Amendments, Wildlife Area Combining Zone

[EXTERNAL EMAIL]

---

Dear Planning Commissioners,

Re: 247-19-000530-TA, 533-PA; 247-19-000531-TA; 247-19-000532-TA; and Wildlife Area Combining Zone Amendments

I oppose these amendments because riparian areas are critically important to the ecosystem and wildlife and plants in those areas. At a time when so much of the climate is changing, we would be foolish to allow development in riparian areas. There are countless examples around the country where developments in floodplains have resulted in property loss and the decrease in various flora and fauna. We don't need to make that mistake. Joette Storm, Bend

**From:** [Armand Resto-Spotts](#)  
**To:** [Nicole Mardell](#)  
**Cc:** [Tim Ramis](#); [Darlene Ferretti](#)  
**Subject:** RE: Comment Letter - 2019 Flood Plain Amendments - Planning Commission Hearing  
**Date:** Wednesday, August 07, 2019 3:58:14 PM  
**Attachments:** [Ltr to Planner Mardell re 2019 Flood Plain Amendments 4826-7435-5615 v.6.pdf](#)

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[EXTERNAL EMAIL]

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Good afternoon, Nicole

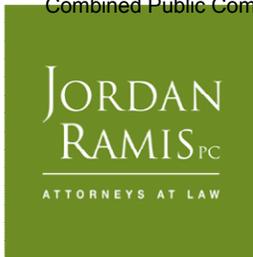
Please find attached a letter for the Planning Commission hearing tomorrow night on the 2019 legislative amendments related to flood plain regulations and areas.

I would appreciate confirmation of receipt of this email. Let me know if you have any issues opening the document.

Thank you,

**ARMAND RESTO-SPOTTS** | Attorney  
**Jordan Ramis PC** | Attorneys at Law  
Direct: 360-567-3917 Main: 360-567-3900

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Two Centerpointe Dr., 6<sup>th</sup> Floor  
Lake Oswego, OR 97035

Tel. (503) 598-7070  
Fax (503) 598-7373

[www.jordanramis.com](http://www.jordanramis.com)

Timothy V. Ramis  
*Admitted in Oregon*  
[tim.ramis@jordanramis.com](mailto:tim.ramis@jordanramis.com)  
Direct Dial: (503) 598-5573

August 7, 2019

VIA EMAIL ONLY

Nicole Mardell  
Associate Planner  
Deschutes County Planning  
117 NW Lafayette Ave  
Bend OR 97701  
E-Mail: [nicole.mardell@deschutes.org](mailto:nicole.mardell@deschutes.org)

Re: **File No. 247-19-00530,-00531, -00532-TA - Flood Plain Related Code Amendments**

Dear Planner Mardell:

I am writing on behalf of Calfa Holdings One, LLC regarding Deschutes County's ("County") proposed amendments to the zoning code and comprehensive plan text pertaining to the use of flood plain zoned land. Staff has proposed a series of amendment packages, including use of flood plain zoned land in cluster and planned unit developments, incorporation of provisions from the state's model flood damage prevention ordinance, and provisions for the division of split zoned flood plain property.

Calfa participated in the appeal of the County's prior amendments (Ordinance 2018-005), and raised issues relating to Goal 5 compliance and evidentiary concerns. Although the County has addressed a significant concern of Calfa in this 2019 legislative amendment cycle—specifically, compliance with Goal 5 and conducting an Economic, Social, Environmental, and Energy ("ESEE") analysis—Calfa remains concerned with the County's substantive analysis relating to the Goal 5 protected resources.

### **ESEE Analysis Should be Required for All Proposed Amendments**

Foremost, when a conflicting use may impact a Goal 5 resource, a local jurisdiction must perform an ESEE analysis. OAR 660-016-0005. The jurisdiction must assess both the "positive and negative ESEE consequences that could result from a decision to allow, limit, or prohibit a conflicting use." OAR 660-023-0010(2). Only with a proper analysis and balancing of the impacts from conflict use on the resource site can the jurisdiction make a final decision on whether to protect the resources totally, partially, or not at all. *Id.* at -0040; OAR 660-016-0010. Further, any amendments to an already acknowledge comprehensive plan or land use regulations (i.e., a post-acknowledgement plan amendment, "PAPA") require the jurisdiction to apply Goal 5 consideration for that amendment. OAR 660-023-0010; 660-023-0250(3). Even if the amendments "provide the same protection" for Goal 5 resources and the new conflicting uses are the same types as previously allowed, Goal 5 still applies. *Johnson et al. v. Jefferson Cnty.*, 56 Or. LUBA 25, 37-38 (2008).

Calfa agrees with the County that an ESEE analysis is required for its proposed amendments to the flood plain regulations to permit counting of flood plain zoned land in acreage calculation for open space. Calfa disagrees with the County that an ESEE analysis is not required for the amendments to

Nicole Mardell  
August 7, 2019  
Page 2

the division of split zoned flood plain property, but acknowledges that the County is performing a respective analysis regardless.

Calfa also disagrees with the County that an ESEE analysis is not required for the amendments to its code to incorporate provisions of the state model flood damage prevention ordinance, and requests that the County conduct a full analysis prior to adopting any respective amendments. The County states that the amendments are incorporating “minor changes or clarifications to uses that are currently allowed in the zone,” that “no new uses are being added,” and that “no Goal 5 resource will be negatively affected” by the incorporation of model ordinance provisions. *Id.* at 7.

However, under applicable state law, the fact that these amendments are “minor” and don’t add “uses” does not mean the County is exempt from Goal 5 obligations. Staff Report, 247-19-000530-TA/533-PA, page 2. Critically, both “positive and negative” consequences that result from a decision that “allow[s], limit[s], or prohibit[s] a conflicting use” must be considered in an ESEE analysis. OAR 660-023-0010. The County’s amendments incorporating model provisions, for example, permits outright certain uses and structures located outside Special Flood Hazard Area, or for example, exempts submittal of flood elevation data for proposals that preclude residential construction in flood plain area. These changes may positively or negatively impact the protected Goal 5 resource within and relying upon the flood plain areas. In sum, an ESEE analysis is warranted to assess the consequences of the amendment on the protected Goal 5 resources. Calfa requests that the Planning Commission require an ESEE analysis for 247-19-000530/533-PA prior to rendering a recommendation and decision on the proposed amendments.

### **Substantive Issues with ESEE Analysis for Flood Plain Density Calculations**

With respect to the ESEE analysis for the proposed amendments that allow for counting of flood plain zoned land in cluster and planned unit developments density calculation (247-19-000531-TA), Calfa emphasizes that the actual harm to the protected Goal 5 resources remain. The County should not recommend adoption of these amendments.

With the proposed amendments, the County is effectively authorizing the potential for greater density of residential development adjacent to and within flood plain areas. This will have a myriad of negative impacts on protected resources within those flood plain areas, including fish and wildlife habitat and wetland and riparian areas. See Exhibits A-D (highlighting impacts from residential development on flood plain areas). Staff’s ESEE analysis focuses on potential conflicting uses of habitat fragmentation, increase impervious surfaces, and possible excavation and vegetation removal associated with residential development. Staff Report, 247-19-000531-TA, Appendix A, pages 7-8. However, staff states that it cannot analyze “non-land use related items such as the presence of dogs and domestic animals or recreation activities and other social implications.” *Id.*

These “non-land use related items,” however, are directly associated with increased residential development, which the amendments purport to allow (and in effect, will allow). Habitat fragmentation includes increased infrastructure, like roads, and concentration of impervious surfaces, driveways, and other infrastructure. Staff Report, 247-19-000531-TA, Appendix A, page 8. Other residential elements, like increased automobile traffic, fertilized lawns, and domestic animals, are simply further examples of how residential development fragments and significantly impacts fish and wildlife habitat. See Exhibits A-D. The staff erred in failing to incorporate these elements in its ESEE analysis, and should do so before the Planning Commission renders a recommendation and decision on the proposed amendments.

Nicole Mardell  
August 7, 2019  
Page 3

Calfa urges the Planning Commission to consider and demand more analysis on the potential impacts from increased residential development on these protected resources. The existing flood plain regulations and Comprehensive Plan were intended to limit residential development in and adjacent to flood plain areas—and the County acknowledges as much that the amendments will retain many of these critical protections. See Staff Report, 247-19-000531-TA, Appendix A, pages 3-4. Amendments to this existing protective scheme are substantial and diverse. The Planning Commission should request further analysis of the potential long-term implications of this new density scheme, particularly as related to nearby flood plain zoned lands, in order to properly protect and regulate Goal 5 resources.

I thank staff and the Planning Commission for the opportunity to offer these comments. Please include them in the record of the proceeding.

Sincerely,

JORDAN RAMIS PC



Timothy V. Ramis

Encls.

# Exhibit A

July 6, 2009

Deschutes County Planning Division  
1130 NW Harriman Street  
Bend, Oregon 97701

RE: Recommendations from the Interagency Wildlife Working Group on the Deschutes County Comprehensive Plan Update

Dear Deschutes County:

In response to a request from Deschutes County to provide up-to-date wildlife information for the County's Comprehensive Plan Update, a group of local interagency wildlife experts from the Oregon Department of Fish and Wildlife, US Fish and Wildlife Service, US Bureau of Land Management and US Forest Service convened a working group (Interagency Working Group). The enclosed document provides wildlife information to support the Comprehensive Plan Update and includes recommendations from the Interagency Working Group concerning necessary wildlife conservation measures to include in Deschutes County's Comprehensive Plan.

Thank you for the opportunity to participate in the Deschutes County Comprehensive Plan Update. If you have any questions regarding our comments, please contact members of the working group listed herein.

Sincerely,

*Confidential for  
this date*  
ODFW  
High Desert Region Manager

*John Allen*  
US Forest Service  
Deschutes National Forest Supervisor

*Nancy Gilbert*  
USFWS  
Bend Field Office Supervisor

*Steven R. Kehring*  
BLM  
Prineville District Manager



JUL 08 2009

CC BY:  
*Glen Becht*





## Updated Wildlife Information and Recommendations for the Deschutes County Comprehensive Plan Update

---

Prepared by: An Interagency Working Group  
Jennifer O'Reilly (USFWS), Glenn Ardt (ODFW)  
Jan Hanf (BLM), Rick Demmer (BLM) and  
Lauri Turner (USFS)

7/6/2009

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**LIST OF PREPARERS**

Glen Ardt - ODFW Wildlife Habitat Biologist 61374 Parrell Road Bend, Oregon 97702 541-388-6444 ex 230	Chris Carey - ODFW Wildlife Diversity Biologist 61374 Parrell Road Bend, Oregon 97702 541-388-6350 ex 228
Rick Demmer Bureau of Land Management Prineville District 3050 NE Third Street Prineville, OR 97754 541-416-6738	Steven George - ODFW Wildlife Biologist 61374 Parrell Road Bend, Oregon 97702 541-388-6363
Jan Hanf Bureau of Land Management Prineville District 3050 NE Third Street Prineville, OR 97754 541-416-6721	Jennifer O'Reilly Fish and Wildlife Biologist US Fish and Wildlife Service -Bend Field Office 20310 Empire Avenue Suite A-100 Bend, OR 97701 541-312-6426
Lauri Turner Deschutes National Forest Forest Wildlife Biologist 1001 SW Emkay Drive Bend, Oregon 97702 541-383-5640	

## **Economic Value of Fish and Wildlife Recreation in Deschutes County**

*The Interagency Working Group recommends that Deschutes County consider the economic impact or benefit to wildlife resources when making a decision that could affect wildlife populations or their habitats to limit conflicting use.*

Oregon Department of Fish and Wildlife and Travel Oregon contracted with Dean Runyan and Associates in 2008 to conduct an economic analysis by county of Fishing, Hunting, Wildlife Viewing, and Shellfishing Recreation in Oregon: 2008 Trip Characteristics and Expenditure Estimates. The survey identified two distinct type of expenditures related to fishing, hunting, shellfish and wildlife viewing trips. Travel related expenditures were for trips of more than 50-miles one way or included an overnight stay. Local recreation trips were less than 50-miles one way.

Preliminary results for the 36 county economic analyses revealed that travel generated expenditures for fishing, hunting, and wildlife viewing trips to Deschutes County generated nearly \$70-million. Expenditures for fishing trips in Deschutes County were the third highest in the state at \$20,410,000, the second highest for hunting at \$6,663,000, and the third highest for wildlife viewing at \$42,771,000. Dean Runyan and Associates also found that out of the \$478,781,000 expenditures generated by people traveling to Deschutes County that 14.6% came from fishing, hunting, and wildlife viewing activities.

Preliminary results also revealed for locally generated expenditures, that fishing trips in Deschutes County generated the fourth highest in the state at \$5,321,000, the fifth highest for hunting (\$1,817,000), and the ninth highest for wildlife viewing at \$1,520,000.

Additive, residents and non-residents spent \$25,731,000 on fishing trips in Deschutes County, \$8,480,000 on hunting trips, and \$44,291,000 on wildlife watching for a grand total of \$78,502,000. Compared to Oregon's 36 counties, Deschutes County ranked third highest for fishing, hunting, and wildlife viewing revenues, behind Lincoln County's \$102,605,000 and Clatsop County's \$84,967,000, both of which provide saltwater, salmon and steelhead, and shellfishing opportunities. Freshwater fishing trips in Deschutes County generated the highest fresh water revenues at \$25,731,000, with Lane and Tillamook Counties generating the second and third highest revenues at \$22,703,000 and \$15,557,000 respectively. Shellfishing generated an additional \$36,295,000 in revenue resulting in over one billion dollars being spent on fishing, hunting, wildlife viewing, and shellfishing activities in Oregon in 2008.

**Table 1: 2008 Fishing, Hunting, & Wildlife Viewing Expenditures in Deschutes County**

Activity	Fishing	Hunting	Wildlife Viewing	Total FHW	Total Travel Generated
Travel Generated Revenue	20,410,000	6,663,000	42,771,000	69,844,000	478,781,000 (14.6% FHW)
36 County Ranking	3	2	3	3	
Locally Generated Revenue	5,321,000	1,817,000	1,520,000	8,658,000	
36 County Ranking	4	5	9	4	
Deschutes Total	**25,731,000	8,480,000	44,291,000	78,502,000	
Statewide Total	341,510,000	136,032,000	495,260,000	972,802,000	

\*\* Deschutes County generated the highest freshwater fishing revenues in the state.

## Oregon Conservation Strategy

*The Interagency Working Group recommends that Deschutes County utilize the Oregon Conservation Strategy as a guide and reference for the maintenance and enhancement of Oregon's wildlife resource to limit conflicting use.*

In 2006 the Oregon Conservation Strategy was adopted by Oregon's Fish and Wildlife Commission for the state of Oregon. The focus of the Conservation Strategy is to use the best available science to create a broad vision and conceptual framework for long-term conservation of Oregon's native fish and wildlife, as well as various invertebrates and native plants. As a guide to conserving the species and habitats that have defined the nature of Oregon, this strategy can help ensure that Oregon's natural treasures are passed on to future generations. The Conservation Strategy emphasizes proactively conserving declining species and habitats to reduce the possibility of future federal or state listings. It is not a regulatory document, but instead presents issues and opportunities, and recommends voluntary actions that will improve the efficiency and effectiveness of conservation in Oregon.

Healthy fish and wildlife populations require adequate habitat, which is provided in natural systems and, for many species, in landscapes managed for forestry, agriculture, range and urban uses. The goals of the Conservation Strategy are to maintain healthy fish and wildlife populations by maintaining and restoring functioning habitats, preventing declines of at-risk species, and reversing declines in these resources where possible.

The Conservation Strategy is a broad strategy for all of Oregon, offering potential roles and opportunities for residents, agencies and organizations. It incorporates information and insights from a broad range of natural resources assessments and conservation plans, supplemented by the professional expertise and practical experiences of a cross-section of Oregon's resource managers and conservation interests. It is designed to have a variety of applications both inside and outside of state government.

Most important, perhaps, it establishes the basis for a common understanding of the challenges facing Oregon's fish and wildlife, and provides a shared set of priorities for addressing the state's conservation needs. The heart of the Conservation Strategy is a blueprint for voluntary action to address the long-term needs of Oregon's fish and wildlife. The future for many species will depend on landowners' and land managers' willingness to voluntarily take action on their own to protect and improve fish and wildlife habitat.

The Oregon Conservation Strategy is available online at <http://www.dfw.state.or.us/conservationstrategy>

### **ODFW Fish and Wildlife Habitat Mitigation Policy**

*Oregon Department of Fish and Wildlife recommends that Deschutes County require impact avoidance for development actions that will impact Category 1 habitat and development of a wildlife mitigation plan for development actions that will impact habitat Categories 2-5 to limit conflicting use.*

Oregon Department of Fish and Wildlife's (ODFW) Fish and Wildlife Habitat Mitigation Policy (OAR 635-415) ([http://www.dfw.state.or.us/lands/mitigation\\_policy.asp](http://www.dfw.state.or.us/lands/mitigation_policy.asp)) provides direction for ODFW staff to review and comment on projects that may impact fish and wildlife habitat. This policy recognizes six distinct categories of wildlife habitat ranging from Category 1 – essential, limited, and irreplaceable habitat, to Category 6 – low value habitat. The policy goal for Category 1 habitat is no loss of habitat quantity or quality through avoidance of impacts by using development alternatives, or by not authorizing the proposed development action if impacts cannot be avoided. The Department recommends avoidance of Category 1 habitats as they are irreplaceable, and thus mitigation is not a viable option.

Categories 2-4 are for essential or important, but not irreplaceable habitats. Category 5 habitat is not essential or important habitat, but has high restoration potential.

### **Threatened and Endangered Species and Species of Concern**

*The interagency working group recommends that Deschutes County develop and adopt measures that will protect federal and state listed threatened and endangered species to limit conflicting use.*

The US Fish and Wildlife Service (USFWS) is responsible for administration of the Endangered Species Act and multiple Federal wildlife laws that protect endangered species and migratory birds, respectively. For more information on legal authorities of the USFWS in the protection of migratory birds, please visit <http://www.fws.gov/migratorybirds/intnltr/treatlaw.html>.

It is Oregon's policy "to prevent the serious depletion of any indigenous species" (ORS 496.012). Oregon Department of Fish and Wildlife maintains a list of native fish and wildlife species in Oregon that have been determined to be either "threatened" or "endangered" according to criteria set forth by rule (OAR 635-100-0105) (<http://www.dfw.state.or.us/OARs/100.pdf>). Recovering species when their populations are severely depleted can be difficult and expensive, and socially and economically divisive. To provide a positive proactive approach to species conservation, a "sensitive" species classification was created under Oregon's Sensitive Species Rule (OAR 635-100-040) ([http://www.dfw.state.or.us/wildlife/diversity/species/docs/SSL\\_by\\_taxon.pdf](http://www.dfw.state.or.us/wildlife/diversity/species/docs/SSL_by_taxon.pdf)).

Appendix H lists species in Deschutes County that are listed by either the Federal or State wildlife agencies under the above mentioned laws or authorities along with a list of wildlife species that occur in Deschutes County.

### **Riparian and wetland areas for wildlife and fish**

*The Interagency Working Group recommends that Deschutes County complete a Local Wetland Inventory and adopt it into the Deschutes County Comprehensive Plan to limit conflicting use.*

Riparian areas support a greater diversity of wildlife than upland areas, and are particularly important and limited habitats in the arid Western U.S. Over 60 percent of the neotropical<sup>1</sup> migratory songbirds in the western U.S. use riparian areas at some point during the year. Approximately 80 percent of all wildlife species depend on riparian areas. Aquatic and fish productivity are directly related to properly functioning and healthy riparian habitat.

Deschutes County has limited riparian and wetland habitats. In 1985, the US Fish and Wildlife Service conducted a National Wetland Inventory for most of Deschutes County. However, due to the large spatial scale of the mapping effort (1:58,000) wetlands smaller than five acres in size were not identified as significant only because they were not mapped, not because they are insignificant. Most wetlands smaller than five acres in size provide significant habitat necessary for a suite of wildlife species as depicted in the introductory paragraph above. A Local Wetland Inventory would greatly improve the County's ability to conserve wetland resources, which are vital to maintaining healthy fish and wildlife populations in the Upper Deschutes basin. Therefore, the Working Group strongly recommends that the County pursue the completion of a Local Wetland Inventory and its adoption into the Comprehensive Plan Update.

Sensitive fish and wildlife species dependent on riparian and wetland areas in the County include but are not limited to those in Table 2.

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<sup>1</sup> Birds that reproduce and summer in North America and winter in South America.

**Table 2: Threatened, endangered and species of concern dependent on floodplain areas in Deschutes County.**

<b>Species</b>	<b>State Oregon Dept of Fish and Wildlife</b>	<b>Federal US Fish and Wildlife Service</b>	<b>Deschutes County</b>
Bull Trout	SC - OCS	Threatened	
Redband Trout	SV - OCS		
Summer Steelhead	SC - OCS	Threatened**	
Chinook Salmon	SV		
Columbia Spotted Frog	SC	Candidate	
Oregon Spotted Frog	SC - OCS	Candidate	
Western Toad	SV - OCS		
Cascade Frog	SV - OCS	SOC	
Coastal tailed frog		SOC	
Oregon slender salamander		SOC	
Great Blue Heron			Goal 5
Yellow-billed Cuckoo	SC	Candidate	
Lewis' Woodpecker	SC - OCS	SOC	
White-headed Woodpecker	SC	SOC	
American Bald Eagle	Threatened	EPA	Goal 5
Northern Goshawk	SV - OCS	SOC	Goal 5
Osprey			Goal 5
American Peregrine Falcon	SV	Delisted	Goal 5
Greater Sandhill Crane	SV - OCS		
Flammulated Owl	SV - OCS		
Great Gray Owl	SV - OCS		
Three-toed Woodpecker	SV - OCS		
Black-backed Woodpecker	SV - OCS		
Pileated Woodpecker	SV		
Olive-sided Flycatcher	SV - OCS	SOC	
Willow Flycatcher	SV	SOC	
Bufflehead	OCS		
Barrows Goldeneye	OCS		
Yellow-breasted chat		SOC	
Townsend's Big-Eared	SC - OCS		

Bat			
California Myotis	SV -OCS		
Long-legged Myotis	SV - OCS		
Hoary Bat	SV - OCS		
Silver-haired Bat	SV - OCS		
Pallid Bat	SV - OCS		
Mule Deer			Goal 5
Elk			Goal 5

\*\* - National Marine Fisheries Service has regulatory authority for steelhead.

C – USFWS Candidate is warranted to be listed as Threatened or Endangered

SC – State Sensitive Critical

SV – State Sensitive Vulnerable

OCS – Oregon Conservation Strategy Species

SOC – USFWS Species of Concern

State Sensitive Species List -

[http://www.dfw.state.or.us/wildlife/diversity/species/sensitive\\_species.asp](http://www.dfw.state.or.us/wildlife/diversity/species/sensitive_species.asp)

EPA – Bald and Golden Eagle Protection Act

Oregon Conservation Strategy Species List -

[http://www.dfw.state.or.us/conservationstrategy/strategy\\_species.asp](http://www.dfw.state.or.us/conservationstrategy/strategy_species.asp)

*Oregon Spotted Frog in the Upper Deschutes Basin*

*Oregon Spotted Frog Conservation Recommendations to Limit Conflicting Use*

*The Interagency Working Group recommends that Deschutes County add an Oregon spotted frog habitat area to the wildlife area combining zone map to include the floodplains along the Deschutes and Little Deschutes Rivers south of Bend (approximately from River Mile (RM) 173 to headwaters of the Deschutes River and from the confluence with the Deschutes River to the Klamath County line (~RM42.9) for the Little Deschutes River).*

- *Oregon spotted frog habitat is essential and limited, and depending on the site, it could be irreplaceable. The mitigation goal for essential, limited, and irreplaceable habitat is no net loss of either habitat quantity or quality through avoidance (Oregon Department of Fish & Wildlife (ODFW) Habitat Category 1). The mitigation goal for essential and limited habitat if impacts are unavoidable is no net loss of either habitat quantity or quality and to provide a net benefit of habitat quantity or quality (ODFW Habitat Category 2).*
- *The Working group recommends a No Net Loss of wetlands within the Oregon spotted frog habitat area. Therefore, wetland fill permits should be sent to the ODFW and FWS for review and comment to the county on their findings.*

- *The working group recommends that Deschutes County complete a Local Wetland Inventory to properly protect wetland and inherent functions and values.*
- *Hydrologic connectivity should be maintained when wetlands will be filled. For example, culverts should be installed below roads, driveways, or other obstructions that may block hydrologic connectivity that allows for proper wetland function and dispersal of Oregon spotted frogs.*
- *Limit structures within floodplains, that could impact floodplain functions*
- *Maintain highest water quality standard in wetlands and rivers.*

The Oregon spotted frog (*Rana pretiosa*) is endemic to the Pacific Northwest and historically ranged from southwestern British Columbia to northeast California. There are less than 50 known sites inhabited by the species in southwestern British Columbia, western and south-central Washington, and western, central, and south-central Oregon; no populations are known to persist in California. Revisits of historic localities suggest the species is lost from 70-90% of its historic range (Cushman and Pearl 2007).

In Oregon, Oregon spotted frogs historically were found in Multnomah, Clackamas, Marion, Linn, Benton, Jackson, Lane, Wasco, Deschutes and Klamath counties. Currently, this species is only known to occur in Deschutes, Klamath, and Lane counties. In Deschutes County, Oregon spotted frogs occur within water bodies on the Deschutes National Forest, Prineville District Bureau of Land Management and private land.

The Oregon spotted frog is considered a Candidate species by the US Fish and Wildlife Service (FWS), which means that there is sufficient information to support a proposal to list this species as endangered or threatened under the Endangered Species Act. The FWS is currently completing a status assessment for the Oregon spotted frog.

The Upper Deschutes and Little Deschutes Rivers and associated wetlands are key habitat for the frog. In particular, riverine oxbows that contain permanent standing water but are no longer connected to the river provide essential overwintering and breeding habitat for Oregon spotted frog. The rivers and associated floodplains are connectivity corridors that must be maintained to allow populations of frogs to interbreed. Small ponds and isolated wetlands with emergent or floating aquatic vegetation and perennial water also provide habitat for the frog, particularly those that are devoid of predatory fish and bull frogs.

In the Upper Deschutes and Little Deschutes Rivers, Oregon spotted frog is threatened by the loss of marsh habitat due to vegetation succession and lodgepole pine encroachment into wetlands; alteration of riverine and wetland hydrologic regimes; interactions with non-native fish and bull frogs; and degraded water quality. Livestock grazing in high density may also pose a threat to Oregon spotted frog.

Development of Deschutes County "red lots" within the floodplain of the Upper Deschutes and Little Deschutes Rivers may pose a threat to Oregon spotted frog in the

future and could be considered conflicting uses relative to conservation of the Oregon spotted frog. Filling of wetlands will directly affect the habitat on which the frog is dependent. Additionally, the recent findings of the US Geological Survey suggest that development of lots with a high water table will increase nutrient loading (i.e., nitrate) in the rivers. Excess nitrate loading in the river, combined with a naturally occurring high level of phosphorous in the substrate, will greatly exacerbate eutrophication of the rivers and lead to excess algal growth and vegetative growth. Spotted frogs are dependent not only on the wetland habitat but the high quality of water within these wetlands.

References:

Cushman, K.A. and C.A. Pearl. 2007. A Conservation Assessment for the Oregon Spotted Frog (*Rana pretiosa*). USDA Forest Service Region 6 and USDI Bureau of Land Management, Oregon and Washington.

### **Shrub-Steppe Habitat**

*The Interagency Working Group recommends that Deschutes County consider impacts to wildlife populations and their habitat when a decision will result in degradation of shrub-steppe habitat to limit conflicting use.*

Nationally, grassland and shrubland birds show the most consistent population declines over the last 30 years of any group of bird species. Across the U.S., the population of 63% of shrubland and shrub-dependent bird species and 70% of grassland species are declining. In the Intermountain West, more than 50% of grassland and shrubland species show downward trends (Paige 1999).

The sagebrush ecosystem has been reduced in area by greater than 40% since pre-European settlement, and less than 10% remains in a condition unaltered by human disturbance. Populations of many of the sagebrush-associated species are declining, and approximately 20% of the ecosystem's native plants and animals are considered imperiled (Wisdom 2005).

Invasion of exotic vegetation, altered fire regimes, road development and use, mining, energy development, climate change, encroachment of pinyon-juniper woodlands, intensive grazing by livestock, and conversion to agriculture, to urban use, and to non-native livestock forage all have contributed to the ecosystem's demise (Wisdom 2005).

Shrub-steppe habitat provides needed resources for over 100 bird species and 70 mammals included 12 Oregon state listed sensitive species, and one threatened species (Table 3). Large blocks of unfragmented functioning habitat with low human disturbance are needed to support shrub-steppe wildlife. If avoidance of these areas is not possible, providing for "no net loss" and a "net benefit" (restoration) of shrub-steppe habitat should be a vital component of any conservation plan.

References

Paige, C., and S.A. Ritter. 1999. Birds in a sagebrush sea: managing sagebrush habitats for bird communities. Partners in Flight Western Working Group, Boise, ID.

Wisdom, M.J., M.M. Rowland, and L.H. Suring, editors. 2005. Habitat threats in the sagebrush ecosystem: methods of regional assessment and applications in the Great Basin. Alliance Communications Group, Lawrence, Kansas, USA.

**Table 3: Threatened, endangered and species of concern dependent on sagebrush steppe habitat in Deschutes County**

Species	State Oregon Dept of Fish and Wildlife	Federal US Fish and Wildlife Service	Deschutes County
Greater Sage-Grouse	SV - OCS	SOC	Goal 5
American Bald Eagle	Threatened	EPA	Goal 5
Golden Eagle		EPA	Goal 5
Swainson's Hawk	SV - OCS		
Ferruginous Hawk	OCS	SOC	
Prairie Falcon			Goal 5
American Peregrine Falcon	SV - OCS	DeListed	Goal 5
Burrowing Owl	SV	SOC	
Loggerhead Shrike	OCS		
Townsend's Big-eared Bat	SC - OCS	SOC	
California Myotis	SV - OCS		
Long-legged Myotis	SV - OCS	SOC	
Hoary Bat	SV - OCS		
Silver-haired Bat	SV	SOC	
Spotted Bat	SV - OCS	SOC	
Pallid Bat	SV OCS		
Pygmy Rabbit	SV - OCS	SOC	
Mule Deer			Goal 5
Elk			Goal 5
Pronghorn			Goal 5

SC – State Sensitive Critical

SV – State Sensitive Vulnerable

OCS – Oregon Conservation Strategy Species

SOC – USFWS Species of Concern

EPA – Federal Eagle Protection Act

State Sensitive Species List -

[http://www.dfw.state.or.us/wildlife/diversity/species/sensitive\\_species.asp](http://www.dfw.state.or.us/wildlife/diversity/species/sensitive_species.asp)

Oregon Conservation Strategy Species List -

[http://www.dfw.state.or.us/conservationstrategy/strategy\\_species.asp](http://www.dfw.state.or.us/conservationstrategy/strategy_species.asp)

Greater Sage Grouse in Deschutes County

*Greater Sage-Grouse Conservation Recommendations to Limit Conflicting Use:*

- *Establish a 3-mile radius (habitat protection area) around occupied leks. All habitat within the 3-mile radius is essential for greater sage-grouse, limited, and irreplaceable (ODFW Habitat Category 1). The mitigation goal for essential, limited, and irreplaceable habitat is no net loss of either habitat quantity or quality through avoidance.*
- *Any sagebrush habitat identified as brood rearing or winter habitat for greater sage-grouse is essential and limited (ODFW Habitat Category 2). Where possible avoid development within 0.5 mile of these areas. The mitigation goal for essential and limited habitat if impacts are unavoidable is no net loss of either habitat quantity or quality and to provide a net benefit of habitat quantity or quality.*
- *Transmission lines should be placed in existing right-of-ways to aggregate this disturbance; if not possible then transmission lines should be sited at least 2-miles from leks, and where possible 0.5 mile from brood rearing habitat and wintering areas.*
- *Unimproved roads should be 0.5 mile from leks. Paved (or improved gravel) larger volume roads should be at least 1-mile from leks.*
- *Ground level structures (i.e., residences, roads, buried power lines, natural gas lines) should not be sited within 0.5 mile of the nearest lek site.*
- *Timing restrictions: construction and maintenance activity associated with any development or industrial and commercial activities (i.e., mineral extraction, shooting sports, paintball course, landfills, OHV systems) should be avoided from 15 February to 31 July time frame in sage-grouse habitat. If avoidance is not possible then activity should be restricted from 2 hrs prior to and 2 hrs after sunrise during this timeframe.*

In August 2005, the Oregon Fish and Wildlife Commission adopted into rule the “Greater Sage-Grouse Conservation Assessment and Strategy for Oregon: A Plan to Maintain and Enhance Populations and Habitat.” Plan development was led by the Oregon Department

of Fish and Wildlife (ODFW), but was collaboratively agreed upon and written by the Oregon Sage-Grouse and Sagebrush Habitat Conservation Team (Sage-Grouse Team). Specifically, the Commission adopted the population and habitat goals into rule (OAR 635-140-0005 & -0010), and directed staff to implement these policies as described in the Plan. The statewide population objective is to maintain or enhance sage-grouse numbers and distribution at the 2003 spring breeding population level, approximately 40,000 birds (Hagen 2005:32).” The statewide habitat goal is to maintain 70% of the sagebrush steppe as sagebrush dominated (> 10% sagebrush cover) landscapes and allow for 30% of the landscape to occur in various stages of disturbance and transition. To achieve this goal, conservation guidelines were established to “...maintain (at a minimum) or enhance (optimum) the quality of current habitats (Hagen 2005: 70).”

Further, the population management objective for sage-grouse in this region (Prineville District), which includes portions of Deschutes and Crook Counties, is to restore sage-grouse numbers and distribution near the 1980 spring breeding population level, approximately 3,000 birds (Hagen 2005: 37). ODFW’s state estimate was at a low point in 2008, with figures showing populations levels at less than half the population estimate for 2005, (Hagen 2009 news release). In 2008, Prineville District alone showed a 38% decrease from the 2007 estimate (Hagen 2008 personal communication).

Sagebrush conversion to agricultural lands, wetland degradation, invasive plants, mining, transmission lines, grazing practices that affect necessary cover or forage, recreational disturbance - motorized and non-motorized, and residential and wind energy developments all can impact local sage-grouse populations and could be considered conflicting uses relative to conservation of greater sage-grouse.

Sage-grouse populations have declined since the 1960s across their range. The declines have been substantial enough to initiate 9 petitions to protect the sage-grouse under the Federal Endangered Species Act. The Sage-Grouse Plan was developed to maintain sustainable populations in Oregon, so that listing under the Endangered Species Act would not be warranted. To this end, the Plan established a “no net loss” objective for sage-grouse habitat conservation. This objective also provides benefits for a suite of other sagebrush obligate species (Hagen 2005, Rowland et al. 2005).

Breeding habitat (lekking, nesting habitat, and early brood-rearing) is critical to the life-history of sage-grouse (Johnson and Braun 1999, Walker 2008). Like many upland birds, sage-grouse rear only 1 brood of young in a breeding season. Thus, any hindrance to breeding activities (i.e., habitat loss or other disturbance) may be deleterious to production and ultimately recruitment into the population (Lyon and Anderson 2003, Holloran 2005, Walker et al. 2007).

Leks are used for breeding and the surrounding sagebrush habitat is used for nesting. Oregon research shows that nearly all nests occur within 5 miles of a lek, while 80 percent of nests occur within 3 miles of a lek. However, regional radio-telemetry data in Deschutes and Crook counties showed that 80 percent of hens nest within 4 miles of a lek. This distance becomes paramount when considering the sage-grouse population in

Deschutes County, which is on the fringe of the species range, and therefore is more susceptible to cumulative effects of habitat alteration and disturbance. Population models suggest that such a loss (20%) can be sustained by a large “healthy” population, but the carrying capacity will be diminished resulting in a smaller but viable population in the future (Walker et al. 2007).

A model, indicating where sage-grouse populations are more likely to persist in landscapes throughout the full range of the species, shows Deschutes county to be on the fringe of the species range and at risk of extirpation (Aldridge et al. 2008) These authors suggest that conservation efforts focused on maintaining large expanses of sagebrush habitat, enhancing the quality of existing habitat, and increasing connections between suitable habitat patches would be most beneficial to maintaining healthy sage-grouse populations. These conservation measures are key in Deschutes county due to the present low sage-grouse population levels, the species low reproductive rate, and the species limited ability to adapt to habitat changes (i.e. habitat loss, degradation, and fragmentation).

Breeding and nesting habitats are essential, limited, and irreplaceable. Based on Oregon’s research and elsewhere in the West, the biological dynamic that occurs between female nest site selection and movement patterns that drive males to establish a lek in these areas of female use has yet to be successfully recreated. Given the uncertainty and risk involved in trying to mitigate for the loss of these habitats (i.e., replace/restore), protection of breeding and nesting habitat is paramount.

Generally brood-rearing habitat is comprised of a mosaic of upland vegetation intermixed with wetland sites (e.g., playas, seeps, springs, wet meadows, riparian areas) where broods seek succulent vegetation and invertebrates. These areas can be greater than 10 miles from lek sites. Wetland sites in shrub-steppe habitats are an essential and limited habitat and “no net loss” and “net benefit” (restoration) are paramount if protection is not possible.

Winter habitat is comprised of low elevation flats in stands of Wyoming big sagebrush, basin big sagebrush, or stands of low sagebrush along windswept ridges or drainages. Winter habitat has not been adequately inventoried in Oregon, thus its distribution and abundance is unknown. However, in Deschutes County, some wintering areas are known and have been delineated. (Hanf, et al. 1994). These habitats have included extensive stands of mountain big sagebrush and low and early-flowering sagebrush. Depending on winter snow accumulations, some wintering areas become especially important, as heavy snowfall forces birds out of low sage areas into big sage areas where sagebrush is still accessible. Because of sage-grouse dependence on sagebrush for winter forage, losses to these areas can have severe impacts on winter survival and subsequent breeding population size (Swenson et al. 1987, Connelly et al. 2004).

Because of the essential and limited nature of winter habitat “no net loss” and “net benefit” (restoration) are paramount if avoidance is not possible.

References

- Aldrige, C.L., S.E.Nielsen, H. L. Beyer, M. S. Boyce, J. W. Connelly, S. T. Knick, M.A. Schroeder. 2008 Range-wide patterns of greater sage-grouse persistence. *Diversity and Distributions* 14, 983-994.
- Connelly, J. W., S.T. Knick, M. A. Schroeder, and S. J. Stiver. 2004. Conservation assessment of greater sage-grouse and sagebrush habitats. Unpublished report, Western Association of Fish and Wildlife Agencies, Denver, CO.
- Hagen, C.A. 2005. Greater sage-grouse conservation assessment and strategy for Oregon: a plan to maintain and enhance populations and habitat. Oregon Department of Fish and Wildlife. Salem, Oregon.
- Hagen, C.A. 2009. Sage grouse numbers dip, but biologists are hoping for a rebound. Bend Bulletin May 21, 2009 News Release.
- Hagen, C.A. 2008. Personal communication.
- Hanf, J.M., P.A. Schmidt, and E.B. Groshens. 1994. Sage grouse in the high desert of central Oregon: results of a study, 1988-1993. United States Department of Interior, Bureau of Land Management, Series P-SG-01, Prineville, OR.
- Holloran, M. J. 2005. Greater sage-grouse (*Centrocercus urophasianus*) population response to natural gas field development in western Wyoming. Dissertation, University of Wyoming, Laramie, Wyoming.
- Johnson, K. H., and C. E. Braun. 1998. Viability and conservation of an exploited sage grouse population. *Conservation Biology* 13: 77-84.
- Lyon, L. A., and S. H. Anderson. 2003. Potential gas development impacts on sage grouse nest initiation and movement. *Wildlife Society Bulletin* 31: 486-491.
- Rowland, M. M., M. J. Wisdom, C. W. Meinke, and L. H. Suring. 2005. Utility of greater sage-grouse as an umbrella species. (pages 232-249). *In* *Habitat Threats in the Sagebrush Ecosystem: Methods of Regional Assessment and Applications in the Great Basin* (Wisdom et al. eds). Alliance Communications Group, Lawrence, Kansas.
- Swenson et al. 1987. Decrease of Sage Grouse *Centrocercus urophasianus* after ploughing of sagebrush steppe. *Biological Conservation*. 41:125-132.
- Walker, B. L. 2008. Greater sage-grouse response to coal-bed methane natural gas development and West Nile virus in the Powder River Basin, Montana and Wyoming USA. Dissertation, University of Montana, Missoula, MT.

Walker, B. L., D. E. Naugle, and K. E. Doherty. 2007. Greater sage-grouse population response to energy development and habitat loss. *Journal of Wildlife Management* 71: 2644-2654.

### **Critical Bird & Mammal Sites**

*Oregon Department of Fish and Wildlife is not requesting additional or modification of existing protection criteria for site specific sensitive bird and mammal sites other than for sage grouse. Sage grouse protection criteria additions and modification are listed under Greater Sage-Grouse Conservation Recommendations to Limit Conflicting Use.*

*The sites adopted in the last periodic review have been examined and we recommend that the county consider updating their inventory to include new sites and remove old sites that are no longer used. Attached is a list of current and recommended critical bird and mammal site locations and protection measures (See Appendices A-G).*

#### *Site-specific protection recommendations*

- *Continue to protect 30 bald eagle nest sites in Deschutes County (Appendix A1)*
- *Remove protection for 34 bald eagle nest sites that are no longer occupied (Appendix A2)*
- *Add protection for 22 eagle nest sites that are not currently protected under Deschutes County ordinance (Appendix A3).*
- *Maintain protection for 32 golden eagle nest sites are currently protected under Deschutes County ordinance (Appendix B1).*
- *Add one golden eagle nest site to the Deschutes County inventory for protection (Appendix B2).*
- *Continue to protect 32 sage grouse lek sites that are currently protected under Deschutes County ordinance (Appendix C1).*
- *Remove protection for 4 sage grouse lek sites that are currently protected under Deschutes County ordinance but are no longer in use (Appendix C2).*
- *Add 5 sage grouse lek sites to the Deschutes County inventory for protection (Appendix C3).*
- *Change the name of the sage grouse lek site, currently protected by Deschutes County, from Squaw Lake to Shaver Flat (Appendix C4).*
- *Continue to protect 8 prairie falcon sites under Deschutes County ordinance (Appendix D).*

- *Maintain protection for one heron site that is still in use (Appendix E1).*
- *Remove protection for heron site that is no longer in use (Appendix E2).*
- *Maintain protection for Great gray owl nest site (Appendix F).*
- *Maintain protection for two known bat sites in Deschutes County (Appendix G).*

Oregon Department of Fish and Wildlife identified a list of bird and mammal species that occur on private land in Deschutes county that are especially sensitive to human activity: bald and golden eagles, sage grouse, prairie falcon, great blue heron, great gray owl and Townsend's big-eared bat.

The purpose of providing special protection for sensitive birds and mammals is to assure that their habitat areas are protected from the effects of conflicting uses or activities. Protection of bird sites can be achieved through the development of site specific management plans. Management plans assure that the proposed use and activities will not destroy or result in abandonment of the sensitive species from a nest site. The county previously adopted protection criteria for site specific sensitive bird and mammal sites.

Residential development, mining, and activities with high human disturbance and other actions that result in habitat loss and/or degradation are threats to these critical bird and mammal sites that could be considered conflicting uses relative to conservation of critical bird and mammal sites.

## **Game Species**

### *Game Species Conservation Recommendations to Limit Conflicting Use:*

*Many new land uses have occurred that were not envisioned during the last periodic review. Oregon Department of Fish and Wildlife recommends that Deschutes County add the following uses with high human use and disturbance to the do not permit list:*

- 1. Guest ranch;*
- 2. Outdoor commercial events (i.e. "Wedding Venues, Farmers Market")*
- 3. OHV course*
- 4. Paintball course*
- 5. Shooting range*
- 6. Model airplane park*
- 7. BMX course*

Oregon Department of Fish and Wildlife is not asking the county to change any of the existing big game wintering range and migration corridor maps currently in use by the county.

Existing county ordinances do not permit the following uses in a WA Zone designated as deer winter range, significant elk habitat, or antelope range.

1. Golf course;
2. Commercial dog kennel;
3. Church;
4. Public or private school;
5. Bed and breakfast inn;
6. Dude ranch;
7. Playground, recreation facility or community center owned and operated by a government agency or a nonprofit community organization;
8. Timeshare unit;
9. Veterinary clinic;
10. Fishing lodge;
11. Destination Resort

The above listed uses generate a high level of public activity, noise, and habitat alteration, which in turn can impact large geographic spaces and alter many acres of valuable wildlife habitat. Game species avoid areas with these uses, which results in reduced overall habitat effectiveness of these critical habitats.

Mule Deer, elk, antelope, cougar, black bear, and silver grey squirrel are species considered to be sensitive to human disturbance in Deschutes County by the Oregon Department of Fish and Wildlife. Cougar populations are increasing. Elk, antelope, black bear, and silver grey squirrel populations are stable. Mule deer populations continue to decline.

**Table 4: Big game population estimates, Deschutes County 2009**

<b>Species</b>	<b>Number</b>
Mule Deer	9,337*
Elk	1,500
Pronghorn	1,000
Cougar	~150
Black Bear	~150
Silver Grey Squirrel	~800

\* The management objective for the Paulina and Upper Deschutes Wildlife Management Units, primarily located in Deschutes County, is an April adult population of 18,700 mule deer

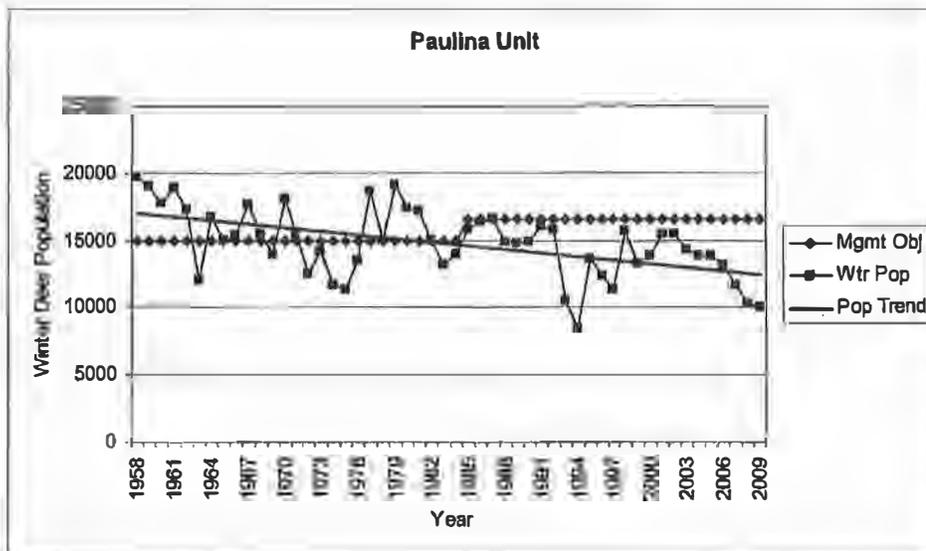


Figure 1: Winter deer population in Paulina Unit.

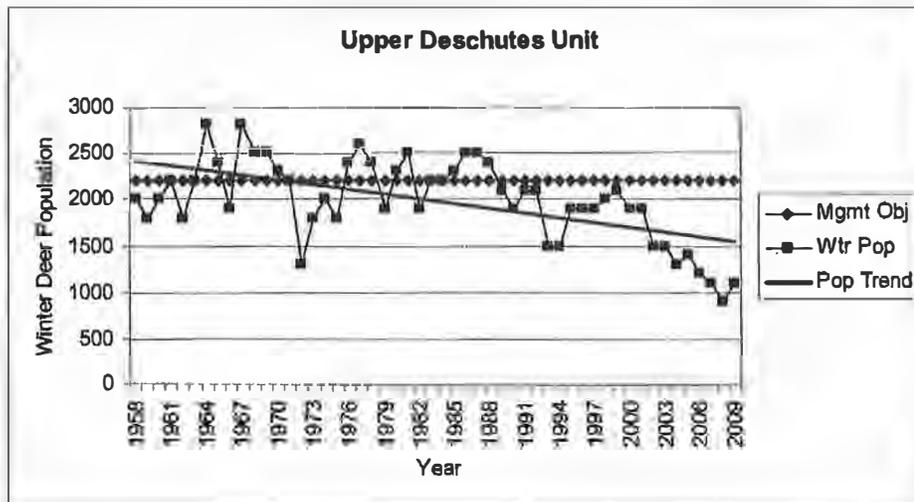


Figure 2: Winter deer population in Upper Deschutes Unit

## **Energy Development**

### *Wildlife Conservation Recommendations to Limit Conflicting Use with Energy Developments:*

*The Interagency Working Group recommends that Deschutes County develop a wind energy ordinance that would include both pre and post construction wildlife surveys, monitoring, and mitigation requirements as outlined in the following documents. We also recommend the county require the developer to create a Technical Advisory Committee (TAC) that would provide wildlife oversight and recommendations to the county. Any TAC would minimally include an Oregon Department of Fish and Wildlife (ODFW) and a developer wildlife biologist. Resources of particular concern in Deschutes County are sage-grouse habitat, raptor nest sites, pygmy rabbit colonies, and big game winter range. Impacts to bats has also become an issue with wind energy development.*

*The Oregon Columbia Plateau siting guidelines recommend that a county wind project permitting process rely on ODFW's Fish and Wildlife Habitat Mitigation Policy (OAR 635-415-0000) for guidance on mitigation strategies. The interagency working group recommends the county require of a developer a map and classification of fish and wildlife habitat impacted by a wind development, and a plan outlining the proposed mitigation to any impacted habitat. Mitigation of impacted habitat is critical to the future of Deschutes County's wildlife.*

*The interagency working group recommends language be included in any ordinance that will provide information on impacts to the following wildlife species: 1) state or federally listed endangered, threatened, sensitive, and special status species, 2) bats and raptors, 3) species of local sport and economic importance such as big game, and any Goal 5 species.*

### *Other Forms of Energy Production (e.g., geothermal, biomass, solar):*

*The interagency working group recommends that Deschutes County use the preceding Wind Energy recommendations as a template when the county develops geothermal, solar, and biomass ordinances.*

### *Wind Energy:*

*The Interagency Working Group supports wind energy as a renewable resource, and we support wind energy projects that are designed to conserve fish and wildlife populations and their habitat. To that end, the interagency working group recommends that Deschutes County consider several resources that are available to counties. The first is the "Oregon Columbia Plateau Ecoregion Wind Energy Siting and Permitting Guidelines"*

(guidelines). This document was finalized in September 2008. Although the guidelines were targeted for wind projects in the Columbia Plateau Ecoregion, much of the information is applicable in other areas. The guidelines identify the kinds of surveys, monitoring and wildlife habitat mitigation that we and other agencies will be looking for from wind developers.

([http://oregon.gov/ENERGY/RENEW/Wind/docs/OR\\_wind\\_siting\\_guidelines.pdf](http://oregon.gov/ENERGY/RENEW/Wind/docs/OR_wind_siting_guidelines.pdf)).

The second resource the interagency working group recommends the county consider is the Oregon Department of Energy "*Model Ordinance for Energy Projects*". This 2005 document has useful material for siting all types of energy projects.

(<http://oregon.gov/ENERGY/SITING/local.shtml>).

Appendix A1: Bald eagle nest sites occupied and protected by Deschutes County.

ODFW Site #	Location Town/Range/Sec/Quarter/TL	UTM's (NAD27)			General Location/Name	Land Owner
		Datum	Northing	Easting		
-	18S/08E/33/NE	10	598108	4869571	Hosmer Lake	Federal
-	20S/07E/35/SW	10	591800	4848990	Lemish Butte	Federal
-	20S/08E/16/SW	10	597983	4854608	Benchmark Butte - NE	Federal
-	20S/08E/33/SE	10	598952	4849706	Crane Pr Res NE	Federal
DE-0046-00	20S/10E/34/NWSE/03401	10	619554	4850162	Bates Butte	Non-Federal
-	21S/07E/01/NW	10	593554	4848658	Quinn River	Federal
-	21S/07E/01/SE	10	594165	4847608	Crane Pr Res W	Federal
-	21S/07E/01/SW	10	593100	4847710	Crane Pr Res W	Federal
-	21S/07E/01/SW	10	593907	4847852	Crane Pr Res W	Federal
-	21S/08E/04/NW	10	598296	4848291	Crane Pr Res E	Federal
-	21S/08E/04/W	10	597960	4848106	Crane Pr Res E-SW	Federal
-	21S/08E/04/W	10	598132	4848214	Crane Pr Res E-NW	Federal
-	21S/08E/05/SE	10	597792	4847934	Crane Pr Res E	Federal
-	21S/08E/07/SE	10	596119	4846116	Crane Pr Res S	Federal
-	21S/08E/08/SW	10	596830	4845816	Crane Pr Res SE	Federal
-	21S/08E/20/SE	10	597283	4843015	Browns Mountain	Federal
-	21S/08E/32/NE	10	597579	4840222	Browns Cr - E	Federal
-	21S/08E/34/SE	10	601283	4839680	Wicklup Res N	Federal
-	21S/08E/34/SW	10	600280	4840010	Wicklup Res N	Federal
-	21S/09E/13/SE	10	613976	4845233	Tetherow Mdw	Federal
-	21S/13E/19/S	10	643539	4844084	East Lake SE	Federal
-	22S/07E/26/S	10	592220	4831230	Davis Lake NW	Federal
-	22S/07E/26/SW	10	592227	4831231	Davis Lake NW	Federal
-	22S/07E/34/SW	10	590666	4829884	Davis Lake W-E	Federal
-	22S/08E/23/NW	10	601742	4834448	Wicklup Res S-N	Federal
-	22S/08E/25/NE	10	604111	4833069	Round Swamp - S	Federal
-	22S/09E/06/SE	10	605858	4838037	Wicklup Dam - E	Federal
-	22S/09E/20/NE	10	607220	4834070	Eaton Butte	Federal
-	22S/09E/20/NE	10	607295	4834050	Eaton Butte	Federal
-	22S/09E/20/SW	10	606469	4833721	Eaton Butte	Federal

**Appendix A2: Bald Eagle nest sites currently protected by Deschutes County and no longer in use.**

ODFW Site #	Location Town/Range/Sec/Quarter/TL	UTM's (NAD27)			General Location/Name	Land Owner
		Datum	Northing	Easting		
DE-0035-01	15S/10E/23/NENE/01400	10	620280	4901790	Cloverdale NE	Non-Federal
DE-0035-00	15S/10E/23/NWNE/01400	10	620000	4901700	Cloverdale NW	Non-Federal
-	18S/08E/32/NE				Elk Lake	Federal
-	19S/08E/27/SE				Lava Lake - E	Federal
-	19S/08E/27/SW				Lava Lake - W	Federal
-	20S/07E/35/S				Lemish Butte	Federal
-	20S/08E/08/SE				Benchmark Butte -W	Federal
-	20S/08E/33/NE				Crane Pr Res NE - NW	Federal
-	20S/08E/33/SE				Crane Pr Res NE-S	Federal
-	20S/08E/33/SE				Crane Pr Res NE-NE	Federal
-	21S/08E/08/SW				Crane Pr Res S	Federal
-	21S/08E/31/SE				Wicklup Res N	Federal
-	21S/08E/32/NE				Browns Cr - W	Federal
-	21S/08E/34/SE				Wicklup Res N	Federal
-	21S/08E/34/SE				Wicklup Res N	Federal
-	21S/08E/34/SE				Wicklup Res N	Federal
-	21S/09E/34/NE				Deschutesw R Ox	Federal
-	21S/13E/19/SE				East Lake E	Federal
-	21S/13E/19/SW				East Lake SW	Federal
-	22S/07E/34/SW				Davis Lake W-W	Federal
-	22S/08E/08/SE				Davis Cr - N	Federal
-	22S/08E/08/SE				Davis Cr	Federal
-	22S/08E/08/SE				Davis Cr - E	Federal
-	22S/08E/07/NE				Davis Cr - S	Federal
-	22S/08E/15/SE				Wicklup Res W-E	Federal
-	22S/08E/15/SW				Wicklup Res W-W	Federal
-	22S/08E/23/N				Wicklup Res S-S	Federal
-	22S/08E/23/NE				Wicklup Res S-E	Federal
-	22S/08E/23/NW				Wicklup Res S-W	Federal
-	22S/08E/24/S				Round Swamp - NE	Federal
-	22S/08E/24/SE				Round Swamp - NE	Federal
-	22S/08E/25/NE				Round Swamp - E	Federal
DE-0037-00	22S/09E/04/00500				Dliman Meadows	Federal
DE-0039-00	22S/09E/08/SESW/0500				Wicklup Dam	Federal

**Appendix A3: Bald Eagle nest sites that are occupied and not protected by Deschutes County.**

ODFW Site #	Location Town/Range/Sec/Quarter/TL	UTM's (NAD27)			General Location/Name	Land Owner
		Datum	Northing	Easting		
DE-0055-00	13S/13E/33/NWSW	10	644325	4917164	Crooked River	Non-Federal
DE-0055-01	13S/13E/33/NWSW	10	644434	4917456	Crooked River	Non-Federal
-	14S/10E/34/SE	10	618411	4907356	Camp Polk	Federal
DE-0035-02	15S/10E/23/SW	10	619270	4900750	Cloverdale	Federal
-	19S/08E/22/NW	10	599207	4863693	Lava L	Federal
-	20S/08E/16/NW	10	597914	4855364	Benchmark Butte	Federal
-	20S/08E/19/SE	10	595488	4852666	Cultus River	Federal
-	20S/08E/19/SE	10	595449	4852663	Cultus River	Federal
DE-0056-01	20S/11E/07/NWNE	10	624558	4857616	Harper Bridge	Non-Federal
-	21S/08E/04/NE	10	599280	4848938	Wuski Butte	Federal
-	21S/08E/04/NW	10	598015	4848393	Crane Pr Res E	Federal
-	21S/08E/07/SE	10	595963	4846315	Crane Pr Res SW	Federal
-	21S/08E/07/SW	10	595455	4845870	Crane Pr Res SW	Federal
-	21S/08E/17/SW	10	596783	4844633	Browns Peak	Federal
-	21S/08E/29/SE	10	597395	4841495	Browns Crossing	Federal
-	21S/09E/19/SW	10	604979	4842920	Pringle Falls Jct	Federal
-	21S/09E/34/NW	10	610220	4840711	Deschutes R Ox	Federal
-	21S/12E/25/NW	10	641568	4842817	Paulina Lk	Federal
-	22S/08E/07/NE	10	595845	4837161	Davis Cr	Federal
-	22S/08E/07/SE	10	595858	4836323	Davis Cr	Federal
-	22S/09E/05/SE	10	607483	4838049	Haner Park	Federal
-	22S/09E/07/SE	10	606001	4836688	Wickiup Butte	Federal

**Appendix B1: Golden Eagle nest sites that are occupied and protected by Deschutes County.**

ODFW Site #	Location Town/Range/Sec/Quarter/TL	UTM's (NAD27)			General Location/Name	Land Owner
		Datum	Northing	Easting		
DE-0015-01	14S/11E/03/NENW/0400	10	627156	4916522	Wychus Cr	Non-Federal
DE-0015-00	14S/11E/03/SESW/0400	10	627267	4915294	Rimrock Ranch	Non-Federal
DE-0012-01	14S/11E/26 SWNW	10	629711	4909656	Upper Deep Canyon	Non-Federal
DE-0009-00	14S/12E/23/NWSW/D00300	10	637991	4911031	N Odin Falls	Non-Federal
DE-0002-03	14S/13E/11/NWNE/0100	10	648447	4915134	Smith Rock St Park	Non-Federal
DE-0002-04	14S/13E/11/NWNE/0100	10	648723	4915118	Smith Rock St Park	Non-Federal
DE-0002-05	14S/13E/11/NWNE/0100	10	648728	4915160	Smith Rock St Park	Non-Federal
DE-0002-06	14S/13E/11/NWNE/0100	10	648919	4915159	Smith Rock St Park	Non-Federal
DE-0002-00	14S/13E/11/SENW/0100	10	648290	4914150	Smith Rock St Park	Non-Federal
DE-0002-01	14S/13E/11/SENW/0100	10	648270	4914301	Smith Rock St Park	Non-Federal
DE-0002-02	14S/13E/11/SENW/0100	10	648238	4914850	Smith Rock St Park	Non-Federal
DE-0034-00	15S/10E/15/SENW/01400	10	617590	4902865	Lazy Z/USFS	Non-Federal
DE-0034-01	15S/10E/15/SENW/01400	10	617904	4903075	Lazy Z/USFS	Non-Federal
DE-0012-00	15S/11E/03/NENE/0800	10	628023	4906651	Upper Deep Canyon	Non-Federal
DE-0003-00	15S/11E/07	10	624192	4902695	Freyrear Butte	Federal
DE-0003-01	15S/11E/16/SESW/02900	10	625649	4902342	Freyrear Butte	Federal
DE-0011-01	15S/12E/01/NESE/0100	10	640993	4906107	Radio Tower/Deschutes	Non-Federal
DE-0011-00	15S/12E/01/NWSE/0100	10	640858	4906085	Radio Tower/Deschutes	Non-Federal
DE-0006-05	15S/12E/35/NESE/01503	10	639433	4898053	Mid-Deschutes Riv	Non-Federal
DE-0006-00	15S/12E/35/SENE/01502	10	639580	4898411	Mid-Deschutes Riv	Non-Federal
DE-0006-01	15S/12E/35/SENE/01502	10	639680	4898477	Mid-Deschutes Riv	Non-Federal
DE-0006-02	15S/12E/35/SENE/01502	10	639606	4898473	Mid-Deschutes Riv	Non-Federal
DE-0006-04	15S/12E/35/SENE/01502	10	639519	4898406	Mid-Deschutes Riv	Non-Federal
DE-0014-00	16S/11E/29/NWSE/07800	10	625802	4890297	Tumalo Dam	Non-Federal
DE-0005-00	16S/12E/09				Mid-Deschutes Riv	Federal
DE-0005-01	16S/12E/09				Mid-Deschutes Riv	Federal
DE-0020-00	19S/14E/24				Horse Ridge/Dry River	Federal
DE-0018-00	20S/15E/19				Pine Mountain - West	Federal
DE-0019-00	20S/15E/25				Pine Mountain - East	Federal
DE-0029-00	20S/17E/36/NWSE/03801	10	690387	4851025	Twin Pines	Non-Federal
DE-0017-00	21S/16E/12				Pine Ridge	Federal
DE-0001-00	21S/19E/04				Imperial Valley	Federal

**Appendix B2: Golden Eagle nest sites not protected by Deschutes County and currently in use.**

ODFW	Location	UTM's (NAD27)				Land
Site #	Town/Range/Sec/Quarter/TL	Datum	Northing	Eastng	General Location/Name	Owner
DE-0009-01	14S/12E/14/S	10	838709	4912157	N Odln Falls	Non-Federal

Appendix C1: Sage Grouse lek sites that are in use and currently protected by Deschutes County.

ODFW Site #	Location Town/Range/Sec/Quarter/TL	UTM's (NAD27)			General Location/Name	Land Owner
		Datum	Northing	Easting		
DE0999-01	T19S/R14E/26	10	659867	4861510	MILlicAN BORROW PIT #1	Federal
DE0997-01	T20S/R16E/25	10	680609	4852538	MOFFIT RANCH #1	Non-Federal
DE0050-02	T20S/R17E/5	10	683188	4859265	AUDUBON #2	Federal
DE0050-01	T20S/R17E/6	10	682744	4858915	AUDUBON #1	Federal
DE0051-01	T20S/R18E/5	10	693837	4858816	CIRCLE F RESERVOIR #1	Non-Federal
DE0051-02	T20S/R18E/5	10	693278	4859064	CIRCLE F RESERVOIR #2	Non-Federal
DE0051-03	T20S/R18E/5	10	693690	4859114	CIRCLE F RESERVOIR #3	Non-Federal
DE0053-01	T20S/R19E/13	10	709289	4856180	TODD WELL #1	Federal
DE0053-04	T20S/R19E/13	10	710670	4856193	TODD WELL #4	Federal
DE0053-05	T20S/R19E/13	10	710587	4856642	TODD WELL #5	Federal
DE0053-06	T20S/R19E/14	10	708920	4857539	TODD WELL #6	Non-Federal
DE0053-07	T20S/R19E/15	10	707337	4857304	TODD WELL #7	Non-Federal
DE0053-02	T20S/R19E/24	10	709756	4855699	TODD WELL #2	Federal
DE0053-03	T20S/R19E/24	10	710628	4855359	TODD WELL #3	Federal
DE0052-01	T20S/R19E/6	10	702068	4859581	MERRILL ROAD #1	Non-Federal
DE0052-02	T20S/R19E/6	10	702354	4859516	MERRILL ROAD #2	Non-Federal
DE0052-03	T20S/R19E/7	10	702375	4858957	MERRILL ROAD #3	Federal
DE0879-01	T21S/R15E/12	10	671706	4847943	KOTZMAN BASIN	Federal
DE0879-02	T21S/R15E/2	10	670524	4849771	PRONGHORN	Federal
DE0992-02	T21S/R16E/13	10	681348	4846455	POWERLINE	Federal
DE0992-01	T21S/R16E/23	10	680809	4845470	THE GAP	Federal
DE0994-01	T21S/R17E/20	10	685352	4845889	WHISKEY SPRINGS #1	Federal
DE0886-02	T21S/R18E/16	10	696622	4846599	SOUTH WELL #2	Federal
DE0886-03	T21S/R18E/16	10	696002	4847560	SOUTH WELL #3	Federal
DE0886-01	T21S/R18E/22	10	697782	4846342	SOUTH WELL #1	Federal
DE0886-04	T21S/R18E/22	10	698011	4845728	SOUTH WELL #4	Federal
DE0996-01	T22S/R16E/12	10	682744	4839459	DICKERSON WELL	Non-Federal
DE0990-01	T22S/R17E/16	10	686349	4837447	THE ROCK	Federal
DE0995-01	T22S/R17E/2	10	689465	4840673	SPICER FLAT #1	Federal
DE0887-01	T22S/R18E/6	10	693382	4840952	LITTLE MUD LAKE	Federal
DE0880-01	T22S/R21E/32	10	724677	4832585	CANARY LAKE	Federal
DE0054-01	T22S/R23E/36	10	749557	4834190	NORDELL RIDGE	Federal

**Appendix C2: Sage Grouse lek sites currently protected by Deschutes County and no longer in use.**

ODFW Site #	Location Town/Range/Sec/Quarter/TL	UTM's (NAD27)			General Location/Name	Land Owner
		Datum	Northing	Easting		
DE0998-01	T20S/R14E/10	10	657122	4857646	EVANS WELL #1	Non-Federal
DE0998-02	T20S/R14E/3	10	657109	4858692	EVANS WELL #2	Federal
DE0997-02	T20S/R16E/26	10	679540	4853374	MOFFIT RANCH #2	Non-Federal
DE0992-03	T21S/R16E/22	10	678936	4844497	MAHOGANY BUTTE	Federal

**Appendix C3 Sage Grouse lek sites not currently protected by Deschutes County and currently in use.**

ODFW Site #	Location Town/Range/Sec/Quarter/TL	UTM's (NAD27)			General Location/Name	Land Owner
		Datum	Northing	Easting		
CR0128-01	T18S/R16E/32	10	673787	4869490	WEST BUTTE	Non-Federal
DE0999-03	T20S/R14E/2	10	659892	4858953	SMITH WELL	Non-Federal
DE0996-02	T21S/R16E/36	10	681774	4841319	DICKERSON GUZZLER	Federal
DE0992-04	T21S/R17E/18	10	683134	4847577	BLM POWERLINE #2	Federal
LA0800-01	T22S/R17E/5	10	684653	4831119	JAYNES WELL	Federal

**Appendix C4: Name change for Sage Grouse lek site currently protected by Deschutes County.**

ODFW Site #	Location Town/Range/Sec/Quarter/TL	UTM's (NAD27)			General Location/Name	Land Owner
		Datum	Northing	Easting		
DE0888-01	T22S/R18E/11	10	700327	4839386	SHAVER FLAT	Federal

**Appendix D: Prairie Falcon nest sites currently occupied and protected by Deschutes County.**

ODFW Site #	Location Town/Range/Sec/Quarter/TL	UTM's (NAD27)			General Location/Name	Land Owner
		Datum	Northing	Easting		
DE-0794-01	14S/13E/11/NWSW/0100	10	647745	4913940	Smith Rock St Park	Non-Federal
DE-0007-00	15S/12E/35				Mid-Deschutes Riv	Federal
DE-0031-00	16S/11E/20/NESE/05600	10	625812	4892106	Tumalo Natural Area	Federal
DE-0031-01	16S/11E/20/SESW/0400	10	625303	4891621	Tumalo Dam	Non-Federal
DE-0010-00	16S/12E/02	10	638929	4897371	Mid-Deschutes Riv	Federal
DE-0463-00	19S/12E/04				Imperial Valley	Federal
DE-0021-00	19S/14E/24				Horse Ridge/Dry River	Federal
DE-0016-00	22S/16E/12/SWSE/0100	10	682234	4838145	Dickerson Flat	Non-Federal

**Appendix E1: Heron Rookery site currently in use and protected by Deschutes County.**

ODFW Site #	Location Town/Range/Sec/Quarter/TL	UTM's (NAD27)			General Location/Name	Land Owner
		Datum	Northing	Easting		
DE-0980-01	14S/09E/00/SENE/0100	10	608516	4914211	Black Butte Ranch	Federal

**Appendix E2: Heron Rookery site currently protected by Deschutes County and no longer in use.**

ODFW Site #	Location Town/Range/Sec/Quarter/TL	UTM's (NAD27)			General Location/Name	Land Owner
		Datum	Northing	Easting		
DE-0981-01	21S/08E/03/NENW				Crane Pr Res	Federal

**Appendix F: Great Grey Owl nest site currently in use and protected by Deschutes County.**

ODFW Site #	Location Town/Range/Sec/Quarter/TL	UTM's (NAD27)			General Location/Name	Land Owner
		Datum	Northing	Easting		
-	22S/09E/09/SESW				Dorrance Meadow	Federal

**Appendix G: Bat sites currently in use and protected by Deschutes County.**

ODFW Site #	Location Town/Range/Sec/Quarter/TL	UTM's (NAD27)			General Location/Name	Land Owner
		Datum	Northing	Easting		
DE-0992-00	14S/09E/19/NWNE/0200	10	602445	4911183	Skylight Cave	Non-Federal
DE-0993-00	19S/13E/13/SWNE	10	651460	4865255	Stokey Flat	Non-Federal

**Appendix H: Use period, abundance and special status of select mammals, birds, amphibians and reptiles in Deschutes County 2009**

Species	Use Period	Relative Abundance	Special Status*	
			State Status	Federal Status
<b>Mammals</b>				
Allen's Chipmunk	X	U		
Badger	X	C		
Beaver	X	A		
Belding Ground Squirrel	X	C		
Big Brown Bat	S	U		
Black Bear	X	C		
Blacktail Jackrabbit	X	C		
Bobcat	X	C		
Bushytail Woodrat	X	C		
California Ground Squirrel	X	F		
California Myotis	X	F	V	
California Vole	X	F		
California Wolverine	X	U	T	SOC
Canyon Mouse	X	F		
Chickaree	X	C		
Coyote	X	A		
Dark Kangaroo Mouse	X	F		
Deer Mouse	X	A		
Dusky Shrew	X	U		
Fisher	X	U	C	
Fringed Myotis	S	U	V	
Golden-mantled Squirrel	X	A		
Gray Fox	X	U		
Great Basin Pocket Mouse	X	C		
Heather Vole	X	F		
Hoary Bat	S	F		

House Mouse	X	C		
Least Chipmunk	X	C		
Little Brown Myotis	S	U		
Long-eared Myotis	S	U		SOC
Long-legged Myotis	X	F	V	SOC
Longtail Vole	X	F		
Long-tail Weasel	X	F		
Merriam Shrew	X	U		
Mink	X	C		
Montane Vole	X	A		
Mountain Cottontail	X	C		
Mountain Lion	X	C		
Mule Deer	X	A		
Muskrat	X	F		
N. Grasshopper Mouse	X	F		
N. Pocket Gopher	X	U		
Northern Flying Squirrel	X	F		
Northern Water Shrew	X	F		
Norway Rat	X	F		
Ord's Kangaroo Rat	X	C		
Pacific Jumping Mouse	X	U		
Pacific Mole	X	U		
Pallid Bat	S	U	V	
Pine Marten	X	C		
Pinon Mouse	X	F		
Porcupine	X	C		
Preble's Shrew	X	U		SOC
Pronghorn Antelope	X	C		
Pygmy Rabbit	X	R	V	SOC
Raccoon	X	C		
Red Fox	X	F		
River Otter	X	C		
Rocky Mtn Elk	X	C		

Roosevelt Elk	X	C		
Sagebrush Vole	X	C		
Shorttail Weasel	X	F		
Sliver-haired bat	S	F	V	SOC
Siskiyou Chipmunk	X	C		
Small-footed Myotis	S	U		SOC
Snowshoe Hare	X	F		
Spotted bat	X	R	V	
Striped Skunk	X	C		
Townsend's Chipmunk	X	C		
Townsend's Ground Squirrel	X	C		
Townsend's western big-eared bat	X	F	C	SOC
Trowbridge Shrew	X	F		
Vagrant Shrew	X	U		
Water Vole	X	C		
Western Gray Squirrel	X	C		
Western Harvest Mouse	X	C		
Western Jumping Mouse	X	F		
Western Piplrel	S	U		
Whitetail Jackrabbit	X	R		
Wolverine	X	R		
Yellow Pine Chipmunk	X	C		
Yellow-bellied Marmot	X	C		
Yuma Myotis	X	F		SOC
<b>Birds</b>				
American Avocet	S	F		
American Bittern	S	F		
American Coot	X	C		
American Dipper	X	F		
American Goldfinch	S	C		
American Kestrel	X	C		
American Peregrine Falcon	X	R	V	DL

American Pipit	X	F		
American Robin	X	C		
American Wigeon	X	C		
Anna's Hummingbird	S	F		
Ash-throated Flycatcher	S	F		
Bald Eagle	X	F	T	DL
Bank Swallow	S	F		
Barn Owl	X	F		
Barn Swallow	S	C		
Barred Owl	X	R		
Barrow Goldeneye	X	F		
Belted Kingfisher	X	F		
Bewick's Wren	X	R		
Black tern	S	F		SOC
Black-backed Woodpecker	X	F	V	
Black-billed Magpie	X	C		
Black-capped Chickadee	W	R		
Black-chinned Hummingbird	S	F		
Black-crowned Night Heron	S	F		
Black-headed Grosbeak	S	F		
Black-necked Stilt	S	F		
Black-throated Gray Warbler	S	F		
Blue "Sooty" Grouse	X	F		
Blue-winged Teal	S	F		
Bohemian Waxwing	W	F		
Boreal Owl	X	F		
Brewer's Blackbird	X	C		
Brewer's Sparrow	S	C		
Brown Creeper	X	F		
Brown-headed Cowbird	S	C		
Bufflehead	X	C		
Burrowing Owl	S	R	V	
Bushtit	S	F		

California Gull	S	C		
California Valley Quail	X	C		
Calliope Hummingbird	S	F		
Canada Goose	X	C		
Canyon Wren	X	C		
Caspian Tern	S	F		
Cassin's Finch	X	C		
Cassin's Vireo	S	F		
Cedar Waxwing	X	C		
Chipping Sparrow	S	C		
Chukar Partridge	X	R		
Cinnamon Teal	S	C		
Clark's Nutcracker	X	C		
Cliff Swallow	S	C		
Common Bushtit	X	C		
Common Crow	X	C		
Common Goldeneve	X	C		
Common Loon	S	R		
Common Merganser	X	C		
Common Nighthawk	S	C		
Common poorwill	S	F		
Common Raven	X	C		
Common Snipe	S	F		
Common Yellowthroat	S	F		
Coopers Hawk	X	C		
Cordilleran Flycatcher	S	F		
Dark-eyed Junco	X	A		
Double-crested Cormorant	S	C		
Downy Woodpecker	X	C		
Dusky Flycatcher	S	F		
Eared Grebe	W	F		
Eastern Kingbird	S	F		
Eurasian Collared-Dove	X	F		

Evening Grosbeak	X	C		
Ferruginous Hawk	S	F	V	SOC
Flammulated Owl	S	F	V	
Fox Sparrow	S	C		
Franklin's Gull	S	F		
Gadwall	W	F		
Golden Eagle	X	F		
Golden-crowned Kinglet	X	F		
Golden-crowned Sparrow	W	C		
Gray Flycatcher	S	C		
Gray Jay	X	C		
Gray Partridge	X	R		
Gray-crowned Rosy Finch	S	F		
Great Blue Heron	X	C		
Great Gray Owl	X	F	V	
Great Horned Owl	X	C		
Greater Sage Grouse	X	F	V	SOC
Greater Yellowleg	S	F		
Green Heron	S	R		
Green-tailed Towhee	S	F		
Green-winged Teal	X	F		
Hairy Woodpecker	X	C		
Hammond's Flycatcher	S	F		
Hermit Thrush	S	F		
Hooded Merganser	X	F		
Horned Grebe	S	F		
Horned Lark	X	C		
House Finch	X	C		
House Sparrow	X	A		
House Wren	S	F		
Killdeer	X	C		
Lark Sparrow	S	F		
Lazuli Bunting	S	F		

Least Sandpiper	S	F		
Lesser Goldfinch	X	R		
Lesser Scaup	W	C		
Lewis' Woodpecker	S	F	C	SOC
Lincoln's Sparrow	X	F		
Loggerhead Shrike	X	F	V	
Long-billed Curlew	S	R	V	
Long-eared Owl	X	F		
MacGillivray's Warbler	S	F		
Mallard	X	C		
Marsh Wren	X	C		
Merlin	W	R		
Mountain Bluebird	X	C		
Mountain Chickadee	X	C		
Mountain Quail	X	R	V	SOC
Mourning Dove	X	C		
Nashville Warbler	X	F		
Northern Flicker	X	C		
Northern Goshawk	X	F	V	SOC
Northern Harrier	X	F		
Northern Oriole	S	F		
Northern Phalarope	S	R		
Northern Pintail	W	C		
Northern Pygmy Owl	X	F		
Northern Rough-winged Swallow	S	F		
Northern Saw-whet Owl	X	F		
Northern Shoveler	W	F		
Northern Shrike	W	F		
Northern Spotted Owl	X	R	T	T
Olive-sided Flycatcher	S	C	V	SOC
Orange-crowned Warbler	S	F		
Osprey	S	C		
Pied-billed Grebe	S	U		

Pileated Woodpecker	X	F	V	
Pine Grosbeak	X	R		
Pine Siskin	X	C		
Pinyon Jay	X	C		
Prairie Falcon	X	C		
Purple Finch	X	F		
Pygmy Nuthatch	X	C		
Red Crossbill	X	F		
Red-breasted Nuthatch	X	C		
Red-breasted Sapsucker	X	C		
Redhead	W	F		
Red-naped Sapsucker	X	F		
Red-tailed Hawk	X	C		
Red-winged Blackbird	X	C		
Ring-billed Gull	S	C		
Ring-neck Duck	W	F		
Ring-necked Pheasant	X	R		
Rock Dove	X	C		
Rock Wren	S	C		
Rosy Finch	X	R		
Rough-legged Hawk	W	C		
Ruby-crowned Kinglet	X	F		
Ruddy Duck	X	C		
Ruffed Grouse	X	F		
Rufous Hummingbird	S	F		
Rufous-sided Towhee	X	F		
Sage Sparrow	S	C		
Sage Thrasher	S	C		
Sandhill Crane	S	F		
Savannah Sparrow	S	C		
Say's Pheobe	S	F		
Scrub Jay	X	C		
Semipalmated Plover	S	R		

Sharp-shinned Hawk	X	C		
Short-eared Owl	S	F		
Snow Goose	W	F		
Snowy Egret	S	F		
Song Sparrow	X	C		
Sora	S	F		
Spotted Sandpiper	S	C		
Starling	X	C		
Steller's Jay	X	F		
Swainson's Hawk	S	R	V	
Swainson's Thrush	S	F		
Three-toed Woodpecker	X	F		
Townsend's Solitaire	X	C		
Townsend's Warbler	S	F		
Tree Swallow	S	C		
Trumpeter Swan	X	F		
Tundra Swan	W	F		
Turkey Vulture	S	C		
Varied Thrush	X	F		
Vaux's Swift	S	F		
Vesper Sparrow	S	F		
Violet-green Swallow	S	C		
Virginia Rail	S	F		
Warbling Vireo	S	F		
Western Bluebird	S	F		
Western Burrowing Owl	X	R		SOC
Western Grebe	S	C		
Western Kingbird	S	F		
Western Meadowlark	S	C		
Western Sandpiper	S	F		
Western Screech Owl	X	F		
Western Tanager	S	F		
Western Wood Pewee	S	F		

White-breasted Nuthatch	X	F		
White-crowned Sparrow	S	F		
White-headed Woodpecker	X	F	C	SOC
White-throated Sparrow	W	R		
White-throated Swift	S	F		
Wild Turkey	X	C		
Williamson's Sapsucker	X	F		
Willow Flycatcher	S	R	V	SOC
Wilson's Phalarope	S	F		
Wilson's Warbler	S	F		
Winter Wren	X	F		
Wood Duck	S	F		
Yellow Warbler	S	F		
Yellow-breasted chat	S	F		SOC
Yellow-headed Blackbird	S	F		
<b>Amphibians and Reptiles</b>				
Bullfrog	X	F		
Cascades Frog	X	F	V	SOC
Coastal tailed frog	X	F		SOC
Common Garter Snake	X	C		
Gopher Snake	X	C		
Great Basin Spadefoot Toad	X	F		
Long-toed Salamander	X	F		
Night Snake	X	U		
Northern alligator Lizard	X	F		
Northern Sagebrush Lizard	X	C		SOC
Northwestern Salamander	X	F		
Oregon slender salamander	X	F		SOC
Oregon Spotted Frog	X	F	S	C
Pacific Tree Frog	X	C		
Racer	X	F		
Roughskin Newt	X	R		

Rubber Boa	X	F		
Sharp-tailed Snake	X	U		
Short-horned Lizard	X	F		
Side-blotched Lizard	X	F		
Striped Whipl-snake	X	F		
Tailed Frog	X	F		
Western Fence Lizard	X	C		
Western Pond Turtle	X	R	C	
Western Rattlesnake	X	F		
Western Skink	X	F		
Western Terrestrial Garter Snake	X	C		
Western Toad	X	C	V	

**Use Period:** X = Year Around S = Summer W = Winter

**Relative Abundance Key:** R = Rare F = Few C = Common A = Abundant  
U = Unknown

**Federal Status Key:** E = endangered; T =Threatened; C= Candidate; SOC = Species of Concern; DL = Delisted

**Federal ESA-listed Species:** An endangered species is one that is in danger of extinction throughout all or a significant portion of its range. A threatened species is one that is likely to become endangered in the foreseeable future.

**Federal Candidate Species:** Taxa for which the Fish and Wildlife Service has sufficient biological information to support a proposal to list as endangered or threatened.

**Federal Species of Concern:** Taxa whose conservation status is of concern to the US Fish and Wildlife Service, but for which further information is still needed.

**Federal Delisted Species:** A species that has been removed from the Federal list of endangered and threatened wildlife and plants.

**State Status Key:** T = Threatened; C = Critical; V = Vulnerable

**State Endangered Species:** Any native wildlife species determined by the commission to be in danger of extinction throughout any significant portion of its range within the state; or any native wildlife species listed as an endangered species pursuant to the federal ESA.  
**State Threatened:** an animal that could become endangered within the foreseeable future within all or a portion of its range.

**State Critical:** species are imperiled with extirpation from a specific geographic area of the state because of small population sizes, habitat loss, or degradation and/or immediate threats.

**Sensitive Vulnerable:** species are facing one or more threats to their populations and/or habitats.

## **Exhibit B**

## The impacts of dogs on wildlife and water quality: A literature review

Compiled by Lori Hennings, Metro Parks and Nature, April 2016

### SUMMARY

Metro periodically reviews the science literature behind its natural resource policies to ensure policies are based on the most current science. Recently staff reviewed the scientific literature regarding the impacts of dogs on wildlife to inform Metro Regulatory Code Title 10.01, which excludes pets from most Metro properties. The only exceptions are service dogs, leashed dogs on some regional trails, Broughton Beach, boat ramps and properties managed by others through intergovernmental agreements that are integrated into larger parks where leashed dogs are allowed (e.g., Forest Park).

Any human related activity can disturb wildlife. In order to meet Metro's dual goals of protecting natural resources and providing access to nature, Metro has tried to strategically locate trails in less sensitive habitat and to ensure that human activity is as non-disruptive as possible. Part of that strategy has been to allow public access, while limiting certain activities such as bringing dogs into natural areas.

The evidence that dogs negatively impact wildlife is overwhelming. It is clear that people with dogs – on leash or off – are much more detrimental to wildlife than people without dogs. Dogs (*Canis lupus familiaris*) are considered to be a subspecies of wolves (*Canis lupus*), and wildlife perceive dogs as predators.<sup>(30)</sup> Impacts include:

1. **Physical and temporal displacement** – The presence of dogs causes wildlife to move away, temporarily or permanently reducing the amount of available habitat in which to feed, breed and rest. Animals become less active during the day to avoid dog interactions. Furthermore, the scent of dogs repels wildlife and the effects remain after the dogs are gone.
2. **Disturbance and stress response** – Animals are alarmed and cease their routine activities. This increases the amount of energy they use, while simultaneously reducing their opportunities to feed. Repeated stress causes long-term impacts on wildlife including reduced reproduction and growth, suppressed immune system and increased vulnerability to disease and parasites.
3. **Indirect and direct mortality** – Dogs transmit diseases (such as canine distemper and rabies) to and from wildlife. Loose dogs kill wildlife.
4. **Human disease and water quality impacts** - Dog waste pollutes water and transmits harmful parasites and diseases to people.

### INTRODUCTION

Metro owns 17,000 acres of parks and natural areas and does not allow dogs or other pets on the vast majority of these lands. Exceptions include service animals, leashed dogs on some regional trails, Broughton Beach, boat ramps and certain properties managed by others through intergovernmental

agreements that are integrated into larger parks where leashed dogs are allowed (e.g., Forest Park). The policy that prohibits visitors from bringing pets to most of Metro's managed parks and natural areas was initiated by Multnomah County in the 1980s and continued in practice after Metro assumed management of those parks in the early 1990s. After a review of the scientific literature and meaningful public discourse, Metro formally adopted the pets policy into its code in 1997 (Metro Council Regulatory code Title 10.01 adopted in Ordinance 96-659A).

To ensure this decision reflects the most up-to-date information, Metro staff examined 54 peer-reviewed scientific journal articles and several research reports relating to the impacts of dogs in natural areas, including numerous literature reviews on the impacts of various types of recreation on wildlife and habitat.<sup>(10, 28, 42, 54, 61, 63, 65, 68, 71, 73, 77)</sup> The results of our literature review are summarized below.

#### PHYSICAL AND TEMPORAL DISPLACEMENT

Displacement may be the most significant impact due to the amount of habitat affected. The presence of dogs causes most wildlife to move away from an area, which temporarily or permanently reduces the amount of functionally available habitat to wildlife. The research is clear that people with dogs disturb wildlife more than humans alone.<sup>(5, 10, 33, 38, 39, 41, 44, 61, 68, 69)</sup> These effects reduce a natural area's carrying capacity for wildlife, and also reduces wildlife viewing experiences for visitors.

Studies on a variety of wildlife in many countries and settings demonstrate that dogs along trails and in natural areas significantly alter wildlife behavior.<sup>(9, 33, 39, 41, 49, 53, 58)</sup> A 2011 literature review found negative dog effects in all 11 papers that examined such effects.<sup>(65)</sup> Studies demonstrate dog-specific impacts on reptiles,<sup>(29, 31, 48)</sup> shorebirds and waterfowl,<sup>(24, 32, 51, 69)</sup> songbirds,<sup>(5, 9, 10)</sup> small mammals,<sup>(33, 39, 56)</sup> deer, elk and bighorn sheep,<sup>(4, 36, 38, 44, 49, 59, 63)</sup> and carnivores.<sup>(22, 33, 52, 58)</sup>

A study in France found that two hikers disturbed an area of 3.7 hectares walking near wild sheep, whereas two hikers with dogs disturbed 7.5 hectares around the sheep.<sup>(41)</sup> In Chicago, migratory songbirds were less abundant in yards with dogs.<sup>(9)</sup> Dog walking in Australian woodlands led to a 35% reduction in bird diversity and a 41% reduction in the overall number of birds.<sup>(5)</sup> The same study showed some disturbance of birds by humans, but typically less than half that induced by dogs.

Studies in California and Colorado showed that bobcats avoided areas where dogs were present, including spatial displacement<sup>(22, 33, 52)</sup> and temporal displacement in which bobcats switched to night time for most activities.<sup>(22)</sup> The Colorado study also demonstrated significantly lower deer activity near trails specifically in areas that allowed dogs, and this effect extended at least 100 meters off-trail.<sup>(33)</sup> This negative effect was also true for small mammals including squirrels, rabbits, chipmunks and mice, with the impact extending at least 50 meters off-trail.

Evidence suggests that some wildlife species can habituate to certain predictable, non-threatening disturbances such as people walking on a trail in a natural area; this effectively lowers the stress response. Part of this adaptation may be due to wildlife learning what is and isn't a threat, and also

avoidance of hunters.<sup>(19,55,63,70)</sup> Habituated animals still react, but amount of habitat affected is not as large.<sup>(55,56,63,70)</sup> However, dogs – especially off-leash dogs – may prevent wildlife habituation because wildlife consistently see them as predators. Dog-specific disturbance has been studied for birds, with no evidence of habituation even with leashed dogs, even where dog-walking was frequent; this effect was much weaker for people without dogs.<sup>(5)</sup>

Even the scent of dog urine or feces can trigger wildlife to avoid an area. Therefore, the impacts of dog presence can linger long after the dog is gone, even days later. One literature review found that predator odors caused escape, avoidance, freezing, and altered behavior in a large suite of wildlife species including scores of amphibian, reptile, bird, and mammal species from other studies.<sup>(30)</sup> The scent of domestic dogs has been shown to repel American beaver (*Castor Canadensis*), mountain beaver (*Aplodontia rufa*), deer (*Odocoileus* species), elk (*Cervus elaphus*), and a wide variety of wildlife native to other countries.<sup>(20,30)</sup> Mountain beaver cause economic damage to young tree stands in the Pacific Northwest, and foresters are considering using dog urine as a repellent.<sup>(20)</sup> An experimental study demonstrated that dog feces are an effective repellent for sheep, with no habituation observed over seven successive days.<sup>(1)</sup>

One Colorado study showed mixed effects of dogs on wildlife.<sup>(44)</sup> The study compared effects of pedestrians alone, pedestrians with leashed dogs and unleashed dogs alone on grassland birds. Vesper Sparrows (*Pooecetes gramineus*) and Western Meadowlarks (*Sturnella neglecta*) waited until dogs were closest to flush – that is, they fly or run away. This could be an attempt to remain undetected against the greatest threat, but could also mean that these bird species perceive humans as a greater threat than dogs. However, the same study found strong dog-specific impacts on mule deer in woodlands. A literature review found that ungulates (deer, elk and sheep) had stronger flight responses in open habitats compared to forested habitats.<sup>(63)</sup> Unlike small ground-nesting songbirds, larger animals would have no cover and could easily be seen in open habitats.

The disturbance effects of off-leash dogs are stronger than on-leash and substantially expand the amount of wildlife habitat affected,<sup>(32,59,63,69)</sup> and the unpredictability of off-leash dogs may prevent wildlife habituation in large areas of habitat.<sup>(5,10,32,61,69)</sup> The negative effects are increased even further when dogs and people venture off-trail, probably because their behavior is less predictable.<sup>(44,67)</sup> Off-leash dogs are likely to reduce the number and types of wildlife in large areas of habitat.

A Colorado study found off-leash dogs ventured up to 85 meters from the trail, although this result was from 1 square meter plots covering a very small percentage of the area.<sup>(33)</sup> Remote cameras in another study documented the same dog 1.5 miles apart in the same day.<sup>(61)</sup> In Utah, mule deer showed a 96% probability of flushing within 100 meters of recreationists located off trails; their probability of flushing did not drop to 70% until the deer were 390 meters from the recreationists.<sup>(67)</sup> A California shorebird study found that off-leash dogs were a disproportionate source of disturbance, and that plovers did not habituate to disturbance; birds were disturbed once every 27 minutes on weekends.<sup>(32)</sup>

## **Exhibit C**

To illustrate the potential of dogs to displace wildlife we explored two well-known local park examples that allow dogs on leash. Forest Park is one of the largest urban parks in the U.S. and was always intended to connect urban dwellers with nature; people have been walking their dogs there since before the park's 1948 dedication. Forest Park covers 5,172 acres of forest, including approximately 80 miles of trails and service. Using a very conservative 25-meter buffer around mapped trails to represent the "human + dog on leash" area of disturbance and assuming 100% compliance with leash rules, the area affected would be 1,406 acres – that's 28% of the entire park. In 651-acre Tryon Creek Natural Area, 207 acres of land (32%) is within 25 meters of a trail.

#### **DISTURBANCE AND STRESS RESPONSE**

Stress response is the functional response of an animal to an external stressor, such as seasonal changes in temperature and food availability or sudden disturbance.<sup>(3)</sup> Specific stress hormones are released to enable the animal to physically respond to the stressor. Acute stress response, when an animal reacts to an immediate situation, can benefit an animal by triggering it to respond appropriately to a threat. However, chronic stress such as repeated disturbances over time may reduce wildlife health, reproduction, growth, impair the immune system and increase vulnerability to parasites and diseases.<sup>(16,27,75)</sup>

Dogs cause wildlife to be more alert, which reduces feeding, sleeping, grooming and breeding activities and wastes vital energy stores that may mean life or death when resources are low, such as during winter or reproduction.<sup>(8,32,40,41,69)</sup> Animals release stress hormones and their heart rates elevate in response.<sup>(3,27,37,38)</sup> When stress becomes too high, animals may flush, freeze, or hide.<sup>(26,30)</sup>

Several studies document that disturbance reduces reproductive success for some wildlife species.<sup>(11,35,40,50,63)</sup> Numerous studies found that female deer and elk, and deer and elk groups with young offspring, show greater flight responses to human disturbances than other groups.<sup>(63)</sup> Stress hormones may cause male songbirds to reduce their territorial defense, females to reduce feeding of their young, nestlings to have reduced weight and poor immune systems, and adult birds to abandon nests.<sup>(11,34,35,76)</sup> A Colorado study showed that elk repeatedly approached by humans had fewer young.<sup>(50)</sup> Although research is lacking on whether dogs specifically reduce the reproductive success of wildlife, the fact that humans with dogs create much stronger disturbance effects than without dogs<sup>(5,33,38,41,44,61,68,69)</sup> implies that these stress effects would be magnified if people had dogs with them.

#### **INDIRECT AND DIRECT MORTALITY**

Dogs chase and kill many wildlife species including reptiles, small mammals, deer and foxes.<sup>(12,13,29,31,48,58,62)</sup> A Canadian study found that domestic dogs were one of the top three predators that killed white-tailed deer fawns.<sup>(4)</sup> In northern Idaho winter deer grounds, an Idaho Fish and Game conservation officer witnessed or received reports of 39 incidents of dogs chasing deer, directly resulting in the deaths of at least 12 animals.<sup>(36)</sup> A study in southern Chile revealed that domestic dogs preyed on

most of the mammal species present in the study area.<sup>(60)</sup> A 2014 literature review of dogs in parks identified 19 studies that investigated the effects of dogs preying on wildlife.<sup>(73)</sup> Of these, 13 reported observing or finding strong evidence of dog predation on wildlife. The Audubon Society of Portland's Wildlife Care Center took in 1,681 known "dog-caught" injured animals from 1987 through March 2016.<sup>(2)</sup>

Dogs transmit diseases to wildlife and vice versa including rabies, Giardia, distemper and parvovirus.<sup>(18,23,66,74)</sup> A Mexico City study concluded that feral dogs continually transmitted parvovirus, toxoplasmosis and rabies to wildlife including opossums, ringtails, skunks, weasels and squirrels.<sup>(66)</sup> Large carnivores such as cougars are especially vulnerable to domestic dog diseases including canine distemper.<sup>(74)</sup>

#### HUMAN DISEASE AND WATER QUALITY IMPACTS

Under the Oregon Department of Environmental Quality (DEQ), Metro is a Designated Management Agency to protect water quality in compliance with the federal Clean Water Act. Limiting dog access at most natural areas is one of Metro's commitments to DEQ, because dog feces pollute water. Feces are often delivered to waterways through stormwater.<sup>(57)</sup> The average dog produces ½ to ¾ pound of fecal matter each day – a hundred dogs can produce more than 500 pounds of waste per week.<sup>(45)</sup> The DEQ identifies pet waste as a significant contributor to one of the region's most ubiquitous and serious pollutants, *E. coli* bacteria. Contact with *E. coli*-polluted water can make people sick. Because dog waste can be a relatively simple source to reduce or eliminate exposure to *E. coli*, DEQ considers reducing or eliminating dog waste an important action item in jurisdictions' clean water implementation plans for the Willamette Basin watershed.<sup>(47)</sup>

Humans can catch parasites and diseases such as hookworms (causes rash), roundworms (may cause vision loss in small children, rash, fever, or cough) and salmonella (causes gastrointestinal illness) from dog waste.<sup>(7,57)</sup> Aside from potential illnesses, dog waste can negatively affect visitors' experience in a natural area. Dog waste left on the ground is a leading complaint in Portland parks, and violators may be fined up to \$150 per incident.<sup>(14)</sup>

Several examples illustrate local dog impacts. A Clean Water Services DNA study found that dog waste alone accounts for an average of 13% of fecal bacteria in stream study sites in the Tualatin River Basin.<sup>(17)</sup> Off-leash dog walking is documented to cause erosion in Portland's Marshall Park, creating sediment problems in stream water.<sup>(15)</sup> In 2014 Portland school administrators expressed concern because playgrounds had become "a minefield for animal waste" from people using school grounds as after hours, off-leash dog parks, threatening the health of school children.<sup>(21)</sup> The City of Gresham found extremely high levels of *E. coli* bacteria in water quality samples of a very specific stretch of a stream, where dog feces were found along stream banks behind several yards with dogs.<sup>1</sup> The city sent letters to

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<sup>1</sup> Personal communication with Katie Holzer, Watershed Scientist at the City of Gresham, Oregon, 4/11/2016.

residents in the neighborhood about the incident and how to properly dispose of dog feces; the levels have not been elevated in follow-up sampling.

### **BELIEF, BEHAVIOR AND REALITY**

People do not always take responsibility for their impacts on wildlife. Several studies demonstrate that natural area visitors, including dog owners, often don't believe they are having much of an effect on wildlife, or assign blame to different user groups rather than accepting responsibility themselves.<sup>(6,64,67,68)</sup> Some natural area visitors assume that when they see wildlife, it means that they are not disturbing the animals – or worse, that because they didn't see any wildlife, they didn't disturb any.<sup>(64)</sup>

For example, in Utah, about half of recreational visitors surveyed did not believe that recreation was having a negative impact on wildlife; of those that did, each user group blamed other groups for the strongest impacts.<sup>(67)</sup> In Austria, 56% of people surveyed at a national park agreed that wildlife is in general disturbed by human activity.<sup>(64)</sup> However, only 12% believed that they had disturbed wildlife in their visit that day, and dog-walkers ranked their activities as less disturbing than other user groups' activities. When asking different user groups to rate the impacts of overall human disturbance on wildlife, dog-walkers rated the impacts the lowest, at 2.6 out of 5 possible impact points.

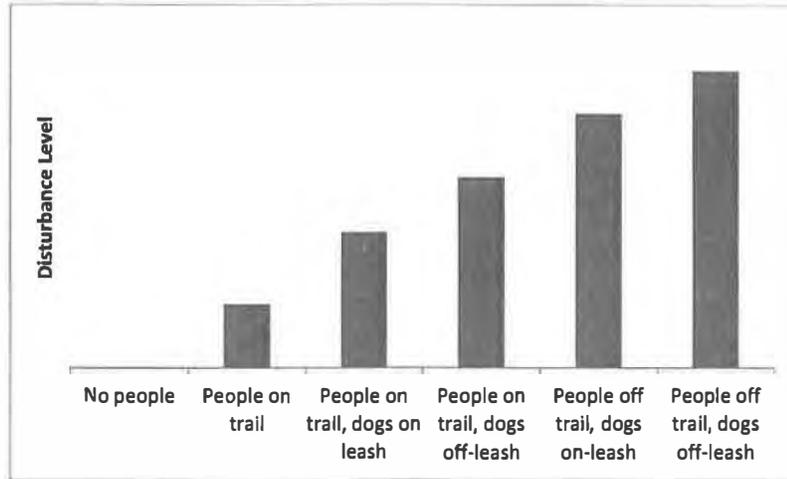
Surveys indicate that many dog owners desire fewer restrictions, while non-dog owners often feel the opposite.<sup>(72,73)</sup> However dog owners don't always follow the rules, and some dog owners allow their dogs to run free in leash-only natural areas.<sup>(32,52,73)</sup> In a Santa Barbara study, only 21% of dogs were leashed despite posted leash requirements.<sup>(32)</sup> And despite regulations and claims to the contrary, dog owners often don't pick up their dog's waste.<sup>(6,32)</sup> An English study revealed that although 95% of visitors claimed to pick up their dog's waste only 19-46% actually did so, depending on location within the park.<sup>(6)</sup>

### **DISCUSSION**

In summary, people and their dogs disturb wildlife, and people are not always aware of or willing to acknowledge the significance of their own impacts. Wildlife perceive dogs as predators. Dogs subject wildlife to physical and temporal displacement from habitat, and dog scent repels wildlife with lingering impacts. Dogs disturb wildlife which can induce long-term stress, impact animals' immune system and reduce reproduction. Dogs spread disease to and outright kill wildlife. People with dogs are much more detrimental to wildlife than people alone; off-leash dogs are worse; and off-trail impacts are the highest (Figure 1).

Urban wildlife is subjected to many human-induced stressors including habitat loss, degraded and fragmented habitat, impacts from a variety of user groups, roads, trails, infrastructure, noise and light pollution.<sup>(26)</sup> These stressors will increase with population; from July 2014 to 2015 the Portland-Vancouver metropolitan region added 40,621 new residents.<sup>(43)</sup> Current population in the region stands at 2.4 million, with another 400,000 residents expected over the next 20 years.

**Figure 1.** Conceptual illustration of the relative impacts on wildlife due to people without and with dogs.



Among medium to high density cities, Portland currently ranks second in the total area covered by parks at nearly 18%, and also second in the number of park acres per resident.<sup>(25)</sup> Of 34 park providers in the Portland region, all but four allow dogs in most or all of their natural areas, typically on-leash; more than two-thirds also offer dog parks or off-leash dog areas (Table 1 at end of document).

Wildlife conservation is not the only valid reason to preserve natural areas. Park providers must weigh the trade-offs between wildlife, habitat, water quality and recreational values. But when considering different types of public access in a natural area, it is important to understand that the research is clear: people with dogs substantially increase the amount of wildlife habitat affected and are more detrimental to wildlife than people without dogs.

## LITERATURE CITED

*Items in bold are from peer-reviewed journals*

1. **Arnould C, Signoret J-P. 1993. Sheep food repellents: Efficacy of various products, habituation, and social facilitation. Journal of Chemical Ecology 19:225-236.**
2. Audubon Society of Portland. 2016. Wildlife Care Center intake summary, 1987-2015. Derived from Audubon Society of Portland's database by Joe Liebezeit on April 13, 2016. Audubon Society of Portland, Portland, OR.
3. **Baker MR, Gobush K, Vynne C. 2013. Review of factors influencing stress hormones in fish and wildlife. Journal for Nature Conservation 21:309-318.**
4. **Ballard WB, Whitlaw HA, Young SJ, Jenkins RA, Forges GJ. 1999. Predation and survival of white-tailed deer fawns in northcentral New Brunswick. Journal of Wildlife Management 63:574-579.**
5. **Banks PB, Bryant JV. 2007. Four-legged friend or foe? Dog walking displaces native birds from natural areas. Biological Letters [online] doi:10.1098/rsbl.0374:1-4.**
6. Barnard A. 2003. Getting the facts – Dog walking and visitor number surveys at Burnham Beeches and their implications for the management process. Countryside Recreation 11:16-19.
7. Becker, K. 2010. Top 5 diseases you can get from your pet. <http://healthypets.mercola.com/sites/healthypets/archive/2010/08/24/top-5-diseases-you-can-get-from-your-pet.aspx>. Healthy Pets with Dr. Karen Becker.
8. **Bekoff M, Ickes RW. 1999. Behavioral interactions and conflict among domestic dogs, black-tailed prairie dogs, and people in Boulder, Colorado. Anthrozoos 12:105-110.**
9. **Belaire JA, Whelan CJ, Minor ES. 2014. Having our yards and sharing them too: The collective effects of yards on native bird species in an urban landscape. Ecological Applications 24:2132-2143.**
10. **Blanc R, Guillemain M, Mournonval J-B, Desmots D, Fritz H. 2006. Effects of non-consumptive leisure disturbance to wildlife. Revue d'Ecologie (La Terre et la Vie) 61:117-133.**
11. Breuner CW. 2011. Stress and reproduction in birds. In Norris DO, Lopez KH (eds): Hormones and Reproduction of Vertebrates, Volume 4 - Birds. Cambridge, MA, Academic Press, pp 129-151.
12. **Butler JRA, Du Toit JT, Bingham J. 2004. Free-ranging domestic dogs (Canis familiaris) as predators and prey in rural Zimbabwe: Threats of competition and disease to large wild carnivores. Biological Conservation 115:369-378.**
13. **Campos CB, Esteves CF, Ferraz KMPMB, Crawshaw PG, Jr., Verdade LM. 2009. Diet of free-ranging cats and dogs in a suburban and rural environment, southeastern Brazil. Journal of Zoology 273:14-20.**
14. City of Portland Bureau of Environmental Services and City of Portland Parks and Recreation. 2008. Dogs for the environment. Portland, OR, City of Portland.
15. City of Portland Bureau of Environmental Services. 2005. Fanno and Tryon Creeks watershed management plan. Portland, Oregon, City of Portland.
16. **Cizauskas CA, Turner WC, Pittes N, Getz WM. 2015. Seasonal patterns of hormones, macroparasites, and microparasites in wild African ungulates: The interplay among stress, reproduction, and disease. PLoS ONE 10:e0120800.**
17. Clean Water Services. 2005. DNA fingerprinting of bacteria sources in the Tualatin sub-basin. Hillsboro, OR, Clean Water Services.
18. **Cleaveland S, Appel MGJ, Chalmers WSK, Chillingworth C, Kaare M, Dye C. 2000. Serological and demographic evidence for domestic dogs as a source of canine distemper virus infection for Serengeti wildlife. Veterinary Microbiology 72:217-227.**

19. Cleveland SM, Hebblewhite M, Thompson M, Henderson R. 2012. Linking elk movement and resource selection to hunting pressure in a heterogeneous landscape. *Wildlife Society Bulletin* 36:658-668.
20. Epple G, Mason J, Nolte D, Campbell D. 1993. Effects of predator odors on feeding in the mountain beaver *Aplodontia rufa*. *Journal of Mammalogy* 74:715-722.
21. FOX 23 staff. Cracking down on doggie droppings at Portland schools. 2014. <http://www.kptv.com/story/25197482/cracking-down-on-doggie-droppings-at-portland-schools>. KPTV-KPDX Broadcasting Corporation.
22. George SL, Crooks KR. 2006. Recreation and large mammal activity in an urban nature reserve. *Biological Conservation* 133:107-117.
23. Gondim LFP, McAllister MM, Mateus-Pinilla NE, Pitt WC, Mech LD, Nelson ME. 2004. Transmission of *Neospora caninum* between wild and domestic animals. *Journal of Parasitology* 90:1361-1365.
24. Gray AC. 2006. Impacts of human disturbance on the behavior of sanderlings on the Georgia Coast. Thesis. Statesboro, GA, Georgia Southern University, Jack N. Averitt College of Graduate Studies.
25. Harnik P, Martin A, Barnhart K. 2015 City Park Facts. 2015. Washington, D.C., The Trust for Public Lands, Center for City Park Excellence.
26. Hennings L A, Soll J. 2010. Wildlife corridors and permeability. A literature review. Portland, OR, Metro.
27. Hing S, Narayan EJ, Thompson RCA, Godfrey SS. 2016. The relationship between physiological stress and wildlife disease: Consequences for health and conservation. *Wildlife Research* 43:51-60.
28. Hughes J, Macdonald DW. 2013. A review of the interactions between free-roaming domestic dogs and wildlife. *Biological Conservation* 157:341-351.
29. Iverson J. 1978. The impact of feral cats and dogs on populations of the West Indian rock iguana, *Cyclura carinata*. *Biological Conservation* 14:63-73.
30. Kats LB, Dill LM. 1998. The scent of death: Chemosensory assessment of predation risk by prey animals. *EcoScience* 5:361-394.
31. Koenig J, Shine R, Shea G. 2002. The dangers of life in the City: Patterns of activity, injury and mortality in suburban lizards (*Tiliqua scincoides*). *Journal of Herpetology* 36:62-68.
32. Lafferty KD. 2004. Disturbance to wintering western Snowy Plovers. *Biological Conservation* 101:315-325.
33. Lenth BE, Knight RL, Brennan ME. 2008. The effects of dogs on wildlife communities. *Natural Areas Journal* 28:218-227.
34. Love OP, Breuner CW, Vezina F, Williams TD. 2004. Mediation of a corticosterone-induced reproductive conflict. *Hormones and Behavior* 46:59-65.
35. Love OP, Chin EH, Wynne-Edwards KE, Williams TD. 2005. Stress hormones: A link between maternal condition and sex-biased reproductive investment. *The American Naturalist* 166:751-766.
36. Lowry DA, McArthur KL. 1978. Domestic dogs as predators on deer. *Wildlife Society Bulletin* 6:38-39.
37. MacArthur RA, Johnston RH, Geist V. 1979. Factors influencing heart rate in free-ranging bighorn sheep: a physiological approach to the study of wildlife harassment. *Canadian Journal of Zoology* 57:2010-2021.
38. MacArthur RA. 1982. Cardiac and behavioral responses of mountain sheep to human disturbance. *Journal of Wildlife Management* 46:351-358.
39. Mainini B, Neuhaus P, Ingold P. 1993. Behaviour of marmots *Marmota marmot* under the influence of different hiking activities. *Biological Conservation* 64:161-164.

40. Manor R, Saltz D. 2004. The impact of free-roaming dogs on gazelle kid / female ratio in a fragmented area. *Biological Conservation* 119:231-236.
41. Martinetto K, Cugnasse JM. 2001. Reaction distance in Mediterranean Mouflon (*Ovis gmelini musimon x Ovis sp.*) in the presence of hikers with a dog on the Caroux plateau (Herault, France). *Revue d Ecologie-La Terre at La Vie* 56:231-242.
42. Marzano M, Dandy N. 2015. Recreational use of forests and disturbance of wildlife. A literature review. Edinburgh, U.K., Forestry Commission.
43. Metro. 2015. 2014 Urban Growth Report. Portland, OR, Metro.
44. Miller SG, Knight RL, Miller CK. 2001. Wildlife responses to pedestrians and dogs. *Wildlife Society Bulletin* 29:124-132.
45. Natural Resources Conservation Service, Fairbanks Soil and Water Conservation District. 2005. Composting dog waste. Palmer, AK, U.S.D.A. Natural Resources Conservation Service, Fairbanks Soil and Water Conservation District.
46. Nickum, R. 2013. 17 best U.S. cities for dogs. <http://blog.estately.com/2013/05/17-best-u-s-cities-for-dogs/>.
47. Oregon Department of Environmental Quality. 2015. Reducing bacterial pollution in the Willamette Basin. 10-WQ-032, 1-2. Portland, OR, Oregon Department of Environmental Quality.
48. Oregon Department of Fish and Wildlife. 2015. Guidance for conserving Oregon's native turtles including best management practices. Salem, OR, Oregon Department of Fish and Wildlife.
49. Pelletier F. 2006. Effects of tourist activities on ungulate behaviour in a mountain protected area. *Journal of Mountain Ecology* 8:15-19.
50. Phillips GE, Alldredge AW. 2000. Reproductive success of elk following disturbance by humans during calving season. *Journal of Wildlife Management* 64:521-530.
51. Randler R. 2006. Disturbances by dog barking increases vigilance in coots *Fulica atra*. *European Journal of Wildlife and Research* 52:265-270.
52. Reed SE, Merenlender AM. 2011. Effects of management of domestic dogs and recreation on carnivores in protected areas in Northern California. *Conservation Biology* 25:504-513.
53. Reed SE, Merenlender AM. 2008. Quiet, nonconsumptive recreation reduces protected area effectiveness. *Conservation Letters* 1:146-154.
54. Reed SE, Larson CL, Crooks KR, Merenlender AM. 2014. Wildlife response to human recreation on NCCP reserves in San Diego County. Report number P1182112. Bozeman, MT, Wildlife Conservation Society.
55. Schultz RD, Bailey JA. 1978. Responses of national park elk to human activity. *Journal of Wildlife Management* 42:91-100.
56. Shannon G, Cordes LS, Hardy AR, Angeloni LM, Crooks KR. 2014. Behavioral responses associated with a human-mediated predator shelter. *PLoS ONE* 9:e94630.
57. Shueler T. 2000. Microbes and urban watersheds: Concentrations, sources, & pathways. *Watershed Protection Techniques* 3:1-12.
58. Silva-Rodriguez EA, Ortega-Solis GR, Jimenez JE. 2010. Conservation and ecological implications of the use of space by chilla foxes and free-ranging dogs in a human-dominated landscape in southern Chile. *Austral Ecology* 35:765-777.
59. Silva-Rodriguez EA, Sieving KE. 2012. Domestic dogs shape the landscape-scale distribution of a threatened forest ungulate. *Biological Conservation* 150:103-110.
60. Silva-Rodriguez EA, Sieving KE. 2011. Influence of care of domestic carnivores on their predation on vertebrates. *Conservation Biology* 25:808-815.
61. Sime CA. 1999. Domestic dogs in wildlife habitats: Effects of recreation on Rocky Mountain wildlife. A review for Montana. Montana Chapter of The Wildlife Society.

62. Spinks PQ, Pauly GB, Crayon JC, Shaffer HB. 2003. Survival of the western pond turtle (*Emys marmorata*) in an urban California environment. *Biological Conservation* 113:257-267.
63. Stankowich T. 2008. Ungulate flight response to human disturbance: A review and meta-analysis. *Biological Conservation* 141:2159-2173.
64. Sterl P, Brandenburg C, Arnberger A. 2008. Visitors' awareness and assessment of recreational disturbance of wildlife in the Donau-Auen National Park. *Journal for Nature Conservation* 16:135-145.
65. Steven R, Pickering C, Castley JG. 2011. A review of the impacts of nature based recreation on birds. *Journal of Environmental Management* 92:2287-2294.
66. Suzan G, Ceballos G. 2005. The role of feral mammals on wildlife infectious disease prevalence in two nature reserves within Mexico City limits. *Journal of Zoo and Wildlife Medicine* 36:479-484.
67. Taylor AR, Knight RL. 2003. Wildlife responses to recreation and associated visitor perceptions. *Ecological Applications* 13:951-963.
68. Taylor K, Taylor R, Anderson P, Longden K, Fisher P. 2005. Dogs, access and nature conservation. *English Nature Research Report* 649, 1-2.
69. Thomas K, Kvitek RG, Bretz C. 2003. Effects of human activity on the foraging behavior of sanderlings *Calidris alba*. *Biological Conservation* 109:67-71.
70. Thompson MJ, Henderson RE. 1998. Elk habituation as a credibility challenge for wildlife professionals. *Wildlife Society Bulletin* 26:477-483.
71. UK CEED. 2000. A review of the effects of recreational interactions within UK European marine sites. 1-264. Countryside Council for Wales (UK Marine SACs Project).
72. Webley P, Siviter C. 2006. Why do some owners allow their dogs to foul the pavement? The social psychology of a minor rule infraction. *Journal of Applied Social Psychology* 30:1371-1380.
73. Weston MA, Fitzsimons JA, Wescott G, Miller KK, Ekanayake KB, Schneider T. 2014. Bark in the park: A review of domestic dogs in parks. *Environmental Management* 54:373-382.
74. Whiteman CW, Matushima ER, Cavalcanti-Confalonieri UE, Palha MDDC, Da Silva ADSL, Monteiro VC. 2009. Human and domestic animal populations as a potential threat to wild carnivore conservation in a fragmented landscape from the Eastern Brazilian Amazon. *Biological Conservation* 138:290-296.
75. Wingfield JC, Hunt K, Breuner C, Dunlap K, Fowler GS, Freed L, Lepson J. 1997. Environmental stress, field endocrinology, and conservation biology; in Clemons JR, Buchholz R (eds). In: *Behavioral Approaches to Conservation in the Wild*. London, England, Cambridge University Press, pp 95-131.
76. Wingfield JC, Silverin B. 1986. Effects of corticosterone on territorial behavior of free-living male song sparrows *Melospiza melodia*. *Hormones and Behavior* 20:405-417.
77. Young JK, Olson KA, Reading RP, Amgalanbaatar S, Berger J. 2011. Is Wildlife Going to the Dogs? Impacts of Feral and Free-Roaming Dogs on Wildlife Populations. *BioScience* 61:125-132.

**Table 1.** Park providers’ dog policies in the greater Portland, Oregon metropolitan area.

Parks provider	No dogs allowed	Some parks allow dogs	Dogs allowed	On-leash	Free to roam	Off-leash areas or dog park
Audubon Society of Portland	X					
City of Beaverton		X <sup>2</sup>		X		X
City of Cornelius			X	X <sup>3</sup>		
City of Durham			X	X		X
City of Fairview		X <sup>4</sup>		X		
City of Forest Grove			X	X		X
City of Gladstone			X	X		X
City of Gresham			X	X		X
City of Happy Valley			X	X <sup>5</sup>		X
City of Hillsboro			X	X		X
City of Lake Oswego			X	X		X
City of Milwaukie <sup>b</sup>			X	X		X
City of Oregon City			X	X		X <sup>7</sup>
City of Portland		X		X <sup>8</sup>		X <sup>9</sup>
City of Sherwood			X	X		X
City of Tigard			X	X		X
City of Troutdale		X <sup>10</sup>		X		X <sup>11</sup>
City of Tualatin			X	X		X
City of West Linn			X	X		X <sup>12</sup>
City of Wilsonville			X	X		X
City of Wood Village			X	X		
Clackamas County			X	X		X
Clean Water Services (Fernhill Wetlands)	X					

<sup>2</sup> All parks except fountain provided by Tualatin Hills Parks & Recreation District.

<sup>3</sup> Considering off-leash dog area at Water Park.

<sup>4</sup> Dogs on leash allowed at all parks except Salish Ponds (no dogs).

<sup>5</sup> Dogs on leash except prohibited in playgrounds.

<sup>6</sup> All city parks are operated by North Clackamas Parks and Recreation Department.

<sup>7</sup> The City of Oregon City is currently testing off-leash areas in three parks.

<sup>8</sup> Dogs on-leash except prohibited at Foster Floodplain Natural Area, Tanner Springs Park, Whitaker Ponds Nature Park, Riverview Natural Area, and the amphitheater at Mt Tabor Park.

<sup>9</sup> 33 off-leash dog areas.<sup>46</sup>

<sup>10</sup> Most parks: dogs not allowed. Exception: Sunrise Park and large Beaver Creek Greenway, leash only. Considering two more on-leash dogs allowed parks.

<sup>11</sup> Plans for an off-leash area at Sunrise Park.

<sup>12</sup> One off-leash dog area: field near parking lot at Mary S. Young Park. Off-leash dogs were identified as an issue by parks board.

Parks provider	No dogs allowed	Some parks allow dogs	Dogs allowed	On-leash	Free to roam	Off-leash areas or dog park
Federal / State (Sandy River Natural Area)			X <sup>13</sup>	X	X	X
Metro		X <sup>14</sup>				
N. Clackamas Parks & Recreation			X			X
OR Department of Fish and Wildlife			X	X <sup>15</sup>	X	X
OR Parks & Recreation Department			X	X		X
Port of Portland		X <sup>16</sup>		X		
The Nature Conservancy	X					
The Wetlands Conservancy			X <sup>17</sup>	X	X	
Tualatin Hills Park and Rec. District		X <sup>18</sup>		X		X
U.S. Fish & Wildlife Service	X					
U.S. Forest Service <sup>19</sup>			X	X	X	X

<sup>13</sup> Leashes required only on/near Confluence Trail and in parking area. Leash-off everywhere else. Region's largest off-leash area, and heavily used.

<sup>14</sup> Metro does not allow dogs except for service dogs, leashed dogs on regional trails, Broughton Beach, boat ramps and properties managed by others through intergovernmental agreements that are integrated into larger parks where leashed dogs are allowed (e.g., Forest Park).

<sup>15</sup> All dogs must be on leash, except while hunting during seasons authorized on Sauvie Island Wildlife Area, or pursuant to a valid "Competitive Hunting Dog Trial Permit" or "Sauvie Island Wildlife Area Individual Dog Training Permit."

<sup>16</sup> Includes Vanport Wetlands and mitigation sites. No dogs allowed except Government Island State Recreation Area (leased to Oregon Parks Department).

<sup>17</sup> No formal policy.

<sup>18</sup> Dogs allowed on-leash except Tualatin Hills Nature Park and Cooper Mountain Nature Park.

<sup>19</sup> Refers specifically to the Sandy River Delta, owned and administered by the National Forest Service, Columbia River Gorge National Scenic Area.

### **Fact Sheet #3: Functions of Riparian Area for Wildlife Habitat**

[This fact sheet was prepared by *Russell Cohen, Rivers Advocate*, Division of Ecological Restoration, Massachusetts Department of Fish and Game. This document is intended for educational purposes only and does not necessarily represent the viewpoint of agencies and commissions having regulatory authority over riparian lands. Last updated: June 11, 2014.]

#### ***What is the significance of riparian areas for wildlife habitat protection?***

Riparian corridors (i.e., rivers, streams and adjacent lands) are particularly valuable habitats for wildlife. This includes many of what are ordinarily thought of as "upland" species as well as wetland species. For example, many upland animals need access to rivers and streams for hunting and drinking, particularly in the winter when other water sources may be frozen over. The junction between rivers, streams and adjacent riparian land is especially high in ecological diversity and biological productivity because gravity is constantly moving energy and matter along with the current, and because so many animals spend their lives both in water and on land. The high value of riparian areas as wildlife habitat is also due to the abundance of water combined with the convergence of many species along the edges and ecological transition zones between aquatic/wetland, aquatic/upland, wetland/upland and river channel/backwaters habitats.

#### **Interaction between rivers and riparian lands helps create and maintain a high level of habitat diversity**

Rivers play a major role in shaping the landscape and creating habitat for flora and fauna. The habitat along rivers and streams is as diverse as the watercourses themselves, ranging from cobble-strewn brooks to tidal creeks and wide floodplain rivers. Natural vegetation along higher-gradient rivers and streams provides large woody debris to the channel that helps form "pool-riffle" habitat critical to many aquatic species and the terrestrial species dependent upon them. Many low-gradient rivers and streams are sinuous by nature; that is, they tend to move about (meander) naturally, creating new channels and abandoning old ones. Natural features such as sandbars, undercut banks, oxbows (a U-shaped body of water that forms when a wide meander from the main stem of a river is cut off, creating a free-standing body of water) and floodplain pools resulting from a stream or river's interaction with adjacent lands are created, undergo change through time, and eventually disappear, while the overall pattern of the river (e.g., meandering, braiding) remains constant, at least on some larger spatial scale and longer time scale. This form of dynamic equilibrium is a singular property of rivers and accounts for much of the high biological diversity and productivity of riverine systems.

The dynamic equilibrium between the waterways and the land creates a corresponding dynamic equilibrium of life within a river system. For example, successive plant and animal communities occupy a meander loop as it is transformed from an active channel, to an isolated oxbow intermittently connected to the main flow during floods, and finally to a wet depression on the floodplain. As long as the river is allowed to freely interact with adjacent vegetated riparian areas, a diversity of habitats in various stages of ecological succession will be maintained. If, on the other hand, the channel is stabilized and isolated from the adjacent riparian area by retaining walls, levees and the like, the many organisms that depend on sandbars, undercut banks, oxbows, floodplain forests and other river-created habitats will begin to disappear.

#### **Importance of riparian vegetation for wildlife**

Vegetation (whether living, decaying or dead, standing or fallen) plays a key role in the function of riparian areas as suitable wildlife habitat. Streamside vegetation provides food and shelter for many species. Wildlife foods (seeds, buds, fruits, berries and nuts) are found in abundance within naturally vegetated riparian areas. The shade, detritus and coarse woody debris provided by streamside forests are very important for healthy fisheries, which are in turn a key food for many wildlife species. Leaves, branches, even whole trees uprooted by the river or other natural forces become food and shelter for aquatic organisms and the many forms of terrestrial wildlife inhabiting riparian areas. Logs falling into streams often divert stream flow into new pathways, increasing the complexity of the channel, which helps to maintain a diversity of habitat niches for riverine plants and animals. Last but not least, some wildlife inhabiting riparian areas, through their actions, create habitat for other wildlife species (beavers are the best known example of this locally).

#### **Riparian areas serve as critical corridors for wildlife movement**

Another characteristic of naturally vegetated riparian areas of particular value to wildlife is their connectivity function. River and stream systems are key elements of our state's ecological infrastructure. Besides serving as important dwelling habitat *per se*, undeveloped lands along river and stream corridors provide vital connective lifelines that enable wildlife movement necessary to maintain healthy wildlife populations. Loss of these connective corridors results in habitat fragmentation, which is a major cause of wildlife decline, and can even lead to extinction. For example, many species of reptiles, amphibians and mammals need the ability to disperse to new habitat to set up new territory for successful feeding and breeding. This allows for the continuous exchange of genetic material between species populations, a critical factor in maintaining species' resilience to disease and other adverse impacts. It is key, therefore, to maintain undeveloped and naturally vegetated corridors between habitats of a sufficient width to enable

animals to travel safely by land from one habitat to another. Allowing habitats to become isolated "islands" surrounded by development will cause them to lose much of their ecological value even though the habitat itself is not directly impacted.

Connections to uplands within and beyond the riparian area also perform vital ecological functions and need to be preserved as much as possible. Many species of amphibians rely on riverine habitat during the breeding season and then spend most of their lives in upland habitat, often at a considerable distance away. The reverse is true for many reptiles. Protecting riverine wetlands will not in itself safeguard the continued existence of the full habitat these organisms need. Protecting access to undeveloped uplands associated with adjacent rivers, therefore, is key to maintaining a healthy functioning ecosystem.

#### **Riparian areas are important for common as well rare species**

Although riparian areas serve as key habitat for a number of state-listed rare species of wildlife, it's important to remember that a naturally vegetated riparian area is considered to be significant for wildlife habitat protection even if no rare species are known to make their homes there. In addition to the fact that a number of migratory species, many of them rare, rely on undeveloped river corridors as migration routes, many of our more common resident species would nevertheless become threatened were they to lose the remaining undisturbed riparian habitat they depend upon. Furthermore, a particular riparian area may be performing an important function for wildlife habitat if it serves as a connection for species to travel between two adjacent areas providing good wildlife habitat, even if relatively few wildlife species are found residing within that particular riparian area itself.

#### ***What species of animals are dependent upon riparian areas for all or a portion of their life cycle?***

**Mammals:** Many mammals, birds, reptiles and amphibians are dependent on undeveloped, vegetated riparian areas along rivers and streams in Massachusetts. Mammal species dependent upon the habitats provided by rivers, streams and associated ponds and wetlands include mink, muskrat, otter, water shrew, bog lemming, beaver and moose. Many other species, however, spend much of their lives within the habitats immediately surrounding our waterways; they are dependent on mixed upland and lowland habitat. Species in this category include everything from raccoon to deer, which often forage in the water, to our eight species of bats, which often forage on insects above the water. All of these species, as well as many others, occasionally use river corridors as travel routes.

**Birds:** Some species of birds found in Massachusetts are especially adapted to river life. The Louisiana and Northern water thrushes, for instance, are usually encountered in river corridors. The spotted sandpiper is frequently visible along river bars and shorelines. Many other shorebird species occur along rivers where appropriate mud bars develop. Belted kingfishers patrol rivers from the headwaters to the sea in search of small fish. Osprey flourish along rivers, and the state's largest nesting group of these birds is found on the Westport River. The state's many species of herons and bittern depend to a large extent on riparian corridors for food, roosting and nesting sites. Bald eagles frequent riverine corridors along the Connecticut and Merrimack Rivers in search of fish and roosting areas. Birds such as cormorants, night herons and gulls follow river systems for many miles inland in search of good feeding areas.

Rivers and their adjacent landscapes are also critical to Massachusetts' resident waterfowl. Black and mallard ducks and blue-winged and green-winged teal nest and raise their young in riverine marshes and wetlands. Wood ducks and hooded mergansers nest in tree cavities in swampy bottomlands. A less obvious river corridor user is the woodcock, or "timberdoodle", a terrestrial bird which follows and relies on vegetated wetlands within river corridors as its primary feeding and nesting habitat. Massachusetts is located in the "Atlantic Flyway", where three million waterfowl of 17 species migrate north and south each year. The northerly and southerly flowing inland rivers of the state, in addition to the coastline, provide direction, nesting and feeding areas for this great migration. River corridors are also major migration routes for many species of songbirds such as vireos, flycatchers, thrushes, tanagers and wood warblers.

**Amphibians and Reptiles:** The state's amphibians, which by definition require water or at least damp habitats in order to reproduce, frequently utilize riparian areas. At least one species, the mudpuppy salamander, is restricted to specific river drainages. Three semi-aquatic salamanders, the northern two-lined, northern dusky and northern spring salamanders, live in and along streams and small rivers in the state. The preservation of river corridors encompassing considerable upland habitat is required to maintain other species of amphibians, for many spend most or all of their lives away from open water habitats. The wood frog and four species of mole salamanders, for instance, breed only in temporary vernal pools and spend their lives on or beneath the forest floor, but may require vegetated riparian areas to disperse to new territory.

Naturally vegetated riparian areas are just as vital for the state's resident reptile species. Individuals of several species, including the musk turtle, snapping turtle, painted turtle and northern water snake may spend their entire lives in riverine habitats. Other species, such as the Blanding's turtle, spotted turtle, diamondback terrapin and ribbon snake, inhabit wetlands which are often associated with river systems. All turtles lay eggs and, hence, even the most aquatic species require upland habitat for their nesting activities. Corridor protection is especially important for our semi-aquatic wood turtle and the rarest reptile in the state -- the bog turtle. The wood turtle spends much of its life in brooks and streams, but it inhabits surrounding upland habitats during the warmer

months of the year. The three known bog turtle populations appear to require alkaline fens containing rivulets.

Reptiles and amphibians (known collectively as "herps") are far less mobile than birds and mammals. While the latter groups can cross developed areas and recolonize lost ground, often in a matter of years, range expansion by herp species is more likely to be measured in decades. Unbroken corridors, especially riparian corridors of natural habitat, are required to ensure the continued health and expansion of our herp species, particularly the amphibians, as well as small mammals such as shrews and moles. These animals may be unable to cross even moderately sized areas of unsuitable habitat (such as parking lots).

**Rare and Endangered Species:** Rivers provide critical habitat for many of the state's rare and endangered species. Massachusetts' rivers provide vital habitat for globally endangered freshwater mussels, many rare dragonflies, endangered tiger beetles, Blanding's turtles, Britton's violet and river bulrush. State-threatened bird species such as the least bittern, king rail, pied-billed grebe and the federally threatened bald eagle also inhabit river corridors in the state. Some types of riverine habitats that the Commonwealth's rare species depend upon are floodplain forests, river sandbars, claybanks, freshwater tidal marshes and extensive marshes dominated by emergent vegetation.

***What alterations to riparian areas may impair their ability to function as wildlife habitat?***

Alterations to the riparian area that are likely to cause the most adverse impact from a wildlife perspective are those that degrade or eliminate an area's functionality as habitat (e.g. replacing vegetated areas with pavement) and/or interfere with its connectivity function (e.g., establishing a barrier to wildlife movement to and/or along a stream corridor). Development in Massachusetts has encroached on river and stream corridors in many areas, fragmenting wildlife habitat and leading to a serious decline in the quantity and quality of wildlife habitat in these areas. It is crucial that we save the linkages that are still intact, as well as taking advantage of opportunities to restore connectivity through the removal of barriers and the reestablishment of vegetative cover on previously devegetated riparian areas wherever possible.

**Lawns and Golf Courses**

The replacement of naturally vegetated riparian areas with manicured and/or highly managed landscapes such as lawns and golf courses has at least three adverse impacts on wildlife. First, such manicured areas typically require periodic and substantial application of pesticides, herbicides, fungicides, fertilizers and other chemicals that often cause direct harm to wildlife through ingestion or bioaccumulation through the food chain, or lead to habitat-degrading pollution in adjoining water bodies. Second, the vegetation in manicured landscapes typically contains less species diversity than wild areas, usually reducing the diversity and overall abundance of wildlife using such areas. Third, the instinct to keep such manicured areas "neat and tidy" often results in the removal of dead standing or fallen trees, leaves and brush, all of which provide important food or shelter for a wide variety of riparian wildlife. To the extent that such "tidying up" involves the use of mechanized equipment such as power mowers, chain saws, leaf blowers and the like, such devices can further discourage wildlife from using the area.

**Roads and Driveways**

The placement of new roads and driveways located within riparian areas can also result in serious fragmentation and degradation of wildlife habitat. Generally speaking, the wider the road, the closer it is located to the river, and the greater the number and speed of vehicles using the road, the greater the adverse impact. The first impact, the removal of trees and other vegetation and subsequent regrading of the road right-of-way, typically destroys whatever habitat existed within that area beforehand. Automobile fluids, deicing chemicals and other toxics washing off roadways can pollute adjacent areas and degrade their value as wildlife habitat. Another serious impact is that roads act as a barrier to many forms of wildlife movement. Even relatively narrow rural roads can be a significant obstacle to the movement of sensitive amphibian species. Stormwater catch basins are insidious amphibian traps. Granite curbs along roadways can be enough of a barrier to effectively prevent amphibians and some turtles from safely crossing a road. Fatal collisions of wildlife attempting to cross roadways with motorized vehicles (i.e., roadkill) is a significant cause of death for many of the state's wildlife species, large and small. Such an "impact" may extend beyond the death of the animal struck and affect mates and offspring.

**New Homes, Yards and Pets**

The placement of new homes within the riparian area can pose an additional set of problems for wildlife. In addition to the impacts associated with roads, driveways and manicured landscapes discussed above, homes with pets and/or other domesticated animals can lead to further degradation or loss of wildlife habitat and even death of wild animals. The clearing of forest or other natural vegetation within the riparian area to establish paddocks for horses, sheep and other grazing animals degrades the utility of that area for native species. Other adverse impacts of pets may extend beyond the houselot to affect riparian areas at a considerable distance. Dogs allowed to roam frequently cannot resist the temptation to chase after deer and other animals. The resulting increased stress on these wild animals can significantly impair their ability to care for themselves and their families. Wildlife will often simply avoid areas with high dog activity, thereby losing what might be otherwise suitable habitat. Last but not least, house

cats allowed to go outdoors are known to be exceptionally destructive to wildlife, especially nestling birds and wild small mammals.

### **Flood Control Structures**

Other alterations that have the potential to cause an adverse impact on wildlife habitat within the riparian area include structural flood controls such as retaining walls, levees and the like, which can isolate a river from its floodplain and serve as a barrier to the very floodwaters that create and maintain floodplain wildlife habitat, considered by many wildlife biologists to be of especially high ecological value.

#### ***Why are vegetated riparian areas along smaller streams as significant for wildlife habitat as along the larger rivers?***

Wildlife use of riparian areas along smaller brooks and streams, although somewhat different in character from the major rivers, is still quite extensive. Many species utilize vegetated riparian areas during all or part of their life cycle regardless of the size of the adjacent watercourse. In fact, several sensitive species in Massachusetts (e.g., the spring salamander) thrive only in cold, unpolluted springs and small streams. Last but not least, as most of the major river corridors in Massachusetts have already been extensively developed, the areas which remain in a relatively pristine condition (and as such are likely to have the best quality wildlife habitat) tend to be located on the smaller tributaries.

#### ***What are some best management practices for riparian areas to maintain and enhance their function as wildlife habitat?***

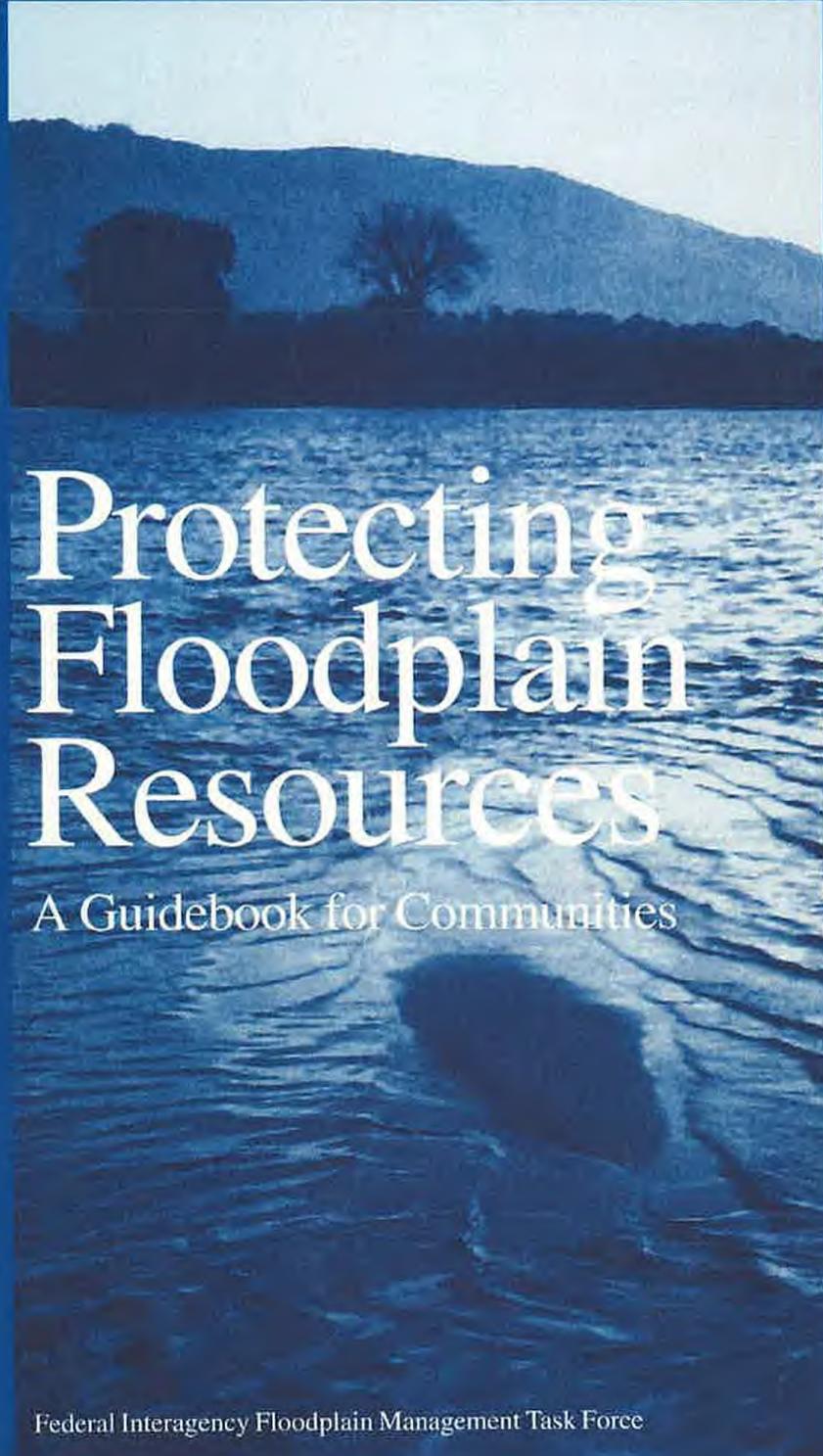
The best way to protect wildlife habitat functions within the riparian area is to maintain and/or restore as much of it as possible in an undisturbed, naturally vegetated state. Many studies have shown the superiority of natural vegetation over cropland and other heavily managed landscapes for wildlife diversity and productivity. These studies have also found that, in general, much larger streamside forest buffer widths are needed for wildlife habitat purposes than for water quality purposes. In fact, 300 feet is the generally accepted **minimum** width needed to provide adequate habitat and movement corridors for most wildlife species. For example, surveys of songbird use of riparian areas recommend that riparian forests be at least 100 meters (330 feet) wide to provide suitable nesting habitat for neotropical migrant birds.

Where some alteration within a riparian area is unavoidable, it should be designed and implemented in a manner that minimizes any loss of connectivity with adjacent vegetated lands as well as any loss of function within the site itself. In general, the further away the proposed work is from the river, the smaller the adverse impact on wildlife habitat and movement. In addition, natural features within a riparian area that may be of particular value to wildlife should be identified and safeguarded from disturbance if at all possible. Such natural features include: **large dead standing trees** (used by hawks and eagles for nesting and roosting); **large trees with cavities** (used by nesting owls, wood ducks, hooded mergansers and other animals); **large dying trees** (bats roost under the loose bark); **stone walls and rock piles** (used by snakes and small mammals); **floodplain and other seasonal pools and water-holding depressions** (used by amphibians for breeding), **as well as adjacent uplands; understory tangles** (used as cover by many wildlife species); **large woody debris in streams** (provides basking areas for turtles and snakes); **streambank burrows** (where the homes of weasels, otters and muskrats are typically located); **sandy soils with good sun exposure** (used by turtles as nesting areas); **large trees overhanging the river** (flycatchers, kingfishers, osprey, and other birds use them for feeding perches); **large stands of conifer trees** (often used by deer as wintering areas); **hollow trees and logs** (suitable as dens for some mammal species) and **fallen shaded logs** (preferred by some salamanders for habitat). If stream crossings are unavoidable, road widths should be kept to the minimum possible. In addition, bridges are generally preferred over culverts for stream crossings, as they present less of a potential barrier to fish and wildlife. [For more info about fish- and wildlife-friendly stream crossing standards and designs, go to <http://www.mass.gov/eea/agencies/dfg/der/publications>.]

Last but not least, previously disturbed riparian areas that continue to remain in a degraded condition may present opportunities for restoring wildlife habitat functions. For example, any work that removes pavement or lawn at the water's edge and replaces them with a vegetated buffer of native trees and shrubs is likely to benefit wildlife as well as fisheries and the other functions of riparian areas. Local conservation commissions, the state's Division of Ecological Restoration and Division of Fisheries and Wildlife, watershed associations and land trusts have some expertise in this area, and may provide some guidance on designing effective riparian wildlife habitat restoration measures.



## **Exhibit D**



## PROTECTING FLOODPLAIN RESOURCES: A Guidebook For Communities

**Dr. Richard Smardon, Professor**  
Faculty of Environmental Studies

**Dr. John Felleman, Professor**  
Faculty of Environmental Studies

with editing by

**Dr. Susan Senecah, Assistant Professor**  
Faculty of Environmental Studies

with the assistance of

**Elizabeth Myers, Graduate Assistant and**  
**Kevin Olvany, Graduate Assistant**  
Faculty of Environmental Studies

and graphic design and illustration by  
**Scott Shannon, Associate Professor**  
Faculty of Landscape Architecture

in cooperation with

**Cory Giacobbe and Jori Wesley**  
U.S. Environmental Protection Agency

**John McShane**  
Federal Emergency Management Agency



sponsored and funded by

### Federal Interagency Floodplain Management Task Force



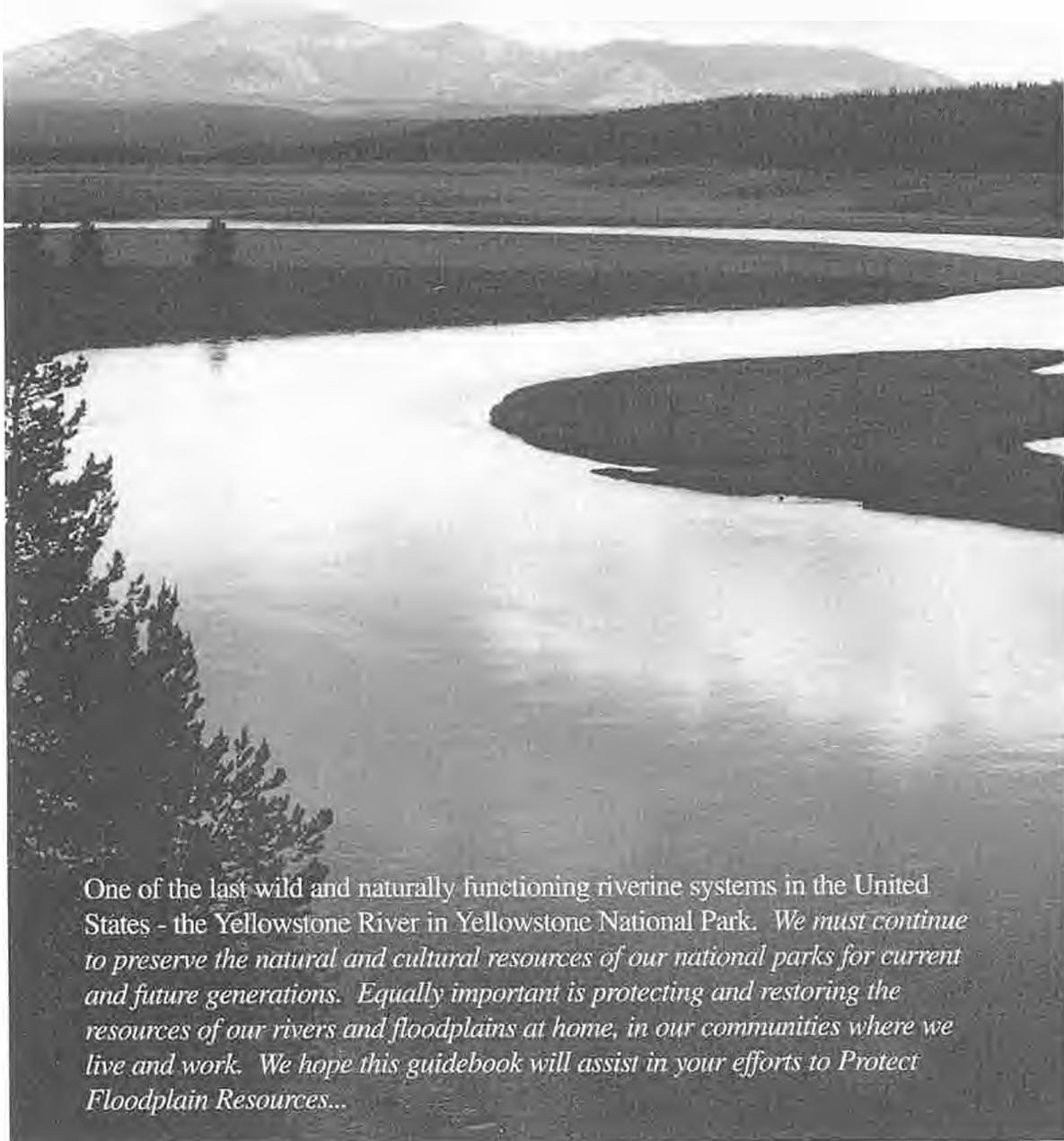
The Federal Interagency Floodplain Management Task Force was established in 1975 within the U.S. Water Resources Council to carry out the responsibility of the President to prepare for the Congress proposals necessary for a Unified National Program for Floodplain Management. In 1982 the Office of Management and Budget assigned responsibility for the Unified National Program to the Federal Emergency Management Agency, which assumed the role of chair of the Task Force. Membership of the Task force consists of the Departments of Agriculture, Army, Commerce, Energy, Housing and Urban Development, Interior, and Transportation; the Environmental Protection Agency; and the Tennessee Valley Authority.

# PROTECTING FLOODPLAIN RESOURCES

A Guidebook  
for  
Communities

The Federal Interagency Floodplain  
Management Task Force

2nd Edition - June 1996



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# Protecting Floodplain Resources

## A Guidebook for Communities

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## BACKGROUND

This guidebook is the result of an elaborate process carried out over a two year period. The authors initially met with the Federal Interagency Floodplain Management Task Force to define the scope, focus, and target audience for the guidebook. The authors then talked with representatives of the Association of State Floodplain Managers and prepared a mailback questionnaire to determine the specific needs and interests of local officials and private interest groups. From these discussions and questionnaires, the basic outline and specific information was modified and refined accordingly.

The final step was to prepare sequential drafts which were reviewed by a working group of the Task Force. Throughout the development of this guidebook the U.S. Environmental Protection Agency and the Federal Emergency Management Agency provided extensive comments and guidance. A revised draft was provided for final review and graphics and photographs were provided simultaneously with the completed guidebook. Following the distribution of the first printing in September 1995, overwhelming response has resulted in the printing of this updated second edition.

## ACKNOWLEDGMENTS

This guidebook was prepared under the auspices of the Federal Interagency Floodplain Management Task Force with funding from U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers. Administrative support was provided by the U.S. Environmental Protection Agency, Wetlands Division. Special thanks go to Jeanne Melanson, now with the Natural Resources Conservation Service for the initial concept and support and to Cory Giacobbe and Jori Wesley of EPA and to John McShane of FEMA for their continued support, comments, and guidance. A special acknowledgment goes to Jon Kusler of the Association of State Wetland Managers for offering his valuable expertise in floodplain and water resource management.

Project research and initial writing was done by Elizabeth Myers and extra case study research by Kevin Olvany. Editing and facilitating the Tulsa workshop was done by Dr. Susan Senecah and graphics and layout were prepared by Prof. Scott Shannon. Drs. Richard Smardon and John Felleman provided overall project direction and management at the SUNY - College of Environmental Science and Forestry's Randolph Pack Environmental Institute.

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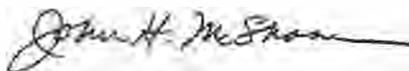
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## PREFACE

**F**loods have caused a greater loss of life and property, and have devastated more families and communities in the United States than all other natural hazards combined. In the past, efforts to reduce flood losses often relied on trying to control floodwaters, rather than encouraging people to avoid flood hazard areas. Yet, despite the expenditure of billions of tax dollars for “flood-control” structures such as dams, levees, and stream channelization, flood losses continued to rise. In addition, this structural approach frequently had adverse impacts on the natural resources and ecological integrity of our rivers and floodplains. In recent years many communities have come to recognize that the floodplain environment is an important community asset and have taken the initiative to create greenways, riverside parks, and other popular amenities. Significantly, protecting the natural resources and functions of floodplains has proven to be effective in reducing flood losses as well.

In the last few years, state and local officials, planners, engineers, property owners, and others, have requested information from Federal agencies on flood hazard mitigation methods that will preserve the integrity of floodplain systems. In response, this guidebook was prepared for local officials, and other interested citizens, to help in the development of a community action plan to protect and restore important floodplain resources and functions.

Rivers and their floodplains are dynamic and complex natural systems that can provide important societal benefits, both economic and environmental. By adapting to the natural phenomenon of flooding, rather than trying to control floodwaters, we can reduce the loss of life and property, protect critical natural and cultural resources, and contribute to the sustainable development of our communities. In towns and cities across the nation, protecting and restoring floodplain resources will enhance the quality of life for this and future generations into the 21st century, and beyond.



John H. McShane, Acting Chair  
Federal Interagency Floodplain Management Task Force

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## 1 Introduction

*“The natural resources and functions of our riverine and coastal floodplains help maintain the integrity of natural systems and provide multiple benefits for people, both material and spiritual.”*

### Statement of Purpose

This guidebook has been written to introduce you, as officials and citizens at the local level, to a basic understanding of natural resources in floodplains, and to offer suggestions for creating strategies for wisely managing these important areas. As our scientific understanding of ecosystems grows, we increasingly recognize the importance of conserving and restoring the natural resources and functions of floodplains. Historically, effective floodplain management was recognized as a necessary task to reduce the loss of life and property. However, floodplain areas are now also recognized as having an intrinsic value of their own as a part of the interconnected ecosystem and an influential role in increasing a community's quality of life. For example, the recognized benefits of a naturally functioning floodplain include the storage and conveyance of flood waters, the recharging of groundwater, the maintenance of surface water quality, and the provision of habitats for fish and wildlife. These areas also provide diverse recreational opportunities, scenic value, and a source of community identity and pride. Clearly, the potential gains of transforming stream and river floodplains from problem areas into value-added community assets are substantial. Local leaders are uniquely positioned to tap these resources for the benefit of their communities.

The overall objective of this guidebook is to help you learn about and understand floodplain management issues in order to take action toward conserving and restoring floodplain natural resources. Whereas case studies will showcase communities that have successfully implemented such projects, a step-by-step formula for universal application to all communities would be unrealistic. Rather, this guidebook is intended as a starting point and a resource for ideas so you can utilize current knowledge about floodplain natural resources in order to customize floodplain management projects to your unique local context.

Chapters 2 and 3 of this guidebook provide an explanation of natural floodplains— their functions and importance in reducing flood losses, maintaining clean and plentiful water supplies, and generally enhancing other factors that affect the quality of life in communities. Recognizing the importance and the sensitive nature of these areas is an important first step in designing an effective strategy for stewardship.

Chapters 4 and 5 of the guidebook suggest ways to successfully plan for and manage floodplain natural resources. They provide information on establishing partnerships to include the public and private sector to identify community objectives, and encourage

creative local application of existing federal, state and private programs to achieve local goals. They also identify sources of technical information which are essential to effective management programs, and explain the importance of continued monitoring and stewardship.

Some excellent examples of floodplain management programs have emerged at the local level. A number of communities have taken great initiative, utilizing public participation to define local objectives and tapping into available resources in state and federal programs. The Case Studies at the end of the guidebook illustrate the variety of approaches that can be taken to avoid future problems in floodplains and show how to take advantage of the assets that rivers and streams can offer to a community. Finally, the References direct readers to additional sources of information and support for communities that accept the challenge to protect these vitally important resource.

### A Brief History of Floodplain and Natural Resources Management

Throughout history, people have settled next to waterways because of the advantages they offer in transportation, commerce, energy, water supply, soil fertility, and even waste disposal. Many major cities are located along rivers, and even the smallest community is likely to be near a creek or stream. In spite of these benefits, however, our historic attraction to settling along rivers and streams is not without its drawbacks. Human uses of floodplains are associated with dangers both to humans and to the natural functions of the riparian or floodplain environment. Loss of property and degradation of critical wildlife habitats are just two of the threats posed by civilization at the water's edge.

Community planning is often a complex balancing act. On one hand, planners often try to dedicate a certain amount of open space for natural areas and passive recreation, or habitats for wildlife. On the other hand, planners also must be aware of the need to limit or avoid development in sensitive areas like wetlands. These objectives often intersect in natural floodplain areas, which are likely to harbor more wetlands, greater wildlife diversity, and higher scenic values, and yet are under a more intense threat of flood losses than any other area within a community. It makes sense, then, to consider combining these objectives by focusing careful attention on the wise and creative use of floodplain lands.

Unfortunately, the wisdom of such an approach can be difficult to recognize because in many communities, distinct organizations are often responsible for parts of the goals mentioned above. For example, agencies in charge of parks, recreation, or stormwater management may operate at the municipal level, while separate state or federal agencies address wetland permitting, wildlife protection, and flood insurance issues. Private environmental education organizations or environmental groups may be particularly concerned about a rare species, scenic beauty, or recreational experiences. Each of these agencies or groups has a different primary goal, yet their interests are more closely related than they may suspect because their common ground is the floodplain. Often, however, the existing processes do not afford them the opportunity to discuss their interests, share their knowledge, and plan together; hence, valuable collaborative energy is untapped.

In order to understand some alternative strategies that can be employed in managing resources in floodplains, it is essential that we become acquainted with the history of floodplain and natural resource management, especially in recent decades. Figure 2 illustrates the evolution of this need for the coordination and integration of strategies for managing floodplain natural resources. Although the time lines present an overview of the federal programs and agencies charged with managing the hazards and resources associated with river corridors throughout U.S. history, the chronology also tells the story of our evolving understanding of these dynamic systems.

*Figure 1a & 1b - Floodplains are noted for their significantly variable character: both between different river systems and from season to season on the same watercourse...*



S. Slaughter



R. Slaughter

*Figure 2 - Timeline of primary floodplain and natural resource management efforts in the United States.*

<b>The Frontier Era</b>	
Pre-1917	Limited federal involvement in flood control or relief.
<b>The Structural Era</b>	
1917	Federal Flood Control Acts. In response to flood disasters in many areas of the country, the federal government took on the costs of constructing reservoirs, channels, dams, and levees. The Army Corps of Engineers was responsible for these efforts. This type of flood controls are referred to as "structural controls."
1928	
1936	
1938	
1950	Federal Disaster Act provided relief to flood victims.
<b>The Stewardship Era</b>	
1960	Flood Control Act. Corps of Engineers assists communities in planning uses of floodplains.
1965	Water Resources Planning Act combined federal and state efforts in creating river basin commissions to do comprehensive planning. Unified National Program for Managing Flood Losses sought to combine federal, state, and local efforts for comprehensive floodplain management. Evolving over several decades, this program attempted to discourage unwise development and to provide education about strategies and tools for managing floodplains.
1966	
1968	National Flood Insurance Act made flood insurance available to homeowners in communities that have implemented local floodplain management regulations. National Wild and Scenic Rivers Act.
1969	National Environmental Policy Act required broad consideration of environmental impacts before implementation of federally funded projects.
1972	Water Pollution Control Act Amendments and Clean Water Act establish a permitting system for development in wetlands.
1977	Executive Order 11988, <i>Floodplain Management</i>
1986	Water Resources Development Act made provisions for cost sharing in water projects.
1990	Omnibus Water Bill requires Corps of Engineers to consider environmental protection as one of its primary missions, and encourages the protection of wetlands; Stafford Disaster Relief Act.
1994	National Flood Insurance Reform Act

Despite the fact that the hydrology, vegetation, wildlife, and soils in floodplains are intricately connected to one another, agency programs were often designed to deal only with single aspects of floodplains, such as flood control or erosion. This single-purpose approach to management has been limiting because it did not recognize the complexity of these systems and the interdependent components of natural areas. As the connections between networks of streams and rivers, adjacent wetlands, soils, vegetation, wildlife, and people are increasingly understood, many experts have begun to encourage "multiobjective management" of river and stream corridors. This shift in approach is reflected in the time line, which shows the parallel histories of floodplain and natural resource management as each has moved toward more broad-based, comprehensive management efforts.

From the birth of the United States until the early 1900s, many federal policies and programs encouraged the development of land, a plentiful resource in a continually expanding nation. In this period, which might be classified as the Frontier Era, the common goal was to conquer the wild landscape of the young nation and to promote "productive use" of land. Flood hazards were the problem of the individual property owner or were dealt with cooperatively at the local level.

As the land became more populated and developed during the first half of the twentieth century, federal and state governments began to set aside natural areas for protection. Such legislative actions were useful, but they treated natural areas as discrete parcels and lacked appreciation for the interconnectedness between preserved areas and the surrounding land. At the same time, in response to a series of devastating flood disasters throughout the country, the federal government began to take an active role in preventing flood losses by assuming costs for the construction of structures such as dams and levees for flood control. This period, known as the Structural Era, was characterized by attempts to alter and control floodwaters and get water off the land as quickly as possible.

In the 1960s and 1970s, however, the complexity and interconnectedness of natural systems triggered in resource managers a new respect for the multiple values of natural areas. Federal agencies that had traditionally operated under single-purpose directives were charged with broadened mandates, such as considering the effects of timber management practices on water quality and wildlife. These shifts in policy heralded an Era of Stewardship for natural systems. Also during this period, despite impressive flood control engineering feats, flood losses continued to rise. In response, federal disaster relief programs were created to deal with the reality of ongoing flood losses throughout the country, and others, such as the National Flood Insurance Program, encouraged appropriate development of flood hazard areas. More recently, the lessons of natural resource stewardship have begun to influence our thinking about floodplain management, and as we realize not only the limitations of our ability to control flooding, we also realize the tremendous benefits that naturally functioning floodplain systems can offer. This realization is responsible for the shift to managing floodplains for multiple objectives.

There are three stories running through this brief history of floodplain management in the U.S.. The first is the story of our evolving understanding of the complexity of natural resource functions. The second is our recognition of limitations on our ability to control floods. And the third — perhaps the most important — is the story of shifting responsibility. Although the burden of flood hazard protection was accepted by the federal government earlier in this century, we have come to recognize that the most sensible, least costly approach to flood hazard protection may have less to do with dams and disaster relief, and more to do with land-use patterns within floodplains. In the U.S., most land-use decisions are made at the local level. This means that there must not only be a renewed emphasis on community responsibility for preventing flood losses, but also for stewardship of the valuable natural functions associated with floodplains.



*Figure 3a - The cost-effectiveness of reducing flood losses by elevating or relocating homes was dramatically demonstrated in parts of the Midwest in June, 1995. The top photograph shows an inundated mobile home park along the Missouri River during the Great Flood of '93. The same area flooded again in 1995 (bottom photograph, as the floodwaters were rising), but there was little flood damage because the families had been moved to new safe sites. Some 10,000 homes in the Midwest have been elevated, relocated, or acquired with Federal and state funds since 1993.*

*The New York Times noted that relocating homes out of the floodplain "...follows a shift toward a more realistic national floodplain policy, one that takes the emphasis off trying to control nature...by moving residents out of harm's way - changing the behavior of people instead of rivers." (5/6/96)*

St. Louis Post Dispatch



*"For years the Government spent billions of Federal dollars trying to keep water away from people. Missouri woke up and started moving people out of harm's way..."*

*Governor Mel Carnahan of Missouri, 1995*

M. Campbell

Aspects of the strategies of former eras still influence us in many ways — flood control structures, land-use patterns, agencies and programs, and even our thinking about these systems still reflect a single-purpose approach in many ways. Certainly we must live with some decisions of the past. But it is important to incorporate the new knowledge that is available to us, and to protect and enhance the valuable resources that are so important to the well-being of our communities. It is our hope that this guidebook will help those at the local level to successfully meet this challenge.

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## 2 Understanding Floodplain Resources

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### What Are Floodplain Natural Resources?

The term “natural resources” often brings to mind products, such as timber or fossil fuels that may be extracted from their natural environments and sold as commodities for profit. But the natural values of floodplains are different: their value lies not in their removal and sale, but in the functions that they perform within the floodplain environment. Floodplain natural resources include the soils, nutrients, water quality and quantity, and diverse species of plants and animals that exist in the areas between the water’s edge and the higher ground adjoining flood-prone areas. These can be considered as natural “infrastructure.” But what is it about these resources that make a naturally functioning floodplain so valuable? We will begin the discussion with some basic information about how floodplains are formed.

**Rivers Shape the Landscape** - The formation of a floodplain is intimately tied to the adjacent river or stream, which over long periods of time carves out the surface geology of the landscape and deposits sand, silt, and other material (these deposits are referred to as alluvium) that form rich soils. A typical river corridor has several features that result from the geological and hydrological processes that form these landscapes (Figure 4). The **river channel** meanders through the landscape, carving through the terrain and depositing sediment as it goes. Sediment deposits and depressions around the water’s edge may result in the formation of **wetlands**, areas that are always or periodically inundated with water.

The level areas bordering river channels are known as **floodplains**. These portions of river valleys are frequently defined in terms of the likelihood of flooding in a given year. Hence, the “100-year” flood is the flood having a 1% chance of occurring during any given year. (Similar definitions can be made for the 25- or 50-year floods.) As the river cuts downward it may leave **terraces**, formed from a time when the river flowed at higher elevations. These landforms are a part of the larger river corridor, and are extremely important to the functioning of the floodplain ecosystem.

**Watersheds** - While the floodplain and its resources are the centerpiece of discussion for this guidebook, watersheds are central to the understanding and management of resources in floodplains. A **watershed** includes the area of land that is drained by a river and its tributaries. Different watersheds are separated from each other by ridges

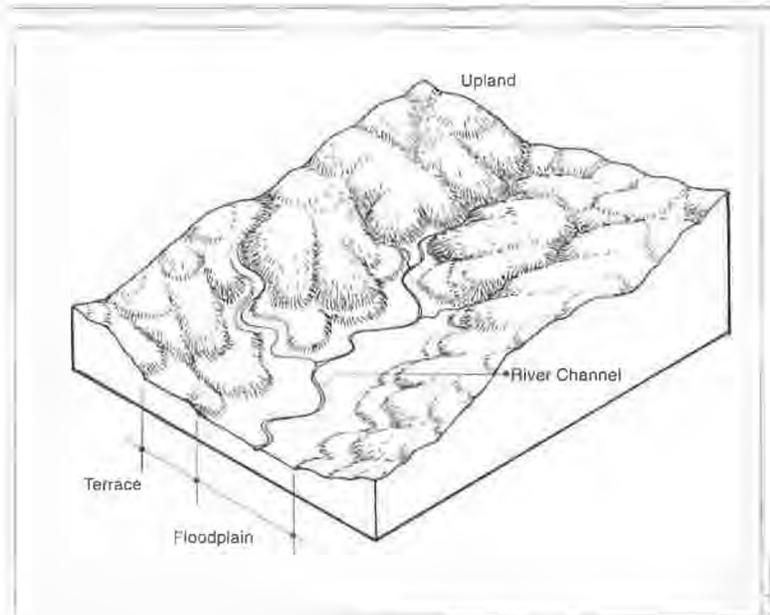


Figure 4 - Major physiographic elements of a typical floodplain.

or divides. Like floodplains, watersheds are formed over time by various climatic, hydrological and geological processes. But a watershed is much bigger than a floodplain and can therefore be more difficult to manage, since large land areas are usually covered by a number of separate municipalities with different governments and land-use strategies. It is important to understand, however, that upstream uses of land and water within a river's watershed are likely to have adverse impacts downstream including the potential for increased flooding.

**Natural Resources and Ecosystems** - Both the hydrological and the geological characteristics of the landscape play an extremely important role in determining what vegetation will inhabit the area. Many of the plant species that grow in floodplains are adapted to thrive in the specific conditions created by the soil types and water flow cycles that characterize river corridors. In turn, this vegetation plays an important role in determining how water flows across the land, and is a major factor in controlling erosion and sediment deposits that can change the face of the landscape.

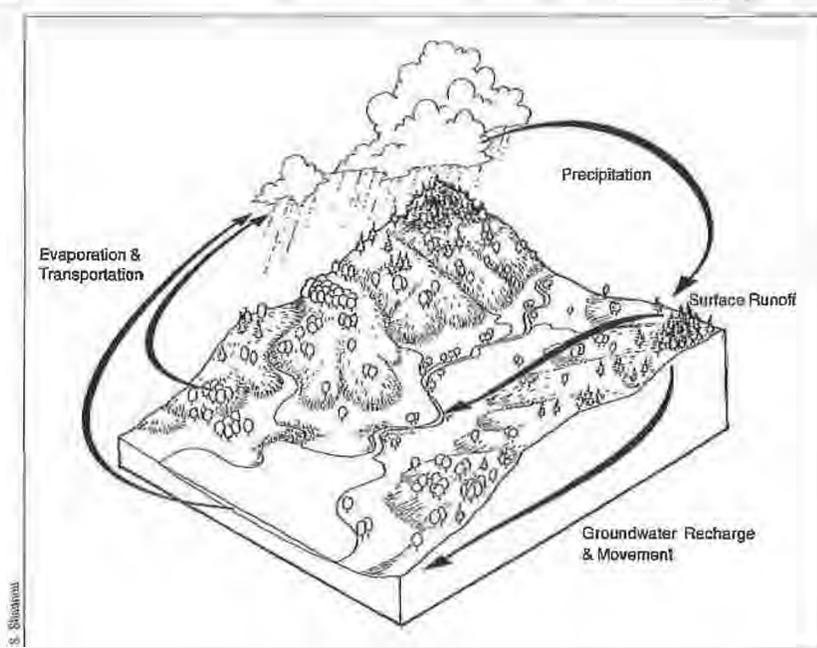
In a mutually supportive cycle, the living and nonliving parts of natural floodplains interact with each other to create dynamic systems in which each component helps to maintain the characteristics of the environment that supports it. These systems of interacting parts of the physical and biological worlds are called **ecosystems**. Together, these parts of the floodplain ecosystem function to store and convey floodwaters, protect water quality, prevent erosion, and maintain rich habitats for fish and wildlife. In recognizing the relationships between the hydrological, geological and biological features of these systems, we can begin to understand how changes to one feature can alter the entire system in significant ways. This was dramatically demonstrated during the Great Midwest Flood of 1993 when the Mississippi River reclaimed much of its floodplain. The flood reconnected the river to traditional spawning areas, resulting in a significant increase in fish populations.

**Natural Communities** - Throughout a floodplain and its adjacent landforms there may be a number of different **ecological communities**, groups of plant and animal species

Figure 5 - Coastal floodplains are geologically dynamic areas where moving sands, shifting inlets, and erosion are common. Coastal salt marshes are among the most productive ecosystems on earth and are a vital link in both commercial and recreational fishing.



Figure 6 - Major elements of the Hydrological Cycle in floodplains.



that coexist in a certain area. The various plant species within an ecological community may share the need for a certain soil type or level of soil moisture that is available only in a particular portion of the floodplain. Wet meadows, bottomland hardwood forests, and riparian shrub wetlands are examples of such communities. The boundaries of these ecological communities can be identified by the landform, soil, and plant types that cover a portion of the floodplain.

**Summary** - This section has introduced floodplain natural resources with an explanation of floodplains, watersheds, ecosystems and natural communities. The basic characteristics of floodplains and their natural resources function in ways that make them so valuable to humans and to wildlife. This is the subject of the next section.

### How Do Natural Floodplain Systems Function?

**The Floodplain Ecosystem** - Floodplain ecosystems are typified by the bottomland hardwood forests found in southern regions of the U.S., the floodplain forests of central and eastern areas, and small wooded areas and streambank vegetation in the western portion of the country. Each floodplain ecosystem has specific conditions that make it unique, and it is important to recognize these distinctive attributes when planning projects for a given area. But there are some general characteristics that are common to the functions of ecosystems in stream and river corridors.

**Hydrology** - Flooding is extremely important to the maintenance of floodplain ecosystems, and may be the primary reason for their biological richness. Floodwaters carry nutrient-rich sediments and trigger chemical processes that cause beneficial changes in the soil, which contribute to a fertile environment for vegetation. The degree of soil saturation from flooding (and resulting elevated groundwater levels) determines the types of vegetation that can grow throughout the floodplain and can create wetlands along stream channels. This is especially important in dry climates, where water is a particularly limiting factor for vegetation. In these areas, floodplains may be far more biologically productive than surrounding upland areas, which are often drier.

The ultimate determinant of the structure of floodplain ecosystems is the **hydroperiod**, or the timing (frequency and duration) and intensity of flooding. The hydroperiod, which is governed by the climate, soils, and geology of the area, determines the amount and movement of water in soils across the floodplain. This rise and fall of flowing water typically occurs at least once within the growing season. The saturation of soils for at least part of the year is one reason why wetlands tend to form in floodplains along stream channels. These hydrological features, combined with the connections to upland and aquatic ecosystems, are what make riparian ecosystems so special. (See Figure 7.)

**Soils and Nutrients** - The distinctive attributes of soils in riparian ecosystems are directly influenced by the hydroperiod, which determines the soil aeration (or oxygen level) as well as nutrients and content of organic material. In turn, the soil affects the structure and function of plant communities in these ecosystems. The aeration of soils is extremely important for rooted vegetation. When the corridor is flooded for long periods of time, low oxygen conditions can be created. Some plants have adaptations that help them to survive in such conditions. Soils in riparian areas (especially wetlands) generally have a high level of nutrients because of the continual replenishment of nutrients during flooding. The periodic wetting of the soil also releases nutrients from the leaf litter. (See Figure 8, page 10.)

**Vegetation and Habitat** - Any ecosystem that forms the edge of two other distinct ecosystems tends to be more biologically diverse than its neighboring systems. This is indeed the case with floodplains, as nutrients, energy and water provide for high biological productivity. The soil conditions that result from varying amounts of moisture in soils leads to a greater diversity of plant species in riparian areas. Floodplains may be characterized by different zones of vegetation, with shallow aquatic vegetation shifting gradually to shrubs and trees toward the upland elevations. This variety in plant life translates into greater diversity of habitats for wildlife. (See Figure 9, page 11.)

Diverse vegetation can support a wide variety of wildlife and smaller organisms that feed on the plants. In addition, the trees and shrubs of upland areas offer protection and nesting and roosting areas for many species. Trees standing or fallen adjacent to the

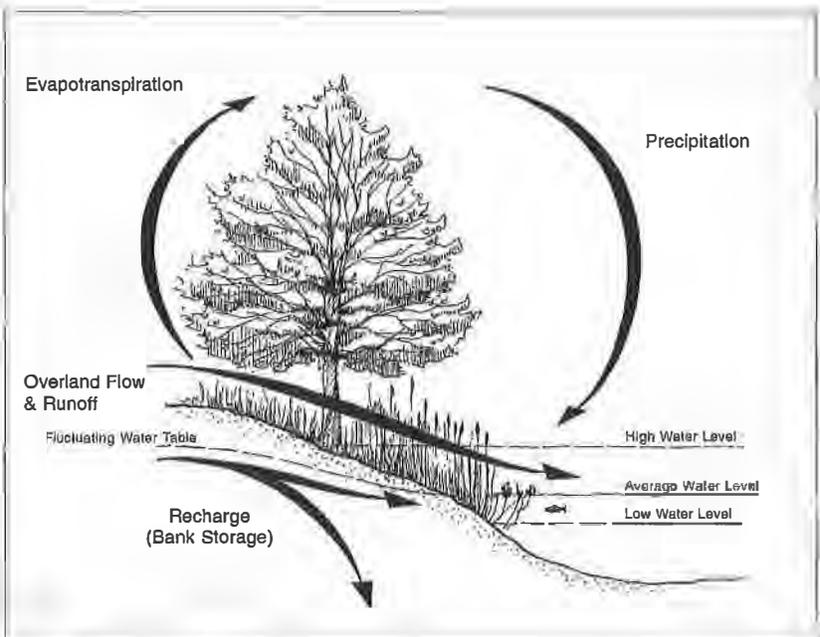


Figure 7 - Hydrologic Features in the floodplain.

*Table 1 - Natural Resources and Functions of Floodplains.*

Water Resources

*Natural Flood and Erosion Control*

- Provide flood storage and conveyance
- Reduce flood velocities
- Reduce peak flows
- Reduce sedimentation

*Water Quality Maintenance*

- Filter nutrients and impurities from runoff
- Process organic wastes
- Moderate temperature fluctuations

*Groundwater Recharge*

- Promote infiltration and aquifer recharge
- Reduce frequency and duration of low surface flows

Biological Resources

*Biological Productivity*

- Rich, alluvial soils promote vegetative growth
- Maintain biodiversity
- Maintain integrity of ecosystems

*Fish and Wildlife Habitats*

- Provide breeding and feeding grounds
- Create and enhance waterfowl habitat
- Protect habitats for rare and endangered species.

Societal Resources

*Harvest of Wild and Cultivated Products*

- Enhance agricultural lands
- Provide sites for aquaculture
- Restore and enhance forest lands

*Recreational Opportunities*

- Provide areas for active and passive uses
- Provide open space
- Provide aesthetic pleasure

*Areas for Scientific Study and Outdoor Education*

- Contain cultural resources (historic and archeological sites)
- Provide opportunities for environmental and other studies

Adapted from: *A Unified Program for Floodplain Management*, 1994.

river's edge act to stabilize its banks, while fallen branches and root masses create aquatic microhabitats in the form of pools, breaks, and ripples. A stream itself can be a source of food and cover for wildlife, and the corridors themselves offer pathways along which birds, mammals, and fish can migrate. Wetlands are particularly valuable as nesting and feeding areas for fish and waterfowl.

*Vegetation and Water in the Floodplain* - While the type of vegetation inhabiting a riparian ecosystem is largely determined by its hydrological conditions, the vegetation itself plays an important role in maintaining these very conditions. The interaction of

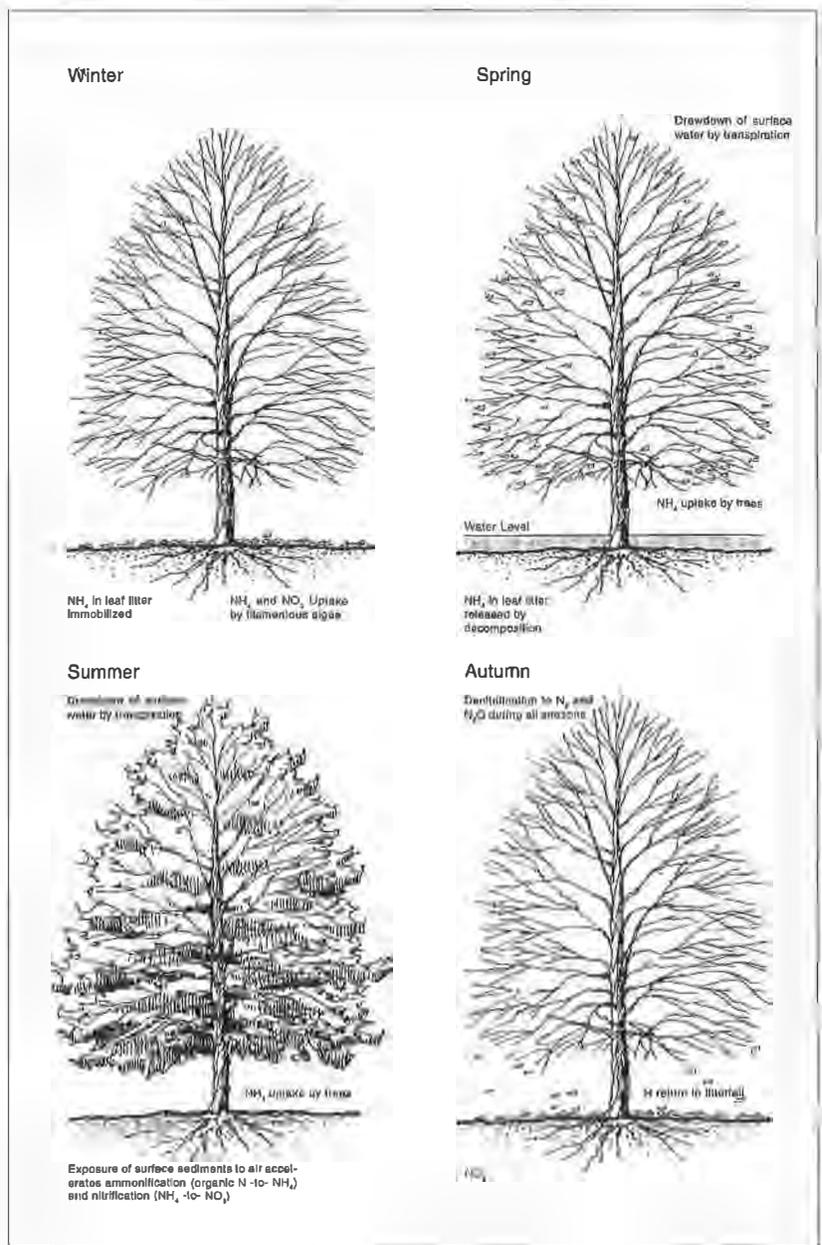


Figure 8 - Nutrient Cycling in a floodplain forested wetland ecosystem.

vegetation and water influences local microclimate conditions. Plants in river corridors provide natural floodwater storage capacity by retarding runoff and increasing the rate at which water infiltrates soils. This can result in the reduction of flood peaks downstream. Vegetation also allows the water to spread horizontally and more slowly, rather than running directly from upland areas into rivers or streams. In addition, the leaf litter and soils associated with floodplain vegetation act as sponges in absorbing some floodwaters. Vegetation also passes water to the atmosphere through transpiration.

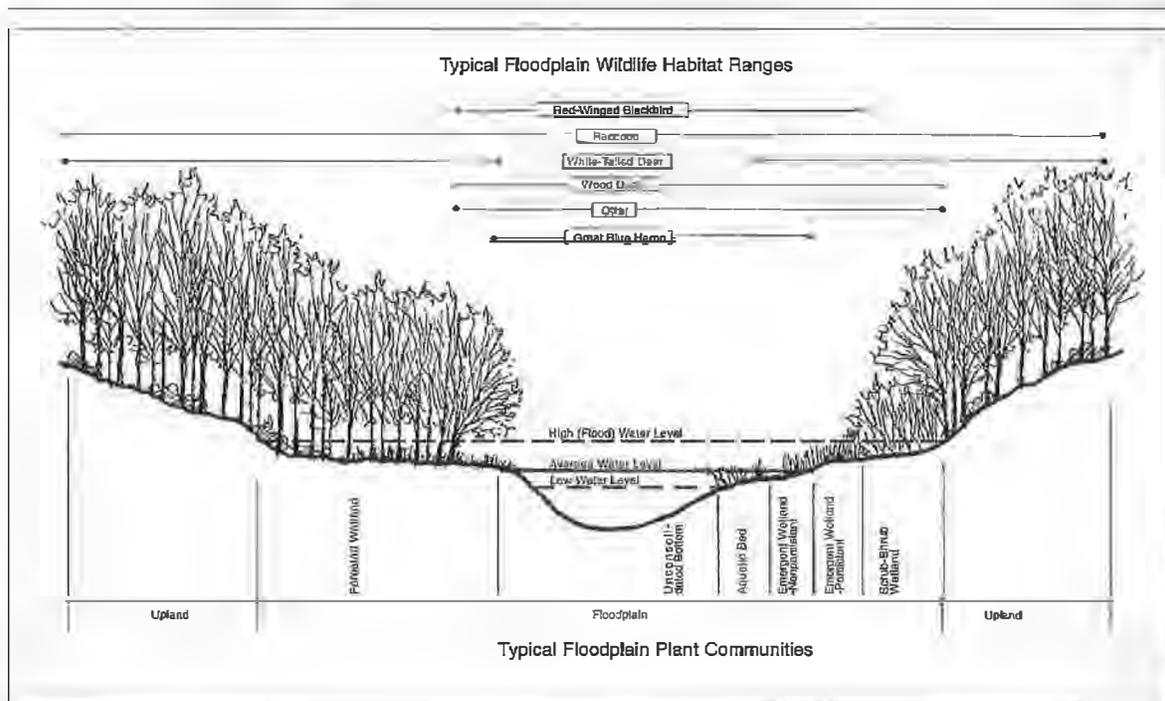


Figure 9 - The structure of plant communities and interconnecting wildlife habitats are strongly influenced by spatial and temporal patterns in the floodplain .

**Surface Water Quality** - Maintaining the ecological integrity of riparian areas can help to protect and even enhance the quality of surface water. This is true because of the critical role that riparian vegetation plays in these systems. First, trees and shrubs along streambeds can maintain the temperature of water by shading it. This is important as lower temperatures increase the capacity of the water to carry oxygen, which is critical for the support of aquatic life and decomposition of organic material.

Second, floodplain vegetation filters sediment and nutrients that move toward rivers and streams from upland areas. This function is crucial because excessive nutrients in aquatic ecosystems can disturb the balance and growth of species and reduce the availability of oxygen in the water. The results can include reduced diversity, unpleasant odors, and, ultimately, human health problems. The degree to which floodplain vegetation performs its filtration function is dependent on several factors, including the slope and width of the floodplain and the nature of the vegetation.

Excessive sediment in waterways can also blanket the gravel beds that are home to invertebrates such as insects and crustaceans. These creatures are an important link in the food chain, and destruction of their habitat can have far-reaching effects on other species in the ecosystem. Excess sediment can also disturb the areas in which fish eggs and young fish develop, with harmful effects on populations that may be essential to recreational fishing areas.

**Groundwater Supply and Quality** - Floodplains and wetlands can play an important role in contributing to sources of water supply for human consumption. The slowing and dispersal of runoff and floodwater by floodplain vegetation allows additional time for this water to infiltrate and recharge groundwater aquifers. Floodplain soils and vegetation can also help to purify the water as it filters down to the aquifer. The ability of wetlands to contribute to groundwater recharge varies with geographic location, season, soil type, water table location and precipitation, as well as wetland type.

In addition, water can also flow from higher groundwater systems into lower surface waters during periods of low flow, so that the frequency and duration of extremely low flows may be reduced. Many wetlands store water that is important for wildlife and may be used for irrigation during periods of drought.

**Summary** - Natural resources in floodplains interactively function to determine the distinctive attributes of soils, vegetation, habitat, and water. They also carry out valuable functions that provide benefits both to humans and to wildlife. How these functions can be encouraged or impeded by human activities on the land is the subject of the next section.



Figure 10 - The Mississippi River reclaims its floodplain during the Great Flood of 1993.

*"...ten thousand river commissions, with the mines of the world at their back, cannot tame that lawless stream, cannot curb it or confine it, cannot say to it "Go here," or "Go there," and make it obey; cannot save a shore which it has sentenced; cannot bar its path with an obstruction which it will not tear down, dance over, and laugh at."*

- Mark Twain,  
*Life on the Mississippi*



### 3 Human Activity - Multiple Uses of Floodplains

*“Rivers were here long before man, and for untold ages every stream has periodically exercised its right to expand when carrying more than normal flow. Man’s error has not been the neglect of flood-control measures, but his refusal to recognize the right of rivers to their floodplain...”*

*-Engineering News-Record, 1937*

While it is important to understand that natural resources of floodplains serve many valuable functions, we must recognize that humans use the land in ways that can impede these natural functions. If vegetation and soils play crucial roles in maintaining water quality and retarding runoff, then their disturbance or removal can inhibit or eliminate the functions that these ecosystem components perform. Loss of these functions should raise concerns for those communities in which floodplain land uses are not compatible.

Every community makes choices about land use. These choices will vary according to the characteristics of a particular community, and in many cases choices are limited by land-use decisions of the past. Current land-use patterns may reflect inadequate consideration or understanding of the consequences of altering natural features of the environment. Even so, it is important that an awareness of the value of natural functions is incorporated into the land-use decisions that will affect the future of any community.

Different levels of development and disruption to natural systems will have varying impacts on natural resources. For example, if the floodplain in your community is already fully developed, your management objectives will be quite different from those of a community that has a considerable amount of open space. Here are some different levels of land use development and corresponding considerations:

- Urban Areas** — It is likely that the floodplain within an urban community is already highly developed. Here, the management options include restoration of natural areas and the relocation of structures that are particularly threatened by flood hazards.
- Suburban Areas/Urban Fringe** — Urban fringe areas often face great development pressures, but may be fortunate enough to have some open space to work with. Effective planning is critical in these communities, and can include a focus on maintaining existing open areas along waterways and restoration of vegetation.
- Rural Areas** — Agricultural communities have a different set of floodplain concerns. They have an advantage in the fact that open space is probably already plentiful in the floodplain. Management strategies here should focus on controlling erosion and excessive nutrient loadings, as well as revegetating streambanks to restore natural ecosystem functions.



- ❑ Wildlands — Communities with very low-density development and much more open space already have functioning natural systems. Local officials in these areas have the opportunity to safeguard floodplain functions at the outset, and to maintain valuable habitats and superior water quality.

It may seem burdensome to plan for the protection of natural resource functions, particularly in heavily developed areas where economic concerns and space limitations are pressing issues. But every community must recognize that decisions about floodplain resources are decisions about the community’s future. With careful consideration and planning, rivers and streams can be aesthetic and functional assets that reflect community pride and ingenuity. However, a community that ignores the importance of natural floodplain functions may ultimately face flood losses and deteriorating water quality. In the end it would be less costly to plan well now.

Of course, not all human activities are incompatible with healthy, functioning floodplain ecosystems. Land uses that allow native vegetation to flourish and do not disturb soils are highly suitable within the floodplain. Well-placed parks or recreational areas that include vegetation are often ideal for maintaining flood storage capacity, and help to support the floodplain functions that protect water quality and sustain habitats for diverse wildlife species. Even open space areas such as agricultural lands can help to maintain flood storage capacity. In addition, there are proactive measures to restore naturally functioning floodplains, such as protecting or planting vegetated buffer strips and creating channel alterations for fish habitat improvement. The following sections describe specific land uses and their relationship to floodplain functions:

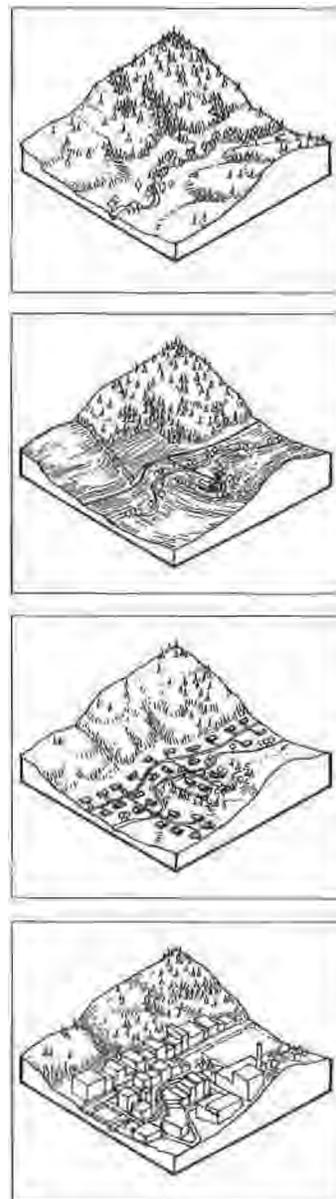
**Urban and Urban Fringe Areas** - Development within floodplains often occurs without consideration of the effects on floodplain natural resource functions. If an area is built up during a period when there have been few floods, the need for the flood storage capacity of a naturally functioning floodplain may have been overlooked. The loss of natural floodplain functions in heavily developed areas not only impedes flood storage, but also increases erosion and reduces the mitigating effects that vegetated areas can have on the pollution of waterways.

Impermeable surfaces such as buildings and pavement replace vegetation as ground cover, increasing the runoff that would have infiltrated in a natural floodplain. The removal of vegetation, destruction of wetlands, and paving in urban and suburban settings can thus increase the risk of flooding. Upstream development outside the floodplain can also result in increased runoff. Vegetation loss and excessive runoff within the floodplain can also cause increased erosion and sedimentation, which may cover spawning areas and bury food sources in streams. Loss of vegetation also removes sources of shelter and food for wildlife, and human-made structures may present barriers to migration and reproductive activity.

The lack of naturally functioning floodplain resources in urbanized or developing areas also has significance for water quality. Diffuse “nonpoint sources” sources of pollution related to urbanization, such as lawn fertilizers, leached materials from waste disposal areas, and chemicals leaked from automobiles, present a threat to water quality. Although it is most effective to address such problems at their source, vegetative buffers along waterways can help to mitigate such pollution. Urban areas also present direct “point sources” of pollution to waterways, such as sewage treatment plants and industrial discharge. Riparian vegetation would have little effect on this type of pollution.

Wetlands are particularly vulnerable to loss through human intervention. The draining and filling of wetlands for development and agriculture results in the loss of an important natural system for reducing runoff and maintaining the quality of surface and ground-

*Figure 11 - Floodplain development in the United States, as well as other countries, has significantly increased flood damages and often degrades the floodplain environment.*



*Figure 12 - Agriculture is a significant and important land use in many floodplains.*



water, and destroys the diversity and habitats for which these areas are recognized. In general, it is important to recognize that there must be a balance between the need for some floodplain occupancy and the tremendous benefits to be gained from maintaining naturally functioning floodplains.

**Agriculture** - While agricultural land uses do not impede the absorption of floodwaters as urban development does, agriculture can present other problems for floodplain resources. Fertilizers and pesticides associated with farming are major sources of nonpoint pollution of waterways. Erosion from poorly managed agricultural operations can cause excessive sedimentation in streams. The removal of vegetation along stream and river banks compounds these problems by eliminating valuable filtration functions.

**Recreation and Open Space** - Parks or recreation areas are one type of land use that is generally considered to be quite compatible with the healthy functioning of floodplain ecosystems. A tremendous variety of recreational activities can occur along rivers and streams. A simple trail provides an opportunity for hiking, jogging, cycling, or horseback riding, as well as increasing accessibility of the waterway to birdwatchers, photographers, and beachcombers. A more ambitious recreation plan might include provisions for water-based activities such as swimming, boating, and canoeing. Well-planned picnic or camping areas may encourage waterfront use by families, and some waterways and wetlands may be ideal for fishing or hunting waterfowl.

If recreational land uses are planned for the floodplain, it is wise to lay out a strategy carefully and to recognize the needs of different recreational groups. For example, swimming and powerboating in a narrow waterway might not be compatible activities, while pollution may detract from water recreation possibilities altogether. Wetlands may have particular value in performing natural floodplain functions, and are better suited to trails or waterfowl hunting than to picnicking. A good starting point is to take an inventory of existing recreation patterns for a waterway and of floodplain features that are unused but have potential. When planning for recreational uses of floodplains, it is important to design areas in ways that minimize potential damage. Heavy recreational use of riparian areas can destroy vegetation, thus reducing its water quality maintenance functions. Trampling off-trail vegetation can also lead to disruptions that reduce diversity of plant and animal life.

**Aesthetic Resources** - Scenic vistas can enrich the quality of life in any community, and are quite likely to be found overlooking waterways. Such areas make excellent targets for floodplain natural resource management plans. Existing or potential scenic areas can be identified easily with input from the public, who are most familiar with a community's special landscapes.

**Cultural Resources** - The centuries-old tendency of humans to settle near waterways has resulted in many historic structures and archeological sites along rivers and streams. Protecting these artifacts of our heritage may be an important part of a floodplain protection strategy.

**Greenways** - Greenways are linear parks or corridors of open space that may extend across many communities. They embody a strategy for keeping riverside areas largely undeveloped while providing recreational, cultural, and aesthetic resources. These chains of green may be dotted with nature centers, historic structures or other semi-open-space land uses, in addition to parks and wild areas with native vegetation. Greenways can help to protect long stretches of floodplain ecosystems, and serve as migration corridors for wildlife.





*Figure 13 - Boulder, Colorado is a good example of a community that has taken the initiative to transform its flood hazard areas into community assets by creating greenways with wildlife preserves, parks, and bike paths.*

**The Floodway** - The floodway is the most significant component of the floodplain, relative to maintaining the flood-carrying capacity of rivers and streams. The floodway is defined as that area of the watercourse plus adjacent floodplain land that must be preserved in order to allow the discharge of the base flood without increasing flood heights more than a designated amount. Communities are required to prohibit development within a floodway that would cause an increase in flood heights. Because a floodway is, in many respects, a *de facto* preservation tool, it also acts to protect critical riparian habitats, minimize degradation of surface water quality, and provide for greater ground-water recharge.

A number of states and local communities have adopted a more restrictive floodway which generally results in a wider floodway; thus a greater area of floodplain, especially sensitive riparian areas, would likely remain undeveloped. Some 5.8 million acres of floodways have been delineated along 40,000 stream and river miles in 7,800 communities nationwide. This is an area the size of Vermont or more than 2 1/2 times that of Yellowstone National Park.

**Watersheds — The Big Picture** - While it is important for communities to plan and take responsibility for the land uses that occur in their own floodplains, it must be recognized that flood level and water quality can be very much affected by land use activities that occur elsewhere in the watershed. Land uses along tributaries are likely to have an impact on downstream communities. Wise management of tributaries is therefore extremely important, as their protection can yield benefits for the entire network. Broad planning efforts among communities within a watershed can thus have far-reaching advantages.



#### 4 Planning for Resource Protection & Restoration

*“No higher duty can devolve upon the city authorities than that of protecting the property, health, and lives of the people; this is their permanent duty - a duty which cannot be evaded, nor can their right to do so be lost by neglect or bartered away.”*

*City of Welch vs Mitchell  
121 S.E. 165 (1924)  
The first court case involving  
floodplain regulations.*

Planners who value their community’s long term vitality and high quality of life should support a highly participatory approach for planning resource protection and restoration in the floodplain. Building consensus among all affected stakeholders, however diverse, best provides an opportunity to establish mutually supportive partnerships and offers the obvious benefits of commitment to basic goals and objectives and more meaningful implementation. Initially, however, any group must decide on a basic organizational approach. Options might include allowing all planning and resource acquisition to be accomplished by:

- a government agency
- a private nonprofit association
- a public-private partnership

Whichever organizational option is chosen, a community approach is needed that involves various, diverse stakeholders in planning floodplain use and management, e.g., land owners, resource managers, local government, environmental advocates, and agricultural and business interests. One of the best ways to start is to do an informal reconnaissance—just invite people to walk the floodplain area together. In the process, the members can start to compile natural resource information as well as floodplain management problems. This is a time to collect ideas, not debate priorities or approaches. This process might need to be repeated, depending on the number and interest of stakeholders. The key is to build ownership of the decision-making process by providing opportunities for all stakeholders to contribute. These experiences should generate a fairly comprehensive list which may include needs, concerns, desires, problems, issues and even solutions from which goals and objectives can be developed. Goals should reflect more general directions and objectives should delineate the more specific means of accomplishing those goals.

Next, choose an approach among single purpose, multiple purpose or comprehensive planning. If the issues are very focused and small in scale, a single purpose approach may be appropriate, e.g., such as creating a river floodplain park. Most groups opt to use a multiple purpose approach; that is, to work simultaneously to meet several needs, e.g., preserving wildlife habitats, reducing flood losses and enhancing water quality in the floodplain.



A comprehensive holistic approach looks at an entire watershed or floodplain as an interrelated environment and attempts to satisfy numerous needs while utilizing a long range vision. This watershed approach requires the planning group assess two major items: the resources necessary to undertake the plan; and the organization appropriate to oversee actual watershed assessment and management. Adjoining communities must be agreeable to dedicating their own efforts to a collaborative process.

The chosen approach also implies how the floodplain planning group will be organized, e.g., private, public, agency driven, private-public partnership, etc.. As noted earlier, the authors urge the planning group to use a participatory approach that involves all stakeholders and allows for as much participation as possible within the various planning tasks. Once the group is organized, goals and objectives are initially set, and a planning approach is specified, then the planning group is ready for floodplain assessment. The following offers some basic steps for assessment:

### Step 1: Identify the Planning Area.

Obtain a base map of the principle drainages and sub drainage basins as well as the floodplain area. Planning should include all the land area from which floodplain problems are perceived to arise. This might include an entire watershed, but more likely will include a section of the floodplain and a land area of not fewer than several hundred feet landward from the banks of a stream or river. The area delineated should not include less than the "100 year" floodplain and should remain flexible because the boundaries may change as information becomes available and updated. As an example, some areas, such as latter tributary buffer zones, may or may not actually lie within a definite floodplain. The maps of your community's floodplain provided by FEMA are a good place to start.

### Step 2: Conduct an Inventory and an Analysis of Land Use and Environmental Concerns.

Broad stakeholder participation is important for the inventory and analysis stage. Participation is useful because as stakeholders become familiar with the floodplain natural resources and management issues, this paves the way for more understanding and agreement on management and implementation steps (see Figure 14).

Choose a reference scale that will be consistent for all maps. This is important so that all recorded information will facilitate accurate comparison of data in analyzing development trends and environmental constraints (see Figure 16).

#### Natural and Cultural Resource Inventory and Assessment

The first stage of the inventory should be the collection of data regarding the natural and cultural resources in the planning area. For each category of resource data, we have suggested a particular, appropriate resource as well as participatory opportunities in the Table above. The table is illustrative of the types of information needed for the natural and cultural resources inventory. The key is to gather enough information to understand how floodplain natural resources and functions are part of an ecosystem, e.g. how the vegetative communities and wildlife depend on local water levels and flows. Particular attention should be focused on areas needing special management or protective measures, e.g. wetlands, wildlife and fisheries habitat, water bodies, and habitats of rare and endangered species.

The inventory should be based on reliable and acceptable sources of information such as those indicated in the middle column; however, opportunities abound for local participation in data acquisition if this work is carried out in a methodical manner (see Figure 14). In fact, some types of information, such as scenic resources, are best inventoried by local citizens. Information might also be obtained from regional and local

*Figure 14 - The planning process works best when all stakeholders are involved.*



*Figure 15 - Inventorying floodplain resources in the field.*



*Table 2 - Natural Resource Data Categories, Sources, & Participatory Options. Acronyms and abbreviated agency names:*

*DNR = Department of Natural Resources or equivalent state agency  
 FEMA = Federal Emergency Management Agency  
 NRCS = Natural Resources Conservation Service  
 NWS = National Wetlands Inventory  
 USFWS = United States Fish and Wildlife Service  
 USGS = United States Geological Survey*

Category Option	Expertise Source	Participation
surficial/bedrock geology	USGS office files surficial/bedrock maps	field trip to identify land forms apparent
soils, soil depth, erodibility, soil structure wetness, percolation & slope	NRCS office & published county soil survey, county extension agent	field trip to sample soil types & attributes
vegetation types & species	existing vegetation mapping aerial photos, local vegetation experts state natural heritage program	field trip for identification & major veg. communities
surface & ground water hydrology, water quality class	USGS office files state env. quality office	limited fieldwork options - note hydro-logic surface features
aquifers & recharge areas-water bodies	USGS files & maps	limited fieldwork
historic/archeological sites & districts	focal historians & archeologists	look for local historic archeologic studies & maps
wetland location & assessment	USFWS office & State DNR office	fieldwork to check NWI maps or state agency for wetland existence, equivalent & vegetation health
fish & wildlife habitat by species	state fish & game office or USFWS surveys	fieldwork to observe wildlife & fish during different seasons
rare & endangered plant & animal species	consult local experts or existing surveys in study area & USFWS	check for lists of endangered species or the area - combine w/fieldwork
floodplains & areas of tidal inundation	Check existing FEMA maps	look for flooding not on existing maps
areas of outstanding scenic quality	look for any existing visual perception surveys	do local surveys, e.g., nominate scenic areas & self-employed photography

planning agencies, county environmental management councils, and local conservation advisory boards or equivalents. Many of these agencies have prepared natural resource inventories, open space indexes, and natural resource plans.

The next step is to assess the existing functions and benefits that the natural resources in the planning area provide to the community. This assessment would include functions such as flooding reduction, nutrient cycling, biological diversity and habitat support, maintaining water quality as well as open space benefits including recreation, aesthetics, heritage and cultural resource maintenance.

**Existing Land Use and Development Trends**

Evaluate existing land use including county and local economic development trends in the planning area that may impact it. Include in the evaluation such growth inducing factors as current and anticipated major public and private capitol investments, including:

- industrial expansion
- major commercial development
- suburban residential development
- development of natural resources (e.g. forestry, mining, recreation, etc.)
- other social and economic trends

The evaluation should include:

- a) development that has occurred over the last few years,
- b) current development activities that are influencing the patterns and magnitude of growth, and
- c) development now in the early stages of planning which may impact the river or stream corridor in the future. The evaluation should show patterns and intensity of land use in the planning area, including urban and non-urban uses planned for undeveloped areas. The relative density and zoning classification, i.e. industrial, commercial, residential, etc., should be mapped, especially if the need for urban, urban fringe, or expanding land use is apparent. Obviously, if the community is primarily rural or wild land — this may be less of an immediate issue; however, projecting all future land use possibilities is always wise.

**Environmental Analysis**

Information from the natural resources inventory should be used to evaluate growth and development in the planning area such as floodplains, critical wildlife habitats, high erosion potential, historic landmarks, scenic vistas, high ground water table, wetlands, etc.. This can be done in a number of ways.

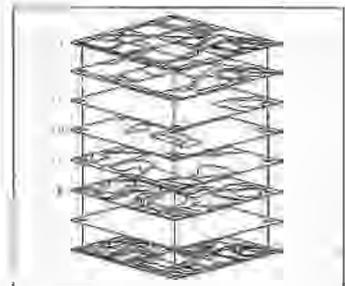
The first way is a weighting of factors from the natural resources inventory as constraints to development ranging from “slight” to “moderate” to “severe.” Transparent overlay maps with shades of gray corresponding to the three levels of constraint can be juxtaposed to indicate the degree of constraint or incompatibility with proposed land use development (see Figure 16). This is called a weighted overlay method.

Another approach is to look at the functions (benefits) provided by the natural floodplain environment such as flood minimization, nutrient cycling, biological diversity, water quality maintenance, contribution to ground water supply and quality, as well as open space functions. The question is to what degree existing or proposed development impacts or reduces these functions (benefits). If these functions are valued, specific controls or performance conditions should be placed on future development in the floodplain such as no net loss of flood storage or conveyance capacity, alteration of existing hydrological processes, disruption of existing habitat values, perceptible change in landscape character, or reduction in open space, etc.. The focus is not so much about a particular land use being incompatible; the focus is more about designing particular land uses or activities so they do not impact the existing ecosystem functions. One could even go further and describe restoration of lost functions in an urban or heavily impacted floodplain.

A third approach is to involve the local stakeholders in discussing and prioritizing both:

- 1) the floodplain natural resource values and functions
- 2) development issues.

*Figure 16 - The inventory of environmental characteristics, such as flood zone, land use, and vegetation types is best accomplished by mapping each characteristic individually. The synthesis of this information requires the ability to consider multiple characteristics and their spatial interaction, such as through the use of weighted overlay analysis or computerised GIS modelling.*



Adapted from R. Hawke

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In this way, some intermingling of local development needs and natural resource protection could be achieved by facilitating town meetings, advisory boards, even negotiations or mediation rather than dictating “professional planning” directives. Such stakeholder discussions are needed if realistic, supported implementation is expected.

In undertaking whatever approach is selected for the environmental analysis, it is useful to consult with other planning agencies, environmental management councils, conservation commissions, and professional resource managers to assist in the classification and interpretation of information in the natural resource inventory.

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### Step 3: Conduct a Problem and Need Assessment

This is one of the most important steps in the assessment process. Problems and needs can be separated into three categories:

- in-stream problems
- floodplain corridor problems
- watershed problems

#### **In-stream Problems and Needs**

In-stream problems and needs directly affect the bed and banks of the water body. Problems include, for example, destruction of fisheries habitat through stream channelization, removal of stream bank vegetation, sedimentation, and problems related to the pollution of the stream bed including debris and wastes, affecting both water quality and aesthetics. The location of these problems and sources should be mapped on a base map overlay or some other information storing device such as a geographic information system. Management needs such as fisheries management, water quality management, floodplain management, recreation development, restoration or rehabilitation of scenic resources, etc. should be discussed and linked to implementation.

#### **Floodplain Management Problems and Needs**

The floodplain is the land that normally has the greatest influence on the quality and character of a river, stream or creek. A stream or river is most vulnerable to sediment from erosion and runoff which originates in the corridor. It is also vulnerable as a result of the heat gained through the removal of a corridor’s vegetative canopy. Thus, flood-prone areas and land activities in the corridor which adversely affect a river, stream or creek should be identified and mapped - especially if they are related to agriculture, forestry, construction/urban encroachment, or mining activity. A description should be made of these activities and how they are impacting the water body or associated wetlands, for example, whether it is a quality or quantity alteration of the ecological structure (see functional analysis in the earlier assessment section). Professional resource managers from your state Department of Natural Resources (DNR) or equivalent, County Soil and Water Conservation Districts, County and local planning agencies, and environmental management councils should be consulted as necessary.

#### **Watershed Management Problems and Needs**

If local communities are to protect and conserve the resources of the streams, creeks and rivers—they may have to look beyond the watercourse and corridor and consider the watershed in its entirety. Because of the cause-effect relationships of the various processes inherent in the land use of streams, creeks, and rivers, water courses serve as an index of the health of the entire watershed. Accordingly, water management problems such as non-point pollution that are related to various land use activities that extend beyond the stream corridor and which are more watershed wide concerns should be described and mapped if the planning group opts to include a watershed wide approach.

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#### Step 4: Define the Corridor Management Boundary

While no precise scientific formula for determining the optimum boundary location for any given corridor management unit can be offered, completion of the preceding steps should help in establishing a “floating” working boundary.

A floating flood plain conservation and management corridor varies in width according to the location of important natural resource features and environmental constraints that exert a strong influence on the character and quality of the stream and its surroundings. Wooded areas, wetlands, flood plains, scenic vistas, and areas having land use constraints, such as steep hillsides or soils having high erosion potential, should be included in the management corridor. However, it may be adequate to focus on the floodplain areas as delineated in your flood maps provided by FEMA.

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#### Step 5: Develop an Action Plan/Agenda

The next step is to move from problems and opportunities to developing an action plan for implementation of various measures that might be needed to protect natural resources in the flood plain. It is especially at this stage that maximum participation of all stakeholders is needed. Ideally, meaningful public participation has been continuous up to this point.

To create an action plan or agenda, there are three activities:

- review goals/objectives and philosophical perspectives;
- create the Action Agenda; and
- determine the sequence of events.

For the first activity, when developing and reviewing your goals and objectives, you can find guidance in the President’s letter transmitting the 1994 document *A Unified National Program for Floodplain Management* to the Congress:

[The Unified National Program] recognizes the importance of continuing to improve our efforts to reduce the loss of life and property caused by floods and to preserve natural resources and functions of floodplains in an economically and environmentally sound manner. This is significant in that the natural resources and functions of our riverine and coastal floodplains help to maintain the viability of natural systems and provide multiple benefits for the people.

It is in this spirit that your organization should review basic goals and objectives as well as adopt an overall strategy to protect floodplain resources.

According to “A Unified National Program in Floodplain Management” (1986 & 1994) two basic strategies can be employed to protect a floodplain’s natural resources:

1.) *Preservation of Resources*: Preventing alteration of floodplain natural and cultural resources, and maintenance of the flood plain environment as close as possible using all practical means.

2.) *Restoration of Resources*: Re-establishment of a setting or an environment in which natural functions can again operate.

Preservation strategies focus on strict control or prohibition of development in sensitive or highly hazardous areas (through establishment of wildlife sanctuaries, for ex-

ample) while restoration strategies focus on actions to improve the quality or functioning of degraded floodplains (by restoring damaged wetlands, for example). It is not always possible, however, to make a clear distinction between the two strategies. Preservation and restoration of floodplain natural resources are often accomplished, either directly or indirectly, through a wide variety of development controls or by means of regulatory standards designed to protect valuable natural resources or minimize adverse impacts to those resources.

Preservation strategies do not exclude management activities that are compatible with sustaining floodplain functions. Preservation strategies, for example, can include activities to improve habitat conditions and the nonpoint pollution control functions of forests at the water's edge. Types of regulatory activities and management programs that directly or indirectly contribute to the restoration and preservation of living resources/habitat resources include:

- single and multi-purpose resource protection and management programs that include objectives for habitat and living resources protection that apply to floodplains
- incorporation of provisions for protection of habitat and living resources in zoning, subdivisions, and other land-use regulations that apply in whole or in part to floodplains
- incorporation of specific provisions related to living resources and habitat protection in floodplain management programs and regulations.

These kinds of programs can be directed toward inland and coastal wetlands, estuarine and coastal areas, barrier beaches and sand dunes, rare and endangered species, riverine and coastal fisheries, and wild and scenic rivers. Most of the nation's wetlands, coastal barriers

*Table 3 - Strategies and Tools for Floodplain Management* - Source: Federal Interagency Floodplain Management Task Force. *A Unified National Program for Floodplain Management*. Washington, D.C.: Federal Emergency Management Agency, 1986, 1994.

<p><b>STRATEGY - Modify Susceptibility to Flood Damage and Disruption:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> floodplain management land use regulations</li> <li><input type="checkbox"/> building codes</li> <li><input type="checkbox"/> acquisition/relocation</li> <li><input type="checkbox"/> development and redevelopment policies</li> <li><input type="checkbox"/> information and education</li> </ul> <p><b>STRATEGY - Modify Flooding:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> dams, levees, floodwalls</li> <li><input type="checkbox"/> channel alterations</li> <li><input type="checkbox"/> land treatment measures</li> <li><input type="checkbox"/> on-site detention facilities</li> </ul> <p><b>STRATEGY - Modify the Impact of Flooding on Individuals and the Community</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> flood insurance</li> <li><input type="checkbox"/> disaster assistance</li> <li><input type="checkbox"/> information and education</li> <li><input type="checkbox"/> tax adjustments</li> </ul> <p><b>STRATEGY - Protect and Restore the Resources and Functions of Floodplains:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> floodplain, wetland, and coastal barrier resources regulations</li> <li><input type="checkbox"/> land use planning</li> <li><input type="checkbox"/> conservation easements</li> <li><input type="checkbox"/> watershed management</li> <li><input type="checkbox"/> tax adjustments</li> <li><input type="checkbox"/> information and education</li> </ul>
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and marine sanctuaries are located within riverine and coastal floodplains, and restoration and preservation of the living resources and habitat resources of floodplains are often accompanied through multi-objective programs or regulations aimed at protecting inland wetlands, coastal wetlands and barrier islands.

Preservation and restoration of floodplain water resources has been accomplished through a variety of water supply, watershed management, agricultural erosion control, and water quality maintenance and improvement programs.

Protection of floodplain cultural resources has been accomplished through open space and recreation planning and urban renewal programs, especially in older cities where early settlement concentrations occurred in the floodplain. Some of these programs include waterfront redevelopment projects, historic and cultural resources protection programs, and a variety of multi-purpose open space programs including programs that focus on the development of water-oriented recreation, public access and greenbelts.

The second activity is to create the Action agenda utilizing strategies from Table 3 with specific tools from Table 4. For each action come up with preliminary answers for the following questions, remembering that none of them are carved in stone, but can be changed as needed.

**Who will take responsibility for initiating and implementing the action?** One group could take the lead role, or the work could be shared among a number of groups or individuals. If no firm commitment to take a leadership role exists, consider ways of generating interest in carrying out this action in the future, rather than immediately.

**How will the action be taken?** Break it down into main components. For example, creating a riverfront bike trail could involve meeting with elected officials, fundraising, preparing a slide show to publicize the effort, and asking a local university for design assistance.

**When will the action be taken?** Sometimes a fixed deadline is approaching that will determine your timeframe. For instance, a hearing date may be scheduled for a proposed flood protection project. In other cases you may need to know only that a given action, such as a water quality monitoring program, should be accomplished within the next year or by the end of the following summer. Perhaps one action will begin only after another is completed. These timeframes provide a general guide for planning your work.

The third activity is to determine the sequence of events. The action agenda outlines a framework for taking actions in a logical sequence leading to the fulfillment of your natural

<p><b>TOOLS FOR:</b></p> <p><b>FLOOD STORAGE AND CONVEYANCE:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Minimize floodplain fills and other actions that require fills, such as construction of dwellings, factories, highways, etc.</li> <li><input type="checkbox"/> Require that structures and facilities near wetlands provide for adequate flow circulation.</li> <li><input type="checkbox"/> Use minimum grading requirements and save as much of the site from compaction as possible.</li> <li><input type="checkbox"/> Relocate non-conforming structures and facilities outside the floodplain.</li> <li><input type="checkbox"/> Return the site to natural contours.</li> <li><input type="checkbox"/> Preserve free natural drainage when designing and constructing bridges, roads, fills and built-up centers.</li> <li><input type="checkbox"/> Prevent intrusion on and destruction of wetland, beach, and estuarine ecosystems, and restore damaged dunes and vegetation.</li> </ul>
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*Table 4 - Examples of Tools for Protecting and Managing Natural Floodplain Resources. - Source: Federal Interagency Floodplain Management Task Force. A Unified National Program for Floodplain Management. Washington, D.C.: Federal Emergency Management Agency, 1986 & 1994.*

Table 4 - (Continued.)

**WATER QUALITY MAINTENANCE:**

- Maintain wetland and floodplain vegetation buffers to reduce the build up of sediments and the delivery of chemical pollutants to the water body.
- Support agricultural practices that minimize nutrient flows into water bodies.
- Control urban run off, other storm water, and point and nonpoint discharges of pollutants.
- Support methods used for grading, filling, soil removal, and replacement, etc. to minimize erosion and sedimentation during construction.
- Restrict the location of potential pathogenic and toxic sources on the floodplain, such as sanitary landfills and septic tanks, heavy metals wastes, etc.

**GROUND WATER RECHARGE:**

- Require the use of permeable surfaces where practicable and encourage the use of detention/retention basins.
- Design construction projects that eliminate, reduce, or hold back runoff.
- Dispose of spoils and solid waste materials so as not to contaminate ground and surface water or significantly change the land contours.

**LIVING RESOURCES AND HABITATS:**

- Identify and protect wildlife habitats and other vital ecologically sensitive areas from disruption.
- Require topsoil protection programs during construction.
- Restrict wetland drainage and channelization.
- Reestablish damaged flood plain ecosystems.
- Manage timber harvesting and other vegetation removal.

**CULTURAL RESOURCES:**

- Provide public access to and along the waterfront for recreation, scientific study, educational instruction, etc.
- Locate and preserve from harm historical and cultural resources; consult with appropriate government agencies or private groups.

**AGRICULTURAL RESOURCES:**

- Minimize soil erosion on cropped areas in floodplains.
- Control, minimize, or eliminate the use of pesticides, herbicides and fertilizers.
- Limit the size of fields and promote fence rows, shelter belts, and strip cropping for improved wildlife habitat.
- Strengthen water bank and soil bank type programs in a manner consistent with alternate demands for use of agricultural land.
- Minimize irrigation return flows and excessive applications of water
- Eliminate feedlot type operations.
- Discourage new agricultural production requiring the use of drainage.
- Retain agricultural activity on highly productive soils where flood risk is compatible with the value of the crops grown.

**AQUACULTURAL RESOURCES:**

- Construct impoundments in a manner that minimizes alteration in natural drainage and flood flow. Existing natural impoundments such as oxbow lakes and sloughs may be used with proper management.
- Limit the use of exotic species, both plant and animal, to those organisms already common to the area or those known not to compete unfavorably with existing natural populations.
- Discourage mechanized operations causing adverse impacts. Machinery such as dredges, weeders, and large scale harvesting equipment may lead to environmental problems such as sediment loading in adjacent watercourses.
- Use extreme caution in the disposal of animal waste.

**FORESTRY:**

- Control the practice of clear cutting, depending on the species harvested, topography, and location.
- Complement state laws governing other aspects of harvest operations such as proximity to water courses, limits to road building, equipment intrusions, etc..
- Include fire management in any overall management plans. Selective burning may reduce the probability of major destructive fires.
- Require erosion control plans on all timber allotments, roads and skidways.

resource conservation goals. An effective action agenda will show concisely the scope of your whole effort, but it is not specific enough to include all the tasks that will actually go into the work. Organizing your time, resources and people is often necessary to make actions come to life. Not every action or event will require a detailed list of tasks, but in many cases a complex project becomes more manageable when broken down in this way.

What you can do to get started is to make lists of everything and everyone you will need as part of the major actions. These lists can be arrayed on a time-line by weeks or months, and ordered in a logical sequence. People can be assigned to the tasks and deadlines can be set for each step. Once you're satisfied that this process will lead you in the right direction - producing the maximum results with the minimum effort - you are set to begin.

This is where talking and planning end and action takes over. Your assessment of floodplain natural resources and issues, your public involvement efforts, goal-setting and selection of alternatives have led you to this point. You have given form to your ideas and you are ready to achieve results.

### Final Step 6 - Implementation and Monitoring of the Action Plan

Once an action is begun, it generates its own momentum, and its success is sometimes difficult to evaluate objectively. It is important to keep track of your progress to be sure that you are accomplishing your floodplain conservation goals, as outlined in the action agenda. Are you meeting the timeframe that you expected? Are the responsible parties continuing to carry out their actions? If not, should responsibilities be shifted or shared with another group?

While monitoring your work, it is also important to continue to publicize your efforts, with an eye toward continuously expanding your base of support. Periodic public events - an annual floodplain festival, a traveling slide show, a clean up day - are good ways to achieve this purpose, and to keep the public aware of the river as a valued resource. Events also serve as a way to celebrate your progress and show appreciation for those who have worked with you. A scheduling chart for implementation can also include monitoring activity as well. Communities should be aware of the opportunity to integrate with the National Flood Insurance Program's Community Rating System to acquire open space as this will result in lower flood insurance rates. Monitoring is another opportunity for broad participation of the stakeholders and should include assessing current status of floodplain resources and problems as well as implementation progress.

A good example of the development of an effective action plan is the recent effort to protect the New York City water supply. Over a period of years, the quality of the surface water in a number of reservoirs has degraded due to increasing development and other activities within the watersheds. To meet safe drinking water standards, a water treatment plant costing upwards of \$8 billion would be needed if the quality of the water supply could not be maintained. The City and State of New York, local communities within the watersheds, and environmental groups worked together to develop a watershed management plan that would protect water quality while still allowing for economic development. Although there were a number of contentious issues, and it took several years to formulate, an agreement was reached by all the stakeholders. This is not only a good example of the planning process working, but also clearly demonstrates that economic growth and environmental quality are mutually compatible goals. However, it will be a number of years before the efficacy of the plan can be fully evaluated.



*Figure 17 Though still meeting safe drinking water standards, some of New York City's 19 reservoirs have been adversely impacted by runoff and other non-point source pollution in recent years. Protecting floodplain resources throughout the watershed, such as by preserving and restoring vegetated riparian buffers, will help to maintain and enhance the drinking water for over 9 million people.*

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**5** Case Studies



## Wildcat and San Pablo Creek

North Richmond, California

### Background

For years flooding was a major problem in the unincorporated community of North Richmond, California. The impoverished community faced annual floods as a result of overflowed creeks and poor drainage, and more serious floods every few years. During the 1940s and 1950s, the Army Corps of Engineers conducted a study of Wildcat and San Pablo Creeks, but decided against launching a project to remedy the community's problems because the low value of the structures in North Richmond's floodplain made a flood control project unjustifiable in the government's cost-benefit analysis.

During the 1970s, the U.S. Department of Housing and Urban Development approached the community with a "Model Cities Plan" aimed at promoting social well-being, environmental quality, and economic redevelopment. The plan was initiated with a cost-benefit analysis that finally enabled the community to get federal help for its flooding problems. The citizens of North Richmond responded favorably and worked enthusiastically with the Corps of Engineers to create a flood control plan that also included such community enhancing features as recreation areas and landscaping. But the plan collapsed when the community was unable to raise the 50% funding that it was required to pay for certain aspects of the project. In the early 1980s, the County Board of Supervisors created a scaled-back plan that addressed only the flood control aspects of the project. But some citizens still had visions of a plan that could serve a wider range of the community's needs. After the scaled down, take it or leave it, "Selected Plan" presented by the County Board of Supervisors, a community coalition (made up of citizens and interested organizations) came up with its own plan (Modified Plan) and also showed the inadequacies of the Selected Plan. They attended public meetings and forced the County to listen to their plan. They used a 1960's participation strategy known as advocacy planning by soliciting their own paid and unpaid experts to develop the Modified Plan. The multi-objective stream corridor management effort that resulted when this coalition came together provides a great example of how an impoverished community empowered themselves and accepted the challenge to direct their own future.



Figure 18 - Location Map



Figure 19 - Wildcat Creek near the marshlands of San Francisco Bay

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### Implementation

The coalition was determined to come up with a floodplain management strategy that also addressed environmental concerns and broader community needs. They presented their plan at public meetings as an alternative to the Selected Plan. After heated debate between the two plans the County Board of supervisors approved the Selected Plan. However, the Selected Plan did not meet a series of regulatory approvals because of environmental deficiencies with their plan. The two creeks were classified by the State as one of the last remaining streams in the area with an almost continuous riparian environment. The Selected Plan would have created an ugly concrete and earth lined channel destroying much of the natural setting. Also, there were major concerns that sedimentation would disturb the marsh and wetland areas. Further, high maintenance costs would be incurred by the local community for the periodic cleaning of the channels where sediments would build up.

A new design team was then formed out of a crisis situation caused by the lack of support for the project on the part of State and Federal regulatory agencies and by the negative publicity of the Selected Plan, and not out of the philosophy of consensus planning. The design team was made up of representatives from both plans and they were to build the "Consensus Plan", which combined both environmental and flood control goals.

The planning process for the Consensus Plan was crucial in creating a plan that would break the 29 year logjam. The process considered all the relevant stakeholders to be co-equal and allowed the community of North Richmond to determine its own fate. The planning sessions were grueling, but unbiased leadership and inclusion of all interested parties made the meetings successful. Implementation of the Consensus plan began two years after its inception, breaking the stalemate.

Funding for the Consensus Plan was critical to the project's success. The project's broad range of objectives made it eligible for funding from agencies unable or unwilling to contribute to single-objective flood control ventures. Citizen groups in this impoverished community found funding through government agencies, foundations and environmental groups. The East Bay Park District provided funding which was matched by the Corps of Engineers for connecting a regional trail system to the two creeks and to create a nature study area. This idea was originally in the Model Cities Plan but funding was unavailable at that point.

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### Natural Resource Protection Opportunities

Unlike most waterways in the San Francisco Bay area, Wildcat Creek is still endowed with riparian habitat along its entire length. For this reason, team members felt that it would be a mistake to replace the natural streambanks with concrete channels. Instead, they modelled the channels after natural features, using meandering, low-flow channels and planting streamside trees whose shade would prevent bullrushes from growing and obstructing flow in the waterways. These strategies enabled the project to stay within the 180-foot right-of-way required by the Selected Plan.

Experts working with the Coalition suspected that sedimentation would be aggravated by the flood control project, damaging wetlands and reducing the channels' capacity. Because of the propensity of many Western areas for flash flooding and associated erosion and even mudslides, the Consensus Plan's design adopted a wetland transition zone with high-velocity low-flow channels upstream to ensure that sediment would be deposited upstream and in the bay, where it would be least harmful.

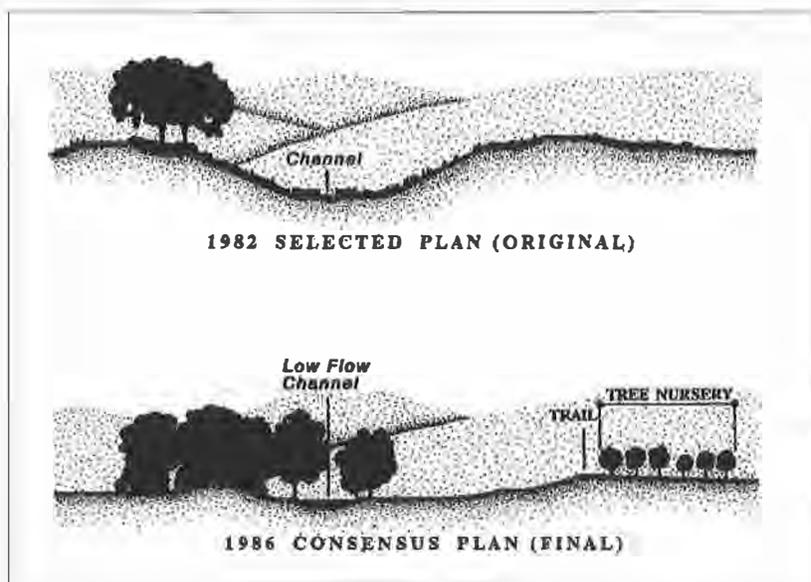


Figure 20 - These cross-sections illustrate the two alternative creek channel designs for Wildcat and San Pablo Creeks. The original 1982 plan utilizes a typical box cross-section, high-capacity channel with little or no adjacent floodplain; the 1986 plan eventually implemented includes a shallow low flow channel with floodplain intact allowing trails, tree nursery, etc.

Adapted from the author Park Service

**Summary**

There were three key aspects of the Consensus Plan that made it an innovative accomplishment. Citizens, unable to participate in the planning process, can stall a project for years and dramatically increase its cost through law suits and hearings. This can be seen through much of the North Richmond case. Probably through default, citizens were finally allowed an active role in the Consensus Plan. This feeling of empowerment made them part of the process and allowed the plan to go through much more quickly. The average time spent planning a US government assisted flood-control project before construction begins is 26 years; North Richmond took 33 years. The second aspect was the multi-objective nature of the plan. With all the varying interests involved the plan had to satisfy their needs. Although multi-objective planning is much more complex, the benefits can increase substantially. Funding for multi-objective planning increases because state and federal agencies are much more apt to fund these type of projects. Also a high level of participation can attract financial contributors and political support which can only be positive. The third aspect was the use of the creeks natural features to convey the "100 year" flood instead of using a purely structural approach. The sediment loads were taken care of much more easily, the aesthetic values remained substantially untouched and the natural setting was enhanced to convey the flood.

Case study adapted from Ann Riley. 1989. "Overcoming Federal Water Policies: The Wildcat-San Pablo Creeks Case" *Environment* 31(10), pp. 12+.

Contact: Coalition to Restore Urban Waters, 1110 Chaucer St., Berkeley, CA 94702

## Blackstone River National Heritage Corridor

Massachusetts and Rhode Island



Figure 21 - Location Map

### Background

The Blackstone River Corridor was a center for industrial development in the eighteenth and nineteenth centuries, when the river's potential as a power source attracted industry and workers to the area. The region is noted as the birthplace of the American Industrial Revolution, and by the late nineteenth century the Blackstone was dubbed America's "hardest working river," with the corridor serving as home to a booming textile industry. During the 20th century, the area experienced economic decline, as textile production increasingly shifted to southern states. Years of industrial stagnation and neglect have spared much of the historical and natural landscape from destruction. However, a new demand by people to settle in this region has raised concern over a possible haphazard suburban sprawl.

Today, the region is nationally recognized as the site of an important part of America's cultural heritage. Its designation as a National Heritage Corridor is the basis for a renewed sense of pride and has spurred efforts to preserve valuable aspects of the past while revitalizing the present. This corridor, which is 46 miles long and spans two states, is the subject of a coordinated effort among federal, state and local governments, as well as many private interests.

### Implementation

In 1986 the federal government passed legislation authorizing the creation of the Blackstone River Valley National Heritage Corridor Commission. Made up of representatives from the National Park Service, state and local governments, and private citizens, the federally created Commission has no legal authority to enforce preservation of the corridor. Nor does the federal government own or manage land in the Blackstone River Valley. Instead, the federal government contributes 50% of the funding for the work of the Corridor Commission, and works in partnership with the states and localities in activities such as comprehensive planning, technical assistance and environmental education. Much of

Figure 22 - View of the Blackstone River at Slater Mill, a designated National Historic Site built in 1793.



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the work on the corridor is performed by state and local governments working with private businesses and nonprofit organizations to protect the resources of the valley.

Each of the two state governments involved handles its relationship with the Commission and localities differently. The Rhode Island Office of State Planning requires towns to adopt comprehensive plans with certain mandatory components. This provides an opportunity for the state to set standards that each community will follow, and affords some degree of coordination in overall land use planning efforts.

The Central Massachusetts Regional Planning Commission, in contrast, simply offers advice and coordination assistance to localities, while comprehensive planning is left up to the initiative of each community and is not mandatory. In both Massachusetts and Rhode Island, multiple state agencies bring expertise to the management of the corridor's economic, historic, and natural resource elements.

Local governments play a key role in managing the corridor, because it is their planning, zoning, and general land use management strategies that will ultimately have the greatest impact on the corridor's landscape. Thus it is very important for communities within the corridor to coordinate their planning efforts. The commission's role is to help facilitate comprehensive planning. Their strategy emphasizes integrated, linked actions rather than single, stand alone projects. Balanced action in each of these areas is critical to achieving harmony among preservation, recreation and development.

The private sector also has an important role to play, as capital investment in the maintenance and restoration of the natural and cultural resources in the corridor contributes to the overall quality of life in area communities and attracts tourism to historic towns. Many of the historic sites are being restored and used in different capacities. The restoration of many of the old mills has increased tourism in the area and old factory sites are being reincarnated as schools, retirement homes, libraries and parks. The local residents overwhelmingly support the plan which would increase tourism in the area.

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### Resource Protection Opportunities

One of the Blackstone River Corridor's greatest assets is its "working landscape" — a combination of farms, villages, cities and riverways that are a part of the region's cultural heritage. Preservation efforts focus largely on historic and cultural resources from the industrial revolution, such as Slater Mill (America's first factory) and the ethnically diverse communities that emerged as waves of immigrants came to the booming region to find work.

The commission's efforts also include recommendations for protection of water quality, vegetation and open space. The industrial boom and subsequent economic decline took a toll on the "hardest working river" by becoming one of America's most polluted rivers. Consequently, part of the commission's goal is to take steps that will contribute to improving the river's water quality, through such measures as encouraging the use of vegetative buffers by landowners adjacent to river. Also conservation easements and land trusts are two methods now being used to buy and preserve the corridor. While there are opportunities and widespread support for developing parks and recreation areas along the river many sections remain underutilized. Currently a bike path spanning the entire length of the river is now being built by the two states. The bikeway, along with nature trails and boating on the river will open the riverway to local families and visitors for recreation. Projects that link Valley-wide resources will be priorities for the commission. Another key component to cleaning up the river is to increase enforcement of illegal pollution discharges along the river. Although the river has become cleaner much progress can still be made.

*"I had not seen this corridor before, and I saw... an extraordinary landscape of history, of generations of empathy and relationship to the land a river once again alive with fish, a second revolution taking place... and I said, take me further..."*

*-Bruce Babbitt, Secretary of the Interior, July 1995*

**From:** [Ashley Williams](#)  
**To:** [Nicole Mardell](#)  
**Subject:** FW: FLOOD PLAIN ZONE AMENDMENTS  
**Date:** Thursday, August 08, 2019 7:56:31 AM  
**Attachments:** [image001.png](#)  
[image002.png](#)  
[image003.png](#)  
[image004.png](#)

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**Ashley Williams | Administrative Assistant**  
**DESCHUTES COUNTY COMMUNITY DEVELOPMENT**

117 NW Lafayette Avenue | Bend, Oregon  
Mail: PO Box 6005 | Bend, Oregon 97708  
Tel: (541) 617-4707 | [www.deschutes.org/cd](http://www.deschutes.org/cd)



*Disclaimer: Please note that the information in this email is an informal statement made in accordance with DCC 22.20.005 and shall not be deemed to constitute final County action effecting a change in the status of a person's property or conferring any rights, including any reliance rights, on any person.*

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**From:** Michelle Alvarado <michelle@wahoofilms.com>  
**Sent:** Wednesday, August 7, 2019 8:42 PM  
**To:** Planning Commission <PlanningCommission@deschutes.org>  
**Subject:** FLOOD PLAIN ZONE AMENDMENTS

*"I oppose changes to the Flood Plain Zone because..."*

- I care about otters, beavers, mink, bobcats, foxes, fish, songbirds, ducks and the many other species that **depend** on the Flood Plain Zone for protection.
- **Riparian areas along the Deschutes and Little Deschutes are critical habitat for the Oregon Spotted Frog**, a “threatened” species on the Endangered Species list. Development will put this species at risk of becoming endangered.
- Views of the Deschutes and Little Deschutes Rivers and Tumalo Creek are iconic and precious. **Dense development along these rivers is not acceptable.**
- Wildlife are considered a public resource, and as a member of the public, **I want the County to strengthen protections for wildlife, not weaken them.**

**Michelle Alvarado**

Owner at Wahoo Films

**Phone** [541-585-3456](tel:541-585-3456) **Email** [michelle@wahoofilms.com](mailto:michelle@wahoofilms.com)

**Website** [wahoofilms.com](http://wahoofilms.com)



**From:** [Ashley Williams](#)  
**To:** [Nicole Mardell](#)  
**Subject:** FW: Flood Plain Zone changes  
**Date:** Thursday, August 08, 2019 10:51:28 AM  
**Attachments:** [image001.png](#)  
[image002.png](#)  
[image003.png](#)  
[image004.png](#)

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**Ashley Williams | Administrative Assistant**  
**DESCHUTES COUNTY COMMUNITY DEVELOPMENT**

117 NW Lafayette Avenue | Bend, Oregon  
Mail: PO Box 6005 | Bend, Oregon 97708  
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**From:** Bill Caram <caram.bill@gmail.com>  
**Sent:** Thursday, August 8, 2019 10:49 AM  
**To:** Planning Commission <PlanningCommission@deschutes.org>  
**Subject:** Flood Plain Zone changes

[EXTERNAL EMAIL]

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I am writing in opposition to the proposed changes to the Flood Plain Zone. Our rivers are precious and imperative for our local wildlife, including some ESA listed species. Please don't weaken the protections for our local wildlife.

Bill Caram

**From:** [Punton, Amanda](#)  
**To:** [Nicole Mardell](#)  
**Cc:** [VAUGHAN Joy R](#); [Edelman, Scott](#)  
**Subject:** Intersect of DLCD and ODFW comments  
**Date:** Thursday, August 08, 2019 4:24:18 PM  
**Attachments:** [ODFW Comments Deschutes Co Floodplain Amendments 8 7 19 ap notes.pdf](#)

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[EXTERNAL EMAIL]

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Hi Nicole,

I thought it would be helpful for me to clarify what I see as the overlap between comments from DLCD and from ODFW, in case you get questions at the hearing tonight.

Joy did a thorough job of assessing the county's proposed plan and code amendments for potential impacts to wildlife. Her letter provides valuable recommendations for how the city could shape their Goal 5 wildlife habitat protection program at this juncture to improve protections for target species. I reviewed your proposed amendments and the process you used to get there for compliance with OAR 660-023. The Goal 5 rule requires a process that does not always result in the best protection for wildlife habitat. This is because local jurisdictions can consider other land use planning objectives and priorities when devising a strategy to protect wildlife habitat. Hopefully the planning commission understands the separate, but overlapping roles of our agencies.

Attached is Joy's comment letter with annotations from me, which may be useful for explaining why DLCD did not identify omissions in your process (aside from my comment on clear and objective code standards), while ODFW identified weaknesses in the proposed protection program.

I hope your hearing goes well tonight,

Amanda



**Amanda Punton**

Natural Resource Specialist

Oregon Department of Land Conservation and Development

800 NE Oregon Street, Suite 1145 | Portland, OR 97232

Direct: 971-673-0961 | Main: 503-373-0050

[www.oregon.gov/LCD](http://www.oregon.gov/LCD)



# Oregon

Kate Brown, Governor

## Department of Fish and Wildlife

Wildlife Division

4034 Fairview Industrial Drive SE

Salem, OR 97302

(503) 947-6300

FAX: (503) 947-6330

Internet: [www.dfw.state.or.us](http://www.dfw.state.or.us)



August 7, 2019

Deschutes County  
Community Development Department  
Attn: Nicole Mardell, Associate Planner  
PO Box 6005  
117 NW Lafayette Ave  
Bend, OR 97708-6005

Dear Ms. Mardell:

Thank you for providing the Oregon Department of Fish and Wildlife (ODFW) the opportunity to review and comment on the proposed revisions to the Deschutes County Comprehensive Plan and Zoning Ordinance related to the Flood Plain Zone (247-19-000530/533-PA; 247-19-000531-TA; 247-19-000532-TA). It is the policy of the state of Oregon to manage fish and wildlife to prevent serious depletion of indigenous species and to provide the optimum recreational and aesthetic benefits for present and future generations of the citizens of this state<sup>1</sup>. In accordance with our mission, ODFW offers the following comments and recommendations for submittal in the record for the Deschutes County Planning Commission Hearing on August 8, 2019. ODFW also provided emailed comments on August 7, 2019 embedded within the county electronic files listed above, specific to the county's proposed ESEE analyses and text amendments, and request those comments be part of the record as well.

ODFW understands that through these proposed revisions, the county is attempting to codify past practices. In some instances, floodplain development may still be prohibited, and the existing setbacks, for example, for Goal 5 will be retained. However, the existing limitations in Deschutes County support the maintenance and functions of floodplain areas by limiting upland development within or near inventoried fish and wildlife habitat. Even though the county has attempted to limited the eligible parcels, ODFW is concerned that these proposals can result in direct and indirect impacts to acknowledged Goal 5 resources, as well as those fish and wildlife resources that are not currently acknowledged in the county's Goal 5 inventory and program. In addition, the amendments to the Comprehensive Plan and Deschutes County Code minimize the important ecological functions and values that floodplains and riparian areas provide to fish and wildlife, including some species that may be listed as sensitive, threatened or endangered, such as the Oregon Spotted Frog and bull trout. The proposal does not thoroughly acknowledge the essential functions and values that floodplains provide to fish and wildlife, nor does it adequately acknowledge the integral relationship between the floodplain and adjacent upland, riparian or wetland habitats. In many cases, the Goal 5 program and resource

<sup>1</sup> ORS 496.012; ORS 506.109

protections relied on the resource zones, which provided for large parcels and included limitations to fragmentation of the resource land. **ODFW is concerned that this could then set a precedent in undermining the integrity of entire Goal 5 program.**



Allowing additional residential development near full or partial floodplain zoned land can impact wetlands and riparian habitats, as well as upland wildlife habitats. Even with the proposed conditions of approval, such as the requirement for a Riparian Area Management Plan (RAMP) and applying the existing Goal 5 restrictions (e.g., 100' buffer), there will be still be a significant net loss of wildlife habitat when compared to a relatively undeveloped parcel. The open space and functional habitat that is inherit in an 80-acre parcel cannot be replicated with 8 10-acre parcels, or any other type of cluster development. The conflicting uses as a result of the upland development are not fully addressed by the development of a RAMP. In addition, the proposed amendments acknowledge that there may be impacts to inventoried wildlife habitat (e.g, deer migration, winter range) with the approval of additional residential development. While the RAMP may include minimization measures, it does not provide any certainty or requirement that the lost functions and values to Goal 5 resources will be replaced to ensure the functions of those resources, such as forage availability in wildlife habitat, are available to the species that depend on them (i.e., no net loss of those resources).

The county's existing Goal 5 program acknowledges the important functions and values of many habitats, including floodplains, wetlands, riparian areas, as well as fish and wildlife. It acknowledges a specific purpose of the Flood Plain Zone is to conserve riparian areas and maintain fish and wildlife resources (Title 18, Chapter 18.96.010). Flowing water and riparian zones are identified as Goal 5 significant resources, as well as listed as Strategy Habitat in the Oregon Conservation Strategy<sup>2</sup>, which is the state's strategy for conserving fish and wildlife. The goals of the Conservation Strategy are to maintain healthy fish and wildlife populations by maintaining and restoring functioning habitats, preventing declines of at-risk species, and reversing declines in these resources where possible.

Riparian zones are the dynamic interface between land and flowing water and an integral component to healthy fish and wildlife populations. Riparian habitats often have high species diversity and are critical for wildlife. These habitats are important to species that prefer moist shrubby or forested habitats. Riparian areas provide essential wintering habitat and travel corridors for birds, amphibians, reptiles, mammals, and other wildlife. These areas can serve as critical migration corridors, where species are reliant on to fulfill all or part of their life-cycle requirements. The plant assemblages and communities in riparian zones help buffer inputs and the cycling of nutrients. In addition to providing habitat for birds and other wildlife, riparian habitats have important ecological functions. Healthy riparian vegetation protects banks from erosion, influences in-channel aquatic habitats, maintains favorable water temperature for fish through shading, filters runoff, and provides nutrients to support terrestrial and aquatic life.

Deschutes County (Title 18, Chapter 18.84) provides a 50' setback from rimrock habitat in the Landscape Management Combining Zone. ODFW understands that the proposed amendments will continue to apply this 50' setback. However, it is not clear from the proposal how or if this zone was evaluated for the increased potential of conflicting uses for the significant Goal 5 wildlife species that utilize these habitats. Cliffs, rimrock, rock outcrops and talus are identified as "Specialized and Local Habitats" per the Oregon Conservation Strategy<sup>3</sup>. These habitats are essential for wildlife, such as raptor nesting (golden eagles in particular) and bat roosting, protected as significant Goal 5 resources through the existing Goal 5 program. ODFW is concerned about the individual and cumulative impacts as a result of development actions disturbing these sensitive habitats. Residential development at the edge of rims alters vegetation and disturbs nesting birds, which can cumulatively affect the available suitable habitat along canyons.

<sup>2</sup> <http://oregonconservationstrategy.org/strategy-habitat/riparian-habitats-and-flowing-water/>

<sup>3</sup> <http://www.oregonconservationstrategy.org/strategy-habitats/specialized-and-local-habitats/>

ODFW acknowledges the challenges that arise when trying to balance resource protection and economic development. The three proposed amendments to the Flood Plain Zone are complex. While they are separate amendments, they are integrally connected and have the ability to set a precedent that may have unintended consequences to the county's existing Goal 5 program. Per the county's request, ODFW has reviewed the proposed amendments and provides more substantive comments and recommendations below for each file listed above, as well as within the electronic submittal dated August 7, 2019. However, in summary for these three proposals:

- **Model Flood Plain Amendments (247-19-000530/533-PA)**: ODFW recommends the language provided in Chapter 18.96 of the current Flood Plain Zone are retained. The new text amendments to Section 2.5 of the Comprehensive Plan are inconsistent with the existing policy and have the potential to undermine the integrity of the Goal 5 program and implementing ordinances to address conflicting uses.
- **Land Division of Split Zoned Flood Plain Property (247-19-000532-TA)**: The current regulations acknowledge that the Flood Plain Zone is recognized as an implementation measure to conserve fish and wildlife resources. ODFW has concerns that the floodplain portion of a parcel may be utilized to allow a greater density in the non-floodplain land. ODFW recommends maintaining the 80 acre minimum parcel size.
- **Flood Plain Cluster and Planned Unit Development Amendments (247-19-000531-TA)**: ODFW has concerns that these amendments would allow Flood Plain zoned land to be used as open space in cluster and planned unit developments located on split zoned properties. Specifically, the designation of open space, and development of a Riparian Area Management Plan does not provide certainty that it will offset any direct or indirect impacts from the increased residential development (PUD, Cluster) in the non-floodplain portion of a property.
- Given the complexity of this proposal, ODFW recommends additional opportunity to coordinate with the county to ensure compliance with the current Goal 5 protection program, and to provide technical assistance to avoid, minimize and/or mitigate the potential impacts to fish, wildlife and habitat resources of the state.



### **Model Flood Plain Amendments (247-19-000530/533-PA)**

ODFW acknowledges that the county is interested in applying DLCD's 2014 Oregon Model Flood Damage Prevention Ordinance. However, the inclusion of this language results in the undermining and minimization of the essential functions and values that floodplain habitats provide to fish and wildlife resources. ODFW is concerned regarding the addition of the proposed text amendments to Section 2.5 (Water Resources) of the Comprehensive Plan, which reference riparian area conservation for fish and wildlife, as only a secondary benefit. Current Deschutes County Code 18.96.010 and implementing ordinances (e.g., Ord. 88-030; Ord. 94-007) acknowledge that one of the specific purposes of the flood plain zone is to "conserve important riparian areas along rivers and streams for the maintenance of the fish and wildlife resources". In addition, the Goal 5 program references the important functions and values that the floodplain provides to many fish and wildlife species, and therefore, ODFW recommends the language provided in Chapter 18.96.010 of the current Flood Plain Zone are retained.

In addition, ODFW has concerns that the county's proposal includes a statement that Goal 5 resources will not be negatively affected. However, all three of these proposals, including the text amendments to Section 2.5, may result in undermining the integrity of the Goal 5 program and implementing ordinances to address conflicting uses.



### **Land Division of Split Zoned Flood Plain Property (247-19-000532-TA)**

ODFW is concerned that additional land divisions of parcels that contain no more than two base zones and one comprehensive plan designation would be allowed through this proposal. This proposal states that the amendments do not propose a new use that could conflict with Goal 5. However, county findings also acknowledge that the amendments would allow for previously ineligible properties to be divided, including certain properties containing Goal 5 resources. Even though the amendments require the floodplain portion of the property to be located in a single parcel, they still allow for additional land divisions in the adjacent non-floodplain zoned land. As a result, the non-floodplain zoned land will be able to be more intensely developed, which can lead to increased conflicting uses (e.g., disturbance, recreational use, habitat fragmentation, habitat loss). The county findings and proposed amendments acknowledge that the creation of new parcels have the possibility to create new conflicts near the inventoried riparian areas, as well as to the riparian dependent species and their habitats. In addition, the current regulations acknowledge that the Flood Plain Zone is recognized as an implementation measure to conserve fish and wildlife resources. For example, Ord. 94-007 specifically identifies an “increase in density of residential lots in or adjacent to riparian areas” as a conflicting use which “could result in a decrease of habitat effectiveness because of disturbance to wildlife.” Therefore, ODFW is concerned that amending the existing regulations to allow the additional land divisions will lead to a loss in fish and wildlife habitat protections. 

### **Flood Plain Cluster and Planned Unit Development Amendments (247-19-000531-TA)**

ODFW has concerns with the amendments to the Flood Plain Zone, which would allow floodplain zoned land to be used as open space in cluster and planned unit developments located on split zoned properties. The county findings and proposed amendment states it will result in greater floodplain protection, and therefore can justify a greater unit density in return. However, the designation of open space does not provide certainty that it will offset any direct or indirect impacts from the increased residential development (PUD, Cluster) in the non-floodplain portion of a property, and result in greater floodplain protection. Habitat fragmentation and other identified conflicting uses can still occur within the floodplain, as well as direct habitat loss to the upland, riparian and wetland habitats outside the floodplain zoned land, as a result of the new land divisions and additional residential development. 

The proposed amendments referenced in Section 2.5 of the Comprehensive Plan states that “additional mitigation measures” were adopted to cluster and PUDs in the Flood Plain Zone, yet the proposed amendment does not identify any specific mitigation measures to offset, or replace, the loss of habitat. The requirement of a RAMP may have the opportunity to limit development, uses or alterations to the land, however the proposed language does not provide certainty that the impacts to fish and wildlife resources will be avoided, minimized or mitigated. For example, the RAMP may still allow for “low intensity recreational uses”, but doesn’t clearly define what is prohibited or allowed. Current policy requires impacts to wetlands or riverbanks to be “fully mitigated”, as evaluated by ODFW, but the same provision is not in place for other Goal 5 resources, such as the loss of wildlife habitat. In some cases, approved RAMPs may introduce additional conflict, such as “low intensity recreation” to the habitat within the open space designation. 

The proposed language in the RAMP is vague and does not provide certainty that habitat functions will be a priority or requirement of the RAMP. This is a concern since the proposed amendments and ESEE analyses seem to rely on the RAMP to address the conflicting uses that may occur with the increased dwelling densities in the non-floodplain zoned areas of the parcel. ODFW does not concur that the development of a RAMP adequately addresses the conflicting uses identified in these amendments. However, if the Planning Commission approves these amendments to the files listed above, ODFW recommends additional opportunity 

to coordinate with the county on refining the requirements for the RAMP, including addressing the main concerns highlighted below:



- *Inventory of riparian resources:* ODFW recommends the inventory of resources specifically identify the criteria, such as habitat survey requirements, that an applicant must comply with.
- *Reference to a wildlife biologist:* It is not clear ODFW's role in the review of the RAMP. For example, is the intent that ODFW wildlife biologists are expected to review and concur with the RAMPs? If so, what is the process for dispute resolution if ODFW raises concern that a RAMP does not adequately protect the habitat resources? ODFW recommends a requirement for an applicant to consult with ODFW prior to the submittal of a Conditional Use Permit.
- *Potential for additional conflicting uses:* ODFW recommends additional clarity on what types of activities will be prohibited and allowed. For example, the term "low intensity recreational uses" are not defined. These types of uses in the riparian area can introduce additional conflicting uses, such as increased disturbance (e.g., recreation, dogs), habitat fragmentation and loss of vegetation and cover, that are not adequately evaluated in this ESEE analysis. In addition, the RAMP references "measures to preserve and protect", but there is not an acknowledgement that some of the impacts to wildlife habitat may necessitate the need for mitigation to offset the loss of habitat function and value. This would be consistent with the approach currently provided for in the Goal 5 program for impacts to wetlands or riverbanks, which must be fully mitigated, as evaluated by ODFW.
- *Durability of the RAMP:* The RAMP relies on a Homeowners Association (HOA) to provide long-term management of the open space. However, HOA may change leadership, which may result in modifications of objectives for long-term management and use of the property subject to the RAMP. ODFW recommends a more long-term protection instrument be considered, such as a conservation easement or deed restriction.
- *Implementation/Annual reporting/compliance monitoring:* There is not a requirement for compliance or reporting on the implementation of the RAMP. What will happen when an HOA changes objectives or if the RAMP is out of compliance?

As stated above, ODFW has concerns that the RAMP is being proposed as adequate to replace the lost functions as a result of the conflicting uses introduced from the residential development. If the Planning Commission approves these proposals, ODFW recommends additional clear and objective criteria that further refine the process steps and requirements for development, review, approval, implementation and monitoring of the RAMP. For example, this may include the development of a RAMP template and guidance document providing clarity on the prohibited and allowed uses.

### **ESEE Analysis for 247-19-000532-TA and 247-19-000531-TA**

ODFW understands there is some discretion in how the county evaluates the ESEE analysis for complying with OAR 660-23. For example, the county relied on the existing, acknowledged Goal 5 inventories, yet the ESEE analyses reference the use of the best available data. If the best available data was not considered, then the county should remove this reference and clearly state that only the existing inventories from original acknowledgement were evaluated. If the county is interested in coordinating with ODFW to consider additional data for a more thorough evaluation of the potential conflicts with fish and wildlife resources, we can provide the technical assistance to provide this for the eligible parcels. Overall, even with being limited to the existing Goal 5 inventories, ODFW does not believe that the ESEE analysis thoroughly evaluates the potential conflicting uses and proposes a program to achieve Goal 5.



The ESEE analyses include statements that certain non-land use related items such as the presence of dogs and domestic animals, or recreation activities and other social implications cannot be evaluated since they are not land use. However, the existing acknowledged Goal 5 program for fish and wildlife (e.g., Ord 92-041; Ord. 94-007) evaluated dogs, dwellings and recreation in the ESEE analysis, and specifically identified them as conflicting uses to many acknowledge Goal 5 resources, such as big game habitat, waterfowl habitat and wetlands and riparian areas. Specifically, Ordinance 92-041 acknowledges that conflicting uses, such as increased recreation, can generate a high level of public activity, noise and habitat alteration, which can have direct and indirect impacts on wildlife habitat. This existing policy also acknowledges that any action which can cause a deterioration of forage quality and quantity, or cover, are conflicting uses to big game. In addition, Ordinance 94-007 specifically identifies recreational use of the riparian area as a conflicting use, which includes formal and informal trails, which can “cause soil compaction and destruction of vegetation”.



The ESEE analyses identifies and evaluates only three conflicting uses: habitat fragmentation, additional impervious surfaces and excavation and vegetation removal. However, the ESEE analyses do not evaluate habitat loss, including the direct loss of resources available to wildlife. For example, vegetation removal and excavation in the upland may displace wildlife, but also have other direct and indirect effects, such as the loss of available forage and cover, and the increase in wildlife damage within the newly developed residential developments. Big game, such as mule deer, need forage and cover to provide safe passage between winter and summer ranges. The current policy (Ord. 92-040) also identifies that the county and ODFW will work together to ensure that deer migration is retained, which includes protection with a conservation easement for the corridor. ODFW continues to recommend a wildlife mitigation plan per the ODFW Fish and Wildlife Habitat Mitigation Policy<sup>4</sup>, for development actions that could result in the loss of fish and wildlife habitat.

Thank you for the opportunity to provide these comments and recommendations for the Planning Commission hearing scheduled for August 8, 2019. ODFW is committed to finding collaborative solutions to avoid and/or minimize impacts to fish, wildlife and habitat resources of the state. Given the complexity of these three proposals, ODFW respectfully requests additional opportunity for further coordination with the county to fully evaluate the proposal with the existing Goal 5 program, and provide the county with technical assistance to avoid, minimize and/or mitigate for the impacts to Goal 5 resources, including fish, wildlife and their habitats. Please contact me ([joy.r.vaughan@state.or.us](mailto:joy.r.vaughan@state.or.us) or 503-947-6089) with any questions or if you need further clarification on ODFW’s comments and recommendations.

A handwritten signature in black ink that reads "Joy Vaughan".

Joy Vaughan  
ODFW Land Use and Waterway Alterations Coordinator

cc: Peter Gutowsky-Deschutes County; Scott Edelman, Howard Gordon, Jon Jinings, Amanda Punton-DLCD  
Michael Harrington, Corey Heath, Andrew Walch-ODFW

<sup>4</sup> OAR 635-415; <https://www.dfw.state.or.us/OARs/415.pdf>

**From:** [Joy R Vaughan](#)  
**To:** [Nicole Mardell](#); [Peter Gutowsky](#)  
**Cc:** [PUNTON Amanda](#); [Andrew J Walch](#); [Corey Heath](#); [HOWARD Gordon](#); [JININGS Jon](#); [Michael Harrington](#); [EDELMAN Scott](#)  
**Subject:** RE: ODFW Comments on Deschutes County Floodplain Amendments  
**Date:** Thursday, August 08, 2019 12:48:28 PM

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Hello Nicole and Peter,

I spoke with Amanda this morning and wanted to provide some clarification to the intent of some of our comments for tonight's hearing. Specifically:

- In our comments, ODFW references the "Goal 5 program" or the "Goal 5 protection program". For example, in our letter ODFW recommended additional opportunity to coordinate with the county to ensure compliance with the current "Goal 5 protection program". We also raised a concern that these amendments could undermine the integrity of the "entire Goal 5 program". Throughout our letter, ODFW intent was referring to the local Goal 5 protection program.
- In our comments, ODFW acknowledges that the county relied on existing, acknowledged Goal 5 inventories and recommended that the amendments specifically clarify that the best available data was not utilized in the ESEE analyses. Our statement on page 5, which recommends coordination with ODFW if the county wanted to consider additional data on fish and wildlife resources, was referring to additional data that may be available for the significant Goal 5 resources being evaluated.

My apologies that ODFW is not able to attend the hearing, but hoping this provides some clarification. Please let me know if you would like to discuss anything further prior to tonight.

Joy

---

**From:** Joy R Vaughan  
**Sent:** Wednesday, August 7, 2019 10:10 PM  
**To:** 'Nicole.Mardell@deschutes.org' <[Nicole.Mardell@deschutes.org](mailto:Nicole.Mardell@deschutes.org)>  
**Cc:** Peter Gutowsky <[Peter.Gutowsky@deschutes.org](mailto:Peter.Gutowsky@deschutes.org)>; PUNTON Amanda <[amanda.punton@state.or.us](mailto:amanda.punton@state.or.us)>; HOWARD Gordon <[gordon.howard@state.or.us](mailto:gordon.howard@state.or.us)>; JININGS Jon (<[jon.jinings@state.or.us](mailto:jon.jinings@state.or.us)> <[jon.jinings@state.or.us](mailto:jon.jinings@state.or.us)>); EDELMAN Scott <[scott.edelman@state.or.us](mailto:scott.edelman@state.or.us)>; Corey Heath <[Corey.Heath@coho2.dfw.state.or.us](mailto:Corey.Heath@coho2.dfw.state.or.us)>; Michael Harrington <[Michael.R.Harrington@coho2.dfw.state.or.us](mailto:Michael.R.Harrington@coho2.dfw.state.or.us)>; 'Andrew J Walch' <[Andrew.J.Walch@state.or.us](mailto:Andrew.J.Walch@state.or.us)>  
**Subject:** ODFW Comments on Deschutes County Floodplain Amendments

Hello Nicole,

Thank you for the opportunity for ODFW to submit comments and recommendations related to the three proposed Deschutes County amendments related to changes to the Flood Plain Zone (247-19-000530/533-PA; 247-19-000531-TA; 247-19-000532-TA). Unfortunately, ODFW is unable to attend the hearing tomorrow night, so please include the following comments in the record for the Planning Commission hearing scheduled for tomorrow, August 8, 2019.

Due to the size of the attachments, ODFW has created a FTP link, which you hopefully received in a separate email. Please let me know if you have any issues downloading our comments. On the FTP

**From:** [Joy R. Vaughan](#)  
**To:** [Nicole Mardell](#)  
**Cc:** [PUNTON Amanda](#); [Andrew J Walch](#); [Corey Heath](#); [HOWARD Gordon](#); [JININGS Jon](#); [Michael Harrington](#); [Peter Gutowsky](#); [EDELMAN Scott](#)  
**Subject:** ODFW Comments on Deschutes County Floodplain Amendments  
**Date:** Wednesday, August 07, 2019 10:10:09 PM  
**Attachments:** [ODFW Comments Deschutes Co Floodplain Amendments 8 7 19.pdf](#)

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Hello Nicole,

Thank you for the opportunity for ODFW to submit comments and recommendations related to the three proposed Deschutes County amendments related to changes to the Flood Plain Zone (247-19-000530/533-PA; 247-19-000531-TA; 247-19-000532-TA). Unfortunately, ODFW is unable to attend the hearing tomorrow night, so please include the following comments in the record for the Planning Commission hearing scheduled for tomorrow, August 8, 2019.

Due to the size of the attachments, ODFW has created a FTP link, which you hopefully received in a separate email. Please let me know if you have any issues downloading our comments. On the FTP site you will find a link to four files, which include our attached letter outlining our comments and recommendations, as well as embedded comments and recommendations within the text of the three attached amendments. These comments are specifically directed to the proposed ESEE analyses and text amendments. Please confirm that you are able to access the FTP site and receipt of these documents.

Thank you and we look forward to further coordination regarding these proposals. Please let me know if you need any clarification or have any questions prior to the hearing tomorrow night. Sorry we are not able to attend in person.

Joy Vaughan | Land Use and Waterway Alterations Coordinator

ODFW Wildlife Division

503-947-6089 office | 503-949-3796 cell

[Joy.r.vaughan@state.or.us](mailto:Joy.r.vaughan@state.or.us)

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# Oregon

Kate Brown, Governor

## Department of Fish and Wildlife

Wildlife Division

4034 Fairview Industrial Drive SE

Salem, OR 97302

(503) 947-6300

FAX: (503) 947-6330

Internet: [www.dfw.state.or.us](http://www.dfw.state.or.us)



August 7, 2019

Deschutes County  
Community Development Department  
Attn: Nicole Mardell, Associate Planner  
PO Box 6005  
117 NW Lafayette Ave  
Bend, OR 97708-6005

Dear Ms. Mardell:

Thank you for providing the Oregon Department of Fish and Wildlife (ODFW) the opportunity to review and comment on the proposed revisions to the Deschutes County Comprehensive Plan and Zoning Ordinance related to the Flood Plain Zone (247-19-000530/533-PA; 247-19-000531-TA; 247-19-000532-TA). It is the policy of the state of Oregon to manage fish and wildlife to prevent serious depletion of indigenous species and to provide the optimum recreational and aesthetic benefits for present and future generations of the citizens of this state<sup>1</sup>. In accordance with our mission, ODFW offers the following comments and recommendations for submittal in the record for the Deschutes County Planning Commission Hearing on August 8, 2019. ODFW also provided emailed comments on August 7, 2019 embedded within the county electronic files listed above, specific to the county's proposed ESEE analyses and text amendments, and request those comments be part of the record as well.

ODFW understands that through these proposed revisions, the county is attempting to codify past practices. In some instances, floodplain development may still be prohibited, and the existing setbacks, for example, for Goal 5 will be retained. However, the existing limitations in Deschutes County support the maintenance and functions of floodplain areas by limiting upland development within or near inventoried fish and wildlife habitat. Even though the county has attempted to limited the eligible parcels, ODFW is concerned that these proposals can result in direct and indirect impacts to acknowledged Goal 5 resources, as well as those fish and wildlife resources that are not currently acknowledged in the county's Goal 5 inventory and program. In addition, the amendments to the Comprehensive Plan and Deschutes County Code minimize the important ecological functions and values that floodplains and riparian areas provide to fish and wildlife, including some species that may be listed as sensitive, threatened or endangered, such as the Oregon Spotted Frog and bull trout. The proposal does not thoroughly acknowledge the essential functions and values that floodplains provide to fish and wildlife, nor does it adequately acknowledge the integral relationship between the floodplain and adjacent upland, riparian or wetland habitats. In many cases, the Goal 5 program and resource

<sup>1</sup> ORS 496.012; ORS 506.109

protections relied on the resource zones, which provided for large parcels and included limitations to fragmentation of the resource land. ODFW is concerned that this could then set a precedent in undermining the integrity of entire Goal 5 program.

Allowing additional residential development near full or partial floodplain zoned land can impact wetlands and riparian habitats, as well as upland wildlife habitats. Even with the proposed conditions of approval, such as the requirement for a Riparian Area Management Plan (RAMP) and applying the existing Goal 5 restrictions (e.g., 100' buffer), there will be still be a significant net loss of wildlife habitat when compared to a relatively undeveloped parcel. The open space and functional habitat that is inherit in an 80-acre parcel cannot be replicated with 8 10-acre parcels, or any other type of cluster development. The conflicting uses as a result of the upland development are not fully addressed by the development of a RAMP. In addition, the proposed amendments acknowledge that there may be impacts to inventoried wildlife habitat (e.g, deer migration, winter range) with the approval of additional residential development. While the RAMP may include minimization measures, it does not provide any certainty or requirement that the lost functions and values to Goal 5 resources will be replaced to ensure the functions of those resources, such as forage availability in wildlife habitat, are available to the species that depend on them (i.e., no net loss of those resources).

The county's existing Goal 5 program acknowledges the important functions and values of many habitats, including floodplains, wetlands, riparian areas, as well as fish and wildlife. It acknowledges a specific purpose of the Flood Plain Zone is to conserve riparian areas and maintain fish and wildlife resources (Title 18, Chapter 18.96.010). Flowing water and riparian zones are identified as Goal 5 significant resources, as well as listed as Strategy Habitat in the Oregon Conservation Strategy<sup>2</sup>, which is the state's strategy for conserving fish and wildlife. The goals of the Conservation Strategy are to maintain healthy fish and wildlife populations by maintaining and restoring functioning habitats, preventing declines of at-risk species, and reversing declines in these resources where possible.

Riparian zones are the dynamic interface between land and flowing water and an integral component to healthy fish and wildlife populations. Riparian habitats often have high species diversity and are critical for wildlife. These habitats are important to species that prefer moist shrubby or forested habitats. Riparian areas provide essential wintering habitat and travel corridors for birds, amphibians, reptiles, mammals, and other wildlife. These areas can serve as critical migration corridors, where species are reliant on to fulfill all or part of their life-cycle requirements. The plant assemblages and communities in riparian zones help buffer inputs and the cycling of nutrients. In addition to providing habitat for birds and other wildlife, riparian habitats have important ecological functions. Healthy riparian vegetation protects banks from erosion, influences in-channel aquatic habitats, maintains favorable water temperature for fish through shading, filters runoff, and provides nutrients to support terrestrial and aquatic life.

Deschutes County (Title 18, Chapter 18.84) provides a 50' setback from rimrock habitat in the Landscape Management Combining Zone. ODFW understands that the proposed amendments will continue to apply this 50' setback. However, it is not clear from the proposal how or if this zone was evaluated for the increased potential of conflicting uses for the significant Goal 5 wildlife species that utilize these habitats. Cliffs, rimrock, rock outcrops and talus are identified as "Specialized and Local Habitats" per the Oregon Conservation Strategy<sup>3</sup>. These habitats are essential for wildlife, such as raptor nesting (golden eagles in particular) and bat roosting, protected as significant Goal 5 resources through the existing Goal 5 program. ODFW is concerned about the individual and cumulative impacts as a result of development actions disturbing these sensitive habitats. Residential development at the edge of rims alters vegetation and disturbs nesting birds, which can cumulatively affect the available suitable habitat along canyons.

<sup>2</sup> <http://oregonconservationstrategy.org/strategy-habitat/riparian-habitats-and-flowing-water/>

<sup>3</sup> <http://www.oregonconservationstrategy.org/strategy-habitats/specialized-and-local-habitats/>

ODFW acknowledges the challenges that arise when trying to balance resource protection and economic development. The three proposed amendments to the Flood Plain Zone are complex. While they are separate amendments, they are integrally connected and have the ability to set a precedent that may have unintended consequences to the county's existing Goal 5 program. Per the county's request, ODFW has reviewed the proposed amendments and provides more substantive comments and recommendations below for each file listed above, as well as within the electronic submittal dated August 7, 2019. However, in summary for these three proposals:

- **Model Flood Plain Amendments (247-19-000530/533-PA)**: ODFW recommends the language provided in Chapter 18.96 of the current Flood Plain Zone are retained. The new text amendments to Section 2.5 of the Comprehensive Plan are inconsistent with the existing policy and have the potential to undermine the integrity of the Goal 5 program and implementing ordinances to address conflicting uses.
- **Land Division of Split Zoned Flood Plain Property (247-19-000532-TA)**: The current regulations acknowledge that the Flood Plain Zone is recognized as an implementation measure to conserve fish and wildlife resources. ODFW has concerns that the floodplain portion of a parcel may be utilized to allow a greater density in the non-floodplain land. ODFW recommends maintaining the 80 acre minimum parcel size.
- **Flood Plain Cluster and Planned Unit Development Amendments (247-19-000531-TA)**: ODFW has concerns that these amendments would allow Flood Plain zoned land to be used as open space in cluster and planned unit developments located on split zoned properties. Specifically, the designation of open space, and development of a Riparian Area Management Plan does not provide certainty that it will offset any direct or indirect impacts from the increased residential development (PUD, Cluster) in the non-floodplain portion of a property.
- Given the complexity of this proposal, ODFW recommends additional opportunity to coordinate with the county to ensure compliance with the current Goal 5 protection program, and to provide technical assistance to avoid, minimize and/or mitigate the potential impacts to fish, wildlife and habitat resources of the state.

#### **Model Flood Plain Amendments (247-19-000530/533-PA)**

ODFW acknowledges that the county is interested in applying DLCD's 2014 Oregon Model Flood Damage Prevention Ordinance. However, the inclusion of this language results in the undermining and minimization of the essential functions and values that floodplain habitats provide to fish and wildlife resources. ODFW is concerned regarding the addition of the proposed text amendments to Section 2.5 (Water Resources) of the Comprehensive Plan, which reference riparian area conservation for fish and wildlife, as only a secondary benefit. Current Deschutes County Code 18.96.010 and implementing ordinances (e.g., Ord. 88-030; Ord. 94-007) acknowledge that one of the specific purposes of the flood plain zone is to "conserve important riparian areas along rivers and streams for the maintenance of the fish and wildlife resources". In addition, the Goal 5 program references the important functions and values that the floodplain provides to many fish and wildlife species, and therefore, ODFW recommends the language provided in Chapter 18.96.010 of the current Flood Plain Zone are retained.

In addition, ODFW has concerns that the county's proposal includes a statement that Goal 5 resources will not be negatively affected. However, all three of these proposals, including the text amendments to Section 2.5, may result in undermining the integrity of the Goal 5 program and implementing ordinances to address conflicting uses.

### **Land Division of Split Zoned Flood Plain Property (247-19-000532-TA)**

ODFW is concerned that additional land divisions of parcels that contain no more than two base zones and one comprehensive plan designation would be allowed through this proposal. This proposal states that the amendments do not propose a new use that could conflict with Goal 5. However, county findings also acknowledge that the amendments would allow for previously ineligible properties to be divided, including certain properties containing Goal 5 resources. Even though the amendments require the floodplain portion of the property to be located in a single parcel, they still allow for additional land divisions in the adjacent non-floodplain zoned land. As a result, the non-floodplain zoned land will be able to be more intensely developed, which can lead to increased conflicting uses (e.g., disturbance, recreational use, habitat fragmentation, habitat loss). The county findings and proposed amendments acknowledge that the creation of new parcels have the possibility to create new conflicts near the inventoried riparian areas, as well as to the riparian dependent species and their habitats. In addition, the current regulations acknowledge that the Flood Plain Zone is recognized as an implementation measure to conserve fish and wildlife resources. For example, Ord. 94-007 specifically identifies an “increase in density of residential lots in or adjacent to riparian areas” as a conflicting use which “could result in a decrease of habitat effectiveness because of disturbance to wildlife.” Therefore, ODFW is concerned that amending the existing regulations to allow the additional land divisions will lead to a loss in fish and wildlife habitat protections.

### **Flood Plain Cluster and Planned Unit Development Amendments (247-19-000531-TA)**

ODFW has concerns with the amendments to the Flood Plain Zone, which would allow floodplain zoned land to be used as open space in cluster and planned unit developments located on split zoned properties. The county findings and proposed amendment states it will result in greater floodplain protection, and therefore can justify a greater unit density in return. However, the designation of open space does not provide certainty that it will offset any direct or indirect impacts from the increased residential development (PUD, Cluster) in the non-floodplain portion of a property, and result in greater floodplain protection. Habitat fragmentation and other identified conflicting uses can still occur within the floodplain, as well as direct habitat loss to the upland, riparian and wetland habitats outside the floodplain zoned land, as a result of the new land divisions and additional residential development.

The proposed amendments referenced in Section 2.5 of the Comprehensive Plan states that “additional mitigation measures” were adopted to cluster and PUDs in the Flood Plain Zone, yet the proposed amendment does not identify any specific mitigation measures to offset, or replace, the loss of habitat. The requirement of a RAMP may have the opportunity to limit development, uses or alterations to the land, however the proposed language does not provide certainty that the impacts to fish and wildlife resources will be avoided, minimized or mitigated. For example, the RAMP may still allow for “low intensity recreational uses”, but doesn’t clearly define what is prohibited or allowed. Current policy requires impacts to wetlands or riverbanks to be “fully mitigated”, as evaluated by ODFW, but the same provision is not in place for other Goal 5 resources, such as the loss of wildlife habitat. In some cases, approved RAMPs may introduce additional conflict, such as “low intensity recreation” to the habitat within the open space designation.

The proposed language in the RAMP is vague and does not provide certainty that habitat functions will be a priority or requirement of the RAMP. This is a concern since the proposed amendments and ESEE analyses seem to rely on the RAMP to address the conflicting uses that may occur with the increased dwelling densities in the non-floodplain zoned areas of the parcel. ODFW does not concur that the development of a RAMP adequately addresses the conflicting uses identified in these amendments. However, if the Planning Commission approves these amendments to the files listed above, ODFW recommends additional opportunity

to coordinate with the county on refining the requirements for the RAMP, including addressing the main concerns highlighted below:

- *Inventory of riparian resources:* ODFW recommends the inventory of resources specifically identify the criteria, such as habitat survey requirements, that an applicant must comply with.
- *Reference to a wildlife biologist:* It is not clear ODFW's role in the review of the RAMP. For example, is the intent that ODFW wildlife biologists are expected to review and concur with the RAMPs? If so, what is the process for dispute resolution if ODFW raises concern that a RAMP does not adequately protect the habitat resources? ODFW recommends a requirement for an applicant to consult with ODFW prior to the submittal of a Conditional Use Permit.
- *Potential for additional conflicting uses:* ODFW recommends additional clarity on what types of activities will be prohibited and allowed. For example, the term "low intensity recreational uses" are not defined. These types of uses in the riparian area can introduce additional conflicting uses, such as increased disturbance (e.g., recreation, dogs), habitat fragmentation and loss of vegetation and cover, that are not adequately evaluated in this ESEE analysis. In addition, the RAMP references "measures to preserve and protect", but there is not an acknowledgement that some of the impacts to wildlife habitat may necessitate the need for mitigation to offset the loss of habitat function and value. This would be consistent with the approach currently provided for in the Goal 5 program for impacts to wetlands or riverbanks, which must be fully mitigated, as evaluated by ODFW.
- *Durability of the RAMP:* The RAMP relies on a Homeowners Association (HOA) to provide long-term management of the open space. However, HOA may change leadership, which may result in modifications of objectives for long-term management and use of the property subject to the RAMP. ODFW recommends a more long-term protection instrument be considered, such as a conservation easement or deed restriction.
- *Implementation/Annual reporting/compliance monitoring:* There is not a requirement for compliance or reporting on the implementation of the RAMP. What will happen when an HOA changes objectives or if the RAMP is out of compliance?

As stated above, ODFW has concerns that the RAMP is being proposed as adequate to replace the lost functions as a result of the conflicting uses introduced from the residential development. If the Planning Commission approves these proposals, ODFW recommends additional clear and objective criteria that further refine the process steps and requirements for development, review, approval, implementation and monitoring of the RAMP. For example, this may include the development of a RAMP template and guidance document providing clarity on the prohibited and allowed uses.

### **ESEE Analysis for 247-19-000532-TA and 247-19-000531-TA**

ODFW understands there is some discretion in how the county evaluates the ESEE analysis for complying with OAR 660-23. For example, the county relied on the existing, acknowledged Goal 5 inventories, yet the ESEE analyses reference the use of the best available data. If the best available data was not considered, then the county should remove this reference and clearly state that only the existing inventories from original acknowledgement were evaluated. If the county is interested in coordinating with ODFW to consider additional data for a more thorough evaluation of the potential conflicts with fish and wildlife resources, we can provide the technical assistance to provide this for the eligible parcels. Overall, even with being limited to the existing Goal 5 inventories, ODFW does not believe that the ESEE analysis thoroughly evaluates the potential conflicting uses and proposes a program to achieve Goal 5.

The ESEE analyses include statements that certain non-land use related items such as the presence of dogs and domestic animals, or recreation activities and other social implications cannot be evaluated since they are not land use. However, the existing acknowledged Goal 5 program for fish and wildlife (e.g., Ord 92-041; Ord. 94-007) evaluated dogs, dwellings and recreation in the ESEE analysis, and specifically identified them as conflicting uses to many acknowledge Goal 5 resources, such as big game habitat, waterfowl habitat and wetlands and riparian areas. Specifically, Ordinance 92-041 acknowledges that conflicting uses, such as increased recreation, can generate a high level of public activity, noise and habitat alteration, which can have direct and indirect impacts on wildlife habitat. This existing policy also acknowledges that any action which can cause a deterioration of forage quality and quantity, or cover, are conflicting uses to big game. In addition, Ordinance 94-007 specifically identifies recreational use of the riparian area as a conflicting use, which includes formal and informal trails, which can “cause soil compaction and destruction of vegetation”.

The ESEE analyses identifies and evaluates only three conflicting uses: habitat fragmentation, additional impervious surfaces and excavation and vegetation removal. However, the ESEE analyses do not evaluate habitat loss, including the direct loss of resources available to wildlife. For example, vegetation removal and excavation in the upland may displace wildlife, but also have other direct and indirect effects, such as the loss of available forage and cover, and the increase in wildlife damage within the newly developed residential developments. Big game, such as mule deer, need forage and cover to provide safe passage between winter and summer ranges. The current policy (Ord. 92-040) also identifies that the county and ODFW will work together to ensure that deer migration is retained, which includes protection with a conservation easement for the corridor. ODFW continues to recommend a wildlife mitigation plan per the ODFW Fish and Wildlife Habitat Mitigation Policy<sup>4</sup>, for development actions that could result in the loss of fish and wildlife habitat.

Thank you for the opportunity to provide these comments and recommendations for the Planning Commission hearing scheduled for August 8, 2019. ODFW is committed to finding collaborative solutions to avoid and/or minimize impacts to fish, wildlife and habitat resources of the state. Given the complexity of these three proposals, ODFW respectfully requests additional opportunity for further coordination with the county to fully evaluate the proposal with the existing Goal 5 program, and provide the county with technical assistance to avoid, minimize and/or mitigate for the impacts to Goal 5 resources, including fish, wildlife and their habitats. Please contact me ([joy.r.vaughan@state.or.us](mailto:joy.r.vaughan@state.or.us) or 503-947-6089) with any questions or if you need further clarification on ODFW’s comments and recommendations.



Joy Vaughan  
ODFW Land Use and Waterway Alterations Coordinator

cc: Peter Gutowsky-Deschutes County; Scott Edelman, Howard Gordon, Jon Jinings, Amanda Punton-DLCD  
Michael Harrington, Corey Heath, Andrew Walch-ODFW

<sup>4</sup> OAR 635-415; <https://www.dfw.state.or.us/OARs/415.pdf>

## 247-19-000530-TA,533-PA Comments

- B. Approval to alter or relocate a water course shall require notification to adjacent communities, the Department of Land Conservation and Development ~~and~~ Department of State Lands, and other appropriate state and federal agencies prior to any such alteration or relocation and submit evidence to the Federal Insurance Administration. Maintenance shall be provided within the altered and relocated portion of said watercourse so that the flood carrying capacity is not diminished.
- C. A conditional use permit shall be based upon findings which relate to the property and existing and proposed structure(s). They shall not pertain to the property owner, inhabitants, economic or financial circumstances.
- D. All structures in the flood plain shall meet the following standards.
1. Anchoring.
    - a. All new construction and substantial improvements shall be anchored to prevent flotation, collapse or lateral movement of the structure.
    - b. All manufactured homes must be anchored to prevent flotation, collapse or lateral movement, and shall be installed using methods and practices that minimize flood damage. Anchoring methods may include, but are not limited to, use of over-the-top or frame ties to ground anchors.
  2. Construction Materials and Methods.
    - a. All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.
    - b. All new construction and substantial improvements shall be constructed using methods and practices that minimize flood damage.
    - c. Electrical, heating, ventilation, plumbing and air-conditioning equipment and other service facilities shall be designed and/or otherwise elevated or located so as to prevent water from entering or accumulating within the components during conditions of flooding.
  3. Utilities.
    - a. All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system.
    - b. New and replacement sanitary systems shall be designed to minimize or eliminate infiltration of floodwaters into the system and discharge from the system into flood waters.
    - c. On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding consistent with the Oregon Department of Environmental Quality as specified in OAR 340-071-0100 et seq.
  4. Below-grade crawlspace is allowed subject to the standards in FEMA Technical Bulletin 11-01.
- E. Subdivision and Partition Proposals.
1. All subdivision and partition proposals shall be consistent with the need to minimize flood damage.
  2. All subdivision and partition proposals shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize flood damage.
  3. All subdivision and partition proposals shall have adequate drainage provided to reduce exposure to flood damage.
  4. Where Base Flood Elevation data has not been provided or is not available from another authoritative source, it shall be generated for subdivision proposals and other proposed developments which contain at least 50 lots or 5 acres (whichever is less). Generation of Base Flood Elevation data shall not be required for subdivision proposals and other proposed developments that expressly preclude residential and non-residential construction in a Special Flood Hazard Area.

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 Number: 1 Author: vaughajo Subject: Sticky Note Date: 8/6/2019 9:31:43 PM

ODFW has authority regarding fish passage (ORS 509.580- 910; OAR 635-412) and therefore, recommend ODFW be included specifically for notice when there is a proposal to alter or relocate a water course which may affect aquatic organism passage.

*Federal Emergency Management Agency Maps*

The Federal Emergency Management Agency (FEMA) maps flood-plains adjacent to the following rivers and streams in Deschutes County. The floodplain along these rivers and streams is recognized in a Flood Plain zone by the County.

**Table 2.5.6 - Floodplains Adjacent to Rivers and Streams**

• Deschutes River	• Long Prairie
• Little Deschutes River	• Dry River
• Whychus Creek	• Spring River
• Crooked River	• Indian Ford Creek
• Paulina Creek	

Source: Deschutes County GIS

Floodplains are defined as the lowland and relatively flat areas adjoining inland waters including at a minimum, that area subject to a one percent (100-year recurrence) or greater chance of flooding in any one year. Generally, river flooding along the Deschutes River has not historically been a serious problem in Deschutes County. This is due to the porous nature of the local geology, irrigation diversion canals and reservoir retention. Studies completed by the U.S. Army Corp of Engineers have resulted in designating a 100 year flood-plain for the Little Deschutes River and Whychus Creek. Regular flooding events have occurred near the headwaters of Tumalo Creek and in the Tumalo community. Along Whychus Creek, the city of Sisters frequently experiences flooding, with the most significant event occurring in 1964 (see also Section 3.5).

In 2019, Deschutes County amended its Flood Plain Zone to incorporate additional standards from the 2014 DLCD Model Flood Ordinance.

The purpose of the Zone is to continue promoting public health, safety, and general welfare, and minimize losses due to flood conditions in specific areas. It is designed to:

- (1) Protect human life and health;
- (2) Minimize expenditure of public money and costly flood control projects;
- (3) Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
- (4) Minimize prolonged business interruptions;
- (5) Minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets, and bridges located in areas of special flood hazard;
- (6) Help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future flood blight areas;
- (7) Ensure that potential buyers are notified that property is in an area of special flood hazard; and,
- (8) Ensure that those who occupy the areas of special flood hazard assume responsibility for their actions.

The Zone also provides secondary benefits including riparian area conservation along rivers and streams for fish and wildlife and preservation of significant scenic and natural resources.

Comprehensive plan policies for Water Resources (Section 2.5), Wildlife Resources (Section 2.6), Open Space and Scenic Views and Sites Resources (Section 2.7), and the corresponding development standards in Title 18 implement protections pertaining to Goal 5.

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 Number: 1 Author: vaughajo Subject: Sticky Note Date: 8/7/2019 5:22:46 PM

ODFW is concerned regarding the addition of this text which minimizes the function and value of the flood plain zone to fish, wildlife and habitat resources by referencing they are only secondary benefits.

 Number: 2 Author: Vaughajo Subject: Highlight Date: 8/7/2019 5:22:05 PM

ODFW does not concur this should be referenced as a secondary benefit. This language minimizes the critical functions of riparian areas to many fish and wildlife species.

Current Deschutes County Code 18.96.010 and implementing ordinances (e.g., Ord. 88-030; Ord. 94-007) acknowledge that one of the specific purposes of the flood plain zone is to "conserve important riparian areas along rivers and streams for the maintenance of the fish and wildlife resources".

## 247-19-000531-TA Comments

### **Chapter 2: Deschutes County Goal 5 Inventory and Methodology** **660-23-0030 – Inventory Goal 5 Resources**

Stemming from periodic review, Deschutes County has adopted inventories for a variety of Goal 5 natural resources. Some of these resources have mapped geographic boundaries, whereas others are described as being located in general areas – such as furbearer habitat in riparian corridors. The inventories were produced at a countywide scale, with additional detail for the Deschutes River and its tributaries through the Deschutes County/City of Bend River Study. For this document, staff utilized Geographic Information Systems (GIS) data to map a conservative location of inventoried sites based on previous ordinances<sup>1</sup> using the best available data for the following inventoried habitat that spatially relates to the flood plain zone: riparian areas, elk habitat, deer habitat, and deer winter range. <sup>2</sup>Staff utilized the County's Wildlife Area Combining Zone layers to determine the general extent of habitat for big game species as the Combining Zone was designed to cover a larger area than the habitat itself (Ordinance 92-046). Inventoried streams and rivers are shown on the map, as well as wetland and riparian areas. The Riparian Area associated with these water bodies is also the habitat area for fish, furbearers, waterfowl, or upland game birds (Ordinance 92-041, 94-007). As the proposed text amendments affect a quantifiable number of properties based on their minimum lot size and other characteristics, staff identified four corridors (20 parcels) in which inventoried natural resources and eligible properties intersect with the flood plain zone.

Deschutes River<sup>2</sup>: properties are located in relative proximity to the Deschutes River. Many areas of the Deschutes River, including the Lower Bridge area, feature canyons in which the height separation of the river from the upland area is over 50-100' in distance. Of the ten (10) parcels shown on the maps, one (1) of the parcels near Tumalo road and Hwy 97 is shown but does not contain any Goal 5 resources and is mapped for consistency in identifying parcels eligible for division under the proposed amendments. <sup>3</sup>Three (3) of the total number of parcels contain mapped Goal 5 Deer Migration Range. Approximately nine (9) parcels contain Goal 5 Riparian Area - consisting of land within 100 feet of the Deschutes River's Ordinary High Water Mark (OHWM), land within a wetland as depicted on the National Wetland Inventory Map, and land that is within the Flood Plain boundary associated with the Deschutes River. These properties also contain the following inventoried Goal 5 resources that depend on Riparian Areas for habitat: fish, furbearer, waterfowl, and upland game bird habitat.

Little Deschutes Corridor<sup>3</sup>: These properties are located in relative proximity to the Little Deschutes River. <sup>4</sup>Each of the six (6) parcels shown on the maps contain mapped Goal 5 Deer Migration Range. Additionally, the parcels contain Goal 5 Riparian Area - consisting of land within 100 feet of the Deschutes River's Ordinary High Water Mark (OHWM), land

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<sup>2</sup> Maps 2, 4, 5, 6

<sup>3</sup> Maps 7, 8, 10

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-  Number: 1 Author: vaughajo Subject: Highlight Date: 8/6/2019 8:41:47 AM  
As ODFW understands it, the best available data was not utilized and the county solely relied on the existing Goal 5 inventories. ODFW recommends the ESEE is revised to reflect that the best available data was not used.

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  -  Number: 2 Author: Vaughajo Subject: Highlight Date: 8/7/2019 2:44:42 PM  
This is referencing county adopted habitat, but biological habitat is likely much larger.

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  -  Number: 3 Author: vaughajo Subject: Highlight Date: 8/6/2019 8:44:20 AM

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  -  Number: 4 Author: vaughajo Subject: Highlight Date: 8/6/2019 8:45:06 AM

1) within a wetland as depicted on the National Wetland Inventory Map, and land that is within the Flood Plain boundary associated with the Little Deschutes River. These properties also contain the following inventoried Goal 5 resources that depend on Riparian Areas for habitat: fish, furbearer, waterfowl, and upland game bird habitat.

Paulina Creek Corridor<sup>4</sup>: 2) This one (1) property is located in relative proximity to Paulina Creek and contains Goal 5 Riparian Area -- consisting of land within 100 feet of the Paulina Creek's Ordinary High Water Mark (OHWM), land within a wetland as depicted on the National Wetland Inventory Map, and land that is within the Flood Plain boundary associated with the Paulina Creek. Lands that include inventoried riparian area also include the following inventoried resources: fish, furbearer, waterfowl, and upland game bird habitat. The properties also contain Goal 5 deer, as identified by the Deer Migration Range.

Whychus Creek Corridor<sup>5</sup>: These three (3) properties are located in relative proximity to the confluence of Whychus Creek and Indian Ford Creek. Two parcels are outside of the identified riparian area and do not contain any other Goal 5 resources but are shown for consistency. 3) One (1) parcel is shown and contains inventoried Goal 5 Riparian Area -- consisting of land within 100 feet of the each bodies' Ordinary High Water Mark (OHWM), land within a wetland as depicted on the National Wetland Inventory Map, and land that is within the Flood Plain boundary associated with the water bodies. The following inventoried resources are also on the property as they depend on Riparian Area for habitat: fish, furbearer, waterfowl, and upland game bird.

The Flood Plain Zone generally is also recognized as program to achieve open space and scenic resources for Landscape Management Rivers and Streams, State Scenic Waterway and Federal Wild and Scenic Rivers, and Ecologically and Scientifically Significant Natural Areas -- Little Deschutes River / Deschutes Confluence. As these are resources associated with mitigating visual impacts and do not impact development potential, they are not impacted by the proposed amendments and therefore are not reviewed in this document.

Maps of these corridors are found in Attachment 1 -- *Cluster Developments in the Flood Plain Zone -- Eligible Parcels and Inventoried Goal 5 Resources.*

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<sup>4</sup> Map 9

<sup>5</sup> Maps 1,3

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 Number: 1 Author: vaughajo Subject: Highlight Date: 8/6/2019 8:45:06 AM

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 Number: 2 Author: vaughajo Subject: Highlight Date: 8/6/2019 8:45:34 AM

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 Number: 3 Author: vaughajo Subject: Highlight Date: 8/6/2019 8:46:00 AM

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## Chapter 3: Conflicting Use Analysis

**660-023-0040(2): Identify conflicting uses. Local governments shall identify conflicting uses that exist, or could occur, with regard to significant Goal 5 resource sites. To identify these uses, local governments shall examine land uses allowed outright or conditionally within the zones applied to the resource site and in its impact area. Local governments are not required to consider allowed uses that would be unlikely to occur in the impact area because existing permanent uses occupy the site.**

Staff is proposing to add two new uses to the Conditional Use Permit section of the Flood Plain Zone chapter of the Deschutes County Zoning Code. This section, DCC 18.96.040, adds the following provisions:

### **18.96.040. Conditional Uses Permitted**

- O. Cluster Developments
- P. Planned Unit Developments

As stated previously, the proposed amendments would codify the allowance of Flood Plain Zoned land to be calculated as open space in establishing cluster and planned unit developments. This change adds two new conditional uses to the Flood Plain Zone chapter. It does not change where structures or uses may be located but does have the potential to allow a greater density of rural residential dwellings in a cluster development (outside of the Flood Plain) dependent on size.

## General Impacts of Conflicting Uses

The Flood Plain Zone currently allows for residential development as a conditional use. As the proposed amendments are residential, but at a slightly higher density, staff provides an analysis of potential conflicts from greater development of Flood Plain, split zoned properties that could be eligible for cluster and planned unit developments. It is important to clarify that as part of this review, staff can only analyze conflicts associated with land use regulations and development. Staff cannot analyze non-land use related items such as the presence of dogs and domestic animals or recreation activities and other social implications. In reviewing the proposed amendments, staff finds that the impacts for any type of development – in this case most likely single family homes, would create the following potential conflicts.

- **Habitat Fragmentation**  
Cluster and planned unit developments allow for a greater number of single-family homes than a traditional development. Per a recent hearings officer decision, properties that are split zoned could not include Flood Plain zoned land in determining the total acreage of a parcel, even if the area was to be used as open space. Under the proposed amendments, Flood Plain zoned land used in the total

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 Number: 1 Author: vughajo Subject: Highlight Date: 8/6/2019 8:47:01 AM

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 Number: 2 Author: Vaughajo Subject: Highlight Date: 8/7/2019 2:46:35 PM

Existing Goal 5 ESEE analysis already acknowledges that dogs and recreation can be conflicting uses. Therefore, this ESEE analysis should continue to consider those conflicts and analyze the impacts.

 Number: 3 Author: vughajo Subject: Highlight Date: 8/6/2019 9:01:22 AM

While habitat fragmentation is a conflicting use that should be evaluated, ODFW also recommends the county evaluates habitat loss. The ESEE analysis does not adequately consider the conflicting uses to the existing Goal 5 resources located in the upland area of the parcel, or the potential for new conflicting uses to be introduced into the riparian area as a result of the RAMP and increased residential development on the upland portion of the parcel.

acreage calculation as open space, could increase total acreage, which in turn increases the number of upland residential lots and associated infrastructure including roads. This greater density of development could concentrate the number of impervious surfaces, driveways, and infrastructure in certain areas and lead to habitat fragmentation.

- *Additional Impervious Surfaces*

Many parcels were previously ineligible for cluster and planned unit developments as they did not meet the minimum acreage requirement. Through the proposed amendments, twenty (20) properties will be eligible for development which could lead to the addition of homesites and corresponding infrastructure. Single family home development often includes the addition of accessory structures (carports, garages, barns, etc.) and other features like driveways, patios, and paved pathways. The addition of these impervious surface have the potential to increase stormwater runoff and decrease groundwater recharge.

- *Excavation and Vegetation Removal*

Development of homesites would likely require removal of upland vegetation, grading, and soil compaction. Although these activities are prohibited in riparian areas, removal of upland vegetation could alter drainage and runoff patterns. This could increase water body volumes, cause bank erosion, flooding, or the flow of sediment into water bodies. **The removal of upland vegetation could also reduce tree canopy and understory vegetation which could be utilized by fish and wildlife species, outside of their primary habitat.**

Staff provides greater detail on these conflicts and their potential consequences below.

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 Number: 1 Author: vaughajo Subject: Highlight Date: 8/6/2019 8:56:16 AM

Development in the upland areas where there is an existing Goal 5 inventory, such as the Deer Migration Range, will result in loss of habitat, including loss of quality and quantity of habitat. In addition, loss of forage for wildlife can exacerbate increased wildlife conflict, such as damage or public safety concerns.

## Chapter 5: ESEE Analysis

**660-023-0040(4): Analyze the ESEE consequences. Local governments shall analyze the ESEE consequences that could result from decisions to allow, limit, or prohibit a conflicting use. The analysis may address each of the identified conflicting uses, or it may address a group of similar conflicting uses. A local government may conduct a single analysis for two or more resource sites that are within the same area or that are similarly situated and subject to the same zoning. The local government may establish a matrix of commonly occurring conflicting uses and apply the matrix to particular resource sites in order to facilitate the analysis. A local government may conduct a single analysis for a site containing more than one significant Goal 5 resource. The ESEE analysis must consider any applicable statewide goal or acknowledged plan requirements, including the requirements of Goal 5. The analyses of the ESEE consequences shall be adopted either as part of the plan or as a land use regulation.**

### Background

The uses proposed are residential in nature and the zone already allows for residential development under a conditional use permit. Therefore staff is analyzing the general consequences associated with additional rural residential development associated with cluster and planned unit developments.

These general consequences fall into three categories:

- *Habitat Fragmentation*
- *Additional Impervious Surfaces*
- *Excavation and Vegetation Removal*

In conducting this ESEE analysis, staff is addressing a group of related conflicting uses, rather than outlining each conflicting use per inventoried resource. This single analysis is appropriate as the eligible properties are all similarly situated in their location near Goal 5 resources and would be eligible for additional residential density under this amendment.

This step is discretionary. The purpose of an ESEE analysis is to provide a qualitative exercise for local governments to weigh the positive and negative consequences of three scenarios in order to determine a preferred outcome. Governments may choose to use quantitative data as necessary, but are not required to gather new information or hire wildlife biologists, economists, sociologists, or energy consultants.

### ESEE Scenario Descriptions

#### *Scenario (A) – Allow the Conflicting Use*

In this scenario, the local government may decide that a conflicting use should be allowed fully, without any restrictions, no matter the potential impacts on the inventory site(s). In this instance, the Goal 5 rule would require the government to determine the conflicting use is of such importance compared to the site that the use should be allowed without any

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 Number: 1 Author: vaughajo Subject: Sticky Note Date: 8/6/2019 9:02:42 AM

The zone may already allow for the use of residential development, but not in the scale that is proposed through this PAPA.

By allowing for cluster and planned unit developments in the Flood Plain Zone, with the Flood Plain zoned area used only as open space, and without any additional limitations, a notable individual economic benefit would be in allowing for this preferred type of development on up to twenty (20) previously ineligible properties. One specific example could be allowing for the clustering of homesites on a property that is residentially zoned and sits atop a canyon wall, away from a narrow water body and corresponding strip of Flood Plain Zone. Previously the strip of Flood Plain Zone would prevent any and all division, **Even though no flood risk to the property exists.** These regulations would allow for the property to be divided.

On an individual economic benefit level, cluster and planned unit developments, as compared to traditional single family home development, often share infrastructure such as roads and utilities, and in turn, the installation and maintenance of this infrastructure is lowered for individual property owners. A community wide benefit would be the addition of homes to the tax base to provide additional services for emergency response and transportation.

Permitting cluster and planned unit developments on properties that contain partial Flood Plain zoning could have negative economic consequences as upland development could unintentionally cause loss or degradation of wildlife habitat. In Deschutes County, a recreational outdoor industry exists which includes hunting, fishing, hiking, and birding activities associated with established recreation areas. **Land clearing and the concentration of residential infrastructure has the potential to drive fish and wildlife away from the area, which could contribute to recreational economic loss if they are located near public lands that provide access to recreate. However, it is important to note that many of these properties are under private ownership and surrounded by private lands, so public access is not always permitted by right.**

### ***Social Consequences:***

Allowing for cluster and planned unit developments on land partially zoned Flood Plain could have a positive social benefit of creating additional housing sites for Deschutes County residents, at a higher level of density than currently allowed. This would allow for a greater number of homesites per acre and would allow for equity in the community, as other similar parcels have been able to be divided per Hearings Officers' interpretations in the past. On an individual level, it has the potential to provide greater clarity regarding the development potential of properties – reducing stress and cost often associated with contentious and ambiguous land use applications, and promoting equity among property owners.

**3** Many residents, advocacy organizations, and wildlife agencies continue to express concerns regarding the loss of fish and wildlife habitat due to the region's rapid growth and development. There is a recognition that increases in population, especially in rural areas, displace habitat and diminish, incrementally, Deschutes County's rural character and quality of life. The proposed amendments could have negative consequences due to increased

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 Number: 1 Author: vaughajo Subject: Highlight Date: 8/6/2019 9:07:21 AM

There may not be the flood risk for this parcel, but per the current DCC and policies (e.g., Ord 88.030), there are other functions and values that need to be considered other than flood risk. This includes the conservation of important riparian areas for fish and wildlife resources.

 Number: 2 Author: vaughajo Subject: Highlight Date: 8/6/2019 9:14:42 AM

Development within wildlife habitat results in direct and indirect impacts. Direct habitat loss leads to displacement, and a loss of accessible land for sustaining important life-history needs of wildlife. Hunting may occur on public lands, but in some cases private as well. However, the life-history needs of wildlife, such as big game, are not solely met on public land and in many cases habitat such as essential migration corridors to access winter range, are located on private land. Therefore there is a much greater economic impact that can result from fully allowing the use to recreational activities such as hunting, fishing and wildlife viewing.

 Number: 3 Author: vaughajo Subject: Sticky Note Date: 8/6/2019 9:17:04 AM

Additional social consequences resulting from fully allowing the use include increased wildlife damage and wildlife conflicts (e.g., public safety, nuisance, etc).

residential development and additional human presence near the inventoried Goal 5 resources which could lead to a reduced level of access and enjoyment for recreationalists.

***Environmental Consequences:***

Residential development is currently and will remain prohibited in designated wetlands, riparian areas, and property within the Flood Plain. Per state law, stormwater runoff will be contained on site. As previously stated, the following Goal 5 protections established during the creation of the initial inventory would remain in place:

- 1) Creation of new residential development sites in the Flood Plain by land division is not permitted.
- 2) Structures must observe a 100-foot setback from the ordinary high water mark of rivers or streams.
- 3) Structures along rivers in the Landscape Management Combining Zone must observe scenic protections.
- 4) Fill or removal of any material or wetland vegetation, regardless of the amount, within the bed and banks of any stream or river or in any wetland is prohibited unless approved as a conditional use.
- 5) Impacts to any wetland or riverbank impacts must be fully mitigated, as evaluated by Oregon Department of Fish and Wildlife (ODFW).
- 6) Cluster developments in designated wildlife habitat combining zones must retain a minimum of 80% open space and satisfy specific conditional use permit criteria.
- 7) All new construction, expansion or substantial improvement of an existing dwelling, an agricultural related structure, a commercial, industrial or other non-residential structure, or an accessory building in a designated Flood Plain obtain a conditional use permit.
- 8) Additional development restrictions apply for areas that contain the following combining zones: Winter Deer Range, Antelope Range, Elk Habitat, Deer Migration Corridors, Sage Grouse Habitat Area, and Sensitive Bird and Mammal Habitat.

A negative consequence of allowing the proposed use outright would be the potential of Flood Plain parcelization and **wildlife fragmentation**. Inherently, any changes to the current code requirements surrounding Flood Plain zoned properties could be disruptive to inventoried fish and wildlife accustomed to vacant or undeveloped land. Although not regulated by land use, additional human presence from one or more new parcels immediately adjacent to the Flood Plain and riparian areas of the property, could disturb and harass fish, deer, waterfowl, upland game birds, furbearer habitat, and the wetland and riparian area itself. **This has the potential to drive animals away from the area or completely reduce wildlife populations as a whole.**

The addition of impervious surface and the excavation of soil and vegetation removal has the potential to impact existing hydrological systems and could lead to degradation of soil and pollution of water bodies. This could increase peak runoff, reduce groundwater

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 Number: 1 Author: vaughajo Subject: Highlight Date: 8/6/2019 9:19:37 AM

In addition to wildlife being displaced as a result of development actions, there is the potential for increased wildlife conflict-especially in areas that are designated as migration corridors essential to wildlife movement.

 Number: 2 Author: Vaughajo Subject: Sticky Note Date: 8/7/2019 2:48:53 PM

Even if habitat in the upland is preserved and managed through open space, the increased use and intensity of development can impact the function and effectiveness of the habitat for that species that depend on it.

 Number: 3 Author: Vaughajo Subject: Highlight Date: 8/7/2019 2:47:05 PM

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original program to mitigate potential conflicts. Continuing with the current regulations would prevent further habitat fragmentation and help maintain wildlife viewing, hunting, and fishing experiences in Deschutes County.

As described within Section 3.3 Rural Housing, of the Deschutes County Comprehensive Plan, there is a need for additional housing in Deschutes County to accommodate rapid population growth. Many protections are currently in place within the Deschutes County Comprehensive Plan and Zoning Ordinance to limit development on resource land (EFU, F1/F2) and on land that contains valuable Goal 5 resources such as Sage Grouse Habitat.

A negative consequence of maintaining the current regulations, would be limiting the potential number of homesites in Deschutes County, causing individual impacts by not meeting the needed supply and demand of housing in a rapidly growing market. At a community wide level, many parcels would continue to remain undeveloped, causing a missed opportunity to widen the regional tax base and provide greater county services. An additional consequence of prohibiting this type of use would be in lowering economies of scale for those working in the building trade sector as fewer homes would be eligible to be built.

***Social Consequences:***

Prohibiting the use of land in the Flood Plain Zone in open space calculations associated with cluster and planned unit developments, in essence, limits the division and development of otherwise eligible land. A negative social consequence of maintaining the current code regulations would be limiting additional housing supply that is needed to address the identified housing shortage in Central Oregon and specifically in Deschutes County. It also limits development opportunities on an individual scale for property owners.

The current lack of regulations surrounding the review of divisions for properties that fall into these situations leaves those properties significantly underutilized for residential development. On an individual level, property owner's often feel they are being treated unfairly as other, similar properties have been able to be developed based on prior hearings' officer determinations.

It could also have positive consequences. Many residents express their appreciation for undisturbed landscapes because they contribute to Deschutes County's rural character and quality of life. Prohibiting the parcelization of larger, undeveloped, Flood Plain land would limit human presence near these existing fish and wildlife habitats and continue the recreational use of natural resources in these areas.

***Environmental Consequences:***

Many residents express their appreciation for fish and wildlife habitat and the importance of protecting it. With no code change, approximately twenty (20) parcels would remain

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 Number: 1 Author: vaughajo Subject: Sticky Note Date: 8/6/2019 9:32:54 AM

While ODFW acknowledges the need for housing, this need can be met in other areas of the county that currently allow for this type of development without the need for a code amendment.

vacant, or developed with one single-family home on a single large tract<sup>6</sup>. Riparian and wetland areas would be less likely to experience incremental impacts from human activity associated with neighboring residential development. 

Analysis conducted by staff identified 2,125 split zoned properties that contain Flood Plain zoning. Many of these properties are under the minimum lot size for the other residential base zone, quite a few are already designated as open space, federal land, national forest, park, or land trust property, and a few more properties are located in overlays that require greater minimum parcel sizes than the base zone that would make them ineligible for division. Of those split zoned parcels, only 20, or 0.94% of those properties would be eligible for a cluster or planned unit development under the proposed amendments.

A potential negative consequence associated with this prohibition could be a shift in development pressure to other lands in Deschutes County through nonfarm dwellings, template dwellings, and conventional land divisions. Cluster and planned unit developments are preferable residential development patterns to conventional land divisions as they cluster all residential impacts associated with residences (including vehicular access, building footprints, noise, and odors) to one portion of the property. The remaining open space area is intended to provide an additional buffer from neighboring sensitive habitats, including wetlands and riparian areas, to reduce degradation of fish and wildlife habitat and migration areas. **By prohibiting this style of development, future development would include duplicative infrastructure and likely have a great overall impact to wildlife habitat areas and migration patterns.**

### ***Energy Consequences:***

Energy consumption will have neutral consequences by this scenario. Residential development that is displaced to other areas of rural Deschutes County outside of those identified will still have demands on utilities and county owned roads. However, if a property owner utilizes a conventional land division, there would be more roads and impervious surfaces associated with development because it is not clustered.

### Scenario (C) Limit the Conflicting Use

Under this scenario, Deschutes County would allow cluster and planned unit developments as conditional uses in the Flood Plain Zone, which would permit land within the Flood Plain Zone to be used as open space. This scenario adds additional limitations for applicants to complete and observe a Riparian Area Management Plan and maintain the open space area as a singularly owned tract, **to mitigate impacts associated with residential development.** All other Goal 5 protection programs remain in place.

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<sup>6</sup> There are a few instances of properties containing development that is larger in scale than one single family home as it precluded the establishment of the Deschutes County Zoning Code. These uses are typically legally nonconforming.

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 Number: 1 Author: vaughajo Subject: Sticky Note Date: 8/6/2019 9:37:26 AM

In addition to the riparian and wetland areas, the upland areas which have designated wildlife habitat, such as deer migration range, would be maintained, thus reducing or eliminating habitat fragmentation, which can result in impacts to essential life-history functions.

 Number: 2 Author: vaughajo Subject: Highlight Date: 8/6/2019 9:40:43 AM

ODFW acknowledges the benefits from clustering developments to avoid or minimize impacts to wildlife habitat. However, this statement is referencing the prohibiting on just the style of development and not the actual increased dwelling densities that would be prohibited. Clustering development could still be achieved on other lands that do not have Goal 5 resources.

 Number: 3 Author: vaughajo Subject: Highlight Date: 8/6/2019 9:44:28 AM

The term mitigate seems to be used throughout this document, but it has multiple meanings. In general, the impacts associated with the upland residential development are not "mitigated" or offset (i.e., replaced lost functions) by the development of the RAMP. Mitigation for the impacts to wildlife habitat, such as deer migration range, are not proposed in this PAPA.

**Economic Consequences:**

As described within Section 3.3 Rural Housing, of the Deschutes County Comprehensive Plan, there is a need for additional housing in Deschutes County to accommodate rapid population growth. Significant protections are currently in place within the Deschutes County Zoning Ordinance to limit development on resource land (EFU, F1/F2) and on land that contains valuable Goal 5 resources such as Sage Grouse Habitat.

The Flood Plain Zone currently has protections in place to limit the parcelization and development of high-risk flood hazard areas identified by FEMA, but does not have any guidance on how to guide development that is outside the Flood Plain. A recent hearings officer interpretation determined the existing code does not allow for the use of Flood Plain zoned land as open space for cluster and planned unit developments on Flood Plain, split zoned parcels as the use is not listed in that zone.

By allowing the use, a notable individual economic benefit would be in allowing for additional homesites on up to twenty (20) previously ineligible properties. On an individual economic benefit level, cluster and planned unit developments, as compared to traditional single family home development, often share infrastructure such as roads and utilities, and in turn, the installation and maintenance of this infrastructure is lowered for individual property owners. A community wide benefit would be the addition of homes to the tax base to provide additional services for emergency response and transportation.

The negative consequences of limiting the conflicting use would be the economic loss associated with **habitat fragmentation and corresponding impacts to outdoor recreation (wildlife viewing, hunting and fishing)**. Although in this scenario, divisions must result in the Flood Plain portion of the parcel remaining fully intact as an open space tract singularly owned by the homeowner's association managed by a Riparian Area Management Plan (RAMP), **there is the potential for wildlife disturbance through additional residential development**. Many residents, advocacy organizations, and wildlife agencies continue to express concerns regarding the loss of fish and wildlife habitat due to the region's rapid growth and development, which could lead to a decrease in the recreational tourism economy. In comparison to scenario (a), which would not contain limitations to the open space tract, staff finds that this scenario would further limit habitat fragmentation and impacts to outdoor recreation. Rural quality of life would likely be less impacted than in scenario (a).

Additionally, as the RAMP is required to be created by a wildlife biologist, applicants and subsequent homeowner associations would bear additional costs in this scenario as compared to scenario (a).

**Social Consequences:**

By allowing for the greater potential of land divisions through cluster and planned unit development applications, supported by RAMPs, the County would gain additional

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 Number: 1 Author: vaughajo Subject: Highlight Date: 8/6/2019 9:48:21 AM

This includes direct habitat loss, which can result in direct and indirect impacts to wildlife and their ability to maintain essential life-history functions.

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 Number: 2 Author: vaughajo Subject: Highlight Date: 8/6/2019 9:49:25 AM

The ESEE analysis does not adequately address these conflicting uses introduced as a result of the additional density in the upland.

developable land to aid in the extensive growth in Deschutes County. Codifying these procedures would provide assurance to property owners of their ability to develop and would add a great deal of certainty to the land use review process associated with split zoned properties that contain Flood Plain zoned land and are seeking cluster and planned unit development approval. This would likely add a level of equality as previous, similar land divisions have been approved under hearings officers' interpretations in the past.

The proposed amendments could also have negative consequences due to additional development and human presence near areas that have special meaning to residents. Historically, many residents in Deschutes County have acknowledged concerns regarding the loss of valuable fish and wildlife which in turn could decrease the quality of life for Deschutes County residents who value these species.

**Environmental Consequences:**

In this scenario, cluster and planned unit developments would be added as conditional uses in the Flood Plain Zone. This would allow for Flood Plain zoned land to be used as open space in these developments with two additional requirements.

15. *The property owner or developer would be required to submit a Riparian Area Management Plan, submitted by a Wildlife Biologist and including the following criteria:*
  - a. *An inventory of riparian resources within or adjacent to the Cluster Development;*
  - b. *A map showing the inventoried riparian resources that identifies the area subject to the Riparian Area Management Plan;*
  - c. *A prohibition on golf courses, tennis courts, swimming pools, marinas, ski runs or other developed recreational uses of similar intensity within the area subject to the Riparian Area Management Plan. Low intensity recreational uses such as bicycle, equestrian and pedestrian trails, and wildlife viewing areas located to minimize impact to the identified riparian resources may be permitted;*
  - d. *A prohibition on off-road motor vehicle use within the area subject to the Riparian Area Management Plan.*
  - e. *Measures to preserve and protect the identified riparian resources shall include:*
    - i. *A description of the required measure and its purpose;*
    - ii. *Performance standards for the measure's success;*
    - iii. *Contingent mitigation if monitoring reveals that performance standards are not satisfied;*
    - iv. *Who is responsible for implementing the actions required by the measure;*
    - v. *Where the measure is to take place;*
    - vi. *When must each measure be implemented; and*
    - vii. *Who will monitor the measure and how and when monitoring will occur.*
16. *The open space tract would be required to be a singular tract under on ownership, by the Homeowner's Association.*

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 Number: 1 Author: vaughajo Subject: Highlight Date: 8/6/2019 11:32:48 AM

The language proposed for the RAMP requirement, including the process requirements, are vague.

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 Number: 2 Author: vaughajo Subject: Highlight Date: 8/6/2019 10:04:31 AM

ODFW recommends language that includes additional requirements for "wildlife biologist" and that ODFW is consulted as well in the development of the RAMP. This may include a requirement that ODFW concurs with the RAMP to ensure habitat is adequately protected.

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 Number: 3 Author: vaughajo Subject: Highlight Date: 8/6/2019 10:07:29 AM

It is not clear if this "inventory" is intended to mean the applicant must conduct habitat surveys or if this criteria is limited to the inventoried habitat found on existing Goal 5 maps. ODFW recommends that this criteria include additional clarification that habitat surveys should be conducted which identify existing fish and wildlife resources, including vegetation transects and documented wildlife use.

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 Number: 4 Author: vaughajo Subject: Highlight Date: 8/6/2019 10:34:52 AM

Recommend the reference to "recreational uses of similar intensity" and "Low intensity recreational uses" be further defined. These should also be listed as separate criteria as one criteria is prohibiting and the other allowing specific types of developments.

Recommend the criteria for prohibited uses specifically reference the avoidance of impacts to fish and wildlife resources. Criteria (d) should be included in the (c).

Recommend the language for allowing development including a statement that the riparian and other Goal 5 functions and values be retained or enhanced as part of the RAMP. Many of the uses currently allowed, such as trails, result in conflicting uses, both direct and indirect, which can have adverse impacts to fish and wildlife resources of the state.

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 Number: 5 Author: vaughajo Subject: Sticky Note Date: 8/7/2019 4:11:47 PM

Overall, the language requiring a RAMP should include more clear and objective standards on what is required. The criteria should specifically identify what is required in the RAMP, including the measures/objectives for long-term management of the site. This should identify the objectives for managing the social (i.e. recreational uses), and ecological (i.e. resource function/values) short and long-term needs for the property. If the RAMP includes a recreational use that may trigger compensatory mitigation, this should be identified in the RAMP as a condition.

In addition, ODFW recommends the RAMP require a specific condition for restoration or enhancement of the open space.

ODFW is concerned about the ambiguity with who is responsible for the compliance in implementing the RAMP to ensure the habitat goals/criteria are durable. The ESEE analysis is relying on the RAMP to address the new conflicting uses to Goal 5, however, there is not certainty that each RAMP will adequately address the conflicting use. In addition, the RAMPs may actually introduce additional conflicting uses or impacts to existing Goal 5 resources.

ODFW recommends the county develop specific templates for developing RAMP, in addition to guidance documents that provide additional direction on implementing the required criteria.

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 Number: 6 Author: vaughajo Subject: Highlight Date: 8/6/2019 10:35:50 AM

ODFW is concerned with durability and long-term preservation of this area through the RAMP, by an HOA.

While the Flood Plain Zone would be contained with an open space tract, managed by a Homeowners' Association with specific riparian management requirements, the fact that there are upland lots for residential development could be disruptive to inventoried Goal 5 species accustomed to vacant property. Residential development is currently and will remain prohibited in designated riparian areas consisting of wetlands, 100-foot setback from ordinary high water, and property within the Flood Plain. Additionally other programs to achieve the goal of protecting Goal 5 habitats would remain in place as described in scenario (a).

As stated previously, approximately twenty (20) properties would be eligible for division based on the proposed amendments. Additional limitations could occur related to legal lot status of the property, eligibility for a septic system, and location of wetlands on the property. This number demonstrates the extensive protections in place today for limiting development near inventoried riparian areas.

Inherently, any changes to the current code requirements surrounding Flood Plain zoned properties could be disruptive to inventoried fish and wildlife accustomed to vacant or undeveloped land. As cluster and planned unit developments allow a higher density of residential development compared to a traditional partition or subdivision, additional human presence could lead to incidental disturbance and harassment of fish, deer, waterfowl, upland game birds, furbearer habitat, and the wetland and riparian area itself. The requirement to maintain the Flood Plain zoned land as an open space parcel managed by a Homeowners' Association with a prescribed Riparian Area Management Plan provides a greater level of assurance that habitats will not be disturbed. By having one owner, the County has a greater likelihood of addressing any issues through code enforcement and education. Cluster and planned unit developments are preferable residential development patterns as they cluster all residential impacts associated with residences (including vehicular access, building footprints, noise, and odors) to one portion of the property. In return, the remaining open space area provides a buffer from neighboring Goal 5 resources, including wetlands and riparian areas, in order to prevent disturbance and harassments of wildlife habitat.

In limiting the use and allowing for greater density near sensitive areas, the number of impervious surfaces, driveways, and infrastructure associated with development could lead to habitat fragmentation. Single family home development often includes the addition of accessory structures (carports, garages, barns, etc.) and other features like driveways, patios, and paved pathways. The addition of these impervious surface have the potential to increase stormwater runoff and decrease groundwater recharge. They could also present barriers to the nature movement of wildlife across properties. By clustering homesites and association infrastructure through cluster and planned unit developments, property owners can minimize duplicative infrastructure wherever possible, such as by utilizing the same well, utility access point, or driveway.

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 Number: 1 Author: vaughajo Subject: Highlight Date: 8/6/2019 10:49:24 AM

ODFW concurs with this statement that the upland development will affect Goal 5 resources (e.g., deer migration range). The development of the RAMP does not offset or fully address the conflicting uses introduced by the increased residential development in the upland, which may be adjacent to the riparian areas protected through Goal 5.

Development of homesites would likely require removal of existing upland vegetation, grading, and soil compaction. Although these activities are prohibited in riparian areas, removal of upland vegetation could alter drainage and runoff patterns. This could increase water body volumes and could cause bank erosion, flooding, or the flow of sediment into water bodies. The removal of upland vegetation could also reduce tree canopy and understory vegetation which could be utilized by fish and wildlife species, outside of their primary habitat.

***Energy Consequences:***

The energy consequences in this scenario are the same as in scenario (a) and are neutral.

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 Number: 1 Author: vaughajo Subject: Sticky Note Date: 8/6/2019 10:55:26 AM

Removal of upland habitat can lead to direct and indirect impacts to wildlife. In many cases, this upland habitat is the primary habitat for certain wildlife species.

## Chapter 6: ESEE Decision

**660-023-0040(5): Develop a program to achieve Goal 5. Local governments shall determine whether to allow, limit, or prohibit identified conflicting uses for significant resource sites. This decision shall be based upon and supported by the ESEE analysis. A decision to prohibit or limit conflicting uses protects a resource site. A decision to allow some or all conflicting uses for a particular site may also be consistent with Goal 5, provided it is supported by the ESEE analysis. One of the following determinations shall be reached with regard to conflicting uses for a significant resource site:**

**(b) A local government may decide that both the resource site and the conflicting uses are important compared to each other, and, based on the ESEE analysis, the conflicting uses should be allowed in a limited way that protects the resource site to a desired extent.**

In utilizing the ESEE, Deschutes County has determined that both the identified resource sites, and the conflicting uses outlined above, are important compared to each other. Deschutes County has determined conflicting uses should be allowed to a limited extent and with conditions that protects the resources to a desired extent. This scenario will require additional protections in support of habitat functions and wildlife longevity, while still addressing the immediate need for housing, and greater consistency in the County's land use regulations.

ESEE Factors	Support habitat functions (Environmental, economic, social)	Address Housing Need (Social, economic)	Support Recreational Economy (Economic, Social)	Consistency of Land Use Regulations (Social)	Preserves Rural Character (Social)	Transportation (Energy)
<b>Prohibit conflict</b> (No change to code)	0	0	0	0	0	0
<b>Allow conflict</b> Allow division of eligible properties with application of current standards.	-	+	-	+	-	-
<b>Limit conflict</b> Allow division of eligible properties with application of current standards and additional limitations.	+	+	-	+	-	0

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 Number: 1 Author: vaughajo Subject: Sticky Note Date: 8/6/2019 11:01:44 AM

ODFW acknowledges that table is intended to provide a simplistic overview of the proposal and that overall, limiting the conflict rather than allowing it outright, can be a benefit to wildlife. However, the direct impacts to habitat functions and values in the uplands are not necessarily the same functions and values being supported in the riparian areas and therefore do not result in a positive for supporting those same habitat functions that were lost.

- ii. *Performance standards for the measure's success;*
  - iii. *Contingent mitigation if monitoring reveals that performance standards are not satisfied;*
  - iv. *Who is responsible for implementing the actions required by the measure;*
  - v. *Where the measure is to take place;*
  - vi. *When must each measure be implemented; and*
  - vii. *Who will monitor the measure and how and when monitoring will occur.*
10. *For those Planned Developments that include a Riparian Area Management Plan, the area requiring a Riparian Area Management Plan shall be contained in one or more lots designated as open space on the plat of the subdivision and held in common ownership of a homeowner's association of the development. This open space shall count towards any open space requirements for Planned Developments.*

The text adds requirements for the ownership and management of the Flood Plain zoned portion of the parcel if it is to be used as open space as part of a cluster or planned unit development. **These provisions will in turn mitigate environmental impacts related to habitat fragmentation.** The procedures are clear and nondiscretionary as they provide the same requirements for every cluster or planned unit development that includes flood plain, split zoned land.

***In addition to the clear and objective regulations required by section (2) of this rule, except for aggregate resources, local governments may adopt an alternative approval process that includes land use regulations that are not clear and objective (such as a planned unit development ordinance with discretionary performance standards), provided such regulations:***

- (a) Specify that landowners have the choice of proceeding under either the clear and objective approval process or the alternative regulations; and***
- (b) Require a level of protection for the resource that meets or exceeds the intended level determined under OAR 660-023-0040(5) and 660-023-0050(1).***

In addition to the requirement above, Deschutes County is also choosing to require a level of protection for the resource that meets or exceeds the level determined under OAR 660-023-0040(5) and 660-023-0050(1). **Deschutes County is requiring a Riparian Area Management Plan (RAMP) for all cluster and planned unit development applications. Within this RAMP, a wildlife biologist would provide site specific analysis on existing fish and wildlife populations and mitigation measures to be abided by to reduce residential conflicts and promote the ongoing vitality of the inventoried resource.**

This requirement would be codified in the Deschutes County Code. It contains discretionary criteria so as to ensure resources are protected at the individual property level.

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 Number: 1 Author: vaughajo Subject: Highlight Date: 8/6/2019 11:04:57 AM

ODFW does not concur that the development of the RAMP mitigates for the impacts related to habitat fragmentation, especially as the RAMP still allows for some habitat fragmentation through the development of "low intensity recreational uses".

 Number: 2 Author: vaughajo Subject: Highlight Date: 8/6/2019 11:10:04 AM

The conflicting uses as a result of the upland development are not fully addressed in the development of a RAMP. The term "mitigation" here seems to be used in reference to "minimization measures", however, the loss of habitat function and values are not necessarily "mitigated" or replaced through the development of a RAMP.

<p><b>UPDATED</b> - Inventory – Ord. No. 94-004 –pages 156-201.</p>	<p><b>No.</b></p>	<p>See above.</p>	<p>1 habitat areas for Upland Game Bird Habitat, adopted in No. 92-041 is repealed and replaced and further amended in Exhibit 4 with the ESEE Analysis and inventory for upland game bird habitat.</p> <p>Conflicts with sage grouse are reduced by the limitations on uses in the EFU and flood Plain zone, by the 320 acre minimum lot size and predominance of BLM.</p> <p>Note above still applies.</p>	<p>Ordinance Nos. 94-004 and 94-021</p>
<p><b>Wetlands and Riparian Areas</b> (Inventory – Ord. No. 92-041 – page 73; identified on USFWS NWI)</p>	<p><b>Yes.</b></p>	<ul style="list-style-type: none"> <li>• Fill and removal of material             <ul style="list-style-type: none"> <li>○ Specifically that which could cause reduction in size or quality or function of a wetland, or cause destruction or degradation of riparian habitat/vegetation.</li> </ul> </li> <li>• Structural development in wetlands/riparian areas that reduce habitat and use of structure from harassment or disturbance of wildlife.</li> <li>• Cutting of riparian vegetation that:             <ul style="list-style-type: none"> <li>○ Removes shade for streams, eliminates habitat for waterfowl, furbearers, and nongame birds or causes erosion.</li> </ul> </li> </ul>	<p>Floodplain zone recognized as program to achieve the goal to conserve wetland and riparian habitat (Ordinance Nos. 88-030, 88-031, 89-009).</p> <p>Others include: fill and removal permits, wetland removal regulations, hydro prohibitions, 100' setback from OHW, conservation easements, restrictions on boats and docks, and landscape management</p>	<p>Ordinance Nos. 86-018, 86-054, 86-056, 88-030, 88-031, 89-009, 92-040, 92-041, 92-045</p>

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 Number: 1 Author: vaughajo Subject: Highlight Date: 8/6/2019 9:05:20 PM

This is not clear. Is this amendment proposing to repeal Ord. 92-041? This repeal has not been evaluated as part of the ESSE analysis. 92-041 was adopted for compliance for the county's Goal 5 program, not just address riparian and wetlands. ODFW could not locate Ord. 94-004 to evaluate these statements and is seeking clarity to address our concerns.

<p><b>UPDATED – Riparian inventory</b> – Ord. No. 94-007; Significant riparian habitat is located in three areas:</p> <p>Area within 100’ of OHW of an inventoried stream or river;</p> <p>Area adjacent to an inventoried river or stream and located within a flood plain mapped by FEMA and zoned flood plain by the county (Deschutes River, Little Deschutes River, Paulina Creek, Fall River, Indian Ford Creek, Tumalo Creek, Squaw (Whychus) Creek, and Crooked River</p> <p>Area adjacent to a river or stream and inventoried as a wetland on the NWI</p>	<p><b>Yes.</b></p>	<ul style="list-style-type: none"> <li>• Location of septic systems – pollution of ground and surface water (dependent on soil characteristics).</li> <li>• Structural development in riparian areas causing harassment or disturbance of wildlife.</li> <li>• Recreational use of riparian area that destruct vegetation and soil composition including:             <ul style="list-style-type: none"> <li>○ Boat landing areas</li> <li>○ Formal/informal trails</li> <li>○ Camping areas.</li> </ul> </li> </ul>	<p><b>1</b> riparian Areas inventory and ESEE analysis adopted by Ordinance No. 92-041 is deleted and replaced by an inventory and ESEE contained in Exhibit A.</p> <p>New parcels meeting the minimum lot size in the resource zones (EFU, Forest, non-exception flood plain) will not cause an increase in residential density that would conflict with riparian habitat values.</p> <p>In RR10, MUA-10, and Flood Plain zone found adjacent to inventoried riparian areas, the creation of new 10 acre parcels would not significantly increase the overall density of residential use adjacent to riparian areas because the areas where new parcels could be created, with the exception of Tumalo Creek, are already divided into lots considerably smaller than 10 acres.</p> <p>Program to achieve Goal 5 for Riparian Habitat: fill and removal regulations to protect wetlands, 100’ setback from OHW, Flood plain zone (regulates docks too), Landscape Management zone, Conservation easements, State Scenic Waterway</p>	<p>Ordinance Nos. 94-007</p>
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 Number: 1 Author: vaughajo Subject: Highlight Date: 8/6/2019 9:04:47 PM

This is not clear. Is this amendment proposing to repeal Ord. 92-041? This repeal has not been evaluated as part of the ESSE analysis. 92-041 was adopted for compliance for the county's Goal 5 program, not just address riparian and wetlands. ODFW could not locate Ord. 94-004 to evaluate these statements and is seeking clarity to address our concerns.

<p><b>Habitat for Sensitive Birds</b> (Inventory – Ord. No. 92-041 – page 41 and Table 5; identified by ODFW, ODF, OSU, Oregon Natural Heritage Data Bases).</p> <p>The area required for each nest site varies between species.</p>	<p>No.</p>	<ul style="list-style-type: none"> <li>• Surface mining</li> <li>• Logging operations</li> <li>• Air strips</li> <li>• Residential use,</li> <li>• Recreation facilities,</li> <li>• Roads</li> <li>• Any other activity which would disturb the nesting birds (i.e. intensive recreational use or removal of trees or vegetation)</li> </ul>	<p>Nest sites are found in forest, EFU and Open Space and Conservation zones. The Sensitive Bird and Mammal Combining Zone achieves the goal to protect sensitive bird sites.</p>	<p>Ordinance Nos. 92-040, 92-041, 92-042, 92-046</p>
<p>(<b>UPDATED</b> - Inventory – Ord. No. 94-004 –pages 3 to 140 Site specific ESEE analysis and decisions follow each site.</p>	<p>No.</p>	<p>See above.</p>	<p><b>1</b>abitat areas for sensitive birds of the Fish and Wildlife Element, adopted in No. 92-041 is repealed and replaced by inventories in Exhibit 1. Area required around each nest site needed to protect the nest from conflict varies between species. It's called "sensitive habitat area."</p> <p>Note: Northern bald eagle, osprey, golden eagle, prairie falcon and great blue heron rookeries are located on federal land. Classified as "2A" Goal 5 Resources. Great Grey owl site no longer exists. Some bald eagle, golden eagle sites are controlled by the Sensitive Bird and Mammal Combining Zone.</p>	<p>Ordinance Nos. 94-004 and 94-021</p>

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 Number: 1 Author: vaughajo Subject: Highlight Date: 8/6/2019 9:04:05 PM

This is not clear. Is this amendment proposing to repeal Ord. 92-041? This repeal has not been evaluated as part of the ESSE analysis. 92-041 was adopted for compliance for the county's Goal 5 program, not just address riparian and wetlands. ODFW could not locate Ord. 94-004 to evaluate these statements and is seeking clarity to address our concerns.

<p><b>Habitat Areas for Townsend’s Big-Eared Bats</b> (Inventory – Ord. No. 92-041 – page 69; identified by ODFW, ODF, OSU, Oregon Natural Heritage Data Bases)</p>	<p><b>No.</b></p>	<ul style="list-style-type: none"> <li>• Surface mining</li> <li>• Logging operations</li> <li>• Air strips</li> <li>• Recreation facilities including golf courses and destination resorts</li> <li>• Roads</li> </ul>	<p>Caves located in EFU zones. Program to achieve the goal is Sensitive Bird and Mammal Combining Zone</p>	<p>Ordinance No. 92-041 and 042</p>
<p><b>UPDATED</b> - Inventory – Ord. No. 94-004 –pages 140 to 155 Site specific ESEE analysis and decisions follow each site.</p>	<p><b>No.</b></p>	<p>See above.</p>	<p>Habitat areas for Townsend Bats adopted in No. 92-041 is repealed and replaced and further amended in Exhibit 2. The ESEE for Townsend’s big-eared bats is amended for additional bat sites in Exhibit 3.</p>	<p>Ordinance Nos. 94-004 and 94-021</p>
<p><b>Lakes and Reservoirs</b> (Inventory – Ord. No. 92-052, Exhibit C, Page 10; includes Upper Tumalo Reservoir; remaining are on federal land</p>	<p><b>No.</b></p>	<ul style="list-style-type: none"> <li>• Development which would cause a loss of open space or a decrease in the aesthetic and scenic resources</li> <li>• land management activities, resulting in the removal of natural vegetation which provides wildlife habitat and scenic value.</li> </ul>	<p>Conflicting uses around Tumalo Reservoir are specifically limited by Title 18.48, Open Space Conservation Zone and a 100’ setback for any structure from OHW</p>	<p>Ordinance No. 91-020</p>

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 Number: 1 Author: vaughajo Subject: Sticky Note Date: 8/6/2019 9:04:29 PM

This is not clear. Is this amendment proposing to repeal Ord. 92-041? This repeal has not been evaluated as part of the ESSE analysis. 92-041 was adopted for compliance for the county's Goal 5 program, not just address riparian and wetlands. ODFW could not locate Ord. 94-004 to evaluate these statements and is seeking clarity to address our concerns.

## 247-19-000532-TA Split Zone Comments

residential structure, or an accessory building in a designated Flood Plain obtain a conditional use permit.

- 8) Additional development restrictions apply for areas that contain the following combining zones: Winter Deer Range, Antelope Range, Elk Habitat, Deer Migration Corridors, Sage Grouse Habitat Area, and Sensitive Bird and Mammal Habitat.

### **Required Steps and Discretionary Review**

Local governments are required to comply with Goal 5 when a Post Acknowledge Plan Amendment (PAPA) allows a new use and the new use “could be” a conflicting use with a particular Goal 5 resource site on an acknowledged resource list.<sup>1</sup> Deschutes County is proposing changes to the Flood Plain Zone to add procedures related to the division of split zoned properties that contain Flood Plain zoning. **Although no new conflicting use is being added, the addition of these procedures would allow for previously ineligible properties to be divided, including certain properties containing Goal 5 resources.** Therefore, the County is not required, but is choosing to conduct an ESEE an analysis exercise to determine potential consequences and protections related to the amendments. ESEEs are meant to be analytical tools. The content of the ESEE is discretionary and is meant to be conducted by planning staff using existing information. In utilizing this tool, there are a few steps jurisdictions must include and address in accordance with OAR 660-023 – *Procedures and Requirements for Complying with Goal 5*:

1. Identify Conflicting Uses – Does the land use or activity negatively impact natural resources?
2. Determine Impact Area – What is the geographic extent to which land uses or activities adjacent to natural resources could negatively impact those resources?
3. Analyze ESEE Consequences – What are the positive and negative consequences (both for development and natural resources) of a decision to fully protect natural resources, fully allow conflicting uses, or limit conflicting uses?
4. Develop a program – How and to what extent will the natural resources be protected based on the ESEE analysis?

Staff provides a response to each of these steps throughout this report. The relevant page and chapter can be found in the table of contents.

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<sup>1</sup> OAR 660-023-0250(3)(b)

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 Number: 1 Author: vaughajo Subject: Highlight Date: 8/7/2019 6:08:32 PM

The proposal states that the amendments do not propose a new use that could conflict with Goal 5. However, the amendments are allowing additional land divisions, which result in habitat fragmentation and other conflicting uses. The current regulations acknowledge that the Flood Plain Zone is recognized as an implementation measure to conserve fish and wildlife resources. In addition, on page 5 of the amendments, the county acknowledges that the creation of new parcels has the possibility to create new conflicts near inventoried riparian areas, including the fish, wildlife and habitat resources found in them.

In many cases, Goal 5 protections relied on the resource zones, which provided for large parcels which included limitations to fragmentation of the resource land.

## Chapter 2: Deschutes County Goal 5 Inventory and Methodology

### 660-23-0030 – Inventory Goal 5 Resources

Stemming from periodic review, Deschutes County has adopted inventories for a variety of Goal 5 natural resources<sup>2</sup>. Some of these resources have mapped geographic boundaries, whereas others are described as being located in general areas – such as furbearer habitat in riparian corridors. The inventories were produced at a countywide scale, with additional detail for the Deschutes River and its tributaries through the Deschutes County/City of Bend River Study. For this document, staff utilized Geographic Information Systems (GIS) data to map a conservative location of inventoried sites based on previous ordinances<sup>3</sup> using the best available data for the following inventoried habitats that spatially coincides with the flood plain zone: riparian areas, elk habitat, deer habitat, and deer winter range. Staff utilized the County's Wildlife Area Combining Zone layers to determine the general extent of habitat for big game species as the Combining Zone was designed to cover a larger area than the habitat itself (Ordinance 92-046). Inventoried streams and rivers are shown on the map, as well as wetland and riparian areas. The Riparian Area associated with these water bodies is also the habitat area for furbearers, waterfowl, or upland game birds (Ordinance 92-041, 94-007). As the proposed text amendments affect a quantifiable number of properties based on their minimum lot size and other characteristics, staff identified four corridors in which inventoried natural resources and eligible properties intersect with the flood plain zone.

Deschutes River Corridor<sup>3</sup>: These properties are located in relative proximity to the Deschutes River. Many areas of the Deschutes River, including the Lower Bridge area, feature canyons in which the height separation of the river from the upland area is over 50-100' in distance. Of the twenty-seven (27) parcels shown on the maps, three (3) parcels are shown but do not contain any Goal 5 resources and are mapped for consistency in identifying parcels eligible for division under the proposed amendments. Sixteen (16) of the total number of parcels contain mapped Goal 5 Deer Migration Range. Approximately twenty-four (24) parcels contain Goal 5 Riparian Area - consisting of land within 100 feet of the Deschutes River's Ordinary High Water Mark (OHWM), land within a wetland as depicted on the National Wetland Inventory Map, and land that is within the Flood Plain boundary associated with the Deschutes River. These properties also contain the following inventoried Goal 5 resources that depend on Riparian Areas for habitat: fish, furbearer, waterfowl, and upland game bird habitat.

Crooked River Corridor<sup>4</sup>: These properties are located in relative proximity to the Crooked River. Each of the two (2) parcels in this corridor contain Goal 5 Riparian Area -- consisting of land within 100 feet of the Crooked River's Ordinary High Water Mark (OHWM), land within a wetland as depicted on the National Wetland Inventory Map, and land that is within the Flood Plain boundary associated with the Crooked River. Lands

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<sup>2</sup> Attachment 2 Goal 5 Summary Table

<sup>3</sup> Maps 1, 4, 5, 6, 8, 9, 10, 11, 12

<sup>4</sup> Map 2

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 Number: 1 Author: vaughajo Subject: Highlight Date: 8/6/2019 4:23:36 PM

ODFW has additional data on existing Goal 5 resources that can be utilized to more accurately consider the impacts to wildlife, such as furbearer habitat.

 Number: 2 Author: vaughajo Subject: Highlight Date: 8/7/2019 6:09:09 PM

As ODFW understands it, the best available data was not utilized and instead the county relied on the existing outdated Goal 5 inventories. Therefore, the ESEE analysis should only reference reliance on the existing data.

that include inventoried riparian area also include the following inventoried resources: fish, furbearer, waterfowl, and upland game bird habitat. The properties also contain Goal 5 Deer Winter range.

Whychus Creek Corridor<sup>5</sup>: The properties are located in relative proximity to the confluence of Whychus Creek and Indian Ford Creek. Of the two (2) parcels shown on the maps, one (1) parcel near Highway 20 is shown but does not contain any Goal 5 resources and is mapped for consistency in identifying parcels eligible for division under the proposed amendments. The other parcel contains inventoried Goal 5 Riparian Area – consisting of land within 100 feet of each bodies' Ordinary High Water Mark (OHWM), land within a wetland as depicted on the National Wetland Inventory Map, and land that is within the Flood Plain boundary associated with the water bodies. The following inventoried resources are also on the property as they depend on Riparian Area for habitat: fish, furbearer, waterfowl, and upland game bird.

Dry River Corridor<sup>6</sup>: These properties are located in relative proximity to the Dry River. Of the five (5) parcels in this corridor, two (2) do not contain Goal 5 resources but are shown on the map for consistency in identifying parcels eligible for division under the proposed amendments. The other three (3) properties contain Goal 5 Riparian Areas – consisting of land within 100 feet of the each bodies' Ordinary High Water Mark (OHWM), land within a wetland as depicted on the National Wetland Inventory Map, and land that is within the Flood Plain boundary associated with the water bodies. Lands that include inventoried riparian area also include the following inventoried resources: furbearer, waterfowl, and upland game bird habitat. The Dry River was not included in the City of Bend/Deschutes County River Study, which informed many of the ordinances that adopted the Goal 5 inventory; it is also not listed as a fish habitat in Ordinance 92-041, which adopted the fish inventory. The Dry River is a tributary of the Crooked River and **is an intermittent stream in the extent that is located in Deschutes County. This means some portions of the river may be able to support fish and wildlife populations, whereas others may not.**

The Flood Plain Zone generally is also recognized as a program to achieve open space and scenic resources for Landscape Management Rivers and Streams, State Scenic Waterway and Federal Wild and Scenic Rivers, and Ecologically and Scientifically Significant Natural Areas – Little Deschutes River / Deschutes Confluence. As these are resources associated with mitigating visual impacts and do not impact development potential, they are not impacted by the proposed amendments and therefore are not reviewed in this document.

Maps of these corridors are found in Map A- *Land Division of Flood Plain, Split Zoned Properties, Eligible Parcels and Inventoried Goal 5 Resources.*

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<sup>5</sup> Map 3

<sup>6</sup> Map 7

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 Number: 1 Author: vaughajo Subject: Highlight Date: 8/6/2019 4:46:59 PM

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This statement regarding intermittent streams is an assumption that they are not essential to support habitat functions for fish and wildlife. Intermittent streams are essential for supporting fish and wildlife life-history needs. For example, many fish species rely on intermittent streams in the fall and winter months when the mainstem rivers may not be suitable. The ability of perennial waters to function as habitat for many fish and wildlife species throughout the year is directly tied to the larger stream network, which includes intermittent and ephemeral streams.

When considered cumulatively, intermittent and ephemeral streams are vital in determining the quality of perennial water, and hence, the beneficial uses supported in downstream perennial reaches and the health of economies tied to those resources.

## Chapter 3: Conflicting Use Analysis

**660-023-0040(2): Identify conflicting uses. Local governments shall identify conflicting uses that exist, or could occur, with regard to significant Goal 5 resource sites. To identify these uses, local governments shall examine land uses allowed outright or conditionally within the zones applied to the resource site and in its impact area. Local governments are not required to consider allowed uses that would be unlikely to occur in the impact area because existing permanent uses occupy the site.**

Staff is proposing to add a new section to the Flood Plain Zone chapter of the Deschutes County Zoning Code. This section, DCC 18.96.150, adds the following provisions:

### **18.96.150. Acreage Calculation for Partition or Subdivision of Certain Properties Containing Flood Plain Zoned Lands**

*Partitions or subdivisions of properties that contain both Flood Plain zoned lands and exactly one other primary zone and which have only one comprehensive plan designation are subject to the following area calculation and configuration standards.*

- 1. The Flood Plain and non-Flood Plain zoned area shall be summed for the purposes of lot area calculation.*
- 2. The minimum lot size for new lots or parcels resulting from such partitions or subdivision shall be determined by the minimum lot size of the non-Flood Plain zone.*
- 3. All Flood Plain zoned lands from the parent lot or parcel must be contained within a single subdivision lot or partition parcel.*

This analysis is slightly varied from a typical ESEE as the change does not add new outright or conditional uses, change the existing conditional allowed uses, or change the location or number of structures or uses that may be allowed on any one unit of land. The proposed amendments instead add a new procedure for the division of split zoned property. This procedure allows for previously ineligible parcels to be divided in certain scenarios, as split zoned properties would utilize the non-Flood Plain base zone standard to determine the minimum lot size following division. Current regulations allow the division of a Flood Plain, split zoned parcel, only if both the Flood Plain and Non-Flood Plain base zone minimum lot size requirements are met.

## General Impacts of Conflicting Uses

As the amendments do not add new uses to the zone, staff provides an analysis of potential conflicts from general development on Flood Plain, split zoned properties. **It is important to clarify that as part of this review, staff can only analyze conflicts associated with land use regulations and development. Staff cannot analyze things like the presence of dogs and domestic animals or recreation activities and other social implications.** In reviewing the proposed amendments, staff finds that the impacts for any type of development, in this case

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 Number: 1 Author: vaughajo Subject: Highlight Date: 8/7/2019 6:09:56 PM

The existing ESEE analysis for county compliance with Statewide Planning Goal 5 already identifies increased human disturbance, such as the presence of dogs and recreation, as a conflicting use. Therefore, ODFW is unclear as to why social implications, such as increased intensity of use and recreation, cannot be evaluated in this proposal.

most likely single family homes but also accessory or agricultural structures, potentially would create the following conflicts.

- *Habitat Fragmentation*  <sup>1</sup>  
By adding procedures for the division of Flood Plain, split zoned properties, 36 properties will be eligible for development as they will no longer be required to meet both the Flood Plain and Non-Flood Plain minimum lot size. This level of development could lead to habitat fragmentation as additional homesites could concentrate the number of impervious surfaces, driveways, and infrastructure in certain areas, displacing wildlife habitat and migration patterns.
- *Additional Impervious Surfaces*  
Development of previously ineligible parcels could lead to the addition of homesites and necessary infrastructure. Single family home development often includes the addition of accessory structures (carports, garages, barns, etc.) and other features like driveways, patios, and paved pathways. The addition of these impervious surfaces have the potential to increase stormwater runoff and decrease groundwater recharge.
- *Excavation and Vegetation Removal*  <sup>2</sup>  
Development of homesites would likely require removal of upland vegetation, grading, and soil compaction that could alter drainage and runoff patterns. This could increase peak runoff, cause bank erosion, exacerbate flooding, or increase the flow of sediment into water bodies. The removal of upland vegetation could also reduce tree canopy and understory vegetation which could be utilized by fish and wildlife species, outside of their primary habitat.

Staff provides greater detail on these potential conflicts and their consequences below.

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Number: 1 Author: vaughajo Subject: Sticky Note Date: 8/6/2019 4:58:11 PM

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While habitat fragmentation is a conflicting use that should be evaluated, ODFW also recommends the county evaluates habitat loss on the portion of the property that will as result of the land division, be allowed to create additional residential development. The ESEE analysis does not adequately consider the conflicting uses to the existing Goal 5 resources located in the upland area of the parcel, or the potential for new conflicting uses to be introduced into the riparian area as a result of the RAMP (from 247-000531-TA).

Number: 2 Author: vaughajo Subject: Sticky Note Date: 8/6/2019 4:59:54 PM

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Development in the upland areas where there is an existing Goal 5 inventory, such as the Deer Migration Range, will result in loss of habitat, including loss of quality and quantity of habitat. In addition, loss of forage for wildlife can exacerbate increased wildlife conflict, such as damage or public safety concerns.

codifying these procedures, property owners and interested parties will have a clear concept of development and divisibility potential for relevant properties which can reduce risk and cost associated with the current interpretation practice that is legally vulnerable.

Additionally, a community wide benefit would be the addition of homes to the tax base to provide additional services for emergency response and transportation.

Permitting the division of Flood Plain, split zoned property could have negative economic consequences as upland development could unintentionally cause loss or degradation of wildlife habitat. In Deschutes County, a recreational outdoor industry exists which includes hunting, fishing, hiking, and birding activities associated with established recreation areas. Land clearing and the concentration of residential infrastructure has the potential to drive fish and wildlife away from the area, or reduce total wildlife populations, which could contribute to recreational economic loss if they are located near public lands that provide access to outdoor recreation. However, it is important to note that many of these properties are under private ownership and surrounded by private lands, so public access is not always permitted by right.

### ***Social Consequences:***

In this scenario, division of Flood Plain, split zoned properties would be allowed outright with no limitations. These divisions could have the positive benefit of creating additional housing sites for Deschutes County residents for split zoned parcels. This would allow for equity in the community, as other similar parcels have been able to be divided per Hearings Officers' interpretations in the past.

Many residents, advocacy organizations, and wildlife agencies continue to express concerns regarding the loss of fish and wildlife habitat due to the region's rapid growth and development. There is a recognition that increases in human population, especially in rural areas, displace habitat and diminish, incrementally, Deschutes County's rural character and quality of life. The proposed amendments could have negative consequences due to increased residential development and additional human presence near the inventoried Goal 5 resources which could lead to a reduced level of access and enjoyment for recreationalists.

### ***Environmental Consequences:***

Residential development is currently and will remain prohibited in designated wetlands, riparian areas, and property within the Flood Plain. Per state law, stormwater runoff will be contained on site. As previously stated, the following Goal 5 protections established during the creation of the initial inventory would remain in place:

- 1) Creation of new residential development sites in the Flood Plain by land division is not permitted.

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 Number: 1 Author: vaughajo Subject: Highlight Date: 8/6/2019 7:21:51 PM

If a property has identified wildlife resources, there are known direct and indirect impacts as a result of conflicting uses, such as development actions.

 Number: 2 Author: vaughajo Subject: Sticky Note Date: 8/6/2019 7:23:33 PM

Development within wildlife habitat results in direct and indirect impacts. Direct habitat loss leads to displacement, and a loss of accessible land for sustaining important life-history needs of wildlife. Hunting may occur on public lands, but in some cases private as well. However, the life-history needs of wildlife, such as big game, are not solely met on public land and in many cases habitat such as essential migration corridors to access winter range, are located on private land. Therefore there is a much greater economic impact that can result from fully allowing the use to recreational activities such as hunting, fishing and wildlife viewing.

 Number: 3 Author: vaughajo Subject: Sticky Note Date: 8/6/2019 7:24:30 PM

Additional social consequences resulting from fully allowing the use include increased wildlife damage and wildlife conflicts (e.g., public safety, nuisance, etc).

 Number: 4 Author: vaughajo Subject: Highlight Date: 8/6/2019 7:30:00 PM

The intent of this statement is not clear. It highlights the additional human presence, but also states there could be less access enjoyment for recreation.

- 2) Structures must observe a 100-foot setback from the ordinary high water mark of rivers or streams.
- 3) Structures along rivers in the Landscape Management Combining Zone must observe scenic protections.
- 4) Fill or removal of any material or wetland vegetation, regardless of the amount, within the bed and banks of any stream or river or in any wetland is prohibited unless approved as a conditional use.
- 5) Impacts to any wetland or riverbank impacts must be fully mitigated, as evaluated by Oregon Department of Fish and Wildlife (ODFW).
- 6) Cluster developments in designated wildlife habitat combining zones must retain a minimum of 80% open space and satisfy specific conditional use permit criteria.
- 7) All new construction, expansion or substantial improvement of an existing dwelling, an agricultural related structure, a commercial, industrial or other non-residential structure, or an accessory building in a designated Flood Plain obtain a conditional use permit.
- 8) Additional development restrictions apply for areas that contain the following combining zones: Winter Deer Range, Antelope Range, Elk Habitat, Deer Migration Corridors, Sage Grouse Habitat Area, and Sensitive Bird and Mammal Habitat.

A positive consequence of allowing the proposed use outright with existing regulations would be for greater consistency in the division of split zoned parcels. The current code is ambiguous and relies on staff and Hearings Officer's determinations to examine individual applications. By codifying the use, there is greater clarity and transparency for all parties involved in the land use process, particularly for those concerned about environmental impacts 

A negative consequence of allowing the proposed use outright would be the potential of Flood Plain parcelization and wildlife fragmentation. Inherently, any changes to the current code requirements surrounding Flood Plain zoned properties could be disruptive to inventoried fish and wildlife accustomed to vacant or undeveloped land. Although not regulated by land use, additional human presence from one or more new parcels immediately adjacent to the Flood Plain and riparian areas of the property could disturb and harass fish, deer, waterfowl, upland game birds, furbearer habitat, and the wetland and riparian area itself.

The addition of impervious surface and the excavation of soil and vegetation removal has the potential to impact existing hydrological systems and could lead to degradation of soil and pollution of water bodies. This could increase peak runoff, reduce groundwater recharge, cause bank erosion, exacerbate flooding, or increase the flow of sediment into water bodies. The removal of upland vegetation could also reduce tree canopy and understory vegetation which could be utilized by fish and wildlife species, outside of their primary habitat 

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 Number: 1 Author: vaughajo Subject: Sticky Note Date: 8/6/2019 7:32:38 PM

The current language and requirement of a RAMP to offset the impacts from the additional residential development in the upland (e.g., wildlife fragmentation/habitat loss) does not provide certainty that those conflicting uses will be addressed through the long-term implementation of the RAMP.

 Number: 2 Author: vaughajo Subject: Highlight Date: 8/6/2019 7:25:32 PM

 Number: 3 Author: vaughajo Subject: Highlight Date: 8/7/2019 6:14:34 PM

In addition to wildlife being displaced as a result of development actions, there is the potential for increased wildlife conflict-especially in areas that are designated as migration corridors essential to wildlife movement.

Although the "additional human presence" may not be regulated by land use, the intensity of development and the type of uses allowed are regulated by land use and the DCC.

In addition, the current ESEE analysis for the Goal 5 program already identifies dogs and recreation, including trail development, as a conflicting use. Therefore, it is unclear why the county cannot analyze those existing conflicting uses in this proposed ESEE analysis.

 Number: 4 Author: vaughajo Subject: Sticky Note Date: 8/6/2019 7:34:28 PM

Removal of upland habitat can lead to direct and indirect impacts to wildlife. In many cases, this upland habitat is the primary habitat for certain wildlife species.

***Energy Consequences:***

Energy consumption will be nominally affected by this scenario and is neutral. Only thirty-six (36) properties will be able to utilize the proposed amendments based on their minimum lot or parcel size. Residential development will therefore be limited in scale.

A potential negative consequence of the proposed amendments could be the addition of new homesites in rural Deschutes County. These new homesites would require energy to develop and operate. Additionally, additional rural residents could lead to additional Vehicle Miles Traveled and greater congestion on county owned roads.

Scenario (B) Prohibit the Conflicting Use

In this scenario, Deschutes County would not change any of the current regulations surrounding the division of properties in the Flood Plain Zone, and would not prescribe land division procedures for properties that are split zoned. Existing regulations would continue to prohibit the use.

***Economic Consequences:***

Wildlife viewing, hunting, and fishing experiences in Deschutes County is a major economic asset to the region. A neutral consequence of prohibiting the division of Flood Plain, split zoned property, is that large undeveloped parcels near inventoried resource areas are maintained. Disturbance of important fish and wildlife populations, resulting from residential use of private property would stay the same. **Continuing to prohibit the division of thirty-six (36) parcels is consistent with the original program to mitigate potential conflicts.** Continuing with the current regulations would likely maintain the existing level of revenue associated with wildlife viewing, hunting, and fishing experiences in Deschutes County.

As described within Section 3.3 Rural Housing, of the Deschutes County Comprehensive Plan, there is a need for additional housing in Deschutes County to accommodate rapid population growth. Many protections are currently in place within the Deschutes County Comprehensive Plan and Zoning Ordinance to limit development on resource land (EFU, F1/F2) and on land that contains valuable Goal 5 resources such as Sage Grouse Habitat.

A negative consequence of maintaining the current regulations, which prohibit the division of 36 Flood Plain, split zone properties, would be limiting the potential of homesites in Deschutes County, causing individual impacts by not meeting the needed supply and demand of housing in a rapidly growing market. At a community wide level, many parcels would continue to remain undeveloped, causing a missed opportunity to widen the regional tax base and provide greater county services. An additional consequence of prohibiting this type of use would be in lowering economies of scale for those working in the building trade sector as fewer homes would be eligible to be built.

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 Number: 1 Author: vaughajo Subject: Highlight Date: 8/6/2019 7:46:04 PM

The intent of the program included the limitation of fragmentation of habitat within the split zoned parcel to avoid the potential conflict, then this should be further evaluated in the ESEE analysis for consistency.

***Energy Consequences:***

Energy consumption will have neutral consequences by this scenario. Residential development that is displaced to other areas of rural Deschutes County outside of those identified will still have demands on utilities.

Scenario (C) Limit the Conflicting Use

Under this scenario, Deschutes County would codify procedures for the division of split zoned properties, allowing for the use of the non-Flood Plain base zone in determining minimum lot size. Additional regulations would be put in place, so that division of split zoned property would only be allowed for properties with two base zones and one comprehensive plan designation. All other Goal 5 protection programs remain in place.

***Economic Consequences:***

As described within Section 3.3 Rural Housing, of the Deschutes County Comprehensive Plan, there is a need for additional housing in Deschutes County to accommodate rapid population growth. Significant protections are currently in place within the Deschutes County Zoning Ordinance to limit development on resource land (EFU, F1/F2) and on land that contains valuable Goal 5 resources such as Sage Grouse Habitat.

The Flood Plain Zone currently has protections in place to limit the parcelization and development of high-risk flood hazard areas identified by FEMA, but does not have any guidance on how to guide development that is outside the Flood Plain. Current regulations allow the division of a Flood Plain, split zoned parcel, only if both the Flood Plain and Non-Flood Plain base zone minimum lot size requirements are met.

By allowing the division of Flood Plain, split zoned properties, a notable economic benefit would be in allowing for additional homesites on previously ineligible properties. On an individual level, this would provide additional housing opportunities for home buyers in an area that is experiencing rapid population growth with limited housing stock. The distinguishing factor in this scenario would be adding procedures to the Deschutes County Code related to the review of split zoned Flood Plain properties. By codifying these procedures, property owners and interested parties will have a clear concept of development and divisibility potential for relevant properties which can reduce risk and cost associated with the current interpretation practice that is legally vulnerable 

On a community wide level – the addition of homesites would lead to additional tax revenue, which could lead to greater rural services such as emergency response and transportation improvements.

The negative impacts of limiting the conflicting use would be the economic loss associated with habitat fragmentation and corresponding impacts to outdoor recreation (wildlife viewing, hunting and fishing). Although in this scenario, divisions must result in the Flood

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 Number: 1 Author: vaughajo Subject: Sticky Note Date: 8/7/2019 6:15:24 PM

While ODFW acknowledges the need for housing, this need may be met in other areas of the county that currently allow for this type of development without the need for a code amendment.

## Chapter 6: ESEE Decision

**660-023-0040(5): Develop a program to achieve Goal 5. Local governments shall determine whether to allow, limit, or prohibit identified conflicting uses for significant resource sites. This decision shall be based upon and supported by the ESEE analysis. A decision to prohibit or limit conflicting uses protects a resource site. A decision to allow some or all conflicting uses for a particular site may also be consistent with Goal 5, provided it is supported by the ESEE analysis. One of the following determinations shall be reached with regard to conflicting uses for a significant resource site:**

**(b) A local government may decide that both the resource site and the conflicting uses are important compared to each other, and, based on the ESEE analysis, the conflicting uses should be allowed in a limited way that protects the resource site to a desired extent.**

In utilizing the ESEE, Deschutes County has determined that both the identified resource sites, and the conflicting uses outlined above, are important compared to each other. Therefore, Deschutes County has determined conflicting uses should be allowed to a limited extent and with conditions that protects the resources to a desired extent.

As stated in the ESEE analysis, there are a variety of positive, negative, and neutral consequences associated with each scenario. Allowing the use with limitations provides additional protections in support of habitat functions and wildlife longevity, while still addressing the immediate need for housing and clarity in the County's land use regulations.

ESEE Factors	Support habitat functions (Environmental, economic, social)	Address Housing Need (Social, economic)	Support Recreational Economy (Economic, Social)	Consistency of Land Use Regulations (Social)	Preserves Rural Character (Social)	Transportation (Energy)
<b>Prohibit conflict</b> (No change to code)	0	0	0	0	0	0
<b>Allow conflict</b> Allow division of eligible properties with application of current standards.	0  <sup>1</sup>	+	-	+	-	-
<b>Limit conflict</b> Allow division of eligible properties with application of current standards and additional limitations.	+  <sup>2</sup>	+	-	+	-	-

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Number: 1 Author: vaughajo Subject: Sticky Note Date: 8/6/2019 8:01:35 PM

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It is not clear how allowing the conflict without limitations would be neutral for supporting habitat. Allowing the conflict outright would not support habitat functions since it doesn't address the habitat impacts within the flood plain/riparian area or the development in the upland.

Number: 2 Author: vaughajo Subject: Sticky Note Date: 8/6/2019 8:02:21 PM

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ODFW acknowledges that table is intended to provide a simplistic overview of the proposal and that overall, limiting the conflict rather than allowing it outright, can be a benefit to wildlife. However, the direct impacts to habitat functions and values in the uplands are not necessarily the same functions and values being supported in the riparian areas and therefore do not result in a positive for supporting those same habitat functions that were lost.

Parcelization of the Flood Plain Zone, which in turn will mitigate environmental impacts related to habitat fragmentation. The procedures associated with development review of split zoned properties are clear and nondiscretionary as they rely on existing comprehensive plan and zoning maps in determining eligibility, and the same requirement to retain the Flood Plain on a singular parcel.

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 Number: 1 Author: vaughajo Subject: Highlight Date: 8/6/2019 8:09:15 PM

This proposal acknowledges that some of the floodplain zoned land is limited in size compared to the other zoning, therefore ODFW does not concur that, by itself, the single parcel of the flood plain zone will mitigate the environmental impacts associated with the upland development (as a result of the land division) and the requirement in 247-000531-TA for a RAMP. As ODFW commented on that proposal, the RAMP may still allow for some habitat fragmentation through the development of "low intensity recreational uses".

<p><b>UPDATED</b> - Inventory – Ord. No. 94-004 –pages 156-201.</p>	<p><b>No.</b></p>	<p>See above.</p>	<p>Habitat areas for Upland Game Bird Habitat, adopted in No. 92-041 is repealed and replaced and further amended in Exhibit 4 with the ESEE Analysis and inventory for upland game bird habitat.  1</p> <p>Conflicts with sage grouse are reduced by the limitations on uses in the EFU and flood Plain zone, by the 320 acre minimum lot size and predominance of BLM.</p> <p>Note above still applies.</p>	<p>Ordinance Nos. 94-004 and 94-021</p>
<p><b>Wetlands and Riparian Areas</b> (Inventory – Ord. No. 92-041 – page 73; identified on USFWS NWI)</p>	<p><b>Yes.</b></p>	<ul style="list-style-type: none"> <li>• Fill and removal of material             <ul style="list-style-type: none"> <li>○ Specifically that which could cause reduction in size or quality or function of a wetland, or cause destruction or degradation of riparian habitat/vegetation.</li> </ul> </li> <li>• Structural development in wetlands/riparian areas that reduce habitat and use of structure from harassment or disturbance of wildlife.</li> <li>• Cutting of riparian vegetation that:             <ul style="list-style-type: none"> <li>○ Removes shade for streams, eliminates habitat for waterfowl, furbearers, and nongame birds or causes erosion.</li> </ul> </li> </ul>	<p>Floodplain zone recognized as program to achieve the goal to conserve wetland and riparian habitat (Ordinance Nos. 88-030, 88-031, 89-009).</p> <p>Others include: fill and removal permits, wetland removal regulations, hydro prohibitions, 100’ setback from OHW, conservation easements, restrictions on boats and docks, and landscape management</p>	<p>Ordinance Nos. 86-018, 86-054, 86-056, 88-030, 88-031, 89-009, 92-040, 92-041, 92-045</p>

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 Number: 1 Author: vaughajo Subject: Sticky Note Date: 8/7/2019 6:19:51 PM

As ODFW understands it, 92-041 was adopted for compliance for the county's Goal 5 program, not just address riparian and wetlands. ODFW could not locate Ord. 94-004 to evaluate these statements and is seeking clarity to address our concerns.

Any specific code referenced should be accessible for public review.

<p><b>Habitat for Sensitive Birds</b> (Inventory – Ord. No. 92-041 – page 41 and Table 5; identified by ODFW, ODF, OSU, Oregon Natural Heritage Data Bases).</p> <p>The area required for each nest site varies between species.</p>	<p>No.</p>	<ul style="list-style-type: none"> <li>• Surface mining</li> <li>• Logging operations</li> <li>• Air strips</li> <li>• Residential use,</li> <li>• Recreation facilities,</li> <li>• Roads</li> <li>• Any other activity which would disturb the nesting birds (i.e. intensive recreational use or removal of trees or vegetation)</li> </ul>	<p>Nest sites are found in forest, EFU and Open Space and Conservation zones. The Sensitive Bird and Mammal Combining Zone achieves the goal to protect sensitive bird sites.</p>	<p>Ordinance Nos. 92-040, 92-041, 92-042, 92-046</p>
<p>(<b>UPDATED</b> - Inventory – Ord. No. 94-004 –pages 3 to 140 Site specific ESEE analysis and decisions follow each site.</p>	<p>No.</p>	<p>See above.</p>	<p><b>1</b>abitat areas for sensitive birds of the Fish and Wildlife Element, adopted in No. 92-041 is repealed and replaced by inventories in Exhibit 1. Area required around each nest site needed to protect the nest from conflict varies between species. It's called "sensitive habitat area."</p> <p>Note: Northern bald eagle, osprey, golden eagle, prairie falcon and great blue heron rookeries are located on federal land. Classified as "2A" Goal 5 Resources. Great Grey owl site no longer exists. Some bald eagle, golden eagle sites are controlled by the Sensitive Bird and Mammal Combining Zone.</p>	<p>Ordinance Nos. 94-004 and 94-021</p>

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 Number: 1 Author: vaughajo Subject: Highlight Date: 8/7/2019 6:18:20 PM  
Same comment as above.

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<p><b>Habitat Areas for Townsend’s Big-Eared Bats</b> (Inventory – Ord. No. 92-041 – page 69; identified by ODFW, ODF, OSU, Oregon Natural Heritage Data Bases)</p>	<p><b>No.</b></p>	<ul style="list-style-type: none"> <li>• Surface mining</li> <li>• Logging operations</li> <li>• Air strips</li> <li>• Recreation facilities including golf courses and destination resorts</li> <li>• Roads</li> </ul>	<p>Caves located in EFU zones. Program to achieve the goal is Sensitive Bird and Mammal Combining Zone</p>	<p>Ordinance No. 92-041 and 042</p>
<p><b>UPDATED</b> - Inventory – Ord. No. 94-004 –pages 140 to 155 Site specific ESEE analysis and decisions follow each site.</p>	<p><b>No.</b></p>	<p>See above.</p>	<p>Habitat areas for Townsend Bats, adopted in No. 92-041 is repealed and replaced and further amended in Exhibit 2. The ESEE for Townsend’s big-eared bats is amended for additional bat sites in Exhibit 3.</p>	<p>Ordinance Nos. 94-004 and 94-021</p>
<p><b>Lakes and Reservoirs</b> (Inventory – Ord. No. 92-052, Exhibit C, Page 10; includes Upper Tumalo Reservoir; remaining are on federal land</p>	<p><b>No.</b></p>	<ul style="list-style-type: none"> <li>• Development which would cause a loss of open space or a decrease in the aesthetic and scenic resources</li> <li>• land management activities, resulting in the removal of natural vegetation which provides wildlife habitat and scenic value.</li> </ul>	<p>Conflicting uses around Tumalo Reservoir are specifically limited by Title 18.48, Open Space Conservation Zone and a 100’ setback for any structure from OHW</p>	<p>Ordinance No. 91-020</p>

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 Number: 1 Author: vaughajo Subject: Sticky Note Date: 8/7/2019 6:18:40 PM  
Same comment as above.

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August 8, 2019

*Filed via hand delivery (w/o attachments) and via email (w/ attachments):  
Nicole.Mardell@deschutes.org*

Deschutes County Planning Commission  
Attn: Nicole Mardell, Associate Planner  
117 NW Lafayette Avenue  
Bend, OR 97708

**Re: Flood Plain Zone amendments – File Nos. 247-19-000530-TA, 247-19-000531-TA, 247-19-000532-TA**

Dear Chair Crawford and Commissioners,

Central Oregon LandWatch (“LandWatch”) respectfully submits these comments in opposition to the proposed amendments to the County’s Flood Plain Zone (the “amendments”). Just as the 2017-2018 proposed amendments would have done, the County’s current proposed amendments to the Flood Plain Zone will significantly harm Deschutes County’s fish and wildlife and their habitat. This harm will result for the benefit of a few private landowners who seek to develop some of the County’s most valuable and scenic habitat along rivers and streams with rural residential housing.

The lands and waters protected by the Flood Plain Zone are likely the most valuable fish and wildlife habitat in the County. The existing Goal 5 inventory and ESEE analysis and decision, contained in Ordinance No. 92-041 and attached here as Exhibit 1, describes many dozens of species that rely on the Flood Plain Zone for survival. Indeed, the County’s 2009 Interagency Working Group Wildlife Report, attached here as Exhibit 3, states that 80% of all wildlife species depend on riparian areas. The natural geography of our arid high desert region means that riparian areas and wetlands have an outsized importance to the survival of fish and wildlife in Deschutes County. This is why the protections of the Flood Plain Zone for significant Goal 5 fish and wildlife, riparian areas, and wetlands are a core part of the County’s program to achieve Goal 5.



For simplicity's sake, LandWatch organizes its comments below under headings for each of the three separate amendments' File Nos. However, our overarching concerns with each of the three proposed amendments are similar: the amendments fail to follow the Goal 5 process outlined in OAR Chapter 660 Division 23, and will do great harm to the County's inventoried significant Goal 5 resources of fish and wildlife, riparian areas, and wetlands.

## **I. Notice**

ORS 215.503 requires that notice of a hearing on amendments to an existing comprehensive plan or a decision to rezone property be mailed to every affected landowner in the County at least twenty days before the date of the first hearing. ORS 215.503(3)-(4)<sup>1</sup>, DCC 22.12.020(C). Any amendment that “[a]dopts or amends an ordinance in a manner that limits or prohibits land uses previously allowed in the affected zone” is considered a decision to “rezone” land for purposes of this rule. ORS 215.503(9)(b). As the proposed amendments limit the use of the Flood Plain Zone for the County's inventoried significant Goal 5 resources compared to the current Flood Plain Zone, and would allow significant additional residential development where it is not currently allowed on properties with Flood Plain zoning, notice to all owners of property with Flood Plain zonings is required. As a result, notice of today's hearing was deficient.

## **II. 247-19-000530-TA – Model Flood Amendments**

This file number proposes to add language from DLCD's 2014 Oregon Model Flood Damage Prevention Ordinance (“Model Ordinance”) to DCC Chapter 18.04 Definition and 18.96 Flood Plain Zone. While many provisions of the Model Ordinance are commendable in helping to minimize flood risk, some of the proposed language has the additional effect of creating new conflicting uses in the County's Flood Plain Zone. The creation of new conflicting uses in the Flood Plain Zone without completing an ESEE analysis and decision violates Goal 5.

The new conflicting uses that 247-19-000530-TA creates are identified in proposed DCC 18.96.030(J), which creates a new outright permitted use in the Flood Plain Zone:

“Uses and structures determined to be located outside the Special Flood Hazard Area in accordance with 18.96.130.” (Page 3 of 8, Exhibit “A” to Ordinance 2019-00x)

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<sup>1</sup> Also known as “Measure 56 notice.”



The referenced section of Deschutes County Code, DCC 18.96.130, is entitled “Interpretation of FIRM Boundaries” and allows the County to make interpretations as to the location of the boundaries of areas of special flood hazards:

“The Planning Director shall make interpretations where needed, as to exact location of the boundaries of the areas of special flood hazards (for example, where there appears to be a conflict between a mapped boundary and actual field conditions.) Such interpretations shall be processed as a development action pursuant to Chapter 22.16.”

Proposed DCC 18.96.030(J) very explicitly permits a new use in the Flood Plain Zone, which is any “uses and structures” that the Planning Director deems to be located outside the Special Flood Hazard Area. While the Special Flood Hazard Area, otherwise known as the 100-year floodplain, may indeed be subject to adjustment and refinement, the fish and wildlife, riparian areas, and wetlands protected by the Flood Plain Zone in the County’s program to achieve Goal 5 are not subject to adjustment and refinement. For these significant Goal 5 resources, the bounds of the Flood Plain Zone are fixed. Fish and wildlife depend on the protection from development that the Flood Plain Zone provides, and will be impacted by the new conflicting uses presented by adjustments and refinements to the boundaries of the Flood Plain Zone.

The County’s acknowledged program to achieve Goal 5 depends on the boundaries of the Flood Plain Zone being fixed. The County has determined, through Ordinances 92-041 and 94-007, that the fixed boundary of the Flood Plain Zone is necessary to protect fish and wildlife, riparian areas, and wetlands. The areas protected by the Flood Plain Zone in Deschutes County have an outsized value to fish and wildlife because of the relatively few surface waters in Deschutes County. Protecting these rivers and streams from unnecessary development is for many fish and wildlife a matter of survival, because in arid Deschutes County, they have nowhere else to go. The proposed amendments’ new allowance of ad hoc alterations to the Flood Plain Zone boundaries as an outright permitted use creates a new conflicting use, and triggers a requirement of a full application of Goal 5 for File No. 247-19-000530-TA.

### **III. 247-19-000531-TA – Land Divisions of Split Zoned Flood Plain Properties**

- a. The minimum lot sizes of the Flood Plain Zone are a core part of the County’s programmatic, county-wide program to achieve Goal 5 for fish and wildlife, riparian areas, and wetlands, and should be retained.**



The proposed amendments would add the following provisions to the Deschutes County Code:

“18.96.150. Acreage Calculation for Partition or Subdivision of Certain Properties Containing Flood Plain Zoned Lands

Partitions or subdivisions of properties that contain both Flood Plain zoned lands and exactly one other primary zone and which have only one comprehensive plan designation are subject to the following area calculation and configuration standards.

1. The Flood Plain and non-Flood Plain zoned area shall be summed for the purposes of lot area calculation.
2. The minimum lot size for new lots or parcels resulting from such partitions or subdivision shall be determined by the minimum lot size of the non-Flood Plain zone.
3. All Flood Plain zoned lands from the parent lot or parcel must be contained within a single subdivision lot or partition parcel.” (Attachment 2: Zoning Text Amendments (247-19-000532-TA) at page 2)

The purpose of the current land division standards for the Flood Plain Zone is to protect the fish and wildlife, riparian areas, and wetlands that coincide with the Flood Plain Zone. These land division standards are described in Deschutes County Ordinance 94-007’s “Conflicting Uses Determination” for riparian areas, which is part of the County’s program to achieve Goal 5 for riparian areas and wetlands:

“Increase in density of residential lots in or adjacent to riparian areas could result in a decrease of habitat effectiveness because of disturbance to wildlife.

The minimum lot size for land adjacent to riparian areas outside of urban growth boundaries and rural service centers is determined by zone as follows:

ZONE	MINIMUM LOT SIZE
Exclusive Farm Use	
Farm Parcel	23 acres irrigated land or more
Nonfarm Parcel	20 acres
Forest Zone	80 acres
Multiple Use Agriculture	10 acres
Rural Residential	10 acres
Flood Plain	
Exception area	10 acres
Non-exception area	80 acres

The Board finds that new parcels meeting the minimum lot size in the resource zones (Exclusive Farm Use, Forest, Non-exception Flood Plain) will not cause an increase in residential density that would conflict with riparian habitat values.



Fifty-one new 10 acre parcels could potentially be created in the Rural Residential, Multiple Use Agriculture and Flood Plain zone found adjacent to inventoried riparian areas. This number does not include a 376 acre property along Tumalo Creek with over a mile of creek frontage.” (Ordinance No. 94-007, Exhibit A, page 8) (Exhibit 2 (attached))

This ordinance (94-007) is not repealed and remains part of the Deschutes County Comprehensive Plan. As a result, the proposed amendments that would remove the minimum lot sizes applicable to land divisions for properties in the Flood Plain Zone conflict with the comprehensive plan.

The findings state that Ordinance No. 92-041, which is the County’s inventory, ESEE analysis and decision, and program to achieve Goal 5 for all fish and wildlife throughout the County, is “repealed and replaced.” Findings Appendix A: ESEE Analysis Document to File No. 247-19-000532-TA, Attachment 2 at 4, 9, 10. If the County’s is indeed repealing this ordinance, then the proposed ESEE is woefully inadequate as a replacement, as it contains only some information pertaining to some Goal 5 fish and wildlife resources on some land in the Flood Plain Zone. The proposed amendments are not a replacement for the programmatic, county-wide program to achieve Goal 5 for fish and wildlife resources contained in Ordinance No. 92-041.

The Findings include a discussion of several past decisions interpreting the Flood Plain Zone “to allow land divisions where property as a whole met the land division standards under the non-Flood Plain Zone regulations” and characterize those decisions as “treat[ing] the Flood Plain Zone like an overlay zone, which thereby would not impose acreage standards in land divisions.” Flood Plain, Split Zone Amendments (247-19-000532-TA), findings at 4. This characterization by staff illustrates how those past decisions wrongly interpreted the Flood Plain Zone’s minimum lot sizes, because the Flood Plain Zone is not an overlay zone. Instead, the Flood Plain Zone is a base zone with its own minimum lot sizes, as staff acknowledges. This characteristic of the Flood Plain Zone (a base zone with its own minimum lot sizes) is essential for protecting the Goal 5 resources that the Flood Plain Zone is acknowledged to protect.

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<sup>2</sup> For a more thorough explanation of the Flood Plain Zone’s role in the County’s program to achieve Goal 5 for riparian areas and wetlands, see Petitioner’s Petition for Review in LUBA No. 2018-123, attached here as Exhibit 4.



**b. The proposed amendments do not comply with Goals 3 and 4.**

Many of the lands in the Flood Plain Zone are resource lands protected by Goals 3 and 4. Accordingly, these lands are subject to minimum lot sizes that prevent land divisions below certain thresholds (usually 80 acres). The proposed amendments attempt to circumvent the minimum lot size requirements of resource lands:

“The requirement that the property has a single comprehensive plan designation precludes division of resource land under non-resource zone standards.” (Findings at Appendix A: ESEE ANALYSIS – 247-19-000532-TA, page 9.)

The Flood Plain Zone is a base zone with its own minimum lot sizes, and the proposed amendments would not change its minimum lot sizes, which remain as described in Ordinance No. 94-007 above. That the Flood Plain Zone is a base zone, and not a plan designation, does not change the fact that as a base zone, the Flood Plain Zone has its own acknowledged minimum lot size. In order to allow lands in the Flood Plain Zone that are protected by Goals 3 and 4 to be divided below the minimum lot size applicable to those lands (80 acres), the County must seek exceptions to Goals 3 and 4 for those lands.

**c. The ESEE analysis is flawed.**

LandWatch notes that the economic, social, environmental, and energy analysis and decision (“ESEE”) for this proposed amendment erroneously states that “no new conflicting use is being added,” but that “the addition of these procedures would allow for previously ineligible properties to be divided, including certain properties containing Goal 5 resources.” Findings at Appendix A: ESEE ANALYSIS – 247-19-000532-TA, page 4. The ESEE analysis goes on:

“the County is not required, but is choosing to conduct an ESEE an analysis exercise to determine potential consequences and protections related to the amendments,” and “[t]he content of the ESEE is discretionary.” (*Id.*)

Providing a new opportunity for previously ineligible properties to be subdivided is a new conflicting use. A conflicting use is a land use regulation “that **could** adversely affect a significant Goal 5 resource.” OAR 660-023-0010(1) (emphasis added). Even impacts to off-site Goal 5



resources constitute a new conflicting use. *Root v. Klamath County*, 63 Or LUBA 230, 248 (2011). Because new conflicting uses are created by the proposed amendments, the ESEE should identify those uses and, as explained in more detail below, conduct a detailed inventory and ESEE analysis and decision that documents the impacts of those uses on each Goal 5 resource that relies on the protections provided by the minimum lot sizes of the Flood Plain Zone.

### **i. Inventory.**

The ESEE's inventory of Goal 5 resources that rely on the Flood Plain Zone is fundamentally flawed. OAR 660-023-0030 prescribes the process for conducting an inventory of resource sites, and requires the following steps:

- “(a) Collect information about Goal 5 resource sites;
- (b) Determine the adequacy of the information;
- (c) Determine the significance of resource sites; and
- (d) Adopt a list of significant resource sites.” (OAR 660-023-0030(1)(a)-(d))

The focus of these steps are the actual “Goal 5 resource sites.”<sup>3</sup> Rather than focus on the many resource sites that rely on the Flood Plain Zone, the ESEE for the proposed amendments focuses on the specific properties that would see additional development potential as a result of the proposed amendments:

“As the proposed text amendments affect a quantifiable number of properties based on their minimum lot size and other characteristics, staff identified four corridors in which inventoried natural resources and eligible properties intersect with the flood plain zone.” (Findings Appendix A: ESEE ANALYSIS – 247-19-000532-TA at page 6)

The ESEE includes a series of maps of properties and existing overlay zones, but includes no actual information about the actual “Goal 5 resource sites.” The table at the end of the findings titled “Deschutes County Significant Goal 5 Resources (Excluding Historic/Aggregate Resources)” also does not provide an adequate inventory of Goal 5 resource sites.

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<sup>3</sup> Collecting information about Goal 5 resource sites requires that, “at a minimum,” local governments “(a) Notify state and federal resource management agencies and request current resource information; and (b) Consider other information submitted in the local process.” OAR 660-023-0030(2)(a)-(b). The ESEE does not indicate that this minimum requirement has occurred.



The findings acknowledge that a wide range of fish and wildlife, including big game species, furbearers, waterfowl, and upland game birds, as well as riparian areas and wetlands themselves, exist in or rely on habitat within the Flood Plain Zone. Findings Appendix A: ESEE ANALYSIS – 247-19-000532-TA at page 5. The ESEE fails to identify or otherwise “collect information,” “determine the adequacy of the information,” “determine the significance,” or “adopt a list of significant resource sites” as required by OAR 660-023-0030(1).

## **ii. ESEE decision process**

The ESEE’s identification of conflicting uses is also flawed. This step of the ESEE process requires the County to “identify conflicting uses that exist, or could occur, with regard to significant Goal 5 resource sites.” OAR 660-023-0040(2). The ESEE for the proposed amendments does not identify conflicting uses and their impacts for each significant resource, but rather mentions a few possible conflicting uses (“single family homes but also accessory or agricultural structures”) and their potential conflicts (habitat fragmentation, additional impervious surfaces, and excavation and vegetation removal). Findings at Appendix A: ESEE ANALYSIS – 247-19-000532-TA, page 7-8.

Similarly, the ESEE’s analysis of ESEE consequences, at Appendix A: ESEE ANALYSIS – 247-19-000532-TA, pages 12-21, inappropriately uses a single analysis for the several Goal 5 resources (a wide range of fish and wildlife, including big game species, furbearers, waterfowl, and upland game birds, as well as riparian areas and wetlands themselves) that are protected by the Flood Plain Zone. Although “A local government may conduct a single analysis for a site containing more than one significant Goal 5 resource,” OAR 660-023-0040(4), the ESEE contains virtually no information about impacts to the dozens of species of fish and wildlife, including furbearers, deer, elk, upland bird species, and waterfowl, that rely on the large minimum lot sizes provided by the Flood Plain Zone.

Under Ordinance No. 94-007, the conflicting uses for Goal 5 resources protected by the Flood Plain Zone are not limited to uses that occur in the Flood Plain Zone. A core element of the Flood Plain Zone that protects many Goal 5 resources (many species of fish and wildlife, riparian areas, and wetlands) are its minimum lot sizes that prevent combination of Flood Plain-zoned lands



with upland areas of split-zoned properties, which would facilitate additional land divisions and development. As such, all uses allowed in upland areas of split-zoned properties are conflicting uses with the Goal 5 resources protected by the Flood Plain Zone. A proper ESEE analysis for the proposed amendments would identify all uses, both outright and conditional, allowed in the upland areas of split-zoned properties, and conduct conflicting use analyses for each of those uses.

The ESEE analysis also repeatedly references a need to provide housing supply on properties in the Flood Plain Zone (“[m]eeting the needed supply and demand of housing in a rapidly growing market.”) Appendix A: ESEE ANALYSIS – 247-19-000532-TA, page 16. Statewide land use planning Goal 10 Housing, which requires local governments to supply needed housing opportunities, only applies within urban growth boundaries, and thus any discussion of housing need in the rural County is inappropriate.

### **iii. Program to achieve Goal 5.**

Just as described above for the ESEE decision process, the findings’ “Program to achieve Goal 5,” Appendix A: ESEE ANALYSIS – 247-19-000532-TA, page 23, fails to address the needs of each significant Goal 5 resource (a wide range of fish and wildlife, including big game species, furbearers, waterfowl, and upland game birds, as well as riparian areas and wetlands themselves) that relies on the Flood Plain Zone’s minimum lot sizes. Instead, the findings state that “each of the identified resource sites is significant, and contains similar resources with similar protection needs.” *Id.* The life cycle and protection needs of each of these Goal 5 resources are unique. For instance, and in general, migrating big game species require open corridors upland from rivers and streams in order to seasonally access riparian habitat, while fish, furbearers, and waterfowl require greater minimization of human disturbance in riparian areas themselves.

For this reason, the ESEE fails to meet the standard at OAR 660-023-0050, which requires plan provisions and land use regulations that protect “each significant resource site.”

The ESEE’s Program to achieve Goal 5 should address the life cycle needs of each of these fish and wildlife species, as well as riparian area and wetlands themselves, in developing a program to limit the many conflicting uses being introduced as a part of these amendments.



#### **IV. 247-19-000531-TA – Cluster and Planned Unit Developments in the Flood Plain Zone**

- a. Not allowing the Flood Plain Zone to be counted as open space for Cluster and Planned Unit Developments is a core part of the County’s programmatic, county-wide program to achieve Goal 5 for fish and wildlife, riparian areas, and wetlands, and should be retained.**

The proposed amendments would amend DCC 18.96.040 to allow “Cluster Developments” and “Planned Unit Developments” (PUDs) as conditional uses in the Flood Plain Zone. Attachment 2: Zoning Text Amendments 247-19-000531-TA, page 2. These amendments introduce two new conflicting uses to all of the Goal 5 resources that are protected by the Flood Plain Zone. Just as described above for split zone properties, these many Goal 5 resources include a wide range of fish and wildlife, including big game species, furbearers, waterfowl, and upland game birds, as well as riparian areas and wetlands themselves. Because of the outsized role of that riparian areas and wetlands play in the County’s program to achieve Goal 5 for fish and wildlife, allowing Cluster and PUDs in the Flood Plain Zone would significantly harm fish and wildlife in Deschutes County.

**b. The ESEE analysis is flawed.**

The economic, social, environmental, and energy analysis and decision (“ESEE”) for the proposed amendments is flawed in many of the same ways that the ESEE for split zone properties is flawed. The ESEE would repeal the existing inventory, ESEE analysis and decision, and program to achieve Goal 5, contained in Ordinance No. 92-041, for all fish and wildlife species in the County. Findings Appendix A: ESEE Analysis Document to File No. 247-19-000531-TA, Attachment 2 at 4, 9, 10. Doing so fails to comply with the required Goal 5 process (inventory, ESEE analysis and decision, and program achieve Goal 5) described in OAR Chapter 660 Division 23.

**i. Inventory**

LandWatch reiterates the comment made above under “Inventory” for 247-19-000531-TA – Land Divisions of Split Zoned Flood Plain Properties that the focus of the ESEE is misplaced.



Rather than identify the “Goal 5 resource sites” for each significant Goal 5 resource impacted the amendment’s new conflicting uses, the ESEE erroneously focuses on the specific properties that would see additional development potential as a result of the proposed amendments. The purpose of the Goal 5 inventory and ESEE analysis and decision process is to protect Goal 5 resources themselves from conflicting uses. Just as the ESEE for split zoned properties, this ESEE fails to identify or otherwise “collect information,” “determine the adequacy of the information,” “determine the significance,” or “adopt a list of significant resource sites” as required by OAR 660-023-0030(1).

## **ii. ESEE decision process**

We also reiterate the comment made above under “ESEE decision process” for 247-19-000531-TA – Land Divisions of Split Zoned Flood Plain Properties that the ESEE’s analysis of ESEE consequences, at Appendix A: ESEE ANALYSIS – 247-19-000531-TA, pages 11-21, inappropriately uses a single analysis for the several Goal 5 resources (a wide range of fish and wildlife, including big game species, furbearers, waterfowl, and upland game birds, as well as riparian areas and wetlands themselves) that are protected by the Flood Plain Zone. Although “[a] local government may conduct a single analysis for a site containing more than one significant Goal 5 resource,” OAR 660-023-0040(4), the ESEE contains virtually no information about impacts to the dozens of species of fish and wildlife, including furbearers, deer, elk, and waterfowl, that rely on the existing prohibition of Cluster and PUDs in the Flood Plain Zone. Please see Ordinance No. 92-041 for an adequate example of an inventory, ESEE analysis and decision, and program to achieve Goal 5 for each species of fish and wildlife that relies on the protections of the Flood Plain Zone. Since the proposed amendments would “repeal and replace” Ordinance No. 92-041, the proposed amendments and their minimal inventory and ESEE analysis and decision are inadequate.

The minimum lot sizes of the Flood Plain Zone, described in Ordinance No. 94-007 and above, also prevent land zoned Flood Plain from being counted as open space for Cluster and PUDs. The Flood Plain Zone is a base zone with its own minimum lot sizes, and under Ordinance No. 94-007, its area cannot be transferred to other zones to meet their minimum lot size standards. Please see our comments above under “ii. ESEE decision process” for split zone properties.



Again, a professed need for rural housing is stated as a primary reason to justify the economic and social benefits of the proposed amendments in the ESEE. We reiterate that statewide land use planning Goal 10 Housing, which requires local governments to supply needed housing opportunities, only applies within urban growth boundaries, and thus any discussion of housing need in the rural County is inappropriate.

**i. Program to achieve Goal 5.**

Again, the “Program to achieve Goal 5” for the proposed amendments relating to Cluster and PUDs fail to address the needs of each significant Goal 5 resource (a wide range of fish and wildlife, including big game species, furbearers, waterfowl, and upland game birds, as well as riparian areas and wetlands themselves) that relies on the Flood Plain Zone’s minimum lot sizes. Appendix A: Appendix A: ESEE ANALYSIS – 247-19-000531-TA, page 23-25. Instead, the findings state that “each of the identified resource sites is significant, and contains similar resources with similar protection needs.” *Id.* at 23.

The proposed requirement for a Riparian Area Management Plan (RAMP) will not ensure that impacts to fish and wildlife, riparian areas, and wetlands are fully mitigated, as required by ODFW policy. Instead, a RAMP will institutionalize impacts to wetlands and riparian areas with, for example, new trails, equestrian use, dogs, river access, and other disturbances, without any enforceable oversight beyond HOA management. The County does not have the resources to ensure that that RAMP provisions will be enforced. Further, while the proposed RAMP would require “[a]n inventory of riparian resources within or adjacent to the [Cluster Development or Planned Development],” it does not require any inventory or program to protect the many dozens of species of fish and wildlife and wetlands that are protected by the Flood Plain Zone. Accordingly, the RAMP as proposed fails to “describe the degree of protection intended for each significant resource site” as required by OAR 660-023-0050(1).

Thank you for your consideration of these comments and for the opportunity to participate in the County’s review of the proposed amendments. LandWatch requests that the written record be left open for two weeks following August 8, 2019 hearing. This is in order to allow the public



additional time to comment on three very complicated amendments that would significantly affect the County's overall program to achieve Goal 5, and to respond to information presented during the August 8 hearing.

Sincerely,



Rory Isbell  
Staff Attorney  
Central Oregon LandWatch

50 SW Bond St., Ste. 4 | Bend, OR 97702  
Phone: (541) 647-2930  
[www.colw.org](http://www.colw.org)

#### Attachments

- Exhibit 1: Ordinance No. 92-041
- Exhibit 2: Ordinance No. 94-007
- Exhibit 3: 2009 Interagency Wildlife Working Group report (“Updated Wildlife Information and Recommendations for the Deschutes County Comprehensive Plan Update”)
- Exhibit 4: Petitioner’s Petition for Review, LUBA No. 2018-123



REVIEWED  
Burd  
LEGAL COUNSEL

BEFORE THE BOARD OF COUNTY COMMISSIONERS OF DESCHUTES COUNTY, OREGON

An Ordinance Amending PL-20, the Deschutes  
County Year 2000 Plan, as Amended, to Adopt  
Inventories, Conflict Analysis and ESEE  
Determinations for Fish and Wildlife  
Resources and Declaring an Emergency.

\* 92 AUG -6 PM 1:26  
\* MARY SUE PENHOLLOW  
\* COUNTY CLERK  
\*

0119-0189

92-26468

ORDINANCE NO. 92-041

WHEREAS, Statewide Planning Goal 5 requires that local governments inventory, identify conflicts with, and analyze the Economic, Social, Environmental, and Energy consequences of protecting or not protecting certain resources, including fish and wildlife resources pursuant to Statewide Planning Goal 5, and determine to what extent, if at all, such resources should be protected.

WHEREAS, pursuant to the requirements of the Oregon Department of Land Conservation and Development (LCDC) the County has been required to review and update its Comprehensive Land Use Plan and implementing ordinances, including for fish and wildlife resources, to assure continuing compliance with Statewide Land Use Planning Goals; and

WHEREAS, public hearings have been held in furtherance of this objective in conformance with state law before the Deschutes County Planning Commission and the Board of County Commissioners for Deschutes County; and

WHEREAS, the Board of County Commissioners has considered the recommendations of the Planning Commission and the public; now therefore,

THE BOARD OF COUNTY COMMISSIONERS OF DESCHUTES COUNTY, OREGON ORDAINS AS FOLLOWS:

Section 1. REPEAL OF EXISTING RESOURCE ELEMENT. The existing Plan Fish and Wildlife resource element, found at pages 59-79 of the Resource Element of the Plan, is hereby repealed.

Section 2. ADOPTION OF FISH AND WILDLIFE RESOURCE ELEMENT. Ordinance No. PL-20, the Deschutes County Year 2000 Comprehensive Plan, as amended, (hereafter referred to as "the Plan") is further amended by adoption as part of the resource element of the Plan the inventory, conflicts analysis and ESEE analysis of inventoried resources concerning fish and wildlife resources in the County attached hereto as Exhibit "A" and incorporated herein by reference.

PAGE 1 - ORDINANCE NO. 92-041 (8/5/92)

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0119-0190

Those ESEEs address the following specific resources:

- Fish Habitat
- Deer Winter Range
- Deer Migration Corridor
- Elk Habitat
- Antelope Habitat
- Habitat Areas for Sensitive Birds
- Habitat Areas for Townsend's Big-Eared Bats
- Upland Game Bird Habitat
- Furbearer Habitat
- Wetlands and Riparian Areas
- Threatened and Endangered Species Habitat

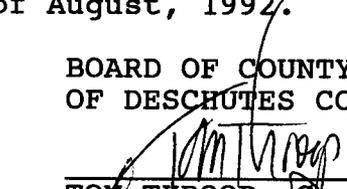
Section 3. FINDINGS. The Board of County Commissioners adopts as its findings and conclusions in support of the amendments set forth herein the Findings attached hereto as Exhibit "B" and incorporated herein by reference.

Section 4. SEVERABILITY. The provisions of this ordinance are severable. If any section, sentence, clause, or phrase of this ordinance or any Exhibit thereto is adjudged to be invalid by a court of competent jurisdiction, that decision shall not affect the validity of the remaining portions of this ordinance or any Exhibit thereto.

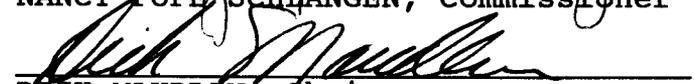
Section 5. EMERGENCY. This Ordinance being necessary for the immediate preservation of the public peace, health and safety, an emergency is declared to exist, and this Ordinance takes effect on its passage.

DATED this 5th day of August, 1992.

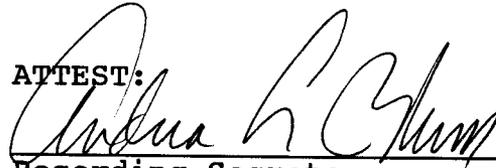
BOARD OF COUNTY COMMISSIONERS  
OF DESCHUTES COUNTY, OREGON

  
\_\_\_\_\_  
TOM THROOP, Commissioner

  
\_\_\_\_\_  
NANCY POPE SCHLANGEN, Commissioner

  
\_\_\_\_\_  
DICK MAUDLIN, Chairman

ATTEST:

  
\_\_\_\_\_  
Recording Secretary

0119-0191

**ORDINANCE NO. 92-041 - EXHIBIT "A"**  
**DESCHUTES COUNTY YEAR 2000 COMPREHENSIVE PLAN**  
**RESOURCE ELEMENT**  
**FISH AND WILDLIFE**  
**INVENTORIES CONFLICT**  
**ESEE ANALYSES**

**FISH AND WILDLIFE AREAS AND HABITATS 0119-0192**

Because fish and wildlife are such a common part of rural life, the importance of this resource, and its sensitivity to human development can be easily overlooked. Perhaps less obvious, but just as important, is the economic significance of this resource to the local population.

The need to protect this critical natural asset has been recognized. For this reason, State Land Use Goal 5 has been developed to ensure fish and wildlife needs are considered in the development decisions of each local jurisdiction.

Deschutes County is fortunate to have resident within its area not only large populations of game animals (such as antelope, deer, elk, sage grouse, etc.) but also a variety of non-games species. The purposes of this plan element is to provide some information about the numbers, locations, and importance of the fish and wildlife resources of the county. This resource element also includes the Environmental, Social, Economic and Energy (ESEE) analysis required by Goal 5 and OAR 660-16-000.

The Oregon Department of Fish and Wildlife has provided inventory information on the mammals, birds and amphibians and reptiles found in Deschutes County. Table 1, Deschutes County Wildlife Inventory, identifies all species found in the county, identifies the time of year they are found and their relative abundance. The county has inventoried, provided information on the quality, quantity and location and completed and ESEE analysis in accordance with OAR 660-16 for the species and habitat areas listed below. The county finds that the other species and their habitat are not significant under Goal 5.

This chapter contains the inventories of significant fish and wildlife habitat areas and the ESEE analysis for the habitat. The chapter is organized in the following order:

Fish Habitat	Page 12
Deer Winter Range	Page 22
Deer Migration Corridor	Page 26
Elk Habitat	Page 32
Antelope Habitat	Page 38
Sensitive Birds	Page 41
Waterfowl Habitat	Page 56
Upland Game Bird Habitat	Page 60
Furbearer Habitat	Page 66
Townsend's Big-eared Bat Habitat	Page 69
Wetlands and Riparian Areas	Page 73
Threatened and Endangered Species Habitat	Page 77

The Oregon Department of Fish and Wildlife (ODFW) has provided the following information on big game populations in the County.

Big Game Population Estimates, Deschutes County, 1992

<u>Species</u>	<u>Number</u>
Mule Deer	25,000
Elk	800
Antelope	1,000
Cougar	10
Bear	40
Silver Grey Squirrel	500

NON-GAME WILDLIFE

Because of the large diversity of nongame wildlife species, their habitat requirements vary considerably depending on the individual species concerned. Habitat requirements outlined for the inventoried wildlife groups are applicable for many species of non-game wildlife.

One of the most important values of non-game wildlife is the non-consumptive use they provide. Numerous hours of bird watching, photography nature studies, etc., are spent on non-game wildlife. It is estimated that 2/3 of all wildlife use is non-consumptive. A 1974 survey shows that during a one year period in Oregon an estimated 719,000 people watched birds or other wildlife, 688,000 fed birds, and 245,000 put up bird houses or nest boxes. The importance of non-game wildlife cannot be over emphasized. Parks are extremely important, particularly in urban areas, because they provide the habitat for small non-game mammals and birds.

Deschutes County contains important populations of hawks, owls, songbirds, small mammals, and numerous other non-game wildlife species. Most of the non-game birds found in Central Oregon are protected.

Non-game wildlife is found throughout sensitive habitat areas outlined for big game, upland game, and waterfowl in Deschutes County. Sensitive habitat within the urban and suburban areas is found in parks, both city and county, and adjacent water areas. Another sensitive habitat type is the snag tree which is used by a variety of cavity nesting birds and mammals.

The land use conflicts listed in the ESEE analysis for the elk, deer, upland game birds, furbearers, sensitive birds,

waterfowl and riparian and wetland habitat also affect non-game wildlife since they are found throughout the same habitat. In addition, land use activities in the urban setting that eliminate open space are also in conflict with non-game wildlife.

### ECONOMIC VALUE OF FISH AND WILDLIFE

Often overlooked is the significant contribution to the economy made by people who come to hunt and fish in the county. The Oregon Department of Fish and Wildlife reports that the most current data available (1989) indicates that a hunter day in Oregon's economy is worth 46.69 for deer and \$48.94 for elk. Deschutes County encompasses all or portions of the Metolius, Paulina, Grizzly, Maury, and Upper Deschutes Big Game Management units. Collectively, all these units generate a total of 75,885 hunter days for deer and 10,108 hunter days for elk. This represents a value of approximately \$3,453,100 for deer and \$494,690 for elk. The estimated worth of a hunter day does not include the money generated from game bird hunting or furbearer trapping. Data from these are not listed by local areas. However, a 1980 estimate showed that small game and game bird hunters contributed \$70.84 per participant on a state wide basis.

The value of angler days is estimated by zones within the state. Deschutes County is located within the Central Zone and the majority of the angling occurs in Deschutes County. In 1991 resident and non-resident anglers combined spent 1,071,135 days angling in the Central Zone. This represents a total economic value within this zone of \$25,392,965. Resident anglers contributed \$28.07 per day and non-resident anglers contributed \$21.94 per day.

Obviously, a considerable number of dollars could be added to the total if data were available on the money spent by people who come only to view or photograph the wildlife. Apparently, fish and wildlife are an important part of our local economy, particularly if a figure was added for the many times that initial outside money is respent in the community, each time adding to local incomes.

### CONCLUSION

The fish and wildlife resources of Deschutes County have an important role to play in the maintenance of the environment that so many local residents enjoy, and which attracts so many visitors each year. The role of this resource in the local economy also must not be overlooked. And finally, our responsibility as guardians of this increasingly rare and irreplaceable resource cannot be forgotten.

FISH AND WILDLIFE TABLES

0119-0195

Table 1	Deschutes County Wildlife Inventory
Table 2	Fish Inventory
Table 3	Minimum Stream Flows
Table 4	Instream Water Rights
Table 5	Bald Eagle Nest - Non-Federal Inventory
Table 6	Bald Eagle Nest - Federal Inventory
Table 7	Golden Eagle Nest - Non-Federal Inventory
Table 8	Golden Eagle Nest - Federal Inventory
Table 9	Prairie Falcon Nest- Non-Federal Inventory
Table 10	Osprey Nest - Non-Federal Inventory
Table 11	Osprey Nest - Federal Inventory
Table 12	Heron Rookery - Non-Federal Inventory
Table 13	Heron Rookery - Federal Inventory
Table 14	Great Grey Owl - Non-Federal Inventory
Table 15	Great Grey Owl - Federal Inventory
Table 16	Sage Grouse Lek - Federal Inventory
Table 17	Sage Grouse Lek - Non-Federal Inventory
Table 18	Townsend's Big-Eared Bat - Non-Federal Inventory
Table 19	Townsend's Big-Eared Bat - Federal Inventory
Table 20	Townsend's Big-Eared Bat - "1B" Inventory

Deschutes County Planning Unit, 1992.

*Selected List	Use		Relative
	Period Key		Abundance Key
Species	Use	Relative	
	Period	Abundance	
			R = Rare
			F = Few
		X=Year Around	C = Common
		S=Summer	A = Abundant
		W=Winter	U = Unknown
<b>Birds</b>			
American Avocet	S	F	
American Bittern	S	F	
American Coot	X	C	
American Goldfinch	S	C	
American Kestrel	X	C	
American Widgeon	X	C	
Anna's Hummingbird	S	F	
Ash-throated Flycatcher	S	F	
Bald Eagle	X	F	
Bank Swallow	S	F	
Barn Owl	X	C	
Barn Swallow	S	C	
Barred Owl	X	U	
Belted Kingfisher	X	F	
Bewick's Wren	X	F	
Black-backed Woodpecker	X	F	
Black-billed Magpie	X	C	
Black-capped Chickadee	W	F	
Black-chinned Hummingbird	S	F	
Black-crowned Night Heron	S	F	
Black-headed Grosbeak	S	F	
Black-throated Grey Warble	S	F	
Blue Grouse	X	F	
Blue-winged Teal	S	F	
Bohemian Waxwing	W	F	
Boreal Owl	X	F	
Brewer's Blackbird	X	C	
Brewer's Sparrow	S	F	
Brown Creeper	X	F	
Brown-headed Cowbird	S	C	
Bufflehead	X	C	
Burrowing Owl	S	R	
California Valley Quail	X	C	
Calliope Hummingbird	S	F	
Canada Goose	X	C	
Canyon Wren	X	C	
Caspian Tern	S	F	
Cassin's Finch	X	C	

Ordinance No. 92-041 - Exhibit "A"  
 Comprehensive Plan - Fish & Wildlife Chapter  
 Page 5

*Selected List	Use	Relative	Releative
	Period	Abundance	Abundance
Species	Period	Abundance	Abundance
Cedar Waxwing	X	C	R = Rare
Chipping Sparrow	S	C	F = Few
Chukar Partridge	X	R	C = Common
Claifornia Gull	X	C	A = Abundant
Clark's Nutcracker	X	C	U = Unknown
Cliff Swallow	S	C	
Common Bushtit	X	C	
Common Crow	X	R	
Common Loon	S	R	
Common Merganser	X	C	
Common Nighthawk	S	C	
Common Raven	X	C	
Common Snipe	S	F	
Coopers Hawk	X	C	
Dark-eyed Junco	X	A	
Dipper	X	F	
Double-crested Cormorant	S	C	
Downy Woodpecker	X	C	
Dusky Flycatcher	S	F	
Eared Grebe	W	F	
Eastern Kingbird	S	F	
Evening Grosbeak	X	C	
Ferruginous Hawk	S	F	
Flammulated Owl	S	F	
Fox Sparrow	S	C	
Franklin's Gull	S	F	
Gadwall	W	F	
Golden Eagle	X	F	
Golden-crowned Kinglet	X	F	
Goldeneye	X	C	
Goshawk	X	F	
Gray Jay	X	C	
Gray Partridge	X	R	
Great Blue Heron	X	C	
Great Gray Owl	X	F	
Great Horned Owl	X	C	
Greater Yellowleg	S	F	
Green Heron	S	R	
Green-tailed Towhee	S	F	
Green-winged Teal	X	F	
Hairy Woodpecker	X	C	

Ordinance No. 92-041 - Exhibit "A"  
Comprehensive Plan - Fish & Wildlife Chapter  
Page 6

DESCHUTES COUNTY WILDLIFE

Combined Public Comments - General Flood Plain Comments

0119-0198

Deschutes County Planning Unit, 1992.

*Selected List	Use	Relative	Releative
	Period	Abundance	Abundance
Species	Period	Abundance	Key
Hammond's Flycatcher	S	F	R = Rare
Hermit Thrush	S	F	F = Few
Hooded Merganser	X	F	C = Common
Horned Lark	X	F	A = Abundant
House Finch	X	C	U = Unknown
House Sparrow	X	C	
House Wren	S	F	
Killdeer	X	C	
Lark Sparrow	S	F	
Lazuli Bunting	S	F	
Least Sandpiper	S	F	
Lesser Goldfinch	X	R	
Lesser Scaup	W	C	
Lewis' Woodpecker	S	F	
Lincoln's Sparrow	X	F	
Loggerhead Shrike	X	F	
Long-billed Curlew	S	R	
Long-billed Marsh Wren	S	F	
Long-eared Owl	X	F	
MacGillivray's Warbler	S	F	
Mallard	X	C	
Merlin	W	R	
Mountain Bluebird	X	C	
Mountain Chickadee	X	C	
Mourning Dove	X	C	
Nashville Warbler	X	F	
Northern Harrier	X	F	
Northern Oriole	S	F	
Northern Phalarope	S	F	
Three-toed Woodpecker	X	F	
Olive-sided Flycatcher	S	C	
Orange-crowned Warbler	S	F	
Osprey	S	C	
Peregrine Falcon	X	R	
Pileated Woodpecker	X	F	
Pine Grosbeak	X	R	
Pine Siskin	X	C	
Pinon Jay	X	C	
Pintail	W	C	
Prairie Falcon	X	C	

Ordinance No. 92-041 - Exhibit "A"  
 Comprehensive Plan - Fish & Wildlife Chapter  
 Page 7

## Deschutes County Planning Unit, 1992.

*Selected List	Use Period Key	Relative Abundance Key
		R = Rare
		F = Few
	X=Year Around	C = Common
	S=Summer	A = Abundant
	W=Winter	U = Unknown
Species	Use Period	Relative Abundance
Purple Finch	X	F
Pygmy Nuthatch	X	C
Pygmy Owl	X	F
Red Crossbill	X	F
Red-breasted Nuthatch	X	C
Redhead	W	F
Red-shafted Flicker	X	C
Red-tailed Hawk	X	C
Red-winged Blackbird	X	C
Ring-billed Gull	X	C
Ring-neck Duck	W	F
Ring-necked Pheasant	X	F
Robin	X	C
Rock Dove	X	C
Rock Wren	S	C
Rosy Finch	X	R
Rough-legged Hawk	W	C
Rough-winged Swallow	S	F
Ruby-crowned Kinglet	X	F
Ruffed Grouse	X	F
Rufous Hummingbird	S	F
Rufous-sided Towhee	X	F
Sage Grouse	X	F
Sage Sparrow	S	R
Sage Thrasher	S	C
Sandhill Crane	S	F
Savannah Sparrow	S	C
Saw-whet Owl	X	F
Say's Pheobe	S	F
Screech Owl	X	F
Semipalmated Plover	S	R
Sharp-shinned Hawk	X	F
Short-eared Owl	S	F
Shoveler	W	F
Snowy Egret	S	F
Solitary Vireo	S	F
Song Sparrow	X	F
Sora	S	F
Spotted Owl	X	F
Spotted Sandpiper	S	F
Starling	X	C

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*Selected List	Use Period Key	Relative Abundance Key
		R = Rare
		F = Few
	X=Year Around	C = Common
	S=Summer	A = Abundant
	W=Winter	U = Unknown
Species	Use Period	Relative Abundance
Steller's Jay	X	F
Swainson's Hawk	S	R
Swainson's Thrush	S	F
Townsend's Solitaire	X	C
Tree Swallow	S	C
Turkey	X	C
Turkey Vulture	S	C
Varied Thrush	X	F
Vaux's Swift	S	F
Vesper Sparrow	S	F
Violet-green Swallow	S	C
Virginia Rail	S	F
Warbling Vireo	S	F
Water Pipit	X	F
Western Bluebird	S	F
Western Flycatcher	S	F
Western Grebe	S	C
Western Kingbird	S	F
Western Meadowlark	S	C
Western Sandpiper	S	F
Western Tanager	S	F
Western Wood Pewee	S	F
White-breasted Nuthatch	X	F
White-crowned Sparrow	S	F
White-headed Woodpecker	X	F
Wigeon	X	F
Williamson's Sapsucker	X	F
Willow Flycatcher	S	R
Wilson's Phalarope	S	R
Wilson's Warbler	S	F
Winter Wren	X	F
Wood Duck	S	F
Yellow Warbler	S	F
Yellow-bellied Sapsucker	X	F
Yellow-headed Blackbird	S	F
Yellowthroat	S	F

**Amphibians and Reptiles**

Bullfrog	X	F
Cascades Frog	X	F

DESCHUTES COUNTY WILDLIFE

Deschutes County Planning Unit, 1992.

*Selected List	Use Period Key	Relative Abundance Key
		R = Rare
		F = Few
	X=Year Around	C = Common
	S=Summer	A = Abundant
	W=Winter	U = Unknown
Species	Use Period	Relative Abundance
N. Grasshopper Mouse	X	F
Northern Water Shrew	X	F
Norway Rat	X	F
N. Pocket Gopher	X	U
Ord's Kangaroo Rat	X	C
Pacific Mole	X	U
Pallid Bat	S	U
Pine Marten	X	C
Pinon Mouse	X	F
Porcupine	X	C
Pronghorn Antelope	X	C
Raccoon	X	C
Red Fox	X	F
River Otter	X	C
Rocky Mtn Elk	X	C
Roosevelt Elk	X	C
Sagebrush Vole	X	C
Shorttail Weasel	X	F
Silver-haired Bat	S	U
Small-footed Myotis	S	U
Snowshoe Hare	X	F
Striped Skunk	X	C
Townsend Ground Squirrel	X	C
Townsend's Big-eared Bat	X	F
Trowbridge Shrew	X	F
Vagrant Shrew	X	U
Water Vole	X	C
Western Gray Squirrel	X	C
Western Harvest Mouse	X	C
Western Jumping Mouse	X	F
Western Pipistrel	S	U
Whitetail Jackrabbit	X	R
Wolverine	X	R
Yellow Pine Chipmunk	X	C
Yellow-bellied Marmot	X	F
Yuma Myotis	X	F

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TABLE 1

DESCHUTES COUNTY WILDLIFE

0119-0202

Deschutes County Planning Unit, 1992.

*Selected List	Use Period Key	Relative Abundance Key
		R = Rare
		F = Few
	X=Year Around	C = Common
	S=Summer	A = Abundant
	W=Winter	U = Unknown
Species	Use Period	Relative Abundance
Common Garter Snake	X	F
Ensatina	X	R
Gopher Snake	X	C
Great Basin Spadefoot Toad	X	F
Long-toed Salamander	X	F
Night Snake	X	U
Northern alligator Lizard	X	F
Pacific Tree Frog	X	C
Racer	X	F
Red-legged Frog	X	F
Roughskin Newt	X	R
Rubber Boa	X	F
Sagebrush Lizard	X	F
Sharp-tailed Snake	X	U
Short-horned Lizard	X	R
Side-blotched Lizard	X	U
Spotted Frog	X	F
Striped Whipsnake	X	U
Tailed Frog	X	F
Western Fence Lizard	X	C
Western Rattlesnake	X	F
Western Skink	X	F
Western Toad	X	F

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**FISH HABITAT**

The many streams, lakes and reservoirs found in Deschutes County provide not only for a large fish population, but also for great variety in species. Each year many hundreds of thousands of angler days are spent in the pursuit of an equally huge number of fish. East and Paulina Lakes alone produced 154,027 fish during 1968. Table 2 identifies the local fish species and how they are distributed throughout the county.

Naturally spawning populations of native rainbow trout and whitefish along with introduced populations of rainbow, brown and brook trout and kokanee salmon are present in streams and reservoirs. Most natural lakes were historically barren of fish populations but today nearly all suitable lakes are stocked annually with fingerling or legal sized rainbow, brook, brown and cutthroat trout and kokanee, coho and Atlantic salmon. Lake trout have been introduced into Big Cultus Lake and have established a natural producing population. Most lakes do not provide suitable spawning habitat and populations can only be maintained by continued stocking. Stocking and management programs are designed to provide a diverse array of opportunities for resident and visiting anglers. It is important to sustain the naturally producing populations and to balance stocking programs with the proper habitats. One native species, the bull trout, has disappeared from the county due to a combination of habitat degradation, overfishing and competition from introduced species.

Historically, summer steelhead that spawned in the upper reaches of Squaw Creek were the only anadromous populations that reached Deschutes County. A series of natural barriers west of Terrebonne blocked access to the Upper Deschutes River. The construction of Round Butte Dam in the 1960's created an additional barrier and blocked the runs into Squaw Creek.

An illegal introduction, the Tui Chub or roach, has prospered in Big and Little Lava Lakes, David Lake, East Lake, Paulina Lake, Crane Prairie Reservoir and Wickiup Reservoir and competes vigorously with the desirable trout populations. Control efforts have been attempted, but have generally provided only short term relief.

Warmwater game fish such as bass and bluegill have been introduced into numerous private ponds but provide little recreation to the general public. An illegal, release (early 1980's) of largemouth bass into Crane Prairie Reservoir has

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prospered and provides a popular fishery. Fortuitously, this introduction appears to have had little adverse effect on the premier trout fishery in the reservoir.

Some fish habitat has been lost or damaged by man's activities. Most of the damage has occurred along the Deschutes River with lesser damage along the Little Deschutes River. Dredging, filling, riparian vegetation removal, and some types of stream bank protection have resulted in major loss of fisheries habitat. A large wood structure was removed from the river in the early 1900's to facilitate log drives. Cattle grazing has damaged riparian vegetation with most damage occurring along the Little Deschutes River. Four dams within Bend's city limits impede fish passage and considerable fish loss occurs when fish pass through the Pacific Corporation hydro plant turbines.

However, the major fish production loss is related to the water flow manipulation associated with the Deschutes River irrigation system. Between Wickiup Dam and Bend (62 river miles) the extreme low winter flow (20 cfs) and the wide range of flow fluctuations (20 cfs to 2100 cfs at Wickiup Dam) have resulted in dewatered spawning areas, reduced rearing habitat, high turbidity levels, decreased fish food production, stranding losses, and elimination of several cover components (large wood, undercut banks, and riparian vegetation).

The most drastic impacts are in the first 27 miles above Fall River (River Mile 200). Tributary inflow from Fall River, Little Deschutes River (River Mile 193) and Spring River (River Mile 190) has moderated the impacts of the present flow regime to some degree in the remaining 35 miles down to Bend.

Wickiup and Crane Prairie Dams have blocked access to high quality spawning areas and cut off the downstream transfer of gravel into lower spawning areas. While the reservoirs have created popular fisheries and recreation areas, the extreme fluctuations arising from irrigation withdrawal/storage detracts from their potential.

At Bend nearly all of the remaining flow is diverted into the irrigation system from early April through Mid-October. Summer flows below Bend are about 30 cfs until major springs add considerable volume below Lower Bridge. Natural summer flows were 1400 - 1600 cfs. The low summer flow results in very high water temperatures (high 70's to low 80's degrees F) and greatly reduced rearing areas in the 35 stream miles above Lower Bridge. Trout populations appear to be maintaining themselves at a low level, while populations below the spring inflow are excellent.

Other streams with major irrigation driven impacts are Squaw

Creek, Indian Ford Creek, Tumalo Creek and Paulina Creek. Sections of all of these streams are completely dewatered during the irrigation season. Unscreened and inadequately screened irrigation diversions are another major source of fish production loss. Any fish entering these diversions is lost when the canals are dewatered at the end of the irrigation season. There are hundreds of miles of main canals and lateral ditches within the county and the extent of the fish loss is unknown. A recent (1991) study did estimate a loss of over 2600 trout in 13 miles of one major diversion canal off the Deschutes River. The canal was screened, but obviously the screen design was inadequate.

Historical fish populations were thought to be some of the best in the Pacific Northwest. Lake stocking programs have expanded the fishery resource throughout the county, but river populations have been greatly degraded.

Improvement in the extreme low flows and modification to the widely fluctuating flow regimes are critical to restoration efforts. Table 2 provides minimum recommended stream flows. These recommendations are not being met in any of the streams where flows are being diverted for irrigation.

The need for water conservation actions, improved irrigation systems, and alternative water sources is widely recognized. Recent state legislation facilitates developing and implementing such programs. A pilot project to evaluate irrigation canal lining is currently being implemented.

A substantial reduction in the loss of fish entering irrigation diversion canals is a key element in fish population restoration. Existing state laws require screening and recent legislation has expanded this to include the smaller diversions. This same legislation provides funding and technical assistance for implementing a screening program.

Alteration of stream banks and riparian areas continues to erode fish habitat. Existing state and county laws and ordinances provide considerable protection for stream banks and beds, wetland and flood plains. A 10-foot strip of streamside vegetation is protected by county ordinance. However, since all violations are not recognized and/or reported, prevention is a better means of protection than enforcement. Recent joint agency efforts have attempted to notify riverfront landowners and the real estate industry.

There is considerable support to restore the degraded fish habitats. ODFW and the U.S. Forest Service are active in planning, funding and implementing a variety of restoration projects. There is an unusually large number of active, dedicated volunteers willing to donate time, money and services toward restoration efforts. Some private landowners

have expressed a commitment to restore or enhance habitat on their property. A unique mitigation plan tied to the Central Oregon Irrigation District hydro project will provide a substantial funding base for Deschutes River restoration efforts.

0119-0206

**FISH HABITAT INVENTORY AND ESEE ANALYSIS**

**Inventory, Location, Quantity and Quality:**

The inventory of the fish resource is contained in Table 2. Table 3 identifies the minimum stream flows necessary for fish in the Deschutes River Basin.

The Deschutes County/City of Bend River Study has been incorporated by amendment into this portion of the Resource Element (Ordinance 86-019). Chapter 5 of the River Study contains a detailed inventory of the fish habitat resource.

The Oregon Department of Fish and Wildlife has applied for instream water rights for the benefit of fish on the Deschutes River, Fall River, Indian Ford Creek, Squaw Creek, and Tumalo Creek. Table 4 describes the specific location of the instream water rights.

**Conflicting Uses:**

The major conflicts with the fish resource are removal of riparian vegetation, fill and removal activities within the bed and banks of streams or wetlands, hydroelectric facilities, rural residential development and water regulation.

The Deschutes County/City of Bend River Study identifies development of hydroelectric facilities as a potential conflict with fish habitat. Dredging, or fill and removal within the bed and banks of rivers and streams, removal of riparian vegetation and some types of stream bank protection cause loss of fish habitat. The major fish production loss is related to the water flow manipulation associated with the Deschutes River irrigation system. The fluctuation of water levels results in dewatered spawning areas, reduced rearing habitat, high turbidity, increased sediments in spawning gravels, decreased fish food production, stranding losses and elimination of several cover components including large wood, undercut banks, and riparian vegetation. Lack of screening on irrigation diversions also causes a loss in population of fish.

Rural residential development adjacent to streams and wetlands can cause conflict by increasing the impermeable surfaces, increasing sewage runoff, disruption of natural

hydroelectric patterns, depletion of the water table and increasing erosion.

**Economic, Social, Environmental and Energy Consequences of conserving significant fish habitat**

For an analysis of the ESEE consequences see the following documents which are hereby incorporated by reference:

- a. Deschutes County/City of Bend River Study, April 1986, Chapter 3, pages 3-1 through 3-33; Chapter 4, pages 4-1 through 4-50; Chapter 5, pages 5-1 through 5-23; Chapter 7, pages 7-1 through 7-30; and Chapter 13, pages 13-1 through 13-42.
- b. River Study Staff Report, May 1986.

**Conclusion:** Based on the ESEE analysis, the county finds that the identified fish habitat and the conflicting uses are important relative to each other. Therefore, the county determines that conflicting uses should be specifically limited and the resource should be protected through a "3C" designation.

**Program to Achieve the Goal (Conserve Fish Habitat)**

The Deschutes County City of Bend River Study was completed in April 1986. The Board of Commissioners has adopted amendments to the comprehensive plan and the following ordinances to implement the River Study and provide protection for fish habitat.

Ordinance No. 86-018 amended Ordinance No. PL-15 to prohibit hydroelectric facilities in designated stretches of the Deschutes River and its tributaries, and to allow hydroelectric facilities in designated stretches of the Deschutes River and its tributaries, and to allow hydroelectric facilities as conditional uses in designated zones and stretches of the Deschutes River. (Title 18.96 and 18.116.130 and 18.128.040(W), Deschutes County Code).

Ordinance No. 86-056 amended Ordinance No. PL-15 to require a conditional use permit for any fill and removal, including removal of vegetation, within the bed and banks of any stream or wetland. The bed and banks of a stream is defined to include 10 feet on either side of the container of the waters of a stream. (Title 18.128.040(W), Deschutes County Code).

Ordinance No. 86-054 amended Ordinance No. PL-15 to require conservation easements as a condition of

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approval for land use actions on property adjacent to certain rivers and streams. (Title 18.116.310, Deschutes County Code).

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Ordinance No. 86-053 amended PL-15 requirements for rimrock setbacks. (Title 18, all zones).

Ordinance 89-030 amended the Deschutes County Comprehensive Plan for Flood Hazard zones.

Ordinance 88-031 amended PL-15 to establish a new Flood Plain zone and use restrictions. (Title 18.96, Deschutes County Code)

Ordinance 89-009 established specific restrictions for boat docks, slips, piers or houses in the Flood Plain zone. (Title 18.96 and 18.116.070, Deschutes County Code).

All zones in Title 18 have a stream setback provision to protect fish and wildlife areas. The setback requirement is 100 feet from the ordinary high water mark along all streams or lakes. The provision applies to all structures and sewage disposal installations.

These ordinances along with the Landscape Management Zone, the Oregon State Scenic Waterway and the Federal Wild and Scenic designations on segments of the certain rivers and streams are the implementing measures to protect the fish habitat Deschutes River, its tributaries and inventoried lakes. The county notifies the Department of Oregon Department of Fish and Wildlife of all requests for fill and removal or development proposals in the flood plain zone, Wildlife Area Combining Zone, or along any designated river or stream.

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TABLE 2 - FISH SPECIES DISTRIBUTION IN DESCHUTES COUNTY

Combined Public Comments - General Flood Plain Comments

0119-0209

	Atlantic Salmon	Coho Salmon	Rainbow Trout	Brown Trout	Cutthroat Trout	Brook Trout	Lake Trout	Dolly Varden Trout	Kokanee	Mountain Whitefish	Largemouth Bass	Bluegill	Brown Bullhead	Bridgellip Sucker	Tui Chub	Gayling	Crayfish
Tyee Creek						2											
Hell Creek						2											
Spring River				2		2				1					2		1
Tumalo Creek			1			2											
Bridge Creek						2											
Fall Creek						2											
Satan Creek						2											
Soda Creek						2											
Crater Creek						2											
Goose Creek						2											
Indian Ford Creek			1			2								2			
Trout Creek			1														
Alder Creek			1														
Squaw Creek			1			2											
Pole Creek						2											
Snow Creek			1			2											
Deschutes River		3	*	2		2			3	1					2		1
Little Deschutes River			1	2		2				1			2		2		1
Park Creek						2											
Three Creeks Creek			3			3											
Sink Creek						2											
Deer Creek			1			2											
Quinn River			*			2			2	1					2		1
Quinn Creek	3					2											
Cultus Creek			*			2											
Cultus Lake, Big			3			2	2			1					2		1
Cultus Lake, Little			2			3											
Cultus River						2			2	1							
Moore Creek						2											
Charlton Creek						2											
Long Prairie Slough													2				2
Browns Creek			2	2		2			#	1							1
Fall River			*	2		2				1					2		1
Paulina Creek			3												2		1
Cache Creek			1														
Crane Prairie Res.			*			#			2	1	2				2		1
Wickiup Reservoir		3	3	#					#	1					2		1
Three Creeks Lake			3			3											
Devil's Lake			3			2											
Hosmer Lake	3					3											1
Irish Lake						3											

- 1 - Native, naturally reproducing
- 2 - Introduced, naturally reproducing
- 3 - Introduced, periodic stocking required to maintain population
- \* - 1 and 3
- # - 2 and 3

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TABLE 3  
Recommended Minimum Flows for Fish Life, Deschutes Basin, Deschutes County /1

Stream	J A		P E		M A		A P		M A		J U		J U		A U		S E		O C		N O		D E	
	N.	B.	R.	R.	Y	Y	E	Y	G.	T.	T.	V.	C.											
Deschutes River 1	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
Deschutes River 2	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
Deschutes River 3	660	660	660	660	660	660	660	660	660	660	660	660	660	660	660	660	660	660	660	660	660	660	660	660
Deschutes River 4	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
Deschutes River 5	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
Deschutes River 6	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Squaw Creek 7	20	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Squaw Creek 8	10	10/20	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
Indian Ford Creek	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3/4	6	4	4	4	4	4	4
Tumalo Creek	35	35	47	47	47	47	47	47	47	47	47	47	47	47	47	10/35	47	35	35	35	35	35	35	35
Spring River	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
Little Deschutes R.	80	80	80	200	200	200	150	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Fall River	70	70	100	100	100	100	70	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Brown Creek	15	15	25	25	25	25	15	15	15	15	15	25	25	25	25	25	25	25	25	25	25	25	25	25
Quinn River	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Cultus Creek	20	20	32	32	32	32	20	5	5	5	5	5	5	5	5	5/20	32	20	20	20	20	20	20	20
Cultus River	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	70	70	70	70	70	70	70	70	70

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TABLE 3 (Continued)  
Recommended Minimum Flows for Fish Life, Deschutes Basin, Deschutes County /1

0119-0211

Stream	J A	F E	M A	A P	M A	J U	J U	A U	S E	O C	N O	D E
	N.	B.	R.	R.	Y	N	L	G.	T.	T.	V.	C.
Low Creek	15	15	30	30	30	20	15	15	15	30	30	20
John Creek	20	20	20	12	12	12	12	12	12/20	35	35	35
Yoda Creek	20	20	20	6	6	6	6	6	6/20	31	31	31
Small Creek	35	35	35	20	20	20	20	20	20/35	46	46	46
Goose Creek	7	7	7	4	4	4	4	4	4/7	10	10	10
Three Creeks	7	7	10	10	10	7	2	2	2/7	10	7	7

1 Flows are expressed in cubic feet per second. The recommended flows should arrive at the point of recommendation and continue to the mouth of the stream or to the next point for which a different flow is recommended. Stream flows recommended in Appendix 1 are designed for game fish production and are not necessarily adequate for wildlife, especially waterfowl and furbearers. Neither would they necessarily be recommended below future impoundments.

- 1 Bend to Round Butte Reservoir
- 2 L Deschutes R. to Spring River - Supported by Instream Water Right (1990)
- 3 Spring River to Bend - Supported by Instream Water Right (1990)
- 4 Wickiup Dam to Little Deschutes River - Supported by Instream Water Right (1990)
- 5 Crane Prairie Dame to Wickiup Reservoir
- 6 A USGS Gage 14-0500
- 7 Below USGS Gage 14-0750
- 8 Below Camp Polk

Combined Public Comments General Floodplain Comments

03/11/92

INSTREAM WATER RIGHT PROGRAM  
DATABASE SUMMARY REPORT

0119-0212

BN	STREAM > PARENT STREAM	UPSTREAM LIMIT	DOWNSTREAM LMT	SPECIES	APP NO	CERT #	DATE
** BASIN 05							
05	DESCHUTES R > COLUMBIA R	CRN PRAIRIE RES	WICKIUP RES	RB,BT,BR,CO,K,	070764		10/11/90
05	DESCHUTES R > COLUMBIA R	LITTLE LAVA LK	CRN PRAIRIE RES	RB,BT,K,WF,	070763		10/11/90
05	DESCHUTES R > COLUMBIA R	193.0	190.0		MPS	59777	11/03/83
05	DESCHUTES R > COLUMBIA R	227.0	193.0		MPS	59776	11/03/83
05	DESCHUTES R > COLUMBIA R	190.0	165.0		MPS	59778	11/03/83
05	FALL R > DESCHUTES R	GAGE 14057500	MOUTH	RB,BT,BR,WF,	070762		10/11/90
05	INDIAN FORD CR > SQUAW CR	HEADWATERS	MOUTH	RB,	070760		10/11/90
05	LITTLE DESCHUTES R > DESCHUTES R	CRESCENT CR	MOUTH	RB,BT,BR,WF,	070757		10/11/90
05	METOLIUS R > DESCHUTES R	METOLIUS SPRING	CANYON CR	BUT,K,	070699		09/24/90
05	SNOW CR > DESCHUTES R	HEADWATERS	MOUTH	RB,BT,	070756		10/11/90
05	SQUAW CR > DESCHUTES R	S FK SQUAW CR	INDIAN FORD CR	RB,BT,	070754		10/11/90
05	TUMALO CR > DESCHUTES R	S FK TUMALO CR	MOUTH	RB,BT,BR,	070752		10/11/90

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DEER WINTER RANGE

0119-0213

Inventory Information: The deer winter range boundaries are mapped on the Big Game Habitat Area Map.

Location, Quantity and Quality: The Oregon Department of Fish and Wildlife (ODFW) identified the Metolius, Tumalo and North Paulina deer winter ranges during the initial comprehensive planning in the county. The boundaries of these winter ranges are shown on the Big Game Sensitive Area map in the Comprehensive Plan (1978) and have been zoned with the Wildlife Area Combining Zone since 1979.

The Tumalo Winter Range Study, 1977, includes detailed information about the plant communities, physiological needs of deer and use of the habitat area.

ODFW has reviewed the boundaries of the Metolius, Tumalo and North Paulina deer winter ranges and does not recommend any changes to the boundaries at this time. ODFW reports that the deer populations in the county are currently stable. The habitat is important to provide winter feeding areas, thermal and hiding cover and isolation from conflict with human activities. The winter ranges support a population of approximately 15,000 deer.

The deer winter ranges are mostly zoned EFU or Forest with minimum lot sizes ranging from 20 to 80 acres. There is a small amount of land zoned Rural Residential or Multiple Use Agriculture with a 10 acre minimum lot size. The deer winter range is contains Bureau of Land Management, U.S. Forest Service, State, County and private land.

On February 27, 1992, the Ochoco District Office of the Oregon Department of Fish and Wildlife provided information to the planning staff regarding deer winter range in the north east corner of the county, north of the Crooked River, in the Smith Rock State Park area. This area is part of deer winter range that has been identified by ODFW since the late 1970's. It was not identified in the initial comprehensive plan because it is under the jurisdiction of the Ochoco District Office. The area is part of the Grizzly Wildlife Management Unit. The Ochoco District did not participate in Deschutes County's original comprehensive planning process. ODFW recognizes this area as significant deer winter range and recommends that it be included in the Deschutes County inventory and protected with the same measures applied to other deer winter range in the county. The area has been included in the inventory and mapped on the Big Game Habitat Area and Wildlife Area Combining Zone Map.

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0119-0214

**Conflicting Uses:**

Researchers and the Oregon Department of Fish and Wildlife have identified dwellings, roads and dogs as the major conflicts with wintering deer. Actions which cause deterioration of forage quality and quantity or cover are conflicting uses. Fences that do not allow safe passage of deer are also a conflicting use. Limiting conflicting uses greatly enhances the chances of survival for deer during the winter when they are gathered in the winter range and are competing for forage.

The Department of Fish and Wildlife Land Use Planning Guide (1989) states that destination resorts, because of their intensity and scale of use, can result in direct loss of habitat, interference with migration routes, increase in stress on animals through harassment, increase game caused damage, reduction in overall population levels and curtail recreational hunting opportunities.

**Economic, Social, Environmental and Energy Consequences of conserving significant deer winter range**

1. **Economic Consequences:** The positive economic consequences of limiting conflicts in deer winter range habitat are the reduction in staff time of ODFW attempting to resolve conflicts between rural residents and wildlife. Deer hunters depend on the survival of healthy deer populations. Deer hunters spend an average of \$46.69 per hunter day; in Deschutes County there are 75,885 deer hunter days per year in the county for a value of \$3,543,100.

The negative economic consequences of applying regulations to limit conflicts in deer winter range are generally borne by individuals prevented from doing an activity such as building a home or road, or dividing land or developing a use which would cause increased traffic or a change in the vegetation which could decrease the quality of the forage or cover.

2. **Social Consequences:** The positive social consequences of limiting development to protect deer winter range are the retention of the stable deer populations for hunters and the public which enjoys viewing wildlife. Negative social consequences are restriction of residential uses and resorts which could provide recreational opportunities. The opportunities to live in rural areas may be somewhat reduced by limiting partitions which would otherwise be allowed by the underlying zoning. Siting standards to protect habitat could result in a property owner not being able to locate a dwelling in the preferred location; however, flexibility can be provided in siting standards to balance the need to protect irrigated farm land and still provide habitat protection.

3. **Environmental Consequences:** Opportunities for big game to flourish in a habitat without repeated interference or disturbance from man would be a positive environmental consequence. Other species of wildlife benefit from large open space environment and a low density of development. Requirements to cluster dwellings or site them near existing roads would limit disturbance of vegetation which provides cover and forage.

4. **Energy Consequences:** The energy consequence from limiting development in deer winter range is a reduction in trip generation associated with development located in rural areas. As a result, development should occur closer to urban areas where services are more available and can be provided with less energy cost.

For additional ESEE consequences see the discussions in the following documents which are hereby incorporated by reference:

- a. The Deschutes County/City of Bend River Study Chapter 6, pages 6-1 through 6-16; Chapter 7, pages 7-1 through 7-30.
- b. River Study Staff Report, May 1986, pages 21-26.
- c. ODFW Central Region Administrative Report No. 86-2 and 92-1.
- d. Tumalo Winter Range Study, 1977.

5. **Conclusion:** Based on the ESEE analysis, the county finds that the identified deer winter range habitat and residential and other conflicting uses within the deer winter range are important relative to each other, and that the conflicts should be balanced by restricting or regulating certain uses and prohibiting others. Therefore, the county determines that conflicting uses should be specifically limited and the resource should be protected through a "3C" designation.

6. **Program to Achieve the Goal (Conserve Deer Winter Range):**

The Wildlife Combining Zone, Title 18.88, (WA) is applied to all areas designated as deer winter range on the Big Game Habitat Wildlife Area Combining Zone Map. The WA zone requires a 40 acre minimum lot size for all new land divisions, prohibits certain conflicting uses (i.e. golf courses, churches, schools etc.), establishes siting and fencing standards, and requires that all land divisions in the Rural Residential (RR-10) or Multiple Use Agriculture (MUA-10) Zone be cluster or planned developments.

The underlying zoning in most of the deer winter range is resource zoning: EFU-20, EFU-40, EFU-80, Forest (F-1, F-2), Flood Plain. These resource zones provide for large lot sizes

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and Public Comments, General Planning Comments  
Combining Zone pending completion of the Goal 8 mapping process  
and Limit uses that are not compatible with farm or forest  
uses. Because of the low density of development in these zones  
and the limitations on uses, the resource zones themselves  
provide considerable protection to wildlife habitat.

The Oregon Department of Fish and Wildlife is notified of any  
land use action in the WA zone and provides comments on  
development proposals. The requests of ODFW are usually  
incorporated into the conditions of approval.

Destination Resorts have been identified as a conflicting use  
with significant big game habitat. The Board of County  
Commissioners has adopted a policy (Ordinance 92-040) to  
prohibit siting of destination resorts in the Wildlife Area  
Combining Zone pending completion of the Goal 8 mapping process  
which shall be accomplished by December 31, 1992.

**DEER MIGRATION CORRIDOR**

0119-0217

**Inventory Information:** The Bend/La Pine migration corridor was identified in the original comprehensive plan resource element and mapped on the Big Game Sensitive Area map included in the Fish and Wildlife Chapter of the Resource Element of the Deschutes County Year 2000 Comprehensive Plan. Based on on going inventory and study of the corridor by the Oregon Department of Fish and Wildlife which is reported in ODFW Central Region Reports 86-2 and 92-1 the location is more accurately mapped and the rate of use of the corridor has been more accurately identified. The County has mapped the Bend/La Pine deer migration corridor Big Game Habitat Area - Wildlife Area Combining Zone Map.

**Location, Quantity and Quality:** The Oregon Department of Fish and Wildlife identified the Bend/La Pine deer migration corridor which was mapped on the Big Game Sensitive Area Map in the Resource Element of the Comprehensive Plan. The corridor is approximately 56 miles long and 3 to 4 miles wide and parallels the Deschutes and Little Deschutes Rivers. The corridor is used by deer migrating from summer range in the forest along the east slope of the Cascades to the North Paulina deer winter range in Deschutes County and the Hole-in-the-Ground and Devil's Garden winter ranges in north Klamath County.

ODFW has conducted a survey of deer tracks to determine the level of use in the corridor during the migration period. The results of the study are published in the Oregon Department of Fish and Wildlife Central Region Administrative Reports No. 86-2 and 92-1. The reports identify areas of high, moderate and low frequency of use.

The La Pine Area Wildlife/Subdivision Study, 1977, describes the geology, soil hydrology, vegetation, migration routes and other characteristics and conflicts in the migration corridor area.

The underlying zoning in most of the Bend/La Pine deer migration corridor is Rural Residential 10 (RR-10). Although the zone has a 10 acre minimum lot size, much of the development in the La Pine area occurred prior to zoning in the county. There are extensive areas of preexisting subdivisions with lots ranging in size from less than an acre to 5 acres. Most of the RR-10 zone is made up of lots less than the 10 acre minimum lot size.

The planned community of Sun River is located in the migration corridor. The Mule Deer Track Count Study found that the frequency of deer migration in the Sunriver area was low.

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The migration corridor includes some EFU-80, Forest and Flood Plain zoned land. The La Pine State Park is zoned Open Space Conservation. These resource zones provide for large lot sizes and limit uses that are not compatible with farm, forest or open space uses. Because of the low density of development in these zones and the limitations on uses, the resource zones themselves provide considerable protection to the migration corridor.

#### **Conflicting Uses:**

Researchers and the Oregon Department of Fish and Wildlife have identified dwellings, roads and dogs as the major conflicts with migrating deer. The ODFW mule deer track count studies document the conflict between dogs and migrating deer through data indicating that when dog tracks increase deer tracks decrease. Fences that do not allow safe passage of deer are also a conflicting use. The areas which are relatively undeveloped with residential uses are the areas that have the highest frequency of deer passage.

Conflicting uses are documented in the ODFW Central Region Administrative Report No. 86-2 and 92-1 and in the La Pine Area Wildlife/Subdivision Study, 1977. These documents are incorporated herein by reference.

Additionally, the ESEEs for surface mines in the deer migration corridor identify the migration corridor as a conflicting use with the surface mining activity. There are four surface mines in the migration corridor (Sites 342, 426, 427, and 432)

#### **Economic, Social, Environmental and Energy Consequences of conserving significant deer winter range**

1. **Economic Consequences:** A positive economic consequences of limiting conflicts in the deer migration corridor is the reduction in staff time of ODFW attempting to resolve conflicts between rural residents and wildlife. Deer hunters depend on the survival of healthy deer populations. Deer hunters spend an average of \$46.69 per hunter day; in Deschutes County there are 75,885 deer hunter days per year in the county for a value of \$3,543,100.

The negative economic consequences of applying regulations to limit conflicts in deer migration corridors are generally borne by individuals prevented from doing an activity such as building a home or road, or dividing land or developing a use which would cause increased traffic or a change in the vegetation which could decrease the quality of the forage or cover. Limiting surfacemining activity could increase the cost of operation of the surface mine.

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2. **Social Consequences:** The the positive social consequence of limiting development to protect deer migration corridors is the retention of the stable deer populations for hunters and the public which enjoys viewing wildlife. Negative social consequences are restriction of residential uses and resorts which could provide recreational opportunities. The opportunities to live in rural areas may be somewhat reduced by limiting partitions which would otherwise be allowed by the underlying zoning. Siting standards could limit the ability of people to site their dwellings in their preferred location.

3. **Environmental Consequences:** Opportunities for big game to travel freely without undue disturbance, obstacles or harassment would be a positive environmental consequence of protecting deer migration corridors. Other species of wildlife benefit from undeveloped habitat and a low density of development. Requirements to cluster dwellings or site them near existing roads would limit disturbance of vegetation and provide more open space. Limiting the area available for extraction of aggregate resources provides more area for the deer to pass through in their migration.

4. **Energy Consequences:** Energy consequences from limiting development in the deer migration corridor winter range will be a reduction in vehicle trip generation associated with development located in rural areas. As a result, development should occur closer to urban areas where services are more available and can be provided with less energy cost.

For additional ESEE consequences see the following documents incorporated herein by reference:

- a. The Deschutes County/City of Bend River Study Chapter 6, pages 6-1 through 6-16; Chapter 7, pages 7-1 through 7-30.
- b. River Study Staff Report, May 1986, pages 21-26.
- c. ODFW Central Region Administrative Report No. 86-2 and 92-1.
- d. La Pine Area Wildlife/Subdivision Study, 1977.

5. **Conclusion:** Based on the ESEE analysis, the county finds that the identified deer migration corridor and residential and other conflicting uses within the corridor are important relative to each other, and that the conflicts should be balanced by restricting or regulating certain uses and prohibiting others. Therefore, the county determines that conflicting uses should be specifically limited and the resource should be protected through a "3C" designation.

## 6. Program to Achieve the Goal (Protect Deer Migration Corridor)

The Bend/La Pine deer migration corridor has been added to the Wildlife Combining Zone by Ordinance 92-040 which adopts comprehensive plan policies regarding the corridor, by ordinance 92-041 which adopts these ESEE findings as part of the Resource Element of the Deschutes County Year 2000 Comprehensive Plan, and by Ordinance 92-046 which amends the zoning map to include the migration corridor as part of the Wildlife Area Combining Zone.

The Wildlife Area Combining Zone, Title 18.88, (WA) has been amended by Ordinance No. 92-042 to require cluster development for all land divisions in the RR-10 zone in the Bend/La Pine migration corridor. A 20 acre parcel is the minimum size required for a cluster development. Although much of the land is already divided into lots less than 5 acres, the 20 acre minimum lot size and the requirement for cluster developments will retain the much of the limited open space important for the passage of deer. The siting standards and fencing standards in the WA zone apply in the deer migration corridor. The fencing standards are those recommended by ODFW to allow for safe passage of the deer.

The Oregon Department of Fish and Wildlife shall be notified of any land use action in the migration corridor and will have the opportunity to comment on development proposals.

The county has created a map of the migration corridor that shows the parcelization pattern in 5 size categories. Most of the land is already divided into parcels 5 acres or less. The county and ODFW will work together to identify priority areas for land acquisition and work with Federal agencies to assure that land important for migration is retained in federal ownership or protected with conservation easements to retain the limited amount of open space in the corridor.

Ordinance 92-040 amended the Comprehensive Plan add the following policies to the Fish and Wildlife Resources chapter:

14. The county shall maintain an inventory of county owned property in the Bend/La Pine deer migration corridor. Prior to sale or exchange of county owned property in the corridor, the county shall consult the Oregon Department of Fish and Wildlife to determine the value of the land for deer migration.
15. The county shall work with ODFW to identify specific areas where the county and ODFW shall encourage public retention and acquisition of land or seek conservation easements for the protection of the migration corridor.

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The conflicting use of surface mining activity is limited by Title 18.52.110(K) which limits the extraction area to five acres, excluding access roads, equipment storage areas, processing equipment sites and stockpiles.

Destination Resorts have been identified as a conflicting use with significant big game habitat. The Board of County Commissions has adopted a policy (Ordinance 92-040) to prohibit siting of destination resorts in the Wildlife Area Combining Zone pending completion of the Goal 8 mapping process which shall be accomplished by December 31, 1992.

#### **Metolius Deer Migration Corridor**

The Oregon Department of Fish and Wildlife has provided the county with a map showing the overall boundary of the migration corridor used by deer to move between the summer range and the Metolius and Tumalo winter ranges and between the two winter ranges. The general corridor boundary is identified on the attached "1B" Deer Migration Corridor Map. However, ODFW is not able at this time to provide the the County with documented evidence of the precise location or quantity of the resource. Migration occurs throughout the identified area, however ODFW does not have specific information on the numbers of animals, or density of use except for Oregon Department of Transportation road kill reports. ODFW may be able to study the migration corridor with the use of radio collars. However, budget constraints may limit the study.

Because there is insufficient information on the location, quality and quantity of the resource for the Metolius deer migration corridor, the County is designating the corridor as a "1B" Goal 5 resource. Ordinance 92-040 adopted Policy 13 which requires the county to review the "1B" Metolius migration corridor during the next periodic review or as additional information on the location, quality and quantity of the resource becomes available.



ELK HABITAT

0119-0223

Description: Elk habitat significant for calving, summer and winter range.

Inventory, Location, Quality and Quantity: The Land and Resource Management Plan for the Deschutes National Forest identifies 6 key elk habitat areas in Deschutes County. The Oregon Department of Fish and Wildlife also recognizes these areas as critical elk habitat for calving, winter or summer range. Except for the Ryan area, ODFW confirms the boundaries of the habitat areas identified by the Forest Service. In the Ryan area, ODFW has expanded the boundary north to Forest Service Road 4601. The following areas are mapped on the Big Game Habitat Area Map and in maps in the Deschutes National Forest Land and Resource Management Plan Appendix 16.

Tumalo Mountain  
Kiwa  
Ryan  
Fall River  
Crane Prairie  
Clover Meadow

Biologists from the Deschutes National Forest and Oregon Department of Fish and Wildlife have also identified two additional areas which are presently used by elk; however, there is not sufficient information to establish that these areas are significant habitat which require additional protection. The ODFW has not conducted population surveys of these areas to determine the extent of use or the importance of the Goal 5 habitat. Therefore, these two areas will be included in the inventory as 1B habitat areas and will be addressed through the Goal 5 process in the next periodic review, or prior to that time as post acknowledgement plan amendment if sufficient information on the location, quality and quantity is available to complete the Goal 5 review process.

The first 1B area is adjacent to the Fall River habitat area and is located between the Deschutes and Little Deschutes Rivers in townships 21S, 22S, and 23S. The second area is adjacent to the Ryan habitat area and extends north from the Inn of the 7th Mountain and includes the area between the forest boundary and the east boundary of the Tumalo deer winter range. These two areas are identified on the maps entitled La Pine "1B" Elk Habitat Area and Bull Flat "1B" Elk Habitat Area.

**Conflicting Uses:**

Tumalo Mountain, Kiwa and Crane Prairie, and Clover Meadow

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are located entirely within the national forest and are managed under the Deschutes National Forest Land and Resource Management Plan to protect their value as elk habitat areas. The zoning on these areas is Forest (F-2 or F-1), Landscape Management Combining Zone - LM, Open Space Conservation - OS&C, or Flood Plain - FP. Ryan and Fall River habitat areas are adjacent to and include some private land; the areas contain F-1, F-2, LM, Surface Mining - SM, and FP zoning. Except for the surface mining site, there are no other identified significant Goal 5 resources which would conflict with elk habitat.

The major conflict is the loss of habitat due to increased residential densities in the habitat areas. Increased human disturbance (i.e. snowmobilers, cross county skiers, dogs, residential development, new roads) can cause conflict with elk. The use of land which necessitates the removal of large amounts of vegetative cover can also alter the quality of elk habitat.

### **Economic, Social, Environmental and Energy Consequences of conserving significant elk habitat**

1. **Economic Consequences:** The positive economic consequences of limiting conflicts with elk habitat are the reduction in staff time of ODFW attempting to resolve conflicts between rural residents and wildlife. Hunters depend on the survival of healthy elk populations. Elk hunters spend an average of \$48.94 per hunter day and in Deschutes County there are 10,108 elk hunter days, per year with a value to the local economy of \$494,690.

The negative economic consequences of applying regulations to limit conflicts in significant elk habitat are generally borne by individuals prevented from doing an activity such as building a home or road, or dividing land, or developing a use which would cause increased traffic or a change in the vegetation which could decrease the quality of the forage or cover. However, since the elk habitat is generally zoned for forest use, the restrictions to protect forest land require relatively large minimum lot sizes and dwellings are not an outright permitted use. Protection of vegetation for habitat and cover could limit the harvest of commercial tree species.

2. **Social Consequences:** The positive social consequences of limiting development to protect elk habitat are the retention of the elk populations for the enjoyment of the public. The negative social consequence is limited to the small amount of private land identified as significant elk habitat. In order to limit the density of development, private land owners may be prohibited

from dividing their land and constructing a dwelling on a new parcel.

0119-0225

3. **Environmental Consequences:** Opportunities for big game to flourish in a habitat without repeated interference or disturbance from man would be a positive environmental consequence. Other species of wildlife benefit from large open space environment and a low density of development.
4. **Energy Consequences:** The energy consequence from limiting development in elk habitat will be a reduction in trip generation associated with development located in rural areas. As a result development should occur closer to urban areas where services are more available and can be provided with less energy cost.

For additional ESEE consequences see the following documents which are hereby incorporated by reference:

- a. The Deschutes County/City of Bend River Study Chapter 6, pages 6-1 through 6-16; Chapter 7, pages 7-1 through 7-30.
  - b. River Study Staff Report, May 1986, pages 21-26.
5. **Conclusion:** Based on the ESEE analysis, the county finds that the identified elk habitat and residential, recreational and other conflicting uses of lands within the habitat are important relative to each other and that the conflicts and the value of the habitat should be balanced by regulating or restricting certain uses and prohibiting others. Therefore, the county determines that conflicting uses should be specifically limited and the resource should be protected through a "3C" designation.
  6. **Program to Achieve the Goal (Conserve Significant Elk Habitat):** The Wildlife Area Combining Zone, Title 18.88 (WA) zone will be applied to all areas identified as significant elk habitat. The county WA Zone has been amended to require a 160 acre minimum lot size for areas identified as significant elk habitat. Certain uses normally allowed in the underlying zones are also prohibited in the WA zone, and siting standards to minimize the conflict of residences with habitat protection are required.

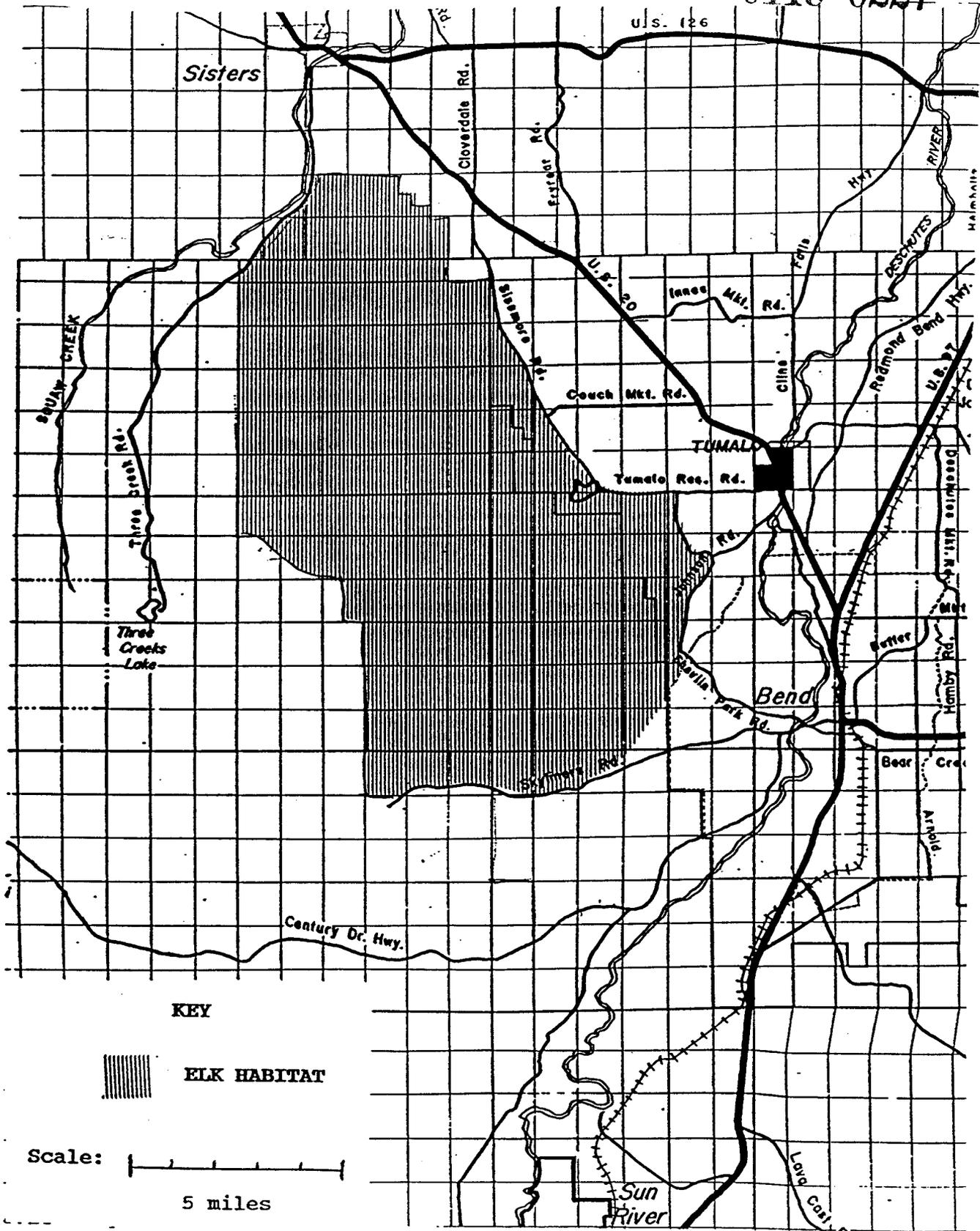
The underlying zoning in the elk habitat areas is either Flood Plain, Forest, or Open Space and Conservation. These resource zones restrict high density residential development and prohibit industrial and commercial uses. Most of the elk habitat is managed by the Deschutes National Forest. The Deschutes National Forest Land and

Resource Management Plan establishes specific elk habitat management objectives for each identified area.

A comprehensive plan policy to require review of the two 1B elk habitat areas in the next county periodic review shall be adopted.

Destination Resorts have been identified as a conflicting use with significant big game habitat. The Board of County Commissioners has adopted a policy (Ordinance 92-040) to prohibit siting of destination resorts in the Wildlife Area Combining Zone pending completion of the Goal 8 mapping process which shall be accomplished by December 31, 1992.

0119-0227

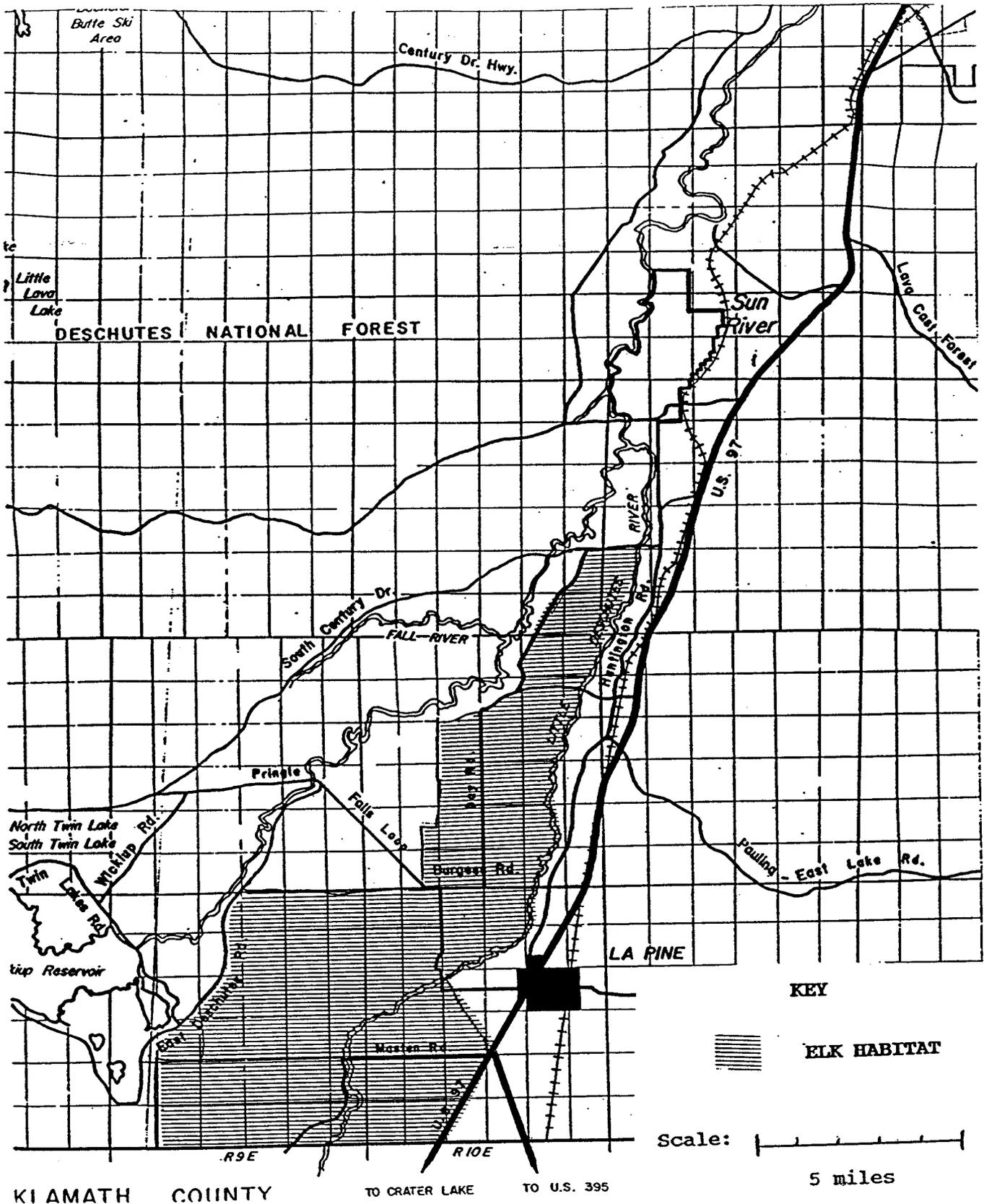


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# LA PINE "1B" ELK HABITAT AREA

0119-0228

Combined Public Comments - General Flood Plain Comments



KIAMATH COUNTY

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**Inventory Information:** The Bend and Ochoco District offices of the Oregon Department of Fish and Wildlife have provided maps of the antelope range and antelope winter range. The available information is adequate to indicate that the resource is significant. The antelope habitat is mapped on the Big Game Habitat-Wildlife Area Combining Zone Map.

**Location, Quantity and Quality:**

In 1978 the Oregon Department of Fish and Wildlife identified antelope range in the eastern part of Deschutes County. This area is known as the North Paulina antelope range. The area is mapped on the Big Game Habitat-Wildlife Area Combining Zone Map.

The antelope winter range areas are Millican and Kotzman Basin in the Bend ODFW District and the Hampton/Brothers area in the Ochoco District. These areas are where the antelope typically congregate in herds during the winter months. During the spring, summer and fall the animals are more dispersed throughout the range. These winter ranges are zoned EFU 320.

ODFW has provided new information on expansion of the North Paulina antelope range. The expanded habitat area includes land in T18S, R14E; and T19S, R14E and R15E. The area is predominately Bureau of Land Management (BLM) land. The land is zoned EFU 40.

Most of the antelope range is zoned EFU-320. The area inside of the Deschutes National Forest boundary is zoned Forest (F-1) with an 80 acre minimum lot size.

The communities of Brothers, Millican and Hamilton are located within the antelope range. These communities have limited area zoned Rural Service Center (RSC). Millican also and Hamilton also have approximately 15 acres zoned Rural Service Center - 5 (RSR-5). The area zoned RSC and RSR-5 is less than 40 acres for each center.

The vegetation in the antelope range is sage, juniper and bitterbrush plant community. In the summer antelope require rather open terrain with a good supply of forbs and grasses coupled with some rather thick stands of sage brush for concealment of young. Winter habitat requires extensive flat areas of mainly forbs, low sage and grasses.

**Conflicting Uses:** Land uses or development activities which would result in the loss of habitat, and animal harassment and disturbance associated with human activity. Except for the rural service centers, the antelope habitat is zoned

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The uses permitted and conditionally permitted in the EFU and Forest zone are listed in Title 18.16 and 18.36 and 18.40. Agricultural use (grazing) practiced in the area is not a conflicting use according to ODFW. Antelope are currently causing agricultural damage to a pivot irrigated alfalfa operation during the late fall and winter months.

0119-0230

Residential development at a density greater than 1:320 could be a conflicting use. High use recreational facilities, or uses which would cause congregation of people such as churches or schools could be conflicting uses. The ODFW Wildlife Guide for Land Use Planning recommends an acceptable density of development in the antelope winter range of 1:320 acres.

The uses permitted in the RSC and RSR-5 zone are listed in 18.64 and 18.72. Because the extent of the commercial, tourist and residential uses in the RSC and RSR-5 zones are limited to small, compact area of the rural service centers, within the extensive habitat area, they should not be a conflict with the antelope habitat.

There are 19 sites zoned for surface mining in the antelope range. The ESEEs for the surface mining recognize the antelope use in the vicinity of the surface mining. The mines are mostly located along the highway and the rock extraction is of limited duration. According to ODFW, the mining activities will not cause a significant conflict with the antelope.

#### **Economic, Social, Environmental and Energy Consequences of conserving significant antelope habitat**

1. **Economic Consequences:** The positive economic consequence of limiting conflicts with antelope habitat are the reduction in staff time attempting to resolve conflicts between residential uses and wildlife. Antelope hunters contribute to the economy of the county and they depend on the survival of stable antelope populations.

The negative economic consequences of applying regulations to limit conflicts in antelope range are generally borne by individuals prevented from doing an activity such as building a residence or road, or dividing land, or developing a use which would cause increased traffic or a change in the vegetation which could decrease the quality of the forage or cover.

2. **Social Consequences:** The positive social consequences of limiting development to protect antelope populations and habitat are the retention of open space and the populations of antelope for the enjoyment of the public. The negative social consequence is limited to the private land identified

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as antelope habitat. In order to limit the density of development private land owners could be prohibited from dividing land and constructing a dwelling on a new parcel.

3. **Environmental Consequences:** Opportunities for antelope to flourish in a habitat without repeated interference or disturbance from man would be a positive environmental consequence. Other species of wildlife, including sage grouse, benefit from a large open space environment and a low density of development.

4. **Energy Consequences:** The positive energy consequences of limiting certain development in the antelope range are the reduction in trip generation associated with residential or other non resource related development in the EFU or forest zones. There are no identified negative energy consequences.

5. **Conclusion:** Based on the ESEE analysis, the county finds that the identified antelope habitat and the conflicting uses are important relative to each other. Therefore, the county determines that conflicting uses should be specifically limited and the resource should be protected through a "3C" designation.

6. **Program to Achieve the Goal (Conserve Antelope Habitat)**

Based on the ESEE analysis the county finds that the uses conflicting with antelope habitat should be specifically limited by the application of the Wildlife Area Combining Zone (Title 18.88). This zone limits specific conflicting uses including schools, golf courses and churches. In the antelope range the minimum lot size is to be 320 acres. The rural service centers of Millican, Hamilton and Brothers shall be excluded from the Wildlife Area Combining Zone. The siting and fencing standards in the Wildlife Area Combining Zone apply in the antelope habitat.

Destination Resorts have been identified as a conflicting use with significant big game habitat. The Board of County Commissioners has adopted a policy (Ordinance 92-040) to prohibit siting of destination resorts in the Wildlife Area Combining Zone pending completion of the Goal 8 mapping process which shall be accomplished by December 31, 1992.

**HABITAT AREAS FOR SENSITIVE BIRDS**

**Description:** Nest sites for for northern bald eagle, osprey, golden eagle, prairie falcon, great grey owl, and great blue heron rookeries.

**Inventory:** The information presented in Tables 5 - 20 has been provided by the Oregon Department of Fish and Wildlife, the Oregon Department of Forestry, Oregon State University Cooperative Wildlife Research Unit and the Oregon Natural Heritage Data Base. The inventory is divided into three categories for each species: 1) sites on federal land (U.S. Forest Service or Bureau of Land Management), 2) sites on non-federal land and sites where the sensitive area around the nest site could extend onto non-federal land, 3) "1B" sites where there is insufficient locational information.

The sites located on federal land are not analyzed further in the Goal 5 process as they protected through the management and planning process for federal lands.

**Location, Quality and Quantity:**

The location of the sites is either specifically located and identified on the Sensitive Bird and Mammal Habitat Map as a known location site. If the site is identified only to the nearest quarter section, the site is identified on the Sensitive Bird and Mammal Combining Zone Map as a general location site. When the locational information is available only to the nearest quarter section, ODFW will specifically identify exact habitat site location at the time of a development proposal near the habitat site. Sites which are not located to at least a quarter section are listed as "1B" sites because there is insufficient locational information for the site.

The quality of the habitat sites is good as the sites are currently being used for nesting purposes. However, the Deschutes County/City of Bend River Study (p. 6-9) notes that the number of active nest sites for golden eagles has decreased 75 percent in the 20 year observation period 1965 - 1984. This decrease is attributed to the increase in land development and human activities. The Deschutes County/City of Bend River Study, Chapter 6 provides detailed information on the habitat needs of the sensitive bird species.

The area required for each nest site varies between species. The minimum area required for protection of nest sites has been identified by the Oregon Department of fish and wildlife in their management guidelines for protecting colony nesting birds, osprey, eagles and raptor nests. The area recommended for eagle, osprey and prairie falcon nests is a radius of

1320 feet from the nest site. The recommended radius from a great blue heron rookery is 300 feet and 900 feet from a great gray owl nest site.

**Conflicting Uses Determination and Analysis:**

0119-0233

The nest sites are found in forest, exclusive farm use and Open Space Conservation zones in the county. The uses permitted in these zones that could conflict with the habitat site are surface mining, residential use, recreation facilities including golf courses and destination resorts, roads, logging, air strips. In general, any activity which would disturb the nesting birds, including intensive recreational use or removal of the trees or vegetation that make the site desirable, could conflict with the habitat site.

Chapter 6 of the Deschutes County/City of Bend River Study contains additional information on the location, quality and quantity of the sensitive birds and their habitat and identifies conflicting uses and ESEE consequences.

**Economic, Social, Environmental and Energy Consequences of Conserving sensitive bird sites**

1. **Economic Consequences:** Limiting the extraction of aggregate to protect sensitive bird nest sites could make a potential aggregate resource site unavailable. The economic consequences of protecting sensitive bird nest sites from residential conflicts could prohibit the development of a property for residential use which would lower its value. Regulating or prohibiting conflicting uses associated with intensive recreational use or resort development could restrict the area available for such development.

The positive economic consequences of limiting conflicts are the protection of the birds which are an important amenity for tourists to the area.

2. **Social Consequences:** The negative social consequence of limiting residential or recreational development near sensitive bird nest sites could be the inability to locate a residence or development in the desired location. Limiting recreational opportunities would cause those activities to be channeled to other areas. However, by limiting such conflicting uses bird watchers would have enhanced opportunities.

3. **Environmental Consequences:** The environmental consequences of limiting development near sensitive bird nest sites are positive. Opportunities for birds to nest in a habitat without repeated interference or disturbances from man should be a positive consequence.

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Restricting vegetation removal through a management plan will retain habitat features which are necessary for birds. Limiting residential, recreational and resort development in the vicinity of a nest would limit disturbance which could cause the birds to leave the habitat site.

- 4. Energy Consequences: There are no significant energy consequences associated with protection of nest sites.
- 5. Conclusion: Based on the ESEE analysis, the identified consequences should be balanced so as to allow the conflicting uses but in a limited way so as to protect the resource to a desired extent.
- 6. Program to Achieve the Goal (protect sensitive bird sites)

For supporting Findings, Goals and Policies see the Deschutes County/City of Bend River Study pages 13-17 through 13-20, and the River Study Staff Report page 1 through 99.

Ordinance 86-019 adopted goals and policies to implement the Deschutes County City of Bend River Study to protect wildlife resources.

Ordinance 92-042 adopted the Sensitive Bird and Mammal Combining Zone for the sensitive birds and the Townsend's big-eared bat. The zone requires that a management plan be developed with the Oregon Department of Fish and Wildlife if a development is proposed within the inventoried habitat site. The zone does not regulate forest practices which are regulated by the Forest Practices Act.

Ordinance 92-046 adopted the Sensitive Bird and Mammal Habitat Combining Zone Map.

Ordinance 92-040 amended the Deschutes County Year 2000 Comprehensive Plan to adopt Policy Number 7 in the Fish and Wildlife Chapter to require protection of sensitive bird and mammal species with the Sensitive Bird and Mammal Habitat Combining Zone.

The Deschutes National Forest Land and Resource Management Plan and the Bureau of Land Management Brothers/LaPine Resource Management Plan identify the habitat needs of the sensitive birds and require management to protect the nest sites on federal lands. The Forest Practices Act also has provisions to protect sensitive nesting, roosting and watering sites.

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TABLE 5

BALD EAGLE NEST SITE INVENTORY

NEST SITES ON NON-FEDERAL LAND OR WITH POTENTIAL NON-FEDERAL  
HABITAT AREAS

Township	Range	Section	Quarter	General Location
15S	10E	23	NWNE	Cloverdale NE
15S	10E	23	NENE	Cloverdale SE
17S	11E	26	NW	Shevlin Park
20S	10E	34	NESW	Bates Butte
22S	09E	04	NE	Wickiup Reservoir
22S	09E	04	SW	Haner Park
22S	09E	06	SW	Wickiup Dam

TABLE 6

0119-0236

**BALD EAGLE NEST SITE INVENTORY  
NEST SITES ON FEDERAL LAND**

Township	Range	Section	Quarter	General Location
18S	08E	32	NE	Elk Lake
18S	08E	33	NE	Hosmer Lake
19S	08E	27	SW	Lava Lakes - W
19S	08E	27	SE	Lava Lakes - E
20S	07E	35	SW	Lemish Butte
20S	07E	35	S 1/2	Lemish Butte
20S	08E	08	SE	Benchmark Bu - W
20S	08E	09	SW	Benchmark Bu - SE
20S	08E	09	SW	Benchmark Bu - NE
20S	08E	33	SE	Crane Pr Res NE-S
20S	08E	33	SE	Crane Pr Res NE-NE
20S	08E	33	SE	Crane Pr Res NE
20S	08E	33	NE	Crane Pr Res NE - NW
21S	07E	01	SE	Crane Pr Res W
21S	07E	01	SW	Crane Pr Res W
21S	07E	01	SE	Crane Pr Res W
21S	07E	01	NW	Quinn River
21S	08E	05	SE	Crane Pr Res E
21S	08E	04	NW	Crane Pr Res E
21S	08E	04	W 1/2	Crane Pr Res E - SE
21S	08E	04	W 1/2	Crane Pr Res E - NW
21S	08E	07	SE	Crane Pr Res S
21S	08E	08	SW	Crane Pr Res S

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Township	Range	Section	Quarter	General Location
21S	08E	08	SW	Crane Pr Res S
21S	08E	20	SE	Browns Mountain
21S	08E	32	NE	Browns Creek - W
21S	08E	32	NE	Browns Creek -E
21S	08E	34	SW	Wickiup Res N
21S	08E	34	SE	Wickiup Res N
21S	08E	34	SE	Wickiup Res N
21S	08E	34	SE	Wickiup Res N
21S	08E	34	SE	Wickiup Res N
21S	08E	34	SE	Wickiup Res N
21S	08E	34	SE	Wickiup Res N
21S	09E	13	NE	Tetherow Mdw
21S	09E	34	NE	Deschutes R Ox
21S	13E	19	SE	East Lake E
21S	13E	19	SW	East Lake SW
21S	13E	19	S 1/2	East Lake SE
22S	07E	26	SW	Davis Lake NW
22E	07E	26	SW	Davis Lake NW
22E	07E	34	SW	Davis Lake W - W
22S	07E	34	SW	Davis Lake W - E
22S	08E	07	NE	Davis Creek - S
22S	08E	06	SE	Davis Creek - N
22S	08E	06	SE	Davis Creek
22S	08E	06	SE	Davis Creek - E
22S	08E	15	SW	Wickiup Res W - W
22S	08E	15	SE	Wickiup Res W - E

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Township	Range	Section	Quarter	General Location
22S	08E	23	NE	Wickiup Res S - E
22S	08E	23	N 1/2	Wickiup Res S - S
22S	08E	23	NW	Wickiup Res S - W
22S	08E	23	NW	Wickiup Res S - N
22S	08E	25	NE	Round Swamp - E
22S	08E	24	S 1/2	Round Swamp - NE
22S	08E	25	NE	Round Swamp - S
22S	08E	24	SE	Round Swamp - N
22S	09E	06	SE	Wickiup Dam - E
22S	09E	20	SW	Eaton Butte
22S	09E	20	SW	Eaton Butte
22S	09E	20	SW	Eaton Butte

**TABLE 7**

**0119-0239**

**GOLDEN EAGLE NEST SITE INVENTORY  
NEST SITES ON NON-FEDERAL LAND OR WITH  
POTENTIAL NON-FEDERAL HABITAT AREA**

<b>Township</b>	<b>Range</b>	<b>Section</b>	<b>Quarter</b>	<b>General Location</b>
14S	11E	03	NENW	Squaw Creek Rimrock Ranch
14S	11E	23	NWSW	McKenzie Canyon
14S	11E	24	NWSE	Deep Canyon
14S	12E	29/28 line		Buckhorn Canyon
14S	12E	23	SWNW	N. Odin Falls
14S	13E	11	NENE	Smith Rock State Park French Tent Nests
14S	13E	11	NENE	Smith Rock State Park Monument Nests
14S	13E	11	NENW	Smith Rock State Park Little Three Fingered Jack Nest
14S	13E	11	SENW	Smith Rock State Park Misery Ridge Nest
14S	13E	11	NESW	Smith Rock State Park Red Wall
15S	11E	17	SENW	Fryear Road - 1
15S	11E	16	SWSW	Fryear Road - 2

**TABLE 8**

**GOLDEN EAGLE NEST SITE INVENTORY NEST SITES  
ON FEDERAL LAND**

19S	13E	05	Center	Coyote Butte
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TABLE 9

0119-0240

PRAIRIE FALCON NEST SITE INVENTORY  
 NEST SITES ON NON-FEDERAL LAND  
 OR WITH POTENTIAL NON-FEDERAL HABITAT AREA

Township	Range	Section	Quarter	General Location
14S	13E	11	NENE	Smith Rock State Park French Tent Nests
14S	13E	11	NWSW	Smith Rock State Park Monkey Face
14S	13E	11	SWSW	Smith Rock State Park Asterisk Pass

TABLE 10

0119-0241

**OSPREY NEST SITE INVENTORY  
NEST SITES ON NON-FEDERAL LANDS OR  
WITH NON-FEDERAL HABITAT AREA**

<b>Township</b>	<b>Range</b>	<b>Section</b>	<b>Quarter</b>	<b>General Location</b>
20	11	07	NENW	Sunriver/Meadowland

0119-0242

**OSPREY - NEST SITE INVENTORY**

**NEST SITES ON FEDERAL LAND**

Township	Range	Section	Quarter	General Location
	18S	11E	04	Desch Ri/Dillon Fall
	18S	11E	34	Desch Ri .2 mi W
	18S	11E	35	Desch Ri 1.2 mi W
	19S	08E	09	Lava Lake .5 mi S
	19S	08E	14	Lava lake 1.1 mi SW
	19S	08E	23	Lt Lava Lake .2 mi W
	19S	08E	27	Lt Lava Lake .2 mi N
	19S	08E	33	Lt Lave Lake 2.2 mi N
	19S	09E	15	Lava Lake .3 mi SW
	19S	10E	18	Desch River
	19S	11E	09	Desch Ri/Benham Fall
2	19S	11E	09	Desch River
	19S	11E	10	Desch Ri 1.1 mi W
	19S	11E	16	Desch River
	19S	11E	19	Desch River
	20S	08E	03	Lt Lava Lake 2.3 mi N
	20S	08E	08	Crane Pra Lake 4.6 MS
	20S	08E	14	Crane Pra Lake 3.1 MS
	20S	08E	23	Crane Pra Lake 3.1 MS
3	20S	08E	27	Crane Pra Lake
2	20S	08E	28	Crane Pra Lake
3	20S	08E	29	Crane Pra Lake

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## Combined Public Comments - General Flood Plain Comments

Township	Range	Section	Quarter	General Location
5	20S	08E	31	Crane Pra Lake
4	20S	08E	32	Crane Pra Lake
7	20S	08E	33	Crane Pra Lake
3	20S	08E	34	Crane Pra Lake
2	20S	08E	36	Crane Pra Lake
	20S	10E	02	Desch Ri 1.0 mi W
	20S	10E	30	Fall River .6 mi S
3	21S	07E	01	Crane Pra Lake
	21S	07E	02	Crane Pra Lake
2	21S	07E	14	Crane Pra Lake
	21S	07E	25	Crane Pra Lake
4	21S	08E	04	Crane Pra Lake
4	21S	08E	05	Crane Pra Lake
5	21S	08E	08	Crane Pra Lake
3	21S	08E	09	Crane Pra Lake
3	21S	08E	16	Crane Pra Lake
	21S	08E	17	Crane Pra Lake
2	21S	08E	21	Crane Pra Lake
2	21S	09E	01	Fall River
	21S	09E	02	Fall River
	21S	09E	09	Desch Ri 2.1 mi SE
	21S	09E	11	Desch Ri 1.3 mi S
	21S	09E	13	Desch Ri 1.0 mi S
	21S	09E	15	Crane Pra Lake 4 ME
	21S	09E	15	Desch River

Township	Range	Section	Quarter	General Location
3	21s	09e	22	Desch River
2	21S	09E	23	Desch River
2	21S	09E	26	Desch River
	21S	09E	27	Desch River
	21S	09E	28	Desch River
2	21S	09E	33	Desch River
3	21S	09E	34	Desch River
	21S	10E	29	Desch Ri 4.0 mi W
	21S	10E	30	Desch Ri 3.5 mi W
	21S	11E	36	Paulina Lk 3 mi E
	21S	12E	18	Paulina Lk 1.9 mi SE
5	22S	07E	01	Crane Pra Lake 3 MW
	22S	07E	02	Wickiup Lake
3	22S	07E	10	Wickiup Lake
2	22S	07E	11	Wickiup Lake
	22E	07E	12	Crane Pra Lake
	22S	07E	15	Wickiup Lake
3	22S	07E	16	Wickiup Lake
3	22S	07E	22	Wickiup Lake
	22S	07E	23	Wickiup Lake
3	22S	07E	28	Wickiup Lake
	22S	08E	09	Crane Pra Lake
	22S	09E	04	Desch River
2	23S	09E	08	Wickiup Lake

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0119-0245

TABLE 12

**HERON ROOKERY SITE INVENTORY  
ROOKERY SITES ON NON-FEDERAL LANDS OR  
WITH NON-FEDERAL HABITAT AREA**

<b>Township</b>	<b>Range</b>	<b>Section</b>	<b>Quarter</b>	<b>General Location</b>
14	09	10	SWNE	Black Butte Ranch

TABLE 13

**HERON ROOKERY SITE INVENTORY  
ROOKERY SITES ON FEDERAL LANDS**

<b>Township</b>	<b>Range</b>	<b>Section</b>	<b>Quarter</b>	<b>General Location</b>
21	08	03	NENW	E. of Crane Prairie Reservoir

0119-0246

TABLE 14

GREAT GRAY OWL SITE INVENTORY  
 HABITAT SITES ON NON-FEDERAL LANDS OR  
 WITH NON-FEDERAL HABITAT AREA

Township	Range	Section	Quarter	General Location
22S	09E	36	SESW	Wagon Train North
21S	10E	14	SE	Burgess Road

TABLE 15

GREAT GREY OWL SITE INVENTORY  
 SITES ON FEDERAL LANDS

Township	Range	Section	Quarter	General Location
22S	09E	09	SESW	Dorrance Meadow

**WATERFOWL HABITAT**

0119-0247

**Inventory:** Habitat areas for waterfowl include all of the rivers, streams and lakes in the county as well as the perennial wetlands and ponds identified on the 1990 U.S. Fish and Wildlife Wetland Inventory Maps. The riparian areas associated with these water features are also important habitat for waterfowl. The City of Bend sewage treatment ponds (Hatfield Lake) has also been identified as a significant habitat area for waterfowl.

The map in the original 1979 comprehensive plan entitled "Wildlife Habitat Sensitive Areas" identified the following especially sensitive areas for waterfowl:

1. Benham Falls nesting area
2. Sparks Lake
3. Crane Prairie Reservoir
4. Wickiup Reservoir
5. Davis Lake

These 5 areas are all under federal ownership and management and are protected under the Deschutes National Forest and Resource Management Plan. They are included in the inventory as waterfowl habitat but are not subject to the Goal 5 process because they are federally managed.

**Location Quality and Quantity:**

The significant habitat includes nesting feeding and resting areas with nesting habitat being the most critical need. The Oregon Department of Fish and Wildlife has provided a list of all bird species in the county which identifies the time of year they are present in the county and their relative abundance. Waterfowl are included in this inventory. This information is displayed in Table 1. The ODFW has also provided a list of birds found at the City of Bend sewage treatment ponds.

The Deschutes County/City of Bend River Study, Chapter 6, provides information on waterfowl habitat location, quality and quantity.

**Conflicting Uses Determination and Analysis:**

Future resort and vacation home development, human activity associated with recreation rivers and lakes, timber-cutting around sensitive habitats, fill and removal of material in wetlands and within the bed and banks of rivers and streams and removal of riparian vegetation are conflicting uses with waterfowl habitat. Fluctuating water levels are also a conflict as they may flood nest sites and/or allow them to be exposed to predators.

**Economic, Social, Environmental and Energy Consequences of Conserving Waterfowl Habitat areas.**

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1. **Economic Consequences:** The positive economic consequences of limiting conflicting uses are the protection of habitat which will maintain or increase waterfowl populations and the natural quality of the areas. Abundant waterfowl and other wildlife attract tourists and hunters to the region. The maintenance of riparian and wetland habitat required for waterfowl may increase the value of property because of the aesthetic values often associated with natural areas and wildlife.
2. **Social Consequences:** By limiting residential development or other development or restricting fill and removal, including removal of vegetation, owners of the affected parcels may be negatively restricted from developing their property in the way they desire. However, there are land owners who consider the habitat and presence of waterfowl to be an amenity which increases the value of their property.
3. **Environmental Consequences:** The environmental consequences of limiting development in waterfowl habitat areas are positive. Opportunities for birds to mate, nest and fledge their young in a habitat without repeated interference or disturbances from man is a positive consequence of conservation.
4. **Energy Consequences:** Restricting development of hydro-electric development is a negative energy consequence. This consequence is discussed thoroughly in Chapter 4 of the Deschutes County/City of Bend River Study ESEE findings and conclusions.

Additional information and ESEE analysis is provided in the Deschutes County/City of Bend River Study, Chapter 6 and the River Study Staff Report.

5. **Conclusion:** Based on the ESEE analysis, the identified consequences should be balanced so as to allow the conflicting uses but in a limited way so as to protect the resource to a desired extent.
6. **Program to Achieve the Goal (protect waterfowl habitat)**

The findings of the Deschutes County/City of Bend River Study resulted in the adoption of the Deschutes River Corridor Chapter in the Comprehensive Plan. This chapter was adopted by Ordinance 86-19. The adopted goals and policies protect the water, fish and wildlife, open space, recreation, archaeological, energy, historical and cultural resources of the and resources of the Deschutes River and its tributaries.

The ordinances implementing the River Study goals and policies which either directly or indirectly protect waterfowl habitat are:

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Ordinance No. 86-016 amended Ordinance No. PL-15 to prohibit hydroelectric facilities in designated stretches of the Deschutes River and its tributaries, and to allow hydroelectric facilities in designated stretches of the Deschutes River and its tributaries, and to allow hydroelectric facilities as conditional uses in designated zones and stretches of the Deschutes River. (Title 18.96 and 18.116.130 and 18.128.040(W), Deschutes County Code).

Ordinance No. 86-056 amended Ordinance No. PL-15 to require a conditional use permit for any fill and removal, including removal of vegetation, within the bed and banks of any stream or wetland. The bed and banks of a stream is defined to include 10 feet on either side of the container of the waters of a stream. (Title 18.128.040(W), Deschutes County Code).

Ordinance No. 86-054 amended Ordinance No. PL-15 to require conservation easements as a condition of approval for land use actions on property adjacent to certain rivers and streams. (Title 18.116.310, Deschutes County Code).

Ordinance 89-030 amended the Deschutes County Comprehensive Plan for Flood Hazard zones.

Ordinance 88-031 amended PL-15 to establish a new Flood Plain zone and use restrictions. (Title 18.96, Deschutes County Code)

Ordinance 89-009 established specific restrictions for boat docks, slips, piers or houses in the Flood Plain zone. (Title 18.96 and 18.116.070, Deschutes County Code).

All zones in Title 18 have a stream setback provision to protect fish and wildlife areas. The setback requirement is 100 feet from the ordinary high water mark along all streams or lakes. The provision applies to all structures and sewage disposal installations.

Title 18.84, Landscape Management Zone requires retention of existing vegetation to screen development from the river or stream. The retention of vegetation can provide a buffer between development and the nesting and feeding sites of waterfowl.

Ordinance 92-040 added the following policy to the fish and Wildlife policies of the Deschutes County Year 2000 Comprehensive Plan: The county shall work with the ODFW and the Deschutes Basin Resource Committee to review existing protection of riparian and wetland area vegetation and recommend comprehensive plan and ordinance amendments, if necessary, by December 31, 1993.

Ordinance 92-045 adopts the U.S. Fish and Wildlife Service

National Wetlands Inventory maps for Deschutes County as the inventory of wetlands in the county.

0119-0250

Ordinance 92-042 adopts the Sensitive Bird and Mammal Combining Zone, Title 18.90. This zone requires management plan prior to development with in the impact area of great blue herons, and osprey.

These goals, policies, and ordinances along with, the Oregon State Scenic Waterway and the Federal Wild and Scenic designations on segments of the certain rivers and streams are the implementing measures to protect waterfowl habitat on the Deschutes River and its tributaries and perennial wetlands and ponds. The Deschutes National Forest Land and Resource Management plan also contains provisions to protect identified waterfowl habitat.

In addition, the forest and EFU zones require large minimum lot sizes which limits the potential density of development in the areas adjacent many of the rivers, streams, wetlands and ponds used for waterfowl habitat.

The county notifies the Oregon Department of Fish and Wildlife of all requests for fill and removal or development proposals in the flood plain zone, Wildlife Area Combining Zone, or along any designated river or stream or wetland.

For additional supporting Findings, Goals and Policies see the Deschutes County/City of Bend River Study and the River Study Staff Report.

0119-0251

UPLAND GAME BIRD HABITAT**Inventory**

The following upland game birds are found in Deschutes County:

Estimated upland game population in 1980 (ODF&W 1985):

Ring-necked Pheasant	200
Valley Quail	10,000
Mountain Quail	50
Chukar Partridge	300
Turkey	50
Blue Grouse	900
Sage Grouse	1,800
Ruffed Grouse	100
Mourning Dove	8,000

**Location, Quality and Quantity**

The habitat for upland game birds is dispersed throughout the county in the riparian, forest, agricultural and rangeland areas of the county. Valley quail and mourning doves are the most common upland game birds. Pheasants, and to a lesser extent valley quail, are truly products of and dependent upon agriculture for their existence. Ideal habitat includes a varied patchwork of seed-producing crops interspersed with brushy fence rows, ditches, streams and woodlots. This type of land cover pattern provides their basic needs of food, water and cover. These birds are primarily found in the Terrebonne and Alfalfa areas. Since pheasants are products of agriculture, they are generally found on farmlands, with no area being essentially more critical than another. However, in many places, riparian vegetation is the only cover available and these thin strips are considered as sensitive areas.

The Oregon Department of Fish and Wildlife has not identified critical habitat areas for any of the upland game species except for the sage grouse. Sage grouse inhabit the sagebrush-grass areas in the eastern portion of the County. The population of sage grouse has shown considerable fluctuation over the years. Present populations are somewhat below average. Areas of particular concern for the sage grouse are the strutting grounds, known as leks. Strutting grounds are flat areas with vegetation less than six inches high on which the males exhibit a breeding display called strutting to attract the females. The sage grouse range and known strutting grounds are shown on the

**Sensitive Bird Habitat Map.** The inventory of sage grouse leks is also listed in Tables 12 and 13 in the Sensitive Bird section of this chapter.

Ruffed grouse and turkey are found mostly on the Deschutes National Forest in forested and riparian habitat. Blue grouse are also mostly on the national forest and are frequently found on ridge tops. Chukars live in grass land habitat and in grassy canyons and also rely on riparian habitat.

#### **Conflicting Uses Determination and Analysis:**

Pheasant and quail are affected whenever agricultural land is taken out of production through urban sprawl, road construction, industrial development, and other land clearing activities. Farming practices on existing agricultural lands also have an impact. The trend today is to farm as much land as possible. Brushy fence rows, woodlots, and riparian vegetation are constantly being removed at the expense of upland game bird use. Reduced acres of agricultural land combined with clean farming techniques (burning fence rows and removing brush areas) has significantly reduced the ring-necked pheasant population in Deschutes County.

The Deschutes County/City of Bend River Study identifies conflicting uses with upland game bird habitat (Chapter 6) and is incorporated here by reference.

Sage grouse depend on large areas of undeveloped rangeland habitat. Activities or development which would interfere with the strutting grounds or displace the birds from the areas used for strutting are conflicting uses. These activities could include road construction, surface mining, or any structural development.

#### **Economic, Social, Environmental and Energy Consequences of Conserving riparian and wetland habitat**

1. **Economic Consequences:** The positive economic consequences of limiting conflicting uses are the protection of habitat which will maintain or increase the upland game bird populations in the county. Abundant wildlife and natural areas are a main reason tourists visit the county. The maintenance of riparian and wetland habitat may increase the value of property because of the aesthetic values often associated with natural areas and wildlife.
2. **Social Consequences:** The positive social consequence of limiting conflicting uses is the the protection of habitat which has aesthetic qualities appreciated by

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residents of the area and tourists. Limiting conflicting uses could prevent someone from developing their property in a manner they desire. However, the county does not regulate accepted farming practices which could cause destruction of some habitat outside of riparian areas.

3. **Environmental Consequences:** The environmental consequences of limiting conflicts with upland game bird habitat are positive. The habitat would be retained or enhanced which results in stable upland game populations. There are no significant negative environmental consequences.
4. **Energy Consequences:** Except for the possible limits on development of hydroelectric facilities, the energy consequences are not significant. The consequences of hydroelectric development are described in detail in the Deschutes County/City of Bend River Study.

Additional information and ESEE analysis is provided in the Deschutes County/City of Bend River Study, Chapter 6 and the River Study Staff Report which are hereby incorporated by reference.

5. **Conclusion:** Based on the ESEE analysis, consequences should be balanced to allow the conflicting uses but in a limited way in order to protect the resource to the desired extent.
6. **Program to Achieve the Goal (protect upland game birds):**

For all of the upland game birds except sage grouse, the habitat is adequately protected by the existing exclusive farm use and forest zoning and the provisions to protect wetlands and riparian areas. The habitat for upland game birds is in the farm and forest zones which provide for minimum lot sizes greater than 20 acres to limit the density of development and the consequent conversion or deterioration of habitat. Any residential development in either the EFU or forest zone requires a conditional use permit.

Agriculture is a permitted use in the exclusive farm use zone and the county does not regulate ordinary farming practices which could cause some loss of cover habitat.

The county provisions to protect riparian areas and wetlands protect one of the most significant components of upland game habitat. The Oregon Forest Practices Act also contains provisions which regulate forest activities in riparian areas.

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Conflicts with sage grouse habitat are limited by exclusive farm use zoning with a 320 acre minimum lot size throughout their range. In sage grouse habitat the Oregon Department of Fish and Wildlife is notified of any conditional use permit and provided an opportunity to identify any conflicts. However, because of their sensitivity and importance, the sage grouse leks or strutting grounds need additional protection. Therefore, the leks identified in Table 14 and on the Sensitive Bird and Mammal Habitat Combining Zone Map are included in the Sensitive Bird and Mammal Combining Zone. The combining zone requires a habitat management plan for any activity located within a 1,320 foot radius of the lek which may cause the lek to be abandoned or destroyed.

Because new leks may be established over time, it is possible that mining activities proposed in the future could conflict with a lek not yet established in the sage grouse range. Therefore, prior to expansion or operation of a mining activity, the Goal 5 program to protect surface mining requires consultation with ODFW to develop adequate setback and closure period restrictions to protect any new lek that is not on the inventory. This consultation will assure that the conflicting surface mining activity will not adversely affect the lek.

TABLE 16

0119-0255

SAGE GROUSE LEK INVENTORY  
SITES ON FEDERAL LANDS

Township	Range	Section	Quarter	General Location
19E	14E	26	SESE	Millican Borrow Pit
20S	17E	05	NWSW	County Line/ Audobon Site
20S	18E	05	SW	Circle F Reservoir
20S	19E	13-24		Todd Well
21S	15E	12	NENSW	Kotzman Basin
21S	16E	22/24	NESW	Mahogany Butte/ The Gap
21S	17E	18	NE	Whiskey Springs
21S	17E	28	NENE	Moonshine
21S	18E	22	NENE	South Well
21S	18E	24	SWSE	Viewpoint
22S	16E	11	SWSE	Antelope Butte
22E	17E	02	SENW	Spicer Flat
22S	17E	16	NW	The Rock
22S	17E	32	SWSW	Jaynes Well
22S	18E	06	SWNE	Little Mid Lake
22S	18E	11	SENEW	Squaw Lake

TABLE 17

0119-0256

SAGE GROUSE LEK INVENTORY  
LEKS ON NON-FEDERAL LANDS OR  
WITH NON-FEDERAL HABITAT AREA

Township	Range	Section	Quarter	General Location
20S	14E	10	NENW	Evans Well
20S	16E	25	NWSW	Moffit Ranch
20S	16E	26	NWNW	Moffit Ranch Satellite
22S	17E	06	SWSW	4-Corners/Dickerson Well
22S	19E	18	NENE	Nweshal Well

**FURBEARER HABITAT**

0119-0257

**Inventory**

Estimated furbearer population in Deschutes County (ODF&W 1985):

Beaver	250
Muskrat	1,000
River Otter	100
Mink	500
Marten	300
Fisher	5
Coyote	2,600
Red Fox	50
Bobcat	400
Wolverine	6
Raccoon	430
Skunk	100
Badger	250
Weasel	500
Yellow-Bellied Marmot	200
Ground Squirrels	15,000
Snowshoe Hare	1,000
Blacktailed Jackrabbit	5,000
Cottontail	2,000
Porcupine	750

**Location, Quality and Quantity**

The nongame furbearing animals are broadly distributed throughout the county in various habitats including forest, open rangeland, agricultural land and land that is developed. These habitats are found in most zones in the county especially forest and exclusive farm use zones. However, some of the animals thrive in developed, and even urban areas, where habitat still exists. Riparian habitat is especially important for many of the species including beaver, muskrat, otters and mink. Most of the other species also use riparian habitat to some extent. The Oregon Department of Fish and Wildlife has not identified any specific habitat sites other than riparian and wetland areas that are critical for the listed species.

**Conflicting Uses Determination and Analysis:**

The conflicting uses are those activities or development which would degrade or destroy habitat or disturb the animals causing them to relocate. Conflicts between furbearers and other land uses are minimal in the county. However beavers cut down desired trees, block road culverts, and build dams at the head of irrigation ditches. Other

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species can prey on livestock (coyote) or cause damage to forests (porcupine) or agriculture and landscaping (ground squirrels, rabbits).

0119-0258

**Economic, Social, Environmental and Energy Consequences of Conserving riparian and wetland habitat**

1. **Economic Consequences:** The positive economic consequences of limiting conflicting uses are the protection of habitat which will maintain or increase the diversity of nongame wildlife in the county. Abundant wildlife and natural areas are a main reason tourists visit the county. The maintenance of riparian and wetland habitat may increase the value of property because of the aesthetic values often associated with natural areas and wildlife.

The negative economic consequence of protecting the habitat some of the species is the damage that they cause to livestock, agriculture, forests, and landscaping.

2. **Social Consequences:** The positive social consequence of limiting conflicting uses is the the protection of habitat which has aesthetic qualities appreciated by residents of the area and tourists. Limiting conflicting uses could prevent someone from developing their property in a manner they desire. However, the county does not regulate accepted farming practices which could cause destruction of some habitat outside of riparian areas. Some of the furbearing nongame animals, including rabbits, ground squirrels and porcupine can cause damage to forest and agriculture, and residential landscaping and gardens.

3. **Environmental Consequences:** The environmental consequences of limiting conflicts with furbearer habitat are positive. The habitat would be retained or enhanced which results in stable and diverse furbearer populations. There are no significant negative environmental consequences.

4. **Energy Consequences:** There are no significant energy consequences.

Additional information and ESEE analysis is provided in the Deschutes County/City of Bend River Study, Chapter 6 and the River Study Staff Report which are hereby incorporated by reference.

Additional analysis of conflicts is also included in the following documents:

- a. Wildlife Resources of Deschutes County, (ODFW

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1985).  
b. Oregon Non-Game Wildlife Management Plan, (ODFW 1984) pages III-61 through III-82, and pages IV-1 through VI-3.

5. **Conclusion:** Based on the ESEE analysis, consequences should be balanced to allow the conflicting uses but in a limited way in order to protect the resource to the desired extent.

6. **Program to Achieve the Goal (protect furbearers)**

The furbearer habitat is adequately protected by the existing exclusive farm use and forest zoning and the provisions to protect wetlands and riparian areas. The farm and forest zones require large minimum lot sizes and many uses are permitted only as conditional uses. The large minimum lot size and limited development retains much of the habitat and restricts the density of development which reduces the possibility for harassment from human activity. The measures to protect riparian and wetland habitat are detailed in this plan in the Riparian and Wetland Habitat section.

Agriculture is a permitted use in the exclusive farm use zone and the county does not regulate ordinary farming practices which could cause some loss of cover habitat. The Oregon Forest Practices Act regulates forest management activities on private forest land and also contains provisions which regulate forest activities in riparian areas. The Forest Service and Bureau of Land Management manage furbearer habitat under their land management plans.

For supporting Goals and Policies see the Deschutes County Comprehensive Plan page 114 through 138; Deschutes County/ City of Bend River Study, pages 13-1 through 13-45; Oregon Non-Game Wildlife Management Plan, pages IV-1 through VI-3.

HABITAT AREAS FOR TOWNSEND'S BIG-EARED BATS

**Description:** Caves and other sites used by the Townsend's big-eared bats for hibernating, roosting and nursery.

**Inventory:** The inventory information presented in the following tables has been provided by the Oregon Department of Fish and Wildlife, and the Oregon State University Cooperative Wildlife Research Unit and the Oregon Natural Heritage Data Base. The sites are used by Townsend's big-eared bats as nursery and hibernating habitat.

The inventory separates sites located on federal land from those on private land. The federal sites are not analyzed further in the Goal 5 process as they protected through the management and planning process for federal lands. The sites located on private land are mapped on the Sensitive Bird and Mammal Map. The federal sites are not included on the map unless the impact area around the habitat site extends into private land.

One site is listed as "1B" because there is insufficient information to precisely locate the site.

TABLE 18

**TOWNSEND'S BIG-EARED BAT HABITAT SITES INVENTORY  
PRIVATE LAND SITES**

Township	Range	Section	Quarter	General Location
15S	13E	21	SE	Redmond Cave
19S	13E	13	E 1/2	Stokey Ranch

TABLE 19

**TOWNSEND'S BIG-EARED BAT HABITAT SITES ON FEDERAL LAND**

Township	Range	Section	Quarter	General Location
19S	09E	14	SE 1/2	Edison Ice Cave
19S	11E	26	SE 1/4	Lava River Cave
19S	13E	04	SW 1/4	Skeleton Cave
19S	13E	08	SE 1/4	Boyd Cave

0119-0261

TABLE 19 - Continued

Township	Range	Section	Quarter	General Location
19S	13E	14	SE 1/4	Wind Cave
19S	13E	14	SE 1/4	Pictograph Cave
19S	13E	23	SW 1/4	Charley the Cave
19S	13E	27	NENW	Charcoal Cave
19S	13E	23	W 1/2	DEG Cave
22S	15E	07		Lees Cave
22S	15E	16	SW 1/4	LQM Cave

TABLE 20

**TOWNSEND'S BIG-EARED BAT HABITAT "1B" SITE  
INSUFFICIENT LOCATIONAL INFORMATION**

18	12	21	5 miles SE of Deschutes River
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The Oregon Department of Fish and Wildlife non-game biologist recommends that the impact area around the cave site where Townsend's big-eared bats are found should be a radius of 1,320 feet. The biologist recommends that prior to approval of any development within the radius of the cave that a management plan be developed to protect the habitat needs of the bats. Researchers are currently studying the bats to learn more about the extent of the habitat.

**Location, Quality and Quantity:**

The location of the habitat sites is described above in Tables 1, 2, and 3. Information on the number of bats is available in a report by J. Mark Perkins, Summary of Fort Rock District Use by Bats With Emphasis on Plecotus Townsendii - 1985-1991.

The Townsend's big-eared bat is listed as an Oregon sensitive species with a vulnerable classification. The bat is classified as a Federal Category 2 sensitive species. The Category 2 species need additional information in order to be proposed for federal listing as a threatened or endangered species under the federal Threatened and Endangered Species Act.

**Conflicting Uses Determination and Analysis:**

The Redmond Cave site is zoned Exclusive Farm Use-40. The Stookey Ranch site is zoned Exclusive Farm Use-320. The uses permitted in these zones that could conflict with the habitat site are surface mining, recreation facilities including golf courses and destination resorts, roads, logging, air strips. The report identified above cites recreational conflicts at most of the caves located on federal land. Large numbers of visitors can disturb the bats. The Deschutes National Forest has also identified the removal of nearby riparian vegetation where the bats feed as a conflicting use.

**Economic, Social, Environmental and Energy Consequences of Conserving sensitive bird sites**

1. **Economic Consequences:** Limiting aggregate extraction as a conflicting use does not have an economic consequence at this time because there are not any identified aggregate sites adjacent to the identified bat habitat sites located on non-federal land. There are no identified aggregate sites within the impact area of the identified habitat sites on private land. The economic consequences of protecting sensitive bat habitat sites from residential conflicts could prohibit the development of a property for residential use which would lower its value. However, both of the identified sites are located on large parcels where a residence could be located outside of the habitat site. Regulating or prohibiting conflicting uses associated with intensive recreational use or resort development to protect could restrict the area available for such development.

Caves are visited by tourists who are interested in geology and natural history. By limiting development and vegetation removal around the bat caves, the caves retain their natural characteristics and attraction to some tourists. If tourist use is limited to reduce conflict with the bats, there could be a minor negative economic consequence.

2. **Social Consequences:** The negative social consequence of limiting recreational use in or near an identified significant bat cave would cause those activities to be channeled to other areas. Limiting such recreational use on federal lands is not within the jurisdiction of the county. By limiting conflicting uses people interested in wildlife would have enhanced opportunities for viewing the bats in their natural habitat.
3. **Environmental Consequences:** The environmental consequences of limiting development near sensitive bat

caves are positive. Opportunities for bats to thrive in a habitat without repeated interference or disturbances from man should be a positive consequence. Restricting vegetation removal through a management plan will retain habitat features which are necessary for the foraging bats. Limiting residential, recreational and resort development in the vicinity of a cave would limit disturbance which could cause the bats to leave the habitat site.

4. **Energy Consequences:** There are no significant energy consequences associated with limiting conflicts with bat habitat sites.
5. **Conclusion:** Based on the ESEE analysis, the identified consequences should be balanced so as to allow the conflicting uses but in a limited way so as to protect the resource to a desired extent.
6. **Program to Achieve the Goal (protect sensitive bird sites)**

Ordinance 92-042 adopted the Sensitive Bird and Mammal Combining Zone for the sensitive birds and the Townsend's big-eared bat. The zone requires that a management plan be developed and reviewed by the Oregon Department of Fish and Wildlife if a development is proposed within the 1,320 feet of an inventoried Townsend's big-eared bat habitat site on private land. The zone does not regulate forest practices which are regulated by the Forest Practices Act.

The Deschutes National Forest Land and Resource Management Plan has provisions for cave management which prohibit clear cutting within 250 feet of the entrance of caves with significant bat populations. The plan also requires a 150 to 200 foot wide forested corridor between the entrance of the cave and the nearest foraging area. If the foraging area is a nearby stream, trees will not be harvested for 75 to 100 feet on either side. The Forest Service has a guideline which states that significant and potentially significant caves will be protected and managed in accordance with the Federal Cave Resources Protection Act of 1988.

0119-0264

**WETLANDS AND RIPARIAN AREAS****Inventory**

The 1979 Deschutes County Year 2000 Comprehensive Plan Resource Element identified riparian areas on a map titled Wildlife Habitat Sensitive Areas. However, the mapping is at a such a small scale that it is impossible to determine anything more than the general location of riparian areas along the identified streams. The Deschutes County/City of Bend River Study inventoried the riparian areas associated with the following rivers and streams as significant: Deschutes River, Little Deschutes River, Crooked River, Squaw Creek, Tumalo Creek, Fall River, Spring River, Indian Ford Creek and Paulina Creek. The River Study inventory was adopted by the Board of County Commissioners on June 30, 1986.

The county has not conducted an inventory of riparian areas adjacent to lakes and ponds on private land; however, many of these areas are included in the National Wetland Inventory Maps. Riparian areas adjacent to the many lakes on federal lands are managed and protected under the federal land and resource management plans and are not included in the county inventory.

Ordinance 92-045 adopted all wetlands identified on the U. S. Fish and Wildlife Service National Wetland Inventory Maps as the Deschutes County wetland inventory.

**Location, Quality and Quantity**

The location and description of wetlands is shown on the U.S. Fish and Wildlife Wetland Inventory Maps.

Riparian areas are located adjacent to the rivers and streams listed in the inventory adopted in the Deschutes County/City of Bend River Study. The extent of the riparian area varies depending on the soil, terrain, vegetation and hydrology of the area. The riparian area ranges from a narrow band of vegetation directly adjacent to the stream to an extensive area including a broad flood plain and associated wetlands.

The wetlands and riparian areas are essential habitat for waterfowl and significant habitat for upland game birds including grouse, quail, mourning doves and pheasants. Many non-game species also depend on the riparian habitat. The riparian vegetation is also an important component of fish habitat to stabilize stream banks and provide shade to maintain desirable water temperatures.

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**Conflicting Uses Determination and Analysis:**

Conflicting uses include fill and removal of material, including vegetation which could cause reduction in the size or quality or function of a wetland or cause destruction or degradation of the riparian habitat and vegetation. Locating structural development in wetlands or riparian areas would reduce the habitat and the use of the structure could cause conflicts such as harassment or disturbance of wildlife dependent on the habitat. Cutting of riparian vegetation can remove important shade for streams, eliminate habitat for various waterfowl, furbearers, and nongame bird species and can also increase the potential for erosion or bank instability in riparian areas. Hydroelectric development could alter or destroy riparian habitat.

**Economic, Social, Environmental and Energy Consequences of Conserving riparian and wetland habitat**

1. **Economic Consequences:** The positive economic consequences of limiting conflicting uses are the protection of habitat which will maintain or increase the fish and wildlife populations and diversity and the natural quality of the areas. Abundant wildlife and natural areas are a main reason tourists visit the county. The maintenance of riparian and wetland habitat may increase the value of property because of the aesthetic values often associated with natural areas and wildlife.
2. **Social Consequences:** The positive social consequence of limiting conflicting uses is the the protection of habitat which has aesthetic qualities appreciated by residents of the area and tourists. Limiting conflicting uses could prevent someone from developing their property in a manner they desire.
3. **Environmental Consequences:** The environmental consequences of limiting conflicts with wetland and riparian habitat are positive. The habitat would be retained or enhanced which results in stable and diverse fish and wildlife populations and high water quality for fish. There are no significant negative environmental consequences.
4. **Energy Consequences:** Limiting hydroelectric development as a conflicting use could reduce the opportunity for hydroelectric energy production and require that power be produced from other sources.

Additional information and ESEE analysis is provided in the

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Deschutes County/City of Bend River Study, Chapter 6 and the River Study Staff Report which are incorporated herein by reference.

5. **Conclusion:** Based on the ESEE analysis, consequences should be balanced to allow the conflicting uses but in a limited way in order to protect the resource to the desired extent.
6. **Program to Achieve the Goal (protect riparian and wetland habitat)**

#### **Policies and Goals:**

The Deschutes County/City of Bend River Study resulted in the amendment of the Comprehensive Plan to include a chapter entitled Deschutes River Corridor (Ordinance 86-019). Goals and policies in the Water Resource, Open Space, Recreation, Fish, and Wildlife sections address riparian habitat protection and enhancement.

The public has expressed concern that the County is not adequately protecting riparian vegetation with the existing provisions adopted as a result of the River Study. In order to review the adequacy of riparian area vegetation protection, the County has adopted the following Comprehensive Plan policy in the Fish and Wildlife chapter of the comprehensive plan (Ordinance 92-040):

The county shall work with ODFW and the Deschutes Basin Resource Committee to review existing protection of riparian and wetland area vegetation and recommend comprehensive plan and ordinances amendments, if necessary, by December 31, 1993.

#### **Zoning Ordinance:**

In all zones, the county zoning ordinance requires a 100 foot setback from the ordinary high water mark of all streams or lakes for all sewage disposal installations and structures.

Title 18.96, Flood Plain Zone - protects riparian habitat and wetlands by requiring a conditional use for any development. One of the specific purposes of the zone is to conserve riparian areas and maintain fish and wildlife resources. The Flood Plain zone also regulates docks and piers and requires a finding that the structure will not cause the deterioration or destruction of wildlife habitat.

Title 18.128(W), Fill and Removal - requires a conditional use permit for any fill and removal, including vegetation, in wetlands or within the bed and banks of any streams or river. The bed and bank of a stream includes the container of the

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Comprehensive Plan - Fish & Wildlife Chapter

stream at bank full stage plus 10 feet.

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Title 18.84.080(1), Landscape Management Zone requires retention of vegetation to screen development from the river. The zone includes land within a state scenic waterway or within 660 feet of the other rivers and streams identified as landscape management.

Title 18.84.080.(10), Landscape Management Zone, requires conservation easements for all site plan reviews adjacent to the landscape management rivers and streams. The conservation easements shall not require public access.

Title 18.116.220 requires a conservation easement as a condition of approval for all land use actions adjacent to rivers and streams in order to protect natural resources, natural values and water quality.

Title 18.128(V) requires conditional use permits for development of hydroelectric facilities. This provision resulted from the Deschutes County/City of Bend River Study (Ordinance 86-018). The regulations require river enhancement and maintenance or enhancement of existing fish and wildlife habitats.

**HABITAT AREAS FOR THREATENED AND ENDANGERED SPECIES**

The State of Oregon has listed the northern bald eagle, the northern spotted owl, and the wolverine as threatened and the peregrine falcon as endangered. The inventory, ESEE and program to protect the eagle nest sites is located in the Sensitive Bird Habitat section of this chapter.

The northern spotted owl and wolverine habitat are located exclusively on national forest lands. The Deschutes National Forest has inventoried northern spotted owl nest sites and habitat areas and has developed a program to protect the species in accordance with federal requirements.

The county has not inventoried or mapped habitat areas for northern spotted owl and wolverine because they are protected by Federal regulations and the Deschutes National Forest Land and Resource Management Plan and/or the Oregon Forest Practices Act and are therefore not subject to the Goal 5 process. There are no known spotted owl or wolverine habitat sites on private land in the county.

There are no identified peregrine falcon nest sites in the County.

Therefore, in conformance with OAR 660 Division 16, the county has analyzed the data and determined that the northern spotted owl, wolverine and peregrine falcon should not be included on the plan inventory (1A) at this time. During the next periodic review the county will re-examine the available information on threatened and endangered species to determine if they need to be included in the plan inventory and protected as significant Goal 5 resources.

EXHIBIT "B"

0119-0269

FINDINGS OF BOARD OF COUNTY COMMISSIONERS  
SUPPORTING ADOPTION OF RESOURCE ELEMENT OF THE COMPREHENSIVE PLAN,  
AMENDMENTS TO TITLE 18.88 OF THE DESCHUTES COUNTY CODE.

Purpose

1. The purpose of these findings is to support the adoption by the Board of County Commissioners (Board) of: 1) a new Fish and Wildlife Chapter to the Resource Element of the Deschutes County Year 2000 Comprehensive Plan including the inventory, conflicts analysis and the analysis of the economic, social, environmental and energy (ESEE) consequences of protecting or not protecting County fish and wildlife resources; 2) amendments to the Goals and Policies in the Fish and Wildlife Chapter of the Deschutes County Year 2000 Comprehensive Plan; 3) amendments to Title 18.88 Wildlife Area Combining Zone of the Deschutes County Code; 4) Title 18.90 Sensitive Bird and Mammal Combining Zone; 5) the National Wetland Inventory Maps for the Wildlife Area Combining Zone and the Sensitive Bird and Mammal Combining Zone.
2. The wildlife inventory, and ESEEs are required to comply with Statewide Planning Goal 5 and its implementing administrative rule OAR 660-16-000. The adoption of the inventories and amendments to the Comprehensive Plan and Title 18 have been conducted pursuant to the periodic review of the County's comprehensive plan and implementing ordinances required by ORS Chapter 197 and OAR 660-19-000.

Procedural Background

3. On November 1, 1979, the Board of County Commissioners adopted its County Comprehensive Plan, including goals and policies for protection of fish and wildlife resources. The Fish and Wildlife chapter of the Resource Element of the Comprehensive Plan contains inventories and discussion of fish and wildlife resources in the county. On November 1, 1979, the Board adopted PL-15 which containing the provisions for the Wildlife Area Combining Zone.
4. On June 30, 1986, the Board adopted the Deschutes County/City of Bend River Study as an amendment to the Deschutes County Year 2000 Comprehensive Plan. The River Study contains inventories of fish and wildlife resources and ESEEs analyzing the uses conflicting with the fish and wildlife resources in the Deschutes River corridor and its tributaries. On the same date, the Board adopted amendments to the Comprehensive Plan regarding fish and wildlife resources in the river corridor and implementing ordinances to implement programs to protect the river corridor and its fish and wildlife resources.

1 - EXHIBIT "B" FOR ORDINANCE NO. 92-041 (8/5/92)

5. The County submitted a draft periodic review order to the Department of Land Conservation and Development (DLCD) in 1989. The draft periodic review order contained fish and wildlife inventories and ESEEs. On August 27, 1990, DLCD submitted comments to the County on the draft periodic review order. The comments identified deficiencies in the ESEE analysis, conclusions and program to implement Goal 5, and also, identified criteria in the Wildlife Area Combining Zone that were not clear and objective as required by OAR 660-16-010(3).
6. The Deschutes County Planning Commission conducted two public hearings on March 11 and April 22, 1992, to take testimony on the draft fish and wildlife element of the Comprehensive Plan and draft amendments to Title 18 and the Deschutes County Zoning map for the Wildlife Area Combining Zone and Sensitive Bird and Mammal Combining Zone. The Planning Commission conducted work sessions on the Goal 5 wildlife amendments on February 12 and March 25, 1992. On May 13, 1992, the Planning Commission recommended approval of the proposed fish and wildlife changes to the Deschutes County Year 2000 Comprehensive Plan and Title 18 to the Board of County Commissioners.
7. The Board of County Commissioners held a public hearing on May 26, 1992, to consider testimony on the recommendation of the Planning Commission on the proposed amendments to the Comprehensive Plan and Title 18.

Compliance with Goal 5.

8. Goal 5 is met through (a) the adoption of Goals and Policies in Ordinance 92-040 reflecting Goal 5 requirements; (b) the adoption of Ordinance 92-041, which pursuant to the Goal 5 rule amends the comprehensive plan to inventory each Goal 5 resource, analyze conflicting uses, and analyze the ESEE consequences of protecting or not protecting inventoried fish and wildlife resources, (c) the adoption of zoning ordinance provisions in Ordinance 92-042, as applied to inventoried sites by the map adopted by Ordinance 92-046, which together constitute the County's program to meet the Goal, and (d) the adoption of specific timelines in Ordinance 92-040 for revisiting resource sites inventoried as so-called "1B" sites under the Goal 5 rule.
9. To comply with the requirements of Goal 5 and OAR 660-16-000, the County worked with the Oregon Department of Fish and Wildlife to obtain the most recent inventory information on fish and wildlife resources in the county and to identify uses conflicting with the fish and wildlife resources. This inventory information was used to update the inventories in the draft periodic review order and amend the draft ESEE

2 - EXHIBIT "B" FOR ORDINANCE NO. 92-041 (8/5/92)

0119-0271

analyses. In addition, ODFW provided information to support zoning ordinance provisions to resolve conflicts between fish and wildlife resource protection and development.

10. The Board finds that the Goal 5 analysis contained in Ordinance 92-041 for each resource is sufficient to meet the Goal 5 requirements without requiring additional findings here.

Compliance with Other Goals

11. GOAL 1 - CITIZEN INVOLVEMENT. The Board finds that Goal 1 is complied with by the notice given and public hearings, as detailed in the findings set forth herein, held both before the Commission and before the Board during this Goal 5 process and by the provisions for citizen participation under the County's Development Procedures Ordinance, codified at Title 22 of the Deschutes County Code.
12. GOAL 2 - LAND USE PLANNING. The purpose of Statewide Planning Goal 2 is to establish a land use planning process and to assure an adequate factual base for land use decision-making. The goal is satisfied in this case by: (a) the adoption of an inventory of fish and wildlife resources as part of the County's comprehensive plan; (b) the conflicts and ESEE analysis for each resource; (c) the existence of a zoning ordinance that, as amended, will implement the ESEE decisions through clear and objective standards; (d) by the adoption of maps showing wildlife areas; and (e) by the extensive factual record generated by the inventory and ESEE process and the site specific treatment of each site.
13. GOAL 3 - AGRICULTURAL LANDS. This ordinance does not conflict with Goal 3. It does not promote new non-farm uses on farm lands. Where there have been conflicts identified with farm uses, such as with the fencing standards found in Chapter 18.88 or the siting standards of Chapter 18.88, those conflicts have been recognized and accommodated. It does not preclude continuation of any existing farming practices. Consequently, adoption of the County's historic resources package does not conflict with Goal 3.
14. GOAL 4 - FOREST LANDS. The Goal 4 analysis with respect to forest lands is the same as that set forth under Goal 3 with respect to farm lands.
15. GOAL 6 - AIR, LAND, AND WATER RESOURCES. Preservation of inventoried fish and wildlife resources does not conflict with Goal 6, since protection of such resources does not promote additional development.

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16. GOAL 7 - AREAS SUBJECT TO NATURAL DISASTERS AND HAZARDS. Not applicable.
17. GOAL 8 - RECREATION NEEDS. Providing for recreational needs is important to the Deschutes County economy. Enjoyment of fish and wildlife resources is an integral part of outdoor recreational experiences.

With respect to destination resorts, the Board finds that the decision on the siting of destination resorts in the Wildlife Area Combining Zone should be delayed and be considered at the time the Board completes the Goal 8 destination resort mapping for irrigated agricultural lands. Goal 8 prohibits siting of destination resorts in areas identified as "especially sensitive big game habitat". The County has inventoried and mapped significant big game habitat as a Goal 5 resource; and to specifically limit conflicting uses on this identified habitat. Under this package, such inventoried lands are zoned with the Wildlife Area Combining Zone (Title 18.88).

The County inventoried big game habitat is more extensive than the area identified as "especially sensitive big game habitat". Until the Board reconciles the difference between the Goal 8 "especially sensitive big game habitat" and the Goal 5 inventoried significant big game habitat, no applications will be accepted for any part of a destination resort in the Wildlife Area Combining Zone. The Goal 8 requirement precluding siting of destination resorts in the especially sensitive big game habitat is met by this interim bar to applications in all the County's wildlife areas.

18. GOAL 9 - ECONOMY OF THE STATE. Preservation of fish and wildlife resources contributes to Oregon's increasingly important tourism industry. The Board finds that the restrictions set forth in the wildlife provisions in the zoning ordinance will further the preservation of fish and wildlife resources by providing for a review of proposed alterations and demolitions of historic structures. The restrictions on siting of structures does not prevent structures from being built on any lot or parcel.
19. GOAL 10 - HOUSING. This Goal is not implicated by the fish and wildlife policies adopted as part of this package. The Plan to implement the Goal applies wildlife restrictions in designated Wildlife Area overlays. These overlays apply only outside Urban Growth Boundaries. Under the Goals, housing needs are to be addressed chiefly by measures taken inside the urban growth boundary.

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4 - EXHIBIT "B" FOR ORDINANCE NO. 92-041 (8/5/92)

0119-0273

20. GOAL 11 - PUBLIC FACILITIES. Not particularly applicable, as the proposal does not propose new development. The provisions encourage clustering, which can make the delivery of public services more efficient.
21. GOAL 12 - TRANSPORTATION. Not particularly applicable, as the wildlife package does not propose new development. The provisions encourage clustering, which can make for more efficient transportation.
22. GOAL 13 - ENERGY CONSERVATION. Not applicable, as no new development is proposed by the package. The promotion of clustering and siting of development close to existing roads will result in energy conservation.
23. GOALS 14 - 19. Not applicable.

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**NOTICE OF COMPLETED WORK TASK  
PERIODIC REVIEW**  
*See OAR 660-25-130*

JURISDICTION: Deschutes County FINAL DECISION DATE: July 20, 1994

DLCD WORK TASK #: 6 SCHEDULED SUBMITTAL DATE: July 29, 1994

**NOTE: THIS FORM SHOULD ACCOMPANY ALL PRODUCTS  
SUBMITTED AS PART OF A SPECIFIC WORK TASK IDENTIFIED ON  
AN APPROVED WORK PROGRAM**

**DESCRIPTION OF COMPLETED WORK TASK/PRODUCTS:**

Adoption of Ordinance 94-007 amending Resource Element of Comprehensive  
Plan to adopt amended ESEE findings and decision for riparian areas and  
wetlands.

LOCAL GOVERNMENT CONTACT: Catherine Morrow, Principal Planner  
Community Development Department  
1130 NW Harriman  
Bend OR 97701  
(503) 388-6575

Send to: Department of Land Conservation and Development  
1175 Court Street, N.E.  
Salem, Oregon 97310-0590

Local governments are required to provide notice of its action to person who participate in the local periodic review process and request such notice in writing (OAR 660-25-140(1)).

NOTE: If more copies of this form are needed, please contact the DLCD office at 373-0081, or the form may be duplicated on yellow paper.

<pr>wktask.fm



NOTICE OF FINAL PERIODIC REVIEW WORK TASK

DEPARTMENT OF  
LAND  
CONSERVATION  
AND  
DEVELOPMENT

August 4, 1994

TO: Subscribers of Final Periodic Review Work Task  
FROM: Micheal J. Rupp, Rural Plan Review Coordinator  
SUBJECT: Receipt of Work Task # 6 from Deschutes County regarding a revised ESEE analysis and a new wetland inventory.

Task #6 of the approved Deschutes County work program was received by the Department of Land Conservation and Development on July 27, 1994. Any objections to the attached work task must be received by DLCD by **August 25, 1994**.

In order to be considered valid, an objection to a work task must:

- (1) Be filed within the 21-day objection period;
- (2) Clearly identify an alleged deficiency in the work task;
- (3) Suggest specific revisions that would resolve the objection; and
- (4) Demonstrate that the objecting party participated at the local level orally or in writing during the local review process.

Local Government Contact: Catherine Morrow  
Phone: (503) 388-6575

DLCD Field Representative: Brent Lake  
Phone: (503) 388-6424

DLCD Task #6 Reviewer: Doug White  
Phone: (503) 373-0083

MJR/bh  
<nprntc>

Enclosures

cc: Periodic Review Assistance Team  
Catherine Morrow, Planning Director  
Brent Lake, Field Representative  
PR File  
Doug White, DLCD Task Reviewer  
Interested Parties

Barbara Roberts  
Governor



1175 Court Street NE  
Salem, OR 97310-0590  
(503) 373-0050  
FAX (503) 362-6705



# Community Development Department

Administration Bldg., 1130 N.W. Harriman, Bend, Oregon 97701

(503) 388-6575

Planning Division

Building Safety Division

Environmental Health Division

July 25, 1994

Doug White  
Department of Land Conservation and Development  
1175 Court Street NE  
Salem, Oregon 97310



Dear Doug:

Enclosed please find Ordinance 94-007 and the periodic review work task completion report form. This Ordinance is submitted as completion of Periodic Review Work Task number 6. The ordinance adopts a revised ESEE analysis for riparian areas and a new wetland inventory and ESEE analysis and decision. I have also included the staff reports to the Planning Commission and Board of County Commissioners.

We will be hiring someone in mid August to assist in completing Periodic Review Work Task 4, the riparian areas cumulative effects analysis.

Sincerely,  
DESCHUTES COUNTY PLANNING DIVISION

Catherine Morrow, Principal Planner

CDM:slr

DEPT OF  
JUL 27 1994  
LAND CONSERVATION  
AND DEVELOPMENT

REVIEWED  
BWW  
COUNTY OF OREGON  
LEGAL COUNSEL

BEFORE THE BOARD OF COUNTY COMMISSIONERS OF DESCHUTES COUNTY, OREGON

- \*An Ordinance Amending \*
- \*The Deschutes County \*
- \*Comprehensive Plan Resource \*
- \*Element To Amend ESEE Conflict \*
- \*Analysis and Decision For \*
- \*Wetlands and Riparian Areas \*
- \*and Declaring An Emergency. \*

ORDINANCE NO. 94-007

WHEREAS, the Land Conservation and Development Commission issued a Remand Order 93-RA-883, requiring Deschutes County to amend the Deschutes County Comprehensive Plan Resource Element economic, social, environmental and energy consequence analysis (ESEE) for riparian areas and wetlands in order to comply with periodic review Factor 2; and,

WHEREAS, The Deschutes County Planning Commission conducted a public hearing on the amendment to the Riparian Area ESEE and the Wetland Area ESEE in the Resource Element of the Comprehensive Plan and has made a recommendation to the Board of County Commissioners, and the Board of County Commissioners has conducted a public hearing on the amendment; therefore,

THE BOARD OF COUNTY COMMISSIONERS OF DESCHUTES COUNTY, OREGON, ORDAINS AS FOLLOWS:

Section 1. That the Wetlands and Riparian Areas inventory and the ESEE analysis adopted by Ordinance 92-041 (p. 73 - 76) be deleted and replaced by the inventory and ESEE analysis contained in Exhibit "A", Riparian Areas, and Exhibit "B", Wetlands.

Section 2. SEVERABILITY. The provisions of this ordinance are severable. If any section, sentence, clause, or phrase of this ordinance or any exhibit thereto is adjudged to be invalid by a court or competent jurisdiction that decision shall not affect the validity of the remaining portions of this ordinance or exhibit thereto.

Section 3. CODIFICATION. County Legal Counsel shall have the authority to format the provisions contained herein in a manner that will integrate them into the County Code consistent with the County Legal Counsel form and style for ordinance codification. Such codification shall include the authority to make format changes, to make changes in numbering systems and to make such numbering changes consistent with interrelated code sections. In addition, as part of codification of these ordinances, County Legal Counsel may insert appropriate legislative history reference. Any legislative history references included herein are not adopted as part of the substance

of this ordinance, but are included for administrative convenience and as a reference. They may be changed to correct errors and to conform to proper style without action of the Board of County Commissioners.

Section 4. REPEAL OF ORDINANCES AS AFFECTING EXISTING LIABILITIES. The repeal, express or implied, of any ordinance, ordinance provision, code section, or any map or any line on a map incorporated therein by reference, by this amending ordinance shall not release or extinguish any duty, condition, penalty, forfeiture, or liability previously incurred or that may hereafter be incurred under such ordinance, unless a provision of this amending ordinance shall so expressly provide, and such ordinance repealed shall be treated as still remaining in force for the purpose of sustaining any proper action or prosecution for the enforcement of such duty, condition, penalty, forfeiture, or liability, and for the purpose of authorizing the prosecution, conviction and punishment of the person or persons who previously violated the repealed ordinance.

Section 5. EMERGENCY. This Ordinance being necessary for the immediate preservation of the public peace, health and safety, an emergency is declared to exist, and this Ordinance takes effect on its passage.

DATED this 20 day of July, 1994.

BOARD OF COUNTY COMMISSIONERS OF  
DESCHUTES COUNTY, OREGON

  
NANCY POHE SCHLANGEN, Chair

  
TOM THROOP, Commissioner

  
BARRY SLAUGHTER, Commissioner

ATTEST:

  
Anita Mutchie  
Recording Secretary

EXHIBIT "A" FOR ORDINANCE 94-007

RIPARIAN AREAS

Inventory

Riparian areas are areas adjacent to rivers, streams, lakes or ponds where there is vegetation that requires free or unbound water or conditions that are more moist than normal. Riparian areas form an interconnected system within a watershed. At the water's edge they define the transition zone between aquatic systems and terrestrial systems. Riparian areas often contain a diversity of vegetation not found in upland areas. Riparian areas are limited in Deschutes County and are important habitats for both fish and wildlife.

In Deschutes County significant riparian habitat is located in one or more of the following three areas:

1. The area within 100 feet of the ordinary high water mark of an inventoried river or stream.

The 100 foot wide area may contain both riparian vegetation and upland vegetation. Wetlands and flood plain are also frequently within 100 feet of a stream or river. In some cases the riparian vegetation may extend beyond 100 feet from the ordinary high water mark if it is a designated wetland or flood plain.

In forested areas, the Oregon Department of Forestry identifies the riparian management area along Class 1 streams as an area on each side of a stream averaging three times the stream width but not averaging less than 25 feet or more than one hundred feet.

The Oregon Department of Fish and Wildlife (ODFW) Land Use Planning Guide contains a section identifying protection policies and standards for various habitats and species. The recommended model ordinance for riparian areas in the handbook identifies a 100 foot area as measured from the ordinary high water line of all Class I and Class II streams.

2. The area adjacent to an inventoried river or stream and located within a flood plain mapped by the Federal Emergency Management Agency and zoned Flood Plain by the county.

The flood plain may extend beyond 100 feet from the ordinary high water mark of the stream and may contain wetland.

**3. The area adjacent to a river or stream and inventoried as a wetland on the National Wetlands Inventory Map.**

A riparian wetland may extend beyond 100 feet from the ordinary high water mark and may be included in a flood plain.

The county has not conducted an inventory of riparian areas adjacent to lakes and ponds on private land. However, many of these areas are included in the National Wetland Inventory Maps and are subject to County, State and/or Federal wetland fill and removal regulations. Riparian areas adjacent to the many lakes on federal lands are managed and protected under the federal land and resource management plans and are not included in the county inventory and are not considered in the ESEE analysis of conflicting uses.

The three areas described above are further identified in the Deschutes County/City of Bend River Study, the Federal Emergency Management Agency (FEMA) Flood Plain maps, the U.S. Department of the Interior National Wetlands Inventory maps, the Deschutes County Year 2000 Comprehensive Plan and Title 18 of the Deschutes County Code.

Deschutes County/City of Bend River Study

The Deschutes County/City of Bend River Study (1986) inventoried the following significant riparian habitat and completed an ESEE analysis of this habitat. The River Study inventory and ESEE analysis for riparian habitat are incorporated herein by reference.

The River Study resulted in adoption of a 100 foot setback for structures and septic systems, fill and removal regulations, provisions for conservation easements and prohibition of hydro-electric facilities on certain reaches of the Deschutes River and its tributaries.

**Riparian Area Inventoried In River Study (Table 6-2)**

<b>STREAMS</b>	<b>ACRES</b>
Deschutes River	1,440
Little Deschutes River	2,920
Paulina Creek	846
Fall River	43
Crooked River	38
Squaw Creek	47
Tumalo Creek	50
Indian Ford Creek	<u>573</u>
	5,966

FEMA Maps

The Federal Emergency Management Agency (FEMA) maps flood plain adjacent to the following rivers and streams. The flood plain along these rivers and streams is zoned Flood Plain (FP) by Deschutes County.

- Deschutes River
- Little Deschutes River
- Squaw Creek
- Crooked River
- Paulina Creek
- Long Prairie
- Dry River
- Spring River
- Indian Ford Creek

Portions of Indian Ford Creek and the Deschutes River near Sunriver have not been surveyed and mapped by FEMA. These areas are not zoned flood plain. However, the Flood Plain Zone, Title 18.96.020, states: "When base flood elevation data has not been provided in the flood insurance study, the Planning Division will obtain, review and reasonably utilize any base flood elevation or flood way data available from federal, state or other sources in determining the location of a flood plain or flood way."

National Wetlands Inventory Maps

The U.S. Department of Interior National Wetlands Inventory Maps are the county inventory of wetland habitat. These mapped wetlands are subject to county, state and federal fill and removal regulations.

Deschutes County Year 2000 Comprehensive Plan

The Deschutes County Year 2000 Comprehensive Plan, adopted in 1979, mapped riparian areas along the following rivers and streams.

<u>River or Stream</u>	<u>Ownership</u>
Deschutes River	Private/Federal
Little Deschutes River	Private/Federal
Fall River	Private/Federal
Tumalo Creek	Private/Federal
Three Creek	Private/Federal
Squaw Creek	Private/Federal
Trout Creek	Private/Federal
Dry Creek	Private/Federal
Cache Creek	Private/Federal
Indian Ford Creek	Private/Federal
Cultus River	Federal
Charlton Creek	Federal
Deer Creek	Federal

Cultus Creek	Federal
Quinn Creek	Federal
Fall Creek	Federal
Moore Creek	Federal

Title 18.88, the Wildlife Area Combining Zone, contained a provision which required advice from the Oregon Department of Fish and Wildlife to determine the minimum lot sizes in these mapped riparian areas. This provision was deleted from Title 18.88 by Ordinance 92-042 because it was not a clear and objective standard. The Comprehensive Plan map was repealed and replaced with a Wildlife Habitat Combining Zone Map that does not include mapped riparian areas.

Title 18 - Deschutes County Zoning Ordinance

Title 18.04.030 of the Deschutes County Code includes the following streams in the definition of "perennial stream." These streams, in addition to all those listed above, are subject to the 100 foot setback for structures and septic systems.

Perennial Streams Listed in Title 18.04.030

Alder Creek	Lake Creek - Middle Fork
Bottle Creek	Metolius Creek
Bridge Creek	Park Creek - East Fork
Brush Draw	Park Creek - West Fork
Bull Creek	Pole Creek
Cache Creek	Rock Creek
Charlton Creek	Snow Creek
Cultus Creek	Soap Creek
Cultus River	Spring Creek
Deer Creek	Soda Crater Creek
Dry Creek	Squaw Creek - North Fork
Fall Creek	Three Creek
First Creek	Todd Lake Creek
Full Creek	Trout Creek
Goose Creek	Tumalo Creek - North Fork
Indian Ford Creek	Tumalo Creek - Middle Fork
Jack Creek	Tumalo Creek - South Fork
Kaleetan Creek	

All of these streams, except portions of Indian Ford Creek, Cache Creek and Dry Creek, are located on federal land and are subject to either the Deschutes National Forest or the Bureau of Land Management Resource Management Plans.

### Location, Quality and Quantity

The extent of riparian area varies depending on the soil, terrain, aspect, vegetation and hydrology. In the south county, there are extensive areas of flood plain and wetland adjacent to the Deschutes and Little Deschutes Rivers. In the north county, where the Deschutes, Crooked River and Squaw Creek are located in canyons, the riparian area is typically a narrow band confined by the canyon.

Native wildlife depend on the limited riparian habitat. According to the Oregon Department of Fish and Wildlife, 37 percent of reptiles, 46 percent of birds and 69 percent of mammals use riparian habitat. Riparian areas are essential habitat for waterfowl and significant habitat for upland game birds including grouse, quail, mourning doves and pheasants. Many non-game species also depend on the riparian habitat. The riparian vegetation is also an important component of fish habitat to stabilize stream banks and provide shade to maintain desirable water temperatures. The riparian areas are used as migration corridors by deer and are travel corridors for many other species of wildlife.

The quality of the riparian areas is poor in some areas of the south county where extensive development on small lots has occurred along the Deschutes and Little Deschutes Rivers. Some land owners have removed native vegetation to the river's edge and constructed retaining walls and docks, planted lawns or have removed vegetation to enhance their view of the river.

Some grazing damage has occurred on isolated private tracts in the canyons of the Deschutes River and Squaw Creek and along Indian Ford Creek and the Little Deschutes River. However, where residential development or grazing has not occurred adjacent to the streams, the riparian vegetation is generally in fair to good condition.

The water level in the Deschutes River fluctuates because of storage and release of water for irrigation from Wickiup and Crane Prairie Reservoirs. The fluctuating water flows cause erosion and increased turbidity. Low flows during the fall and winter greatly diminish the size of wetted area and can render cover near the banks unsuitable for fish habitat. The low flows also create unstable streambank conditions leading to erosion. The timing and velocity of high flows during the spring and summer reduce the potential for revegetation of stream banks.

In forested riparian areas the width of the significant habitat area depends on the size (class) of the stream. The Oregon Department of Forestry (ODF) defines riparian habitat in three classifications: riparian area, riparian area of influence and riparian management area.

The ODF riparian area is the wet soil area next to streams lakes, and wetlands. These areas have high water tables and soils which exhibit characteristics of wetness. Water loving plants are often associated with these areas.

The ODF riparian area of influence is the transition area between the riparian area and upland vegetation. It contains trees which may provide shade or contribute fine or large woody material or terrestrial insects to a stream. It also may contain trees that provide habitat for wildlife associated with the riparian management area.

The ODF riparian management area is the area subject to the regulations in the Forest Practices Act administered by the the Oregon Department of Forestry along class I streams. The width of the riparian management area on each side of the stream is 3 times the width of the streams but not less than 25 feet or greater than 100 feet. This area usually includes a riparian area and riparian area of influence.

Commercial forest harvest operations are subject to the State Forest Practices Act and are not regulated by the county.

### Conflicting Uses Determination

Conflicting uses identified include:

1. Fill and removal of material, including vegetation, which could cause reduction in the size, quality or function of riparian habitat or cause destruction or degradation of the riparian vegetation.
2. Locating structural development in riparian areas can reduce the habitat and the use of structures could cause conflicts such as harassment or disturbance of wildlife dependent on the habitat.
3. Cutting of riparian vegetation can remove important shade from streams needed to maintain water temperature for fish, eliminate habitat for various waterfowl, furbearers, and nongame bird species and can also increase the potential for erosion or bank instability in riparian areas.

The county does not regulate commercial forest practices; they are regulated by the Oregon Department of Forestry.

4. Hydroelectric development can alter or destroy riparian habitat.
5. Locating septic systems in riparian area could cause pollution of ground and surface water systems. The potential for this conflict depends on the characteristics of the soil and hydrology.

The Department of Environmental Quality regulates the placement and construction of septic systems. The purpose of Department of Environmental Quality regulations (OAR 340-71) is to restore and maintain the quality of public waters and to protect the public health and general welfare of the people of the State of Oregon.

6. Recreational use of the riparian area including boat landing areas, formal and informal trails and camping areas can cause soil compaction and destruction of vegetation.
7. Overgrazing can cause bank erosion and destruction of riparian vegetation leading to increased siltation and higher water temperatures.

Farm use, including grazing is a permitted use in most zones outside of the rural service centers. ORS 30.930 to 30.947 contains "right to farm" provisions which prohibit right of action or claim for relief based on nuisance or trespass arising from a farm or forest practice. Therefore the county may not be able to regulate grazing activities in EFU or Forest zoned land.

8. Irrigation water storage, release and diversion alters the natural hydrologic cycles in riparian areas causing erosion and alteration of natural riparian vegetation.

The county does not have have control over storage, release, use or diversion of water. Water flows and water appropriation are regulated and administered by the Oregon Department of Water Resources.

9. Depending on the hydrology and geology of an area, wells in or adjacent to riparian areas could affect hydrology and alter the amount or quality of water in riparian areas.

The State Water Resources Department enforces state statute (ORS 537) and administrative rules (OAR 690) regarding construction and maintenance of wells. ORS 537.769 prohibits adoption of any ordinance, order or regulation by a local government to regulate the inspection or construction of wells.

10. Increase in density of residential lots in or adjacent to riparian areas could result in a decrease of habitat effectiveness because of disturbance to wildlife.

The minimum lot size for land adjacent to riparian areas outside of urban growth boundaries and rural service centers is determined by zone as follows:

<b>ZONE</b>	<b>MINIMUM LOT SIZE</b>
Exclusive Farm Use	
Farm Parcel	23 acres irrigated land or more
Nonfarm Parcel	20 acres
Forest Zone	80 acres
Multiple Use Agriculture	10 acres
Rural Residential	10 acres
Flood Plain	
Exception area	10 acres
Non-exception area	80 acres

The Board finds that new parcels meeting the minimum lot size in the resource zones (Exclusive Farm Use, Forest, Non-exception Flood Plain) will not cause an increase in residential density that would conflict with riparian habitat values.

Fifty-one new 10 acre parcels could potentially be created in the Rural Residential, Multiple Use Agriculture and Flood Plain zone found adjacent to inventoried riparian areas. This number does not include a 376 acre property along Tumalo Creek with over a mile of creek frontage. The potential land divisions are distributed as follows:

<b>LOCATION</b>	<b>POTENTIAL NUMBER OF NEW PARCELS</b>
Squaw Creek	14
Indian Ford Creek	16
Little Deschutes River	4
Deschutes North of Bend	5
Deschutes South of Bend	12
Tumalo Creek	Undeveloped 376 acre parcel, One mile of creek frontage

Creation of new 10 acre parcels would not significantly increase the overall density of residential use adjacent to riparian areas because the areas where new parcels could be created, with the exception of Tumalo Creek, are already divided into lots considerably smaller than 10 acres.

**Economic, Social, Environmental and Energy Consequences of Conflicting Uses**

Although there may be economic, social, environmental and energy consequences of 1) permitting or limiting water flow; 2) grazing in the Exclusive Farm Use zones; 3) the number and location of wells; or 4) commercial forest practices in riparian areas, regulation of these conflicting uses is not within the jurisdiction of the county. Therefore, the following ESEE analysis does not consider the consequences of permitting or limiting these conflicting uses.

**Economic Consequences:**

A positive economic consequence of limiting conflicting uses is the protection of habitat which will maintain or increase the fish and wildlife populations, vegetation diversity and the natural quality of the areas. Abundant wildlife and natural areas are a main reason tourists visit the county.

The maintenance of riparian habitat may increase the value of private property because of the aesthetic values often associated with natural areas and wildlife. However, requiring retention of riparian vegetation on residential land adjacent to rivers and streams may reduce the value of the property depending on the preferences of potential buyers.

An economic consequence of limiting removal of riparian vegetation including timber could be a reduction in material available for the timber industry. Prohibiting forest management in riparian areas could also increase the incidence of tree mortality and fire hazard due to insect infestation which could result in increase cost for controlling wildfire.

Maintaining riparian vegetation can stabilize stream banks and thereby prevent loss of land due to erosion.

Restricting or regulating recreational development in riparian areas could have an economic consequence because fewer sites would be available for tourists.

Owners of property zoned for 10 acre minimum lot sizes would face a reduction in the potential value of their property if they were prohibited from dividing their property adjacent to riparian areas.

**Social Consequences:**

The positive social consequence of limiting conflicting uses is the protection of habitat which has aesthetic qualities appreciated by both county residents and tourists. Limiting conflicting uses also helps maintain wildlife populations which are valued by county residents and visitors.

Limiting conflicting uses such as docks, decks, and other structures could prevent someone from developing their property in a manner they desire. Restricting removal of native vegetation may prevent property owners from increasing their view of a river or stream or prevent them from developing introduced landscaping including lawns.

Limiting public improvements such as trails, campgrounds, public boat launching facilities could result in more crowding in existing facilities and an inability to expand existing or develop new facilities for recreation.

Limiting land division in exception areas to create new parcels in, or adjacent to, riparian areas would have a social consequence of reducing the number of potential homesites in areas that are zoned for residential development. The positive social consequence would be retention of larger areas of open space free from development. The current minimum lot size in exception areas is 10 acres. In the Rural Residential and Multiple Use Agriculture Zone (exception areas) there is the potential to create a approximately 51 new parcels adjacent to riparian areas. However, it is unlikely that this many new parcels will be created because of limitations of topography, access and flood plain and the desire of owners for parcels larger than 10 acres.

#### Environmental Consequences:

The environmental consequences of limiting conflicts with riparian habitat are positive. The habitat would be retained or enhanced which results in stable and diverse fish and wildlife populations and high water quality for fish. Limiting fill and removal activities associated with construction projects and stream bank stabilization will maintain water quality for people and wildlife.

Strictly prohibiting management of forest vegetation in riparian areas could lead to increased fire hazard due to increased fuel build up and tree mortality from insect infestations. Wildfire could be an environmental consequence leading to destruction of vegetation and damage to soil causing increased erosion.

#### Energy Consequences:

Limiting hydroelectric development as a conflicting use could reduce the opportunity for hydroelectric energy production and require that power be produced from other sources.

Additional information and ESEE analysis is provided in the Deschutes County/City of Bend River Study, Chapter 6 and the River Study Staff Report which are incorporated herein by reference.

**Conclusion:**

Based on the above ESEE analysis and the ESEE analysis found in the Deschutes County/City of Bend River Study, consequences should be balanced to allow the conflicting uses but in a limited way in order to protect the resource to the desired extent (OAR 660-16-010(3)).

## Program To Achieve Goal 5 For Riparian Habitat

### Policies and Goals

The Deschutes County/City of Bend River Study resulted in the amendment of the Comprehensive Plan to include a chapter entitled Deschutes River Corridor (Ordinance 86-019). Goals and policies in the Water Resource, Open Space, Recreation, Fish, and Wildlife sections of this chapter address riparian habitat protection and enhancement.

The Fish and Wildlife chapter of the Comprehensive Plan has a policy (Policy #15) to retain and encourage public ownership of significant fish and wildlife habitat and riparian areas. The Water Resources chapter contains policies to protect water quality and reduce erosion (Policy #9).

### Zoning Ordinance

Deschutes County has numerous zoning regulations which serve to protect the riparian resource. Not every regulation applies to every inventoried stream. Some of these regulations were adopted primarily to protect other Goal 5 resources; however, they also provide some protection of riparian resources as well.

For example, the Landscape Management Zone (LM) was adopted to protect scenic and open space values as seen from the designated rivers and streams, but it also has provisions to retain riparian vegetation with a conservation easement within 10 feet of the ordinary high water mark. The fill and removal regulations protect wetlands which are frequently riparian areas. Other regulations such as flood plain restrictions were adopted to reduce hazards but also serve to prohibit most development in riparian areas which are also flood plain zones.

The regulations which apply to conflicting uses in riparian areas are discussed below along with a description of the rivers and streams where each regulation applies. The following two provisions apply to all rivers and streams identified in the inventory:

1. In all zones the county zoning ordinance requires a 100 foot setback from the ordinary high water mark of all streams or lakes for all sewage disposal installations and structures. No structures, septic tanks or drain fields are permitted within 100 feet of any inventoried River Study or perennial stream.
2. In all zones a conditional use permit is required for fill and removal of any material, including vegetation, within a wetland or within the bed and banks of an inventoried stream. This provision applies to all wetlands mapped on the National Wetland Inventory Maps. The bed and banks of a stream is defined as the container below full bank stage plus the land 10 feet on either side of the container.

Flood Plain Zone - Title 18.96

Where the riparian area is zoned Flood Plain because it is mapped as flood plain on the FEMA maps, the regulations of Title 18.96 apply. Permitted uses in the flood plain are limited to agriculture, forest management, open space, and residential uses not containing structures. Conditional use permits are required for all other uses. One of the specific purposes of the zone is to conserve riparian areas and maintain fish and wildlife resources. The Flood Plain zone also regulates docks and piers and requires a finding that the structure will not cause the deterioration or destruction of wildlife habitat.

Landscape Management Zone - Title 18.84

The following rivers and streams are designated as Landscape Management streams and are subject to the provisions of Title 18.84, the Landscape Management Combining Zone.

Deschutes River  
Little Deschutes River  
Squaw Creek  
Crooked River  
Tumalo Creek  
Paulina Creek

Title 18.84.080(1) requires retention of vegetation to screen development which would be visible from the designated river or stream. This provision may protect riparian vegetation. The zone includes land within 1320 feet of a state scenic waterway (segments of Deschutes River) or a federal Wild and Scenic River (segments of Deschutes River and Squaw Creek), or within 660 feet of the other rivers and streams identified as landscape management.

Title 18.84.080.(10) requires a conservation easement for landscape management site plan reviews adjacent to the landscape management rivers and streams. The conservation easement includes the area 10 feet from the ordinary high water mark of the river or stream. The conservation easements shall not require public access.

Other Provisions in Title 18

Title 18.113.070(D), Destination Resort Zone, requires complete mitigation of any loss or net degradation of fish and wildlife resources from destination resort development.

Title 18.113.070(E), Destination Resort Zone, requires maintenance of riparian vegetation within 100 feet of streams rivers and significant wetlands in new destination resorts.

Title 18.116.220 requires a conservation easement as a condition of approval for all land use actions involving properties adjacent to the Deschutes River, Crooked River, Fall River, Little Deschutes River, Spring River, Paulina Creek Squaw Creek and Tumalo Creek in order to protect natural resources, natural values and water quality. The conservation easement includes all property within 10 feet of the ordinary high water mark of the river or stream.

Concurrent with the adoption of this inventory and ESEE analysis, the Board of County Commissioners has directed the Planning Division to begin the process to amend Title 18.116.220 to add Indian Ford Creek to the list of streams requiring a conservation easement as a condition of approval for land use actions involving properties adjacent to certain streams.

Title 18.128(V) establishes criteria for conditional use permits for development of hydroelectric facilities. This provision resulted from the Deschutes County/City of Bend River Study (Ordinance 86-018). The regulations require river enhancement and maintenance or enhancement of existing fish and wildlife habitats.

#### Federal Wild and Scenic River

Segments of the Deschutes River and upper Squaw Creek are designated as Federal Scenic Rivers. The U.S. Forest Service is in the process of developing a management plans for the Deschutes River. The county is participating in technical review committees developing the plan.

#### State Scenic Waterway

The Deschutes River, except for the portion adjacent to the Sunriver planned development, is designated an Oregon Scenic Waterway. Development within one quarter mile of state scenic waterways is subject to review by the Oregon State Parks and Recreation Department to assure compatibility with the scenic values along the river. New dams are prohibited. Although, the principle objective of the State Scenic Waterways is to protect scenic characteristics, a secondary benefit is retention of riparian vegetation for screening and scenic qualities.

#### Commercial Forest Practices

Commercial forest practices in riparian areas on private land are regulated by the Oregon Department of Forestry. Riparian area management on federal land is subject to either Bureau of Land Management or U.S. Forest Service land management plans.

#### Agricultural Practices

Agricultural practices including grazing are a permitted use in most zones. In the EFU zone, state statute prohibits

regulations that make farm practices a nuisance or trespass. Therefore, the county does not regulate farm practices.

Oregon Department of Fish and Wildlife

The Oregon Department of Fish and Wildlife (ODFW) Land Use Planning Guide identifies acceptable riparian protection ordinances in its Riparian Handbook for Planners. One of the referenced ordinances is Deschutes County's. The handbook specifically describes the 100 foot setback for structures and the Landscape Management Combining Zone as measures protecting riparian areas in Deschutes County.

EXHIBIT "B" FOR ORDINANCE NO. 94-007

WETLANDS

Inventory

Deschutes County Ordinance 92-045 adopted all wetlands identified on the U. S. Fish and Wildlife Service National Wetland Inventory Maps as the Deschutes County wetland inventory. Wetlands are those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal conditions do support a prevalence of vegetation typically adapted for life in saturated soil conditions.

Location, Quality and Quantity

The location and description of wetlands is shown on the U.S. Fish and Wildlife Wetland Inventory Maps. Wetlands in Deschutes County are found adjacent to rivers, streams, and springs, in low lying areas with soils that inhibit drainage, in and adjacent to natural and constructed lakes and ponds and as a result seepage from irrigation canals and distribution ditches.

Wetlands are identified by three indicators: hydrology (is the areas saturated or inundated with water at some time during the growing season); hydric soils (are the soils those that are commonly found in wetlands); and vegetation (is there a predominance of vegetation that commonly grows in wet areas). In the arid climate of Deschutes County, wetlands are essential habitat for waterfowl and significant habitat for upland game birds including grouse, quail, mourning doves and pheasants. Many non-game species also depend on the wetland habitat. The wetlands adjacent to rivers and streams are important hydrological components of the habitat for aquatic species.

Conflicting Uses Determination and Analysis

Conflicting uses include fill and removal of material, including vegetation, which could cause reduction in the size, quality or function of a wetland. Fill and removal in riparian wetlands can result in erosion and increased stream turbidity.

Locating structural development in wetlands would reduce the habitat and the use of the structure could cause conflicts such as harassment or disturbance of wildlife dependent on the habitat.

Draining wetlands for agriculture or other development purposes destroys the hydrological function of the wetland and alters the habitat qualities that certain wildlife depend on.

Cutting of wetland vegetation adjacent to streams can remove important shade for streams, eliminate habitat for various waterfowl, furbearers, and nongame bird species and can also increase the potential for erosion or bank instability in riparian areas.

**Economic, Social, Environmental and Energy Consequences of Conflicting Uses**

**Economic Consequences:**

The positive economic consequences of limiting conflicting uses are the protection of habitat which will maintain or increase the fish and wildlife populations and natural diversity. Abundant wildlife and natural areas are a main reason tourists visit the county. The maintenance of wetland habitat may increase the value of property because of the aesthetic values often associated with natural areas and wildlife.

Restriction of fill and removal in agricultural wetlands could create increased cost for normal maintenance of irrigation storage ponds.

Construction in wetlands would cost more than in upland areas because of the amount of fill required to make the ground dry and stable for construction.

**Social Consequences:**

The positive social consequence of limiting conflicting uses is the the protection of habitat which has aesthetic qualities appreciated by residents of the area and tourists. Limiting conflicting uses in riparian wetlands will help maintain water quality for wildlife and

Limiting conflicting uses could prevent a property owner from developing their property in a manner they desire.

**Environmental Consequences:**

The environmental consequences of limiting conflicts with wetland habitat are positive. The habitat would be retained or enhanced which results in stable and diverse fish and wildlife populations and high water quality for fish. There are no significant negative environmental consequences.

**Energy Consequences:**

Modifying or filling wetlands to allow development may require more use of equipment and fuel than comparable development on upland areas.

Additional information and ESEE analysis is provided in the Deschutes County/City of Bend River Study, Chapter 6 and the

River Study Staff Report which are incorporated herein by reference.

Conclusion:

Based on the ESEE analysis, consequences should be balanced to allow the conflicting uses but in a limited way in order to protect the resource to the desired extent.

Program To Achieve Goal 5 For Wetland Habitat

The Deschutes County/City of Bend River Study, the Deschutes County Comprehensive Plan and Title 18 of the Deschutes Code contain policies and regulations to limit conflicting uses.

Deschutes County/City of Bend River Study

The Deschutes County/City of Bend River Study resulted in the amendment of the Comprehensive Plan to include a chapter entitled Deschutes River Corridor (Ordinance 86-019). The following goals in the Deschutes River Corridor chapter of the Comprehensive Plan address wetland habitat:

**FISH**

7. Deschutes County shall adopt regulations pertaining to fill and removal of material in waterways and adjacent wetlands.
12. Deschutes County, in cooperation with the irrigation districts, USFS, ODFW, and Bureau of Reclamation, should explore means to restore and stabilize riparian and wetland habitats. Emphasis should be on stabilizing flows caused by water regulations. Consideration should also include, but not be limited to, bank erosion control revegetation programs, and elimination of inappropriate levels of riparian livestock grazing along rivers and streams.

**WILDLIFE**

4. Deschutes County, in cooperation with the USFS and ODFW, shall protect and enhance lands containing sensitive wildlife habitat.
9. Deschutes County shall support efforts by local conservation clubs to develop a waterfowl and wetlands habitat improvement program along the Deschutes River.
12. Deschutes County shall adopt regulations pertaining to fill and removal of material in waterways and adjacent wetlands.

## OPEN SPACE

1. Deschutes County shall include areas along the Deschutes River, Little Deschutes River, Crooked River, Spring River, Fall River, Tumalo Creek, Paulina Creek and Squaw Creek into the Landscape Management Zone. In these areas, the LM zone may include all riparian areas, wetlands and canyons.

Goals and policies in the Water Resource, Open Space, Recreation, Fish, and Wildlife sections of the Comprehensive Plan address riparian habitat protection and enhancement. Riparian areas in Deschutes County often contain wetlands.

### Title 18 - Deschutes County Zoning Ordinance

In all zones, the county zoning ordinance requires a 100 foot setback from the ordinary high water mark of all streams or lakes for all sewage disposal installations and structures. Wetland areas are often found within 100 feet of streams.

Title 18.128(W), Fill and Removal, establishes the criteria for the conditional use permit. All zones in the county outside of urban growth boundaries require a conditional use permit for fill and removal activity in a wetland or within the bed and banks of a stream or river. The criteria require: (1) review by the Oregon Department of Fish and Wildlife; (2) control of erosion; (3) minimizing disturbance of existing vegetation; (4) a determination that there is no practical alternative for development. A conservation easement is required as a condition for a fill and removal conditional use permit.

Title 18.120.050 establishes exceptions to the requirement for fill and removal conditional use permits. A conditional use permit is not required for fill and removal of less than 50 cubic yards for the purpose of removing diseased or insect-infested trees or shrubs, trees presenting a safety hazard or normal maintenance and pruning. An exception to the requirement for a conditional use permit may be granted for: (1) minor fill or removal for vegetative enhancement; (2) maintenance and repair of existing bridges, dams, irrigation facilities that will not alter the existing characteristics of the wetland; (3) maintenance of nonconforming structures or boat docks; (4) emergency actions to mitigate fill and removal violations in order to benefit fish and wildlife habitat; 5) fish and wildlife habitat enhancement projects approved or sponsored by the Oregon Department of Fish and Wildlife.

Title 18.96, Flood Plain Zone - protects wetlands within flood plains by requiring a conditional use permit for any development. One of the specific purposes of the zone is to conserve riparian areas and maintain fish and wildlife resources. The Flood Plain zone also regulates docks and piers

and requires a finding that the structure will not cause the deterioration or destruction of wildlife habitat.

Division of State Lands

The Oregon Division of State Lands requires permits to fill or remove more than 50 cubic yards of material from a wetland.

U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers administers federal regulations on fill and removal in wetlands. A federal permit may be required for fill and removal of material in a wetland.

July 6, 2009

Deschutes County Planning Division  
1130 NW Harriman Street  
Bend, Oregon 97701

RE: Recommendations from the Interagency Wildlife Working Group on the Deschutes County Comprehensive Plan Update

Dear Deschutes County:

In response to a request from Deschutes County to provide up-to-date wildlife information for the County's Comprehensive Plan Update, a group of local interagency wildlife experts from the Oregon Department of Fish and Wildlife, US Fish and Wildlife Service, US Bureau of Land Management and US Forest Service convened a working group (Interagency Working Group). The enclosed document provides wildlife information to support the Comprehensive Plan Update and includes recommendations from the Interagency Working Group concerning necessary wildlife conservation measures to include in Deschutes County's Comprehensive Plan.

Thank you for the opportunity to participate in the Deschutes County Comprehensive Plan Update. If you have any questions regarding our comments, please contact members of the working group listed herein.

Sincerely,

*Chris Dale*  
ODFW  
High Desert Region Manager

*John Allen*  
US Forest Service  
Deschutes National Forest Supervisor

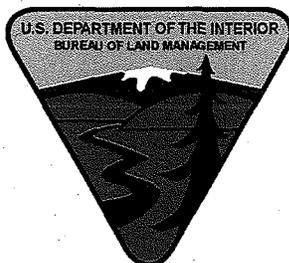
*Nancy Gilbert*  
USFWS  
Bend Field Office Supervisor

*Stephen R. Reinhart*  
BLM  
Prineville District Manager

RECEIVED  
*LA*

JUL 08 2009

BY:  
*Glen Arndt*







# Updated Wildlife Information and Recommendations for the Deschutes County Comprehensive Plan Update

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Prepared by: An Interagency Working Group  
Jennifer O'Reilly (USFWS), Glenn Ardt (ODFW)  
Jan Hanf (BLM), Rick Demmer (BLM) and  
Lauri Turner (USFS)

7/6/2009



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**LIST OF PREPARERS**

Glen Ardt - ODFW Wildlife Habitat Biologist 61374 Parrell Road Bend, Oregon 97702 541-388-6444 ex 230	Chris Carey - ODFW Wildlife Diversity Biologist 61374 Parrell Road Bend, Oregon 97702 541-388-6350 ex 228
Rick Demmer Bureau of Land Management Prineville District 3050 NE Third Street Prineville, OR 97754 541-416-6738	Steven George - ODFW Wildlife Biologist 61374 Parrell Road Bend, Oregon 97702 541-388-6363
Jan Hanf Bureau of Land Management Prineville District 3050 NE Third Street Prineville, OR 97754 541-416-6721	Jennifer O'Reilly Fish and Wildlife Biologist US Fish and Wildlife Service -Bend Field Office 20310 Empire Avenue Suite A-100 Bend, OR 97701 541-312-6426
Lauri Turner Deschutes National Forest Forest Wildlife Biologist 1001 SW Emkay Drive Bend, Oregon 97702 541-383-5640	



## **Economic Value of Fish and Wildlife Recreation in Deschutes County**

*The Interagency Working Group recommends that Deschutes County consider the economic impact or benefit to wildlife resources when making a decision that could affect wildlife populations or their habitats to limit conflicting use.*

Oregon Department of Fish and Wildlife and Travel Oregon contracted with Dean Runyan and Associates in 2008 to conduct an economic analysis by county of Fishing, Hunting, Wildlife Viewing, and Shellfishing Recreation in Oregon: 2008 Trip Characteristics and Expenditure Estimates. The survey identified two distinct type of expenditures related to fishing, hunting, shellfish and wildlife viewing trips. Travel related expenditures were for trips of more than 50-miles one way or included an overnight stay. Local recreation trips were less than 50-miles one way.

Preliminary results for the 36 county economic analyses revealed that travel generated expenditures for fishing, hunting, and wildlife viewing trips to Deschutes County generated nearly \$70-million. Expenditures for fishing trips in Deschutes County were the third highest in the state at \$20,410,000, the second highest for hunting at \$6,663,000, and the third highest for wildlife viewing at \$42,771,000. Dean Runyan and Associates also found that out of the \$478,781,000 expenditures generated by people traveling to Deschutes County that 14.6% came from fishing, hunting, and wildlife viewing activities.

Preliminary results also revealed for locally generated expenditures, that fishing trips in Deschutes County generated the fourth highest in the state at \$5,321,000, the fifth highest for hunting (\$1,817,000), and the ninth highest for wildlife viewing at \$1,520,000.

Additive, residents and non-residents spent \$25,731,000 on fishing trips in Deschutes County, \$8,480,000 on hunting trips, and \$44,291,000 on wildlife watching for a grand total of \$78,502,000. Compared to Oregon's 36 counties, Deschutes County ranked third highest for fishing, hunting, and wildlife viewing revenues, behind Lincoln County's \$102,605,000 and Clatsop County's \$84,967,000, both of which provide saltwater, salmon and steelhead, and shellfishing opportunities. Freshwater fishing trips in Deschutes County generated the highest fresh water revenues at \$25,731,000, with Lane and Tillamook Counties generating the second and third highest revenues at \$22,703,000 and \$15,557,000 respectively. Shellfishing generated an additional \$36,295,000 in revenue resulting in over one billion dollars being spent on fishing, hunting, wildlife viewing, and shellfishing activities in Oregon in 2008.



**Table 1: 2008 Fishing, Hunting, & Wildlife Viewing Expenditures in Deschutes County**

Activity	Fishing	Hunting	Wildlife Viewing	Total FHW	Total Travel Generated
Travel Generated Revenue	20,410,000	6,663,000	42,771,000	69,844,000	478,781,000 (14.6% FHW)
36 County Ranking	3	2	3	3	
Locally Generated Revenue	5,321,000	1,817,000	1,520,000	8,658,000	
36 County Ranking	4	5	9	4	
Deschutes Total	**25,731,000	8,480,000	44,291,000	78,502,000	
Statewide Total	341,510,000	136,032,000	495,260,000	972,802,000	

\*\* Deschutes County generated the highest freshwater fishing revenues in the state.

## Oregon Conservation Strategy

*The Interagency Working Group recommends that Deschutes County utilize the Oregon Conservation Strategy as a guide and reference for the maintenance and enhancement of Oregon's wildlife resource to limit conflicting use.*

In 2006 the Oregon Conservation Strategy was adopted by Oregon's Fish and Wildlife Commission for the state of Oregon. The focus of the Conservation Strategy is to use the best available science to create a broad vision and conceptual framework for long-term conservation of Oregon's native fish and wildlife, as well as various invertebrates and native plants. As a guide to conserving the species and habitats that have defined the nature of Oregon, this strategy can help ensure that Oregon's natural treasures are passed on to future generations. The Conservation Strategy emphasizes proactively conserving declining species and habitats to reduce the possibility of future federal or state listings. It is not a regulatory document, but instead presents issues and opportunities, and recommends voluntary actions that will improve the efficiency and effectiveness of conservation in Oregon.

Healthy fish and wildlife populations require adequate habitat, which is provided in natural systems and, for many species, in landscapes managed for forestry, agriculture, range and urban uses. The goals of the Conservation Strategy are to maintain healthy fish and wildlife populations by maintaining and restoring functioning habitats, preventing declines of at-risk species, and reversing declines in these resources where possible.

The Conservation Strategy is a broad strategy for all of Oregon, offering potential roles and opportunities for residents, agencies and organizations. It incorporates information and insights from a broad range of natural resources assessments and conservation plans, supplemented by the professional expertise and practical experiences of a cross-section of Oregon's resource managers and conservation interests. It is designed to have a variety of applications both inside and outside of state government.

Most important, perhaps, it establishes the basis for a common understanding of the challenges facing Oregon's fish and wildlife, and provides a shared set of priorities for addressing the state's conservation needs. The heart of the Conservation Strategy is a blueprint for voluntary action to address the long-term needs of Oregon's fish and wildlife. The future for many species will depend on landowners' and land managers' willingness to voluntarily take action on their own to protect and improve fish and wildlife habitat.

The Oregon Conservation Strategy is available online at <http://www.dfw.state.or.us/conservationstrategy>

## **ODFW Fish and Wildlife Habitat Mitigation Policy**

*Oregon Department of Fish and Wildlife recommends that Deschutes County require impact avoidance for development actions that will impact Category 1 habitat and development of a wildlife mitigation plan for development actions that will impact habitat Categories 2-5 to limit conflicting use.*

Oregon Department of Fish and Wildlife's (ODFW) Fish and Wildlife Habitat Mitigation Policy (OAR 635-415) ([http://www.dfw.state.or.us/lands/mitigation\\_policy.asp](http://www.dfw.state.or.us/lands/mitigation_policy.asp)) provides direction for ODFW staff to review and comment on projects that may impact fish and wildlife habitat. This policy recognizes six distinct categories of wildlife habitat ranging from Category 1 – essential, limited, and irreplaceable habitat, to Category 6 – low value habitat. The policy goal for Category 1 habitat is no loss of habitat quantity or quality through avoidance of impacts by using development alternatives, or by not authorizing the proposed development action if impacts cannot be avoided. The Department recommends avoidance of Category 1 habitats as they are irreplaceable, and thus mitigation is not a viable option.

Categories 2-4 are for essential or important, but not irreplaceable habitats. Category 5 habitat is not essential or important habitat, but has high restoration potential.

## **Threatened and Endangered Species and Species of Concern**

*The interagency working group recommends that Deschutes County develop and adopt measures that will protect federal and state listed threatened and endangered species to limit conflicting use.*

The US Fish and Wildlife Service (USFWS) is responsible for administration of the Endangered Species Act and multiple Federal wildlife laws that protect endangered species and migratory birds, respectively. For more information on legal authorities of the USFWS in the protection of migratory birds, please visit <http://www.fws.gov/migratorybirds/intrnltr/treatlaw.html>.

It is Oregon's policy "to prevent the serious depletion of any indigenous species" (ORS 496.012). Oregon Department of Fish and Wildlife maintains a list of native fish and wildlife species in Oregon that have been determined to be either "threatened" or "endangered" according to criteria set forth by rule (OAR 635-100-0105) (<http://www.dfw.state.or.us/OARs/100.pdf>). Recovering species when their populations are severely depleted can be difficult and expensive, and socially and economically divisive. To provide a positive proactive approach to species conservation, a "sensitive" species classification was created under Oregon's Sensitive Species Rule (OAR 635-100-040) ([http://www.dfw.state.or.us/wildlife/diversity/species/docs/SSL\\_by\\_taxon.pdf](http://www.dfw.state.or.us/wildlife/diversity/species/docs/SSL_by_taxon.pdf)).

Appendix H lists species in Deschutes County that are listed by either the Federal or State wildlife agencies under the above mentioned laws or authorities along with a list of wildlife species that occur in Deschutes County.

## **Riparian and wetland areas for wildlife and fish**

*The Interagency Working Group recommends that Deschutes County complete a Local Wetland Inventory and adopt it into the Deschutes County Comprehensive Plan to limit conflicting use.*

Riparian areas support a greater diversity of wildlife than upland areas, and are particularly important and limited habitats in the arid Western U.S. Over 60 percent of the neotropical<sup>1</sup> migratory songbirds in the western U.S. use riparian areas at some point during the year. Approximately 80 percent of all wildlife species depend on riparian areas. Aquatic and fish productivity are directly related to properly functioning and healthy riparian habitat.

Deschutes County has limited riparian and wetland habitats. In 1985, the US Fish and Wildlife Service conducted a National Wetland Inventory for most of Deschutes County. However, due to the large spatial scale of the mapping effort (1:58,000) wetlands smaller than five acres in size were not identified as significant only because they were not mapped, not because they are insignificant. Most wetlands smaller than five acres in size provide significant habitat necessary for a suite of wildlife species as depicted in the introductory paragraph above. A Local Wetland Inventory would greatly improve the County's ability to conserve wetland resources, which are vital to maintaining healthy fish and wildlife populations in the Upper Deschutes basin. Therefore, the Working Group strongly recommends that the County pursue the completion of a Local Wetland Inventory and its adoption into the Comprehensive Plan Update.

Sensitive fish and wildlife species dependent on riparian and wetland areas in the County include but are not limited to those in Table 2.

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<sup>1</sup> Birds that reproduce and summer in North America and winter in South America.

**Table 2: Threatened, endangered and species of concern dependent on floodplain areas in Deschutes County.**

<b>Species</b>	<b>State Oregon Dept of Fish and Wildlife</b>	<b>Federal US Fish and Wildlife Service</b>	<b>Deschutes County</b>
Bull Trout	SC - OCS	Threatened	
Redband Trout	SV - OCS		
Summer Steelhead	SC - OCS	Threatened**	
Chinook Salmon	SV		
Columbia Spotted Frog	SC	Candidate	
Oregon Spotted Frog	SC - OCS	Candidate	
Western Toad	SV - OCS		
Cascade Frog	SV - OCS	SOC	
Coastal tailed frog		SOC	
Oregon slender salamander		SOC	
Great Blue Heron			Goal 5
Yellow-billed Cuckoo	SC	Candidate	
Lewis' Woodpecker	SC - OCS	SOC	
White-headed Woodpecker	SC	SOC	
American Bald Eagle	Threatened	EPA	Goal 5
Northern Goshawk	SV - OCS	SOC	Goal 5
Osprey			Goal 5
American Peregrine Falcon	SV	Delisted	Goal 5
Greater Sandhill Crane	SV - OCS		
Flammulated Owl	SV - OCS		
Great Gray Owl	SV - OCS		
Three-toed Woodpecker	SV - OCS		
Black-backed Woodpecker	SV - OCS		
Pileated Woodpecker	SV		
Olive-sided Flycatcher	SV - OCS	SOC	
Willow Flycatcher	SV	SOC	
Bufflehead	OCS		
Barrows Goldeneye	OCS		
Yellow-breasted chat		SOC	
Townsend's Big-Eared	SC - OCS		

Bat			
California Myotis	SV -OCS		
Long-legged Myotis	SV - OCS		
Hoary Bat	SV - OCS		
Silver-haired Bat	SV - OCS		
Pallid Bat	SV - OCS		
Mule Deer			Goal 5
Elk			Goal 5

\*\* - National Marine Fisheries Service has regulatory authority for steelhead.

C – USFWS Candidate is warranted to be listed as Threatened or Endangered

SC – State Sensitive Critical

SV – State Sensitive Vulnerable

OCS – Oregon Conservation Strategy Species

SOC – USFWS Species of Concern

State Sensitive Species List -

[http://www.dfw.state.or.us/wildlife/diversity/species/sensitive\\_species.asp](http://www.dfw.state.or.us/wildlife/diversity/species/sensitive_species.asp)

EPA – Bald and Golden Eagle Protection Act

Oregon Conservation Strategy Species List -

[http://www.dfw.state.or.us/conservationstrategy/strategy\\_species.asp](http://www.dfw.state.or.us/conservationstrategy/strategy_species.asp)

*Oregon Spotted Frog in the Upper Deschutes Basin*

*Oregon Spotted Frog Conservation Recommendations to Limit Conflicting Use*

*The Interagency Working Group recommends that Deschutes County add an Oregon spotted frog habitat area to the wildlife area combining zone map to include the floodplains along the Deschutes and Little Deschutes Rivers south of Bend (approximately from River Mile (RM) 173 to headwaters of the Deschutes River and from the confluence with the Deschutes River to the Klamath County line (~RM42.9) for the Little Deschutes River).*

- *Oregon spotted frog habitat is essential and limited, and depending on the site, it could be irreplaceable. The mitigation goal for essential, limited, and irreplaceable habitat is no net loss of either habitat quantity or quality through avoidance (Oregon Department of Fish & Wildlife (ODFW) Habitat Category 1). The mitigation goal for essential and limited habitat if impacts are unavoidable is no net loss of either habitat quantity or quality and to provide a net benefit of habitat quantity or quality (ODFW Habitat Category 2).*
- *The Working group recommends a No Net Loss of wetlands within the Oregon spotted frog habitat area. Therefore, wetland fill permits should be sent to the ODFW and FWS for review and comment to the county on their findings.*

- *The working group recommends that Deschutes County complete a Local Wetland Inventory to properly protect wetland and inherent functions and values.*
- *Hydrologic connectivity should be maintained when wetlands will be filled. For example, culverts should be installed below roads, driveways, or other obstructions that may block hydrologic connectivity that allows for proper wetland function and dispersal of Oregon spotted frogs.*
- *Limit structures within floodplains. that could impact floodplain functions*
- *Maintain highest water quality standard in wetlands and rivers.*

The Oregon spotted frog (*Rana pretiosa*) is endemic to the Pacific Northwest and historically ranged from southwestern British Columbia to northeast California. There are less than 50 known sites inhabited by the species in southwestern British Columbia, western and south-central Washington, and western, central, and south-central Oregon; no populations are known to persist in California. Revisits of historic localities suggest the species is lost from 70-90% of its historic range (Cushman and Pearl 2007).

In Oregon, Oregon spotted frogs historically were found in Multnomah, Clackamas, Marion, Linn, Benton, Jackson, Lane, Wasco, Deschutes and Klamath counties. Currently, this species is only known to occur in Deschutes, Klamath, and Lane counties. In Deschutes County, Oregon spotted frogs occur within water bodies on the Deschutes National Forest, Prineville District Bureau of Land Management and private land.

The Oregon spotted frog is considered a Candidate species by the US Fish and Wildlife Service (FWS), which means that there is sufficient information to support a proposal to list this species as endangered or threatened under the Endangered Species Act. The FWS is currently completing a status assessment for the Oregon spotted frog.

The Upper Deschutes and Little Deschutes Rivers and associated wetlands are key habitat for the frog. In particular, riverine oxbows that contain permanent standing water but are no longer connected to the river provide essential overwintering and breeding habitat for Oregon spotted frog. The rivers and associated floodplains are connectivity corridors that must be maintained to allow populations of frogs to interbreed. Small ponds and isolated wetlands with emergent or floating aquatic vegetation and perennial water also provide habitat for the frog, particularly those that are devoid of predatory fish and bull frogs.

In the Upper Deschutes and Little Deschutes Rivers, Oregon spotted frog is threatened by the loss of marsh habitat due to vegetation succession and lodgepole pine encroachment into wetlands; alteration of riverine and wetland hydrologic regimes; interactions with non-native fish and bull frogs; and degraded water quality. Livestock grazing in high density may also pose a threat to Oregon spotted frog.

Development of Deschutes County "red lots" within the floodplain of the Upper Deschutes and Little Deschutes Rivers may pose a threat to Oregon spotted frog in the

future and could be considered conflicting uses relative to conservation of the Oregon spotted frog. Filling of wetlands will directly affect the habitat on which the frog is dependent. Additionally, the recent findings of the US Geological Survey suggest that development of lots with a high water table will increase nutrient loading (i.e., nitrate) in the rivers. Excess nitrate loading in the river, combined with a naturally occurring high level of phosphorous in the substrate, will greatly exacerbate eutrophication of the rivers and lead to excess algal growth and vegetative growth. Spotted frogs are dependent not only on the wetland habitat but the high quality of water within these wetlands.

References:

Cushman, K.A. and C.A. Pearl. 2007. A Conservation Assessment for the Oregon Spotted Frog (*Rana pretiosa*). USDA Forest Service Region 6 and USDI Bureau of Land Management, Oregon and Washington.

## **Shrub-Steppe Habitat**

*The Interagency Working Group recommends that Deschutes County consider impacts to wildlife populations and their habitat when a decision will result in degradation of shrub-steppe habitat to limit conflicting use.*

Nationally, grassland and shrubland birds show the most consistent population declines over the last 30 years of any group of bird species. Across the U.S., the population of 63% of shrubland and shrub-dependent bird species and 70% of grassland species are declining. In the Intermountain West, more than 50% of grassland and shrubland species show downward trends (Paige 1999).

The sagebrush ecosystem has been reduced in area by greater than 40% since pre-European settlement, and less than 10% remains in a condition unaltered by human disturbance. Populations of many of the sagebrush-associated species are declining, and approximately 20% of the ecosystem's native plants and animals are considered imperiled (Wisdom 2005).

Invasion of exotic vegetation, altered fire regimes, road development and use, mining, energy development, climate change, encroachment of pinyon-juniper woodlands, intensive grazing by livestock, and conversion to agriculture, to urban use, and to non-native livestock forage all have contributed to the ecosystem's demise (Wisdom 2005).

Shrub-steppe habitat provides needed resources for over 100 bird species and 70 mammals included 12 Oregon state listed sensitive species, and one threatened species (Table 3). Large blocks of unfragmented functioning habitat with low human disturbance are needed to support shrub-steppe wildlife. If avoidance of these areas is not possible, providing for "no net loss" and a "net benefit" (restoration) of shrub-steppe habitat should be a vital component of any conservation plan.

References

Paige, C., and S.A. Ritter. 1999. Birds in a sagebrush sea: managing sagebrush habitats for bird communities. Partners in Flight Western Working Group, Boise, ID.

Wisdom, M.J., M.M. Rowland, and L.H. Suring, editors. 2005. Habitat threats in the sagebrush ecosystem: methods of regional assessment and applications in the Great Basin. Alliance Communications Group, Lawrence, Kansas, USA.

**Table 3: Threatened, endangered and species of concern dependent on sagebrush steppe habitat in Deschutes County**

<b>Species</b>	<b>State Oregon Dept of Fish and Wildlife</b>	<b>Federal US Fish and Wildlife Service</b>	<b>Deschutes County</b>
Greater Sage-Grouse	SV - OCS	SOC	Goal 5
American Bald Eagle	Threatened	EPA	Goal 5
Golden Eagle		EPA	Goal 5
Swainson's Hawk	SV - OCS		
Ferruginous Hawk	OCS	SOC	
Prairie Falcon			Goal 5
American Peregrine Falcon	SV - OCS	DeListed	Goal 5
Burrowing Owl	SV	SOC	
Loggerhead Shrike	OCS		
Townsend's Big-eared Bat	SC - OCS	SOC	
California Myotis	SV - OCS		
Long-legged Myotis	SV - OCS	SOC	
Hoary Bat	SV - OCS		
Silver-haired Bat	SV	SOC	
Spotted Bat	SV - OCS	SOC	
Pallid Bat	SV OCS		
Pygmy Rabbit	SV - OCS	SOC	
Mule Deer			Goal 5
Elk			Goal 5
Pronghorn			Goal 5

SC – State Sensitive Critical

SV – State Sensitive Vulnerable

OCS – Oregon Conservation Strategy Species

SOC – USFWS Species of Concern

EPA – Federal Eagle Protection Act

State Sensitive Species List -

[http://www.dfw.state.or.us/wildlife/diversity/species/sensitive\\_species.asp](http://www.dfw.state.or.us/wildlife/diversity/species/sensitive_species.asp)

Oregon Conservation Strategy Species List -  
[http://www.dfw.state.or.us/conservationstrategy/strategy\\_species.asp](http://www.dfw.state.or.us/conservationstrategy/strategy_species.asp)

Greater Sage Grouse in Deschutes County

*Greater Sage-Grouse Conservation Recommendations to Limit Conflicting Use:*

- *Establish a 3-mile radius (habitat protection area) around occupied leks. All habitat within the 3-mile radius is essential for greater sage-grouse, limited, and irreplaceable (ODFW Habitat Category 1). The mitigation goal for essential, limited, and irreplaceable habitat is no net loss of either habitat quantity or quality through avoidance.*
- *Any sagebrush habitat identified as brood rearing or winter habitat for greater sage-grouse is essential and limited (ODFW Habitat Category 2). Where possible avoid development within 0.5 mile of these areas. The mitigation goal for essential and limited habitat if impacts are unavoidable is no net loss of either habitat quantity or quality and to provide a net benefit of habitat quantity or quality.*
- *Transmission lines should be placed in existing right-of-ways to aggregate this disturbance; if not possible then transmission lines should be sited at least 2-miles from leks, and where possible 0.5 mile from brood rearing habitat and wintering areas.*
- *Unimproved roads should be 0.5 mile from leks. Paved (or improved gravel) larger volume roads should be at least 1-mile from leks.*
- *Ground level structures (i.e., residences, roads, buried power lines, natural gas lines) should not be sited within 0.5 mile of the nearest lek site.*
- *Timing restrictions: construction and maintenance activity associated with any development or industrial and commercial activities (i.e., mineral extraction, shooting sports, paintball course, landfills, OHV systems) should be avoided from 15 February to 31 July time frame in sage-grouse habitat. If avoidance is not possible then activity should be restricted from 2 hrs prior to and 2 hrs after sunrise during this timeframe.*

In August 2005, the Oregon Fish and Wildlife Commission adopted into rule the "Greater Sage-Grouse Conservation Assessment and Strategy for Oregon: A Plan to Maintain and Enhance Populations and Habitat." Plan development was led by the Oregon Department

of Fish and Wildlife (ODFW), but was collaboratively agreed upon and written by the Oregon Sage-Grouse and Sagebrush Habitat Conservation Team (Sage-Grouse Team). Specifically, the Commission adopted the population and habitat goals into rule (OAR 635-140-0005 & -0010), and directed staff to implement these policies as described in the Plan. The statewide population objective is to maintain or enhance sage-grouse numbers and distribution at the 2003 spring breeding population level, approximately 40,000 birds (Hagen 2005:32).” The statewide habitat goal is to maintain 70% of the sagebrush steppe as sagebrush dominated (> 10% sagebrush cover) landscapes and allow for 30% of the landscape to occur in various stages of disturbance and transition. To achieve this goal, conservation guidelines were established to “...maintain (at a minimum) or enhance (optimum) the quality of current habitats (Hagen 2005: 70).”

Further, the population management objective for sage-grouse in this region (Prineville District), which includes portions of Deschutes and Crook Counties, is to restore sage-grouse numbers and distribution near the 1980 spring breeding population level, approximately 3,000 birds (Hagen 2005: 37). ODFW’s state estimate was at a low point in 2008, with figures showing populations levels at less than half the population estimate for 2005, (Hagen 2009 news release). In 2008, Prineville District alone showed a 38% decrease from the 2007 estimate (Hagen 2008 personal communication).

Sagebrush conversion to agricultural lands, wetland degradation, invasive plants, mining, transmission lines, grazing practices that affect necessary cover or forage, recreational disturbance - motorized and non-motorized, and residential and wind energy developments all can impact local sage-grouse populations and could be considered conflicting uses relative to conservation of greater sage-grouse.

Sage-grouse populations have declined since the 1960s across their range. The declines have been substantial enough to initiate 9 petitions to protect the sage-grouse under the Federal Endangered Species Act. The Sage-Grouse Plan was developed to maintain sustainable populations in Oregon, so that listing under the Endangered Species Act would not be warranted. To this end, the Plan established a “no net loss” objective for sage-grouse habitat conservation. This objective also provides benefits for a suite of other sagebrush obligate species (Hagen 2005, Rowland et al. 2005).

Breeding habitat (lekking, nesting habitat, and early brood-rearing) is critical to the life-history of sage-grouse (Johnson and Braun 1999, Walker 2008). Like many upland birds, sage-grouse rear only 1 brood of young in a breeding season. Thus, any hindrance to breeding activities (i.e., habitat loss or other disturbance) may be deleterious to production and ultimately recruitment into the population (Lyon and Anderson 2003, Holloran 2005, Walker et al. 2007).

Leks are used for breeding and the surrounding sagebrush habitat is used for nesting. Oregon research shows that nearly all nests occur within 5 miles of a lek, while 80 percent of nests occur within 3 miles of a lek. However, regional radio-telemetry data in Deschutes and Crook counties showed that 80 percent of hens nest within 4 miles of a lek. This distance becomes paramount when considering the sage-grouse population in

Deschutes County, which is on the fringe of the species range, and therefore is more susceptible to cumulative effects of habitat alteration and disturbance. Population models suggest that such a loss (20%) can be sustained by a large "healthy" population, but the carrying capacity will be diminished resulting in a smaller but viable population in the future (Walker et al. 2007).

A model, indicating where sage-grouse populations are more likely to persist in landscapes throughout the full range of the species, shows Deschutes county to be on the fringe of the species range and at risk of extirpation (Aldridge et al. 2008) These authors suggest that conservation efforts focused on maintaining large expanses of sagebrush habitat, enhancing the quality of existing habitat, and increasing connections between suitable habitat patches would be most beneficial to maintaining healthy sage-grouse populations. These conservation measures are key in Deschutes county due to the present low sage-grouse population levels, the species low reproductive rate, and the species limited ability to adapt to habitat changes (i.e. habitat loss, degradation, and fragmentation).

Breeding and nesting habitats are essential, limited, and irreplaceable. Based on Oregon's research and elsewhere in the West, the biological dynamic that occurs between female nest site selection and movement patterns that drive males to establish a lek in these areas of female use has yet to be successfully recreated. Given the uncertainty and risk involved in trying to mitigate for the loss of these habitats (i.e., replace/restore), protection of breeding and nesting habitat is paramount.

Generally brood-rearing habitat is comprised of a mosaic of upland vegetation intermixed with wetland sites (e.g., playas, seeps, springs, wet meadows, riparian areas) where broods seek succulent vegetation and invertebrates. These areas can be greater than 10 miles from lek sites. Wetland sites in shrub-steppe habitats are an essential and limited habitat and "no net loss" and "net benefit" (restoration) are paramount if protection is not possible.

Winter habitat is comprised of low elevation flats in stands of Wyoming big sagebrush, basin big sagebrush, or stands of low sagebrush along windswept ridges or drainages. Winter habitat has not been adequately inventoried in Oregon, thus its distribution and abundance is unknown. However, in Deschutes County, some wintering areas are known and have been delineated. (Hanf, et al. 1994). These habitats have included extensive stands of mountain big sagebrush and low and early-flowering sagebrush. Depending on winter snow accumulations, some wintering areas become especially important, as heavy snowfall forces birds out of low sage areas into big sage areas where sagebrush is still accessible. Because of sage-grouse dependence on sagebrush for winter forage, losses to these areas can have severe impacts on winter survival and subsequent breeding population size (Swenson et al. 1987, Connelly et al. 2004).

Because of the essential and limited nature of winter habitat "no net loss" and "net benefit" (restoration) are paramount if avoidance is not possible.

### References

- Aldrige, C.L., S.E.Nielsen, H. L. Beyer, M. S. Boyce, J. W. Connelly, S. T. Knick, M.A. Schroeder. 2008 Range-wide patterns of greater sage-grouse persistence. *Diversity and Distributions* 14, 983-994.
- Connelly, J. W., S.T. Knick, M. A. Schroeder, and S. J. Stiver. 2004. Conservation assessment of greater sage-grouse and sagebrush habitats. Unpublished report, Western Association of Fish and Wildlife Agencies, Denver, CO.
- Hagen, C.A. 2005. Greater sage-grouse conservation assessment and strategy for Oregon: a plan to maintain and enhance populations and habitat. Oregon Department of Fish and Wildlife. Salem, Oregon.
- Hagen, C.A. 2009. Sage grouse numbers dip, but biologists are hoping for a rebound. Bend Bulletin May 21, 2009 News Release.
- Hagen, C.A. 2008. Personal communication.
- Hanf, J.M., P.A. Schmidt, and E.B. Groshens. 1994. Sage grouse in the high desert of central Oregon: results of a study, 1988-1993. United States Department of Interior, Bureau of Land Management, Series P-SG-01, Prineville, OR.
- Holloran, M. J. 2005. Greater sage-grouse (*Centrocercus urophasianus*) population response to natural gas field development in western Wyoming. Dissertation, University of Wyoming, Laramie, Wyoming.
- Johnson, K. H., and C. E. Braun. 1998. Viability and conservation of an exploited sage grouse population. *Conservation Biology* 13: 77-84.
- Lyon, L. A., and S. H. Anderson. 2003. Potential gas development impacts on sage grouse nest initiation and movement. *Wildlife Society Bulletin* 31: 486-491.
- Rowland, M. M., M. J. Wisdom, C. W. Meinke, and L. H. Suring. 2005. Utility of greater sage-grouse as an umbrella species. (pages 232-249). *In* *Habitat Threats in the Sagebrush Ecosystem: Methods of Regional Assessment and Applications in the Great Basin* (Wisdom et al. eds). Alliance Communications Group, Lawrence, Kansas.
- Swenson et al. 1987. Decrease of Sage Grouse *Centrocercus urophasianus* after ploughing of sagebrush steppe. *Biological Conservation*. 41:125-132.
- Walker, B. L. 2008. Greater sage-grouse response to coal-bed methane natural gas development and West Nile virus in the Powder River Basin, Montana and Wyoming USA. Dissertation, University of Montana, Missoula, MT.

Walker, B. L., D. E. Naugle, and K. E. Doherty. 2007. Greater sage-grouse population response to energy development and habitat loss. *Journal of Wildlife Management* 71: 2644-2654.

## **Critical Bird & Mammal Sites**

*Oregon Department of Fish and Wildlife is not requesting additional or modification of existing protection criteria for site specific sensitive bird and mammal sites other than for sage grouse. Sage grouse protection criteria additions and modification are listed under Greater Sage-Grouse Conservation Recommendations to Limit Conflicting Use.*

*The sites adopted in the last periodic review have been examined and we recommend that the county consider updating their inventory to include new sites and remove old sites that are no longer used. Attached is a list of current and recommended critical bird and mammal site locations and protection measures (See Appendices A-G).*

### *Site-specific protection recommendations*

- *Continue to protect 30 bald eagle nest sites in Deschutes County (Appendix A1)*
- *Remove protection for 34 bald eagle nest sites that are no longer occupied (Appendix A2)*
- *Add protection for 22 eagle nest sites that are not currently protected under Deschutes County ordinance (Appendix A3).*
- *Maintain protection for 32 golden eagle nest sites are currently protected under Deschutes County ordinance (Appendix B1).*
- *Add one golden eagle nest site to the Deschutes County inventory for protection (Appendix B2).*
- *Continue to protect 32 sage grouse lek sites that are currently protected under Deschutes County ordinance (Appendix C1).*
- *Remove protection for 4 sage grouse lek sites that are currently protected under Deschutes County ordinance but are no longer in use (Appendix C2).*
- *Add 5 sage grouse lek sites to the Deschutes County inventory for protection (Appendix C3).*
- *Change the name of the sage grouse lek site, currently protected by Deschutes County, from Squaw Lake to Shaver Flat (Appendix C4).*
- *Continue to protect 8 prairie falcon sites under Deschutes County ordinance (Appendix D).*

- *Maintain protection for one heron site that is still in use (Appendix E1).*
- *Remove protection for heron site that is no longer in use (Appendix E2).*
- *Maintain protection for Great gray owl nest site (Appendix F).*
- *Maintain protection for two known bat sites in Deschutes County (Appendix G).*

Oregon Department of Fish and Wildlife identified a list of bird and mammal species that occur on private land in Deschutes county that are especially sensitive to human activity: bald and golden eagles, sage grouse, prairie falcon, great blue heron, great gray owl and Townsend's big-eared bat.

The purpose of providing special protection for sensitive birds and mammals is to assure that their habitat areas are protected from the effects of conflicting uses or activities. Protection of bird sites can be achieved through the development of site specific management plans. Management plans assure that the proposed use and activities will not destroy or result in abandonment of the sensitive species from a nest site. The county previously adopted protection criteria for site specific sensitive bird and mammal sites.

Residential development, mining, and activities with high human disturbance and other actions that result in habitat loss and/or degradation are threats to these critical bird and mammal sites that could be considered conflicting uses relative to conservation of critical bird and mammal sites.

## **Game Species**

### *Game Species Conservation Recommendations to Limit Conflicting Use:*

*Many new land uses have occurred that were not envisioned during the last periodic review. Oregon Department of Fish and Wildlife recommends that Deschutes County add the following uses with high human use and disturbance to the do not permit list:*

1. *Guest ranch;*
2. *Outdoor commercial events (i.e. "Wedding Venues, Farmers Market")*
3. *OHV course*
4. *Paintball course*
5. *Shooting range*
6. *Model airplane park*
7. *BMX course*

Oregon Department of Fish and Wildlife is not asking the county to change any of the existing big game wintering range and migration corridor maps currently in use by the county.

Existing county ordinances do not permit the following uses in a WA Zone designated as deer winter range, significant elk habitat, or antelope range.

1. Golf course;
2. Commercial dog kennel;
3. Church;
4. Public or private school;
5. Bed and breakfast inn;
6. Dude ranch;
7. Playground, recreation facility or community center owned and operated by a government agency or a nonprofit community organization;
8. Timeshare unit;
9. Veterinary clinic;
10. Fishing lodge;
11. Destination Resort

The above listed uses generate a high level of public activity, noise, and habitat alteration, which in turn can impact large geographic spaces and alter many acres of valuable wildlife habitat. Game species avoid areas with these uses, which results in reduced overall habitat effectiveness of these critical habitats.

Mule Deer, elk, antelope, cougar, black bear, and silver grey squirrel are species considered to be sensitive to human disturbance in Deschutes County by the Oregon Department of Fish and Wildlife. Cougar populations are increasing. Elk, antelope, black bear, and silver grey squirrel populations are stable. Mule deer populations continue to decline.

**Table 4: Big game population estimates, Deschutes County 2009**

<b>Species</b>	<b>Number</b>
Mule Deer	9,337*
Elk	1,500
Pronghorn	1,000
Cougar	~150
Black Bear	~150
Silver Grey Squirrel	~800

\* The management objective for the Paulina and Upper Deschutes Wildlife Management Units, primarily located in Deschutes County, is an April adult population of 18,700 mule deer

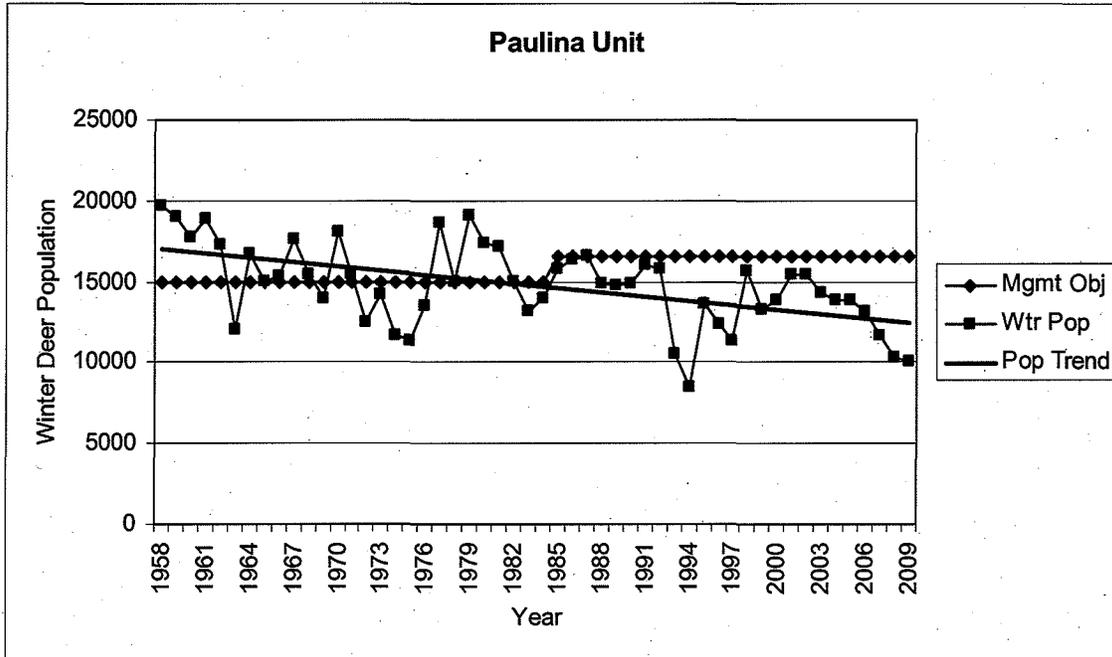


Figure 1: Winter deer population in Paulina Unit.

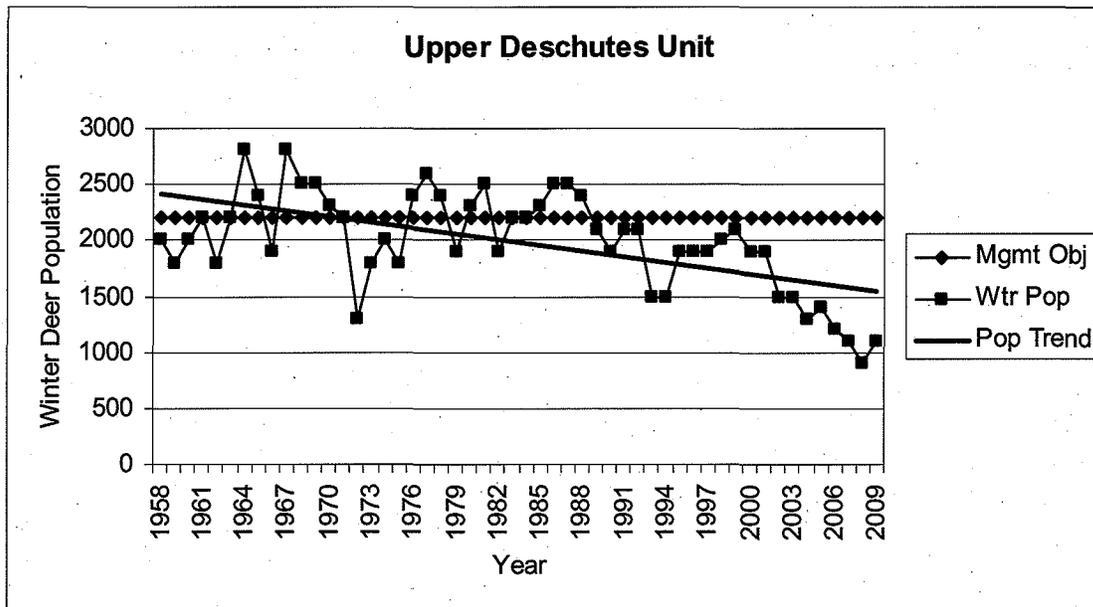


Figure 2: Winter deer population in Upper Deschutes Unit

## Energy Development

### *Wildlife Conservation Recommendations to Limit Conflicting Use with Energy Developments:*

*The Interagency Working Group recommends that Deschutes County develop a wind energy ordinance that would include both pre and post construction wildlife surveys, monitoring, and mitigation requirements as outlined in the following documents. We also recommend the county require the developer to create a Technical Advisory Committee (TAC) that would provide wildlife oversight and recommendations to the county. Any TAC would minimally include an Oregon Department of Fish and Wildlife (ODFW) and a developer wildlife biologist. Resources of particular concern in Deschutes County are sage-grouse habitat, raptor nest sites, pygmy rabbit colonies, and big game winter range. Impacts to bats has also become an issue with wind energy development.*

*The Oregon Columbia Plateau siting guidelines recommend that a county wind project permitting process rely on ODFW's Fish and Wildlife Habitat Mitigation Policy (OAR 635-415-0000) for guidance on mitigation strategies. The interagency working group recommends the county require of a developer a map and classification of fish and wildlife habitat impacted by a wind development, and a plan outlining the proposed mitigation to any impacted habitat. Mitigation of impacted habitat is critical to the future of Deschutes County's wildlife.*

*The interagency working group recommends language be included in any ordinance that will provide information on impacts to the following wildlife species: 1) state or federally listed endangered, threatened, sensitive, and special status species, 2) bats and raptors, 3) species of local sport and economic importance such as big game, and any Goal 5 species.*

### *Other Forms of Energy Production (e.g., geothermal, biomass, solar):*

*The interagency working group recommends that Deschutes County use the proceeding Wind Energy recommendations as a template when the county develops geothermal, solar, and biomass ordinances.*

### *Wind Energy:*

The Interagency Working Group supports wind energy as a renewable resource, and we support wind energy projects that are designed to conserve fish and wildlife populations and their habitat. To that end, the interagency working group recommends that Deschutes County consider several resources that are available to counties. The first is the "Oregon Columbia Plateau Ecoregion Wind Energy Siting and Permitting Guidelines"

(guidelines). This document was finalized in September 2008. Although the guidelines were targeted for wind projects in the Columbia Plateau Ecoregion, much of the information is applicable in other areas. The guidelines identify the kinds of surveys, monitoring and wildlife habitat mitigation that we and other agencies will be looking for from wind developers.

([http://oregon.gov/ENERGY/RENEW/Wind/docs/OR\\_wind\\_siting\\_guidelines.pdf](http://oregon.gov/ENERGY/RENEW/Wind/docs/OR_wind_siting_guidelines.pdf)).

The second resource the interagency working group recommends the county consider is the Oregon Department of Energy "*Model Ordinance for Energy Projects*". This 2005 document has useful material for siting all types of energy projects.

(<http://oregon.gov/ENERGY/SITING/local.shtml>).

Appendix A1: Bald eagle nest sites occupied and protected by Deschutes County.

ODFW Site #	Location Town/Range/Sec/Quarter/TL	UTM's (NAD27)			General Location/Name	Land Owner
		Datum	Northing	Easting		
-	18S/08E/33/NE	10	598108	4869571	Hosmer Lake	Federal
-	20S/07E/35/SW	10	591800	4848990	Lemish Butte	Federal
-	20S/08E/16/SW	10	597983	4854608	Benchmark Butte - NE	Federal
-	20S/08E/33/SE	10	598952	4849706	Crane Pr Res NE	Federal
DE-0046-00	20S/10E/34/NWSE/03401	10	619554	4850162	Bates Butte	Non-Federal
-	21S/07E/01/NW	10	593554	4848658	Quinn River	Federal
-	21S/07E/01/SE	10	594165	4847608	Crane Pr Res W	Federal
-	21S/07E/01/SW	10	593100	4847710	Crane Pr Res W	Federal
-	21S/07E/01/SW	10	593907	4847852	Crane Pr Res W	Federal
-	21S/08E/04/NW	10	598296	4848291	Crane Pr Res E	Federal
-	21S/08E/04/W	10	597960	4848106	Crane Pr Res E-SW	Federal
-	21S/08E/04/W	10	598132	4848214	Crane Pr Res E-NW	Federal
-	21S/08E/05/SE	10	597792	4847934	Crane Pr Res E	Federal
-	21S/08E/07/SE	10	596119	4846116	Crane Pr Res S	Federal
-	21S/08E/08/SW	10	596830	4845816	Crane Pr Res SE	Federal
-	21S/08E/20/SE	10	597283	4843015	Browns Mountain	Federal
-	21S/08E/32/NE	10	597579	4840222	Browns Cr - E	Federal
-	21S/08E/34/SE	10	601283	4839680	Wickiup Res N	Federal
-	21S/08E/34/SW	10	600280	4840010	Wickiup Res N	Federal
-	21S/09E/13/SE	10	613976	4845233	Tetherow Mdw	Federal
-	21S/13E/19/S	10	643539	4844084	East Lake SE	Federal
-	22S/07E/26/S	10	592220	4831230	Davis Lake NW	Federal
-	22S/07E/26/SW	10	592227	4831231	Davis Lake NW	Federal
-	22S/07E/34/SW	10	590666	4829884	Davis Lake W-E	Federal
-	22S/08E/23/NW	10	601742	4834448	Wickiup Res S-N	Federal
-	22S/08E/25/NE	10	604111	4833069	Round Swamp - S	Federal
-	22S/09E/06/SE	10	605858	4838037	Wickiup Dam - E	Federal
-	22S/09E/20/NE	10	607220	4834070	Eaton Butte	Federal
-	22S/09E/20/NE	10	607295	4834050	Eaton Butte	Federal
-	22S/09E/20/SW	10	606469	4833721	Eaton Butte	Federal

Appendix A2: Bald Eagle nest sites currently protected by Deschutes County and no longer in use.

ODFW Site #	Location Town/Range/Sec/Quarter/TL	UTM's (NAD27)			General Location/Name	Land Owner
		Datum	Northing	Easting		
DE-0035-01	15S/10E/23/NENE/01400	10	620280	4901790	Cloverdale NE	Non-Federal
DE-0035-00	15S/10E/23/NWNE/01400	10	620000	4901700	Cloverdale NW	Non-Federal
-	18S/08E/32/NE				Elk Lake	Federal
-	19S/08E/27/SE				Lava Lake - E	Federal
-	19S/08E/27/SW				Lava Lake - W	Federal
-	20S/07E/35/S				Lemish Butte	Federal
-	20S/08E/08/SE				Benchmark Butte -W	Federal
-	20S/08E/33/NE				Crane Pr Res NE - NW	Federal
-	20S/08E/33/SE				Crane Pr Res NE-S	Federal
-	20S/08E/33/SE				Crane Pr Res NE-NE	Federal
-	21S/08E/08/SW				Crane Pr Res S	Federal
-	21S/08E/31/SE				Wickiup Res N	Federal
-	21S/08E/32/NE				Browns Cr - W	Federal
-	21S/08E/34/SE				Wickiup Res N	Federal
-	21S/08E/34/SE				Wickiup Res N	Federal
-	21S/08E/34/SE				Wickiup Res N	Federal
-	21S/09E/34/NE				Deschutesw R Ox	Federal
-	21S/13E/19/SE				East Lake E	Federal
-	21S/13E/19/SW				East Lake SW	Federal
-	22S/07E/34/SW				Davis Lake W-W	Federal
-	22S/08E/06/SE				Davis Cr - N	Federal
-	22S/08E/06/SE				Davis Cr	Federal
-	22S/08E/06/SE				Davis Cr - E	Federal
-	22S/08E/07/NE				Davis Cr - S	Federal
-	22S/08E/15/SE				Wickiup Res W-E	Federal
-	22S/08E/15/SW				Wickiup Res W-W	Federal
-	22S/08E/23/N				Wickiup Res S-S	Federal
-	22S/08E/23/NE				Wickiup Res S-E	Federal
-	22S/08E/23/NW				Wickiup Res S-W	Federal
-	22S/08E/24/S				Round Swamp - NE	Federal
-	22S/08E/24/SE				Round Swamp - NE	Federal
-	22S/08E/25/NE				Round Swamp - E	Federal
DE-0037-00	22S/09E/04/00500				Dilman Meadows	Federal
DE-0039-00	22S/09E/06/SESW/0500				Wickiup Dam	Federal

Appendix A3: Bald Eagle nest sites that are occupied and not protected by Deschutes County.

ODFW Site #	Location Town/Range/Sec/Quarter/TL	UTM's (NAD27)			General Location/Name	Land Owner
		Datum	Northing	Easting		
DE-0055-00	13S/13E/33/NWSW	10	644325	4917164	Crooked River	Non-Federal
DE-0055-01	13S/13E/33/NWSW	10	644434	4917456	Crooked River	Non-Federal
-	14S/10E/34/SE	10	618411	4907356	Camp Polk	Federal
DE-0035-02	15S/10E/23/SW	10	619270	4900750	Cloverdale	Federal
-	19S/08E/22/NW	10	599207	4863693	Lava L	Federal
-	20S/08E/16/NW	10	597914	4855364	Benchmark Butte	Federal
-	20S/08E/19/SE	10	595488	4852666	Cultus River	Federal
-	20S/08E/19/SE	10	595449	4852663	Cultus River	Federal
DE-0056-01	20S/11E/07/NWNE	10	624558	4857616	Harper Bridge	Non-Federal
-	21S/08E/04/NE	10	599280	4848938	Wuski Butte	Federal
-	21S/08E/04/NW	10	598015	4848393	Crane Pr Res E	Federal
-	21S/08E/07/SE	10	595963	4846315	Crane Pr Res SW	Federal
-	21S/08E/07/SW	10	595455	4845870	Crane Pr Res SW	Federal
-	21S/08E/17/SW	10	596783	4844633	Browns Peak	Federal
-	21S/08E/29/SE	10	597395	4841495	Browns Crossing	Federal
-	21S/09E/19/SW	10	604979	4842920	Pringle Falls Jct	Federal
-	21S/09E/34/NW	10	610220	4840711	Deschutes R Ox	Federal
-	21S/12E/25/NW	10	641568	4842817	Paulina Lk	Federal
-	22S/08E/07/NE	10	595845	4837161	Davis Cr	Federal
-	22S/08E/07/SE	10	595858	4836323	Davis Cr	Federal
-	22S/09E/05/SE	10	607483	4838049	Haner Park	Federal
-	22S/09E/07/SE	10	606001	4836688	Wickiup Butte	Federal

Appendix B1: Golden Eagle nest sites that are occupied and protected by Deschutes County.

ODFW Site #	Location Town/Range/Sec/Quarter/TL	UTM's (NAD27)			General Location/Name	Land Owner
		Datum	Northing	Easting		
DE-0015-01	14S/11E/03/NENW/0400	10	627156	4916522	Wychus Cr	Non-Federal
DE-0015-00	14S/11E/03/SESW/0400	10	627267	4915294	Rimrock Ranch	Non-Federal
DE-0012-01	14S/11E/26 SWNW	10	629711	4909656	Upper Deep Canyon	Non-Federal
DE-0009-00	14S/12E/23/NWSW/D00300	10	637991	4911031	N Odin Falls	Non-Federal
DE-0002-03	14S/13E/11/NWNE/0100	10	648447	4915134	Smith Rock St Park	Non-Federal
DE-0002-04	14S/13E/11/NWNE/0100	10	648723	4915118	Smith Rock St Park	Non-Federal
DE-0002-05	14S/13E/11/NWNE/0100	10	648728	4915160	Smith Rock St Park	Non-Federal
DE-0002-06	14S/13E/11/NWNE/0100	10	648919	4915159	Smith Rock St Park	Non-Federal
DE-0002-00	14S/13E/11/SESW/0100	10	648290	4914150	Smith Rock St Park	Non-Federal
DE-0002-01	14S/13E/11/SESW/0100	10	648270	4914301	Smith Rock St Park	Non-Federal
DE-0002-02	14S/13E/11/SESW/0100	10	648238	4914850	Smith Rock St Park	Non-Federal
DE-0034-00	15S/10E/15/SESW/01400	10	617590	4902865	Lazy Z/USFS	Non-Federal
DE-0034-01	15S/10E/15/SESW/01400	10	617904	4903075	Lazy Z/USFS	Non-Federal
DE-0012-00	15S/11E/03/NENE/0800	10	628023	4906651	Upper Deep Canyon	Non-Federal
DE-0003-00	15S/11E/07	10	624192	4902695	Freyrear Butte	Federal
DE-0003-01	15S/11E/16/SESW/02900	10	625649	4902342	Freyrear Butte	Federal
DE-0011-01	15S/12E/01/NESE/0100	10	640993	4906107	Radio Tower/Deschutes	Non-Federal
DE-0011-00	15S/12E/01/NWSE/0100	10	640858	4906085	Radio Tower/Deschutes	Non-Federal
DE-0006-05	15S/12E/35/NESE/01503	10	639433	4898053	Mid-Deschutes Riv	Non-Federal
DE-0006-00	15S/12E/35/SENE/01502	10	639580	4898411	Mid-Deschutes Riv	Non-Federal
DE-0006-01	15S/12E/35/SENE/01502	10	639680	4898477	Mid-Deschutes Riv	Non-Federal
DE-0006-02	15S/12E/35/SENE/01502	10	639606	4898473	Mid-Deschutes Riv	Non-Federal
DE-0006-04	15S/12E/35/SENE/01502	10	639519	4898406	Mid-Deschutes Riv	Non-Federal
DE-0014-00	16S/11E/29/NWSE/07800	10	625802	4890297	Tumalo Dam	Non-Federal
DE-0005-00	16S/12E/09				Mid-Deschutes Riv	Federal
DE-0005-01	16S/12E/09				Mid-Deschutes Riv	Federal
DE-0020-00	19S/14E/24				Horse Ridge/Dry River	Federal
DE-0018-00	20S/15E/19				Pine Mountain - West	Federal
DE-0019-00	20S/15E/25				Pine Mountain - East	Federal
DE-0029-00	20S/17E/36/NWSE/03801	10	690387	4851025	Twin Pines	Non-Federal
DE-0017-00	21S/16E/12				Pine Ridge	Federal
DE-0001-00	21S/19E/04				Imperial Valley	Federal

**Appendix B2: Golden Eagle nest sites not protected by Deschutes County and currently in use.**

ODFW	Location	UTM's (NAD27)				Land
Site #	Town/Range/Sec/Quarter/TL	Datum	Northing	Easting	General Location/Name	Owner
DE-0009-01	14S/12E/14/S	10	638709	4912157	N Odin Falls	Non-Federal

Appendix C1: Sage Grouse lek sites that are in use and currently protected by Deschutes County.

ODFW	Location	UTM's (NAD27)				Land
Site #	Town/Range/Sec/Quarter/TL	Datum	Northing	Easting	General Location/Name	Owner
DE0999-01	T19S/R14E/26	10	659867	4861510	MILLICAN BORROW PIT #1	Federal
DE0997-01	T20S/R16E/25	10	680609	4852538	MOFFIT RANCH #1	Non-Federal
DE0050-02	T20S/R17E/5	10	683188	4859265	AUDUBON #2	Federal
DE0050-01	T20S/R17E/6	10	682744	4858915	AUDUBON #1	Federal
DE0051-01	T20S/R18E/5	10	693837	4858816	CIRCLE F RESERVOIR #1	Non-Federal
DE0051-02	T20S/R18E/5	10	693278	4859064	CIRCLE F RESERVOIR #2	Non-Federal
DE0051-03	T20S/R18E/5	10	693690	4859114	CIRCLE F RESERVOIR #3	Non-Federal
DE0053-01	T20S/R19E/13	10	709289	4856180	TODD WELL #1	Federal
DE0053-04	T20S/R19E/13	10	710670	4856193	TODD WELL #4	Federal
DE0053-05	T20S/R19E/13	10	710587	4856642	TODD WELL #5	Federal
DE0053-06	T20S/R19E/14	10	708920	4857539	TODD WELL #6	Non-Federal
DE0053-07	T20S/R19E/15	10	707337	4857304	TODD WELL #7	Non-Federal
DE0053-02	T20S/R19E/24	10	709756	4855699	TODD WELL #2	Federal
DE0053-03	T20S/R19E/24	10	710628	4855359	TODD WELL #3	Federal
DE0052-01	T20S/R19E/6	10	702068	4859581	MERRILL ROAD #1	Non-Federal
DE0052-02	T20S/R19E/6	10	702354	4859516	MERRILL ROAD #2	Non-Federal
DE0052-03	T20S/R19E/7	10	702375	4858957	MERRILL ROAD #3	Federal
DE0879-01	T21S/R15E/12	10	671706	4847943	KOTZMAN BASIN	Federal
DE0879-02	T21S/R15E/2	10	670524	4849771	PRONGHORN	Federal
DE0992-02	T21S/R16E/13	10	681348	4846455	POWERLINE	Federal
DE0992-01	T21S/R16E/23	10	680809	4845470	THE GAP	Federal
DE0994-01	T21S/R17E/20	10	685352	4845889	WHISKEY SPRINGS #1	Federal
DE0886-02	T21S/R18E/16	10	696622	4846599	SOUTH WELL #2	Federal
DE0886-03	T21S/R18E/16	10	696002	4847560	SOUTH WELL #3	Federal
DE0886-01	T21S/R18E/22	10	697782	4846342	SOUTH WELL #1	Federal
DE0886-04	T21S/R18E/22	10	698011	4845728	SOUTH WELL #4	Federal
DE0996-01	T22S/R16E/12	10	682744	4839459	DICKERSON WELL	Non-Federal
DE0990-01	T22S/R17E/16	10	686349	4837447	THE ROCK	Federal
DE0995-01	T22S/R17E/2	10	689465	4840673	SPICER FLAT #1	Federal
DE0887-01	T22S/R18E/6	10	693382	4840952	LITTLE MUD LAKE	Federal
DE0880-01	T22S/R21E/32	10	724677	4832585	CANARY LAKE	Federal
DE0054-01	T22S/R23E/36	10	749557	4834190	NORDELL RIDGE	Federal

**Appendix C2: Sage Grouse lek sites currently protected by Deschutes County and no longer in use.**

ODFW	Location	UTM's (NAD27)				Land
Site #	Town/Range/Sec/Quarter/TL	Datum	Northing	Easting	General Location/Name	Owner
DE0998-01	T20S/R14E/10	10	657122	4857646	EVANS WELL #1	Non-Federal
DE0998-02	T20S/R14E/3	10	657109	4858692	EVANS WELL #2	Federal
DE0997-02	T20S/R16E/26	10	679540	4853374	MOFFIT RANCH #2	Non-Federal
DE0992-03	T21S/R16E/22	10	678936	4844497	MAHOGANY BUTTE	Federal

**Appendix C3 Sage Grouse lek sites not currently protected by Deschutes County and currently in use.**

ODFW	Location	UTM's (NAD27)				Land
Site #	Town/Range/Sec/Quarter/TL	Datum	Northing	Easting	General Location/Name	Owner
CR0128-01	T18S/R16E/32	10	673787	4869490	WEST BUTTE	Non-Federal
DE0999-03	T20S/R14E/2	10	659892	4858953	SMITH WELL	Non-Federal
DE0996-02	T21S/R16E/36	10	681774	4841319	DICKERSON GUZZLER	Federal
DE0992-04	T21S/R17E/18	10	683134	4847577	BLM POWERLINE #2	Federal
LA0800-01	T22S/R17E/5	10	684653	4831119	JAYNES WELL	Federal

**Appendix C4: Name change for Sage Grouse lek site currently protected by Deschutes County.**

ODFW	Location	UTM's (NAD27)				Land
Site #	Town/Range/Sec/Quarter/TL	Datum	Northing	Easting	General Location/Name	Owner
DE0888-01	T22S/R18E/11	10	700327	4839386	SHAVER FLAT	Federal

**Appendix D: Prairie Falcon nest sites currently occupied and protected by Deschutes County.**

ODFW	Location	UTM's (NAD27)				Land
Site #	Town/Range/Sec/Quarter/TL	Datum	Northing	Easting	General Location/Name	Owner
DE-0794-01	14S/13E/11/NWSW/0100	10	647745	4913940	Smith Rock St Park	Non-Federal
DE-0007-00	15S/12E/35				Mid-Deschutes Riv	Federal
DE-0031-00	16S/11E/20/NESE/05600	10	625812	4892106	Tumalo Natural Area	Federal
DE-0031-01	16S/11E/20/SESW/0400	10	625303	4891621	Tumalo Dam	Non-Federal
DE-0010-00	16S/12E/02	10	638929	4897371	Mid-Deschutes Riv	Federal
DE-0463-00	19S/12E/04				Imperial Valley	Federal
DE-0021-00	19S/14E/24				Horse Ridge/Dry River	Federal
DE-0016-00	22S/16E/12/SWSE/0100	10	682234	4838145	Dickerson Flat	Non-Federal

**Appendix E1: Heron Rookery site currently in use and protected by Deschutes County.**

ODFW	Location	UTM's (NAD27)				Land
Site #	Town/Range/Sec/Quarter/TL	Datum	Northing	Easting	General Location/Name	Owner
DE-0980-01	14S/09E/00/SENE/0100	10	608516	4914211	Black Butte Ranch	Federal

**Appendix E2: Heron Rookery site currently protected by Deschutes County and no longer in use.**

ODFW	Location	UTM's (NAD27)				Land
Site #	Town/Range/Sec/Quarter/TL	Datum	Northing	Easting	General Location/Name	Owner
DE-0981-01	21S/08E/03/NENW				Crane Pr Res	Federal

**Appendix F: Great Grey Owl nest site currently in use and protected by Deschutes County.**

ODFW	Location	UTM's (NAD27)				Land
Site #	Town/Range/Sec/Quarter/TL	Datum	Northing	Easting	General Location/Name	Owner
-	22S/09E/09/SESW				Dorrance Meadow	Federal

**Appendix G: Bat sites currently in use and protected by Deschutes County.**

ODFW	Location	UTM's (NAD27)				Land
Site #	Town/Range/Sec/Quarter/TL	Datum	Northing	Easting	General Location/Name	Owner
DE-0992-00	14S/09E/19/NWNE/0200	10	602445	4911183	Skylight Cave	Non-Federal
DE-0993-00	19S/13E/13/SWNE	10	651460	4865255	Stokey Flat	Non-Federal

**Appendix H: Use period, abundance and special status of select mammals, birds, amphibians and reptiles in Deschutes County 2009**

Species	Use Period	Relative Abundance	Special Status*	
			State Status	Federal Status
<b>Mammals</b>				
Allen's Chipmunk	X	U		
Badger	X	C		
Beaver	X	A		
Belding Ground Squirrel	X	C		
Big Brown Bat	S	U		
Black Bear	X	C		
Blacktail Jackrabbit	X	C		
Bobcat	X	C		
Bushytail Woodrat	X	C		
California Ground Squirrel	X	F		
California Myotis	X	F	V	
California Vole	X	F		
California Wolverine	X	U	T	SOC
Canyon Mouse	X	F		
Chickaree	X	C		
Coyote	X	A		
Dark Kangaroo Mouse	X	F		
Deer Mouse	X	A		
Dusky Shrew	X	U		
Fisher	X	U	C	
Fringed Myotis	S	U	V	
Golden-mantled Squirrel	X	A		
Gray Fox	X	U		
Great Basin Pocket Mouse	X	C		
Heather Vole	X	F		
Hoary Bat	S	F		

House Mouse	X	C		
Least Chipmunk	X	C		
Little Brown Myotis	S	U		
Long-eared Myotis	S	U		SOC
Long-legged Myotis	X	F	V	SOC
Longtail Vole	X	F		
Long-tail Weasel	X	F		
Merriam Shrew	X	U		
Mink	X	C		
Montane Vole	X	A		
Mountain Cottontail	X	C		
Mountain Lion	X	C		
Mule Deer	X	A		
Muskrat	X	F		
N. Grasshopper Mouse	X	F		
N. Pocket Gopher	X	U		
Northern Flying Squirrel	X	F		
Northern Water Shrew	X	F		
Norway Rat	X	F		
Ord's Kangaroo Rat	X	C		
Pacific Jumping Mouse	X	U		
Pacific Mole	X	U		
Pallid Bat	S	U	V	
Pine Marten	X	C		
Pinon Mouse	X	F		
Porcupine	X	C		
Preble's Shrew	X	U		SOC
Pronghorn Antelope	X	C		
Pygmy Rabbit	X	R	V	SOC
Raccoon	X	C		
Red Fox	X	F		
River Otter	X	C		
Rocky Mtn Elk	X	C		

Roosevelt Elk	X	C		
Sagebrush Vole	X	C		
Shorttail Weasel	X	F		
Silver-haired bat	S	F	V	SOC
Siskiyou Chipmunk	X	C		
Small-footed Myotis	S	U		SOC
Snowshoe Hare	X	F		
Spotted bat	X	R	V	
Striped Skunk	X	C		
Townsend's Chipmunk	X	C		
Townsend's Ground Squirrel	X	C		
Townsend's western big-eared bat	X	F	C	SOC
Trowbridge Shrew	X	F		
Vagrant Shrew	X	U		
Water Vole	X	C		
Western Gray Squirrel	X	C		
Western Harvest Mouse	X	C		
Western Jumping Mouse	X	F		
Western Pipitrel	S	U		
Whitetail Jackrabbit	X	R		
Wolverine	X	R		
Yellow Pine Chipmunk	X	C		
Yellow-bellied Marmot	X	C		
Yuma Myotis	X	F		SOC
<b>Birds</b>				
American Avocet	S	F		
American Bittern	S	F		
American Coot	X	C		
American Dipper	X	F		
American Goldfinch	S	C		
American Kestrel	X	C		
American Peregrine Falcon	X	R	V	DL

American Pipit	X	F		
American Robin	X	C		
American Wigeon	X	C		
Anna's Hummingbird	S	F		
Ash-throated Flycatcher	S	F		
Bald Eagle	X	F	T	DL
Bank Swallow	S	F		
Barn Owl	X	F		
Barn Swallow	S	C		
Barred Owl	X	R		
Barrow Goldeneye	X	F		
Belted Kingfisher	X	F		
Bewick's Wren	X	R		
Black tern	S	F		SOC
Black-backed Woodpecker	X	F	V	
Black-billed Magpie	X	C		
Black-capped Chickadee	W	R		
Black-chinned Hummingbird	S	F		
Black-crowned Night Heron	S	F		
Black-headed Grosbeak	S	F		
Black-necked Stilt	S	F		
Black-throated Gray Warbler	S	F		
Blue "Sooty" Grouse	X	F		
Blue-winged Teal	S	F		
Bohemian Waxwing	W	F		
Boreal Owl	X	F		
Brewer's Blackbird	X	C		
Brewer's Sparrow	S	C		
Brown Creeper	X	F		
Brown-headed Cowbird	S	C		
Bufflehead	X	C		
Burrowing Owl	S	R	V	
Bushtit	S	F		

California Gull	S	C		
California Valley Quail	X	C		
Calliope Hummingbird	S	F		
Canada Goose	X	C		
Canyon Wren	X	C		
Caspian Tern	S	F		
Cassin's Finch	X	C		
Cassins Vireo	S	F		
Cedar Waxwing	X	C		
Chipping Sparrow	S	C		
Chukar Partridge	X	R		
Cinnamon Teal	S	C		
Clark's Nutcracker	X	C		
Cliff Swallow	S	C		
Common Bushtit	X	C		
Common Crow	X	C		
Common Goldeneye	X	C		
Common Loon	S	R		
Common Merganser	X	C		
Common Nighthawk	S	C		
Common poorwill	S	F		
Common Raven	X	C		
Common Snipe	S	F		
Common Yellowthroat	S	F		
Coopers Hawk	X	C		
Cordilleran Flycatcher	S	F		
Dark-eyed Junco	X	A		
Double-crested Cormorant	S	C		
Downy Woodpecker	X	C		
Dusky Flycatcher	S	F		
Eared Grebe	W	F		
Eastern Kingbird	S	F		
Eurasian Collared-Dove	X	F		

Evening Grosbeak	X	C		
Ferruginous Hawk	S	F	V	SOC
Flammulated Owl	S	F	V	
Fox Sparrow	S	C		
Franklin's Gull	S	F		
Gadwall	W	F		
Golden Eagle	X	F		
Golden-crowned Kinglet	X	F		
Golden-crowned Sparrow	W	C		
Gray Flycatcher	S	C		
Gray Jay	X	C		
Gray Partridge	X	R		
Gray-crowned Rosy Finch	S	F		
Great Blue Heron	X	C		
Great Gray Owl	X	F	V	
Great Horned Owl	X	C		
Greater Sage Grouse	X	F	V	SOC
Greater Yellowleg	S	F		
Green Heron	S	R		
Green-tailed Towhee	S	F		
Green-winged Teal	X	F		
Hairy Woodpecker	X	C		
Hammond's Flycatcher	S	F		
Hermit Thrush	S	F		
Hooded Merganser	X	F		
Horned Grebe	S	F		
Horned Lark	X	C		
House Finch	X	C		
House Sparrow	X	A		
House Wren	S	F		
Killdeer	X	C		
Lark Sparrow	S	F		
Lazuli Bunting	S	F		

Least Sandpiper	S	F		
Lesser Goldfinch	X	R		
Lesser Scaup	W	C		
Lewis' Woodpecker	S	F	C	SOC
Lincoln's Sparrow	X	F		
Loggerhead Shrike	X	F	V	
Long-billed Curlew	S	R	V	
Long-eared Owl	X	F		
MacGillivray's Warbler	S	F		
Mallard	X	C		
Marsh Wren	X	C		
Merlin	W	R		
Mountain Bluebird	X	C		
Mountain Chickadee	X	C		
Mountain Quail	X	R	V	SOC
Mourning Dove	X	C		
Nashville Warbler	X	F		
Northern Flicker	X	C		
Northern Goshawk	X	F	V	SOC
Northern Harrier	X	F		
Northern Oriole	S	F		
Northern Phalarope	S	R		
Northern Pintail	W	C		
Northern Pygmy Owl	X	F		
Northern Rough-winged Swallow	S	F		
Northern Saw-whet Owl	X	F		
Northern Shoveler	W	F		
Northern Shrike	W	F		
Northern Spotted Owl	X	R	T	T
Olive-sided Flycatcher	S	C	V	SOC
Orange-crowned Warbler	S	F		
Osprey	S	C		
Pied-billed Grebe	S	U		

Pileated Woodpecker	X	F	V	
Pine Grosbeak	X	R		
Pine Siskin	X	C		
Pinyon Jay	X	C		
Prairie Falcon	X	C		
Purple Finch	X	F		
Pygmy Nuthatch	X	C		
Red Crossbill	X	F		
Red-breasted Nuthatch	X	C		
Red-breasted Sapsucker	X	C		
Redhead	W	F		
Red-naped Sapsucker	X	F		
Red-tailed Hawk	X	C		
Red-winged Blackbird	X	C		
Ring-billed Gull	S	C		
Ring-neck Duck	W	F		
Ring-necked Pheasant	X	R		
Rock Dove	X	C		
Rock Wren	S	C		
Rosy Finch	X	R		
Rough-legged Hawk	W	C		
Ruby-crowned Kinglet	X	F		
Ruddy Duck	X	C		
Ruffed Grouse	X	F		
Rufous Hummingbird	S	F		
Rufous-sided Towhee	X	F		
Sage Sparrow	S	C		
Sage Thrasher	S	C		
Sandhill Crane	S	F		
Savannah Sparrow	S	C		
Say's Pheobe	S	F		
Scrub Jay	X	C		
Semipalmated Plover	S	R		

Sharp-shinned Hawk	X	C		
Short-eared Owl	S	F		
Snow Goose	W	F		
Snowy Egret	S	F		
Song Sparrow	X	C		
Sora	S	F		
Spotted Sandpiper	S	C		
Starling	X	C		
Steller's Jay	X	F		
Swainson's Hawk	S	R	V	
Swainson's Thrush	S	F		
Three-toed Woodpecker	X	F		
Townsend's Solitaire	X	C		
Townsend's Warbler	S	F		
Tree Swallow	S	C		
Trumpeter Swan	X	F		
Tundra Swan	W	F		
Turkey Vulture	S	C		
Varied Thrush	X	F		
Vaux's Swift	S	F		
Vesper Sparrow	S	F		
Violet-green Swallow	S	C		
Virginia Rail	S	F		
Warbling Vireo	S	F		
Western Bluebird	S	F		
Western Burrowing Owl	X	R		SOC
Western Grebe	S	C		
Western Kingbird	S	F		
Western Meadowlark	S	C		
Western Sandpiper	S	F		
Western Screech Owl	X	F		
Western Tanager	S	F		
Western Wood Pewee	S	F		

White-breasted Nuthatch	X	F		
White-crowned Sparrow	S	F		
White-headed Woodpecker	X	F	C	SOC
White-throated Sparrow	W	R		
White-throated Swift	S	F		
Wild Turkey	X	C		
Williamson's Sapsucker	X	F		
Willow Flycatcher	S	R	V	SOC
Wilson's Phalarope	S	F		
Wilson's Warbler	S	F		
Winter Wren	X	F		
Wood Duck	S	F		
Yellow Warbler	S	F		
Yellow-breasted chat	S	F		SOC
Yellow-headed Blackbird	S	F		
<b>Amphibians and Reptiles</b>				
Bullfrog	X	F		
Cascades Frog	X	F	V	SOC
Coastal tailed frog	X	F		SOC
Common Garter Snake	X	C		
Gopher Snake	X	C		
Great Basin Spadefoot Toad	X	F		
Long-toed Salamander	X	F		
Night Snake	X	U		
Northern alligator Lizard	X	F		
Northern Sagebrush Lizard	X	C		SOC
Northwestern Salamander	X	F		
Oregon slender salamander	X	F		SOC
Oregon Spotted Frog	X	F	S	C
Pacific Tree Frog	X	C		
Racer	X	F		
Roughskin Newt	X	R		

Rubber Boa	X	F		
Sharp-tailed Snake	X	U		
Short-horned Lizard	X	F		
Side-blotched Lizard	X	F		
Striped Whip-snake	X	F		
Tailed Frog	X	F		
Western Fence Lizard	X	C		
Western Pond Turtle	X	R	C	
Western Rattlesnake	X	F		
Western Skink	X	F		
Western Terrestrial Garter Snake	X	C		
Western Toad	X	C	V	

**Use Period: X = Year Around S = Summer W = Winter**

**Relative Abundance Key: R = Rare F = Few C = Common A = Abundant  
U = Unknown**

**Federal Status Key: E = endangered; T = Threatened; C = Candidate; SOC = Species of Concern; DL = Delisted**

*Federal ESA-listed Species:* An endangered species is one that is in danger of extinction throughout all or a significant portion of its range. A threatened species is one that is likely to become endangered in the foreseeable future.

*Federal Candidate Species:* Taxa for which the Fish and Wildlife Service has sufficient biological information to support a proposal to list as endangered or threatened.

*Federal Species of Concern:* Taxa whose conservation status is of concern to the US Fish and Wildlife Service, but for which further information is still needed.

*Federal Delisted Species:* A species that has been removed from the Federal list of endangered and threatened wildlife and plants.

**State Status Key: T = Threatened; C = Critical; V = Vulnerable**

*State Endangered Species:* Any native wildlife species determined by the commission to be in danger of extinction throughout any significant portion of its range within the state; or any native wildlife species listed as an endangered species pursuant to the federal ESA.

*State Threatened:* an animal that could become endangered within the foreseeable future within all or a portion of its range.

*State Critical:* species are imperiled with extirpation from a specific geographic area of the state because of small population sizes, habitat loss, or degradation and/or immediate threats.

*Sensitive Vulnerable:* species are facing one or more threats to their populations and/or habitats.



**BEFORE THE LAND USE BOARD OF APPEALS  
OF THE STATE OF OREGON**

CENTRAL OREGON LANDWATCH,

Petitioner,

v.

DESCHUTES COUNTY,

Respondent,

and

LOWER BRIDGE, LLC, and FRED AND  
TERESA NETTER,

Intervenor-Respondents.

LUBA No. 2018-123

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CALFA HOLDINGS ONE, LLC,

Petitioner,

v.

DESCHUTES COUNTY,

Respondent,

and

LOWER BRIDGE, LLC, and FRED AND  
TERESA NETTER,

Intervenor-Respondents.

LUBA No. 2018-124  
(CONSOLIDATED)

**PETITIONER CENTRAL OREGON LANDWATCH'S  
PETITION FOR REVIEW**

Rory Isbell, OSB #173780  
Central Oregon LandWatch  
50 SW Bond Street, Suite 4  
Bend, OR 97702  
Tel.: (541) 647-2930  
Attorney for Petitioner Central Oregon  
LandWatch

Timothy Ramis, OSB #753110  
Jordan Ramis PC  
Two Centerpointe Dr., 6<sup>th</sup> Floor  
Lake Oswego, OR 97734  
Tel.: (503) 598-7070  
Attorney for Petitioner Calfa Holdings  
One, LLC

Adam Smith, OSB #170317  
Asst. Deschutes County Legal Counsel  
1300 NW Wall Street, Suite 205  
Bend, OR 97701  
Tel.: (541) 388-6625  
Attorney for Respondent Deschutes  
County

Tia M. Lewis, OSB #933437  
Schwabe Williamson & Wyatt PC  
360 SW Bond St., Ste. 500  
Bend, OR 97702  
Tel.: (541) 749-4044  
Attorney for Intervenor-Respondent  
Lower Bridge, LLC

Fred and Teresa Netter  
P.O. Box 22  
Terrebonne, OR 97760  
Intervenor-Respondents

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1 **I. STANDING OF PETITIONER**

2 Petitioner Central Oregon LandWatch (hereinafter “Petitioner” or  
3 “LandWatch”) appeared before Respondent Deschutes County (hereinafter  
4 “Respondent” or “the County”) during the proceedings leading to the  
5 challenged decision. Petitioner timely filed a Notice of Intent to Appeal  
6 pursuant to ORS 197.830 and thus has standing to appeal pursuant to ORS  
7 197.830(2).

8 **II. STATEMENT OF THE CASE**

9 **A. NATURE OF THE LAND USE DECISION**

10 This is an appeal from the Deschutes County Board’s September 19,  
11 2018 decision (the “decision” or “Ordinance No. 2018-005”) adopting  
12 amendments to the County’s comprehensive plan (“DCCP”), code, and zoning  
13 map that converts the County’s Flood Plain Zone, a base zone, to the Flood  
14 Plain Combining Zone, a combining or overlay zone. The decision declares an  
15 emergency and that the ordinance is “necessary for the immediate preservation  
16 of the public peace, health and safety.” Rec. 9, App. 3.

17 The County’s decision is a final land use decision subject to review by  
18 the Land Use Board of Appeals (“LUBA”). The County Board’s decision is  
19 found at Record (“Rec.”) 7, and is attached at Appendix (“App.”) 1.

20 **B. RELIEF SOUGHT**

21 Petitioner seeks reversal of the decision or, in the alternative, remand.

1 **C. SUMMARY OF ARGUMENT**

2 This case concerns a sweeping change in the County’s comprehensive  
3 plan and zoning regulations that undermines an important historical protection  
4 of significant Goal 5 resources. Ostensibly, the County is making this change  
5 to resolve “administrative difficulties,” Rec. 83, App. 77, but actually to allow  
6 “divisibility of river-adjacent properties” to facilitate rural residential  
7 development alongside the County’s riparian areas and wetlands. Rec. 85, App.  
8 79.

9 The County’s adoption of the decision creates two main issues that are  
10 the subject of this appeal. First, the decision does not comply with the  
11 requirements of Oregon Statewide Planning Goal 5, OAR 660-015-0000(5),  
12 because it amends “a portion of an acknowledged plan or land use regulation  
13 adopted in order to protect a significant Goal 5 resource,” OAR 660-023-  
14 0250(3)(a), and it creates new conflicting uses. OAR 660-023-0250(3)(b).

15 Second, the decision does not take the required goal exceptions to  
16 Oregon Statewide Planning Goals 3 and 4. OAR 660-015-0000(3), OAR 660-  
17 015-0000(4). Goal 3 requires that “[a]gricultural lands shall be preserved and  
18 maintained for farm use,” and Goal 4 is to “conserve forest lands by  
19 maintaining the forest land base.” The decision here redesignates lands that are

1 suitable for agricultural or forest resource uses to a nonresource plan  
2 designation called Rural Residential Exception Area (“RREA”).

3 Goal 5 requires that when a post-acknowledgment plan amendment  
4 (“PAPA”) affects a significant inventoried Goal 5 resource, the local  
5 government must apply the requirements of Goal 5, OAR 660-023-0000 et.  
6 seq., in consideration of that PAPA. Here, the decision affects inventoried Goal  
7 5 resources throughout the County in two primary ways: by removing the  
8 minimum lot size for properties within the Flood Plain Zone, and by allowing  
9 the area within the Flood Plain Zone to be counted as open space to facilitate  
10 increased development density adjacent to the floodplain.

11 One of the core purposes of the Flood Plain Zone, as described in its  
12 purpose statement, is to “to conserve important riparian areas along rivers and  
13 streams for the maintenance of the fish and wildlife resources.” DCC  
14 18.96.010. As is evident from this language, the Flood Plain Zone is a  
15 foundational element of the County’s program to achieve Goal 5 for riparian  
16 corridors, wetlands, and fish and wildlife resources.

17 The County’s existing program to achieve Goal 5 for these resources is  
18 not sufficient to protect these resources after the County’s decision because, and  
19 as explained in the First Assignment of Error, the existing program to achieve

1 Goal 5 is contingent on no further land divisions in or adjacent to the County's  
2 floodplains.

3 These amendments to the County code create new conflicting uses to  
4 riparian areas, wetlands, and wildlife habitat, and that require a full application  
5 of Goal 5, including an analysis of the economic, social, environmental, and  
6 energy ("ESEE") consequences that could result from a decision to allow, limit,  
7 or prohibit these new conflicting uses. OAR 660-023-0010.

8 The County erred in failing to complete the Goal 5 process at OAR 660-  
9 023-0030 through 660-023-0050, including the inventory process, ESEE  
10 decision process, and a program to achieve Goal 5 – all steps of which are  
11 required when a PAPA either creates a sweeping amendment to the County's  
12 existing program to achieve Goal 5 or creates new conflicting uses. Both  
13 conditions are present here.

14 The decision also amends the plan designation and zoning of lands in the  
15 Flood Plain Zone to become either Agriculture, Forest, or Rural Residential  
16 Exception Area. Most of the parcels in the Flood Plain Zone are split-zoned  
17 with a portion zoned Flood Plain and the other portion zoned to another of the  
18 County's base zones. The Flood Plain-zoned portion of these parcels have been  
19 designated and zoned Flood Plain since the County's first acknowledged  
20 comprehensive plan in the 1970s. The lands have also never received an

1 exception to any of the Statewide Planning Goals to convert them to  
2 nonresource lands. Now that the County seeks to change the plan designation  
3 of these lands, it must assign them a plan designation that complies with Goals  
4 3 and 4. The County erred in not analyzing each parcel for its soil quality,  
5 suitability for agriculture or forest use, etc., to determine whether each parcel  
6 should receive an Agriculture or Forest plan designation. The County erred in  
7 redesignating these lands that clearly are agricultural or forest to a designation –  
8 Rural Residential Exception Area – that does not comply with Goals 3 and 4  
9 without taking exceptions to those goals.

#### 10 **D. SUMMARY OF MATERIAL FACTS**

##### 11 **1. The Flood Plain plan designation.**

12 The County's comprehensive plan and code that are being amended here  
13 include a plan and corresponding zone designation called Flood Plain. The  
14 Flood Plain Zone is a base zone, with the same legal and administrative status  
15 as the County's other base zones, such as EFU, Forest, Rural Residential, etc.  
16 The Flood Plain Zone applies to lands in the County along rivers, streams,  
17 wetlands, and elsewhere that have a propensity for inundation, as mapped by  
18 the Federal Emergency Management Agency ("FEMA"). While the County  
19 does not report how many acres of land in the Flood Plain Zone are affected by

1 this PAPA, the DCCP at Section 2.5 reports that 5,966 acres in the County are  
2 “Riparian.” Rec. 48, App. 42.

3 The Flood Plain Zone has multiple purposes:

4 “The purposes of the Flood Plain Zone are: To implement the  
5 Comprehensive Plan Flooding Section; to protect the public from  
6 the hazards associated with flood plains; to conserve important  
7 riparian areas along rivers and streams for the maintenance of the  
8 fish and wildlife resources; and to preserve significant scenic and  
9 natural resources while balancing the public interests with those of  
10 individual property owners in the designated areas.” (DCC  
11 18.96.010)

## 12 **2. Goal 5 resources.**

13 Many inventoried Goal 5 resources are affected by this decision. The  
14 County created inventories, completed ESEE analyses and decisions, and  
15 created programs to achieve Goal 5 in two ordinances from the early 1990s:  
16 Ordinance No. 92-041 and Ordinance No. 94-007. These ordinances include  
17 Riparian Corridors, Wetlands, Fish Habitat, Deer Winter Range, Elk Habitat,  
18 Waterfowl Habitat, Upland Game Bird Habitat, and Furbearer Habitat as Goal 5  
19 resources protected by the Flood Plain Zone. Rec. 1171, 1190, 1197-98, 1207,  
20 1230-1231, 1235, 1241; App. 101, 120, 127-128, 137, 160-161, 165, 171.

## 21 **3. Procedural background.**

22 The County initiated these amendments to its Flood Plain Zone in early  
23 2017. The Deschutes County Planning Commission held several public  
24 hearings in the first half of 2017, and after deliberations voted to recommend

1 amendments to the Board of County Commissioners on September 14, 2017.  
2 The Board of County Commissioners held two public hearings in late 2017, and  
3 then directed the Planning Commission to hold another public hearing. After a  
4 final recommendation from the Planning Commission in early 2018, the Board  
5 of County Commissioners deliberated the amendments sporadically throughout  
6 2018, and adopted its final decision on September 19, 2018.

### 7 **III. LUBA’S JURISDICTION**

8 The Deschutes County Board of Commissioners made a final decision  
9 under ORS 197.015(10)(a). LUBA has jurisdiction to review such local land  
10 use decisions pursuant to ORS 197.825(1).

### 11 **IV. FIRST ASSIGNMENT OF ERROR**

12 **The County misconstrued and misapplied the applicable**  
13 **law by not correctly applying Goal 5 when it adopted**  
14 **Ordinance No. 2018-005 where Ordinance No. 2018-005 is an**  
15 **amendment to the Deschutes County Comprehensive Plan that**  
16 **affects a Goal 5 resource and the County failed to follow OAR**  
17 **660-023-0250(3)(a) requiring application of Goal 5 where a**  
18 **PAPA amends protections of a significant Goal 5 resource.**

#### 19 **A. PRESERVATION OF ERROR**

20 LandWatch repeatedly raised the issue below that converting the Flood  
21 Plain Zone from a base zone to an overlay zone would significantly affect Goal  
22 5 resources. Rec. 544, 1165, 1519; 2nd Supplemental Record (“2nd Supp.  
23 Rec.”) 3.

1 LandWatch also notes that the “raise it or waive it” waiver doctrine  
2 in ORS 197.835(3) and ORS 197.763 applies only to local government quasi-  
3 judicial proceedings and not to legislative land use proceedings. *Hatley v.*  
4 *Umatilla Cnty.*, 256 Or App 91, 109 n6, 301 P3d 920 (2013); *DLCD v.*  
5 *Columbia County*, 24 Or LUBA 32, 36 (1992); *Parmenter v. Wallowa County*,  
6 21 Or LUBA 490, 492 (1991), *aff’d*, 114 Or App 362, 835 P2d 152, *rev*  
7 *den*, 314 Or 574, 840 P2d 1296 (1992); *Roads End Sanitary District v. City of*  
8 *Lincoln City*, 48 Or LUBA 126, 129 (2004).

#### 9 **B. STANDARD OF REVIEW**

10 The Board shall reverse or remand an amendment to a comprehensive  
11 plan if the amendment is not in compliance with the statewide planning goals.  
12 ORS 197.853(6). LUBA must reverse or remand a local decision if it concludes  
13 the local government improperly construed the applicable law. ORS  
14 197.835(9)(a)(D).

#### 15 **C. ARGUMENT**

16 Deschutes County violated Goal 5 when it failed to correctly apply Goal  
17 5 in consideration of Ordinance No. 2018-005. Ordinance No. 2018-005  
18 amends a portion of the County’s acknowledged plan and land use regulations  
19 that were originally adopted to protect several significant Goal 5 resources.  
20 Local governments are required to apply Goal 5 when a PAPA “affects a Goal 5

1 resource.” OAR 660-023-0250(3). A PAPA affects a Goal 5 resource in any  
2 one of three ways:

3 “(a) The PAPA creates or amends a resource list or a portion of an  
4 acknowledged plan or land use regulation adopted in order to  
5 protect a significant Goal 5 resource or to address specific  
6 requirements of Goal 5;

7 (b) The PAPA allows new uses that could be conflicting uses with  
8 a particular significant Goal 5 resource site on an acknowledged  
9 resource list; or

10 (c) The PAPA amends an acknowledged UGB and factual  
11 information is submitted demonstrating that a resource site, or the  
12 impact areas of such a site, is included in the amended UGB area.”  
13 (OAR 660-023-0250(3)(a)-(c))

14 The ordinance is a PAPA because it amends the County’s acknowledged  
15 comprehensive plan. Respondent is required to apply Goal 5 because  
16 Ordinance No. 2018-005 both amends an acknowledged plan or land use  
17 regulation that was originally adopted in order to protect significant Goal 5  
18 resources and allows new conflicting uses with those resources, triggering both  
19 OAR 660-023-0250(3)(a), the subject of this First Assignment of Error, and  
20 OAR 660-023-0250(3)(b), the subject of the Second Assignment of Error  
21 discussed below. The County did not make findings in response to OAR 660-  
22 023-0250(3)(a), but did state that “Deschutes County is therefore required to  
23 apply Goal 5 in consideration of this PAPA” in another portion of the findings.  
24 Rec. 102, App. 96. Deschutes County erred in failing to fully apply Goal 5,

1 including the required ESEE decision process, when it adopted Ordinance No.  
2 2018-005.

3 **1. The Flood Plain Zone is an acknowledged land use regulation**  
4 **adopted as the primary means to protect significant Goal 5**  
5 **Riparian Corridors, Wetlands, and Wildlife Habitat resources.**

6 Historically, the County has limited the amount of development adjacent  
7 to the County's floodplains. To fully understand the significant role that the  
8 County's Flood Plain Zone plays in protecting inventoried significant Goal 5  
9 resources by limiting development, a review of the history of the Flood Plain  
10 Zone and how it protects Goal 5 resources is in order.

11 The County's first acknowledged comprehensive plan and zoning code,  
12 acknowledged by the Land Conservation and Development Commission  
13 ("LCDC") in 1979, created the Flood Plain Zone and recognized the twofold  
14 purpose of the Flood Plain Zone:

15 "The purposes of the Flood Plain Zone are to protect the public  
16 from the hazards associated with flood plains, to conserve  
17 important riparian areas along rivers and streams for the  
18 maintenance of the fish and wildlife resources, and to preserve  
19 significant scenic and natural resources while balancing the public  
20 interests with those of individual property owners in the designated  
21 area." (1979 Deschutes County Code Section 4.210(1)) (App. 187)

22 The County's 1979 Comprehensive Plan Fish and Wildlife Chapter notes:

23 "One type of area of particular concern is the riparian area or  
24 wetlands along streams and lakes. These areas not only serve as  
25 essential habitat for many species and as migration corridors for  
26 big game, but are particularly in need of protection because of their

1 limited nature.” (1979 Comprehensive Plan at 163-164) (App.  
2 196-197)

3 The 1979 Comprehensive Plan Fish and Wildlife Chapter, at Policy 5, also  
4 describes how a core purpose of regulations on development in floodplain areas  
5 is to protect sensitive riparian areas:

6 “Consistent with Policy 4 and in order to protect the sensitive  
7 riparian areas, as well as to protect people and property from flood  
8 damage, the zoning ordinance shall prohibit development (except  
9 floating docks) within 100 feet of the mean high water mark of a  
10 perennial or intermittent stream or lake. Pre-existing lots unduly  
11 restricted by this requirement shall be eligible to apply for a  
12 variance with the usual filing fee. Variances shall also be possible  
13 where it is shown that the structure is removed from the riparian  
14 area because of a high bluff or steep slope.” (1979 Comprehensive  
15 Plan at 165-166) (App. 198-199)

16 In 1986, Deschutes County completed a “Deschutes County/City of Bend  
17 River Study” that identified important wildlife habitat in the Deschutes River  
18 corridor, and adopted new Goals and Policies, as well as the River Study itself,  
19 into the comprehensive plan as a means to protect that habitat. Many of those  
20 goals and policies continue recognize the importance of wetland and riparian  
21 areas for fish and wildlife resources. For instance:

22 “Deschutes County, in cooperation with the ODFW and USFS,  
23 shall consider wetlands and riparian areas as sensitive wildlife  
24 habitat due to their scarcity and unique characteristics to serve a  
25 wide range of wildlife species and shall protect them.  
26 Modification/alteration of these areas may only be permitted in  
27 unique situations and after consultation with the ODFW.”  
28 (Ordinance No. 86-020 at 12.) (App. 201)

1           When the County completed its first complete Goal 5 inventory for fish  
2   and wildlife as part of its periodic review in 1992, it officially incorporated the  
3   Flood Plain Zone as a core component of its program to achieve Goal 5 for  
4   riparian corridors, wetlands, and wildlife habitat Goal 5 resources:

5           “Title 18.96, Flood Plain Zone – protects riparian habitat and  
6   wetlands by requiring a conditional use for any development. One  
7   of the specific purposes of the zone is to conserve riparian areas  
8   and maintain fish and wildlife resources. The Flood Plain zone also  
9   regulates docks and piers and requires a finding that the structure  
10   will not cause the deterioration of destruction of wildlife habitat.”  
11   (Ordinance No. 92-041 at 75.) (App. 178)

12   This description of the Flood Plain Zone appears in Ordinance No. 92-041’s  
13   section on Wetlands and Riparian Areas.

14           Wetlands and riparian areas are not the only significant Goal 5 resources  
15   that Ordinance No. 92-041 describes as protected by the Flood Plain Zone. Six  
16   additional significant Goal 5 resources rely on the protections of the Flood Plain  
17   Zone in the County’s program to achieve Goal 5:

- 18           • The Program to Achieve the Goal for Fish Habitat identifies the  
19           “**Flood Plain zone**” as one of the policies to “provide  
20           protection for fish habitat.” (Ordinance No. 92-041 at 16-17)  
21           (App. 119-120) (emphasis added)
- 22           • The Program to Achieve the Goal for Deer Winter Range: “The  
23           underlying zoning in most of the deer winter range is resource  
24           zoning: EFU-20, EFU-40, EFU-80, Forest (F-1, F-2), **Flood**  
25           **Plain**. These resource zones provide for large lot sizes and  
26           limit uses that are not compatible with farm or forest uses.  
27           Because of the low density of development in these zones and  
28           the limitations on uses, the resource zones themselves provide

- 1 considerable protection to wildlife habitat.” (Ordinance No. 92-  
 2 041 at 24-25) (App. 127-128) (emphasis added)
- 3 • The Program to Achieve the Goal for Elk habitat: “The  
 4 underlying zoning in the elk habitat areas is either **Flood Plain**,  
 5 Forest, or Open Space and Conservation. These resource zones  
 6 restrict high density residential development and prohibit  
 7 industrial and commercial uses.” (Ordinance No. 92-041 at 34)  
 8 (App. 137) (emphasis added)
  - 9 • The Program to Achieve the Goal for Waterfowl Habitat  
 10 identifies the “**Flood Plain Zone**” as one of the “policies which  
 11 either directly or indirectly protect waterfowl habitat.”  
 12 (Ordinance No. 92-041 at 57-58) (App. 160-161) (emphasis  
 13 added)
  - 14 • The Program to Achieve the Goal for Upland Game Bird  
 15 Habitat includes “the county provisions to protect **riparian**  
 16 **areas and wetlands** protect one of the most significant  
 17 components of upland game habitat.” (Ordinance No. 92-041  
 18 at 62) (App. 165) (emphasis added)
  - 19 • Furbearer Habitat is “adequately protected by the existing  
 20 exclusive farm use and forest zoning and the provisions to  
 21 **protect wetlands and riparian areas.**” (Ordinance No. 92-  
 22 041 at 68) (App. 171) (emphasis added)

23 It is clear that in the County’s first effort at inventorying its Goal 5 resources  
 24 and developing a program to achieve the Goal, the County in Ordinance No. 92-  
 25 041 relied on the Flood Plain Zone to protect many of its significant Goal 5  
 26 resources. This is because the majority of the fish and wildlife present in  
 27 Deschutes County rely on the riparian and wetland areas that coincide with  
 28 floodplains in Deschutes County. See Ordinance No. 86-020 Deschutes  
 29 County/City of Bend River Study (App. 200-202); Interagency Report, 2009  
 30 County Comprehensive Plan Update (Rec. 1257, 1265). In Deschutes County’s  
 31 arid geography, floodplain areas play an outsized role in providing habitat on

1 which most of the County's fish and wildlife depend. *Id.* Accordingly, the  
2 County's overall program to achieve Goal 5 is highly dependent on the habitat  
3 protections provided by the Flood Plain Zone.

4 Indeed, the "Location, Quality and Quantity" section for Furbearer  
5 Habitat in Ordinance No. 92-041 explains how all of the 20 significant Goal 5-  
6 protected furbearers rely on areas protected by the Flood Plain Zone, even those  
7 species that do not spend most of their time in the Flood Plain Zone but must  
8 frequently travel to the Zone:

9 "Riparian habitat is especially important for many of the species  
10 including beaver, muskrat, otters and mink. Most of the other  
11 species also use riparian habitat to some extent. The Oregon  
12 Department of Fish and Wildlife has not identified any specific  
13 habitat sites other than riparian and wetland areas that are critical  
14 for the listed species." (Ordinance No. 92-041 at 66) (App. 169)

15 Again, DCC 18.96 provides that one of the specific purposes of the Flood  
16 Plain Zone is to conserve riparian areas and fish and wildlife resources. In its  
17 inventory of significant Goal 5 resources that rely on the protections of the  
18 Flood Plain Zone, found in Ordinance No. 92-041, the County identified the  
19 following specific species and habitat as protected by the Flood Plain Zone:

- 20 • Significant fish species: Atlantic Salmon, Coho Salmon,  
21 Rainbow Trout, Brown Trout, Cutthroat Trout, Lake trout,  
22 Dolly Varden Trout, Kokanee, Mountain Whitefish,  
23 Largemouth Bass, Bluegill, Brown Bullhead, Bridgelip Sucker,  
24 Tui Chub, Gayling, Crayfish.  
25 • Significant wildlife species: Deer, Elk

- 1 • Significant habitat: Waterfowl Habitat, Upland Game Bird
- 2 Habitat
- 3 • Significant furbearers: Beaver, Muskrat, River Otter, Mink,
- 4 Marten, Fisher, Coyote, Red Fox, Bobcat, Wolverine, Raccoon,
- 5 Skunk, Badger, Weasel, Yellow-Bellied Marmot, Ground
- 6 Squirrels, Snowshoe Hare, Blacktailed Jackrabbit, Cottontail,
- 7 Porcupine (Ordinance No. 92-041 at 18, 24, 34, 58, 62, 66)
- 8 (App. 121, 127, 137, 161, 165, 169)

9 After the County undertook periodic review of its comprehensive plan  
10 and created its inventory of significant Goal 5 resources and its program to  
11 achieve Goal 5, LCDC issued a remand order in 1993. The order required the  
12 County to further explain how its plan and land use regulations were adequate  
13 to protect significant Goal 5 riparian areas. LCDC ordered the County:

14 “Assess the cumulative effects of implementation actions on the  
15 protection of riparian habitat located within: (1) Landscape  
16 Management River and Stream corridors; (2) 100 feet of the  
17 ordinary high water mark of Perennial Streams; and (3) the Flood  
18 Plain Zone or Base Flood area. If the county finds that the  
19 cumulative effects of implementation actions has resulted in a  
20 significant loss of inventoried riparian habitat, amendments to the  
21 plan and/or land use regulations will be necessary to comply with  
22 periodic review (OAR 660-19-055(1)).” (Remand Order 93-RA-  
23 883) (App. 203-204)

24 The remand order also directed the County:

25 “Revise the ESEE analysis for wetlands and riparian habitats to  
26 explain why some provisions are applied to certain riparian  
27 habitats and not to others. For wetlands, revise the ESEE analysis  
28 (or adopt a separate ESEE) to clarify the regulations that protect  
29 the county's inventoried wetlands.” (Remand Order 93-RA-883)  
30 (App. 205)

1           The County responded to this remand order with Ordinance No. 94-007  
 2 to show that the cumulative effects of its actions do not result in a significant  
 3 loss of inventoried riparian habitat and to clarify the regulations that protect the  
 4 County’s inventoried wetlands.

5           The County in the ordinance’s cover letter stated that “[t]he ordinance  
 6 adopts a revised ESEE analysis for riparian areas and a new wetland inventory  
 7 and ESEE analysis and decision.” Ordinance No. 94-007; App. 212.

8           Ordinance No. 94-007 in its conflicting use analysis documented the  
 9 importance of the Flood Plain Zone and its minimum lot sizes in preventing  
 10 significant loss of riparian habitat due to development in or adjacent to riparian  
 11 areas:

12           “Increase in density of residential lots in **or adjacent to** riparian  
 13 areas could result in a decrease of habitat effectiveness because of  
 14 disturbance to wildlife.

15           The minimum lot size for land adjacent to riparian areas outside of  
 16 urban growth boundaries and rural service centers is determined by  
 17 zone as follows:

18           ZONE	MINIMUM LOT SIZE
19           Exclusive Farm Use	
20                 Farm Parcel	23 acres irrigated land or more
21                 Nonfarm Parcel	20 acres
22           Forest Zone	80 acres
23           Multiple Use Agriculture	10 acres
24           Rural Residential	10 acres
25           Flood Plain	
26                 Exception area	10 acres
27                 Non-exception area	80 acres

1  
2 The Board finds that new parcels meeting the minimum lot size in  
3 the resource zones (Exclusive Farm Use, Forest, Non-exception  
4 Flood Plain) will not cause an increase in residential density that  
5 would conflict with riparian habitat values.” (emphasis added)  
6 (Ordinance No. 94-007) (App. 222)

7 The 80-acre minimum lot size for non-exception areas of the Flood Plain Zone  
8 is a core part of ensuring that “an increase in residential density that would  
9 conflict with riparian habitat values” is limited. Only by retaining these  
10 minimum lot sizes for Flood Plain zoned properties does the County adequately  
11 protect the significant Goal 5 resources in or adjacent to riparian areas, and this  
12 minimum lot size of the Flood Plain Zone was acknowledged by LCDC as a  
13 significant component of the County’s program to achieve Goal 5 for these  
14 resources.

15 Ordinance No. 94-007 reiterated what Ordinance No. 92-041 said before  
16 it: “One of the specific purposes of the [Flood Plain] zone is to conserve  
17 riparian areas and maintain fish and wildlife resources.” Ordinance No. 94-007  
18 at 14; App. 228. For wetlands, Ordinance No. 94-007, like Ordinance No. 92-  
19 041, regarded the Flood Plain Zone as a key part of the program to achieve  
20 Goal 5:

21 “Title 18.96, Flood Plain Zone - protects wetlands within flood  
22 plains by requiring a conditional use permit for any development.  
23 One of the specific purposes of the zone is to conserve riparian  
24 areas and maintain fish and wildlife resources. The Flood Plain  
25 zone also regulates docks and piers and requires a finding that the

1 structure will not cause the deterioration of [sic] destruction of  
2 wildlife habitat.” (Ordinance No. 94-007) (App. 234)

3 To inform an update to its comprehensive plan in 2009, Deschutes  
4 County requested a report from an interagency team of wildlife experts at the  
5 Oregon Department of Fish and Wildlife, the U.S. Fish and Wildlife Service,  
6 the U.S. Forest Service, and the U.S. Bureau of Land Management. Rec. 1256.

7 The report explained the vitality of riparian areas to most fish and wildlife  
8 species:

9 “Riparian areas support a greater diversity of wildlife than upland  
10 areas and are particularly important and limited habitats in the arid  
11 Western U.S. Over 60 percent of the neotropical migratory  
12 songbirds in the western U.S. use riparian areas at some point  
13 during the year. Approximately 80 percent of all wildlife species  
14 depend of riparian areas. Aquatic and fish productivity are directly  
15 related to properly functioning and healthy riparian habitat.” (Rec.  
16 1265)

17 The same interagency report listed 38 species of fish and wildlife that are  
18 threatened, endangered, or species of concern that are dependent on the riparian  
19 areas protected by Deschutes County’s Flood Plain Zone. Rec. 1266-1267.

20 Another factor that needs to be considered in an ESEE analysis is  
21 information from the Oregon Department of Fish and Wildlife (“ODFW”) that  
22 wildlife-related activity contributes \$70 million annually to the county’s  
23 economy in 2008 (or about \$90 million in 2019 dollars). The Flood Plain Zone,

1 along with the others in the County's suite of land use regulations, protect the  
2 economic value of the County's fish and wildlife resources.

3 **2. Converting the Flood Plain Zone to an overlay zone is an**  
4 **amendment to the County's program to achieve Goal 5 and**  
5 **requires the County to apply all sections of Goal 5 applicable**  
6 **to the affected Goal 5 resources.**

7 OAR 660-023-0250(3)(a) requires the application of Goal 5 when a  
8 PAPA affects a Goal 5 resource by "creat[ing] or amend[ing] a resource list or a  
9 portion of an acknowledged plan or land use regulation adopted in order to  
10 protect a significant Goal 5 resource or to address specific requirements of Goal  
11 5."

12 The County misunderstands what exactly it means to "apply Goal 5."  
13 The County states in its findings that although "Deschutes County is [] required  
14 to apply Goal 5 in consideration of this PAPA," Rec. 102, App. 96, the decision  
15 "does not allow new uses that could be conflicting," *id.*, and that accordingly  
16 nothing more is required by Goal 5. This is a misinterpretation and  
17 misapplication of Goal 5 for two reasons. First, Ordinance 2018-005 does  
18 create a new conflicting use, discussed in the Second Assignment of Error  
19 below. Second, even if Ordinance No. 2018-005 did not create a new  
20 conflicting use, it amends "a portion of an acknowledged plan or land use  
21 regulation adopted in order to protect a significant Goal 5 resource or to address  
22 specific requirements of Goal 5." OAR 660-023-0250(3)(a).

1           The “threshold question” is whether Goal 5 applies to a PAPA because  
2 the PAPA “either (1) amend[s] a portion of an acknowledged plan or land use  
3 regulation that was adopted in order to protect a significant Goal 5 resource or  
4 (2) allow new uses that could be conflicting uses with a particular significant  
5 Goal 5 resource site on an acknowledged resource list.” *Johnson v. Jefferson*  
6 *County*, 56 Or LUBA 25, 37, *aff’d*, *Johnson v. Jefferson County*, 221 Or App  
7 156 (2008). Amending a plan or land use regulation that protects Goal 5  
8 resources requires the application of Goal 5 under OAR 660-023-0250(3)(a),  
9 regardless of whether a new conflicting use is created. The three triggers under  
10 OAR 660-023-0250(3) each independently require the application of Goal 5.  
11 They are connected by an “either/or” language, and any one of the three triggers  
12 the application of Goal 5. *See Johnson*, 56 Or LUBA at 37.

13           The requirements of Goal 5 must be applied to the extent that a PAPA  
14 affects a Goal 5 resource. *Cosner v. Umatilla County*, 65 Or LUBA 9, 21  
15 (2012) (“Which and how many of the substantive steps in the Goal 5 decision  
16 process must be revisited, if any, and to what extent, will depend on the nature  
17 of the amendments, the existing acknowledged program, the particular Goal 5  
18 resource and the conflicting use at issue.”). When, for example, a PAPA affects  
19 only one resource at a specific location and that single new conflicting use “has  
20 similar impacts to conflicting uses that were considered in adopting the

1 acknowledged program,” then a full application of Goal 5 may not be required.  
2 *NWDA v. City of Portland*, 50 Or LUBA 310, 341 (2005). Where a PAPA  
3 allows additional categories of a conflicting use, even when that type of  
4 conflicting use is already allowed under the acknowledged comprehensive plan,  
5 the additional categories are new conflicting uses for purposes of OAR 660-  
6 023-0250(3)(b). *Johnson*, 56 Or LUBA at 38.

7 In *Johnson*, the challenged ordinance allowed additional residential uses  
8 that affected two of a county’s inventoried significant Goal 5 resources (Big  
9 Game Habitat and Open Space). *Id.* at 37. LUBA held that amending the  
10 county’s program to achieve Goal 5 “alone is enough to make Goal 5 apply,  
11 under OAR 660-023-0250(3)(a).” *Id.* at 37. Further, LUBA held that the  
12 additional residential uses are “new conflicting uses” even though residential  
13 uses were already allowed in the relevant zones, and that a full application of  
14 Goal 5, including a new ESEE analysis and decision, was required in  
15 consideration of those new conflicting uses. *Id.* at 38.

16 Even impacts to inventoried significant Goal 5 resources off-site from a  
17 PAPA trigger the requirement to apply Goal 5 under OAR 660-023-0250(3)(a).  
18 *Root v. Klamath County*, 63 Or LUBA 230, 248 (2011). In *Root*, a proposed  
19 destination resort development was adjacent to inventoried big game habitat.  
20 *Id.* at 242, 245. The county made a finding that its decision to rezone the

1 proposed destination resort area did not authorize new conflicting uses and that,  
2 alternatively, any impacts from potential future conflicting uses could be  
3 mitigated later through future measures. *Id.* at 248. LUBA held that impacts of  
4 the rezoning decision on off-site Goal 5 resources, which were not within the  
5 rezone area, could not be deferred and that an ESEE analysis and decision were  
6 required. *Id.*

7 OAR 660-023-0250(3)(a) is implicated by Ordinance No. 2018-005  
8 because the ordinance amends how the County protects many significant  
9 inventoried Goal 5 resources that exist in and rely on the County's Flood Plain  
10 Zone throughout the entire county. The County's comprehensive plan was  
11 acknowledged to comply with Goal 5 in large part because of how the Flood  
12 Plain Zone protects the many Goal 5 resources that exist in or rely on the  
13 riparian areas and wetlands within the County's floodplains.

14 Converting the Flood Plain Zone from a base zone to an overlay zone  
15 significantly alters how and how well these many Goal 5 resources are  
16 protected. The two principal ways this zone conversion does this is by  
17 eliminating the minimum lots sizes of the Flood Plain Zone, and by allowing  
18 the Flood Plain Zone to be used in open space calculations for cluster and  
19 planned developments.

20 **a) Minimum lot size.**

1           The decision (Ordinance No. 2018-005) removes the prior minimum lot  
2 size of the Flood Plain Zone. It does this by converting a base zone with its  
3 own minimum lot sizes to an overlay zone that combines with base zones of  
4 adjacent lands not within the Flood Plain Zone. The former DCC 18.96.110  
5 Dimensional Standards, at subpart (C), states:

6           “Minimum lot size shall be 10 acres for all areas which have  
7 received an exception to the Statewide Planning Goals for resource  
8 uses. Areas which have not received an exception to the Statewide  
9 Planning Goals shall have a minimum lot size of 80 acres.” (DCC  
10 18.96.110(C))

11           The decision removes these minimum lot sizes for Flood Plain Zone  
12 lands, and allows the land within in the flood plain to be added to adjacent lands  
13 not within the Flood Plain Zone for purposes of calculating minimum lot size  
14 for development on the lands adjoining the floodplain. The acknowledged  
15 comprehensive plan and zoning scheme are based on the Flood Plain Zone as a  
16 base zone, with the indispensable characteristic that either 80 acres or 10 acres  
17 of lands zoned Flood Plain are required to complete a land division. For  
18 example, if a split-zoned parcel has some amount of land designated RREA  
19 along with 9 acres designated Flood Plain, it could not be divided into two  
20 parcels with two dwellings because it did not meet the 10-acre minimum lot  
21 size of the Flood Plain Zone.

1 As explained in the comprehensive plan in Ordinance No. 94-007,  
2 “[i]ncrease in density of residential lots in or adjacent to riparian areas could  
3 result in a decrease of habitat effectiveness because of disturbance to wildlife,”  
4 App. 222, and that only “new parcels meeting the minimum lot size in the  
5 resource zones (Exclusive Farm Use, Forest, Non-exception Flood Plain) will  
6 not cause an increase in residential density that would conflict with riparian  
7 habitat values.” Ordinance No. 94-007, App. 222. Converting the Flood Plain  
8 Zone to an overlay zone removes the minimum lots sizes that are an  
9 indispensable part of Deschutes County’s acknowledged program to protect  
10 significant Goal 5 resources, including riparian corridors, wetlands, and wildlife  
11 habitat.

12 **b) Open space.**

13 The decision also allows the floodplain to be used in open space  
14 calculations for cluster and planned developments adjoining the floodplain,  
15 which opens the door for increased development immediately upland from or  
16 alongside the County’s floodplains. The decision amends the County’s  
17 standards for cluster and planned development, at DCC 18.128.200(14) and  
18 18.128.210(4), Rec. 81-82, App. 75-76, to allow the required open space to  
19 include lands in the new Flood Plain Combining Zone. Before these changes,  
20 the lands in the Flood Plain Zone could not be included in open space

1 calculations for adjoining lands. As designed as part of the County's  
2 acknowledged program to achieve Goal 5, the lands in the Flood Plain Zone are  
3 not included in open space calculations.

4       Allowing additional development through elimination of the minimum  
5 lot sizes and using formerly Flood Plain Zone lands to be used in open space  
6 calculations for adjoining development amends the County's acknowledged  
7 plan and land use regulations adopted in order to protect significant Goal 5  
8 resources and to address specific requirements of Goal 5. See OAR 660-023-  
9 0250(3)(a). Accordingly, the County must apply Goal 5, including the Goal 5  
10 process at OAR 660-023-0030, 0040, and 0050, and the requirements for  
11 riparian corridors found at OAR 660-023-0090, for wetlands at OAR 660-023-  
12 0100, and for wildlife habitat at 660-023-0110.

13                   **c) Other amendments to the County's program to achieve**  
14                   **Goal 5 created by Ordinance No. 2018-005.**

15       The decision (Ordinance No. 2018-005) also creates a requirement for a  
16 "Riparian Area Management Plan" for new cluster and planned developments  
17 adjacent to the Flood Plain Zone. Rec. 81-82, 96, App. 75-76, 90. Even though  
18 this new requirement would ostensibly provide protection of Goal 5 resources,  
19 it is an additional amendment to the County's program to achieve Goal 5 that  
20 triggers a full application of Goal 5 under OAR 660-023-0250(3)(a). If this  
21 new requirement is intended to mitigate impacts to inventoried Goal 5 resources

1 from conflicting uses, the County has completed no analysis that identifies what  
2 those impacts are and how the new requirement for Riparian Area Management  
3 Plans mitigates those impacts. Indeed, the existence of this new requirement  
4 appears to be an admission that the decision does impact inventoried Goal 5  
5 resources, and that some sort of additional mitigation is required. An ESEE  
6 analysis is necessary for the County to disclose the full extent of such impacts  
7 on inventoried Goal 5 resources and how and why the County chooses to allow,  
8 limit, or prohibit conflicting uses.

9 Because the County's failed to comply with the requirements of Goal 5,  
10 its decision should be reversed or remanded.

11 **3. The County's findings that full compliance with Goal 5 is not**  
12 **required are inadequate and not based on substantial evidence.**

13 The County did not make findings responding to OAR 660-023-  
14 0250(3)(a), and instead only made a finding in response to OAR 660-023-  
15 0250(3)(b). Rec. 102 (findings page 20), App. 96. As explained above, either  
16 one of the triggers of OAR 660-023-0250(3) requires a full application of Goal  
17 5 to a PAPA. Because no finding is made to the first trigger in OAR 660-023-  
18 0250(3)(a), the County's findings are inadequate and not supported by  
19 substantial evidence.

20 To the extent that other portions of the County's findings could be  
21 construed as related to OAR 660-023-0250(3)(a), they are not adequate. The

1 record is absent of any evidence that the Flood Plain Zone is not a significant  
2 component of the County's program to achieve Goal 5 for riparian corridors,  
3 wetlands, and wildlife habitat, and the record is instead replete with evidence  
4 that it is a significant component. This evidence includes portions of the DCCP  
5 found at Ordinance No. 92-041, Ordinance No. 94-007, and the 2009  
6 interagency wildlife report.

7 If the County's decision is not reversed, it should be remanded because  
8 its findings are inadequate in explaining how the decision does not amend the  
9 County's acknowledged program to achieve Goal 5.

## 10 **V. SECOND ASSIGNMENT OF ERROR**

11 **The County misinterpreted and misapplied applicable**  
12 **law found in OAR 660-023-0250(3)(b) when it failed to**  
13 **complete an ESEE analysis to determine the effects of**  
14 **conflicting uses on inventoried significant Goal 5 resources**  
15 **created by Ordinance No. 2018-005 and to develop a program**  
16 **to protect inventoried significant Goal 5 resources.**

### 17 **A. PRESERVATION OF ERROR**

18 LandWatch repeatedly raised the issue below that converting the Flood  
19 Plain Zone from a base zone to an overlay zone requires a Goal 5 ESEE  
20 analysis and decision. Rec. 544, 1165, 1519; 2nd Supp. Rec. 3.

### 21 **B. STANDARD OF REVIEW**

22 See Standard of Review for the First Assignment of Error.

1 **C. ARGUMENT**

2 As described in the First Assignment of Error, Ordinance No. 2018-005  
3 amends the County's program to achieve Goal 5 in two primary ways:  
4 eliminating the minimum lot size of the Flood Plain Zone, and allowing the  
5 Flood Plain Zone to be used in open space calculations for cluster and planned  
6 developments. Aside from being amendments to the County's program to  
7 achieve Goal 5, both of these amendments also create new conflicting uses for  
8 which the County has not completed the required ESEE analysis.

9 "Local governments shall develop a program to achieve Goal 5 for  
10 all significant resource sites based on an analysis of the economic,  
11 social, environmental, and energy (ESEE) consequences that could  
12 result from a decision to allow, limit, or prohibit a conflicting use."  
13 (OAR 660-023-0040(1))

14 A conflicting use is a

15 "land use, or other activity reasonably and customarily subject to  
16 land use regulations, that could adversely affect a significant Goal  
17 5 resource (except as provided in OAR 660-023-0180(1)(b)). Local  
18 governments are not required to regard agricultural practices as  
19 conflicting uses." (OAR 660-023-0010(1))

20 As LUBA stated in *Johnson*, 56 Or LUBA at 38, additional uses of a  
21 same type already allowed under an acknowledged program to achieve Goal 5  
22 are new conflicting uses.

1           **1.     The decision creates at least two new conflicting uses.**

2           The County’s findings state that “there is no conflicting use in this case.”  
3     Rec. 87, App. 81. Yet, in the finding for Goal 5, the County also acknowledges  
4     that new land divisions and associated development will occur as a result of the  
5     decision:

6           “Upland development is not located within the flood plain  
7           combining zone and any uses, including those associated with  
8           cluster and planned development, including open space  
9           requirements and new land divisions, will be subject to the  
10          applicable standards of the zone that continue to limit the type and  
11          extent of development disturbance within the zone. Therefore, no  
12          conflicting uses are included in these amendments.” (Rec. 100,  
13          App. 94)

14          The first new conflicting use created by Ordinance No. 2018-005 is to  
15          allow new land divisions and associated development in the floodplain by  
16          eliminating the minimum lot size of the Flood Plain Zone. Allowing new land  
17          divisions in the floodplain facilitates additional development in areas  
18          immediately adjacent to the Flood Plain Zone. The second new conflicting use  
19          is to allow new cluster and planned developments on properties that include  
20          Flood Plain zoning, and to use Flood Plain-zoned lands as required open space  
21          in order to allow higher density development on parcels that include Flood  
22          Plain zoning.

23          As used in OAR 660-023-0250(3)(b) (“The PAPA allows new uses that  
24          could be conflicting uses with a particular significant Goal 5 resource site on an

1 acknowledged resource list”), the phrase “could be” “presents a fairly low  
2 threshold.” *Nicita v. City of Oregon City*, \_\_\_ Or LUBA \_\_\_ (LUBA No. 2018-  
3 102) slip op at 7 (2019). “On its face, a zone change that significantly increases  
4 the volume or intensity of development impacts on a natural resource compared  
5 to development under the existing zoning almost certainly would, without more,  
6 exceed that low threshold, by allowing uses that ‘could be’ conflicting uses.”  
7 *Id.* The facts in *Nicita* are quite similar to the facts here, although on a smaller  
8 scale. There, a quasi-judicial applicant sought to rezone a property from a zone  
9 that allowed 55% lot coverage to a zone that allows 90% lot coverage on a  
10 property along an inventoried Goal 5 creek. *Id.* slip op at 5. The city was  
11 required to fully apply Goal 5, including an ESEE analysis and decision, in  
12 consideration of this zone change. Even though the new zone did not allow a  
13 new type of use, it did allow more intense development of the same type of use  
14 as the old zone adjacent to the inventoried Goal 5 resource. *Id.* slip op at 25.

15 A land division that occurs in an inventoried riparian area, wetland,  
16 wildlife habitat, or other significant Goal 5 resource is an “activity reasonably  
17 and customarily subject to land use regulations[] that could adversely affect a  
18 significant Goal 5 resource.” OAR 660-023-0010(1). Removing the minimum  
19 lot sizes of the Flood Plain Zone allows new land divisions, which in turn  
20 allows development on the new parcels created that include Flood Plain zoning.

1 The additional development enabled by removing Flood Plain Zone minimum  
2 lot sizes, at the very least, meets the low threshold of what “could be” a  
3 conflicting use. *See Nicita*, slip op at 7. Even if future development associated  
4 with a land division occurs just outside of or next to an inventoried riparian  
5 area, wetland, or wildlife habitat, that development could adversely affect a  
6 significant Goal 5 resource.

7 LCDC in its 1993 remand order directed the County to “[a]ssess the  
8 cumulative effects of implementation actions on the protection of riparian  
9 habitat located within... the Flood Plain Zone” and that if the County finds that  
10 “the cumulative effects of implementation actions has resulted in a significant  
11 loss of inventoried riparian habitat, amendments to the plan and/or land use  
12 regulations will be necessary[.]” Remand Order 93-RA-883; App. 203. As  
13 stated in the First Assignment of Error above, the County responded to this  
14 remand order with Ordinance No. 94-007, stating that “[i]ncrease in density of  
15 residential lots in **or adjacent to** riparian areas could result in a decrease of  
16 habitat effectiveness because of disturbance to wildlife.” Ordinance No. 94-  
17 007; App. 222 (emphasis added). The County viewed development either in or  
18 adjacent to riparian areas as a use that conflicts with the Goal 5 resources that  
19 either exist in the Flood Plain Zone, or rely on the habitat in Flood Plain Zone.

1           Ordinance No. 94-007 also describes the minimum lot sizes for all of the  
2 base zones for inventoried Goal 5 riparian habitat and wetlands, including the  
3 Flood Plain Zone, and concludes that “new parcels meeting the minimum lot  
4 size in the resource zones (Exclusive Farm Use, Forest, Non-exception Flood  
5 Plain) will not cause an increase in residential density that would conflict with  
6 riparian habitat values.” Ordinance No. 94-007; App. 222. The County’s  
7 existing ESEE analysis and decision for riparian habitat and wetlands  
8 (contained in Ordinance No. 94-007) relies on the fact that only land divisions  
9 that will comply with the minimum lot size standards – 10 acres for exception  
10 areas and 80 acres for non-exception areas – will prevent unacceptable conflict  
11 with the inventoried Goal 5 resource of riparian habitat. Land divisions enabled  
12 by removing these minimum lot size standards of the Flood Plain Zone, as  
13 created by the decision here, are not contemplated by the County’s  
14 acknowledged program to achieve Goal 5, and are new conflicting uses.

15           LCDC’s 1993 remand order also directs the County to  
16           “Revise the ESEE analysis for wetlands and riparian habitats to  
17           explain why some provisions are applied to certain riparian  
18           habitats and not to others. For wetlands, revise the ESEE analysis  
19           (or adopt a separate ESEE) to clarify the regulations that protect  
20           the county's inventoried wetlands.” (Remand Order 93-RA-883 at  
21           3, App. 205).

22           Ordinance No. 94-007 completes this task for riparian areas and  
23 wetlands, and lists the Flood Plain Zone as a regulation that protects both.

1           The County in its decision states that it relies in its “past interpretation”  
2 of how the Flood Plain Zone applies to split-zoned properties. Rec. 85, 100,  
3 App. 79, 94. This past interpretation, though, is not the County’s current  
4 interpretation. The current and correct interpretation of the County code, which  
5 the County acknowledges at Findings page 3, is that “...the minimum lot size  
6 required for a new lot or parcel in the pertinent zone must be entirely within that  
7 zone.” Rec. 85, App. 79; County File No. 247-15-000195-TP, Rec. 869. This  
8 interpretation is consistent with the County’s acknowledged ESEE analysis for  
9 riparian areas, found in Ordinance No. 94-007, which explains that the  
10 minimum lot sizes of the Flood Plain Zone are necessary to prevent land  
11 divisions and development that would be inadequate to protect the many  
12 inventoried Goal 5 resources that exist in and rely on the County’s floodplains.

13           **2.     Aside from split-zone parcels, the decision also changes the**  
14           **plan designation and zoning for some parcels that are wholly**  
15           **within the Flood Plain Zone, which creates without question a**  
16           **new conflicting use.**

17           As explained in more detail in the Third Assignment of Error below, the  
18 decision assigns new comprehensive plan and zoning designations to not only  
19 split-zoned parcels, but also to many parcels wholly within the Flood Plain  
20 Zone. These parcels have only ever had one single plan and zone designation  
21 (Flood Plain). These parcels’ new plan and zoning designation will have  
22 development standards that are wholly different from the former Flood Plain

1 base zone standards. These new uses and their associated development  
2 standards are a new conflicting use that triggers the full application of Goal 5  
3 under OAR 660-023-0250(3)(b), including ESEE analyses for all affected Goal  
4 5 resources.

5 **3. The County’s finding that Ordinance No. 2018-005 does not**  
6 **create any new conflicting uses is inadequate and not based on**  
7 **substantial evidence.**

8 The County in response to OAR 660-023-0250(3)(b) found that  
9 “Deschutes County is... required to apply Goal 5 in consideration of this  
10 PAPA.” Rec. 102, App. 96. The County also finds that “this amendment does  
11 not allow new uses that could be conflicting.” *Id.*

12 The findings to support the County’s conclusion that no conflicting uses  
13 are allowed by the decision are inadequate and unsupported by substantial  
14 evidence. The County’s discussion of whether a conflicting use analysis is  
15 required states that the existing ESEE and program to achieve Goal 5 for  
16 riparian areas makes “no mention of minimum lot sizes.” Rec. 87, App. 81.  
17 This is not true, as Ordinance No. 94-007 specifically references the minimum  
18 lot sizes of the Flood Plain Zone as a primary way the Flood Plain Zone  
19 protects riparian area Goal 5 resources. Because the County does not base its  
20 decision upon the substantial evidence of its own comprehensive plan, which  
21 includes its acknowledged program to achieve Goal 5 for riparian areas, the

1 decision is not based on substantial evidence. In the event the decision is not  
 2 reversed, remand is necessary to correct these inadequate findings concerning  
 3 conflicting uses.

#### 4 **VI. THIRD ASSIGNMENT OF ERROR**

5 **Ordinance No. 2018-005 does not comply with Goals 3**  
 6 **and 4 because it redesignates agricultural and forest lands in**  
 7 **the County’s Flood Plain Zone to a non-resource plan**  
 8 **designation instead of Agricultural or Forest plan designations,**  
 9 **and without taking exceptions to Goals 3 and 4.**

##### 10 **A. PRESERVATION OF ERROR**

11 The “raise it or waive it” waiver doctrine in ORS 197.835(3) and ORS  
 12 197.763 applies only to local government quasi-judicial proceedings and not  
 13 to legislative land use proceedings. *Hatley v. Umatilla Cnty.*, 256 Or App 91,  
 14 109 n6, 301 P3d 920 (2013); *DLCD v. Columbia County*, 24 Or LUBA 32, 36  
 15 (1992); *Parmenter v. Wallowa County*, 21 Or LUBA 490, 492 (1991), *aff’d*, 114  
 16 Or App 362, 835 P2d 152, *rev den*, 314 Or 574, 840 P2d 1296 (1992); *Roads*  
 17 *End Sanitary District v. City of Lincoln City*, 48 Or LUBA 126, 129 (2004).

18 LandWatch raised the issue below by questioning “how the County  
 19 would implement the proposed changes on properties that are entirely within  
 20 the current Flood Plain Zone.” 2nd Supp. Rec. 4.

##### 21 **B. STANDARD OF REVIEW**

22 The board shall reverse or remand an amendment to a comprehensive  
 23 plan if the amendment is not in compliance with the statewide planning goals.

1 ORS 197.853(6). LUBA must reverse or remand a local decision if it concludes  
2 the local government improperly construed the applicable law. ORS  
3 197.835(9)(a)(D).

#### 4 **C. ARGUMENT**

5 Ordinance No. 2018-005 redesignates lands from the Flood Plain plan  
6 designation to either a resource designation (Agriculture or Forest) or to the  
7 Rural Residential Exception Area (RREA) designation. Rec. 93, App. 87. The  
8 definitions of Agricultural lands, OAR 660-033-0020,<sup>1</sup> and Forest lands, OAR  
9 660-006-0005(7),<sup>2</sup> require that those lands receive plan and zone designations  
10 that protect those lands consistent with Goal 3 and Goal 4, or take exceptions to  
11 those goals.

12 Given that the lands affected by the decision contain high-quality  
13 floodplain soils, many of the lands redesignated by Ordinance No. 2018-005

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<sup>1</sup> “Agricultural land... in eastern Oregon is land of predominantly Class I, II, III, IV, V and VI soils as identified in the Soil Capability Classification System of the United States Soil Conservation Service, and other lands which are suitable for farm use taking into consideration soil fertility, suitability for grazing, climatic conditions, existing and future availability of water for farm irrigation purposes, existing land-use patterns, technological and energy inputs required, or accepted farming practices.”

<sup>2</sup> “(7) ‘Forest lands’ as defined in Goal 4 are those lands acknowledged as forest lands, or, in the case of a plan amendment, forest lands shall include:  
(a) Lands that are suitable for commercial forest uses, including adjacent or nearby lands which are necessary to permit forest operations or practices; and  
(b) Other forested lands that maintain soil, air, water and fish and wildlife resources.”

1 meet the definitions for EFU and Forest lands, but are proposed by the County  
 2 in its decision to be redesignated from Flood Plain to RREA.<sup>3</sup> Accordingly,  
 3 Ordinance No. 2018-005 does not comply with Goal 3 and Goal 4, and the  
 4 County erred in redesignating lands to Rural Residential Exception Area  
 5 without taking exceptions to Goals 3 and 4. Post-acknowledgment plan  
 6 amendments must comply with the statewide planning goals. ORS  
 7 197.175(2)(a); ORS 197.250 (“[A]ll comprehensive plans and land use  
 8 regulations [...] shall be in compliance with the goals...”).

9 In order to allow uses not otherwise allowed by the statewide planning  
 10 goals, Goal 2 provides local governments an opportunity to receive an  
 11 exception to the statewide goals. “Exception” means:

12 “a comprehensive plan provision, including an amendment to an  
 13 acknowledged comprehensive plan, that:  
 14 (A) Is applicable to specific properties or situations and does not  
 15 establish a planning or zoning policy of general applicability;  
 16 (B) Does not comply with some or all goal requirements applicable  
 17 to the subject properties or situations; and  
 18 (C) Complies with standards under subsection (2) of this section.”  
 19 (ORS 197.732(1)(b))

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<sup>3</sup> Many of the parcels on these lands are split-zoned, with a portion designated RREA or EFU/Forest and a portion designated Flood Plain. Some of the parcels on these lands are wholly within the Flood Plain zone. In either case, the decision redesignates lands that apparently meet the definitions for EFU or Forest lands from Flood Plain to RREA. As addressed in the Fourth Assignment of Error below, the decision does this without an adequate factual base.

1           The exceptions process is applicable to several goals, including Goal 3  
2 and Goal 4. OAR 660-004-0010(1).

3           The justification to use resource lands for uses not allowed by the  
4 applicable Goal must be set forth in the comprehensive plan as an exception.  
5 OAR 660-004-0020(1). DCC 18.96.110(C) states:

6           “In an FP Zone, the following dimensional standards shall apply...  
7 Minimum lot size shall be 10 acres for all areas which have  
8 received an exception to the Statewide Planning Goals for resource  
9 uses. Areas which have not received an exception to the Statewide  
10 Planning Goals shall have a minimum lot size of 80 acres.”

11          A local government may adopt an exception to the statewide planning  
12 goals if

13          “(a) The land subject to the exception is physically developed to  
14 the extent that it is no longer available for uses allowed by the  
15 applicable goal;  
16 (b) The land subject to the exception is irrevocably committed as  
17 described by Land Conservation and Development Commission  
18 rule to uses not allowed by the applicable goal because existing  
19 adjacent uses and other relevant factors make uses allowed by the  
20 applicable goal impracticable; or  
21 (c) The following standards are met:  
22 (A) Reasons justify why the state policy embodied in the  
23 applicable goals should not apply;  
24 (B) Areas that do not require a new exception cannot reasonably  
25 accommodate the use;  
26 (C) The long term environmental, economic, social and energy  
27 consequences resulting from the use at the proposed site with  
28 measures designed to reduce adverse impacts are not significantly  
29 more adverse than would typically result from the same proposal  
30 being located in areas requiring a goal exception other than the  
31 proposed site; and

1 (D) The proposed uses are compatible with other adjacent uses or  
2 will be so rendered through measures designed to reduce adverse  
3 impacts.” (ORS 197.732(2))

4 Exceptions from the resource goals can only be approved if the land is  
5 physically developed, irrevocably committed, or reasons justify why the  
6 applicable goals should not apply. No factual information in the Record shows  
7 that the lands in the County’s Flood Plain plan designation qualify for any of  
8 these three types of exceptions.

9 The lands in the County’s Flood Plain Zone, including the portions of  
10 split-zoned parcels with Flood Plain zoning, have never been assigned any plan  
11 designation other than Flood Plain. These lands have also never “received an  
12 exception to the Statewide Planning Goals for resource uses.” DCC  
13 18.96.110(C).

14 The only lands in the county where LCDC has acknowledged exceptions  
15 to Goals 3 and 4 are lands designated as Rural Residential Exception Area.  
16 This is true for both the current DCCP as well as the County’s first  
17 comprehensive plan that created the Flood Plain Zone, written in 1979. The  
18 exceptions statements in both the 1979 comprehensive plan and the current  
19 DCCP make no mention of lands designated Flood Plain. App. 236-252, 253-  
20 256. Instead, they describes lands that qualify for irrevocably committed  
21 exceptions because of development that predated the County’s first

1 comprehensive plan but that otherwise is inconsistent with the Statewide  
2 Planning Goals. The County assigned such lands the designation of RREA. It  
3 did not assign any of those lands the designation of Flood Plain. No parcels or  
4 portions of parcels (for split-zoned properties) in the Flood Plain Zone are  
5 included as part of any acknowledged goal exception. The Flood Plain plan  
6 designation is not a nonresource plan designation that allows residential  
7 development as the RREA plan designation does.

8       The fact that the Flood Plain plan designation has been acknowledged by  
9 LCDC without an exception being taken does not allow the County to ignore  
10 goal requirements in subsequent plan amendments. *Oregon Shores*  
11 *Conservation Coalition v. Coos County*, 50 Or LUBA 444, 460 (2005) (“While  
12 the acknowledgment process shields the county from certain collateral attacks  
13 on its acknowledged plan and ordinances, errors the county may have  
14 committed in that process do not obviate goal and rule requirements that  
15 govern subsequent post-acknowledgement plan decisions to change the  
16 comprehensive plan and zoning designation for such property.”). (emphasis  
17 original)

18       Here, the decision changes the Flood Plain Zone from a primary zone to a  
19 combining zone. Rec. 92-93, App. 86-87. The County’s findings state that  
20 “the primary zone for the areas previously zoned flood plan [sic] is  
21 amended to reflect the corresponding comprehensive plan

1 designation and primary zoning of adjacent areas. Where the  
2 comprehensive plan designation is not identified, the nearest and  
3 most similar zoning has been applied. (See Exhibit A).” (Rec. 92-  
4 93, App. 86-87)

5 Applying the plan designation and primary zoning of adjacent properties  
6 is vague and arbitrary, as nearly every Flood Plain zoned property has several  
7 nearby properties with different plan designations to choose from. Further, no  
8 other zone is “similar” to the Flood Plain Zone.

9 Several properties that are re-designated and rezoned as a result of the  
10 decision are not split-zoned, and instead are wholly within the Flood Plain  
11 Zone. The County’s choice of which plan designation and zone to apply to  
12 these properties is especially arbitrary and out of compliance with the statewide  
13 land use planning goals, especially Goals 3 and 4.

14 The County’s finding for Goal 3 states that the goal “is not applicable  
15 because no changes to the EFU zone are proposed.” Rec. 99, App. 93. For  
16 Goal 4, the findings similarly state the goal “is not applicable because no  
17 changes to the F-1 and F-2 zones are proposed.” *Id.* Both of these statements  
18 are inaccurate. The decision takes land that was planned and zoned Flood Plain  
19 and arbitrarily amends the plan by assigning a new plan and zone based solely  
20 on “corresponding comprehensive plan designation and primary zoning of  
21 adjacent areas.” Rec. 92-93, App. 86-87. Some of these amendments add land  
22 to the County’s Agriculture and Forest plan designations, and some prevent

1 land that should be protected by Goals 3 and 4 from being added to the  
2 County's Agriculture and Forest plan designations. These are both changes to  
3 the amount of lands in the County's EFU, F-1, and F-2 zones for which no  
4 factual basis is supplied.

5 The County erred in failing to redesignate lands in the Flood Plain Zone  
6 to Agriculture or Forest. If the County wants to redesignate these lands to  
7 RREA, it needs to take exceptions to the Statewide Planning Goals, following  
8 the process described above.

9 Further, an exception is "applicable to specific properties or situations  
10 and does not established a zoning policy of general applicability." OAR 660-  
11 004-005(1)(a). Even if an exception to Goals 3 and 4 were taken for the lands  
12 in the Flood Plain Zone, those exceptions would be for the purpose of  
13 protecting flood plain areas. "Exceptions to one goal or a portion of one goal  
14 do not relieve a jurisdiction from remaining goal requirements and do not  
15 authorize uses, densities, public facilities and services, or activities other than  
16 those recognized or justified by the applicable exception." OAR 660-004-  
17 0018(1). The decision to assign the RREA plan designation to Flood Plain  
18 designated land ignores the requirements of Goals 3 and Goal 4.

19 For these reasons, Ordinance No. 2018-005 does not comply with Goals  
20 3 and 4, and should be reversed or remanded.

1 **VII. FOURTH ASSIGNMENT OF ERROR**

2 **The decision violates Goal 2 in its failure to provide an**  
3 **adequate factual basis for redesignating land to Rural**  
4 **Residential Exception Area and because of the resulting**  
5 **conflicting comprehensive plan policies.**

6 **A. PRESERVATION OF ERROR**

7 See the Preservation of Error for the Third Assignment of Error.

8 LandWatch raised the issue below by questioning “how the County  
9 would implement the proposed changes on properties that are entirely within  
10 the current Flood Plain Zone.” 2nd Supp. Rec. 4.

11 **B. STANDARD OF REVIEW**

12 See the Standard of Review for the Third Assignment of Error.

13 **C. ARGUMENT**

14 The decision fails to comply with Goal 2 because it amends the  
15 comprehensive plan designation of hundreds of parcels of land without the  
16 support of an adequate factual basis. Goal 2 is “[t]o establish a land use  
17 planning process and a policy framework as a basis for all decision and actions  
18 related to use of land and assure an adequate factual base for such decisions and  
19 actions.” OAR 660-015-0000(2).

20 **1. The decision lacks an adequate factual base.**

21 **a) Comprehensive Plan redesignations.**

1           The decision arbitrarily redesignates lands in the Flood Plain Zone to  
2 “reflect the corresponding comprehensive plan designation and primary zoning  
3 of adjacent areas” or to “the nearest and most similar zoning.” Rec. 92-93,  
4 App. 86-87. Beyond these vague descriptions, the County failed to identify  
5 which plan designation each Flood Plain-zoned parcel would receive. This  
6 redesignation of hundreds of parcels throughout the county without identifying  
7 or justifying the new plan designation results in a decision significantly lacking  
8 an adequate factual base.

9                           **b)    The County’s present disagreement with a prior County**  
10                           **quasi-judicial land use decision is not an adequate**  
11                           **factual base.**

12           The decision is motivated by something other than an adequate factual  
13 base. The County cites a prior County decision (County File No. 247-15-  
14 000195-TP) as reason for the decision’s plan amendments. Rec. 85, App. 79.  
15 The County’s findings explain how this decision interpreted the minimum lot  
16 sizes of the Flood Plain Zone:

17           “More recently, in County File No. 247-15-000195-TP, the  
18 Hearings Officer found that Deschutes County Code requires,  
19 ‘...the minimum lot size required for a new lot or parcel in the  
20 pertinent zone must be met entirely within that zone.’ This  
21 decision marked a significant departure from the long-standing  
22 practice to split zoned properties including Flood Plain zoning, as  
23 shown in the decisions cited-above. Because most split-zoned  
24 floodplain properties in Deschutes County only have a narrow  
25 river-adjacent fringe of floodplain, almost no properties have the  
26 required 10-acres (for exception lands) or 80-acres (for resource

1 zoned lands) of Flood Plain zoned land necessary for a land  
2 division. Thereby, the Hearings Officer's aforementioned decision  
3 serves almost as a moratorium for land division involving Flood  
4 Plain acreage.

5 Under the current Hearings Officer's ruling, a parcel with 100 acres  
6 of Rural Residential Zone (10 acre minimum lot size) and 1 acre of  
7 Flood Plain zone becomes wholly indivisible due to the failure to  
8 have 10 acres of Flood plain zoned lands. In practice, this ruling  
9 precludes division of almost all river-adjacent properties,  
10 regardless of size because the floodplain is predominantly a  
11 narrow, river-adjacent strip in Deschutes County. A major reason  
12 for this proposed amendment is to restore the divisibility of river-  
13 adjacent properties to align with the County's long-standing  
14 practice.” (Rec. 85, App. 79)

15 The Hearing Officer’s decision referenced here, in File No. 247-15-  
16 000195-TP, is consistent with Ordinance No. 94-007’s discussion of the role  
17 that the minimum lot sizes of the Flood Plain Zone play in preventing land  
18 divisions. This is the method by which the Flood Plain Zone protects Goal 5  
19 resources in the floodplain, which is a significant part of the County’s  
20 acknowledged program to achieve Goal 5.

21 Citing a final decision of a County Hearings Officer as a reason to adopt  
22 these legislative amendments is far from an adequate factual base. If the  
23 County or anyone else believed the decision in File No. 247-15-000195-TP was  
24 incorrect, the decision could have been appealed to the Board of County

1 Commissioners, or called up by the Board of County Commissioners itself for  
2 reinterpretation under DCC 22.28.050(A).<sup>4</sup>

3 **c) The County's failure to complete an ESEE analysis is a**  
4 **lack of an adequate factual base.**

5 As discussed in Petitioner's First and Second Assignments of Error, the  
6 County failed to conduct an ESEE analysis and decision as required by Goal 5.  
7 The failure to disclose the ESEE consequences of the decision is also a  
8 violation of Goal 2's requirement to provide an adequate factual base, as  
9 numerous more facts than are provided are needed for an adequate ESEE  
10 analysis.

11 As an example of what basic information should be included in an ESEE  
12 analysis, the County has not quantified the number of new land divisions that  
13 could occur in the proposed Flood Plain Combining Zone, or the amount of  
14 development associated with those land divisions. Yet the County  
15 acknowledges that new land divisions and development will occur. Rec. 85,  
16 App. 79. Those new land divisions and associated development were not  
17 allowed under the former Flood Plain Zone. The County's decision violated

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<sup>4</sup> "Review of an administrative action or a Hearings Body's decision may be initiated by the Board of County Commissioners."

1 Goal 2 by not providing an adequate factual base on the number of new land  
2 divisions enabled by the decision.

3 **2. The decision creates an inconsistency with the comprehensive**  
4 **plan.**

5 Goal 2 also requires that “plans and actions related to land use shall be  
6 consistent with the comprehensive plans of cities and counties.” The County’s  
7 decision here results in inconsistency with the County’s comprehensive plan.

8 Here, the County’s decision changes the plan designation of all properties  
9 designated Flood Plain to either the Agriculture, Forest, or Rural Residential  
10 Exception Area plan designation. Rec. 93, App. 87. With this redesignation,  
11 the former minimum lot sizes of the Flood Plain zone are eliminated, and land  
12 formerly zoned Flood Plain may be added to adjacent lands for purposes of  
13 calculating the minimum lot size for land divisions and development.

14 As discussed in the First Assignment of Error, the comprehensive plan in  
15 Ordinance No. 94-007 states that an “[i]ncrease in density of residential lots in  
16 or adjacent to riparian areas could result in a decrease of habitat effectiveness  
17 because of disturbance to wildlife” and that only “new parcels meeting the  
18 minimum lot size in the resource zones (Exclusive Farm Use, Forest, Non-  
19 exception Flood Plain) will not cause an increase in residential density that  
20 would conflict with riparian habitat values.” Ordinance No. 94-007, App. 222.

1           The purpose and effect of the Flood Plain Zone has historically been to  
2 prohibit development in the floodplain to protect riparian habitat, wetlands, as  
3 well as mitigate risk due to flood events. Effectively transferring the area of the  
4 floodplain to upland areas in order to facilitate additional development is  
5 inconsistent with the protections against development the Flood Plain Zone was  
6 created and acknowledged to provide.

7           Allowing Flood Plain-zoned lands to be added to adjacent lands allows  
8 an “increase in density of residential lots in or adjacent to riparian areas,” and is  
9 thus inconsistent with the County’s acknowledged ESEE analysis and program  
10 to achieve Goal 5 for riparian areas, which are part of its comprehensive plan.

11           **3. The required goal exceptions are not taken.**

12           Further, and as stated in the Third Assignment of Error, an exception is  
13 “applicable to specific properties or situations and does not established a zoning  
14 policy of general applicability.” OAR 660-004-005(1)(a). Even if an exception  
15 to a statewide planning goal were taken for the lands in the Flood Plain Zone,  
16 that exception would be for the purpose of protecting floodplain areas from  
17 development. “Exceptions to one goal or a portion of one goal do not relieve a  
18 jurisdiction from remaining goal requirements and do not authorize uses,  
19 densities, public facilities and services, or activities other than those recognized  
20 or justified by the applicable exception.” OAR 660-004-0018(1). Goal 2

1 requires the County to make findings, supported by an adequate factual base,  
2 that one of the three types of exceptions to the goals allows the County to  
3 redesignate Flood Plain Zone lands to RREA.

#### 4 **VIII. CONCLUSION**

5 The Flood Plain Zone and its minimum lot sizes are a core part of  
6 ensuring that “an increase in residential density that would conflict with riparian  
7 habitat values” is limited. Ordinance No. 94-002, App. 222. Only by retaining  
8 the minimum lot sizes for Flood Plain-zoned properties does the County  
9 adequately protect the significant Goal 5 resources in or adjacent to riparian  
10 areas, and the minimum lot sizes of the Flood Plain Zone were acknowledged  
11 by LCDC as a core component of the County’s program to achieve Goal 5 for  
12 these resources.

13 LandWatch respectfully requests that LUBA reverse or, alternatively,  
14 remand the County’s decision in this case.

15 DATED this 31<sup>st</sup> day of January, 2019.

Respectfully submitted,

---

Rory Isbell OSB# 173780  
Attorney for Petitioner Central Oregon  
LandWatch

16

## CERTIFICATE OF COMPLIANCE

I certify that **PETITIONER'S PETITION FOR REVIEW** complies with the word count limitation in OAR 661-010-0030(2)(b) for a Petition for Land Use Board of Appeals Review; it is proportionately typed, not smaller than 14-point font for the body and footnotes and contains 11,304 words.

DATED this 31<sup>st</sup> day of January, 2019.

Respectfully submitted,

---

Rory Isbell, OSB #173780  
Attorney for Petitioner Central Oregon  
LandWatch

## CERTIFICATE OF FILING

I hereby certify that on January 31, 2019, I filed the original of **PETITIONER'S PETITION FOR REVIEW** for LUBA Case Nos. 2018-123/124, together with four copies, with the Land Use Board of Appeals, 775 Summer Street, NE, Suite 330, Salem, Oregon 97301-1283, pursuant to OAR 661-010-0075(2)(a)(B), by first-class mail with the U.S. Postal Service.

DATED this 31<sup>st</sup> day of January, 2019.

---

Rory Isbell, OSB #173780  
Attorney for Petitioner Central  
Oregon LandWatch

## CERTIFICATE OF SERVICE

I hereby certify that on January 31, 2019, I served a true and correct copy of **PETITIONER'S PETITION FOR REVIEW** for LUBA Case Nos. 2018-123/124, by USPS first-class mail on:

Adam Smith  
Asst. Deschutes County Legal Counsel  
1300 NW Wall Street, Suite 205  
Bend, OR 97701

Timothy Ramis  
Jordan Ramis PC  
Two Centerpointe Dr., 6<sup>th</sup> Floor  
Lake Oswego, OR 97734

Tia M. Lewis  
Schwabe Williamson & Wyatt PC  
360 SW Bond St., Ste. 500  
Bend, OR 97702

Fred and Teresa Netter  
P.O. Box 22  
Terrebonne, OR 97760

DATED this 31<sup>st</sup> day of January, 2019.

---

Rory Isbell, OSB #173780  
Attorney for Petitioner Central  
Oregon LandWatch

**APPENDIX**

	<b>Rec.</b>	<b>App.</b>
Decision of the Board of Commissioners (Ordinance No. 2018-005) September 19, 2018	7	1
Excerpt of Deschutes County Ordinance No. 92-041, Inventories, Conflict Analysis and ESEE Determinations for Fish and Wildlife	1171	101
Excerpt of 1979 Deschutes County Code	-	186
Excerpt of 1979 Deschutes County Comprehensive Plan	-	195
Excerpt of Deschutes County Ordinance No. 86-020, Deschutes County/City of Bend River Study	-	200
LCDC Remand Order 93-RA-883	-	2-3
Deschutes County Ordinance No. 94-007, ESEE Conflict Analysis and Decision for Wetlands and Riparian Areas	-	210
1979 Comprehensive Plan Goal Exception Statement	-	237
Current DCCP Goal Exception Statements	-	253



For Recording Stamp Only

BEFORE THE BOARD OF COUNTY COMMISSIONERS OF DESCHUTES COUNTY, OREGON

An Ordinance Amending Deschutes County Code Title 18, Deschutes County Zoning, and Title 23, the Deschutes County Comprehensive Plan, Changing the Flood Plain Zone to a Combining Zone and Incorporating Related Text Amendments and Declaring an Emergency.

\*
\*
\*
\*
\*

ORDINANCE NO. 2018-005

WHEREAS, the Deschutes County Community Development Department (CDD) proposed a zone change (file no. 247-17-000140-ZC) to DCC Title 18, Deschutes County Zoning Map, to change the Flood Plain Zone from a primary zone to a combining zone; and

WHEREAS, as a related matter, the Deschutes County CDD initiated amendments (Planning Division File No. 247-17-000141-PA) to the Deschutes County Comprehensive Plan, Chapter 2, Resource Management, Appendix B, Tumalo Community Plan, Appendix D, Newberry Country Plan, and Appendix 5.4, Newberry Country Zoning Map; and

WHEREAS, as a related matter, the Deschutes County CDD last initiated amendments (Planning Division File Nos. 247-17-000142-TA) to Deschutes County Code ("DCC") Title 18, County Zoning; and

WHEREAS, the Deschutes County Planning Commission reviewed the proposed changes on April 13, 2017, and December 14, 2017, and forwarded to the Deschutes County Board of County Commissioners ("Board"), a recommendation of approval; and

WHEREAS, the Board considered these changes during a duly noticed public hearing on November 8, 2017; and

WHEREAS, the Board deliberated on the amendments on March 19, 2018, April 2, 2018, and September 12, 2018, and concluded that the public will benefit from the proposed changes; now, therefore,

THE BOARD OF COUNTY COMMISSIONERS OF DESCHUTES COUNTY, OREGON, ORDAINS as follows:

Section 1. AMENDMENT. DCC Title 18, Zoning Map, is amended to change the zone designation from Flood Plain ("FP") to Flood Plain Combining for certain property depicted on the maps set forth as Exhibit "A", attached hereto and by this reference incorporated herein.

Section 2. AMENDMENT. DCC 23.01.010, Introduction, is amended to read as described in Exhibit "B," attached hereto and by this reference incorporated herein, with new language underlined.

///

Section 3. AMENDMENT. Deschutes County Comprehensive Plan Chapter 2, Resource Management, is amended to read as described in Exhibit “C,” attached hereto and by this reference incorporated herein, with new language underlined and language to be deleted in ~~strikethrough~~.

Section 4. AMENDMENT. Deschutes County Comprehensive Plan Appendix B, Tumalo Community Plan, is amended to read as described in Exhibit “D,” attached hereto and by this reference incorporated herein, with new language underlined and language to be deleted in ~~strikethrough~~.

Section 5. AMENDMENT. Deschutes County Comprehensive Plan Appendix D, Newberry Country Plan, is amended to read as described in Exhibit “E,” attached hereto and by this reference incorporated herein, with new language underlined and language to be deleted in ~~strikethrough~~.

Section 6. AMENDMENT. Deschutes County Comprehensive Plan Appendix 5.4, Newberry Country Zoning Map, is amended to remove the Flood Plain (“FP”) zone designation for certain property depicted on the map set forth as Exhibit “F”, attached hereto and by this reference incorporated herein.

Section 7. AMENDMENT. Deschutes County Comprehensive Plan Chapter 5, Supplementary Sections, is amended to read as described in Exhibit “G,” attached hereto and by this reference incorporated herein, with new language underlined and language to be deleted in ~~strikethrough~~.

Section 8. AMENDMENT. DCC 18.04.030, Definitions, is amended to read as described in Exhibit “H,” attached hereto and by this reference incorporated herein, with new language underlined and language to be deleted in ~~strikethrough~~.

Section 9. AMENDMENT. DCC 18.12.010, Establishment of Zones, is amended to read as described in Exhibit “I,” attached hereto and by this reference incorporated herein, with new language underlined and language to be deleted in ~~strikethrough~~.

Section 10. AMENDMENT. DCC 18.61.030, La Pine Planning Area, is amended to read as described in Exhibit “J,” attached hereto and by this reference incorporated herein, with new language underlined and language to be deleted in ~~strikethrough~~.

Section 11. AMENDMENT. DCC 18.96.010, Purposes, 18.96.020, Designated Areas, 18.96.030, Uses Permitted Outright, 18.96.040, Conditional uses permitted, 18.96.070, Application for Conditional Use, 18.96.090, Yard and Setback Requirements, and 18.96.110, Dimensional Standards, are amended to read as described in Exhibit “K,” attached hereto and by this reference incorporated herein, with new language underlined and language to be deleted in ~~strikethrough~~.

Section 12. AMENDMENT. DCC 18.113.060, Standards for Destination Resorts, is amended to read as described in Exhibit “L,” attached hereto and by this reference incorporated herein, with new language underlined and language to be deleted in ~~strikethrough~~.

Section 13. AMENDMENT. DCC 18.116.260, Rock Crushing Outside the SM Zone, and 18.116.270, Conducting Filming Activities in All Zones, are amended to read as described in Exhibit “M,” attached hereto and by this reference incorporated herein, with new language underlined and language to be deleted in ~~strikethrough~~.

///

Section 14. AMENDMENT. DCC 18.124.030, Approval Required, is amended to read as described in Exhibit "N," attached hereto and by this reference incorporated herein, with new language underlined and language to be deleted in ~~strikethrough~~.

Section 15. AMENDMENT. DCC 18.128.200, Cluster Development (Single Family Residential Uses Only), and 18.128.210, Planned Development, are amended to read as described in Exhibit "O," attached hereto and by this reference incorporated herein, with new language underlined and language to be deleted in ~~strikethrough~~.

Section 16. FINDINGS. The Board adopts as its findings Exhibit "P", attached and incorporated by reference herein.

Section 17. EMERGENCY. This Ordinance being necessary for the immediate preservation of the public peace, health and safety, an emergency is declared to exist, and this Ordinance becomes effective 21 days after the date of adoption.

Dated this 19 of September, 2018

BOARD OF COUNTY COMMISSIONERS  
OF DESCHUTES COUNTY, OREGON

  
\_\_\_\_\_  
ANTHONY DEBONE, Chair

  
\_\_\_\_\_  
PHILIP G. HENDERSON, Vice Chair

  
\_\_\_\_\_  
TAMMY BANEY, Commissioner

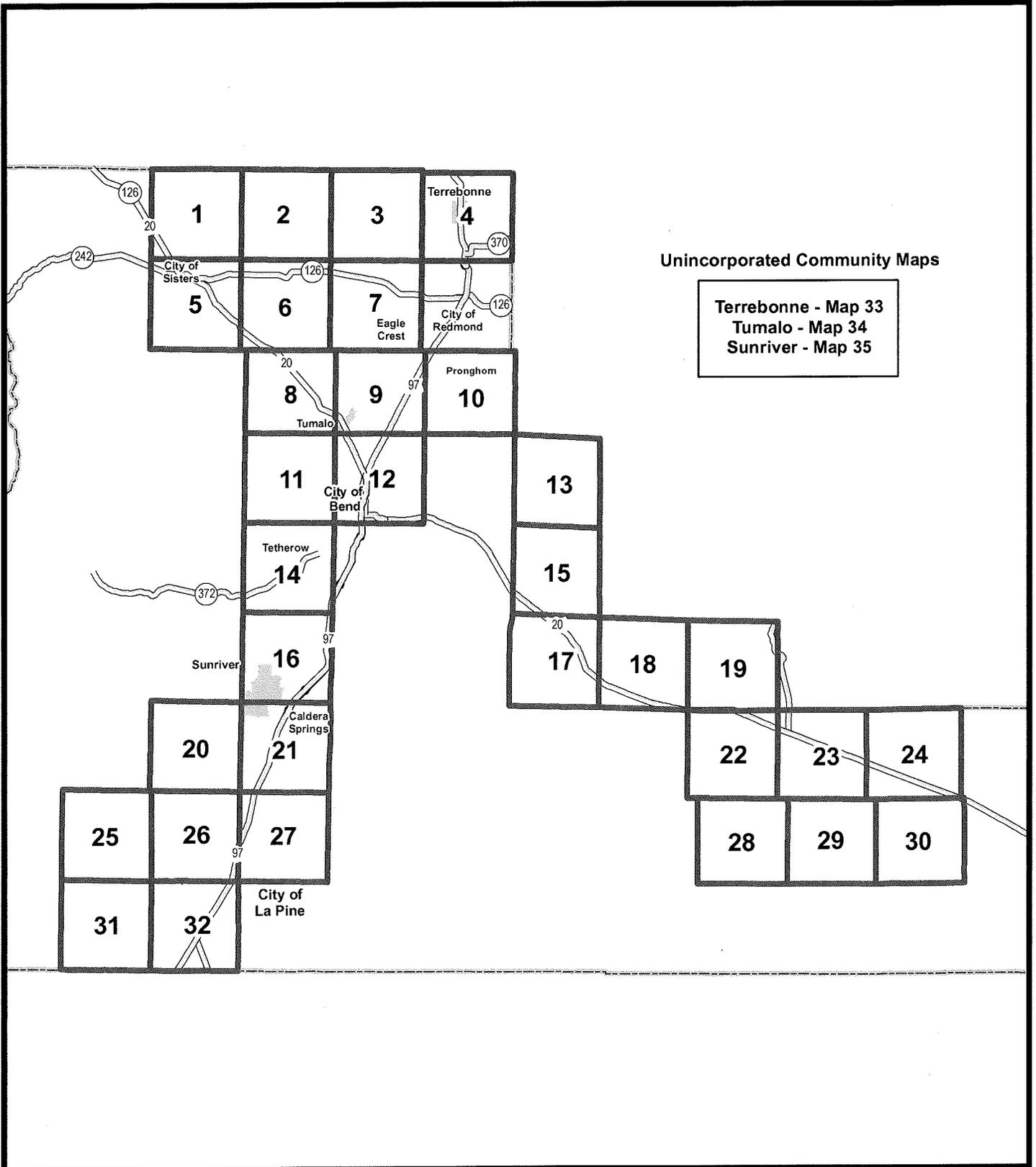
ATTEST:  
  
\_\_\_\_\_  
Recording Secretary

Date of 1<sup>st</sup> Reading: 19 day of September, 2018.

Date of 2<sup>nd</sup> Reading: 19 day of September, 2018.

Commissioner	Record of Adoption Vote:			
	Yes	No	Abstained	Excused
Anthony DeBone	<u>X</u>	—	—	—
Philip G. Henderson	<u>X</u>	—	—	—
Tammy Baney	<u>X</u>	—	—	—

Effective date: 10 day of October, 2018.



Unincorporated Community Maps

Terrebonne - Map 33  
 Tumalo - Map 34  
 Sunriver - Map 35

**Deschutes County  
 Flood Plain Combining Zone**

Ordinance 2018-005

Exhibit "A"

**Legend**

- Flood Plain Index
- State Highway
- County Boundary
- Unincorporated Community
- Urban Growth Boundary

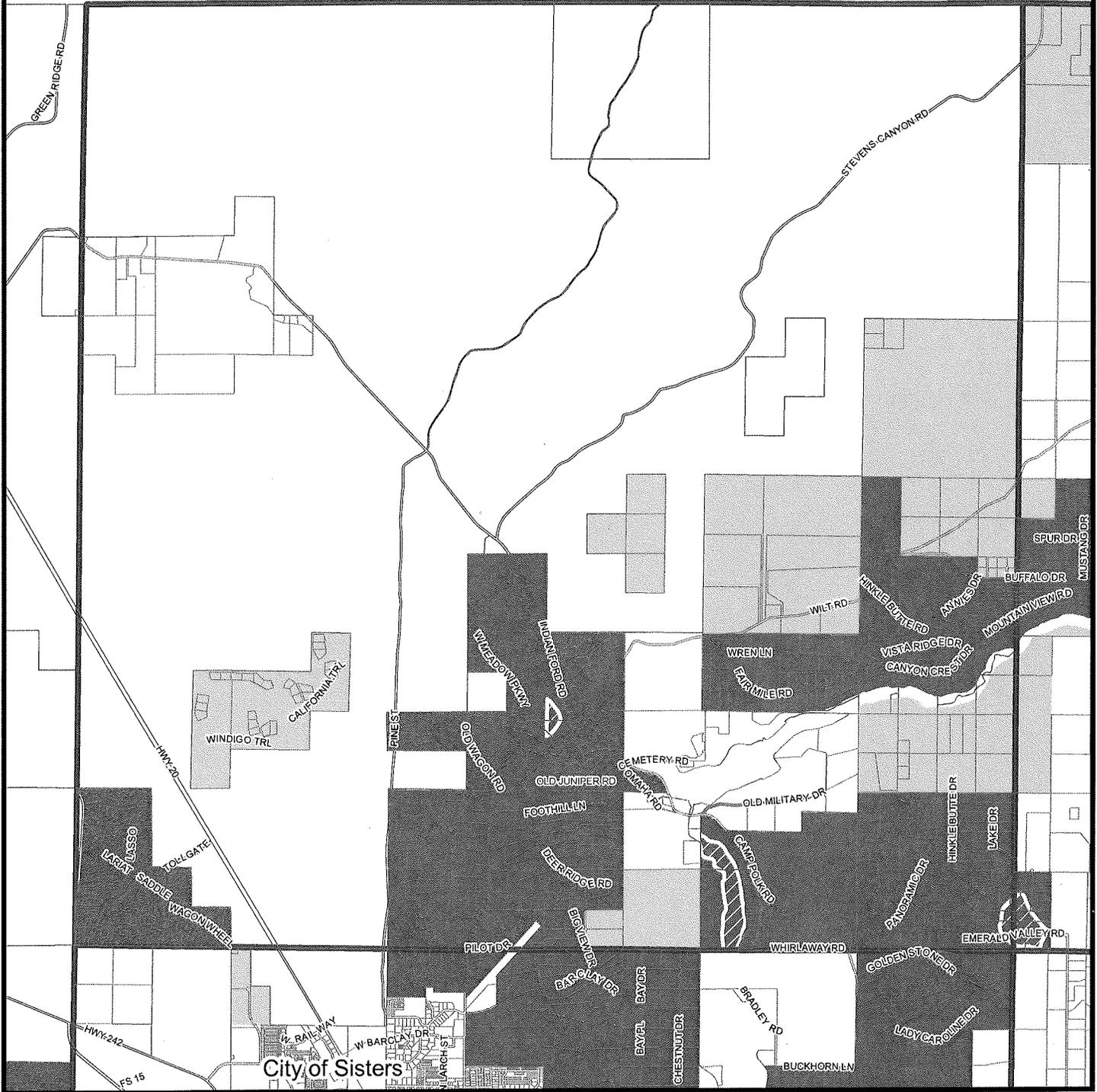


May 9, 2018  
 462



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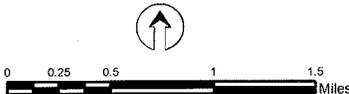
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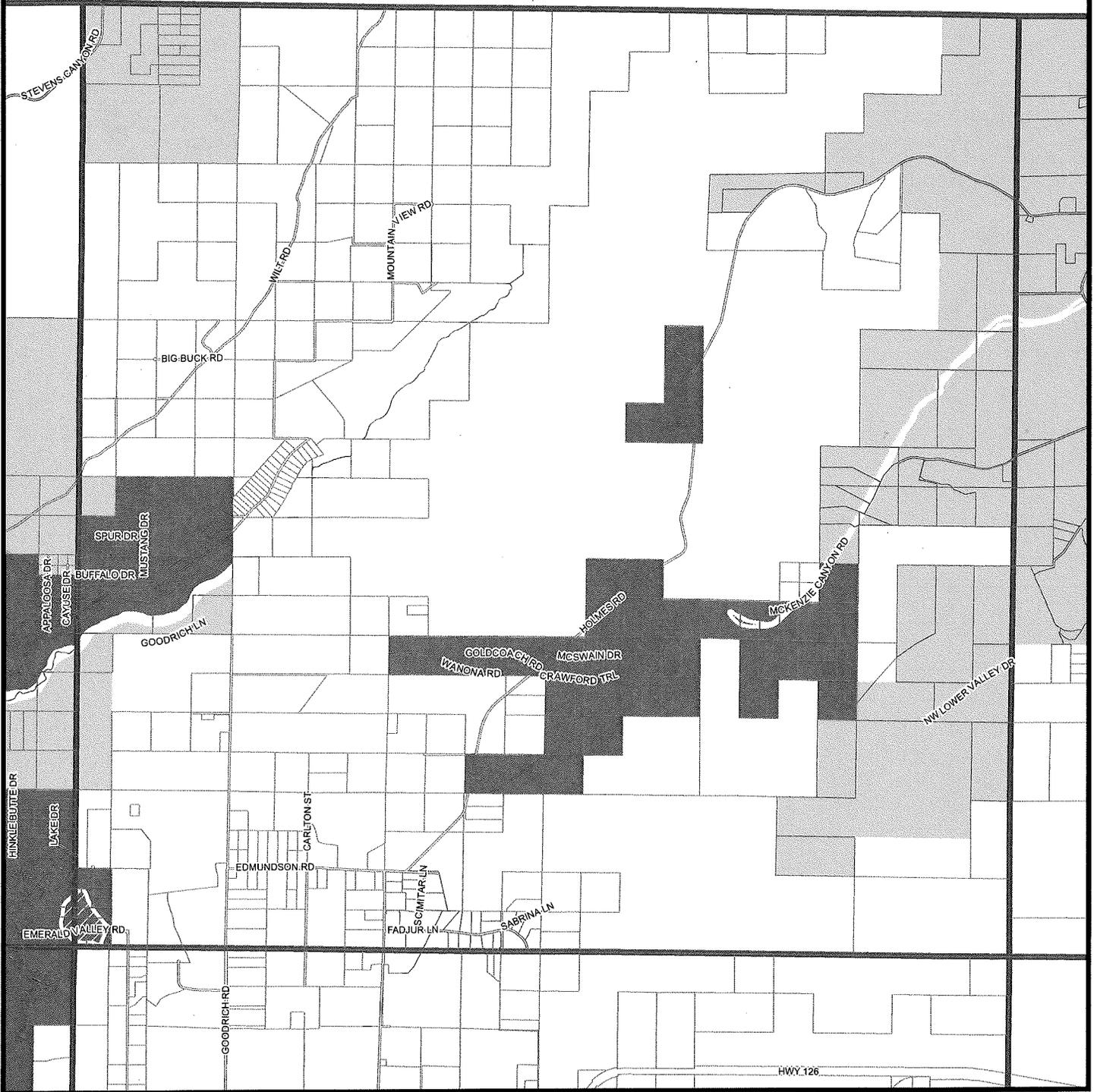
# Flood Plain Combining Zone

Map 1 of 35

- Legend**
- Index
  - Unincorporated Community
  - Flood Plain Overlay Zone
  - County Zoning**
  - ADD - Airfield Operations District
  - ASD - Aviation Support District
  - ASDRA - Aviation Support District Reserve Area
  - ARID - Aviation Related Industrial District
  - ARIDRA - Aviation Related Industrial District Reserve Area
  - EFUAL - Alfalfa Subzone
  - EFUHR - Horse Ridge Subzone
  - EFULA - La Pine Subzone
  - EFULB - Lower Bridge Subzone
  - EFUSC - Sisters/Cloverdale Subzone
  - EFUTE - Terrebonne Subzone
  - EFUTRB - Tumalo/Redmond/Bend Subzone
  - F1 - Forest Use 1
  - F2 - Forest Use 2
  - MUA10 - Multiple Use Agricultural
  - OS&C - Open Space & Conservation
  - RI - Rural Industrial
  - RC - Rural Commercial
  - RR10 - Rural Residential
  - SM - Surface Mining
  - SMURA - Surface Mining URA
  - UAR10 - Urban Area Reserve - 10 Acre Minimum
  - SR 2.5 - Residential 2.5 Acre Minimum



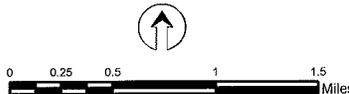
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### Flood Plain Combining Zone

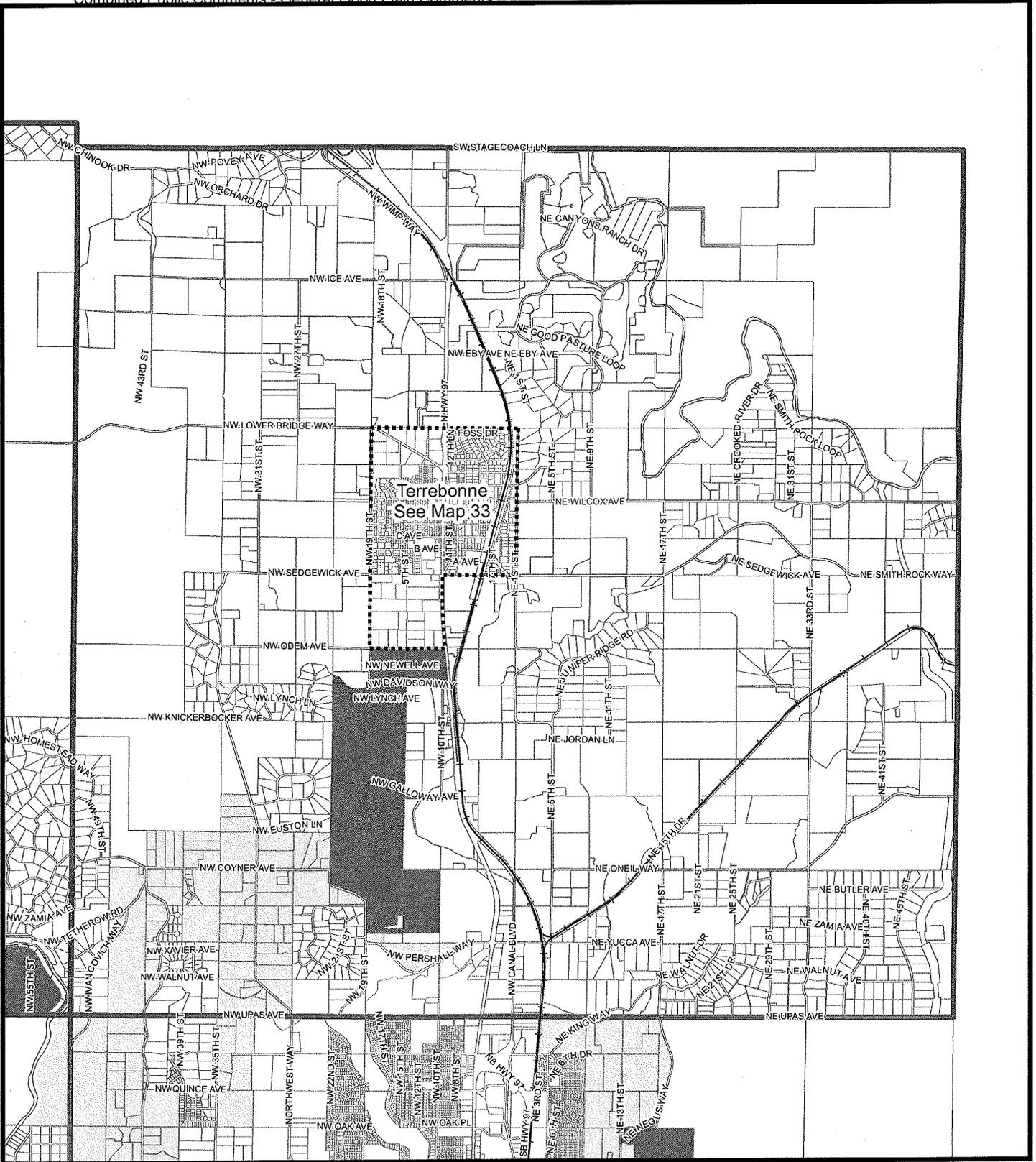
Map 2 of 35

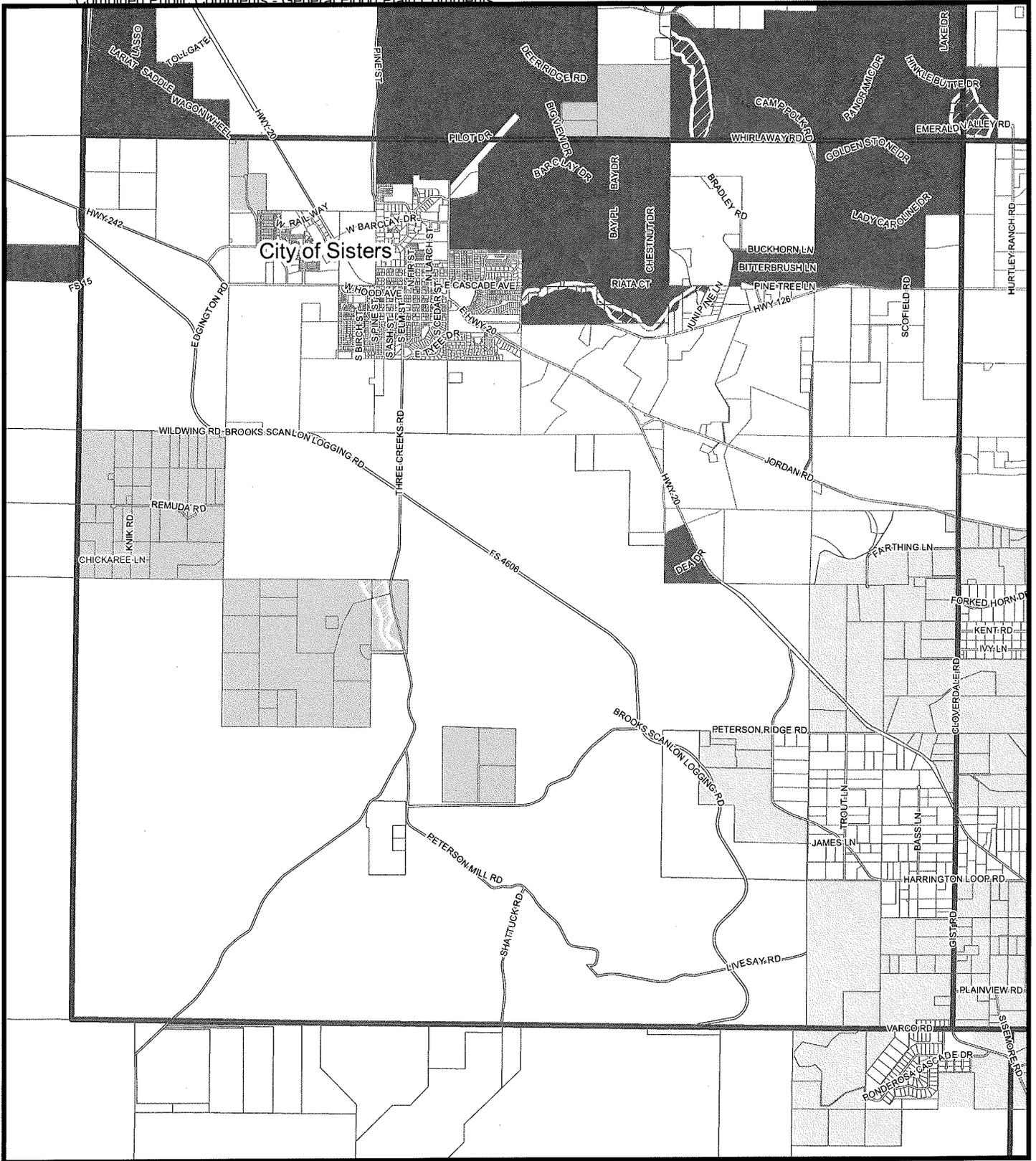
- Legend**
- Index
  - Unincorporated Community
  - Flood Plain Overlay Zone
  - County Zoning**
  - AOD - Airfield Operations District
  - ASD - Aviation Support District
  - ASDRA - Aviation Support District Reserve Area
  - ARID - Aviation Related Industrial District
  - ARIDRA - Aviation Related Industrial District Reserve Area
  - EFULAL - Fallala Subzone
  - EFUHR - Horse Ridge Subzone
  - EFULA - La Pine Subzone
  - EFULB - Lower Bridge Subzone
  - EFUSC - Sisters/Cloverdale Subzone
  - EFUTE - Turrellona Subzone
  - EFUTRB - Tumble/Redmond/Bend Subzone
  - F1 - Forest Use 1
  - F2 - Forest Use 2
  - MJA10 - Multiple Use Agricultural
  - OS&C - Open Space & Conservation
  - RI - Rural Industrial
  - RC - Rural Commercial
  - RR10 - Rural Residential
  - SM - Surface Mining
  - SMURA - Surface Mining URA
  - UAR10 - Urban Area Reserve - 10 Acre Minimum
  - SR 2.5 - Residential 2.5 Acre Minimum



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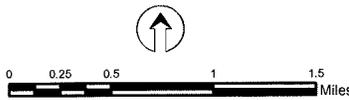




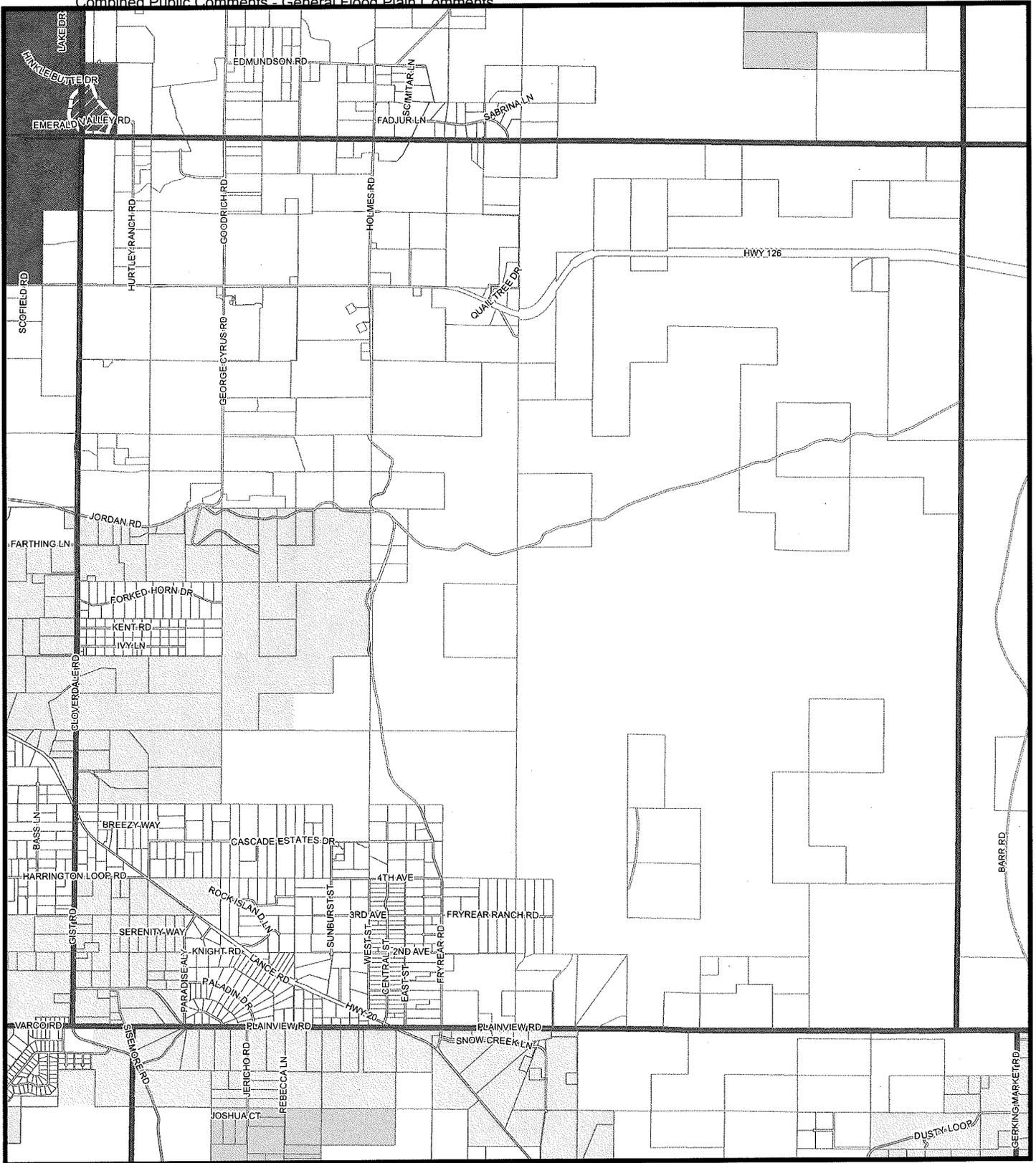
# Flood Plain Combining Zone

Map 5 of 35

- Legend**
- Index
  - Unincorporated Community
  - Flood Plain Overlay Zone
  - County Zoning**
  - AOD - Airfield Operations District
  - ASD - Aviation Support District
  - ASDRA - Aviation Support District Reserve Area
  - ARID - Aviation Related Industrial District
  - ARIDRA - Aviation Related Industrial District Reserve Area
  - EFUAL - Alfalfa Subzone
  - EFUHR - Horse Ridge Subzone
  - EFULA - La Pine Subzone
  - EFULB - Lower Bridge Subzone
  - EFUSC - Sisters/Cloverdale Subzone
  - EFUTE - Terrebonne Subzone
  - EFUTRB - Tumalo/Redmond/Bend Subzone
  - F1 - Forest Use 1
  - F2 - Forest Use 2
  - MUA10 - Multiple Use Agricultural
  - OS&C - Open Space & Conservation
  - RI - Rural Industrial
  - RC - Rural Commercial
  - RR10 - Rural Residential
  - SM - Surface Mining
  - SMURA - Surface Mining URA
  - UAR10 - Urban Area Reserve - 10 Acre Minimum
  - SR 2.5 - Residential 2.5 Acre Minimum



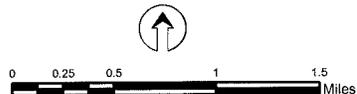
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# Flood Plain Combining Zone

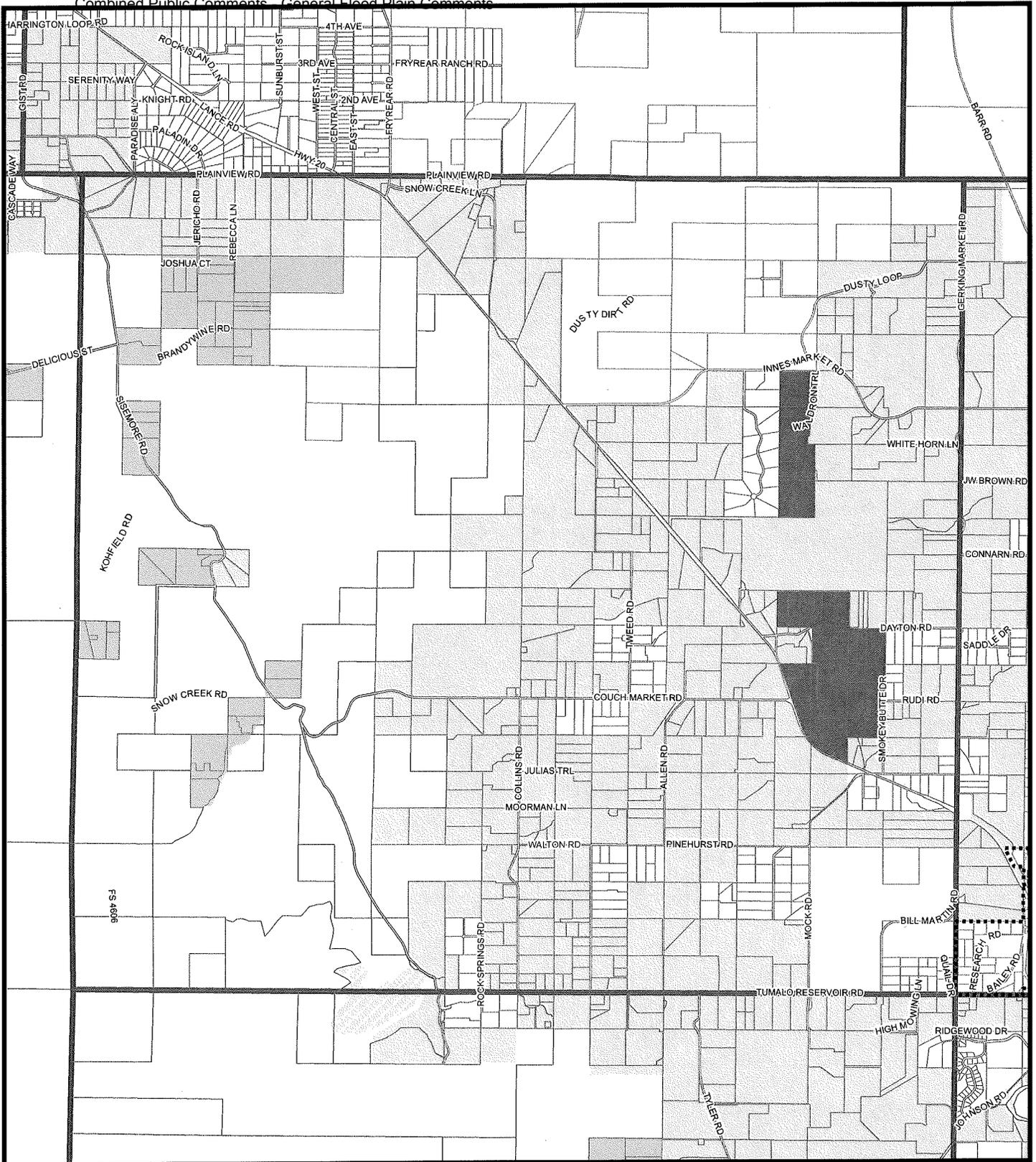
Map 6 of 35

- Legend**
- Index
  - Unincorporated Community
  - Flood Plain Overlay Zone
  - County Zoning**
  - AOD - Airfield Operations District
  - ASD - Aviation Support District
  - ASDRA - Aviation Support District Reserve Area
  - ARID - Aviation Related Industrial District
  - ARIDRA - Aviation Related Industrial District Reserve Area
  - EFUAL - Atfalpa Subzone
  - EFUHR - Horse Ridge Subzone
  - EFULA - La Pine Subzone
  - EFULB - Lower Bridge Subzone
  - EFUSC - Sisters/Cloverdale Subzone
  - EFUTE - Terrebonne Subzone
  - EFUTRB - Tumalo/Redmond/Bend Subzone
  - F1 - Forest Use 1
  - F2 - Forest Use 2
  - MJA10 - Multiple Use Agricultural
  - OS&C - Open Space & Conservation
  - RI - Rural Industrial
  - RC - Rural Commercial
  - RR10 - Rural Residential
  - SM - Surface Mining
  - SMURA - Surface Mining LRA
  - UAR10 - Urban Area Reserve - 10 Acre Minimum
  - SR 2.5 - Residential 2.5 Acre Minimum



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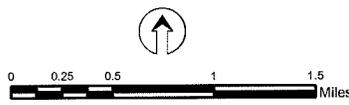




# Flood Plain Combining Zone

Map 8 of 35

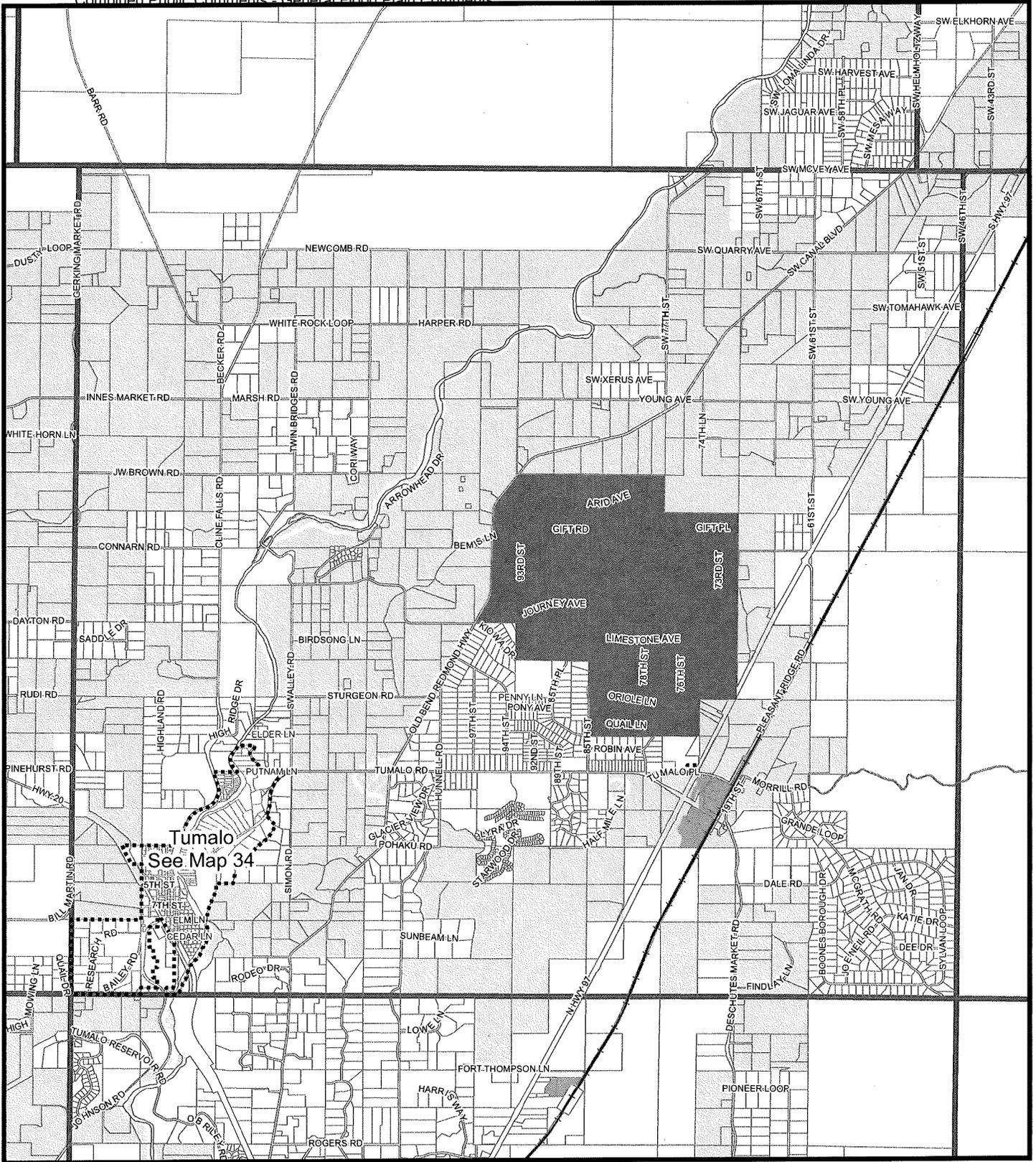
- Legend**
- Index
  - Unincorporated Community
  - Flood Plain Overlay Zone
  - County Zoning**
  - ADD - Airfield Operations District
  - ASD - Aviation Support District
  - ASDRA - Aviation Support District Reserve Area
  - ARID - Aviation Related Industrial District
  - ARIDRA - Aviation Related Industrial District Reserve Area
  - EFUAL - Allalfa Subzone
  - EFUHR - Horse Ridge Subzone
  - EFULA - La Pine Subzone
  - EFULB - Lower Bridge Subzone
  - EFUSC - Sisters/Cloverdale Subzone
  - EFUTE - Terrebonne Subzone
  - EFUTRB - Tumalo/Redmond/Bend Subzone
  - F1 - Forest Use 1
  - F2 - Forest Use 2
  - MJA10 - Multiple Use Agricultural
  - OS&C - Open Space & Conservation
  - RI - Rural Industrial
  - RC - Rural Commercial
  - RR10 - Rural Residential
  - SM - Surface Mining
  - SMLURA - Surface Mining URA
  - UAR10 - Urban Area Reserve - 10 Acre Minimum
  - SR2.5 - Residential 2.5 Acre Minimum



May 2, 2018  
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# Flood Plain Combining Zone

Map 9 of 35

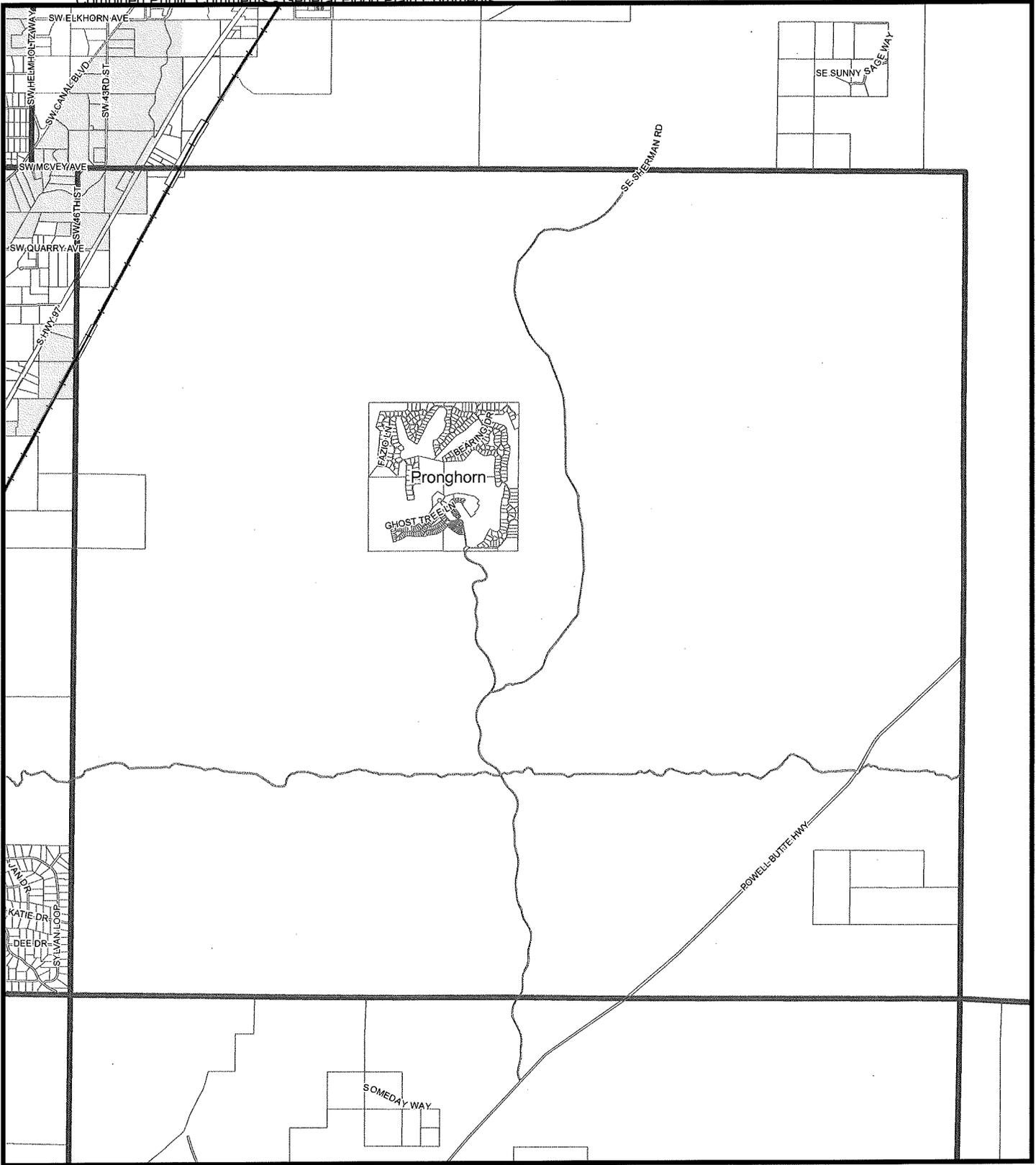
- Legend**
- Index
  - Unincorporated Community
  - Flood Plain Overlay Zone
  - County Zoning**
  - AOD - Airfield Operations District
  - ASD - Aviation Support District
  - ASDRA - Aviation Support District Reserve Area
  - ARID - Aviation Related Industrial District
  - ARIDRA - Aviation Related Industrial District Reserve Area
  - EFUAL - Alfalfa Subzone
  - EFUHR - Horse Ridge Subzone
  - EFULA - La Pine Subzone
  - EFULB - Lower Bridge Subzone
  - EFUSC - Sisters/Cloverdale Subzone
  - EFUTE - Terrebonne Subzone
  - EFUTRB - Tumalo/Redmond/Bend Subzone
  - F1 - Forest Use 1
  - F2 - Forest Use 2
  - MUA10 - Multiple Use Agricultural
  - OS&C - Open Space & Conservation
  - RI - Rural Industrial
  - RC - Rural Commercial
  - RR10 - Rural Residential
  - SM - Surface Mining
  - SMURA - Surface Mining URA
  - UAR10 - Urban Area Reserve - 10 Acre Minimum
  - SR 2.5 - Residential 2.5 Acre Minimum



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# Flood Plain Combining Zone

Map 10 of 35

**Legend**

- Index
- Unincorporated Community
- Flood Plain Overlay Zone
- County Zoning**
- AOD - Airfield Operations District
- ASD - Aviation Support District
- ASDRA - Aviation Support District Reserve Area
- ARID - Aviation Related Industrial District
- ARIDRA - Aviation Related Industrial District Reserve Area
- EFUAL - Allais Subzone
- EFUHR - Horse Ridge Subzone
- EFULA - La Pine Subzone
- EFULB - Lower Bridge Subzone
- EFUSC - Slaters/Cloverdale Subzone

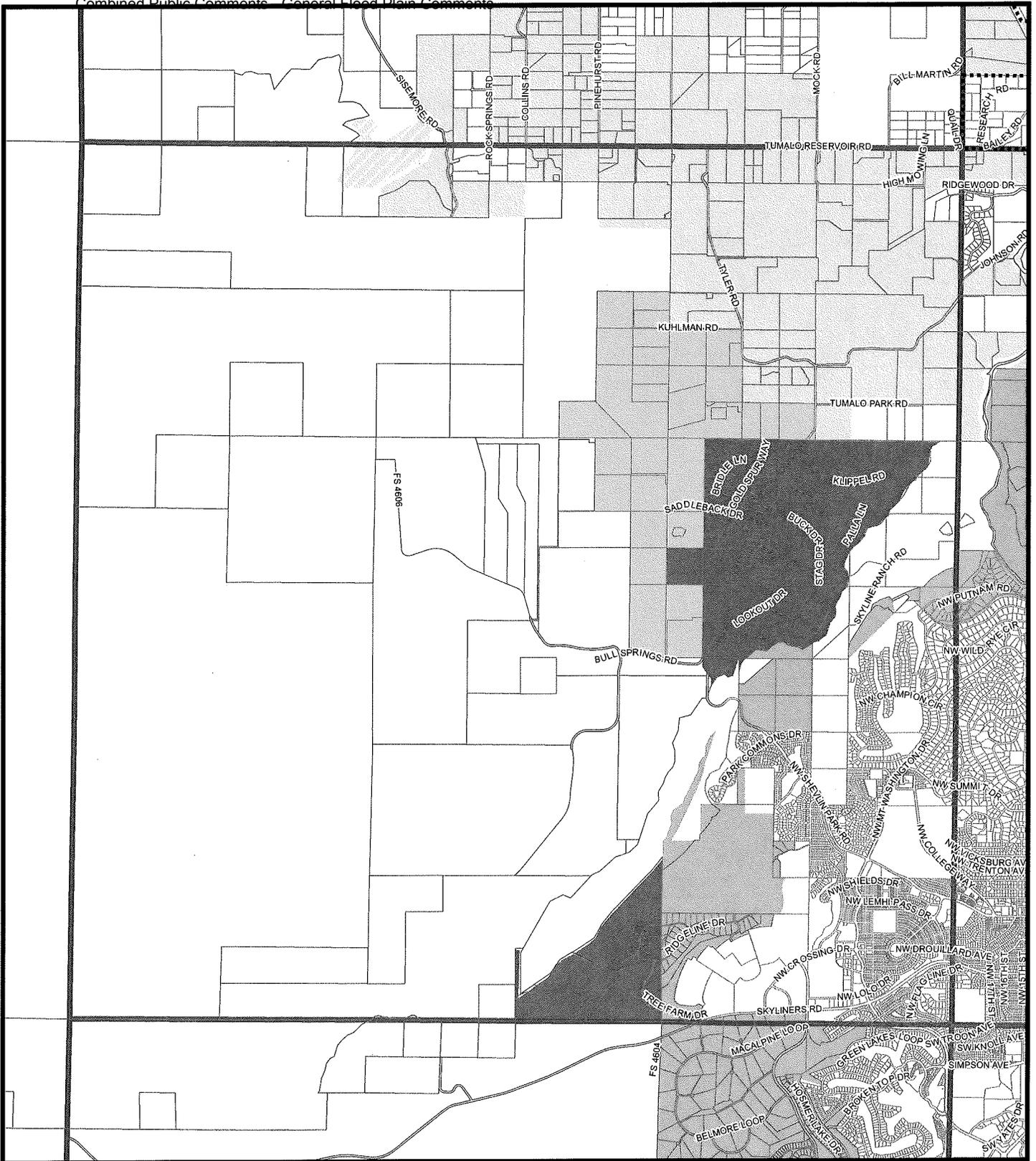
- EFUTE - Terrebonne Subzone
- EFUTRB - Turnalo/Redmond/Bend Subzone
- F1 - Forest Use 1
- F2 - Forest Use 2
- MUA10 - Multiple Use Agricultural
- OS&C - Open Space & Conservation
- RI - Rural Industrial
- RC - Rural Commercial
- RR10 - Rural Residential
- SM - Surface Mining
- SMURA - Surface Mining URA
- UAR10 - Urban Area Reserve - 10 Acre Minimum
- SR 2.5 - Residential 2.5 Acre Minimum

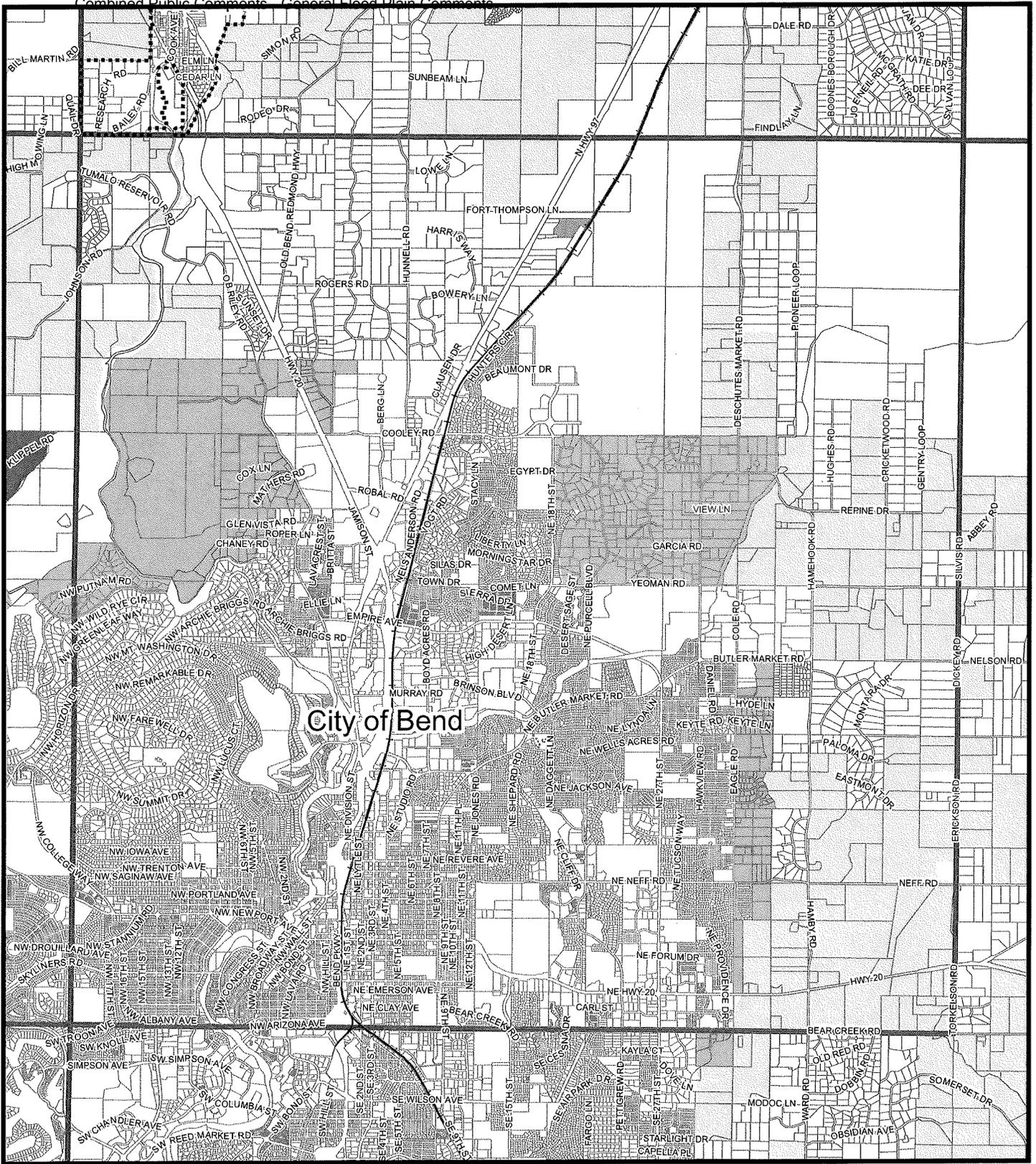


May 2, 2018  
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City of Bend

# Flood Plain Combining Zone

Map 12 of 35

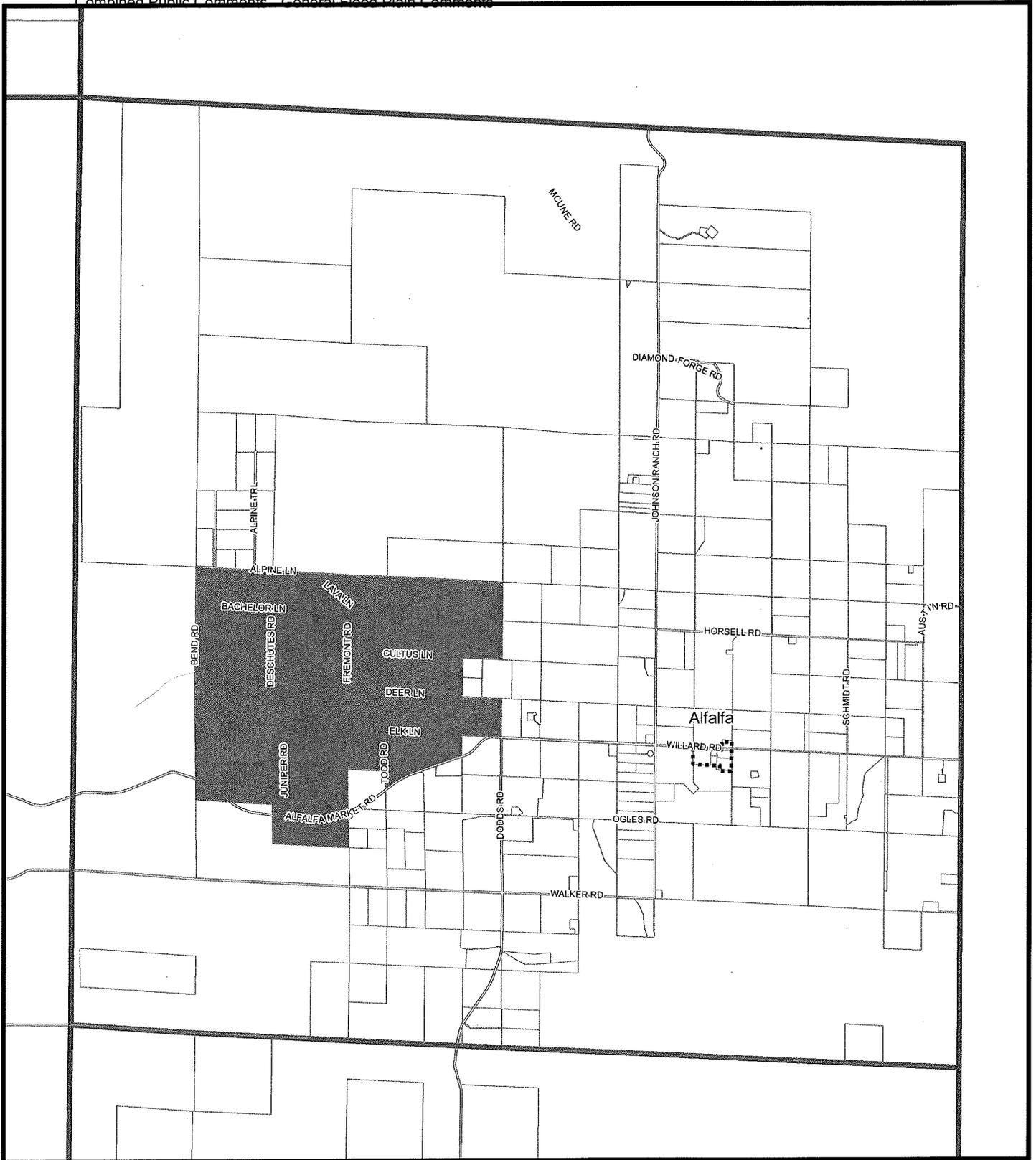
- Legend**
- Index
  - Unincorporated Community
  - Flood Plain Overlay Zone
  - County Zoning**
  - AOD - Airfield Operations District
  - ASD - Aviation Support District
  - ASDRA - Aviation Support District Reserve Area
  - ARID - Aviation Related Industrial District
  - ARIDRA - Aviation Related Industrial District Reserve Area
  - EFUAL - Alfalfa Subzone
  - EFUHR - Horse Ridge Subzone
  - EFULA - La Pine Subzone
  - EFULB - Lower Bridge Subzone
  - EFUSC - Sisters/Cloverdale Subzone
  - EFUTE - Terrebonne Subzone
  - EFUTRB - Tumalo/Redmond/Bend Subzone
  - F1 - Forest Use 1
  - F2 - Forest Use 2
  - MUA10 - Multiple Use Agricultural
  - OS&C - Open Space & Conservation
  - RI - Rural Industrial
  - RC - Rural Commercial
  - RR10 - Rural Residential
  - SM - Surface Mining
  - SMUR - Surface Mining URA
  - UA10 - Urban Area Reserve - 10 Acre Minimum
  - SR 2.5 - Residential 2.5 Acre Minimum



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# Flood Plain Combining Zone

Map 13 of 35

- Legend**
- Index
  - Unincorporated Community
  - Flood Plain Overlay Zone
  - County Zoning**
  - AOD - Airfield Operations District
  - ASD - Aviation Support District
  - ASDRA - Aviation Support District Reserve Area
  - ARID - Aviation Related Industrial District
  - ARIDRA - Aviation Related Industrial District Reserve Area
  - EFUAL - Alfalfa Subzone
  - EFUHR - Horse Ridge Subzone
  - EFULA - La Pine Subzone
  - EFULB - Lower Bridge Subzone
  - EFUSC - Sisters/Cloverdale Subzone

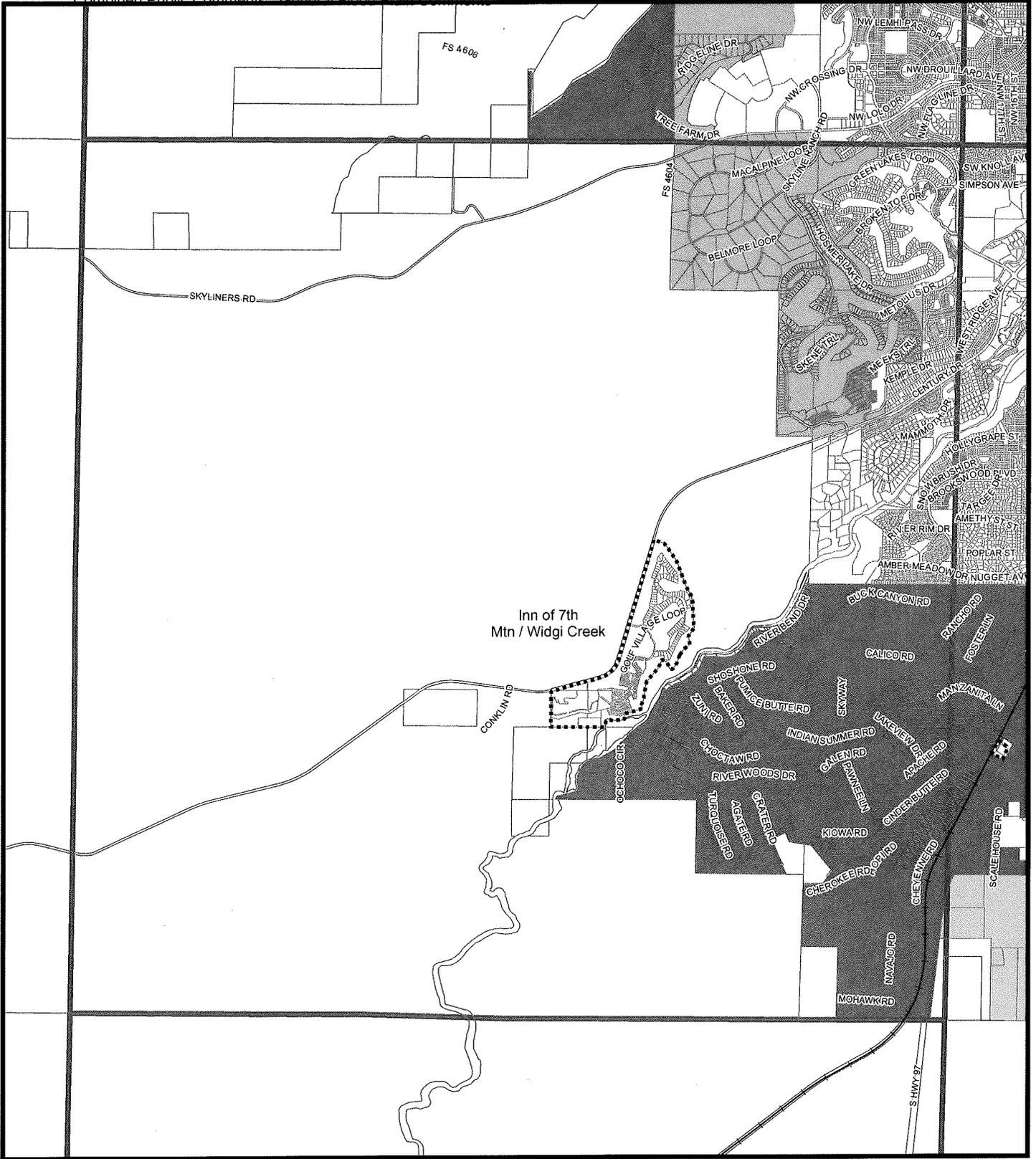
- EFUTE - Terrebonne Subzone
- EFUTRB - Tumalo/Redmond/Bend Subzone
- F1 - Forest Use 1
- F2 - Forest Use 2
- MUA10 - Multiple Use Agricultural
- OS&C - Open Space & Conservation
- RI - Rural Industrial
- RC - Rural Commercial
- RR10 - Rural Residential
- SM - Surface Mining
- SMURA - Surface Mining URA
- UAR10 - Urban Area Reserve - 10 Acre Minimum
- SR 2.5 - Residential 2.5 Acre Minimum



May 2, 2018  
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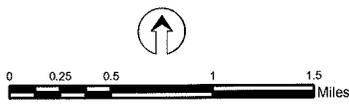
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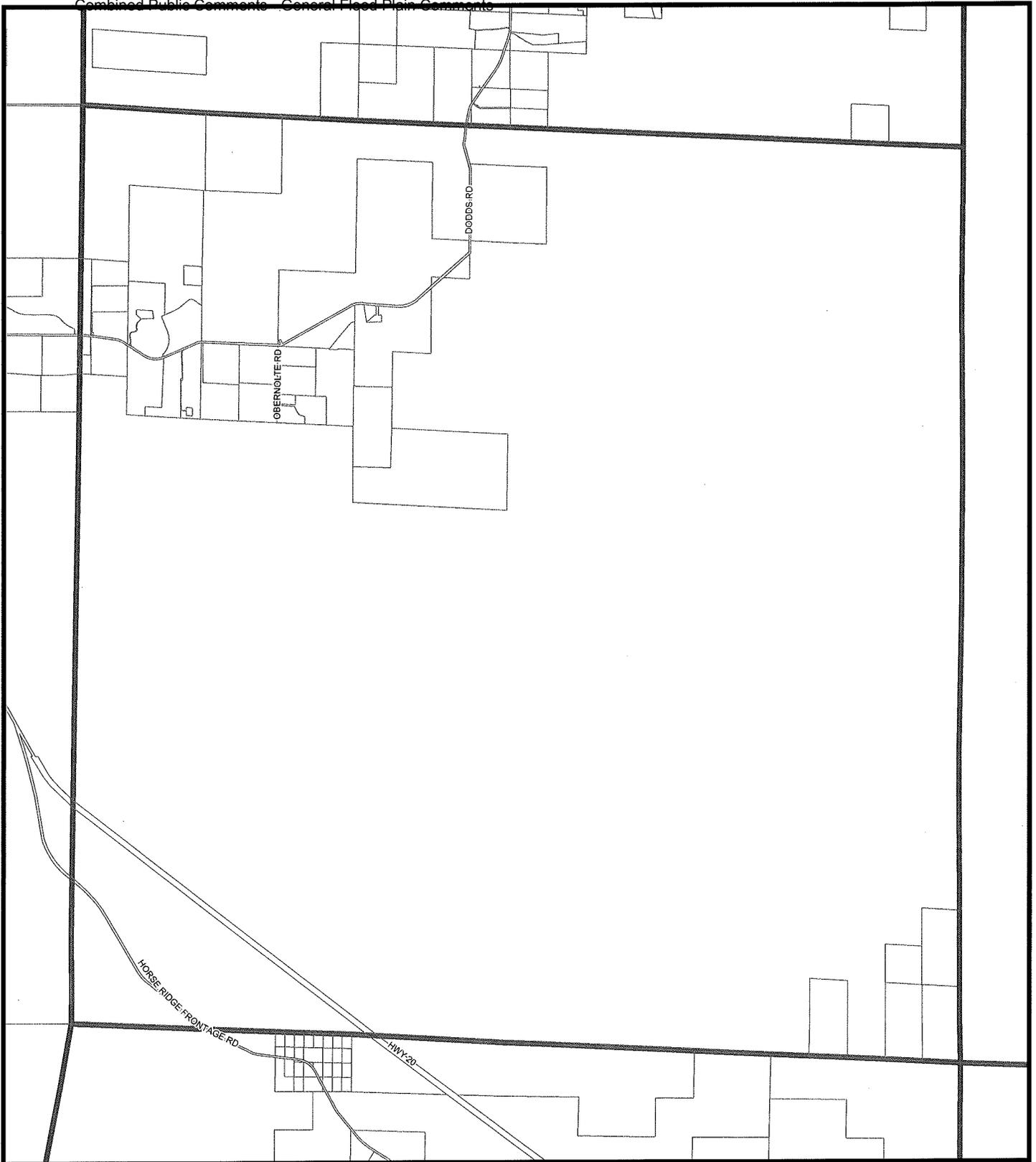
# Flood Plain Combining Zone

Map 14 of 35

- Legend**
- Index
  - Unincorporated Community
  - Flood Plain Overlay Zone
  - County Zoning**
  - AOD - Airfield Operations District
  - ASD - Aviation Support District
  - ASDRA - Aviation Support District Reserve Area
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  - EFULA - La Pine Subzone
  - EFULB - Lower Bridge Subzone
  - EFUSC - Slaters/Cloverdale Subzone
  - EFUTE - Terrebonne Subzone
  - EFUTRB - Tuma/Redmond/Bend Subzone
  - F1 - Forest Use 1
  - F2 - Forest Use 2
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  - OS&C - Open Space & Conservation
  - RI - Rural Industrial
  - RC - Rural Commercial
  - RR10 - Rural Residential
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  - UAR10 - Urban Area Reserve - 10 Acre Minimum
  - SR 2.5 - Residential 2.5 Acre Minimum



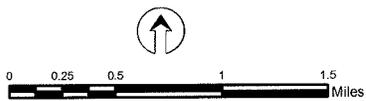
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# Flood Plain Combining Zone

Map 15 of 35

- Legend**
- Index
  - Unincorporated Community
  - Flood Plain Overlay Zone
  - County Zoning**
  - AOD - Airfield Operations District
  - ASD - Aviation Support District
  - ASDRA - Aviation Support District Reserve Area
  - ARID - Aviation Related Industrial District
  - ARIDRA - Aviation Related Industrial District Reserve Area
  - EFUAL - Atfalpa Subzone
  - EFUHR - Horse Ridge Subzone
  - EFULA - La Pine Subzone
  - EFULB - Lower Bridge Subzone
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  - RR10 - Rural Residential
  - SM - Surface Mining
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  - UAR10 - Urban Area Reserve - 10 Acre Minimum
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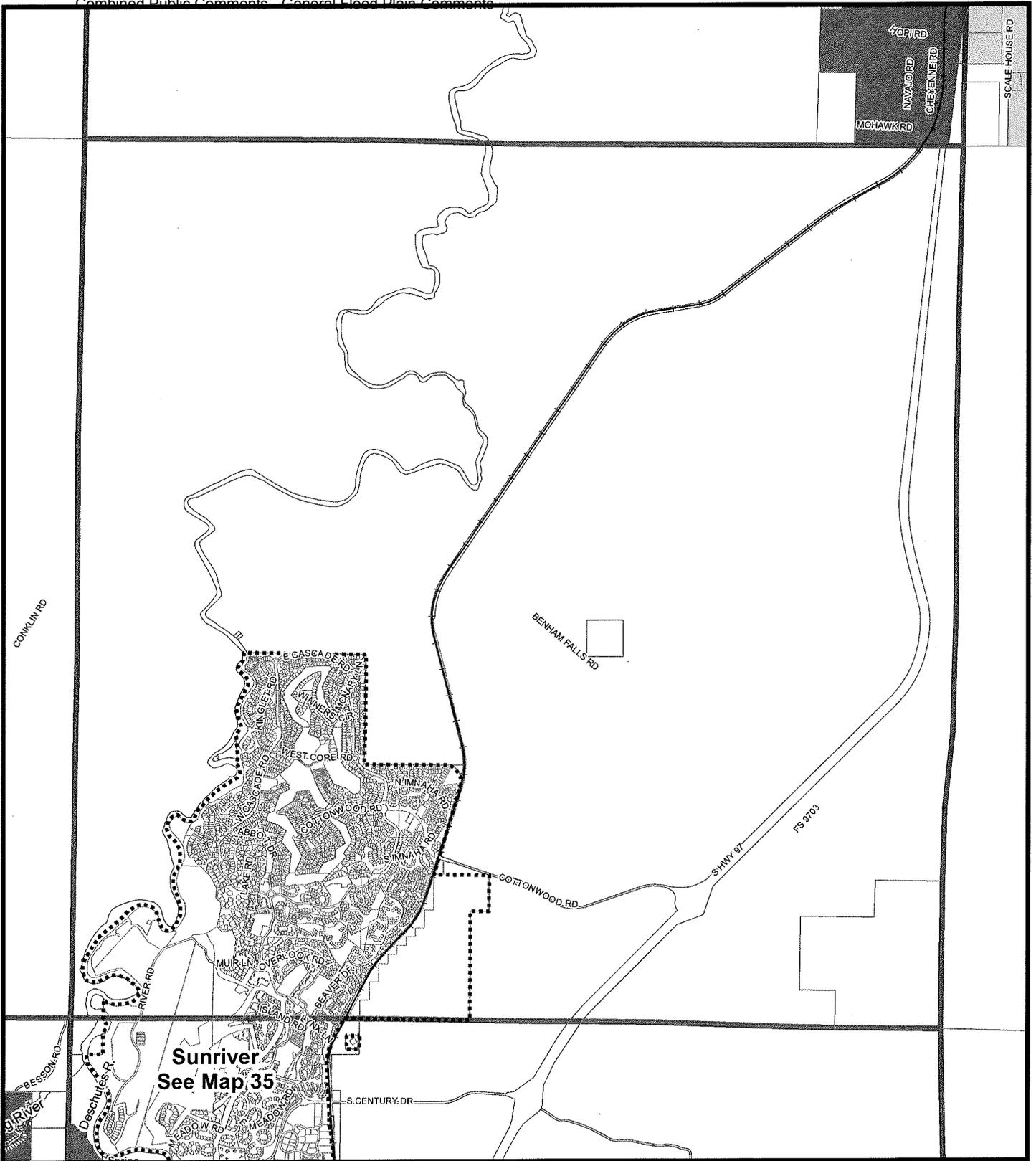


May 2, 2018

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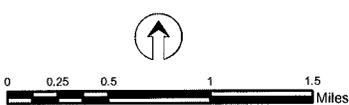
# Flood Plain Combining Zone

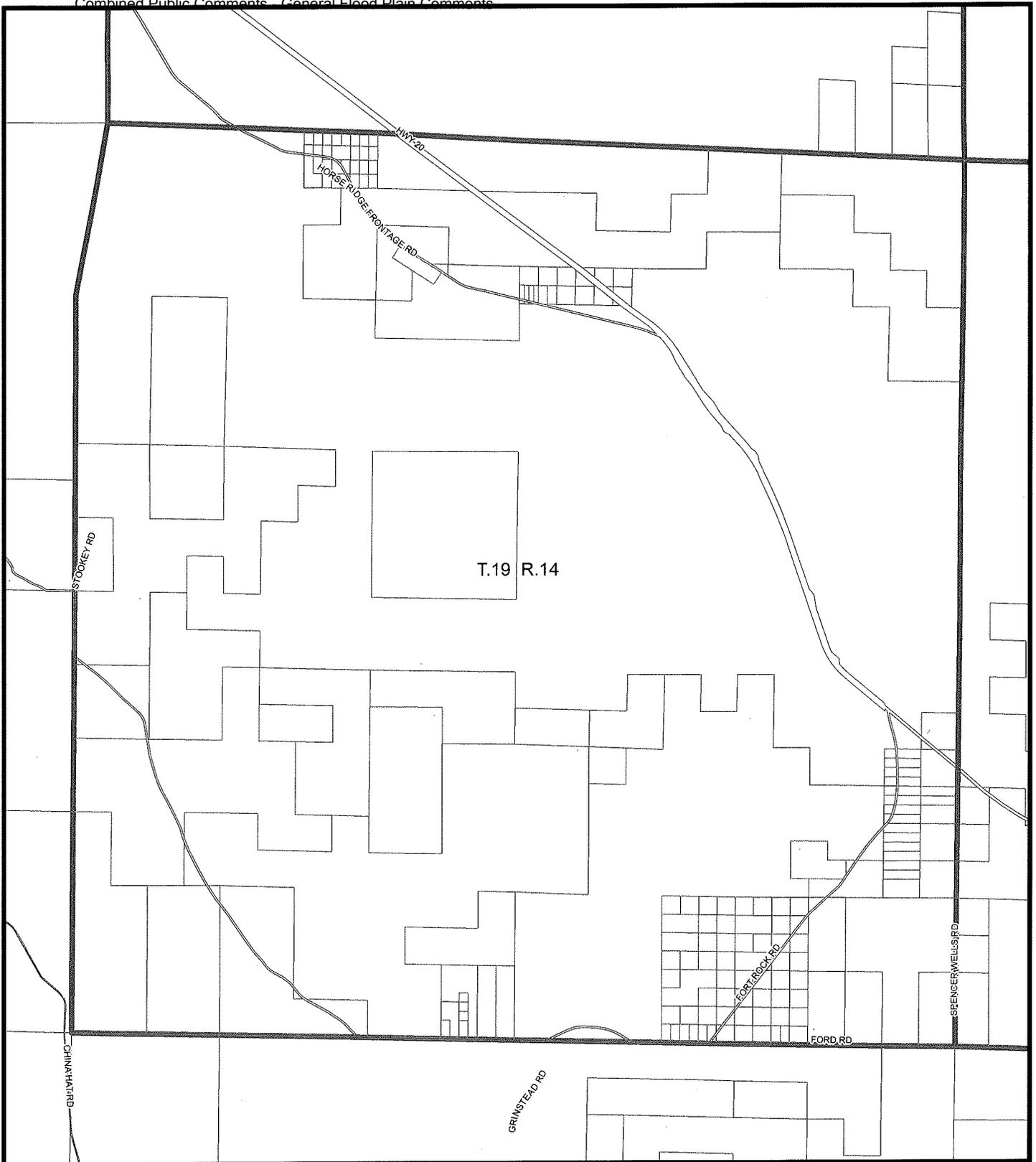
Map 16 of 35

- Legend**
- Index
  - Unincorporated Community
  - Flood Plain Overlay Zone
  - County Zoning**
  - ADD - Airfield Operations District
  - ASD - Aviation Support District
  - ASDRA - Aviation Support District Reserve Area
  - ARID - Aviation Related Industrial District
  - ARIDRA - Aviation Related Industrial District Reserve Area
  - EFUAL - Alfalfa Subzone
  - EFUHR - Horse Ridge Subzone
  - EFULA - La Pine Subzone
  - EFULB - Lower Bridge Subzone
  - EFUSC - Sisters/Cloverdale Subzone
  - EFUTE - Terrebonne Subzone
  - EFUTRB - Tumalo/Redmond/Bend Subzone
  - F1 - Forest Use 1
  - F2 - Forest Use 2
  - MUA10 - Multiple Use Agricultural
  - OS&C - Open Space & Conservation
  - RI - Rural Industrial
  - RC - Rural Commercial
  - RR10 - Rural Residential
  - SM - Surface Mining
  - SMURA - Surface Mining URA
  - UAR10 - Urban Area Reserve - 10 Acre Minimum
  - SR 2.5 - Residential 2.5 Acre Minimum



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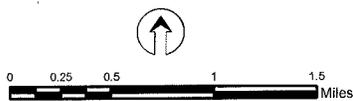




# Flood Plain Combining Zone

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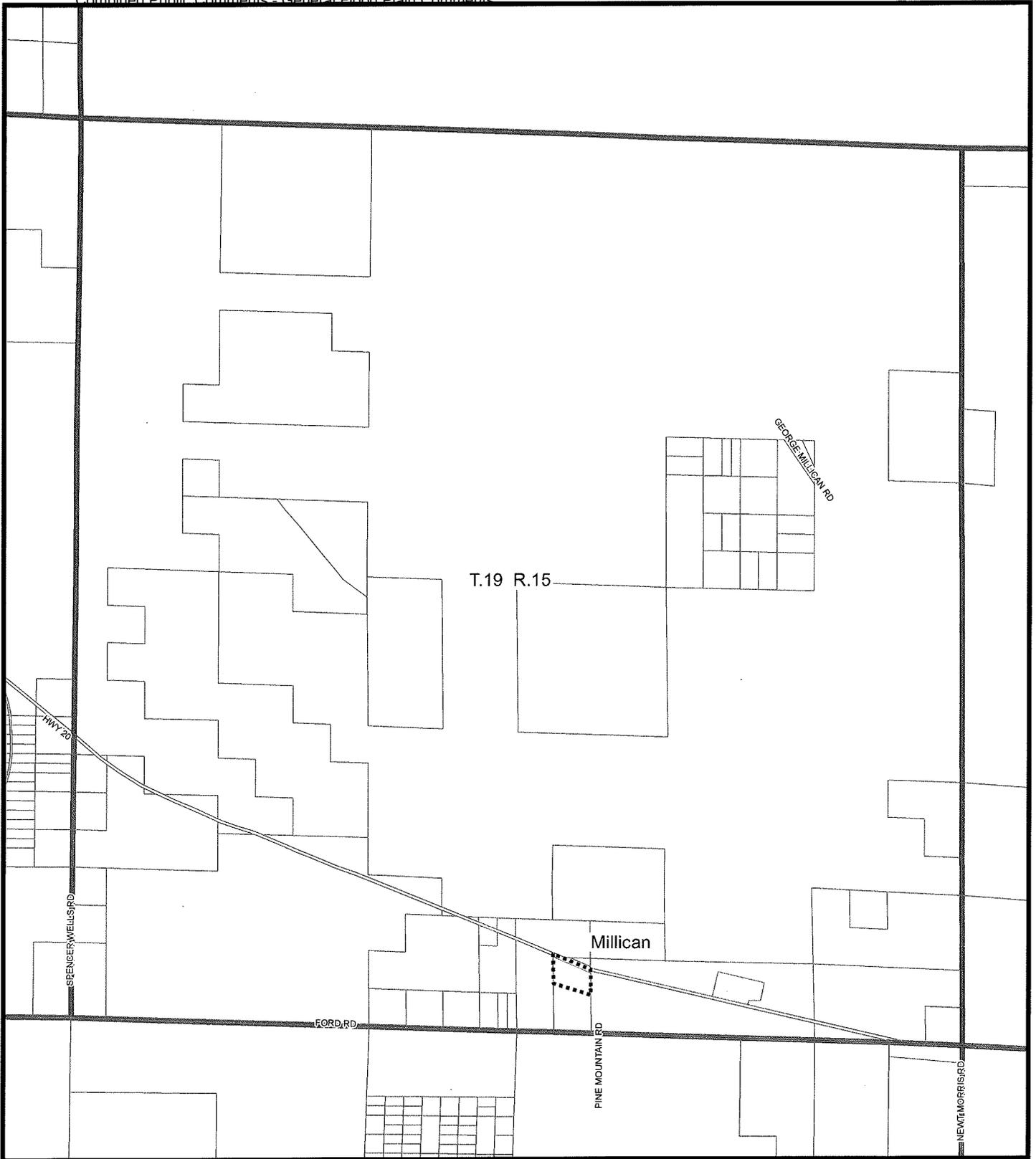
- Legend**
- Index
  - Unincorporated Community
  - Flood Plain Overlay Zone
  - County Zoning**
  - ADD - Airfield Operations District
  - ASD - Aviation Support District
  - ASDRA - Aviation Support District Reserve Area
  - ARID - Aviation Related Industrial District
  - ARIDRA - Aviation Related Industrial District Reserve Area
  - EFUAL - Alfalfa Subzone
  - EFUHR - Horse Ridge Subzone
  - EFULA - La Pine Subzone
  - EFULB - Lower Bridge Subzone
  - EFUSC - Slaters/Cloverdale Subzone
  - EFUTE - Terrebonne Subzone
  - EFUTRB - Turnalo/Redmond/Bend Subzone
  - F1 - Forest Use 1
  - F2 - Forest Use 2
  - MUA10 - Multiple Use Agricultural
  - OS&C - Open Space & Conservation
  - RI - Rural Industrial
  - RC - Rural Commercial
  - RR10 - Rural Residential
  - SM - Surface Mining
  - SMURA - Surface Mining URA
  - UAR10 - Urban Area Reserve - 10 Acre Minimum
  - SR 2.5 - Residential 2.5 Acre Minimum



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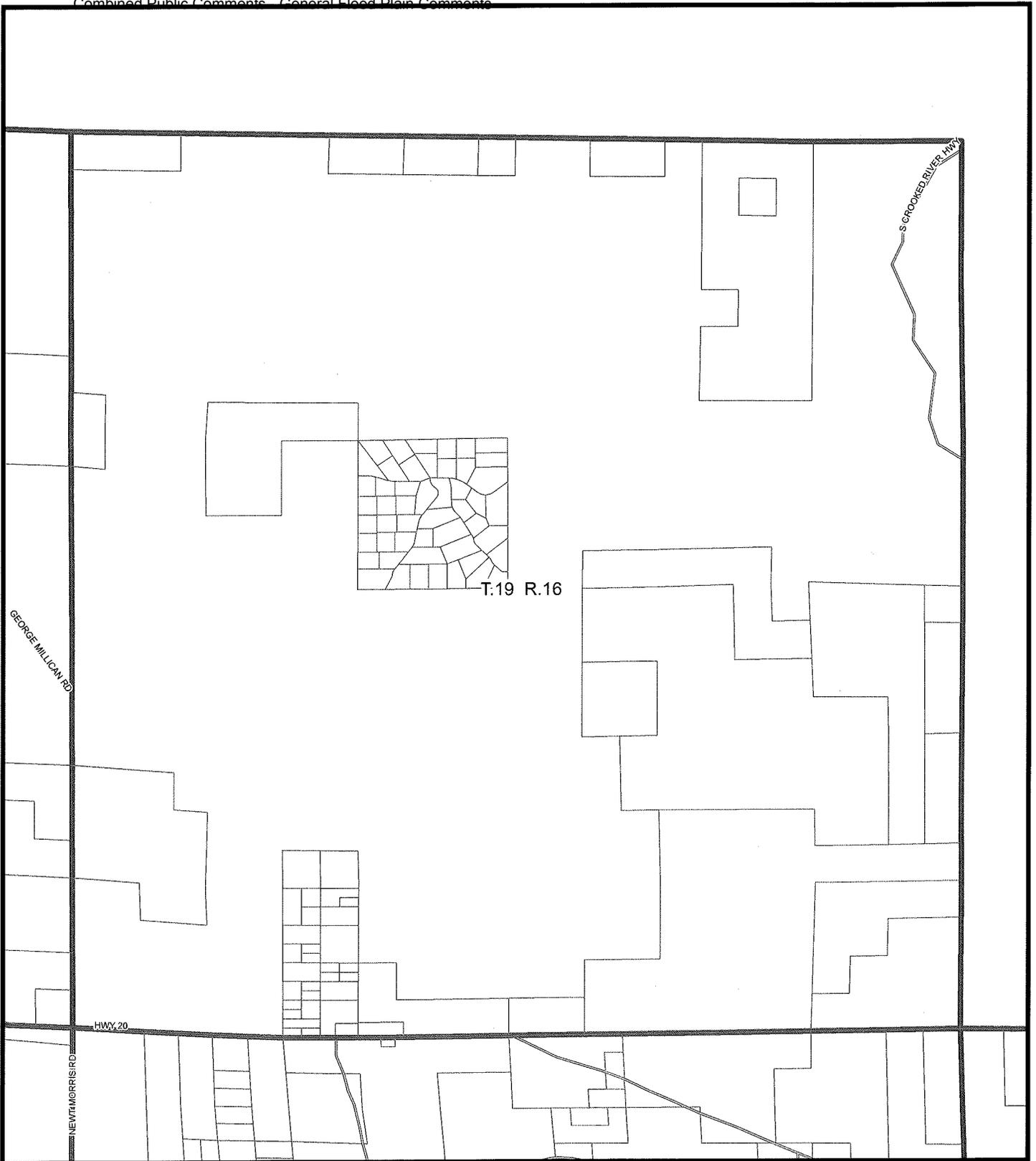
### Flood Plain Combining Zone

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- Legend**
- Index
  - Unincorporated Community
  - Flood Plain Overlay Zone
  - County Zoning**
  - ADD - Airfield Operations District
  - ASD - Aviation Support District
  - ASDRA - Aviation Support District Reserve Area
  - ARID - Aviation Related Industrial District
  - ARIDRA - Aviation Related Industrial District Reserve Area
  - EFUAL - Alfalfa Subzone
  - EFUHR - Horse Ridge Subzone
  - EFULA - La Pine Subzone
  - EFULB - Lower Bridge Subzone
  - EFUSC - Sisters/Cloverdale Subzone
  - EFUTE - Terrebonne Subzone
  - EFUTRB - Tuma/Redmond/Bend Subzone
  - F1 - Forest Use 1
  - F2 - Forest Use 2
  - MUA10 - Multiple Use Agricultural
  - OS&C - Open Space & Conservation
  - RI - Rural Industrial
  - RC - Rural Commercial
  - RR10 - Rural Residential
  - SM - Surface Mining
  - SMURA - Surface Mining URA
  - UAR10 - Urban Area Reserve - 10 Acre Minimum
  - SR 2.5 - Residential 2.5 Acre Minimum



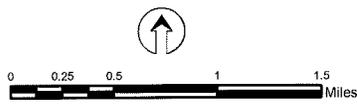
**DISCLAIMER**  
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### Flood Plain Combining Zone

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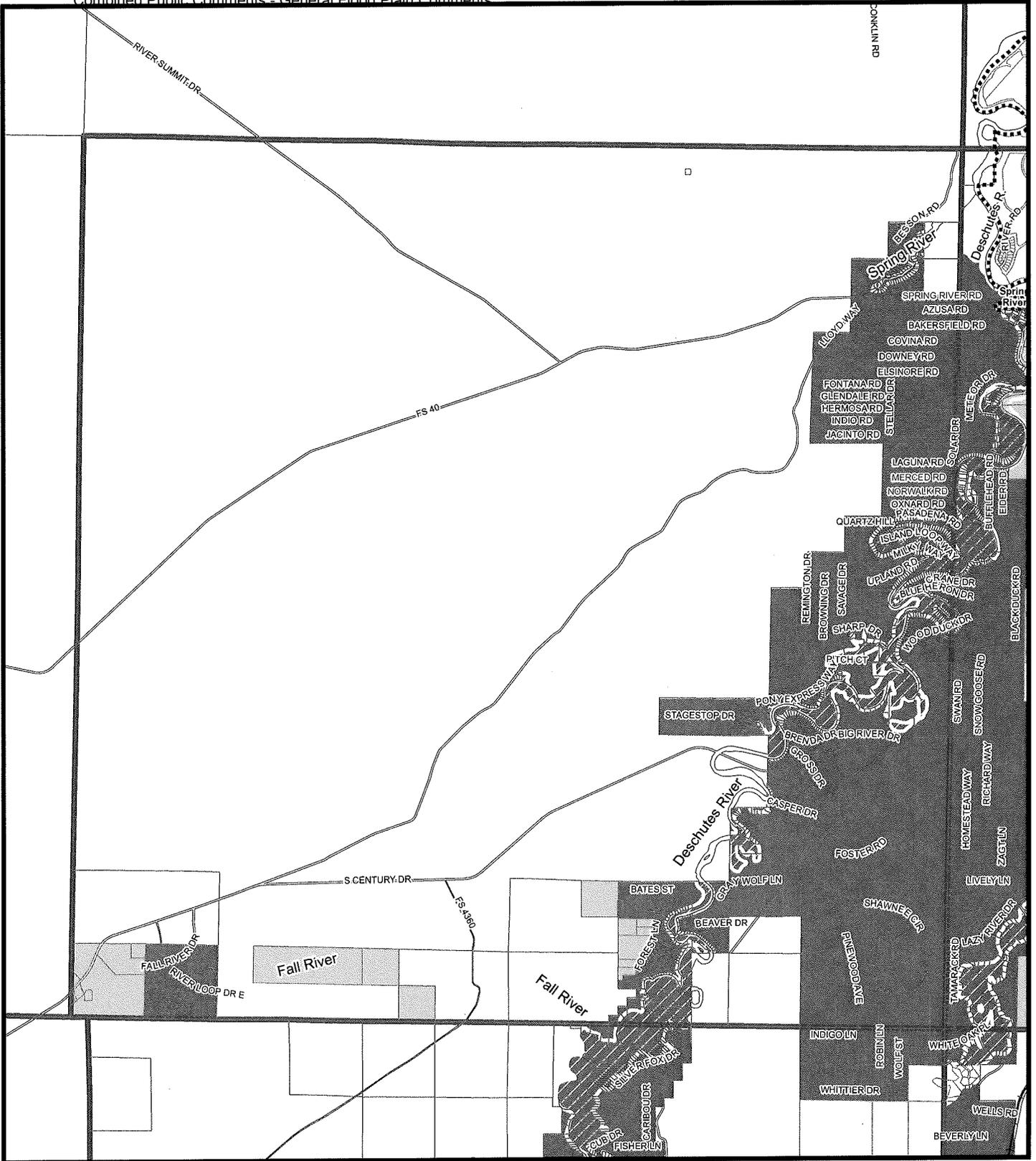
- Legend**
- Index
  - Unincorporated Community
  - Flood Plain Overlay Zone
  - County Zoning**
  - ADD - Airfield Operations District
  - ASD - Aviation Support District
  - ASDRA - Aviation Support District Reserve Area
  - ARID - Aviation Related Industrial District
  - ARIDRA - Aviation Related Industrial District Reserve Area
  - EFUAL - Alfalfa Subzone
  - EFUHR - Horse Ridge Subzone
  - EFULA - La Pine Subzone
  - EFULB - Lower Bridge Subzone
  - EFUSC - Sisters/Cloverdale Subzone
  - EFUTE - Terrebonne Subzone
  - EFUTRB - Tumalo/Redmond/Bend Subzone
  - F1 - Forest Use 1
  - F2 - Forest Use 2
  - MUA10 - Multiple Use Agricultural
  - OS&C - Open Space & Conservation
  - RI - Rural Industrial
  - RC - Rural Commercial
  - RR10 - Rural Residential
  - SM - Surface Mining
  - SMURA - Surface Mining URA
  - UAR10 - Urban Area Reserve - 10 Acre Minimum
  - SR2.5 - Residential 2.5 Acre Minimum



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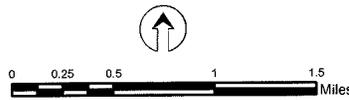


# Flood Plain Combining Zone

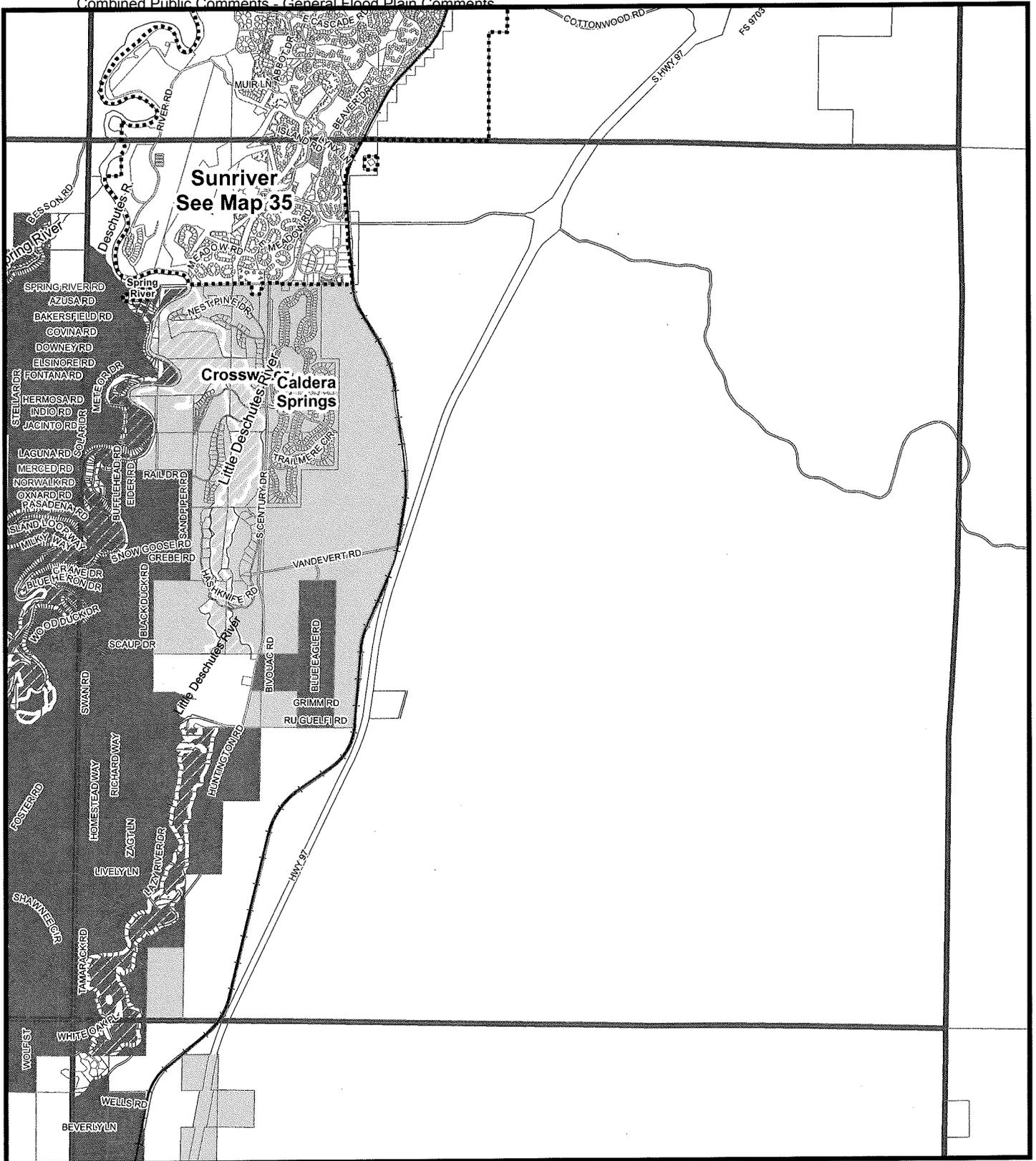
Map 20 of 35

- Legend**
- Index
  - Unincorporated Community
  - Flood Plain Overlay Zone
  - County Zoning**
  - ACD - Airfield Operations District
  - ASD - Aviation Support District
  - ASDRA - Aviation Support District Reserve Area
  - ARID - Aviation Related Industrial District
  - ARIDRA - Aviation Related Industrial District Reserve Area
  - EFUAL - Alfalfa Subzone
  - EFUHR - Horse Ridge Subzone
  - EFULA - La Pine Subzone
  - EFULB - Lower Bridge Subzone
  - EFUSC - Sisters/Cloverdale Subzone

- EFUTE - Terrebonne Subzone
- EFUTRB - Turn-of-Redmond/Bend Subzone
- F1 - Forest Use 1
- F2 - Forest Use 2
- MJA10 - Multiple Use Agricultural
- OS&C - Open Space & Conservation
- RI - Rural Industrial
- RC - Rural Commercial
- RR10 - Rural Residential
- SM - Surface Mining
- SMURA - Surface Mining URA
- UAR10 - Urban Area Reserve - 10 Acre Minimum
- SR 2.5 - Residential 2.5 Acre Minimum



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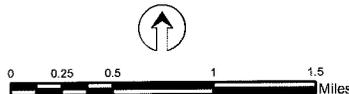


# Flood Plain Combining Zone

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- Legend**
- Index
  - Unincorporated Community
  - Flood Plain Overlay Zone
  - County Zoning**
  - AOD - Airfield Operations District
  - ASD - Aviation Support District
  - ASDRA - Aviation Support District Reserve Area
  - ARID - Aviation Related Industrial District
  - ARIDRA - Aviation Related Industrial District Reserve Area
  - EFUAL - Alfalfa Subzone
  - EFUHR - Horse Ridge Subzone
  - EFULA - La Pine Subzone
  - EFULB - Lower Bridge Subzone
  - EFUSC - Sisters/Cloverdale Subzone

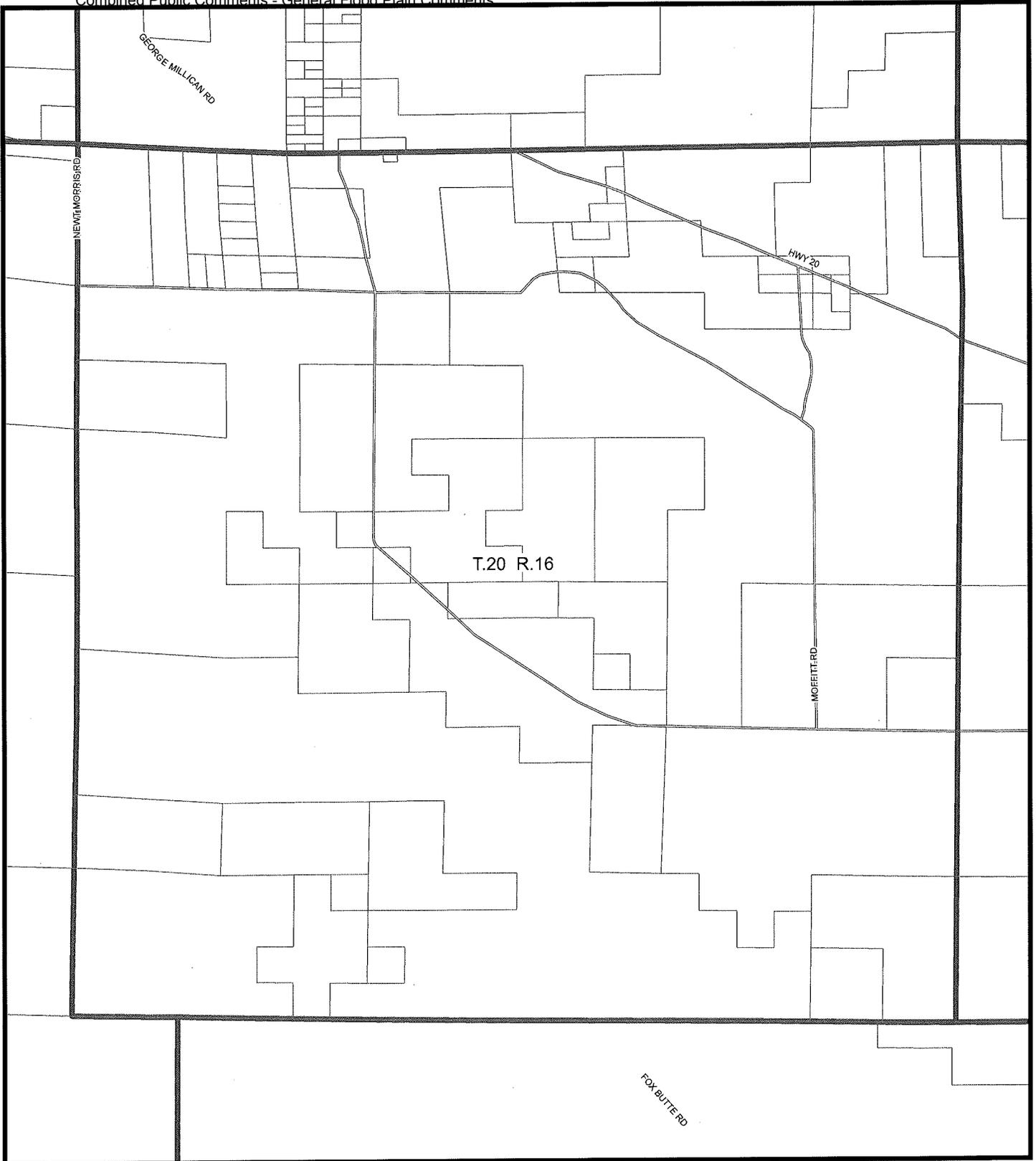
- EFUTE - Terrebonne Subzone
- EFUTRB - Tumalo/Redmond/Bend Subzone
- F1 - Forest Use 1
- F2 - Forest Use 2
- MJA10 - Multiple Use Agricultural
- OS&C - Open Space & Conservation
- RI - Rural Industrial
- RC - Rural Residential
- RR10 - Rural Residential
- SM - Surface Mining
- SMURA - Surface Mining URA
- UAR10 - Urban Area Reserve - 10 Acre Minimum
- SR2.5 - Residential 2.5 Acre Minimum



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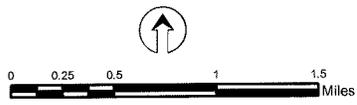


# Flood Plain Combining Zone

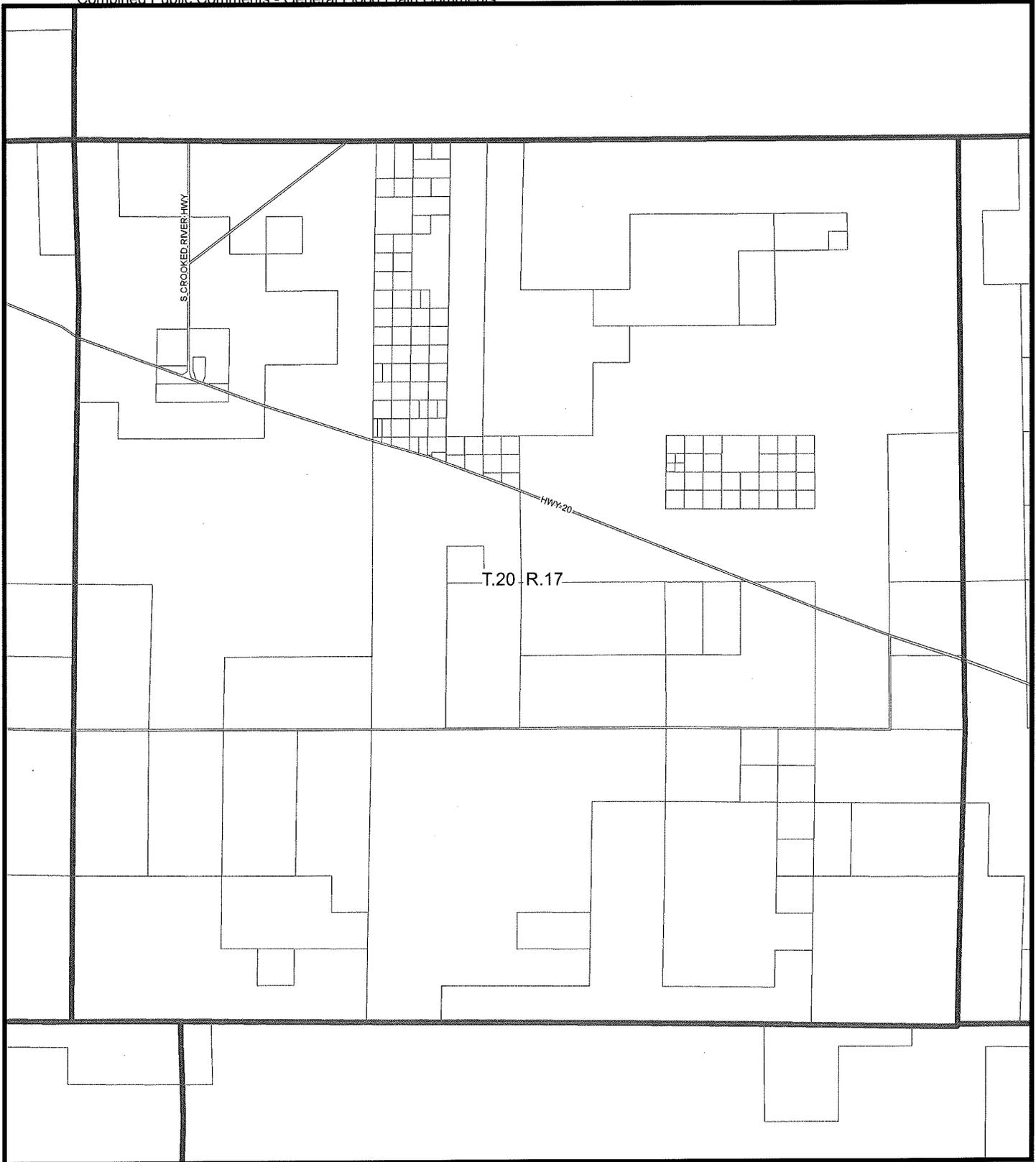
Map 22 of 35

- Legend**
- Index
  - Unincorporated Community
  - Flood Plain Overlay Zone
  - County Zoning**
  - AOD - Airfield Operations District
  - ASD - Aviation Support District
  - ASDRA - Aviation Support District Reserve Area
  - ARID - Aviation Related Industrial District
  - ARIDRA - Aviation Related Industrial District Reserve Area
  - EFUAL - Altalfa Subzone
  - EFUHR - Horse Ridge Subzone
  - EFULA - La Pine Subzone
  - EFULB - Lower Bridge Subzone
  - EFUSC - Sisters/Clovelate Subzone

- EFUTE - Terrebonne Subzone
- EFUTRB - Tuma/Redmond/Bend Subzone
- F1 - Forest Use 1
- F2 - Forest Use 2
- MUA10 - Multiple Use Agricultural
- OS&C - Open Space & Conservation
- RI - Rural Industrial
- RC - Rural Commercial
- RR10 - Rural Residential
- SM - Surface Mining
- SMURA - Surface Mining URA
- UAR10 - Urban Area Reserve - 10 Acre Minimum
- SR2.5 - Residential 2.5 Acre Minimum



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# Flood Plain Combining Zone

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- Legend**
- Index
  - Unincorporated Community
  - Flood Plain Overlay Zone
  - County Zoning**
  - AOD - Airfield Operations District
  - ASD - Aviation Support District
  - ASDRA - Aviation Support District Reserve Area
  - ARID - Aviation Related Industrial District
  - ARIDRA - Aviation Related Industrial District Reserve Area
  - EFUAL - Alfalfa Subzone
  - EFUHR - Horse Ridge Subzone
  - EFULA - La Pine Subzone
  - EFULB - Lower Bridge Subzone
  - EFUSC - Sisters/Cloverdale Subzone

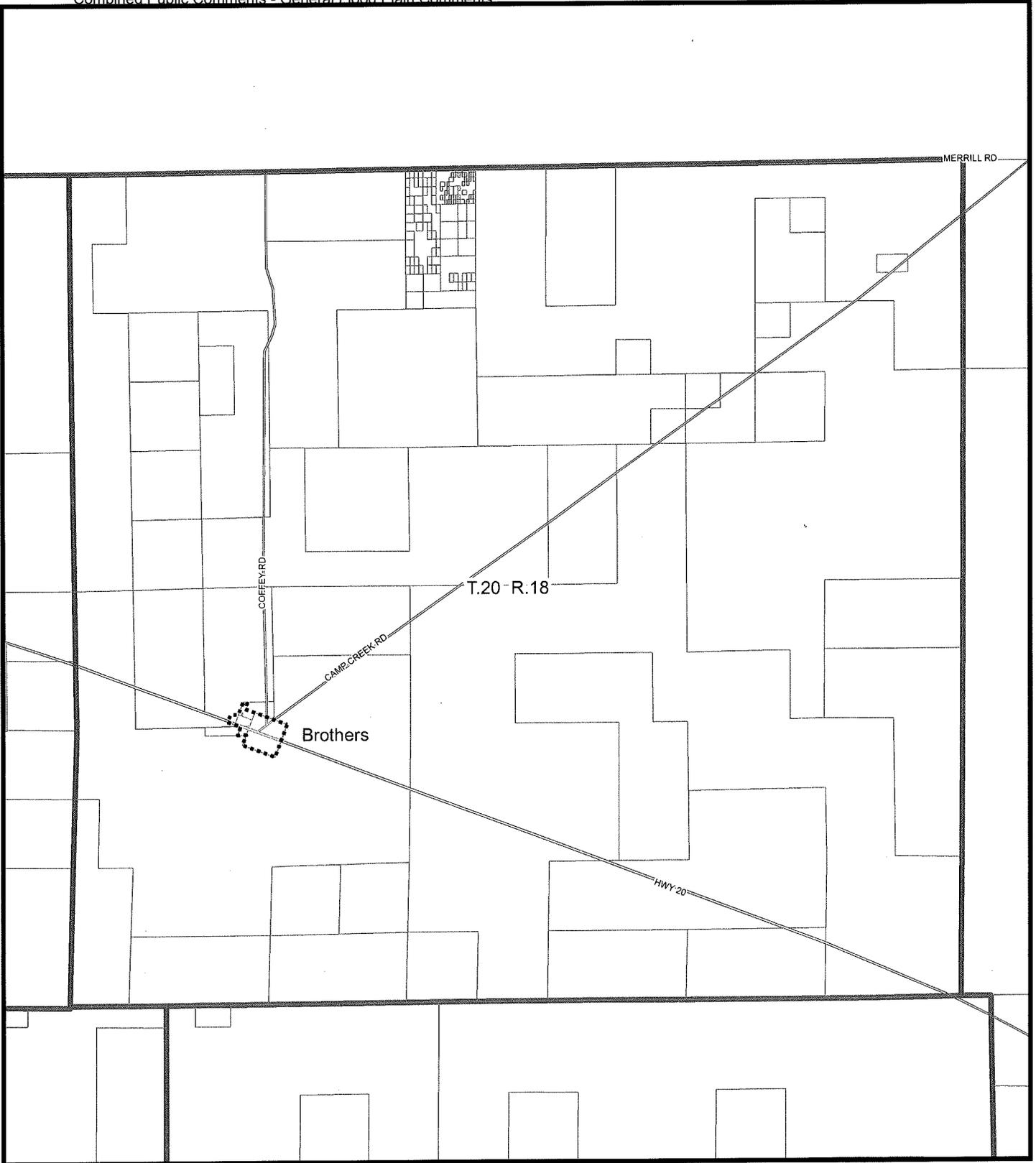
- EFUTE - Terrebonne Subzone
- EFUTRB - Tumalo/Redmond/Bend Subzone
- F1 - Forest Use 1
- F2 - Forest Use 2
- MUA10 - Multiple Use Agricultural
- OSAC - Open Space & Conservation
- RI - Rural Industrial
- RC - Rural Commercial
- RR10 - Rural Residential
- SM - Surface Mining
- SMURA - Surface Mining URA
- UAR10 - Urban Area Reserve - 10 Acre Minimum
- SR 2.5 - Residential 2.5 Acre Minimum



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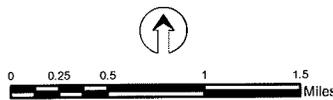


### Flood Plain Combining Zone

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- Legend**
- Index
  - Unincorporated Community
  - Flood Plain Overlay Zone
  - County Zoning**
  - AOD - Airfield Operations District
  - ASD - Aviation Support District
  - ASDRA - Aviation Support District Reserve Area
  - ARID - Aviation Related Industrial District
  - ARIDRA - Aviation Related Industrial District Reserve Area
  - EFUAL - Alfalfa Subzone
  - EFUHR - Horse Ridge Subzone
  - EFULA - La Pine Subzone
  - EFULB - Lower Bridge Subzone
  - EFUSC - Sisters/Cloverdale Subzone

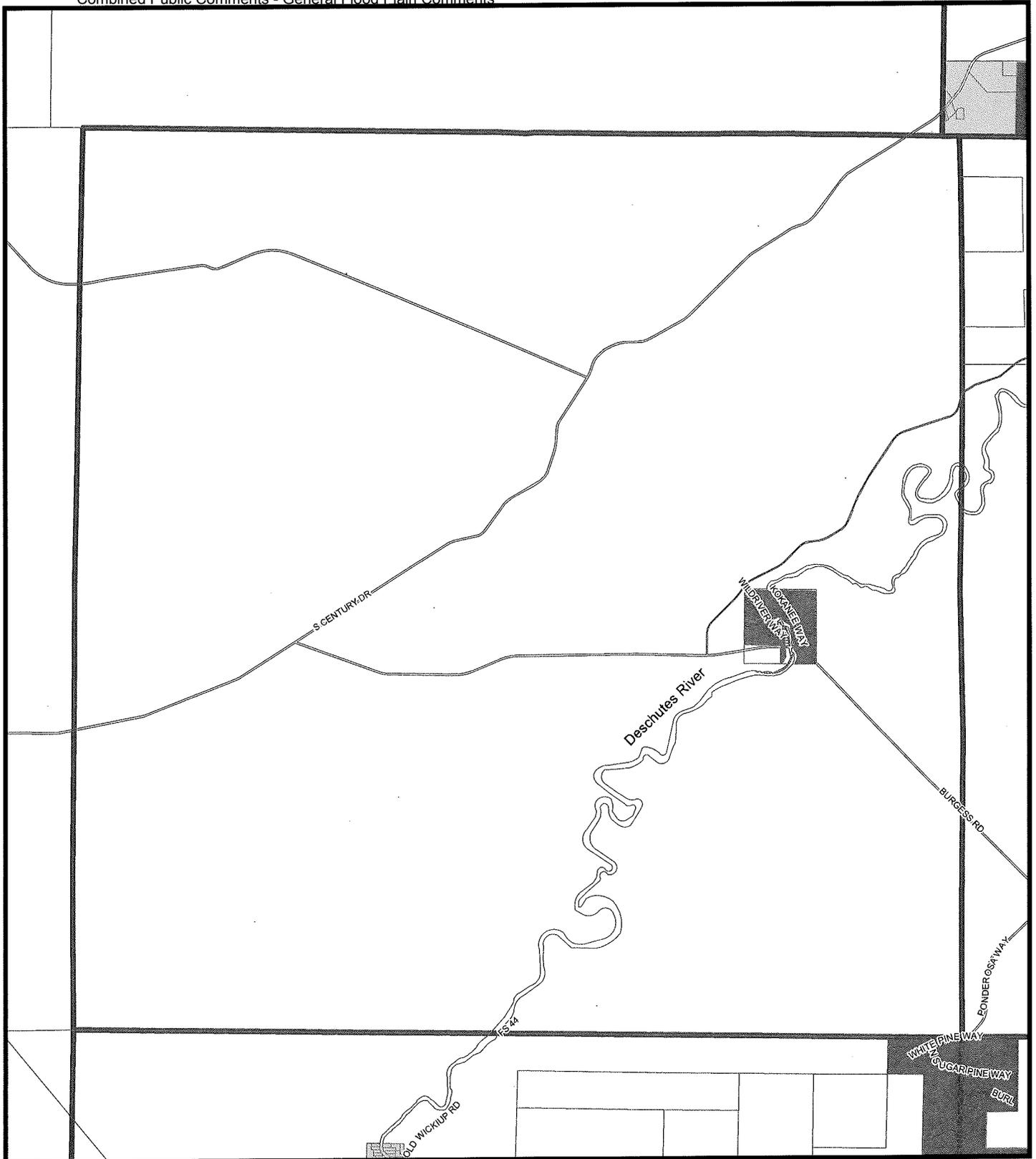
- EFUTE - Terrebonne Subzone
- EFUTRB - Tumalo/Redmond/Bend Subzone
- F1 - Forest Use 1
- F2 - Forest Use 2
- MUA10 - Multiple Use Agricultural
- OS&C - Open Space & Conservation
- RI - Rural Industrial
- RC - Rural Commercial
- RR10 - Rural Residential
- SM - Surface Mining
- SMURA - Surface Mining URA
- UAR10 - Urban Area Reserve - 10 Acre Minimum
- SR 2.5 - Residential 2.5 Acre Minimum



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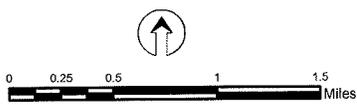
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### Flood Plain Combining Zone

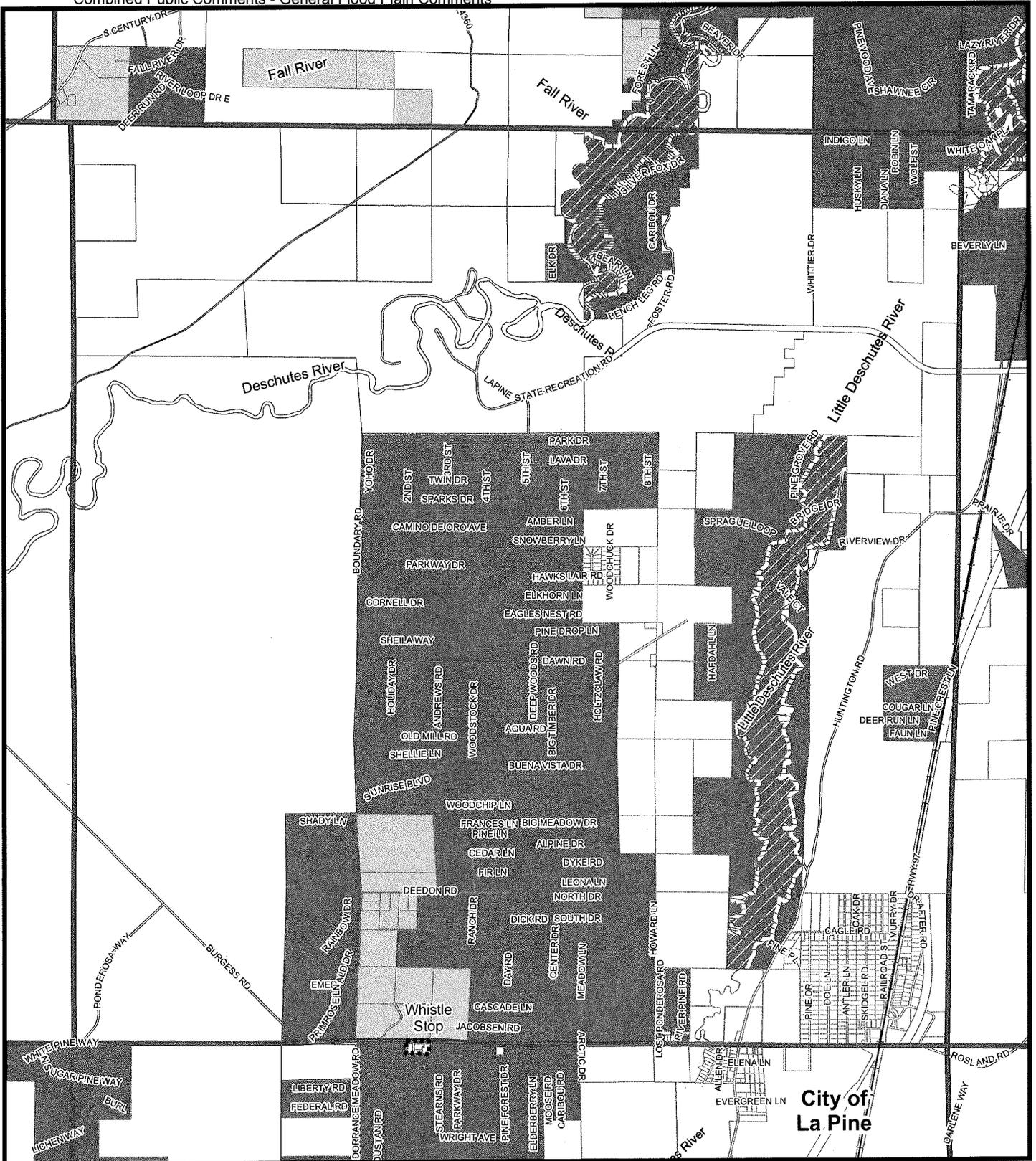
Map 25 of 35

- Legend**
- Index
  - Unincorporated Community
  - Flood Plain Overlay Zone
  - County Zoning**
  - AOD - Airfield Operations District
  - ASD - Aviation Support District
  - ASDRA - Aviation Support District Reserve Area
  - ARID - Aviation Related Industrial District
  - ARIDRA - Aviation Related Industrial District Reserve Area
  - EFUAL - Alfalfa Subzone
  - EFUHR - Horse Ridge Subzone
  - EFULA - La Pine Subzone
  - EFULB - Lower Bridge Subzone
  - EFUSC - Sisters/Clovenstone Subzone
  - EFUTE - Terrebonne Subzone
  - EFUTRB - Tumalo/Redmond/Bend Subzone
  - F1 - Forest Use 1
  - F2 - Forest Use 2
  - MJA10 - Multiple Use Agricultural
  - OS&C - Open Space & Conservation
  - RI - Rural Industrial
  - RC - Rural Commercial
  - RR10 - Rural Residential
  - SM - Surface Mining
  - SMURA - Surface Mining URA
  - UAR10 - Urban Area Reserve - 10 Acre Minimum
  - SR 2.5 - Residential 2.5 Acre Minimum



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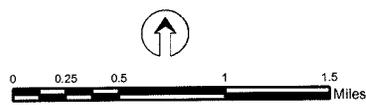
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# Flood Plain Combining Zone

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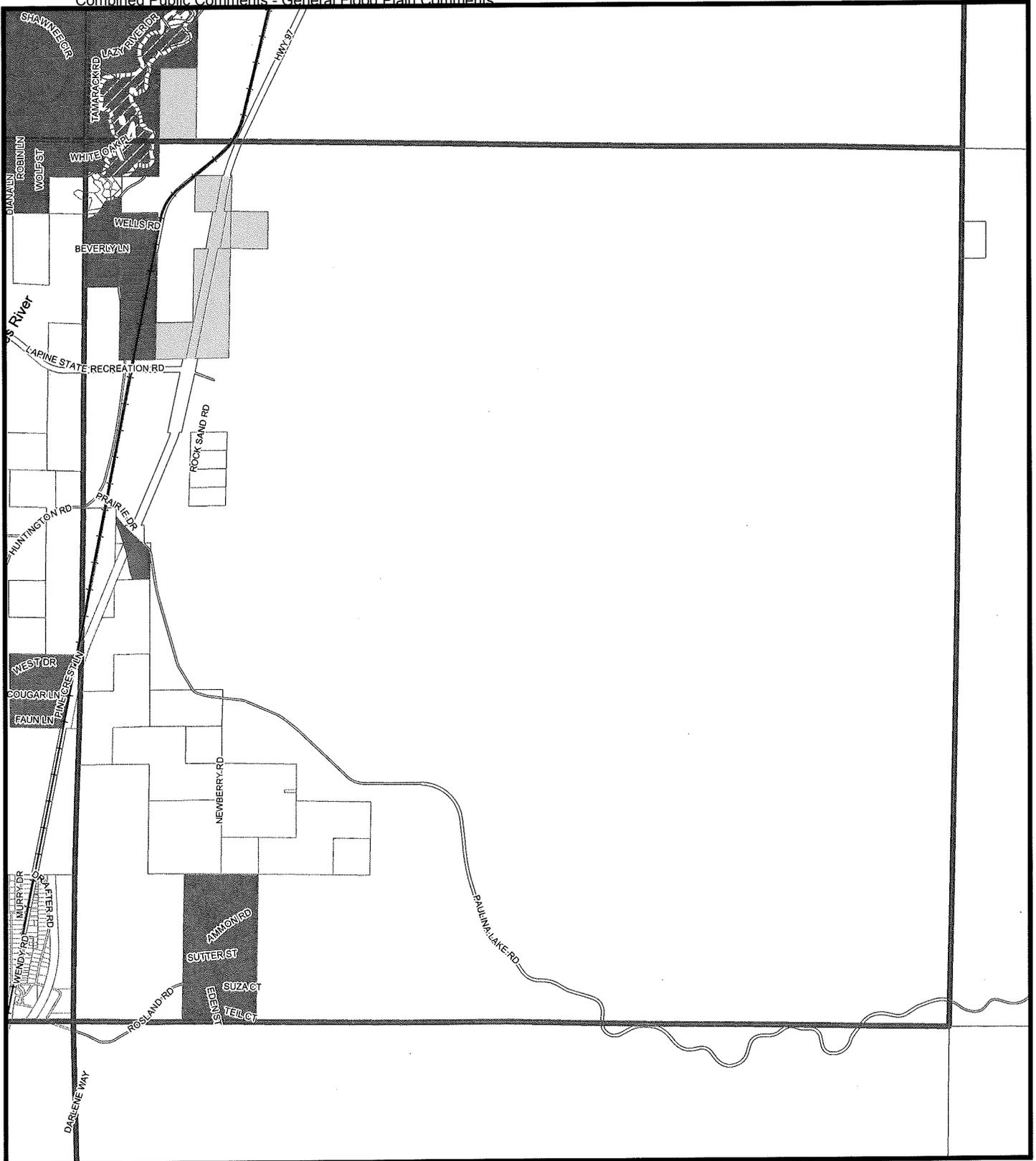
- Legend**
- Index
  - Unincorporated Community
  - Flood Plain Overlay Zone
  - County Zoning**
  - ADD - Airfield Operations District
  - ASD - Aviation Support District
  - ASDRA - Aviation Support District Reserve Area
  - ARID - Aviation Related Industrial District
  - ARIDRA - Aviation Related Industrial District Reserve Area
  - EFUAL - Aifa/la Subzone
  - EFUHR - Horse Ridge Subzone
  - EFULA - La Pine Subzone
  - EFULB - Lower Bridge Subzone
  - EFUSC - Sisters/Cloverdale Subzone
  - EFUTE - Terrebonne Subzone
  - EFUTRB - Tumalo/Redmond/Bend Subzone
  - F1 - Forest Use 1
  - F2 - Forest Use 2
  - MUA10 - Multiple Use Agricultural
  - OS&C - Open Space & Conservation
  - RI - Rural Industrial
  - RC - Rural Commercial
  - RR10 - Rural Residential
  - SM - Surface Mining
  - SMJRA - Surface Mining URA
  - UAR10 - Urban Area Reserve - 10 Acre Minimum
  - SR 2.5 - Residential 2.5 Acre Minimum



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## Flood Plain Combining Zone

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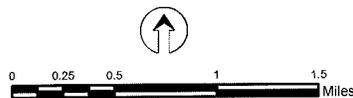
**Legend**

- Index
- Unincorporated Community
- Flood Plain Overlay Zone

**County Zoning**

- ACD - Airfield Operations District
- ASD - Aviation Support District
- ASDRA - Aviation Support District Reserve Area
- ARID - Aviation Related Industrial District
- ARIDRA - Aviation Related Industrial District Reserve Area
- EFUL - Allfalls Subzone
- EFUHR - Horse Ridge Subzone
- EFULA - La Pine Subzone
- EFULB - Lower Bridge Subzone
- EFUSC - Sisters/Clovelde Subzone

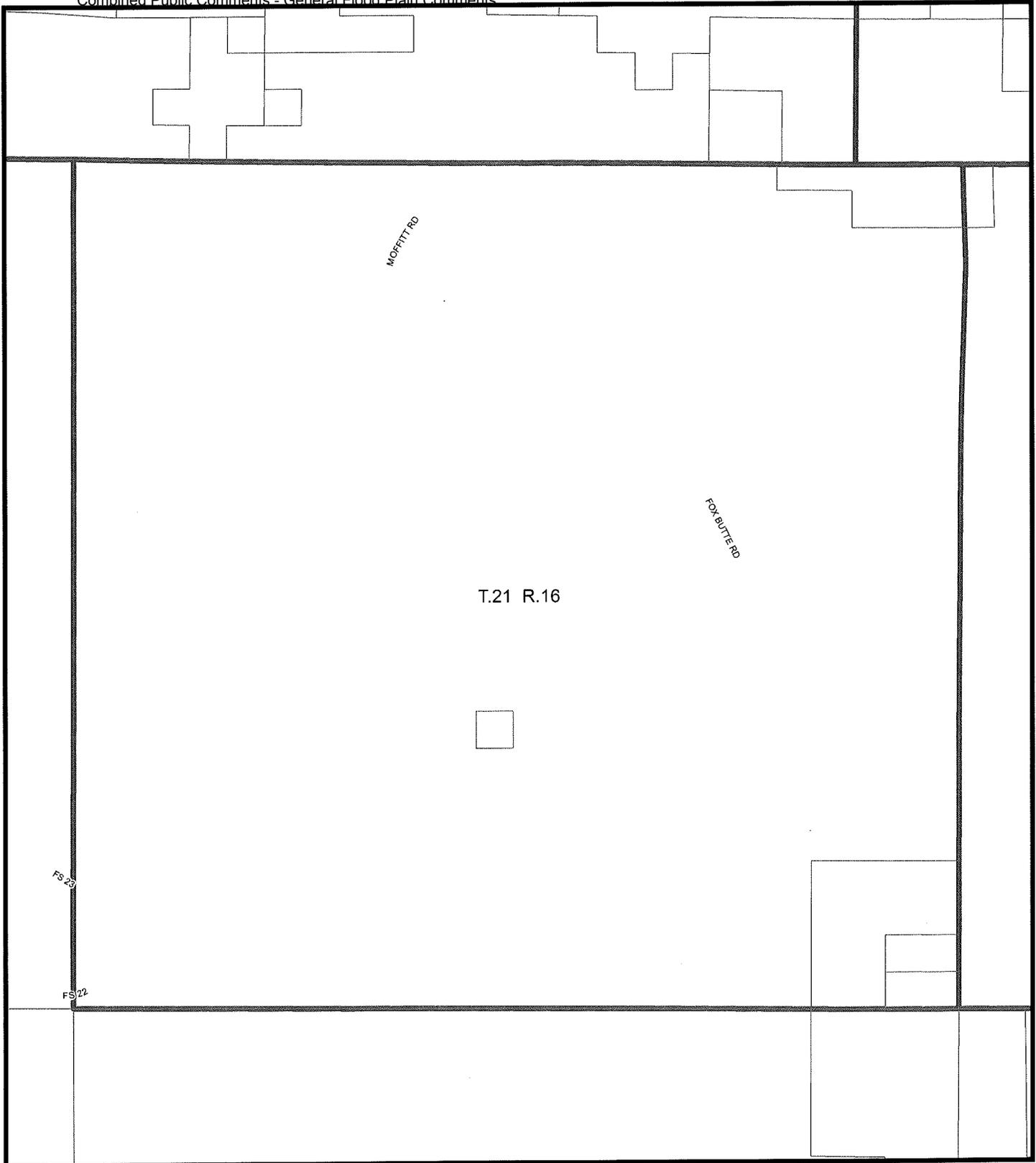
- EFUTE - Terrebonne Subzone
- EFUTRB - Turn-of-Redmond/Bend Subzone
- F1 - Forest Use 1
- F2 - Forest Use 2
- MJA10 - Multiple Use Agricultural
- OS&C - Open Space & Conservation
- RI - Rural Industrial
- RG - Rural Commercial
- RR10 - Rural Residential
- SM - Surface Mining
- SMURA - Surface Mining URA
- UAR10 - Urban Area Reserve - 10 Acre Minimum
- SR2.5 - Residential 2.5 Acre Minimum



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# Flood Plain Combining Zone

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- Legend**
- Index
  - Unincorporated Community
  - Flood Plain Overlay Zone
  - County Zoning**
  - AOD - Airfield Operations District
  - ASD - Aviation Support District
  - ASDRA - Aviation Support District Reserve Area
  - ARID - Aviation Related Industrial District
  - ARIDRA - Aviation Related Industrial District Reserve Area
  - EFUAL - Alfalfa Subzone
  - EFUHR - Horse Ridge Subzone
  - EFULA - La Pine Subzone
  - EFULB - Lower Bridge Subzone
  - EFUSC - Sisters/Cloverdale Subzone

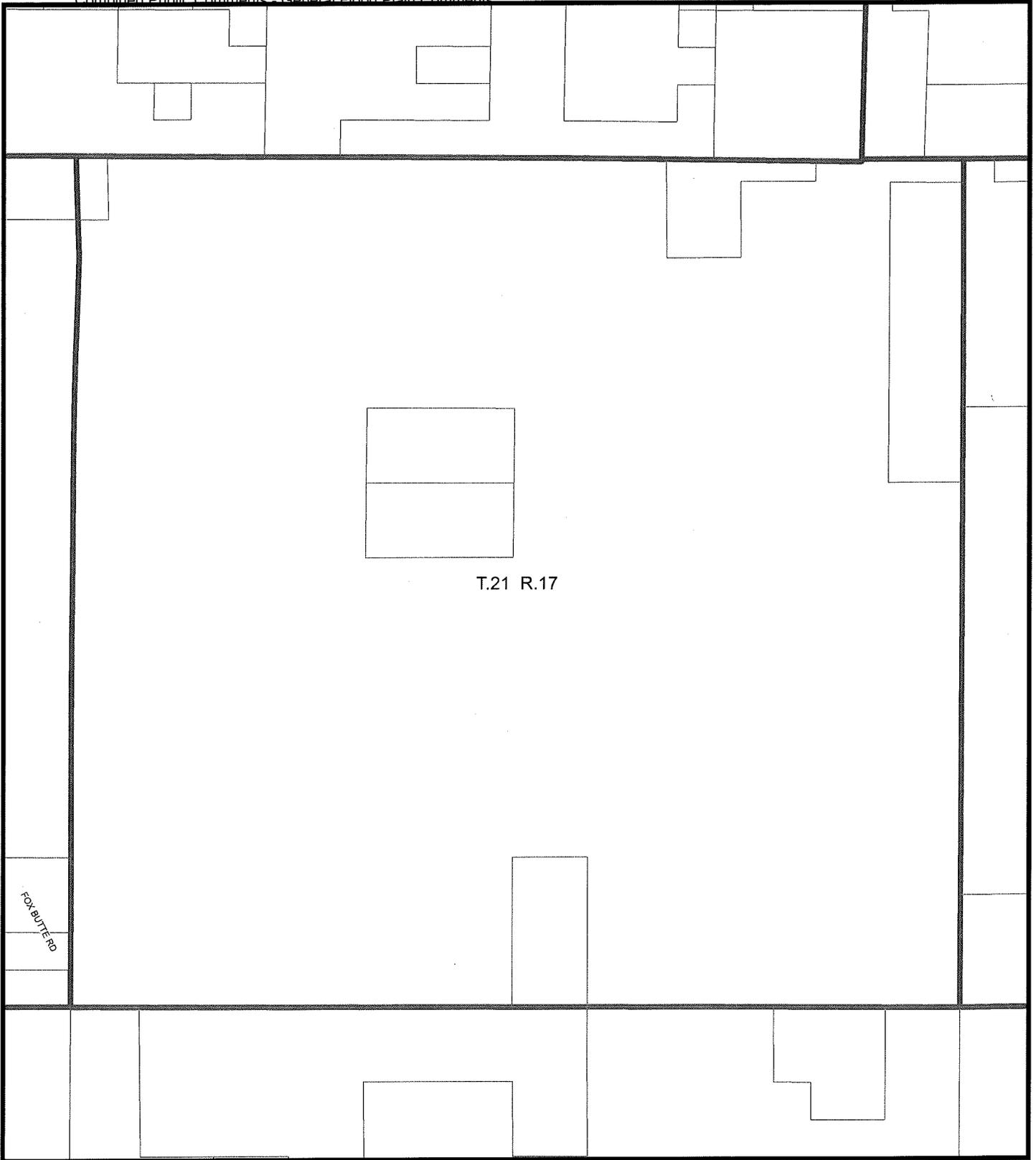
- EFUTE - Terrebonne Subzone
- EFUTRB - Tumalo/Redmond/Bend Subzone
- F1 - Forest Use 1
- F2 - Forest Use 2
- MUA10 - Multiple Use Agricultural
- OS&C - Open Space & Conservation
- RI - Rural Industrial
- RC - Rural Commercial
- RR10 - Rural Residential
- SM - Surface Mining
- SMURA - Surface Mining URA
- UAR10 - Urban Area Reserve - 10 Acre Minimum
- SR 2.5 - Residential 2.5 Acre Minimum



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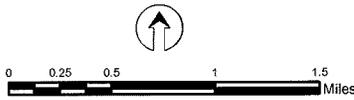
T.21 R.17

FOX BUTTE RD

## Flood Plain Combining Zone

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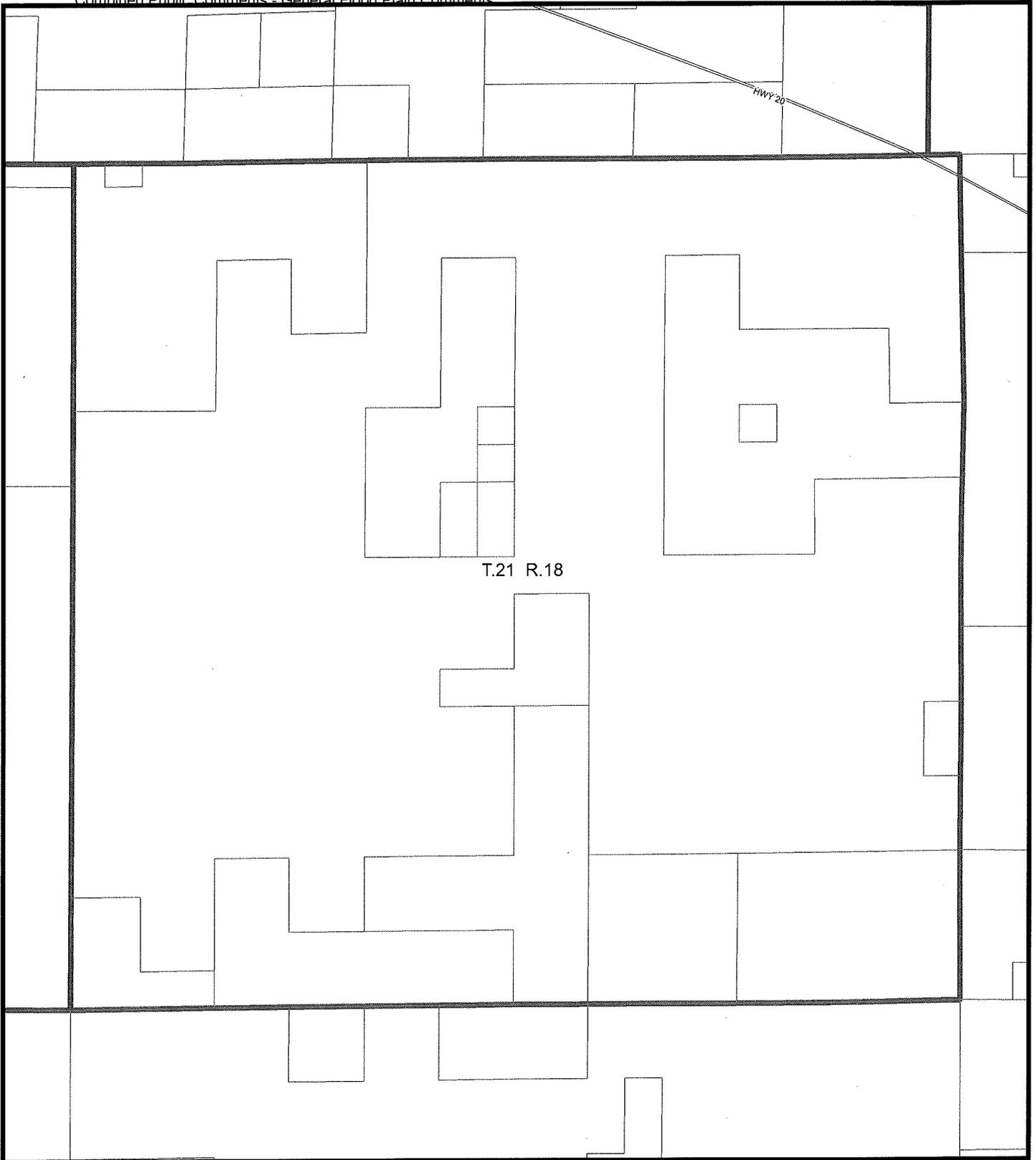
- Legend**
- Index
  - Unincorporated Community
  - Flood Plain Overlay Zone
  - County Zoning**
  - AOD - Airfield Operators District
  - ASD - Aviation Support District
  - ASDRA - Aviation Support District Reserve Area
  - ARID - Aviation Related Industrial District
  - ARIDRA - Aviation Related Industrial District Reserve Area
  - EFUAL - Alfalfa Subzone
  - EFUHR - Horse Ridge Subzone
  - EFULA - La Pine Subzone
  - EFULB - Lower Bridge Subzone
  - EFUSC - Sisters/Cloverdale Subzone
  - EFUTE - Terrebonne Subzone
  - EFUTRB - Tumalo/Redmond/Bend Subzone
  - F1 - Forest Use 1
  - F2 - Forest Use 2
  - MUA10 - Multiple Use Agricultural
  - OS&C - Open Space & Conservation
  - RI - Rural Industrial
  - RC - Rural Commercial
  - RR10 - Rural Residential
  - SM - Surface Mining
  - SMURA - Surface Mining URA
  - UAR10 - Urban Area Reserve - 10 Acre Minimum
  - SR 2.5 - Residential 2.5 Acre Minimum



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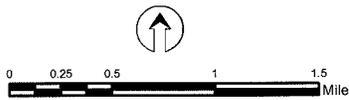


# Flood Plain Combining Zone

Map 30 of 35

- Legend**
- Index
  - Unincorporated Community
  - Flood Plain Overlay Zone
  - County Zoning**
  - AOD - Airfield Operations District
  - ASD - Aviation Support District
  - ASDRA - Aviation Support District Reserve Area
  - ARID - Aviation Related Industrial District
  - ARIDRA - Aviation Related Industrial District Reserve Area
  - EFUAL - Alfalfa Subzone
  - EFUHR - Horse Ridge Subzone
  - EFULA - La Pine Subzone
  - EFULB - Lower Bridge Subzone
  - EFUSC - Sisters/Cloverdale Subzone

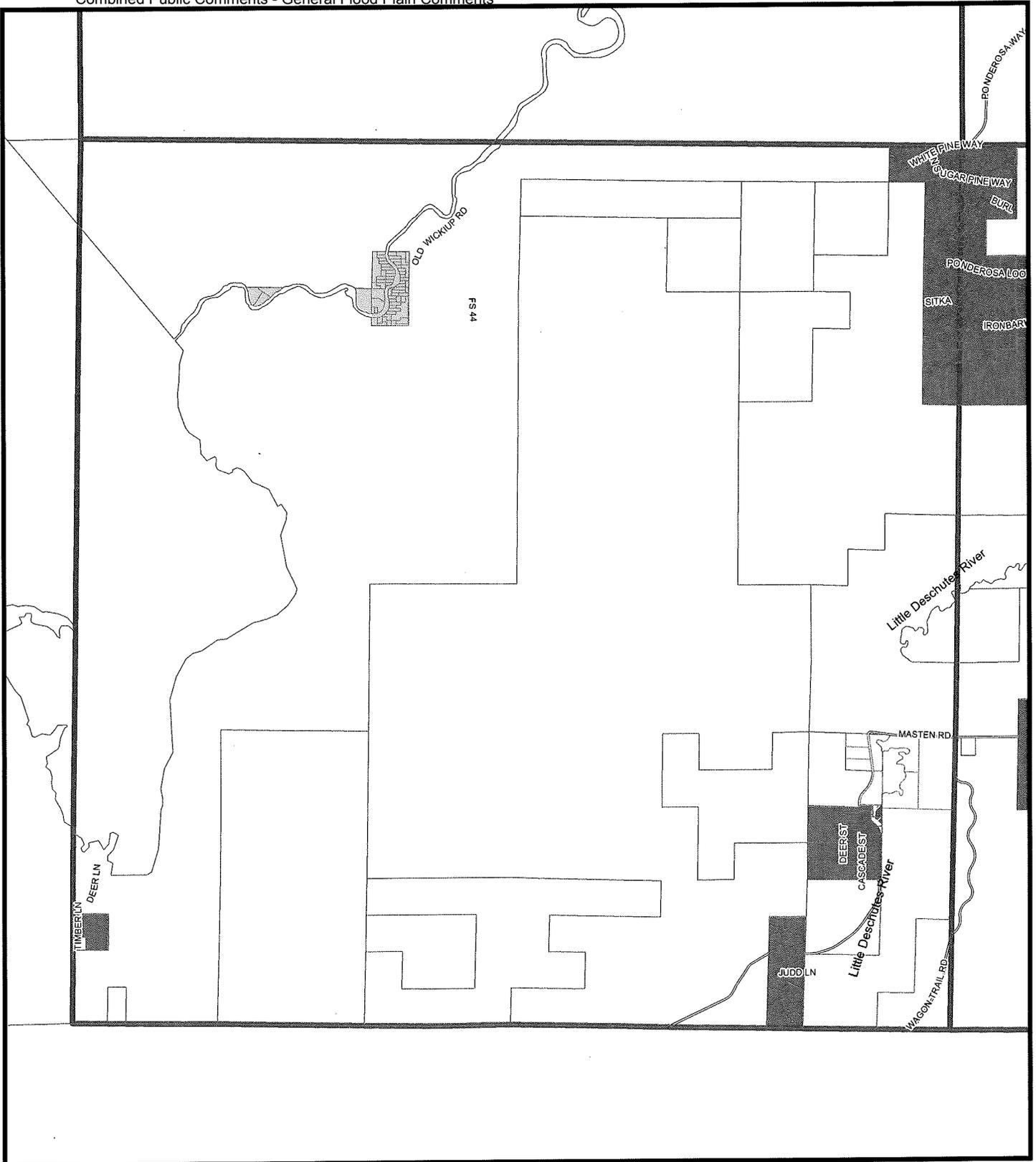
- EFUTE - Terrebonne Subzone
- EFUTRB - Tumelo/Redmond/Bend Subzone
- F1 - Forest Use 1
- F2 - Forest Use 2
- MUA10 - Multiple Use Agricultural
- OS&C - Open Space & Conservation
- RI - Rural Industrial
- RC - Rural Commercial
- RR10 - Rural Residential
- SM - Surface Mining
- SMURA - Surface Mining URA
- UAR10 - Urban Area Reserve - 10 Acre Minimum
- SR 2.5 - Residential 2.5 Acre Minimum



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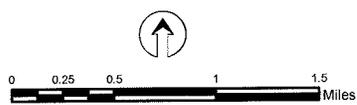
# Flood Plain Combining Zone

Map 31 of 35

**Legend**

- Index
- Unincorporated Community
- Flood Plain Overlay Zone
- County Zoning**
- AOD - Airfield Operations District
- ASD - Aviation Support District
- ASDRA - Aviation Support District Reserve Area
- ARID - Aviation Related Industrial District
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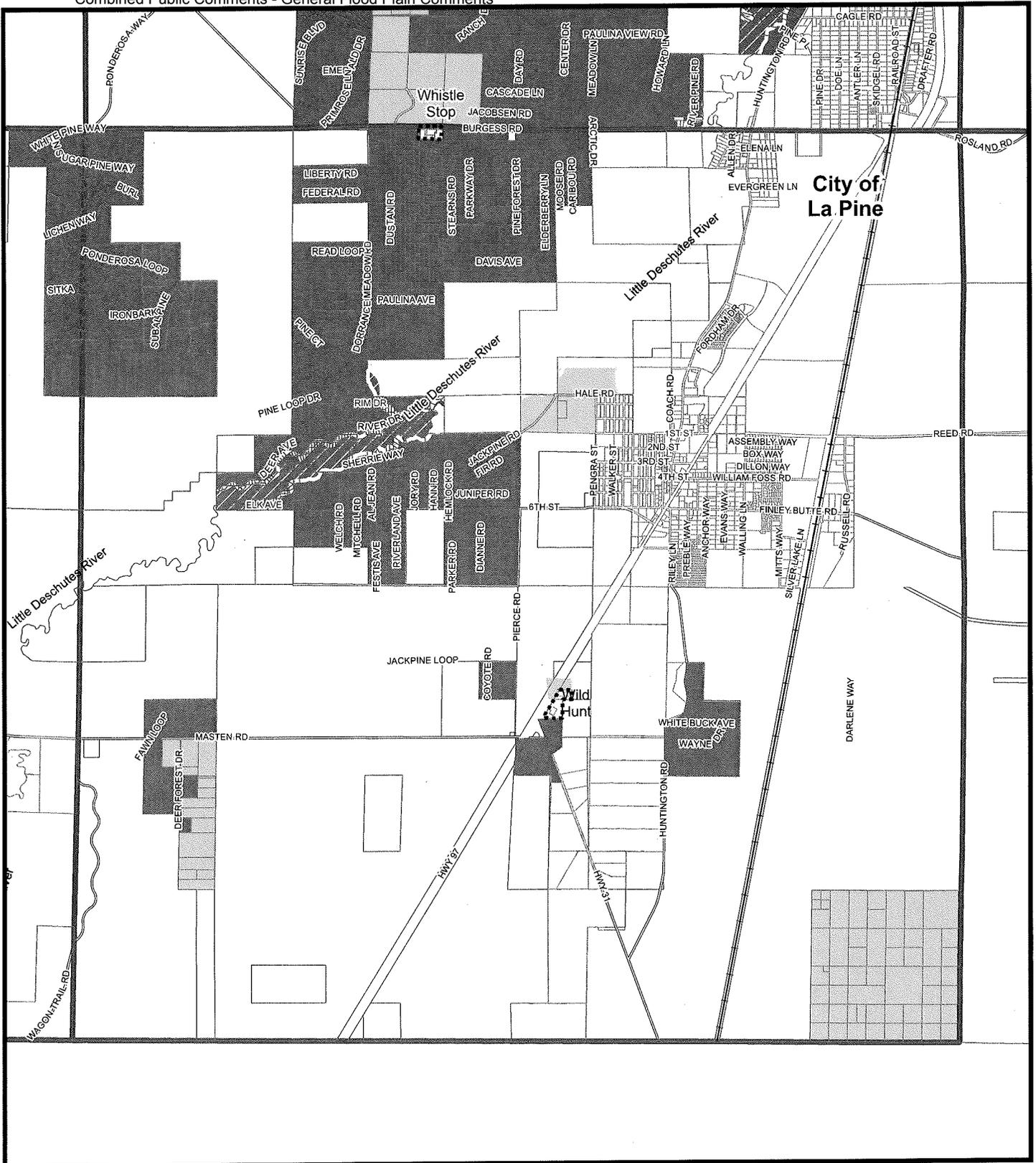
- EFUTE - Terrebonne Subzone
- EFUTRB - Tumalo/Redmond/Bend Subzone
- F1 - Forest Use 1
- F2 - Forest Use 2
- MUA10 - Multiple Use Agricultural
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- RR10 - Rural Residential
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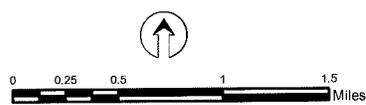


# Flood Plain Combining Zone

Map 32 of 35

- Legend**
- Index
  - Unincorporated Community
  - Flood Plain Overlay Zone
  - County Zoning**
  - ACD - Airfield Operations District
  - ASD - Aviation Support District
  - ASDRA - Aviation Support District Reserve Area
  - ARID - Aviation Related Industrial District
  - ARIDRA - Aviation Related Industrial District Reserve Area
  - EFUAL - Airfalls Subzone
  - EFUHR - Horse Ridge Subzone
  - EFULA - La Pine Subzone
  - EFULB - Lower Bridge Subzone
  - EFUSC - Sisters/Cloverdale Subzone

- EFUTE - Terrebonne Subzone
- EFUTRB - Tumalo/Redmond/Bend Subzone
- F1 - Forest Use 1
- F2 - Forest Use 2
- MUA10 - Multiple Use Agricultural
- OS&C - Open Space & Conservation
- RI - Rural Industrial
- RC - Rural Commercial
- RR10 - Rural Residential
- SM - Surface Mining
- SMURA - Surface Mining URA
- UAR10 - Urban Area Reserve - 10 Acre Minimum
- SR 2.5 - Residential 2.5 Acre Minimum

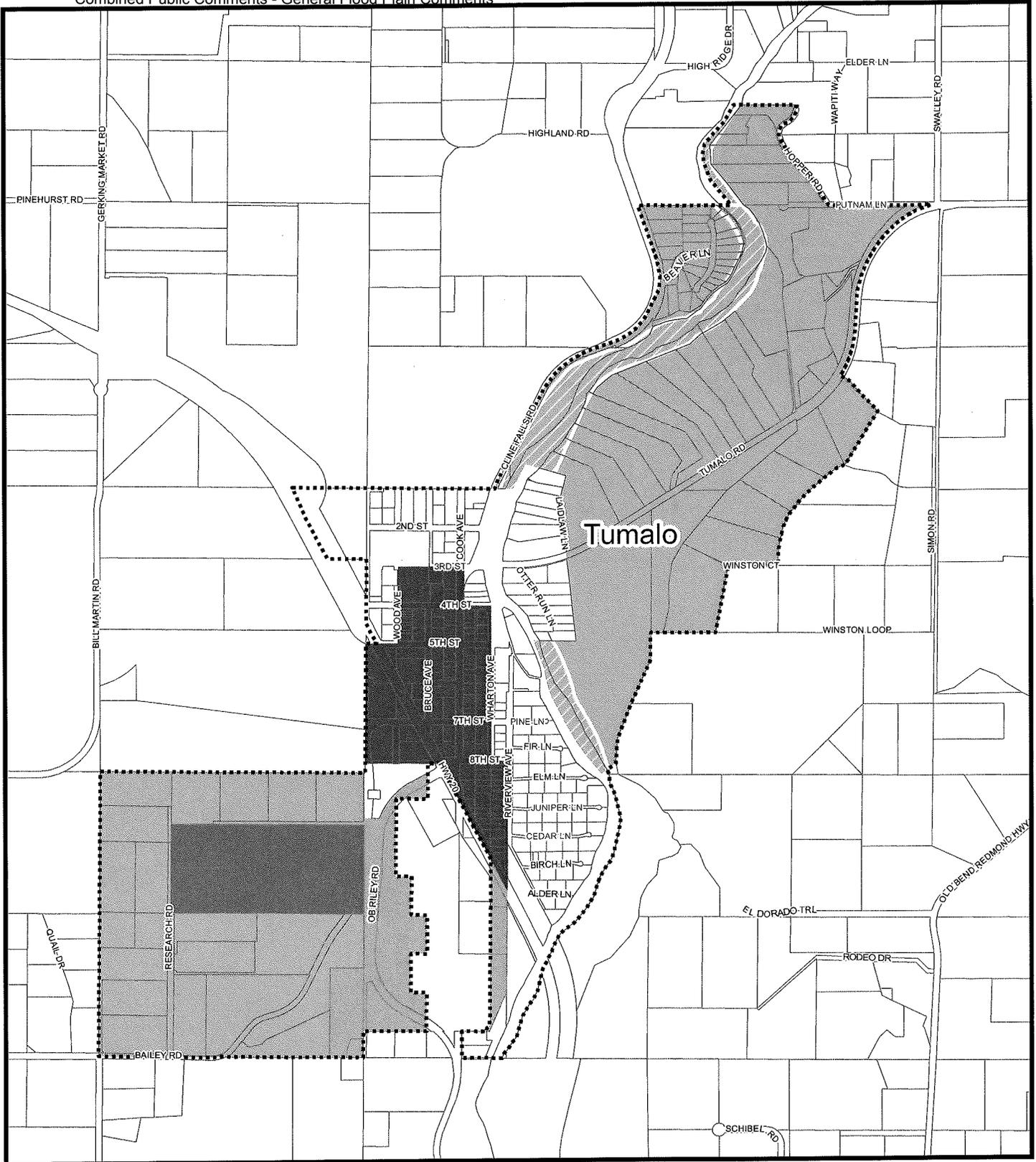


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### Flood Plain Combining Zone

Map 34 of 35



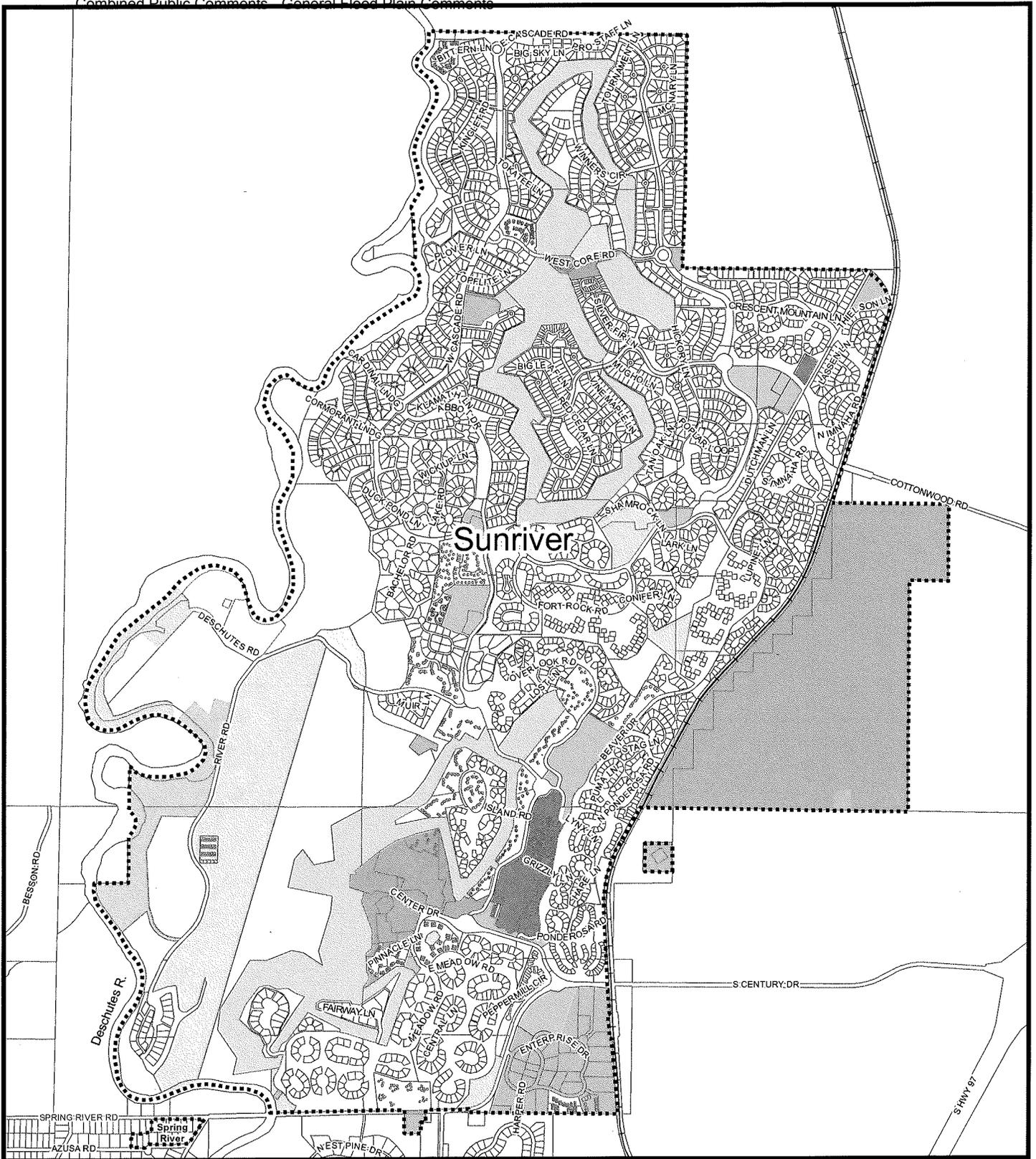
**Legend**

- Unincorporated Community
- Flood Plain Overlay Zone
- Tumalo Zoning**
- TUC - Commercial
- TUR - Residential
- TUR5 - Residential 5 Acre Minimum
- TURE - Research & Development
- TUI - Industrial



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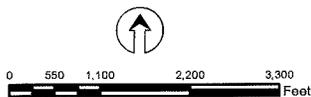
DISCLAIMER  
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- Legend**
- Unincorporated Community
  - ▨ Flood Plain Overlay Zone
  - ▭ Sunriver Zoning
  - SUA - Sunriver Airport
  - ▨ SUC - Sunriver Business Park
  - ▨ SUC - Sunriver Commercial
  - ▨ SUCG - Sunriver Community General
  - ▨ SUC - Sunriver Community Limited
  - ▨ SUCN - Sunriver Community Neighborhood
  - ▨ SUCR - Sunriver Community Recreation
  - ▨ SUF - Sunriver Forest
  - ▨ SURM - Sunriver Multiple Family Residential
  - ▨ SUR - Sunriver Resort
  - ▨ SURE - Sunriver Resort Equestrian
  - ▨ SURG - Sunriver Resort Golf Course
  - ▨ SURA - Sunriver Resort Marina
  - ▨ SURN - Sunriver Resort Nature Center
  - ▨ SURS - Sunriver Single Family Residential
  - ▨ SUU - Sunriver Utility

## Flood Plain Combining Zone

Map 35 of 35



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## **Chapter 23.01 COMPREHENSIVE PLAN**

### 23.01.010. Introduction.

- A. The Deschutes County Comprehensive Plan, adopted by the Board in Ordinance 2011-003 and found on the Deschutes County Community Development Department website, is incorporated by reference herein.
- B. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2011-027, are incorporated by reference herein.
- C. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2012-005, are incorporated by reference herein.
- D. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2012-012, are incorporated by reference herein.
- E. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2012-016, are incorporated by reference herein.
- F. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2013-002, are incorporated by reference herein.
- G. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2013-009, are incorporated by reference herein.
- H. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2013-012, are incorporated by reference herein.
- I. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2013-007, are incorporated by reference herein.
- J. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2014-005, are incorporated by reference herein.
- K. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2014-006, are incorporated by reference herein.
- L. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2014-012, are incorporated by reference herein.
- M. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2014-021, are incorporated by reference herein.
- N. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2014-027, are incorporated by reference herein.
- O. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2015-021, are incorporated by reference herein.
- P. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2015-029, are incorporated by reference herein.
- Q. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2015-018, are incorporated by reference herein.
- R. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2015-010, are incorporated by reference herein.
- S. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2016-001, are incorporated by reference herein.
- T. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2016-022, are incorporated by reference herein.
- U. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2016-005, are incorporated by reference herein.
- V. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2016-027, are incorporated by reference herein.

W. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2016-029, are incorporated by reference herein.

X. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2017-007, are incorporated by reference herein.

Y. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2018-002, are incorporated by reference herein.

Z. The Deschutes County Comprehensive Plan amendments, adopted by the Board in Ordinance 2018-005, are incorporated by reference herein.

(Ord. 2018-005 §2, 2018; Ord. 2018-002 §1, 2018; Ord. 2017-007 §1, 2017; Ord. 2016-029 §1, 2016; Ord. 2016-027 §1, 2016; Ord. 2016-005 §1, 2016; Ord. 2016-022 §1, 2016; Ord. 2016-001 §1, 2016; Ord. 2015-010 §1, 2015; Ord. 2015-018 § 1, 2015; Ord. 2015-029 § 1, 2015; Ord. 2015-021 § 1, 2015; Ord. 2014-027 § 1, 2014; Ord. 2014-021 §1, 2014; Ord. 2014-12 §1, 2014; Ord. 2014-006 §2, 2014; Ord. 2014-005 §2, 2014; Ord. 2013-012 §2, 2013; Ord. 2013-009 §2, 2013; Ord. 2013-007 §1, 2013; Ord. 2013-002 §1, 2013; Ord. 2013-001 §1, 2013; Ord. 2012-016 §1, 2012; Ord. 2012-013 §1, 2012; Ord. 2012-005 §1, 2012; Ord. 2011-027 §1 through 12, 2011; Ord. 2011-017 repealed; Ord. 2011-003 §3, 2011)

Click here to be directed to the Comprehensive Plan (<http://www.deschutes.org/compplan>)

## Section 2.5 Water Resources

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### Riparian Areas

Riparian areas are areas adjacent to rivers, streams, lakes or ponds where there is vegetation that requires free or unbound water or conditions that are more moist than normal. Riparian areas form an interconnected system within a watershed. At the water's edge they define the transition zone between aquatic and terrestrial systems. Riparian areas often contain a diversity of vegetation not found in upland areas. Riparian areas are limited in Deschutes County and are important habitats for both fish and wildlife.

The Deschutes County Comprehensive Plan, adopted in 1979 and revised, mapped riparian areas along the following rivers and streams.

**Table 2.5.5 - Riparian Acreage in Deschutes County**

Streams	Riparian Acres
Deschutes River	1,440
Little Deschutes River	2,920
Paulina Creek	846
Indian Ford Creek	573
Tumalo Creek	50
Whychus Creek	47
Fall River	43
Crooked River	38
<b>TOTAL</b>	<b>5,966</b>

Source: Deschutes County/City of Bend River Study 1986

Significant riparian habitat is located in one or more of the following three areas:

- The area within 100 feet of the ordinary high water mark of an inventoried river or stream. The 100 foot wide area may contain both riparian vegetation and upland vegetation.
- Wetlands and flood plain are also frequently within 100 feet of a stream or river. In some cases the riparian vegetation may extend beyond 100 feet from the ordinary high water mark if it is a designated wetland or flood plain.
- The area adjacent to an inventoried river or stream and located within a flood plain mapped by the Federal Emergency Management Agency and included in a zoned Flood Plain Combining Zone by the County. The flood plain may extend beyond 100 feet from the ordinary high water mark of the stream and may contain wetland.

The County has not conducted an inventory of riparian areas adjacent to lakes and ponds on private land. However, many of these areas are included in National Wetland Inventory Maps and are subject to County, State and/or Federal wetland fill and removal regulations. Riparian areas adjacent to the many lakes on federal lands are managed and protected under federal land and resource management plans and are not included in the County inventory.

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### Floodplains

*Federal Emergency Management Agency Maps*

The Federal Emergency Management Agency (FEMA) maps flood-plains adjacent to the following rivers and streams in Deschutes County. The floodplain along these rivers and streams is recognized in a Flood Plain Combining Zone by the County.

**Table 2.5.6 - Floodplains Adjacent to Rivers and Streams**

• Deschutes River	• Long Prairie
• Little Deschutes River	• Dry River
• Whychus Creek	• Spring River
• Crooked River	• Indian Ford Creek
• Paulina Creek	

Source: Deschutes County GIS

Floodplains are defined as the lowland and relatively flat areas adjoining inland waters including at a minimum, that area subject to a one percent (100-year recurrence) or greater chance of flooding in any one year. Generally, river flooding along the Deschutes River has not historically been a serious problem in Deschutes County. This is due to the porous nature of the local geology, irrigation diversion canals and reservoir retention. Studies completed by the U.S. Army Corp of Engineers have resulted in designating a 100 year flood-plain for the Little Deschutes River and Whychus Creek. Regular flooding events have occurred near the headwaters of Tumalo Creek and in the Tumalo community. Along Whychus Creek, the city of Sisters frequently experiences flooding, with the most significant event occurring in 1964 (see also Section 3.5).

In 2018, Deschutes County amended its Flood Plain Zone to change it to a Combining Zone. The purpose of the Combining Zone is to continue promoting public health, safety, and general welfare, and minimize losses due to flood conditions in specific areas. It is designed to:

- (1) Protect human life and health;
- (2) Minimize expenditure of public money and costly flood control projects;
- (3) Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
- (4) Minimize prolonged business interruptions;
- (5) Minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets, and bridges located in areas of special flood hazard;
- (6) Help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future flood blight areas;
- (7) Ensure that potential buyers are notified that property is in an area of special flood hazard; and,
- (8) Ensure that those who occupy the areas of special flood hazard assume responsibility for their actions.

The Combining Zone also provides secondary benefits including riparian area conservation along rivers and streams for fish and wildlife and preservation of significant scenic and natural resources. Comprehensive plan policies for Water Resources (Section 2.5), Wildlife Resources (Section 2.6), Open Space and Scenic Views and Sites Resources (Section 2.7), and the corresponding development standards in Title 18 implement protections pertaining to Goal 5.

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**Land Use Designations and Inventory**

Deschutes County Comprehensive Plan designations identify general land uses for Tumalo and provide the legal framework for establishing zoning districts. Zoning regulates land uses that are allowed in each respective district. Table 4 lists Tumalo comprehensive plan designations and corresponding zoning districts. Table 5 summarizes existing property inventories within those zoning districts. Tumalo Comprehensive Plan designations are then described in greater detail.

**Table 4 - Tumalo Land Use Designations**

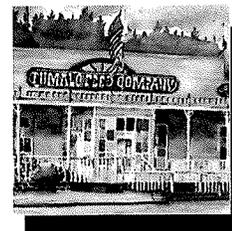
Comprehensive Plan Designations	Zoning Districts
Commercial (TUC)	Commercial District (TUC)
Floodplain (FP)	Floodplain (FP)
Industrial (TUI)	Industrial District (TUI)
Research and Development (TURE)	Research and Development District (TURE)
Residential (TUR)	Residential District (TUR)
Residential 5 Acre Minimum (TUR5)	Residential Five Acre Minimum District (TUR5)

**Table 5 - Tumalo Land Use Inventory \***

Zone	Residential Units	Commercial / Industrial Developments	Undeveloped Parcels	Total Number of Parcels
TUC	28	17	57	102
TUR	93	0	37	127
TUR5	75	0	27	99
TURE	0	2	1	3
TUI	0	2	1	3
<b>Total</b>	<b>196</b>	<b>21</b>	<b>123</b>	<b>334</b>

\* Assessor's Data 2009

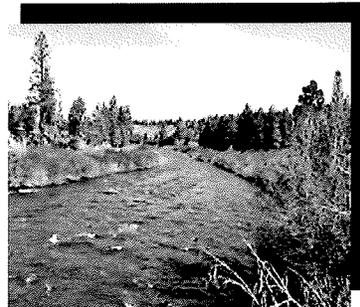
**Commercial (TUC).** A “Commercial” designation allows a range of limited commercial and industrial uses to serve Tumalo and the surrounding area. In general, the designation extends north from the intersection of Cook Avenue and U.S. 20 to 3<sup>rd</sup> Street between Wood and Wharton Avenues. Commercial lands also comprise an area west of U.S. 20 between 5<sup>th</sup> and 8<sup>th</sup> Streets.



This designation was originally intended to accommodate a mixture of small-scale commercial and limited industrial uses. The core commercial area initially encompassed lands adjacent to Cook Avenue, north of U.S. 20. The designation was ultimately expanded between Cook and

Wharton Avenues that extends south to U.S. 20. This area includes the “Tumalo Mall,” an existing commercial and retail complex. The use of this building received authorization as a nonconforming use in 1986 and site plan alterations in 1987 and 1988. These land use actions brought the uses into compliance with the commercial zone.

~~Floodplain (FP). A “Floodplain” designation protects the public and private property from hazards associated with floodplains; conserves important riparian areas along rivers and streams for fish and wildlife resources; and preserves significant scenic and natural resources. This designation follows the channel of the Deschutes River that bisects Tumalo. The areas of special flood hazard are identified by the Federal Insurance Administration in a report titled *Flood Insurance Study for Deschutes County, Oregon and Incorporated Areas*. This report was revised in September 2007, and includes accompanying Flood Insurance Rate Maps. The Flood Insurance Study is on file at the Deschutes County Community Development Department.~~



Industrial (TUI). An “Industrial” designation allows a limited range of industrial uses to serve Tumalo and the surrounding area. The designation recognizes nonconforming industrial uses and properties suitable for limited amounts of additional industrial development. This designation is concentrated around the Knife River operation that fronts O.B. Riley Road and U.S. 20.

Research and Development (TURE). A “Research and Development” designation allows research and development facilities requiring a more rural, non-industrial location to be sited in Tumalo. This designation contains two parcels in one ownership located on the southeast slope of Laidlaw Butte. It was originally created to accommodate a research and development site and associated uses predating Deschutes County’s 1979 zoning ordinance.

Residential (TUR). A “Residential” designation allows a mixture of housing types and densities suited to the level of available water and wastewater facilities. The purpose of this district is to allow new residential development that is compatible with the rural character of the area. Originally, the residential district boundary coincided with the boundary of the old Laidlaw Plat including the Deschutes River Homesites plats between Riverview Avenue and the Deschutes River. Today, it also includes the area surrounding the Knife River aggregate site south of U.S. 20.

Residential 5-Acre (TUR-5). A “Residential 5 Acre Minimum” designation retains large rural residential lots. The lands designated Residential-5 acre minimum include the larger parcels east of the Deschutes River and the west slope of Laidlaw Butte.

A “Flood Plain Combining Zone” provides additional regulations to promote public health, safety, and general welfare, and minimize losses due to flood conditions in specific areas. The Combining Zone also provides secondary benefits including riparian area conservation along rivers and streams for fish and wildlife and preservation of significant scenic and natural resources. Refer to Section 2.5 of the Comprehensive Plan for more details.

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# Policy Topics

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## Land Use Designations

Land Use is governed by 19 Statewide Planning Goals, but particularly Goal 2, Land Use Planning. Refer to the Deschutes County Comprehensive Plan Section 1.3 for further details. Deschutes County Comprehensive Plan designations identify general land uses and provide a legal framework for establishing zoning districts. Zoning regulates land uses that are allowed in each respective district with development standards. **Table 4** lists the predominant comprehensive plan designations and corresponding zoning districts for South County. **Table 5** shows the acreage associated with the districts.

<b>Table 4 - South County Area Land Use Designations</b>	
<b>Comprehensive Plan Designations</b>	<b>Zoning Districts</b>
Agricultural	Exclusive Farm Use Zone
Destination Resort	Destination Resort Overlay Zone
	<del>Floodplain Zone</del>
Forest	Forest Use 1 & 2 Zone
Open Space and Conservation	Open Space and Conservation Zone
Rural Commercial	Rural Commercial Zone
Rural Residential Exception Area	Rural Residential 10 Zone
Surface Mining	Surface Mining Zone, Impact Combining Zone
Unincorporated Community	<i>Unincorporated Community - Rural Service Center</i>
	<u>Other Relevant Districts</u>
	<i>Landscape Management Combining Zone</i>
	<i>Wildlife Area Combining Zone</i>
	<i>Flood Plain Combining Zone</i>

**Table 5 - South County Zoning District & Associated Acreages**

<b>Zoning Districts <sup>1</sup></b>	<b>Acres <sup>2</sup></b>	<b>Percent <sup>3</sup></b>
Exclusive Farm Use La Pine	5,706	3%
<del>Flood Plain</del>	<del>4,974</del>	<del>3%</del>
Forest 1	135,827	76%
Forest 2	4,392	2%
Open Space and Conservation	8,979	5%
Rural Residential 10	17,596	10%
Other (Unincorporated Community, Surface Mining, Rural Commercial)	149	0%
<b>Total</b>	<b>177,623</b>	<b>100%</b>
<b>Overlay and Combining Zones</b>		
Wildlife Combining	99,655	56%
Destination Resort Overlay	2,000	1%
Landscape Management Combining	8,274	5%
Flood Plain Combining	4,974	3%

<sup>1</sup> Zoning districts, combining and overlay zones exclude Sunriver and La Pine

<sup>2</sup> Acres include roads, right-of way, lakes, rivers

<sup>3</sup> Rounding may not add to 100%

Described below in greater detail are South Deschutes County's Comprehensive Plan designations.



An "Agricultural Lands" designation and EFU zone protects farmlands in Deschutes County pursuant to Statewide Planning Goal 3 (Agricultural Lands). As discussed in the Agricultural Lands Section of the Comprehensive Plan, protecting agriculture is one of the primary goals of the Oregon land use system. A 1992 study identified seven agricultural subzones. For each subzone, standards determine minimum parcel sizes for farm divisions to protect the commercial agricultural land base. The subzone applicable to south Deschutes County is EFU - La Pine (EFULP). Its specifically noted for riparian meadows, grazing and meadow hay. The minimum acreage for this subzone is 37 irrigated acres. Refer to Section 2.2 of the Agricultural Lands section of the Comprehensive Plan for more details.

Statewide Planning Goal 8, the recreation goal, was amended in 1989 to specify a process for locating destination resorts on rural land without taking an exception to Goals 3, 4, 11 and 14. This was followed by legislation incorporating Goal 8 into Oregon's land use statutes. By these actions, the State of Oregon recognized destination resorts as a legitimate rural land use. In order to allow destination resorts, Goal 8 requires that Deschutes County adopt a "Destination Resort" map



showing which lands are eligible for destination resort development.

Although a property is mapped as eligible for a destination resort, a destination resort may not be permitted outright in that location. In order to be approved, a proposal for a resort must be processed as a conditional use and comply with the specific standards and criteria established by the county. In 2010, the Board of County Commissioners adopted new criteria and procedures for updating its Destination Resort Maps. One year later the Board officially updated them. In south Deschutes County, 573 properties, encompassing 2,000 acres are designated as eligible for siting a destination resort. Refer to Section 3.9 of the Comprehensive Plan for more details.



~~A “Floodplain” designation protects public and private property from hazards associated with floodplains; conserves important riparian areas along rivers and streams for fish and wildlife resources; and preserves significant scenic and natural resources. Floodplains are defined as the lowland and relatively flat areas adjoining inland waters including at a minimum, that area subject to a one percent (100-year recurrence) or greater chance of flooding in any one year. The areas of special flood hazard are identified by the Federal Insurance Administration in a report titled, *Flood Insurance Study for Deschutes County, Oregon and Incorporated Areas*. This report was revised in September 2007, and includes accompanying Flood Insurance Rate Maps. Floodplains in Southern Deschutes County are adjacent to the Deschutes, Little Deschutes and Fall rivers. The Flood Insurance Study is on file at the Deschutes County Community Development Department. Refer to Section 2.5 of the Comprehensive Plan for more details.~~

Maintaining strong protections for forest land is another primary goal of the Oregon land use planning system. Statewide Planning Goal 4 sets forest identification and protection standards which must be met by local governments. The Goal requires forests to be designated on a comprehensive plan as “*Forest Lands*” and protected primarily for the growing and harvesting of trees. The key concept is local governments must inventory forest lands and protect them through local regulations. In 1992, as part of State mandated Periodic Review, Deschutes County revised its forest designations and associated regulations to two (F-1 and F-2). As shown in Table 5, the vast majority of lands in South County are zoned for forest uses. Refer to the Section 2.3 of the Comprehensive Plan for more details.



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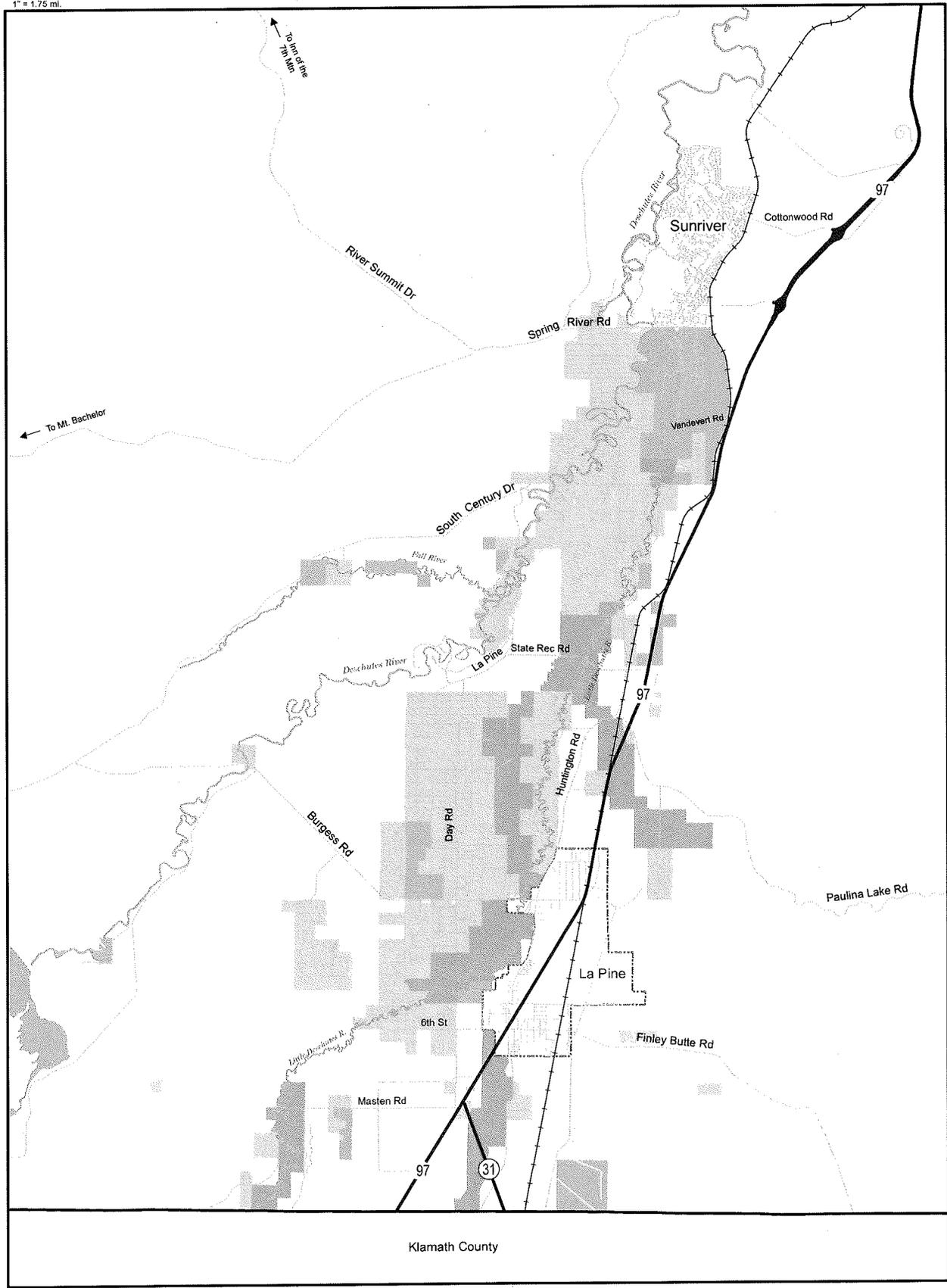


An “Open Space and Conservation” designation protects views either through the Landscape Management Combining Zone or Open Space and Conservation Zone. Open spaces are generally undeveloped areas that are being maintained for some other purpose, such as parks, forests or wildlife habitat. Besides the value that stems from the primary use of the land, open spaces provide aesthetically pleasing undeveloped landscapes. Because these areas are undeveloped they also provide additional benefits such as water recharge and safety zones from natural hazards like flooding. Refer to Section 2.7 of the Comprehensive Plan for more details.

The majority of private land in South County is designated “Rural Residential Exception Area.” Rural Residential Exception Areas and corresponding Rural Residential (RR-10) zone are so named because the County had to follow a process under Statewide Goals 2, 3 or 4 to explain why these rural lands were excepted from State farm or forest designations. The minimum lot size for new subdivisions in the RR-10 zoning district is ten acres. Refer to Section 3.3 of the Comprehensive Plan for more details.

Besides the above designations there are other Comprehensive Plan and Zoning Districts relevant to south Deschutes County. “Unincorporated Communities” include “Rural Service Centers,” pre-existing areas of minor commercial and residential development. The “Surface Mining” designation provides regulations for non-renewable resources, such as pumice, cinders, building stone, sand, gravel and crushed rock. The “Rural Commercial” designation refers to areas of pre-existing commercial development that do not meet the standards for Rural Service Centers. Refer to the Sections 2.10, 3.4, and 4.8, of the Comprehensive Plan for more details. There are also a number of overlay or combining zones. The “Wildlife Combining Zone” provides additional regulations to protect deer migration corridors and elk habitat. Limits are placed on fencing, building location, and new subdivisions. The “Landscape Management Combining Zone” provides additional regulations to protect viewsheds from development along rivers and certain roads. Refer to Sections 2.6, 2.7, and 3.9, of the Comprehensive Plan for more details. The “Flood Plain Combining Zone” provides additional regulations to promote public health, safety, and general welfare, and minimize losses due to flood conditions in specific areas. The Combining Zone provides secondary benefits including riparian area conservation along rivers and streams for fish and wildlife and preservation significant scenic and natural resources. Refer to Section 2.5 of the Comprehensive Plan for more details.

# Appendix 5.4 - Zoning



- Legend**
- +— Railroad
  - =— State Highway
  - ▨ Rivers & Lakes
  - Unincorporated Community
  - - - La Pine City Limit

- Zoning Designations**
- ▨ EFU- La Pine Subzone
  - ▨ F1 - Forest Use 1
  - ▨ F2 - Forest Use 2
  - ▨ OS&C - Open Space & Conservation
  - ▨ RR10 - Rural Residential 10 Acre Minimum
  - ▨ SM - Surface Mining

Ordinance 2018-005  
 Exhibit "F"



**DISCLAIMER:**  
 The information on this map was derived from digital databases on Deschutes County's G.I.S. Care was taken in the creation of this map, but it is provided "as is". Deschutes County cannot accept any responsibility for errors, omissions, or positional accuracy in the digital data or the underlying records. There are no warranties, express or implied, including the warranty of merchantability or fitness for a particular purpose, accompanying this product. However, notification of any errors will be appreciated.

## Section 5.12 Legislative History

### Background

This section contains the legislative history of this Comprehensive Plan.

**Table 5.11.1 Comprehensive Plan Ordinance History**

Ordinance	Date Adopted/ Effective	Chapter/Section	Amendment
2011-003	8-10-11/11-9-11	All, except Transportation, Tumalo and Terrebonne Community Plans, Deschutes Junction, Destination Resorts and ordinances adopted in 2011	Comprehensive Plan update
2011-027	10-31-11/11-9-11	2.5, 2.6, 3.4, 3.10, 3.5, 4.6, 5.3, 5.8, 5.11, 23.40A, 23.40B, 23.40.065, 23.01.010	Housekeeping amendments to ensure a smooth transition to the updated Plan
2012-005	8-20-12/11-19-12	23.60, 23.64 (repealed), 3.7 (revised), Appendix C (added)	Updated Transportation System Plan
2012-012	8-20-12/8-20-12	4.1, 4.2	La Pine Urban Growth Boundary
2012-016	12-3-12/3-4-13	3.9	Housekeeping amendments to Destination Resort Chapter
2013-002	1-7-13/1-7-13	4.2	Central Oregon Regional Large-lot Employment Land Need Analysis
2013-009	2-6-13/5-8-13	1.3	Comprehensive Plan Map Amendment, changing designation of certain property from Agriculture to Rural Residential Exception Area
2013-012	5-8-13/8-6-13	23.01.010	Comprehensive Plan Map Amendment, including certain property within City of Bend Urban Growth Boundary
2013-007	5-29-13/8-27-13	3.10, 3.11	Newberry Country: A Plan for Southern Deschutes County

2013-016	10-21-13/10-21-13	23.01.010	Comprehensive Plan Map Amendment, including certain property within City of Sisters Urban Growth Boundary
2014-005	2-26-14/2-26-14	23.01.010	Comprehensive Plan Map Amendment, including certain property within City of Bend Urban Growth Boundary
2014-012	4-2-14/7-1-14	3.10, 3.11	Housekeeping amendments to Title 23.
2014-021	8-27-14/11-25-14	23.01.010, 5.10	Comprehensive Plan Map Amendment, changing designation of certain property from Sunriver Urban Unincorporated Community Forest to Sunriver Urban Unincorporated Community Utility
2014-021	8-27-14/11-25-14	23.01.010, 5.10	Comprehensive Plan Map Amendment, changing designation of certain property from Sunriver Urban Unincorporated Community Forest to Sunriver Urban Unincorporated Community Utility
2014-027	12-15-14/3-31-15	23.01.010, 5.10	Comprehensive Plan Map Amendment, changing designation of certain property from Agriculture to Rural Industrial
2015-021	11-9-15/2-22-16	23.01.010	Comprehensive Plan Map Amendment, changing designation of certain property from Agriculture to Surface Mining.
2015-029	11-23-15/11-30-15	23.01.010	Comprehensive Plan Map Amendment, changing designation of certain property from Tumalo Residential 5-Acre Minimum to Tumalo Industrial
2015-018	12-9-15/3-27-16	23.01.010, 2.2, 4.3	Housekeeping Amendments to Title 23.

2015-010	12-2-15/12-2-15	2.6	Comprehensive Plan Text and Map Amendment recognizing Greater Sage-Grouse Habitat Inventories
2016-001	12-21-15/04-5-16	23.01.010; 5.10	Comprehensive Plan Map Amendment, changing designation of certain property from, Agriculture to Rural Industrial (exception area)
2016-007	2-10-16/5-10-16	23.01.010; 5.10	Comprehensive Plan Amendment to add an exception to Statewide Planning Goal II to allow sewers in unincorporated lands in Southern Deschutes County
2016-005	11-28-16/2-16-17	23.01.010, 2.2, 3.3	Comprehensive Plan Amendment recognizing non-resource lands process allowed under State law to change EFU zoning
2016-022	9-28-16/11-14-16	23.01.010, 1.3, 4.2	Comprehensive plan Amendment, including certain property within City of Bend Urban Growth Boundary
2016-029	12-14-16/12/28/16	23.01.010	Comprehensive Plan Map Amendment, changing designation of certain property from, Agriculture to Rural Industrial
2017-007	10-30-17/10-30-17	23.01.010	Comprehensive Plan Map Amendment, changing designation of certain property from Agriculture to Rural Residential Exception Area
2018-002	1-3-18; 1-25-18	23.01, 2.6	Comprehensive Plan Amendment permitting churches in the Wildlife Area Combining Zone

<p><u>2018-005</u></p>	<p><u>5-9-18/5-30-18</u></p>	<p><u>23.01.010, 2.5, Tumalo Community Plan, Newberry County Plan</u></p>	<p><u>Comprehensive Plan Map Amendment, removing Flood Plain Comprehensive Plan Designation; Comprehensive Plan Amendment adding Flood Plain Combining Zone purpose statement.</u></p>
<p>2018-006</p>	<p>7-23-18/7-23-18</p>	<p>23.01.010, 5.8, 5.9</p>	<p>Housekeeping Amendments correcting tax lot numbers in Non-Significant Mining Mineral and Aggregate Inventory; modifying Goal 5 Inventory of Cultural and Historic Resources</p>

## Chapter 18.04. TITLE, PURPOSE AND DEFINITIONS

### 18.04.030. Definitions.

...

"Base flood" means the flood having a one percent chance of being equaled or exceeded in any given year. Also referred to as the "100-year flood." Designation on flood plain maps always includes the letters A or V.

"Base flood elevation" means the computed elevation to which floodwater is anticipated to rise during the base flood. Base Flood Elevations (BFEs) are shown on Flood Insurance Rate Maps (FIRMs) and on the flood profiles.

...

"Below-grade crawl space" means an enclosed area below the base flood elevation in which the interior grade is not more than two feet below the lowest adjacent exterior grade and the height, measured from the interior grade of the crawlspace to the top of the crawlspace foundation, does not exceed 4 feet at any point.

...

"Critical facility" means a facility for which even a slight chance of flooding might be too great. Critical facilities include, but are not limited to, schools, nursing homes, hospitals, police, fire and emergency response installations, and installations which produce, use or store hazardous materials or hazardous waste.

...

"Flood Insurance Rate Map (FIRM)" is the official map on which the United States Federal Insurance Administration has delineated both the areas of special flood hazards and the risk premium zones applicable to the community. The FIRM is adopted by reference in Ordinance No. ~~88-034~~2007-019.

"Flood Insurance Study" is the official report provided by the Federal Insurance Administration that includes flood profiles, the Flood Boundary-Floodway Map, and the water surface elevation of the base flood condition of partial or complete inundation of normally dry land areas. The Study is adopted by reference in Ordinance No. ~~88-034~~2007-019.

~~"Flood plain" means the area adjoining a stream that is subject to inundation by the base flood discharge that is outside the floodway.~~

...

"New construction" means any structure for which the start of construction commenced on or after the effective date of Ordinance PL-15. For purposes of the Flood Plain Combining Zone (FP), "new construction" means any structure for which the start of construction commenced on or after the date of adoption of the amendments to the Flood Plain Zone in Ordinance No. 88-030.

...

"Substantial damage" means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.

"Substantial improvement" means any repair, reconstruction or improvement of a structure, the cost of which equals or exceeds 50 percent of the true cash value of the structure either:

- A. Before the improvement or repair is started; or
- B. If the structure has been damaged and is being restored, before the damage occurred. For the purposes of this definition, "substantial improvement" is considered to occur when the first

alteration of any wall, ceiling, floor or other structural part of the building commences, whether or not that alteration affects the external dimensions of the structure. ~~The term does not, however, include either;~~

The term does not, however, include either:

- A. Any project for improvement of a structure to comply with existing state or local health, sanitary or safety code specifications which are solely necessary to assure safe living conditions; or
- B. Any alteration of a structure listed on the National Register of Historic Places or a State Inventory of Historic Places.

...

(Ord. 2018-005 §8, 2018; Ord. 2017-015§1, 2017; Ord. 2016-026§1, 2016; Ord. 2016-015§1, 2016; Ord. 2015-004 §1, 2015; Ord. 2014-009 §1, 2014; Ord. 2013-008 §1, 2013; Ord. 2012-007 §1, 2012; Ord. 2012-004 §1, 2012; Ord. 2011-009 §1, 2011; Ord. 2010-022 §1, 2010; Ord. 2010-018 3, 2010, Ord. 2008-007 §1, 2008; Ord. 2008-015 §1, 2008; Ord. 2007-005 §1, 2007; Ord. 2007- 020 §1, 2007; Ord. 2007-019 §1, 2007; Ord. 2006-008 §1, 2006; Ord. 2005-041 §1, 2005; Ord. Chapter 18.04 35 ( 04/2015) 2004-024 §1, 2004; Ord. 2004-001 §1, 2004; Ord. 2003-028 §1, 2003; Ord. 2001-048 §1, 2001; Ord. 2001-044 §2, 2001; Ord. 2001-037 §1, 2001; Ord. 2001-033 §2, 2001; Ord. 97-078 §5, 1997; Ord. 97-017 §1, 1997; Ord. 97-003 §1, 1997; Ord. 96-082 §1, 1996; Ord. 96-003 §2, 1996; Ord. 95-077 §2, 1995; Ord. 95-075 §1, 1975; Ord. 95-007 §1, 1995; Ord. 95-001 §1, 1995; Ord. 94-053 §1, 1994; Ord. 94-041 §§2 and 3, 1994; Ord. 94-038 §3, 1994; Ord. 94-008 §§1, 2, 3, 4, 5, 6, 7 and 8, 1994; Ord. 94-001 §§1, 2, and 3, 1994; Ord. 93-043 §§1, 1A and 1B, 1993; Ord. 93- 038 §1, 1993; Ord. 93-005 §§1 and 2, 1993; Ord. 93-002 §§1, 2 and 3, 1993; Ord. 92-066 §1, 1992; Ord. 92-065 §§1 and 2, 1992; Ord. 92-034 §1, 1992; Ord. 92-025 §1, 1992; Ord. 92-004 1 and 2, 1992; Ord. 91-038 §§3 and 4, 1991; Ord. 91-020 §1, 1991; Ord. 91-005 §1, 1991; Ord. 91-002 §11, 1991; Ord. 90-014 §2, 1990; Ord. 89-009 §2, 1989; Ord. 89-004 §1, 1989; Ord. 88- 050 §3, 1988; Ord. 88-030 §3, 1988; Ord. 88-009 §1, 1988; Ord. 87-015 §1, 1987; Ord. 86-056 2, 1986; Ord. 86-054 §1, 1986; Ord. 86-032 §1, 1986; Ord. 86-018 §1, 1986; Ord. 85-002 §2, 1985; Ord. 84-023 §1, 1984; Ord. 83-037 §2, 1983; Ord. 83-033 §1, 1983; Ord. 82-013 §1, 1982)

**Chapter 18.12. ESTABLISHMENT OF ZONES**

**18.12.010. Establishment of Zones.**

For the purpose of DCC Title 18, the following primary zones, combining zones, subzones and unincorporated community zone districts are hereby established:

**A. Primary Zones.**

Primary Zones	Abbreviations
Airport Development	AD
Exclusive Farm Use Zones	EFU
Flood Plain	FP
Forest Use	F1
Forest Use	F2
Multiple Use Agriculture	MUA10
Open Space and Conservation	OS&C
Rural Commercial	RC
Rural Industrial	RI
Rural Residential	RR10
Surface Mining	SM

**B. Combining Zones.**

Combining Zones	Abbreviations
Airport Safety	AH
Conventional Housing	CH
Destination Resort	DR
Landscape Management	LM
Limited Use	LU
Sensitive Bird & Mammal Habitat	SBMH
Surface Mining Impact Area	SMIA Wildlife Area
Wildlife Area	WA
Flood Plain	FP

**C. Exclusive Farm Use Subzones.**

Exclusive Farm Use Subzones	Abbreviations
Alfalfa	EFUAL
Horse Ridge East	EFUHR
La Pine	EFULA
Lower Bridge	EFULB
Sisters/Cloverdale	EFUSC
Terrebonne	EFUTE
Tumalo/Redmond/Bend	EFUTRB

**D. Unincorporated Community Zones.**

**1. La Pine Urban Unincorporated Community.**

La Pine Planning Area	Abbreviations
Commercial District	LPC
Community Facility District	LPCF
Community Facility Limited District	LPCFL

Flood Plain District	LPFP
Industrial District	LPI
Business Park District	LPBP
Residential District	LPR
Sewer Treatment District	LPST
Neighborhood Planning Area Abbreviations	
Neighborhood Community Facility	LPNCF
Neighborhood Community Facility Limited	LPNCFL
Neighborhood Commercial	LPNC
Neighborhood Park	LPNPK
Neighborhood Open Space	LPNO
Neighborhood Residential Center	LPNRC
Neighborhood Residential General	LPNRG
Wickiup Planning Area Abbreviation	
Wickiup Commercial/Residential	LPWCR

2. Sunriver Urban Unincorporated Community.

Sunriver Districts Abbreviations	
Airport District	SUA
Business Park District	SUBP
Commercial District	SUC
Community General District	SUCG
Community Limited District	SUCL
Community Neighborhood District	SUCN
Community Recreation District	SUCR
Flood Plain Combining District	SUFP
Forest District	SUF
Multiple Family Residential District	SURM
Resort District	SUR
Resort Equestrian District	SURE
Resort Golf Course District	SURG
Resort Marina District	SURA
Resort Nature Center District	SURN
Single Family Residential District	SURS
Utility District	SUU

3. Terrebonne Rural Community.

Terrebonne Districts	Abbreviations
Commercial District	TeC
Commercial-Rural District	TeCR
Residential District	TeR
Residential-5 acre minimum District	TeR5

4. Tumalo Rural Community.

Tumalo Districts	Abbreviations
Commercial District	TuC
Flood Plain District	TuFP
Residential District	TuR
Residential-5 acre minimum District	TuR5
Research & Development District	TuRE

5. Rural Service Center.

Commercial/Mixed Use Districts		RSC-C/M (B,H,M,W,W)
Brothers, Hampton, Millican, Whistlestop, Wildhunt		
Alfalfa	RSC-C/M (A)	
Alfalfa Residential	RSC-R(A)	
Brothers Open Space	RSC-OS	

6. Black Butte Ranch Resort Community.

Black Butte Ranch District	Abbreviations
Resort District	BBRR
Surface Mining District/Limited Use	BBRSM
Utility District/Limited Use	BBRU

7. Inn of the 7<sup>th</sup> Mountain/Widgi Creek Resort Community

Inn of the 7 <sup>th</sup> Mountain/ Widgi Creek District	Abbreviations
Resort District	SMWCR
Widgi Creek Residential District	WCR

(Ord. 2018-005 §9, 2018; Ord. 2008-017 § 1, 2008, Ord. 2006-008 §2, 2006; Ord. 2005-016 §1, 2005, Ord. 2002-019 §1, 2002, Ord. 2002-001, §1, 2002, Ord. 2001-048 §4, 2001, Ord. 2001-044 §2, 2001; Ord. 98-063 §2, 1998; Ord. 96-003 §4, 1996; Ord. 92-025 §5, 1992)

...  
**18.12.040. Zone Boundaries.**

Unless otherwise specified, zone boundaries are section lines, subdivision lines, lot lines, center lines of street or railroad rights of way, water courses, ridges or rimrocks, other readily recognizable or identifiable natural features, or the extension of such lines. In case of any dispute regarding the zoning classification of property subject to the County code, the original ordinance with map exhibit contained in the official county records will control. Whenever uncertainty exists as to the boundary of a zone as shown on the zoning map or amendment thereto, the following rules shall apply:

- A. Where a boundary line is indicated as following a street, alley, canal or railroad right of way, it shall be construed as following the centerline of such right of way.
- B. Where a boundary line follows or approximately coincides with a section lines or division thereof, lot or property ownership line, it shall be construed as following such line.

- C. If a zone boundary as shown on the zoning map divides a lot or parcel between two zones, the entire lot or parcel shall be deemed to be in the zone in which the greater area of the lot or parcel lies, provided that this adjustment involves a distance not exceeding 100 feet from the mapped zone boundary. ~~DCC Title 18 does not apply to areas zoned flood plain.~~  
(Ord. 2018-005 §9, 2018; Ord 2008-017 § 1.2008, Ord. 91-020 §1, 1991; Ord. 91-005 §3, 1991; Ord. 80-206 §2, 1980)

**Chapter 18.61. URBAN UNINCORPORATED COMMUNITY ZONE - LA PINE**

**18.61.030. La Pine Planning Area.**

...  
F. La Pine Flood Plain District. All uses proposed within this district shall be subject to the provisions in DCC 18.96, Flood Plain Combining Zone.  
...

(Ord. 2018-005 §10, 2018; Ord. 2010-029 § 1, 2010; Ord. 2009-025 § 1, 2009; Ord. 2003-002 §1, 2003; Ord. 2002-033 §1, 2002; Ord. 2001-044 §3, 2001; Ord. 2000-015§ 2, 2000; Ord. 97-063 §3, 1997; Ord. 97-041 §1, 1997; Ord. 97-017 §4, 1997; Ord. 96-003 §1, 1996)

## **Chapter 18.96. FLOOD PLAIN COMBINING ZONE - FP**

### **18.96.010. Purposes.**

The purposes of the Flood Plain Combining Zone are: To implement the applicable elements of the Comprehensive Plan Flooding Resource Management and Growth Management Sections; to protect the public from the hazards associated with flood plains; to conserve important riparian areas along rivers and streams for the maintenance of the fish and wildlife resources; and to preserve significant scenic and natural resources while balancing the public interests with those of individual property owners in the designated areas.

(Ord. 2018-005 §11, 2018; Ord. 88-030 §4, 1988)

### **18.96.020. Designated Areas.**

The areas of special flood hazard identified by the Federal Insurance Administration in a scientific and engineering report entitled "Flood Insurance Study for Deschutes County, Oregon and Incorporated Areas" revised September 28, 2007, with accompanying Flood Insurance Rate Maps is hereby adopted by reference and incorporated herein by this reference. The Flood Insurance Study is on file at the Deschutes County Community Development Department.

The Flood Plain Combining Zone shall include all areas designated as "Special Flood Hazard Areas" by the Flood Insurance Study for Deschutes County. When ~~base flood elevation~~ data has not been provided in the Flood Insurance Study, the Planning Director ~~may will obtain~~ review and reasonably utilize any ~~base flood elevation or floodway data~~ provided by the applicant or available from federal, state or other sources to determine the location of a flood plain or floodway.

(Ord. 2018-005 §11, 2018; Ord 2007-019 §2, 2007; Ord. 2000-033 §5, 2000; Ord. 88-030 §4, 1988)

### **18.96.030. Uses Permitted Outright.**

The following uses and their accessory uses are permitted outright:

A. Uses permitted outright in the underlying zone with which the Flood Plain Combining Zone is combined, that does not constitute floodplain development as defined in DCC 18.04.030, shall be permitted outright

B. Notwithstanding the provision of subsection (A) above, the following uses that do not constitute floodplain development as defined in DCC 18.04.030, are permitted outright and not subject to the provisions of this chapter:

A.1. Agricultural use conducted without establishing or utilizing a structure. For purposes of DCC 18.96.030(AB)(1), a "structure" does not include a boundary fence as long as such fence is designed to impede as little as possible the movement of floodwaters and flood-carried material.

B.2. Management, propagation and harvesting of a forest product.

C.3. Open space, as defined in DCC 18.04.030.

D.4. Portions of a residential use that do not contain structures, such as lawn, garden or play areas.

E.5. Class I and II road or street project subject to approval as part of a land partition, subdivision or subject to the standards and criteria established by DCC 18.116.230 that do not involve Floodplain development.

F.6. Class III road or street project.

G.7. Excavation, grading and fill for the routine maintenance and repair of existing roads and roadway drainage within the road right-of-way that will have not adverse effect on flood waters.

H.8. Operation, maintenance, and piping of existing irrigation systems operated by an Irrigation District except as provided in DCC 18.120.050.

I.9. Recreational vehicles provided they meet the standards and criteria established by DCC 18.116.095.

10. Fill and removal activities involving the removal of vegetation if the material to be filled or removed will not exceed 50 cubic yards in volume and such fill or removal activities are undertaken for the purpose of:
    - a. Removal of diseased or insect-infested trees or shrubs or of rotten or damaged trees that present safety hazards, or
    - b. Normal maintenance and pruning of trees and shrubs.
  11. Fill and removal activities conducted by an Irrigation District involving piping work in existing canals and ditches.
  12. Any open fencing that is placed in the floodplain but outside the floodway, provided there is no grading required to place the fence.
  13. Uses and structures determined to be located outside the Special Flood Hazard Area in accordance with 18.96.130.
- (Ord. 2018-005 §11, 2018; Ord. 2007-019 §2, 2007; Ord. 93-043 §15, 1993; Ord. 91-020 §1, 1991; Ord. 88-030 §4, 1988)

**18.96.040. Conditional uses permitted.**

The following uses and their accessory uses may be allowed subject to applicable sections of this title:

- A. ~~A roadway, bridge or utility structure, except a landfill, that will not impede the waters of a base flood subject to DCC 18.128.~~
- B. ~~Incidental storage of material or equipment that is either not subject to damage by flood, or is mobile and readily removable from the area within time available after flood warning. If such material is not readily removable, it shall be anchored to prevent flotation and shall not obstruct water flow. Material or equipment stored shall include only items which will not create a hazard to the health or safety of persons, property, animals or plant life should the storage area be inundated.~~
- C. ~~Single family dwelling, or a manufactured home subject to DCC 18.116.070, on an individual lot. In addition to the other requirements of DCC 18.96, single family dwellings proposed to be sited in areas of the Flood Plain Zone designated "Agriculture" on the Comprehensive Plan Map may be approved only as uses identified by DCC 18.16.030(A), (B), (D) or (E) and subject to the applicable provisions of DCC 18.16 governing those uses. In addition to the other requirements of DCC 18.96, single family dwellings proposed to be sited in areas of the Flood Plain Zone designated "Forest" on the Comprehensive Plan Map may be approved only as uses identified by DCC 18.36.030(Y), 18.40.030(X) or 18.40.030(Y) and subject to the applicable provision of DCC 18.36 and 18.40 governing those uses.~~
- D. ~~Agricultural accessory buildings.~~
- E. ~~Hydroelectric facilities subject to DCC 18.116.130 and 18.128.260.~~
- F. ~~Excavation, grading and fill and removal within the bed and banks of a stream or river or in a wetland, subject to DCC 18.120.050 and 18.128.270. Excavation, grading and fill within any area of special flood hazard identified in DCC 18.96.020.~~
- G. ~~Recreational uses requiring only structures having an insignificant effect on flood waters outside the Floodway, such as golf courses, tennis courts, driving ranges, archery ranges, picnic grounds, boat launching ramps, swimming areas, wildlife or nature preserves, game farms, fish hatcheries, shooting preserves and hunting or fishing areas subject to DCC 18.128, except in areas designated "Forest" or "Agriculture" on the Comprehensive Plan Map.~~
- H. ~~Subdividing or partitioning of land, any portion of which is located in a flood plain, subject to the provisions of DCC Title 18 and DCC Title 17, the Subdivision/Partition Ordinance.~~
- I. ~~All new construction, expansion or substantial improvement of an existing dwelling, an agricultural related structure, a commercial, industrial or other non-residential structure, or an accessory building.~~
- J. ~~A boat dock or pier, either individual or community, on private property which lies in the following areas:~~
  1. ~~On the Deschutes River between river miles 226.4 and 224.5. This area is identified in the Scenic Waterway Management Plan as the Wickiup River Community Area;~~

- ~~2. On the Deschutes River between river miles 217.5 and 216.5. This area is identified in the Scenic Waterway Management Plan as the Pringle Falls River Community Area; and~~
  - ~~3. On the Deschutes River between river miles 207 and 192. This area is identified in the Scenic Waterway Management Plan as River Community Areas and Recreational River Area respectively.~~
  - ~~K. Those recreational uses described in DCC 18.36.030, "F-1 Conditional Uses," having an insignificant effect on flood waters where the subject Flood Plain zoned site is designated by the Comprehensive Plan Map as "Forest" and is adjacent to land zoned F-1.~~
  - ~~L. Those recreational uses described in DCC 18.40.030, "F-2 Conditional Uses," having an insignificant effect on flood waters where the subject Flood Plain zoned site is designated by the Comprehensive Plan Map as "Forest" and is adjacent to land zoned F-2.~~
  - ~~M. Wireless telecommunications facilities, except those facilities meeting the requirements of DCC 18.116.250(A) or (B).~~
  - ~~N. Surface mining of mineral and aggregate resources in conjunction with the operation and maintenance of irrigation systems operated by an Irrigation District, including the excavation and mining for facilities, ponds, reservoirs, and the off-site use, storage, and sale of excavated material.~~
  - A. Uses permitted conditionally in the underlying zone with which the Flood Plain Combining Zone is combined shall be permitted conditionally.
  - B. When uses identified in this chapter as conditional or outright uses include Flood Plain Development, as defined in DCC 18.04.030, that Flood Plain Development is a conditional use.
  - C. Notwithstanding subsections (A) and (B) above, the following uses are permitted conditionally in the Flood Plain Combining Zone in association with any underlying zone:
    1. A bridge.
    2. Excavation, grading and fill and removal within the bed and banks of a stream or river or in a wetland, subject to DCC 18.120.050 and 18.128.270. Excavation, grading and fill within any area of special flood hazard identified in DCC 18.96.020.
    3. A boat dock or pier, either individual or community, on private property which lies in the following areas:
      - i. On the Deschutes River between river miles 226.4 and 224.5. This area is identified in the Scenic Waterway Management Plan as the Wickiup River Community Area;
      - ii. On the Deschutes River between river miles 217.5 and 216.5. This area is identified in the Scenic Waterway Management Plan as the Pringle Falls River Community Area; and
      - iii. On the Deschutes River between river miles 207 and 192. This area is identified in the Scenic Waterway Management Plan as River Community Areas and Recreational River Area respectively.
    4. Surface mining of mineral and aggregate resources in conjunction with the operation and maintenance of irrigation systems operated by an Irrigation District, including the excavation and mining for facilities, ponds, reservoirs, and the off-site use, storage, and sale of excavated material.
    5. Subdividing or partitioning of land, including cluster developments and planned developments where permitted in the underlying primary zone, subject to the provisions of DCC Title 18 and DCC Title 17, the Subdivision/Partition Ordinance.
- (Ord. 2018-005 §11, 2018; Ord. 2007-019 §2, 2007; Ord. 2001-039 §11, 2001; Ord. 2001-016 §2, 2001; Ord. 97-063 §3, 1997; Ord. 96-032 §1, 1996; Ord. 95-075 §1, 1995; Ord. 95-022 §1, 1995; Ord. 93-045 §1, 1993; Ord. 93-002 §4, 1993; Ord. 91-038 §1, 1991; Ord. 91-005 §37, 1991; Ord. 89-009 §4, 1989; Ord. 88-030 §4, 1988)

**18.96.050. Prohibited Uses.**

Marinas, boat slips and boat houses on private property.  
(Ord. 89-009 § 5, 1989)

**18.96.060. Limitations on Conditional Uses.**

The following limitations shall apply to all uses allowed by DCC 18.96.040:

- A. No new construction of a dwelling (including manufactured housing), accessory structure or farm use structure shall be allowed in the floodway of any river or stream except for replacement in conformance with the applicable provisions of DCC 18.96 of a dwelling lawfully in existence as of the effective date of Ordinance 88-030.
- B. No new construction of a dwelling (including manufactured housing), accessory structure or farm use structure shall be located in the flood plain unless it can be demonstrated by the applicant that no alternative exists on the subject property which would allow the structure to be placed outside of the flood plain.
- C. No subdivision or partition shall be allowed which creates the potential for additional residential dwellings in the flood plain.
- D. All necessary federal, state and local government agency permits shall be obtained.  
(Ord. 2007-019 §2, 2007; Ord. 95-022 §1, 1995; Ord. 93-002 §5, 1993; Ord. 91-020 §1, 1991; Ord. 88-030 §4, 1988)

**18.96.070. Application for Conditional Use.**

All records of any application for a conditional use permit and all certification of elevations shall be maintained in the records of the Community Development Department for public inspection. An application for a conditional use permit in the Flood Plain Combining Zone shall, at a minimum, contain the following information:

- A. A detailed explanation of why it is necessary to conduct the proposed use in the Flood Plain Combining Zone. Where ~~Base Flood Elevation~~ data is not available from the Flood Insurance Study or from another authoritative source, it shall be generated and submitted with the application for subdivision proposals and other proposed developments which contain at least 50 lots or five acres (whichever is less). Generation of Base Flood Elevation data shall not be required for subdivision proposals and other proposed developments that expressly preclude residential and non-residential construction in a Special Flood Hazard Area.
- B. A site plan, drawn to scale and accompanied by drawings, sketches and descriptions which describe and illustrate the proposed use. This site plan shall include, at a minimum, existing and proposed site contours in relation to the ~~Base Flood Elevation~~, existing and proposed structures, drainage facilities, and an explanation of how erosion will be dealt with during and after construction of the use.
- C. The location of the property relative to the channel of the river or stream.
- D. The location of existing and proposed diking or abutments, if any.
- E. The elevation of the lowest habitable floor and of any basement floor for any dwelling unit or structure.
- F. The elevation to which the structure is to be floodproofed, if applicable.
- G. Elevations on the site plan shall be established by a licensed surveyor or engineer, and shall be in relation to mean sea level.
- H. Certification by a registered professional engineer or architect that the floodproofing methods for any structure meet the floodproofing criteria established by the Federal Emergency Management Agency and the applicable standards in DCC 18.96.
- I. All other elements or information which will assist in the evaluation of the proposed development and conformance with the applicable criteria.

(Ord. 2018-005 §11, 2018; Ord. 95-022 §1, 1995; Ord. 93-043 §15A, 1993; Ord. 91-020 §1, 1991; Ord. 88-030 §4, 1988)

**18.96.080. Criteria to Evaluate Conditional Uses.**

- A. A conditional use permit in a Flood Plain Combining Zone shall not be approved unless all standards established by the Federal Emergency Management Agency and DCC Title 18 are addressed and findings are made by the Hearings Body or Planning Director that each of the standards and criteria are satisfied.
- B. Approval to alter or relocate a water course shall require notification to adjacent communities, the Department of Land Conservation and Development, ~~and~~ Department of State Lands, and other appropriate state and federal agencies prior to any such alteration or relocation and submit evidence to the Federal Insurance Administration. Maintenance shall be provided within the altered and relocated portion of said watercourse so that the flood carrying capacity is not diminished.
- C. A conditional use permit shall be based upon findings which relate to the property and existing and proposed structure(s). They shall not pertain to the property owner, inhabitants, economic or financial circumstances.
- D. All structures in the flood plain shall meet the following standards.
  - 1. Anchoring.
    - a. All new construction and substantial improvements shall be anchored to prevent flotation, collapse or lateral movement of the structure.
    - b. All manufactured homes must be anchored to prevent flotation, collapse or lateral movement, and shall be installed using methods and practices that minimize flood damage. Anchoring methods may include, but are not limited to, use of over-the-top or frame ties to ground anchors.
  - 2. Construction Materials and Methods.
    - a. All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.
    - b. All new construction and substantial improvements shall be constructed using methods and practices that minimize flood damage.
    - c. Electrical, heating, ventilation, plumbing and air-conditioning equipment and other service facilities shall be designed and/or otherwise elevated or located so as to prevent water from entering or accumulating within the components during conditions of flooding.
  - 3. Utilities.
    - a. All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system.
    - b. New and replacement sanitary systems shall be designed to minimize or eliminate infiltration of floodwaters into the system and discharge from the system into flood waters.
    - c. On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding consistent with the Oregon Department of Environmental Quality as specified in OAR 340-071-0100 et seq.
  - 4. Below-grade crawlspaces are ~~is~~ allowed subject to the standards in FEMA Technical Bulletin 11-01.
- E. Subdivision and Partition Proposals.
  - 1. All subdivision and partition proposals shall be consistent with the need to minimize flood damage.
  - 2. All subdivision and partition proposals shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize flood damage.
  - 3. All subdivision and partition proposals shall have adequate drainage provided to reduce exposure to flood damage.
  - 4. Where Base Flood Elevation data has not been provided or is not available from another authoritative source, it shall be generated for subdivision proposals and other proposed developments which contain at least 50 lots or 5 acres (whichever is less). Generation of Base Flood Elevation data shall not be required for subdivision proposals and other proposed

developments that expressly preclude residential and non-residential construction in a Special Flood Hazard Area.

- F. Review of Building Permits. Where elevation data is not available either through the Flood Insurance Study or from another authoritative source, applications for building permits shall be reviewed to assure that proposed construction will be reasonably safe from flooding. The test of reasonableness is a local judgment and includes use of historical data, high water marks, photographs of past flooding, etc., where available. (Failure to elevate at least two feet above grade in these zones may result in higher insurance rates.)
- G. Specific Standards. In the Flood Plain Combining Zone, the following requirements must be met:
1. Residential Construction.
    - a. New construction, including replacement, and substantial improvement of any residential structure shall have the lowest floor of the entire structure, including basement, elevated at least one foot above ~~b~~Base ~~f~~Flood ~~e~~Elevation.
    - b. Fully enclosed areas below the lower floor that are subject to flooding are prohibited unless they are designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must satisfy the standards in FEMA Technical Bulletin 11-01 and must either be certified by a registered professional engineer or architect and ~~or~~ must meet or exceed the following criteria:
      - i. A minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided.
      - ii. The bottom of all openings shall be no higher than one foot above grade.
      - iii. Openings may be equipped with screens, louvers or other coverings or devices, provided that they permit the automatic entry and exit of floodwaters.
  2. Nonresidential Construction. New construction and substantial improvement of any commercial, industrial or other nonresidential structure shall either have the lowest floor, including basement, elevated at least one foot above the level of the ~~b~~Base ~~f~~Flood ~~e~~Elevation, or, together with attendant utility and sanitary facilities, shall:
    - a. Be flood proofed so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water.
    - b. Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy.
    - c. Be certified by a registered professional engineer or architect that the design and methods of construction are subject to accepted standards of practice for meeting provisions of DCC 18.96.080, based on their development and/or review of the structural design, specifications and plans. Such certifications shall be provided to the County as set forth in DCC 18.96.070(H).
    - d. Nonresidential structures that are elevated, but not flood proofed, must meet the same standards for space below the lowest floor as described in DCC 18.96.080(F).
    - e. Applicants for floodproofing nonresidential buildings shall be notified that flood insurance premiums will be based on rates that are one foot below the floodproofed level (e.g. a building constructed to the flood level will be rated as one foot below that level).
    - f. Applicants shall supply a comprehensive Maintenance Plan for the entire structure that shall include but not limited to: exterior envelope of structure; all penetrations to the exterior of the structure; all shields, gates, barriers, or components designed to provide floodproofing protection to the structure; all seals or gaskets for shields, gates, barriers, or components; and, the location of all shields, gates, barriers, and components as well as all associated hardware, and any materials or specialized tools necessary to seal the structure.
    - g. Applicants shall supply an Emergency Action Plan (EAP) for the installation and sealing of the structure prior to a flooding event that clearly identifies what triggers the EAP and who is responsible for enacting the EAP.
  3. Exception for Small Accessory Structures. Relief from elevation or floodproofing as required in (G)(1) or (G)(2) above may be granted for small accessory structures that are:

- a. Less than 200 square feet and do not exceed one story;
  - b. Not temperature controlled;
  - c. Not used for human habitation and are used solely for parking of vehicles or storage of items having low damage potential when submerged;
  - d. Not used to store hazardous or toxic material, oil or gasoline, or any priority persistent pollutant identified by the Oregon Department of Environmental Quality unless confined in a tank installed in compliance with this ordinance or stored at least one foot above Base Flood Elevation;
  - e. Located and constructed to have low damage potential;
  - f. Constructed with materials resistant to flood damage;
  - g. Anchored to prevent flotation, collapse, or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy, during conditions of the base flood;
  - h. Constructed to equalize hydrostatic flood forces on exterior walls by allowing for the automatic entry and exit of floodwater. Designs for complying with this requirement must be certified by a licensed professional engineer or architect or:
    - i. Provide a minimum of two openings with a total net area of not less than one square inch for every square foot of enclosed area subject to flooding;
    - ii. The bottom of all openings shall be no higher than one foot above the higher of the exterior or interior grade or floor immediately below the opening; and
    - iii. Openings may be equipped with screens, louvers, valves or other coverings or devices provided they permit the automatic flow of floodwater in both directions without manual intervention.
  - i. Constructed with electrical, and other service facilities located and installed so as to prevent water from entering or accumulating within the components during conditions of the base flood.
4. ~~Manufactured Homes Dwellings. All manufactured homes to be placed or substantially improved shall be elevated on a permanent foundation such that the lowest floor of the manufactured home is at least one foot above the base flood elevation. Such manufactured homes shall be securely anchored to an adequately anchored foundation system subject to the provisions of DCC 18.96.080(C)(1).~~
- a. Manufactured dwellings supported on solid foundation walls shall be constructed with flood openings that comply with (G)(1)(b) above;
  - b. The bottom of the longitudinal chassis frame beam in A zones shall be at or above the Base Flood Elevation and the lowest floor of the manufactured dwelling shall be at least one foot above the Base Flood Elevation;
  - c. The manufactured dwelling shall be anchored to prevent flotation, collapse, and lateral movement during the base flood. Anchoring methods may include, but are not limited to, use of over-the-top or frame ties to ground anchors (Reference FEMA's "Manufactured Home Installation in Flood Hazard Areas" guidebook for additional techniques); and
  - d. Electrical crossover connections shall be a minimum of 12 inches above Base Flood Elevation.
45. Docks, Piers and Walkways.
- a. No individual boat dock or pier shall be allowed on any lot with less than 200 feet of river frontage.
  - b. No community boat dock or pier shall be allowed on any lot with less than 100 feet of river frontage.
  - c. No individual boat dock or pier shall be more than 20 feet in length or more than eight feet in width. The total surface area shall not exceed 160 square feet.
  - d. No community boat dock or pier shall be more than 20 feet in length. The total surface area shall not exceed 320 square feet.
  - e. A boat dock or pier shall not extend into or over the water more than 20 feet as measured from the ordinary high water mark (OHM), or five percent of the distance between the ordinary low

water mark (OLM) on each river or stream bank measured at right angles to the shoreline, whichever is less, unless it can be shown that a greater extension:

- i. Is necessary to allow access to the OHM;
  - ii. Will not increase flood hazard; and
  - iii. Will not cause the deterioration or destruction of marine life or wildlife habitat. When the lines of ordinary high or low water cannot be determined by survey or inspection, then such lines shall be determined by a registered professional engineer using the annual mean high or low water for the preceding year, using data from the State of Oregon Watermaster.
- f. Individual boat docks and piers shall have a minimum five foot setback from adjoining property boundaries projected over the water surface.
  - g. Dock, pier and walkway structures shall not be covered or enclosed.
  - h. All materials used in dock, pier or walkway construction must be in compliance with all DEQ and EPA regulations.
  - i. Docks, piers and walkways shall use either pilings or Styrofoam floats if such floats are fully enclosed and sealed.
  - j. Docks, piers and walkways shall not impede water movement or cause deposition on waterway beds.
  - k. Docks, piers and walkways containing concrete or wood preservatives shall be fully cured or dried prior to placement in the water.
  - l. No walkway shall be more than four feet in width. The length of the walkway shall be no more than the minimum required to allow access to a dock.
  - m. Walkways shall include at least one handrail if the structure is elevated 30 inches or more from ground level.
  - n. All docks, piers and walkways shall meet the test of noninterference with navigation.
65. Parking Facilities. No parking facility shall be located within 20 feet (measured at right angles) of the ordinary high water mark (OHM).
7. Construction of new critical facilities shall be, to the extent possible, located outside the limits of the Area of Special Flood Hazard (100-year floodplain). Construction of new critical facilities shall be permissible within the Area of Special Flood Hazard if no feasible alternative site is available. Critical facilities constructed within the Area of Special Flood Hazard shall have the lowest floor elevated three feet above Base Flood Elevation or to the height of the 500-year flood, whichever is higher. Access to and from the critical facility should also be protected to the height utilized above. Floodproofing and sealing measures must be taken to ensure that hazardous or toxic substances, oil or gasoline, or any priority persistent pollutant identified by the Oregon Department of Environmental Quality will not be displaced by or released into floodwaters. Access routes elevated to or above the level of the Base Flood Elevation shall be provided to all critical facilities to the extent possible unless deemed impractical by the Hearings Body or Planning Director.
8. Incidental storage of material or equipment that is either not subject to damage by flood may be permitted. If such material is not readily removable, it shall be anchored to prevent flotation and shall not obstruct water flow. Material or equipment stored shall include only items which will not create a hazard to the health or safety of persons, property, animals or plant life should the storage area be inundated.

H. Floodways. In floodways the following provisions shall apply:

1. Encroachments, including fill and removal, replacement of a dwelling lawfully in existence on the effective date of Ordinance 88-030 and other development are prohibited unless certification by a registered professional engineer is provided demonstrating that the proposed encroachments will not result in any increase in flood levels during a base flood discharge.
2. The applicant must demonstrate that all necessary federal, state and local government agency permits have been or can be obtained and that all other applicable sections of DCC Title 18 have been satisfied.

3. Replacement of a dwelling shall not increase the square footage or footprint of the structure by more than 20 percent of the square footage or footprint of such dwelling as of the effective date of Ordinance 88-030.
4. No replacement of a dwelling shall be allowed if the use of the preexisting dwelling has been abandoned or otherwise terminated for a period of over one year.

(Ord. 2018-005 §11, 2018; Ord. 2007-019 §2, 2007; Ord. 2000-033 §6, 2000; Ord. 95-075 §1, 1995; Ord. 95-022 §1, 1995; Ord. 93-043 §15B, 1993; Ord. 93-002 §§6-8, and 9, 1993; Ord. 91-020 §1, 1991; Ord. 89-009 §7, 1989; Ord. 88-030 §4, 1988)

#### **18.96.085. Elevation Certification.**

Elevation of all new construction, including replacement and substantial improvements, relative to mean sea level of the lowest floor shall be documented before the framing inspection with a survey certified by a State of Oregon registered professional engineer or land surveyor.  
(Ord. 95-022 §1, 1995; Ord. 93-002 §10, 1993)

#### **18.96.090. Yard and Setback Requirements.**

~~In an FP Zone, the following yard and setback requirements shall be maintained;~~ in the Flood Plain Combining Zone except where the underlying primary zone differs, then the more restrictive standard shall apply.

- A. The front setback shall be a minimum of 20 feet from a property line fronting on a local street, 30 feet from a property line fronting on a collector and 50 feet from an arterial.
- B. There shall be a minimum side yard of 10 feet for all uses.
- C. The minimum rear yard shall be 20 feet.
- D. The setback from a north lot line shall meet the solar setback requirements in DCC 18.116.180.
- E. The minimum yard setback for a nonfarm use from the property line adjacent to a farm use not owned by the applicant shall be 100 feet.
- F. In addition to the setbacks set forth herein, any greater setbacks required by applicable building or structural codes adopted by the State of Oregon and/or the County under DCC 15.04 shall be met.

(Ord. 2018-005 §11, 2018; Ord. 95-075 §1, 1995; Ord. 94-008 §25, 1994; Ord. 88-030 §4, 1988)

#### **18.96.100. Stream Setback.**

To permit better light, air, vision, stream and pollution control, to protect fish and wildlife areas and to preserve the natural scenic amenities along streams and lakes, the following setbacks shall apply:

- A. All sewage disposal installations such as septic tanks or septic drain fields shall be setback from the ordinary high water mark along all streams or lakes a minimum of 100 feet, measured at right angles to the ordinary high water mark. In those cases where practical difficulties preclude the location of the facilities at a distance of 100 feet, and the County Sanitarian finds that a closer location will not endanger public health or safety, a setback exception may be permitted to locate these facilities closer to the stream or lake, but in no case closer than 25 feet.
- B. All structures, buildings or similar permanent fixtures shall be set back from the ordinary high water mark along all streams or lakes a minimum of 100 feet measured at right angles from the ordinary high water mark.

(Ord. 91-020 § 1, 1991; Ord. 88-030 § 4, 1988)

#### **18.96.110. Dimensional Standards.**

In the Flood Plain Combining Zone, the dimensional standards shall be as established in the underlying zone with which the FP Zone is combined.

~~In an FP Zone, the following dimensional standards shall apply:~~

- ~~A. Lot Coverage. The main building and accessory buildings located on any building site or lot shall not cover in excess of 30 percent of the total lot area.~~
  - ~~B. Building Height. No building or structure shall be erected or enlarged to exceed 30 feet in height, except as allowed under DCC 18.120.040.~~
  - ~~C. Minimum lot size shall be 10 acres for all areas which have received an exception to the Statewide Planning Goals for resource uses. Areas which have not received an exception to the Statewide Planning Goals shall have a minimum lot size of 80 acres.~~
- (Ord. 2018-005 §11, 2018; Ord. 92-055 § 8, 1992)

**18.96.120. Warning and Disclaimer of Liability.**

The degree of flood protection required by DCC Title 18 is considered reasonable for regulatory purposes and is based upon scientific and engineering considerations. Larger floods can and will occur on rare occasions. Flood heights may be increased by man-made or natural causes. DCC Title 18 shall not create liability on the part of Deschutes County, any officer, agent or employee thereof, or the Federal Insurance Administration, for any flood damages that result from reliance on DCC Title 18 or any decision lawfully made hereunder.

(Ord. 88-030 § 4, 1988)

**18.96.130 Interpretation of FIRM Boundaries**

The Planning Director shall make interpretations where needed, as to exact location of the boundaries of the areas of special flood hazards (for example, where there appears to be a conflict between a mapped boundary and actual field conditions). Such interpretations shall be processed as a development action pursuant to Chapter 22.16.

(Ord. 2007-019 §2, 2007)

**18.96.140. Use Variances.**

Use variances or variances to the standards established by DCC 18.96.060 and 18.96.080 shall not be allowed.

(Ord. 2007-019 §2, 2007; Ord. 88-030 §4, 1988)

**Chapter 18.113. DESTINATION RESORTS ZONE - DR**

**18.113.060. Standards for Destination Resorts.**

The following standards shall govern consideration of destination resorts:

...  
H. Floodplain requirements. The floodplain combining zone (FP) requirements of DCC 18.96 shall apply to all developed portions of a destination resort in an FP Zone in addition to any applicable criteria of DCC 18.113. Except for floodplain areas which have been granted an exception to LCDC goals 3 and 4, floodplain combining zones shall not be considered part of a destination resort when determining compliance with the following standards;

1. One hundred sixty acre minimum site;
2. Density of development;
3. Open space requirements.

A conservation easement as described in DCC Title 18 shall be conveyed to the County for all areas within a floodplain which are part of a destination resort.

...  
(Ord. 2018-005 §12, 2018; Ord. 2016-003 §1, 2016; Ord. 2015-016 §7, 2015; Ord. 2013-008 §2, 2013; Ord. 2007-05 §2, 2007; Ord. 92-004 §13, 1992)

## Chapter 18.116. SUPPLEMENTARY PROVISIONS

### 18.116.260. Rock Crushing Outside the SM Zone.

- ...
- B. On-site rock crushing for on-site construction and maintenance is permitted outright in any zone, ~~except Flood Plain (FP)~~, or in any combining zone, except Wildlife Area (WA), Landscape Management (LM), ~~Flood Plain (FP)~~ or Sensitive Bird and Mammal Habitat (SBMH), if the requirements of DCC 18.116.260(A) and the following standards are met:
1. Rock crushing activity, including set up and crushing, occurs for no more than 60 consecutive days on a site within any one-year period;
  2. Rock crushing occurs Monday through Friday, between 7:00 a.m. and 5:00 p.m., and not on legal holidays; and
  3. Water is available on-site to provide dust control.

...

(Ord. 2018-005 §13, 2018; Ord. 97-006 §2, 1997)

### 18.116.270. Conducting Filming Activities in All Zones.

- ...
2. Special Limitations. In addition to the general limitations set forth under DCC 18.116.270(C)(1)(a) and (b), the following additional special limitations shall be applied, where applicable:
- a. Filming and accessory or supporting activities proposed for a site designated as exclusive farm use by the zoning ordinance shall be subject to applicable provisions of ORS 215.296.
  - b. Filming and accessory or supporting activities involving structures or improvements regulated under DCC 18.96 (flood plain combining zone) shall be subject to the applicable provisions of DCC 18.96 unless the Federal Emergency Management Agency authorizes a waiver of the provisions of DCC 18.96.
  - c. Filming and accessory or supporting activities necessitating fill or removal activities shall comply with the applicable provisions of DCC 18.128.270, except that no conservation agreement shall be required where the fill is associated with a temporary structure or improvement and such fill would be removed along with the temporary structure or improvement under a fill and removal permit required by the County.
  - d. Filming and accessory or supporting activities shall not be allowed in any sensitive habitat area designated under DCC 18.90 during the nesting period identified in the ESEE for each site.
3. At the completion of filming, any structure or improvement for which land use approval would otherwise be required shall obtain the required approvals or the structure or improvement shall be removed. The County may require the applicant to post a bond in an amount sufficient to cover the cost of removal for any such structure or improvement.
4. The standards of DCC 18.116.270(B) may be met by the imposition of conditions calculated to ensure that this standard will be met.

...

(Ord. 2018-005 §13, 2018; Ord. 97-007 §1, 1997)

## Chapter 18.124. SITE PLAN REVIEW

...

### 18.124.030. Approval Required.

- A. No building, grading, parking, land use, sign or other required permit shall be issued for a use subject to DCC 18.124.030, nor shall such a use be commenced, enlarged, altered or changed until a final site plan is approved according to DCC Title 22, the Uniform Development Procedures Ordinance.
- B. The provisions of DCC 18.124.030 shall apply to the following:
  - 1. All conditional use permits where a site plan is a condition of approval;
  - 2. Multiple-family dwellings with more than three units;
  - 3. All commercial uses that require parking facilities;
  - 4. All industrial uses;
  - 5. All other uses that serve the general public or that otherwise require parking facilities, including, but not limited to, landfills, schools, utility facilities, churches, community buildings, cemeteries, mausoleums, crematories, airports, parks and recreation facilities and livestock sales yards; and
  - 6. As specified for Flood Plain Zones (FP) and Surface Mining Impact Area (SMIA) Combining Zones (SMIA).
  - 7. Non-commercial wind energy system generating greater than 15 to 100 kW of electricity.
- C. The provisions of DCC 18.124.030 shall not apply to uses involving the stabling and training of equine in the EFU zone, noncommercial stables and horse events not requiring a conditional use permit.
- D. Noncompliance with a final approved site plan shall be a zoning ordinance violation.
- E. As a condition of approval of any action not included in DCC 18.124.030(B), the Planning Director or Hearings Body may require site plan approval prior to the issuance of any permits.  
(Ord. 2018-005 §14, 2018; Ord. 2011-009 §1, 2011; Ord. 2003-034 §2, 2003; Ord. 94-008 §14, 1994; Ord. 91-038 §1, 1991; Ord. 91-020 §1, 1991; Ord. 86-032 §1, 1986)

**Chapter 18.128. CONDITIONAL USE**

**18.128.200. Cluster Development (Single-Family Residential Uses Only).**

B. The conditional use shall not be granted unless the following findings are made:

...

15. For Cluster Developments containing or adjacent to rivers, lakes or streams, in addition to compliance with other applicable zone development restrictions, uses and activities must be consistent with a required Riparian Area Management Plan. The Riparian Area Management Plan shall preserve and protect riparian resources, be prepared by a wildlife biologist, and include the following:

- a. An inventory of riparian resources within or adjacent to the Cluster Development;
- b. A map showing the inventoried riparian resources that identifies the area subject to the Riparian Area Management Plan;
- c. A prohibition on golf courses, tennis courts, swimming pools, marinas, ski runs or other developed recreational uses of similar intensity within the area subject to the Riparian Area Management Plan. Low intensity recreational uses such as bicycle, equestrian and pedestrian trails, and wildlife viewing areas located to minimize impact to the identified riparian resources may be permitted;
- d. A prohibition on off-road motor vehicle use within the area subject to the Riparian Area Management Plan.
- e. Measures to preserve and protect the identified riparian resources shall include:
  - i. A description of the required measure and its purpose;
  - ii. Performance standards for the measure's success;
  - iii. Contingent mitigation if monitoring reveals that performance standards are not satisfied;
  - iv. Who is responsible for implementing the actions required by the measure;
  - v. Where the measure is to take place;
  - vi. When must each measure be implemented; and
  - vii. Who will monitor the measure and how and when monitoring will occur.

16. For those Cluster Developments that include a Riparian Area Management Plan, the area requiring a Riparian Area Management Plan shall be contained in one or more lots designated as open space on the plat of the subdivision and held in common ownership of a homeowner's association of the development. This open space shall count towards any open space requirements for Cluster Developments.

(Ord. 2018-005 §15, 2018; Ord. 2015-016 §8, 2015; Ord. 2004-024 §2, 2004; Ord. 95-075 §1, 1995; Ord. 93-005 §11, 1993; Ord. 91-020 §1, 1991)

**18.128.210. Planned Development.**

B. The conditional use may be granted upon the following findings:

...

9. For Planned Developments containing or adjacent to rivers, lakes or streams, in addition to compliance with other applicable zone development restrictions, uses and activities must be consistent with a required Riparian Area Management Plan. The Riparian Area

Management Plan shall preserve and protect riparian resources, be prepared by a wildlife biologist, and include the following:

- a. An inventory of riparian resources within or adjacent to the Planned Development;
- b. A map showing the inventoried riparian resources that identifies the area subject to the Riparian Area Management Plan;
- c. A prohibition on golf courses, tennis courts, swimming pools, marinas, ski runs or other developed recreational uses of similar intensity within the area subject to the Riparian Area Management Plan. Low intensity recreational uses such as bicycle, equestrian and pedestrian trails, and wildlife viewing areas located to minimize impact to the identified riparian resources may be permitted;
- d. A prohibition on off-road motor vehicle use within the area subject to the Riparian Area Management Plan.
- e. Measures to preserve and protect the identified riparian resources shall include:
  - i. A description of the required measure and its purpose;
  - ii. Performance standards for the measure's success;
  - iii. Contingent mitigation if monitoring reveals that performance standards are not satisfied;
  - iv. Who is responsible for implementing the actions required by the measure;
  - v. Where the measure is to take place;
  - vi. When must each measure be implemented; and
  - vii. Who will monitor the measure and how and when monitoring will occur.

10. For those Planned Developments that include a Riparian Area Management Plan, the area requiring a Riparian Area Management Plan shall be contained in one or more lots designated as open space on the plat of the subdivision and held in common ownership of a homeowner's association of the development. This open space shall count towards any open space requirements for Planned Developments.

(Ord. 2018-005 §15, 2018; Ord. 96-003 §9, 1996; Ord. 95-075 §1, 1995; Ord. 93-005 §11, 1993; Ord. 91-020 §1, 1991)

## FINDINGS

### I. SUMMARY

Deschutes County, through Ordinance No. 2018-005, is amending the Deschutes County Comprehensive Plan, Zoning Map, and Zoning Ordinance with the primary purpose of changing the Flood Plain zone from primary zone to combining zone. The amendments also incorporate provisions of the 2014 *Oregon Model Flood Damage Prevention Ordinance*, address inconsistencies created by the conversion to a combining zone, correct errors, and add provisions for cluster and planned developments on property that contains flood plain zoning. The amendments do not affect the mapped FEMA flood plain boundary or the standards applicable to most development within the Area of Special Flood Hazard (aka 100-year flood plain).

The current flood plain zone was adopted through Ordinance No. 88-030. Since adoption, there have been several amendments to the flood plain zone addressing allowed uses and applicable standards. In addition, over the last decade there have been amendments to the Comprehensive Plan adding a Tumalo Community Plan and Newberry Country Plan.

### II. BACKGROUND AND INTENT

#### a. Statement Of The Problem To Solved

Deschutes County presently has mapped the Floodplain Zone as a base zone, which is unusual in Oregon and presents a number of administrative difficulties. In order to understand these difficulties, some background in the National Flood Insurance Program (NFIP), Deschutes County's use of base and combining zones, and how Deschutes County has implemented its regulatory scheme are needed.

#### i. National Flood Insurance Program (NFIP)

The National Flood Insurance Program (NFIP) is based on a mutual agreement between the Federal Government and Deschutes County. Federally backed flood insurance is made available in Deschutes County, provided that the County agrees to regulate development in mapped floodplains. So long as Deschutes County does its part making sure future floodplain development meets certain criteria, FEMA provides subsidized flood insurance for properties in Deschutes County.

FEMA has prepared a floodplain map and developed flood hazard data for Deschutes County. The NFIP underwrites flood insurance coverage only in those communities that adopt and enforce floodplain regulations that meet or exceed NFIP criteria. The County's floodplain regulations are designed to meet FEMA regulations and to ensure that new

buildings will be protected from the flood levels shown on the FEMA-provided Flood Insurance Rate Map (FIRM) and that development will not make the flood hazard worse.

Beginning in 1988 Deschutes County adopted the Flood Insurance Rate Map (FIRM) as the Flood Plain Zone and also adopted Comprehensive Plan policies and implementing zoning code to comply with FEMA requirements. These maps, policies, and zoning code have been periodically updated to match the latest information and requirements provided by FEMA.

It is important to note that the FIRM maps and FEMA regulations explicitly recognize that the mapped floodplain is subject to refinement. The map does not capture property-specific topographic details and FEMA regulations allow the County to waive FEMA requirements, such as special construction standards, where development is located above the Base Flood Elevation.

## **ii. Deschutes County's Use of Base And Combining Zones**

In Deschutes County, base zones are used to identify those uses that are appropriate to a geographic area and provide standards for those uses. Base zone standards include outright and conditional uses, minimum lot sizes, setbacks, height limitations and other similar standards.

Combining zones are used to identify geographical areas that require special additional considerations, frequently for special protection of Goal 5 resources such as wildlife, scenic corridors, or surface mining impact areas. The combining zones may intersect a number of base zones and are intended to modify the standards in the underlying base zones.

The Floodplain Zone is unusual in that it has some characteristics of a base zone and some characteristics of a combining zone. Like a base zone, some uses, such as docks, are unique to the zone. Like a combining zone, special requirements modify general requirements for residential and non-residential construction, earthmoving, and specific use requirements. Originally, Deschutes County uniquely implemented the Flood Plain Zone as a base zone, assigning uses and providing use standards, such as construction specifications, minimum lot areas, and setbacks.

## **iii. Regulatory Scheme**

When Deschutes County implemented the Flood Plain Zone as a base zone, two difficulties were created. The first was caused by the fact that few properties are entirely within the Flood Plain Zone. Specifically, the Code does not explicitly explain how to deal with land divisions of split zoned properties. County land use decisions over time demonstrate a lack of consistency when it comes to approaching this issue. The long-standing, prevalent practice was to allow land divisions where the minimum lot size was met for the non-Flood Plain Zone, with no regard for the Flood Plain Zone acreage standards. The record includes

nine (9) land use decisions for split-zone land divisions including Flood Plain zoning that demonstrate this long-standing practice. In each case, the Flood Plain zoned acreage was added to the non-Flood Plain Zone to calculate minimum lot sizes and, where applicable, open space requirements. In effect, these decisions treat the Flood Plain zone like an overlay zone, which thereby would not impose acreage standards in land divisions. However, use specific standards, like special construction standards from the Flood Plain Zone were imposed on development subject to flood hazard. As discussed below, these decision demonstrate that the County's long-standing practice was to treat the Flood Plain zone like an overlay zone.

More recently, in County File No. 247-15-000195-TP, the Hearings Officer found that Deschutes County Code requires, "...the minimum lot size required for a new lot or parcel in the pertinent zone must be met entirely within that zone." This decision marked a significant departure from the long-standing practice to split zoned properties including Flood Plain zoning, as shown in the decisions cited-above. Because most split-zoned floodplain properties in Deschutes County only have a narrow river-adjacent fringe of floodplain, almost no properties have the required 10-acres (for exception lands) or 80-acres (for resource zoned lands) of Flood Plain zoned land necessary for a land division. Thereby, the Hearings Officer's aforementioned decision serves almost as a moratorium for land division involving Flood Plain acreage.

Under the current Hearings Officer's ruling, a parcel with 100 acres of Rural Residential Zone (10 acre minimum lot size) and 1 acre of Flood Plain zone becomes wholly indivisible due to the failure to have 10 acres of Flood plain zoned lands. In practice, this ruling precludes division of almost all river-adjacent properties, regardless of size because the floodplain is predominantly a narrow, river-adjacent strip in Deschutes County. A major reason for this proposed amendment is to restore the divisibility of river-adjacent properties to align with the County's long-standing practice.

A second difficulty stemming from treating the Flood Plain Zone as a base zone stems from the fact that the floodplain is poorly defined. As noted above, the FIRM maps and FEMA regulations explicitly recognize that the mapped floodplain is subject to refinement. When a property-specific topography survey demonstrates that a property or development site is wholly above the base flood elevation, FEMA does not require implementation of physical precautions, such as special construction standards.

Ideally, Flood Plain zoned lands identified as above the based flood elevation would automatically be rezoned to the adjacent non-Flood Plain zoning, as they are not subject to the hazard which is the basis of the zone. Unfortunately, rezoning is an expensive and cumbersome process and many properties that have been found upon detailed survey to be free of flooding hazard nonetheless, remain Flood Plain zoned. This amendment fixes that problem by making the Flood Plain a Plain Combining Zone with expressed provision that

relieve properties that have been identified according to FEMA regulations to be free of flooding hazard from unnecessary and ill-suited regulatory burdens.

**b. Intent**

The proposed amendments are intended to address the split-zoning and floodplain boundary problems described above while continuing to protect significant Goal 5 natural resources. These amendments will streamline the County's administration of FEMA's requirements and codify the long-standing County practice to the division of properties containing some Flood Plain zoned lands. In addition, this amendment incorporates updated provisions found in the *2014 Oregon Model Flood Damage Prevention Ordinance*. Finally, this amendment adds additional riparian habitat protections for cluster and planned unit subdivisions adjacent to rivers in response to public and Planning Commission concerns regarding potential impacts from these developments.

It is also the intent of this amendment to clarify that the primary purpose of the comprehensive plan and zoning provisions relating to the floodplain is to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas through specific methods of reducing flood losses, as required by FEMA and the NFIP. The Flood Plain Zone has and will continue to provide a secondary benefit as part of a variety of interlocking provisions that protect and limit developability of riparian habitat.

This amendment is not intended to and does not allow new or different development of Flood Plain zoned lands when compared to the County's long-standing practice. Outside of riparian protections in cluster and planned unit development, which are hereby enhanced, the following provisions remain unchanged:

- 1) No creation of development sites in the floodplain by land division.
- 2) No changes are proposed to the 100-foot structural setback from the ordinary high water mark of rivers.
- 3) No changes are proposed to the scenic protections for rivers in the Landscape Management Combining Zone.
- 4) No change to DCC 18,128.270(D)(2)(e), which requires any wetland or riverbank impacts have to be fully mitigated, as evaluated by ODFW.
- 5) No change to the requirement that cluster developments in designated wildlife habitat must continue to retain a minimum of 80% open space and satisfy specific conditional use permit criteria.
- 6) No change to the requirement that all new construction, expansion or substantial improvement of an existing dwelling, an agricultural related structure, a commercial, industrial or other non-residential structure, or an accessory building in a designated flood plain obtain a conditional use permit.

At times through the public process, opponents to this amendment either misunderstood or misrepresent the intent and effect of this amendment. To the extent this amendment facilitates division of river-adjacent lands, it only codifies the long-standing regulatory practice of Deschutes County. No new direct impacts to the floodplain or associated riparian habitats are authorized by this amendment. Within the context of Deschutes County's ongoing commitments to riparian protection listed above, there is neither evidence in the record that river-adjacent land divisions would cause any direct impacts to riparian habitat nor evidence that riparian habitats would be harmed by indirect impacts from nearby development outside of the Flood Plain zone.

### **III. IS A GOAL 5 CONFLICTING USE ANALYSIS REQUIRED?**

#### **a. Background**

OAR chapter 660, division 023, requires the County to conduct an analysis of the Economic, Social, Environmental and Energy (ESEE) consequences of allowing, limiting or prohibiting uses that conflict with an inventoried significant natural resource. A detailed response to the rules under OAR 660-23 is presented below. Public comment from opponents argued that a conflicting use<sup>1</sup> analysis was required. However, the County finds that there is no conflicting use in this case. This amendment aligns the code with the long-standing interpretation and implementation of existing code provisions. Thereby, as described below, there are no new conflicting uses allowed under this amendment.

Opponents have argued that “[t]he minimum lot size of the floodplain zone is part of the acknowledged program to achieve Deschutes County's goal of protecting riparian and wetland habitat.” For this, they cite to Ordinance 92-014, Comprehensive Plan - Fish & Wildlife Chapter, at page 75:

Title 18.96, Flood Plain Zone - protects riparian habitat and wetlands by requiring a conditional use for any development. One of the specific purposes of the zone is to conserve riparian areas and maintain fish and wildlife resources. The Flood Plain zone also regulates docks and piers and requires a finding that the structure will not cause the deterioration or destruction of wildlife habitat.

With regard to the Floodplain, no mention is made of minimum lot sizes. What is discussed are acreage standards in Wildlife Area Combining Zones, which will remain in full effect under the currently proposed amendments:

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<sup>1</sup> OAR 660-023-0010(1) defines a “Conflicting use” as a “land use, or other activity reasonably and customarily subject to land use regulations, that could adversely affect a significant Goal 5 resource (except as provided in OAR 660-023-0180(1)(b)). Local governments are not required to regard agricultural practices as conflicting uses.”

Opponents have also stated that “[a]n ESEE analysis is required to consider the effect fragmenting the Goal 5-listed habitats by dropping the minimum lot size, thereby allowing a higher density of structures in riparian areas and wetlands.” The aforementioned statement demonstrates that opponents plainly misunderstand how the overlapping protections for river adjacent lands work in the Deschutes County Code. While parcelization of river adjacent lands would make possible new upland homesites, new homesites in the floodplain and within 100’ feet of rivers will continue to be prohibited. As discussed above, outside of riparian protections in cluster and planned unit development which are enhanced by this amendment, the following provisions remain unchanged:

- 1) No creation of development sites in the floodplain by land division.
- 2) No changes are proposed to the 100-foot structural setback from the ordinary high water mark of rivers.
- 3) No changes are proposed to the scenic protections for rivers in the Landscape Management Combining Zone.
- 4) No change to DCC 18,128.270(D)(2)(e), which requires any wetland or riverbank impacts have to be fully mitigated, as evaluated by ODFW.
- 5) No change to the requirement that cluster developments in designated wildlife habitat must continue to retain a minimum of 80% open space and satisfy specific conditional use permit criteria.
- 6) No change to the requirement that all new construction, expansion or substantial improvement of an existing dwelling, an agricultural related structure, a commercial, industrial or other non-residential structure, or an accessory building in a designated flood plain obtain a conditional use permit.

Opponents also expressed misplaced concern for potential impacts to the threatened Oregon Spotted Frog (*Rana pretiosa*). The United States Fish and Wildlife Service notes that “[t]his species is always found in or near a perennial body of water, such as a spring, pond, lake, sluggish stream, irrigation canal, or roadside ditch.”<sup>2</sup> This species is not dependent on upland areas, beyond 100 feet from rivers that would potentially be parcelized under this amendment. Moreover, as shown in the matrix below, there is no evidence that such development would impact this species or any other Goal 5 significant natural resource.

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<sup>2</sup> <https://www.fws.gov/wafwo/articles.cfm?id=149489589>

**Table 1**

<b>USES AND REGULATION</b>	<b>PRIMARY ZONE - Current</b>	<b>COMBINING ZONE - Proposed</b>
<b>Permitted Uses</b>	<ul style="list-style-type: none"> <li>Permits specific uses outright.</li> <li>Permits boundary fencing explicitly permitted outright in association with agricultural uses as long as fence limits impediment of floodwater and flood carried material.</li> </ul>	<ul style="list-style-type: none"> <li>Permits uses allowed outright in the underlying primary zone that do not constitute "flood plain development."<sup>3</sup></li> <li>Permits uses determined to be located outside the Special Flood Hazard Area and exempts said uses from FP zone standards.</li> <li>Fencing: Permits any open fencing that is placed in the floodplain but outside the floodway, provided there is no grading required to place the fence is permitted outright.</li> <li>Includes reference to fill and removal activities already allowed DCC 18.120 for clarity.</li> </ul>
<b>Conditional Uses</b>	<ul style="list-style-type: none"> <li>Permits specific conditional uses. Included are not permitted in the adjacent primary zones -</li> <li>Permits "All new construction, expansion or substantial improvement of an existing dwelling, an agricultural related structure, a commercial, industrial or other non-residential structure, or an accessory building."</li> <li>Standards of DCC 18.128, Conditional Uses, are applicable to all conditional uses.</li> </ul>	<ul style="list-style-type: none"> <li>Permits conditional uses allowed in the underlying primary zone.</li> <li>Explicitly permits "flood plain development" as a conditional use.</li> <li>Explicitly permits conditional uses currently allowed that are specific to the flood plain zone (e.i. bridge, work in bed and bancs of waterway, boar dock, etc).</li> <li>Standards of DCC 18.128, Conditional Uses, remain applicable to all conditional uses.</li> </ul>
<b>Land Division (Partition/ Subdivision)</b>	<ul style="list-style-type: none"> <li>Must comply with all applicable minimum lot sizes if split zoned. (e.i. RR-10/FP requires the RR-10 areas are 10 acres <u>and</u> the FP areas are 10 acres) based on Hearings Officer interpretation.</li> <li>Minimum lot size shall be 10 acres for all areas which have received an exception to the Statewide Planning Goals for resource uses (e.i. RR-10, MUA-10). Areas which have not received an exception to the Statewide Planning Goals shall have a minimum lot size of 80 acres (i.e. EFU, F-1, F-2).</li> <li>Must provide area for development outside of flood plain zone.</li> </ul>	<ul style="list-style-type: none"> <li>Must comply with the underlying primary zone minimum lot size. (e.i. RR-10/FP requires the RR-10 <u>together</u> with FP are 10 acres.)</li> <li>Must provide area for development outside of flood plain zone.</li> </ul>

<sup>3</sup> DCC 18.0.030 states that "'Flood plain development' means any man made change to improved or unimproved real estate, including, but not limited to, buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, or storage of equipment or materials located within the area of special flood hazard."

USES AND REGULATION	PRIMARY ZONE - Current	COMBINING ZONE - Proposed
<b>Cluster Development/Planned Development</b>	<ul style="list-style-type: none"> <li>Not permitted.</li> </ul>	<ul style="list-style-type: none"> <li>Permitted as conditional use if allowed in the underlying primary zone.</li> <li>Riparian Area Management Plan is required.</li> <li>Development within open space is limited.</li> <li>Development in FP requires conditional use permit for "flood plain development."</li> <li>Must provide area for residential development outside of FP zone.</li> </ul>
<b>Flood Plain Development</b>	<ul style="list-style-type: none"> <li>Not Specified. Permits individual conditional uses.</li> <li>Conditional use standards of DCC 18.128 will apply.</li> </ul>	<ul style="list-style-type: none"> <li>Permitted as conditional use applying broadly to uses that meet the definition of "flood plain development."</li> <li>Conditional use standards of DCC 18.128 will apply.</li> </ul>
<b>Single Family Dwelling</b>	<ul style="list-style-type: none"> <li>Permitted conditional use.</li> </ul>	<ul style="list-style-type: none"> <li>Permitted conditional use as "flood plain development" if allowed in the underlying zone.</li> </ul>
<b>Commercial Development</b>	<ul style="list-style-type: none"> <li>Permitted conditional use even in areas where adjacent zoning is residential or resource.</li> </ul>	<ul style="list-style-type: none"> <li>Conditional Use as "flood plain development" if permitted in the underlying primary zone.</li> </ul>
<b>Small Accessory Structures (&lt;200 sq ft)</b>	<ul style="list-style-type: none"> <li>Required to comply with all applicable residential construction standards of DCC 18.96.080(G)(1).</li> </ul>	<ul style="list-style-type: none"> <li>Provides exemption to the flood proofing and flood elevation requirements of DCC 18.96.080(G)(1) with specific design and use requirements.</li> </ul>
<b>Yard and Setback Requirements</b>	<ul style="list-style-type: none"> <li>Standards specific to the zone.</li> </ul>	<ul style="list-style-type: none"> <li>Requires compliance with the more restrictive standard of either the FP or underlying primary zone.</li> </ul>
<b>Dimensional Standards</b>	<ul style="list-style-type: none"> <li>Standards specific to the zone. Minimum lot size is 10 acres for all areas which have received an exception to the Statewide Planning Goals for resource uses and 80 acres for areas which have not received an exception to the Statewide Planning Goals. This is recognition there is a relationship with other primary zone the area.</li> </ul>	<ul style="list-style-type: none"> <li>Standards established in the underlying primary zone to which the FP Zone is combined.</li> </ul>
<b>Other New Development</b>	<ul style="list-style-type: none"> <li>As a conditional use, DCC 18.96.040(I) permits "All new construction, expansion or substantial improvement of an existing dwelling, an agricultural related structure, a commercial, industrial or other non residential structure, or an accessory building." This is comprehensive allowing many uses that may not otherwise be permitted in the adjacent primary zones and may not be compatible with</li> </ul>	<ul style="list-style-type: none"> <li>Permitted uses will be limited to those permitted in the underlying primary zone. Further, most development within the floodplain zone will "flood plain develop," a conditional use. This configuration will be far more limiting than may otherwise have previously been permitted as noted in the previous column.</li> </ul>

USES AND REGULATION	PRIMARY ZONE - Current	COMBINING ZONE - Proposed
	intended use of the general area as specified in the comprehensive plan.	
<b>Combining Zones; Mapped Wetlands</b>	<ul style="list-style-type: none"> <li>Where zoned or mapped, the provisions of Wildlife Area (WA) and Landscape Management (LM) Combining zones and protection of mapped wetlands are applicable.</li> <li>The standards of the WA and LM Combining zones and the protective standards for mapped wetlands implement measures to comply with the requirements of Goal 5.</li> </ul>	<ul style="list-style-type: none"> <li>Where zoned or mapped, the provisions of Wildlife Area (WA) and Landscape Management (LM) Combining zones and protection of mapped wetlands are applicable.</li> <li>The standards of the WA and LM Combining zones and the protective standards for mapped wetlands continue to implement measures to comply with the requirements of Goal 5.</li> </ul>

**IV. PROPOSED AMENDMENTS**

The proposed amendment is detailed in Exhibits A-O of Ordinance 2018-005. Maps shown in Exhibits A and F identify the map and text changes in the remaining exhibits, identified by underline for new text and ~~strikethrough~~ for deleted text. Below are explanations of the proposed changes.

**A. Comprehensive Plan Amendments**

**Text Amendment to Comprehensive Plan, Chapter 2, Section 2.5 - Water Resources.**

The proposed amendment includes the addition of the flood plain zone purpose statement. The statement identifies the purpose is to promote the public health, safety, and general welfare, and minimize losses due to flood conditions in specific areas and secondary benefits include riparian area conservation for fish and wildlife and preservation of significant scenic and natural resources. The amendment also changes the flood plain from primary zone to combining zone. (See Exhibit C)

Chapter 2, Section 2.5 - Water Resources, previously did not include a purpose statement for the Flood Plain zone. This amendment includes adoption of the "Statement of Purpose" from the 2014 *Oregon Model Flood Damage Prevention Ordinance*. The adoption of the model code provisions, including this purpose statement, was recommend by the Oregon Department of Land Conservation and Development (DLCD). The Flood Plain zone is intended to be responsive to NFIP requirements as well as state guidance and recommendations on the implementation of these requirements.

The adopted text also states that the Flood Plain zone, "...provides secondary benefits including riparian area conservation along rivers and streams for fish and wildlife and preservation of significant scenic and natural resources". This is to acknowledge that the

Flood Plain zone includes requirements that have incidental benefits to riparian habitats and scenic resources, including but not limited to:

- 1) Requiring consideration of "natural resources" as part of conditional use review. All "Flood plain development" is conditional and thus subject to this requirement.
- 2) Prohibiting development in the floodplain where non-floodplain sites are available on-site. As most Flood Plain zoned lands are wholly mapped as floodplain, this typically pushes developments back from rivers and riparian habitats.

While these benefits are not insignificant, the primary protection of riparian natural and scenic resources is implemented by 100-foot structural setbacks from rivers; wetland regulations that also protect the bed and banks of rivers; and the scenic provision of the Landscape Management Combining Zone.

As described above, the Comprehensive Plan is being amended to recognize both the primary purpose of the floodplain zone (reduce the risk of property loss) as well as secondary benefits to riparian habitat. It is the nature of the national flood insurance program and the need to ensure consistency with state/federal regulations, which thereby suggest that riparian protection is best understood as a secondary benefit.

#### **Text Amendment to Comprehensive Plan, Appendix B - Tumalo Community Plan.**

The proposed text and map amendments remove reference to the flood plain comprehensive plan designation because the flood plain will no longer be a primary zone. Included is a reference to the flood plain zone purpose statement and secondary benefit to riparian area conservation and preservation of significant scenic and natural resources in Section 2.5. The amendment also changes the flood plain from primary zone to combining zone. (See Exhibit D)

#### **Text and Map Amendment to Comprehensive Plan, Newberry County: A Plan for Southern Deschutes County.**

The proposed text and map amendments remove reference to the flood plain comprehensive plan designation because the flood plain will no longer be a primary zone. Included is a reference to the flood plain zone purpose statement and secondary benefit to riparian area conservation and preservation of significant scenic and natural resources in Section 2.5. The amendment also changes the flood plain from a primary to combining zone. (See Exhibits E and F)

### **B. Zone Change**

#### **Deschutes County Zoning Map Amendment**

The proposed zoning map amendment changes the flood plain from primary zone to combining zone. Conversely, the primary zone for the areas previously zoned flood plain is amended to reflect the corresponding comprehensive plan designation and primary zoning of adjacent areas. Where the comprehensive plan designation is not identified, the nearest and most similar zoning has been applied. (See Exhibit A)

### **C. Title 18, Zoning Text Amendments**

#### **Chapter 18.04. TITLE, PURPOSE AND DEFINITIONS**

The proposed amendments incorporate terminology related to current best practices included in the 2014 *Oregon Model Flood Damage Prevention Ordinance*. Also included are "housekeeping" amendments updating references to the current ordinance adopting the new Flood Insurance Rate Maps (FIRM) and the change of the flood plain from primary zone to combining zone. (See Exhibit H)

#### **Chapter 18.12. ESTABLISHMENT OF ZONES**

The amendment changes the flood plain from primary zone to combining zone. (See Exhibit I)

#### **Chapter 18.61. URBAN UNINCORPORATED COMMUNITY ZONE - LA PINE**

The amendment changes the flood plain from primary zone to combining zone. (See Exhibit J)

#### **Chapter 18.96. FLOOD PLAIN ZONE**

The proposed amendments include:

- Section 18.96.010. Purposes.
  - Changes the flood plain from primary zone to combining zone.
- Section 18.96.020. Purposes.
  - Changes the flood plain from primary zone to combining zone.
- Section 18.96.030. Uses Permitted Outright

Within the floodplain itself, all of the allowed uses and relating standards are relatively similar under the proposed code as before, as documented in Table 1.

- 18.936.030(A): Specifies the underlining primary zone to determine those uses permitted outright in the zone.

- 18.96.030(B): Specifies additional uses explicitly permitted outright in the zone.
- 18.96.030(B)(10): Lists the fill and removal activities identified in Deschutes County Code (DCC)18.120.050, Fill and Removal Exceptions, that are permitted outright in the zone.
- 18.96.030(B)(11): Provides exception to flood plain zone standards if the location of development is located within the boundary of the Flood Plain Combining Zone but determined to be located outside of the Area of Special Flood Hazard (aka 100-year flood plain).
- 18.96.030(B)(12): Allows any open fencing that is placed in the floodplain but outside the floodway, provided there is no grading required to place the fence.
- Section 18.96.040. Conditional Uses Permitted

It may appear that there are additional uses permitted outright, however as documented by Table 1 above, the additions are not in reality a change from the current zoning scheme or otherwise does not potentially allow a “conflicting use.”

- 18.96.040(A): Specifies the underlining primary zone determines uses permitted as conditional uses in the zone.
- 18.96.040(B): Specifies a use permitted in Chapter 18.96 that includes “flood plain development,” as defined in Title 18, is a conditional use.
- 18.96.040(C): Identifies conditional uses specifically permitted in the zone.
- Section 18.96.070. Application for Conditional Use
  - 18.96.070(A): Provides exception to the submission of flood elevation data if the proposal expressly precludes residential and non-residential construction in the flood plain area and reflects the change of the flood plain from primary zone to combining zone.
- Section 18.96.080. Criteria to Evaluate Conditional Uses
  - 18.96.080(A): Changes the flood plain from primary zone to combining zone.
  - 18.96.080(B): Clarifies other state and federal agencies that are involved in the alteration and relocation of a water course shall be notified.
  - 18.96.080(D)(3): Provides reference that on-site waste disposal systems shall be located consistent with the Oregon Department of Environmental Quality as specified in Oregon Administrative Rule (OAR) 340-071.

- 18.96.080(E)(4): Provides exception to the submission of flood elevation data if the proposal expressly precludes residential and non-residential construction in the flood plain area.
- 18.96.080(G): Changes the flood plain from primary zone to combining zone.
- 18.96.080(G)(2): Requires a comprehensive Maintenance Plan for nonresidential construction and an Emergency Action Plan (EAP) for the installation and sealing of the structure.
- 18.96.080(G)(3): Provides Relief from elevation or floodproofing requirements for small accessory structures that are less than 200 square feet in area, one story, not temperature controlled, not used for human habitation, and several other use and design standards. This recognizes that the risk to human safety and property loss is relatively low for these structures and the additional design and cost associated with elevation and floodproofing is not warranted under these specific conditions and criteria.
- 18.96.080(G)(4) Reformats the standards applicable to manufactured dwellings and the section is renumbered due to addition of new section (G)(3).
- 18.96.080(G)(5): Renumbered due to addition of new section (G)(3).
- 18.96.080(G)(6): Renumbered due to addition of new section (G)(3).
- 18.96.080(G)(7): Requires construction of new critical facilities shall be, to the extent possible, located outside the limits of the Area of Special Flood Hazard. "Critical Facility," as proposed, means a facility for which even a slight chance of flooding might be too great. Critical facilities include, but are not limited to schools, nursing homes, hospitals, police, fire and emergency response installations, installations that produce, use or store hazardous materials or hazardous waste. The purpose of this amendment is to prevent loss of or damage to these critical facilities due to flooding and increase likelihood the facilities are available during and after a flood event.
- 18.96.080(G)(8): Relocates standards applicable to incidental storage of materials or equipment from section 18.96.040 and regulates the use as "flood plain development," a conditional use.
- 18.96.090: Specifies the more restrictive yard and setbacks requirements of the flood plain combining zone or the underlying primary zone(s) shall apply.

- 18.96.110: Specifies the dimension standards of the underlying primary zone(s) shall apply.

(See Exhibit K)

#### **Chapter 18.113. DESTINATION RESORTS ZONE**

Changes the flood plain from primary zone to combining zone. (See Exhibit L)

#### **Chapter 18.116. SUPPLEMENTARY PROVISIONS**

Changes the flood plain from primary zone to combining zone. (See Exhibit M)

#### **Chapter 18.124. SITE PLAN REVIEW**

- 18.124.030: Changes the flood plain from primary zone to combining zone. (See Exhibit N)

#### **Chapter 18.28. CONDITIONAL USE**

- 18.128.200(B)(15): Requires a management plan for the "Riparian Area" as part of any cluster development of property adjacent to a river, lake, or stream. The riparian area management plan provides additional preservation, protection, and enhancement for these sensitive areas by limiting development, uses, and alterations to the land. A wildlife biologist shall prepare the plan.
- 18.128.200(B)(16): Requires area requiring a Riparian Area Management Plan contained in one or more lots designated as open space on the plat of the subdivision and held in common ownership of a homeowner's association of the development. The amendment also specifies the open space can count towards any open space requirements for Cluster Developments.
- 18.128.210(B)(9): Requires a management plan for the "Riparian Area" as part of any planned development of property adjacent to a river, lake, or stream. The riparian area management plan provides additional preservation, protection, and enhancement for these sensitive areas by limiting development, uses, and alterations to the land. A wildlife biologist shall prepare the plan.
- 18.128.210(B)(10): Requires area requiring a Riparian Area Management Plan contained in one or more lots designated as open space on the plat of the subdivision and held in common ownership of a homeowner's association of the development. The amendment also specifies the open space can count towards any open space requirements for Planned Developments.

(See Exhibit O)

#### IV. REVIEW CRITERIA

Deschutes County lacks specific criteria in DCC Titles 18, 22, or 23 for reviewing a legislative plan and text amendment. Nonetheless, because this is a Deschutes County initiated amendment, the County bears the responsibility for justifying that the amendments are consistent with the Statewide Planning Goals and its Comprehensive Plan.

#### V. APPLICABLE CRITERIA

##### A. CHAPTER 22.12, LEGISLATIVE PROCEDURES

1. Section 22.12.010.

##### ***Hearing Required***

**FINDING:** The Deschutes County Planning Commission held public hearings on April 13, 2017, and December 14, 2017. A public hearing before the Board of County Commissioners (Board) was held on November 8, 2017.

2. Section 22.12.020, Notice

##### ***Notice***

##### ***A. Published Notice***

1. ***Notice of a legislative change shall be published in a newspaper of general circulation in the county at least 10 days prior to each public hearing.***
2. ***The notice shall state the time and place of the hearing and contain a statement describing the general subject matter of the ordinance under consideration.***

**FINDING:** Notice was published in the Bend Bulletin newspaper on April 2, 2017 and December 3, 2017 for the Planning Commission hearings and on October 29, 2017, for the Board hearing. The notice contained the information described in DCC 22.12.020(A)(2).

##### ***B. Posted Notice. Notice shall be posted at the discretion of the Planning Director and where necessary to comply with ORS 203.045.***

**FINDING:** This criterion is met with notices posted on the bulletin board in the lobby of the Deschutes County Community Development Department, 117 NW Lafayette, Bend.

- C. **Individual notice. Individual notice to property owners, as defined in DCC 22.08.010(A), shall be provided at the discretion of the Planning Director, except as required by ORS 215.503.**

**FINDING:** Individual notice was not initiated or required. Individual postcards were mailed to all private property owners with flood plain zoned property to inform them of the proposed changes with an invitation to scheduled open houses. Open houses were held at various locations throughout the county prior to the formal legislative process.

- D. **Media notice. Copies of the notice of hearing shall be transmitted to other newspapers published in Deschutes County.**

**FINDING:** This criterion has been met as notice was provided to the County public information official for wider media distribution.

- 3. Section 22.12.030 Initiation of Legislative Changes.

**A legislative change may be initiated by application of individuals upon payment of required fees as well as by the Board of County Commissioners.**

**FINDING:** This criterion is met as the application was initiated by the Deschutes County Planning Division at the direction of the Board.

- 4. Section 22.12.040. Hearings Body

**A. The following shall serve as hearings or review body for legislative changes in this order:**

- 1. **The Planning Commission.**
- 2. **The Board of County Commissioners.**

**FINDING:** This criterion is met as the Planning Commission held public hearings on April 13, 2017, and December 14, 2017. The Board held its public hearing on November 8, 2017.

**B. Any legislative change initiated by the Board of County Commissioners shall be reviewed by the Planning Commission prior to action being taken by the Board of Commissioners.**

**FINDING:** This criterion is met as the initial Planning Commission public hearing preceded the Board public hearing.

- 5. Section 22.12.050 Final Decision

***All legislative changes shall be adopted by ordinance***

**FINDING:** Land use applications 247-17-000140-ZC, 247-17-000141-PA, and 247-17-000142-TA are implemented by ordinance 2018-005. This criterion is met.

**B. Statewide Planning Goals**

The parameters for evaluating these specific amendments are based on an adequate factual base and supportive evidence demonstrating consistency with Statewide Planning Goals. The following findings demonstrate that Ordinance No. 2018-005 complies with applicable statewide planning goals and state law.

- **Goal 1, Citizen Involvement,** is met through this adoption process because these amendments received public hearings before the Planning Commission and the Board, consistent with ORS 215.060 and DCC 22.12.010. In addition, open houses were held throughout the county prior to the formal legislative process was initiated.
- **Goal 2, Land Use Planning,** is met because ORS 197.610 allows local governments to initiate post acknowledgments plan amendments (PAPA). An Oregon Department of Land Conservation and Development 35-day notice was initiated on March 8, 2017, and later amended on October 24, 2017. This FINDINGS document provides the adequate factual basis and documented analysis for the zone change, plan amendment, and zoning text amendment.
- **Goal 3, Agricultural Lands,** is not applicable because no changes to the EFU zone are proposed.
- **Goal 4, Forest Lands,** is not applicable because no changes to the F-1 and F-2 zones are proposed.

**Goal 5, Natural Resources, Scenic and Historic Areas, and Open Spaces:**

As described in detail above, the County did not do an ESEE analysis because this amendment does not allow new uses that could be conflicting. Within the floodplain itself, all of the allowed uses and relating standards are relatively similar under the proposed code as before. Finally, regarding split zoned properties, the proposed code is consistent with the County's past interpretation.

Local governments are required to apply Goal 5 to a PAPA when the amendment allows a new use and the new use "could be" a conflicting use with a particular Goal 5 resource site on an acknowledged resource list.<sup>4</sup>

Comments received argue development options in the areas upland and outside of the flood plain combining zone, the open space for Cluster and Planned Developments, and removal of the 80-acre minimum parcel size represent conflicting uses.

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<sup>4</sup> OAR 660-023-0250(3)(b)

**Finding:** Upland development is not located within the flood plain combining zone and any uses, including those associated with cluster and planned development, including open space requirements and new land divisions, will be subject to the applicable standards of the zone that continue to limit the type and extent of development disturbance within the zone. Therefore, no conflicting uses are included in these amendments.

***Economic, Social, Environmental, and Energy Analysis***

As described in detail above, the County did not do an ESEE analysis because this amendment does not allow new uses that could be conflicting. Within the floodplain itself, all of the allowed uses and relating standards are relatively similar under the proposed code as before. Finally, regarding split zoned properties, the proposed code is consistent with the County's past interpretation.

***660-23-0030 – Inventory Goal 5 Resources***

**Finding:** During periodic review, Deschutes County adopted Ordinance No. 92-041 and 92-042 concurrently to address fish and wildlife protection. These ordinances amended the Wildlife Chapter of the Comprehensive Plan and established DCC 18.88, Wildlife Area Combining Zone. Ordinance 92-041 adopted deer winter range, antelope and elk habitat boundaries based on an Economic, Social, Environmental and Energy (ESEE) analysis. In addition, Ordinance 92-042 acknowledged the following ordinances, along with the Landscape Management Combining Zone, the Oregon State Scenic Waterway and the Federal Wild and Scenic designations implement measures to protect fish and waterfowl habitat in the Deschutes River, its tributaries and inventories lakes:

- Ordinance No. 86-018 amended Ordinance No. PL - 15 to prohibit hydroelectric facilities in designated stretches of the Deschutes River and its tributaries, and to allow hydroelectric facilities in designated stretches of the Deschutes River and its tributaries, and to allow hydroelectric facilities as conditional uses in designated zones and stretches of the Deschutes River. (DCC 18.96 and 18.116.130 and 18.128.040(W)).
- Ordinance No. 86-053 amended PL - 15 requirements for rimrock setbacks. (Title 18, all zones).
- Ordinance No. 86-054 amended Ordinance No. PL -15 to require conservation easements as a condition of approval for land use actions on property adjacent to certain rivers and streams. (DCC 18.116.310, Deschutes County Code).

- Ordinance No. 86-056 amended Ordinance No. PL -15 to require a conditional use permit for any fill and removal, including removal of vegetation, within the bed and banks of any stream or wetland. The bed and banks of a stream is defined to include 10 feet on either side of the container of the waters of a stream. (DCC 18.128.040(W)).
- Ordinance 88-031 amended PL - 15 to establish a new Flood Plain zone and use restrictions. (DCC 18.96)
- Ordinance 89-009 established specific restrictions for boat docks, slips, piers or houses in the Flood Plain zone. DCC 18.96 and 18.116.070. All zones in Title 18 have a stream setback provision to protect fish and wildlife areas. The setback requirement is 100 feet from the ordinary high water mark along all streams or lakes. The provision applies to all structures and sewage disposal installations. DCC 18.84, Landscape Management Zone requires retention of existing vegetation to screen development from the river or stream. The retention of vegetation can provide a buffer between development and the nesting and feeding sites of waterfowl.
- Ordinance 89-030 amended the Deschutes County Comprehensive Plan for Flood Hazard zones.
- Ordinance 92-040 added the following policy to the Fish and Wildlife policies of the Deschutes County Year 2000 Comprehensive Plan: The county shall work with the Oregon Department of Fish and Wildlife (ODFW) and the Deschutes Basin Resource Committee to review existing protection of riparian and wetland area vegetation and recommend comprehensive plan and ordinance amendments, if necessary, by December 31, 1993.
- Ordinance 92-042 adopted the Sensitive Bird and Mammal Habitat Combining Zone, DCC18.90. This zone insures that sensitive habitat areas identified in the County's Goal 5 sensitive bird and mammal inventory as critical for the survival of the northern bald eagle, great blue heron, golden eagle, prairie falcon, osprey, great grey owl, and the Townsend's big-eared bat are protected from the effects of conflicting uses or activities which are not subject to the Forest Practices Act.
- Ordinance 92-045 adopted the U. S. Fish and Wildlife Service National Wetlands Inventory maps for Deschutes County as the inventory of wetlands in the county.

Based on the ordinances listed above, Deschutes County continues to protect significant Goal 5 resources in riparian and wetland areas. These protections include,

but are not limited to, a 100-foot setback from and conservation easements along select rivers and streams, protections of mapped wetland, limitations on development in the flood plain, and landscape management design review.

If development is located within the flood plain combining zone, there are specific standards that mitigate development impacts on riparian ecosystems and wetlands. In addition, cluster and planned developments require the majority of the property be retained as open space and a riparian area management plan to provide additional protection, preservation, and enhancement of the sensitive areas.

**660-023-0250 – Applicability**

***(2) The requirements of this division are applicable to PAPAs initiated on or after September 1, 1996. OAR 660, Division 16 applies to PAPAs initiated prior to September 1, 1996. For purposes of this section "initiated" means that the local government has deemed the PAPA application to be complete.***

**Finding:** Deschutes County initiated a PAPA in 2017. This rule applies.

***(3) Local governments are not required to apply Goal 5 in consideration of a PAPA unless the PAPA affects a Goal 5 resource. For purposes of this section, a PAPA would affect a Goal 5 resource only if:***

***(b) The PAPA allows new uses that could be conflicting uses with a particular significant Goal 5 resource site on an acknowledged resource list;***

**Finding:** Deschutes County is amending the Comprehensive Plan, Zoning Map, and Title 18. The amendments convert the flood plain zone to combining zone, adopt provisions of the 2014 *Oregon Model Flood Damage Prevention Ordinance*, address inconsistencies created by the conversion to a combining zone, correct errors, and add provisions for cluster and planned developments on property that contains flood plain zoning. Deschutes County is therefore required to apply Goal 5 in consideration of this PAPA.

As described in detail above, the County did not do an ESEE analysis because this amendment does not allow new uses that could be conflicting. Within the floodplain itself, all of the allowed uses and relating standards are relatively similar under the proposed code as before, and documented in Table 1. Finally, regarding split zoned properties, the proposed code is consistent with the County's past interpretation.

**660-23-0040 – ESEE Decision Process**

***(1) Local governments shall develop a program to achieve Goal 5 for all significant resource sites based on an analysis of the economic, social, environmental, and***

***energy (ESEE) consequences that could result from a decision to allow, limit, or prohibit a conflicting use.***

***(a) Identify the conflicting uses;***

***(b) Determine the impact area;***

***(c) Analyze the ESEE consequences;***

***(d) Develop a program to achieve Goal 5.***

**Finding:** Deschutes County has already developed a program to achieve Goal 5 for significant sites related to fish and wildlife habitat and scenic view protections. This amendment does not significant alter that existing program, nor does this amendment give rise to a “new conflicting use” necessitating a new ESEE analysis.

- **Goal 6, Air, Water and Land Resources Quality and Goal 7, Natural Hazards** are met because the County has other code provisions pertaining to development in the flood plain combining zone that are designed to protect air, water and land resources quality and to assure that they are not approved in areas subject to natural resources and natural hazards.
- **Goal 8, Recreational Needs**, is not applicable because proposed changes are not addressing a recreational use or need.
- **Goal 9, Economic Development**, is met because the development within the flood plain combining zone remains available but limited. The amendments may result in additional land divisions and related development but such opportunities are extremely limited due to required minimum parcel sizes and existing development patterns. In addition, the amendments will not result in significant industrial or commercial developments due to rural zoning restrictions.
- **Goal 10, Housing** is not applicable because, unlike municipalities, unincorporated areas are not obligated to fulfill certain housing requirements.
- **Goal 11, Public Facilities** is not applicable because the proposed changes are not specific to a particular use. With that said, in the rural county development typically relies on domestic wells and onsite wastewater treatment systems. A Goal 11 exception would be required for a centralized sewer system.
- **Goal 12, Transportation**, is addressed during land use review for a development proposal. The County has a code provision that pertains to Traffic Impact Studies, DCC 18.116.310 and a Board Resolution, 2013-020, which sets a transportation system development charge rates of \$3,937 per peak hour trip.

- **Goal 13, Energy Conservation**, is addressed during land use review for development and compliance with applicable zoning and development standard and application of the Uniform Building Code.
- **Goal 14, Urbanization**, is not applicable because no expansion of an urban area is proposed with these amendments.
- **Goals 15 through 19** are not applicable to any amendments to the County's comprehensive plan because the county has none of those types of lands.

## **B. Deschutes County Comprehensive Plan**

### **Chapter 2, Resource Management**

#### **Section 2.5, Water Resources**

##### ***2.5.10 Support educational efforts and identify areas where the County could provide information on the Deschutes River ecosystem, including rivers, riparian areas, floodplains and wetlands.***

- a. Explore methods of ensuring property owners know and understand regulations for rivers, riparian areas, floodplains and wetlands.***

**FINDING:** The amendment process provided an opportunity to ensure property owners know and understand development regulations as they pertain to riparian areas, floodplains, and wetlands. Individual postcards were mailed to all private property owners with flood plain zoned property to inform them of the proposed changes and scheduled open houses. Open houses were held at various locations throughout the county prior to the formal legislative process. Staff presented an overview of the proposed amendments and administration of the flood plain zone.

##### ***2.5.16 Use a combination of incentives and/or regulations to mitigate development impacts on river and riparian ecosystems and wetlands.***

**FINDING:** The flood plain combining zone limits development and establishes standards to mitigate impacts. DCC 18.96.060(B) requires that no new construction of a dwelling, accessory structure or farm use structure shall be located in the flood plain unless it can be demonstrated that no alternative exists that would allow the structure to be placed outside of the flood plain. If development is located within the flood plain combining zone, there are specific standards that mitigate development impacts on riparian ecosystems and wetlands. In addition, cluster and planned developments require the majority of the flood plain be retained as open space and a riparian area management plan to provide additional protection, preservation, and enhancement of the sensitive areas.

#### **Section 2.6, Wildlife**

**2.6.4 Support incentives for restoring and/or preserving significant wildlife habitat by traditional means such as zoning or innovative means, including land swaps, conservation easements, transfer of development rights, tax incentives or purchase by public or non-profit agencies.**

**FINDING:** Cluster and planned unit developments that include flood plain zoning are required to provide a riparian area management plan. The provision of the riparian area management plan, along with the required open space, allow the development to have a greater unit density in return for great flood plain protection. This additional density is an incentive to provide protections and open space, managed by a home owners association, than otherwise required.

**Section 2.7, Open Spaces, Scenic Views and Site**

**2.7.4 Encourage new development to be sensitive to scenic views and sites.**

**FINDING:** The setback standards for the flood plain and landscape management combining zones require a 100-foot buffer adjacent to the river. A cluster or planned development require a riparian area management plan and open space managed by a home owners association. Both of these requirements provide additional riparian and wetland preservation, protection, and enhancement by limiting incidental impacts.

**2.7.6 Review County Code and revise as needed to protect open space and scenic views and sites, including:**

- b. Work with private property owners to provide incentives and mitigations for protecting visually important areas from development impacts.**
- e. Review County Code for ways to mitigate for developments that significantly impact scenic views.**

**FINDING:** The setback requirements of the flood plain zone remain with the conversion to a combining zone. The building heights allowed for development within the flood plain combining zone will be determined by the primary zone of the property. These standards, along with the setback standards associated with the landscape management and wildlife area combining zones, protect open space and scenic views and sites. In addition, cluster and planned developments require the majority of the flood plain be retained as open space with a riparian area management plan. These two mechanisms provide additional protection, preservation, and enhancement of sensitive riparian and wetland areas.

**Chapter 3, Resource Management**

**Section 3.3, Rural Housing**

**3.3.4 Encourage new subdivisions to incorporate alternative development patterns, such as cluster development, that mitigate community and environment impacts.**

**FINDING:** The amendment allows cluster and planned developments on properties that are located in the flood plain combining zone if the primary zone permits such development. Cluster and planned developments require the majority of the flood plain be retained as open space with a riparian area management plan. These two mechanisms provide additional protection, preservation, and enhancement of sensitive riparian and wetland areas.

### **Section 3.5, Natural Hazards**

#### **3.5.10 Regulate development in designated floodplains identified on the Deschutes County Zoning Map based on Federal Emergency Management Act regulations.**

##### **a. Participate in and implement the Community Rating System as part of the National Flood Insurance Program.**

**FINDING:** The flood plain combining zone will continue regulating and restricting development within its boundary. The amendment incorporates provisions of the 2014 *Oregon Model Flood Damage Prevention Ordinance*. Administration of the flood plain combining zone demonstrates the County's commitment to participation and implementation of the County Rating System as part of the National Flood Insurance Program.

#### **3.5.11 Review and revise County Code as needed to:**

##### **f. Make the Floodplain Zone a combining zone and explore ways to minimize and mitigate floodplain impacts.**

**FINDING:** The amendment makes the flood plain zone a combining zone. Development options will continue to be limited. If development in the flood plain combining zone is proposed, there are specific and strict development standards to minimize and mitigate floodplain impacts. The standards include flood elevation, flood proofing, additional setbacks, and other design elements. In addition and as previously noted, cluster and planned developments are required to provide a riparian area management plan for additional protection, preservation, and enhancement of sensitive riparian and wetland areas.

REVIEWED  
Burd  
LEGAL COUNSEL

BEFORE THE BOARD OF COUNTY COMMISSIONERS OF DESCHUTES COUNTY, OREGON

An Ordinance Amending PL-20, the Deschutes  
County Year 2000 Plan, as Amended, to Adopt  
Inventories, Conflict Analysis and ESEE  
Determinations for Fish and Wildlife  
Resources and Declaring an Emergency.

\* 92 AUG -6 PM 1:26  
\* MARY SUE PENHOLLOW  
\* COUNTY CLERK  
\*

0119-0189

92-26468

ORDINANCE NO. 92-041

WHEREAS, Statewide Planning Goal 5 requires that local governments inventory, identify conflicts with, and analyze the Economic, Social, Environmental, and Energy consequences of protecting or not protecting certain resources, including fish and wildlife resources pursuant to Statewide Planning Goal 5, and determine to what extent, if at all, such resources should be protected.

WHEREAS, pursuant to the requirements of the Oregon Department of Land Conservation and Development (LCDC) the County has been required to review and update its Comprehensive Land Use Plan and implementing ordinances, including for fish and wildlife resources, to assure continuing compliance with Statewide Land Use Planning Goals; and

WHEREAS, public hearings have been held in furtherance of this objective in conformance with state law before the Deschutes County Planning Commission and the Board of County Commissioners for Deschutes County; and

WHEREAS, the Board of County Commissioners has considered the recommendations of the Planning Commission and the public; now therefore,

THE BOARD OF COUNTY COMMISSIONERS OF DESCHUTES COUNTY, OREGON ORDAINS AS FOLLOWS:

Section 1. REPEAL OF EXISTING RESOURCE ELEMENT. The existing Plan Fish and Wildlife resource element, found at pages 59-79 of the Resource Element of the Plan, is hereby repealed.

Section 2. ADOPTION OF FISH AND WILDLIFE RESOURCE ELEMENT. Ordinance No. PL-20, the Deschutes County Year 2000 Comprehensive Plan, as amended, (hereafter referred to as "the Plan") is further amended by adoption as part of the resource element of the Plan the inventory, conflicts analysis and ESEE analysis of inventoried resources concerning fish and wildlife resources in the County attached hereto as Exhibit "A" and incorporated herein by reference.

PAGE 1 - ORDINANCE NO. 92-041 (8/5/92)

AUG 11 1992

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AUG 13 1992

0119-0190

Those ESEEs address the following specific resources:

- Fish Habitat
- Deer Winter Range
- Deer Migration Corridor
- Elk Habitat
- Antelope Habitat
- Habitat Areas for Sensitive Birds
- Habitat Areas for Townsend's Big-Eared Bats
- Upland Game Bird Habitat
- Furbearer Habitat
- Wetlands and Riparian Areas
- Threatened and Endangered Species Habitat

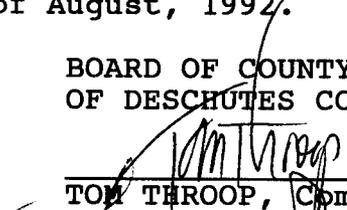
Section 3. FINDINGS. The Board of County Commissioners adopts as its findings and conclusions in support of the amendments set forth herein the Findings attached hereto as Exhibit "B" and incorporated herein by reference.

Section 4. SEVERABILITY. The provisions of this ordinance are severable. If any section, sentence, clause, or phrase of this ordinance or any Exhibit thereto is adjudged to be invalid by a court of competent jurisdiction, that decision shall not affect the validity of the remaining portions of this ordinance or any Exhibit thereto.

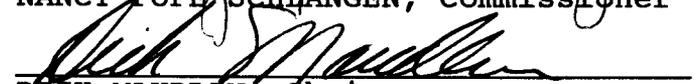
Section 5. EMERGENCY. This Ordinance being necessary for the immediate preservation of the public peace, health and safety, an emergency is declared to exist, and this Ordinance takes effect on its passage.

DATED this 5th day of August, 1992.

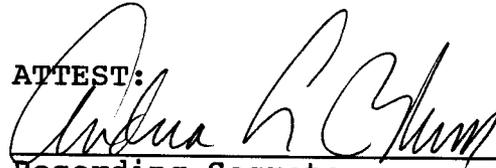
BOARD OF COUNTY COMMISSIONERS  
OF DESCHUTES COUNTY, OREGON

  
\_\_\_\_\_  
TOM THROOP, Commissioner

  
\_\_\_\_\_  
NANCY POPE SCHLANGEN, Commissioner

  
\_\_\_\_\_  
DICK MAUDLIN, Chairman

ATTEST:

  
\_\_\_\_\_  
Recording Secretary

0119-0191

**ORDINANCE NO. 92-041 - EXHIBIT "A"**  
**DESCHUTES COUNTY YEAR 2000 COMPREHENSIVE PLAN**  
**RESOURCE ELEMENT**  
**FISH AND WILDLIFE**  
**INVENTORIES CONFLICT**  
**ESEE ANALYSES**

**FISH AND WILDLIFE AREAS AND HABITATS** 0119-0192

Because fish and wildlife are such a common part of rural life, the importance of this resource, and its sensitivity to human development can be easily overlooked. Perhaps less obvious, but just as important, is the economic significance of this resource to the local population.

The need to protect this critical natural asset has been recognized. For this reason, State Land Use Goal 5 has been developed to ensure fish and wildlife needs are considered in the development decisions of each local jurisdiction.

Deschutes County is fortunate to have resident within its area not only large populations of game animals (such as antelope, deer, elk, sage grouse, etc.) but also a variety of non-games species. The purposes of this plan element is to provide some information about the numbers, locations, and importance of the fish and wildlife resources of the county. This resource element also includes the Environmental, Social, Economic and Energy (ESEE) analysis required by Goal 5 and OAR 660-16-000.

The Oregon Department of Fish and Wildlife has provided inventory information on the mammals, birds and amphibians and reptiles found in Deschutes County. Table 1, Deschutes County Wildlife Inventory, identifies all species found in the county, identifies the time of year they are found and their relative abundance. The county has inventoried, provided information on the quality, quantity and location and completed and ESEE analysis in accordance with OAR 660-16 for the species and habitat areas listed below. The county finds that the other species and their habitat are not significant under Goal 5.

This chapter contains the inventories of significant fish and wildlife habitat areas and the ESEE analysis for the habitat. The chapter is organized in the following order:

Fish Habitat	Page 12
Deer Winter Range	Page 22
Deer Migration Corridor	Page 26
Elk Habitat	Page 32
Antelope Habitat	Page 38
Sensitive Birds	Page 41
Waterfowl Habitat	Page 56
Upland Game Bird Habitat	Page 60
Furbearer Habitat	Page 66
Townsend's Big-eared Bat Habitat	Page 69
Wetlands and Riparian Areas	Page 73
Threatened and Endangered Species Habitat	Page 77

The Oregon Department of Fish and Wildlife (ODFW) has provided the following information on big game populations in the County.

Big Game Population Estimates, Deschutes County, 1992

<u>Species</u>	<u>Number</u>
Mule Deer	25,000
Elk	800
Antelope	1,000
Cougar	10
Bear	40
Silver Grey Squirrel	500

NON-GAME WILDLIFE

Because of the large diversity of nongame wildlife species, their habitat requirements vary considerably depending on the individual species concerned. Habitat requirements outlined for the inventoried wildlife groups are applicable for many species of non-game wildlife.

One of the most important values of non-game wildlife is the non-consumptive use they provide. Numerous hours of bird watching, photography nature studies, etc., are spent on non-game wildlife. It is estimated that 2/3 of all wildlife use is non-consumptive. A 1974 survey shows that during a one year period in Oregon an estimated 719,000 people watched birds or other wildlife, 688,000 fed birds, and 245,000 put up bird houses or nest boxes. The importance of non-game wildlife cannot be over emphasized. Parks are extremely important, particularly in urban areas, because they provide the habitat for small non-game mammals and birds.

Deschutes County contains important populations of hawks, owls, songbirds, small mammals, and numerous other non-game wildlife species. Most of the non-game birds found in Central Oregon are protected.

Non-game wildlife is found throughout sensitive habitat areas outlined for big game, upland game, and waterfowl in Deschutes County. Sensitive habitat within the urban and suburban areas is found in parks, both city and county, and adjacent water areas. Another sensitive habitat type is the snag tree which is used by a variety of cavity nesting birds and mammals.

The land use conflicts listed in the ESEE analysis for the elk, deer, upland game birds, furbearers, sensitive birds,

waterfowl and riparian and wetland habitat also affect non-game wildlife since they are found throughout the same habitat. In addition, land use activities in the urban setting that eliminate open space are also in conflict with non-game wildlife.

### ECONOMIC VALUE OF FISH AND WILDLIFE

Often overlooked is the significant contribution to the economy made by people who come to hunt and fish in the county. The Oregon Department of Fish and Wildlife reports that the most current data available (1989) indicates that a hunter day in Oregon's economy is worth 46.69 for deer and \$48.94 for elk. Deschutes County encompasses all or portions of the Metolius, Paulina, Grizzly, Maury, and Upper Deschutes Big Game Management units. Collectively, all these units generate a total of 75,885 hunter days for deer and 10,108 hunter days for elk. This represents a value of approximately \$3,453,100 for deer and \$494,690 for elk. The estimated worth of a hunter day does not include the money generated from game bird hunting or furbearer trapping. Data from these are not listed by local areas. However, a 1980 estimate showed that small game and game bird hunters contributed \$70.84 per participant on a state wide basis.

The value of angler days is estimated by zones within the state. Deschutes County is located within the Central Zone and the majority of the angling occurs in Deschutes County. In 1991 resident and non-resident anglers combined spent 1,071,135 days angling in the Central Zone. This represents a total economic value within this zone of \$25,392,965. Resident anglers contributed \$28.07 per day and non-resident anglers contributed \$21.94 per day.

Obviously, a considerable number of dollars could be added to the total if data were available on the money spent by people who come only to view or photograph the wildlife. Apparently, fish and wildlife are an important part of our local economy, particularly if a figure was added for the many times that initial outside money is respent in the community, each time adding to local incomes.

### CONCLUSION

The fish and wildlife resources of Deschutes County have an important role to play in the maintenance of the environment that so many local residents enjoy, and which attracts so many visitors each year. The role of this resource in the local economy also must not be overlooked. And finally, our responsibility as guardians of this increasingly rare and irreplaceable resource cannot be forgotten.

FISH AND WILDLIFE TABLES

0119-0195

Table 1	Deschutes County Wildlife Inventory
Table 2	Fish Inventory
Table 3	Minimum Stream Flows
Table 4	Instream Water Rights
Table 5	Bald Eagle Nest - Non-Federal Inventory
Table 6	Bald Eagle Nest - Federal Inventory
Table 7	Golden Eagle Nest - Non-Federal Inventory
Table 8	Golden Eagle Nest - Federal Inventory
Table 9	Prairie Falcon Nest- Non-Federal Inventory
Table 10	Osprey Nest - Non-Federal Inventory
Table 11	Osprey Nest - Federal Inventory
Table 12	Heron Rookery - Non-Federal Inventory
Table 13	Heron Rookery - Federal Inventory
Table 14	Great Grey Owl - Non-Federal Inventory
Table 15	Great Grey Owl - Federal Inventory
Table 16	Sage Grouse Lek - Federal Inventory
Table 17	Sage Grouse Lek - Non-Federal Inventory
Table 18	Townsend's Big-Eared Bat - Non-Federal Inventory
Table 19	Townsend's Big-Eared Bat - Federal Inventory
Table 20	Townsend's Big-Eared Bat - "1B" Inventory

Deschutes County Planning Unit, 1992.

*Selected List	Use Period Key		Relative Abundance Key
		X=Year Around	R = Rare
		S=Summer	F = Few
		W=Winter	C = Common
			A = Abundant
			U = Unknown
Species	Use Period	Relative Abundance	
<b>Birds</b>			
American Avocet	S	F	
American Bittern	S	F	
American Coot	X	C	
American Goldfinch	S	C	
American Kestrel	X	C	
American Widgeon	X	C	
Anna's Hummingbird	S	F	
Ash-throated Flycatcher	S	F	
Bald Eagle	X	F	
Bank Swallow	S	F	
Barn Owl	X	C	
Barn Swallow	S	C	
Barred Owl	X	U	
Belted Kingfisher	X	F	
Bewick's Wren	X	F	
Black-backed Woodpecker	X	F	
Black-billed Magpie	X	C	
Black-capped Chickadee	W	F	
Black-chinned Hummingbird	S	F	
Black-crowned Night Heron	S	F	
Black-headed Grosbeak	S	F	
Black-throated Grey Warble	S	F	
Blue Grouse	X	F	
Blue-winged Teal	S	F	
Bohemian Waxwing	W	F	
Boreal Owl	X	F	
Brewer's Blackbird	X	C	
Brewer's Sparrow	S	F	
Brown Creeper	X	F	
Brown-headed Cowbird	S	C	
Bufflehead	X	C	
Burrowing Owl	S	R	
California Valley Quail	X	C	
Calliope Hummingbird	S	F	
Canada Goose	X	C	
Canyon Wren	X	C	
Caspian Tern	S	F	
Cassin's Finch	X	C	

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*Selected List	Use	Relative	Releative
	Period Key	Abundance	Abundance Key
Species	Use	Relative	
	Period	Abundance	
Cedar Waxwing	X	C	R = Rare
Chipping Sparrow	S	C	F = Few
Chukar Partridge	X	R	C = Common
Claifornia Gull	X	C	A = Abundant
Clark's Nutcracker	X	C	U = Unknown
Cliff Swallow	S	C	
Common Bushtit	X	C	
Common Crow	X	R	
Common Loon	S	R	
Common Merganser	X	C	
Common Nighthawk	S	C	
Common Raven	X	C	
Common Snipe	S	F	
Coopers Hawk	X	C	
Dark-eyed Junco	X	A	
Dipper	X	F	
Double-crested Cormorant	S	C	
Downy Woodpecker	X	C	
Dusky Flycatcher	S	F	
Eared Grebe	W	F	
Eastern Kingbird	S	F	
Evening Grosbeak	X	C	
Ferruginous Hawk	S	F	
Flammulated Owl	S	F	
Fox Sparrow	S	C	
Franklin's Gull	S	F	
Gadwall	W	F	
Golden Eagle	X	F	
Golden-crowned Kinglet	X	F	
Goldeneye	X	C	
Goshawk	X	F	
Gray Jay	X	C	
Gray Partridge	X	R	
Great Blue Heron	X	C	
Great Gray Owl	X	F	
Great Horned Owl	X	C	
Greater Yellowleg	S	F	
Green Heron	S	R	
Green-tailed Towhee	S	F	
Green-winged Teal	X	F	
Hairy Woodpecker	X	C	

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DESCHUTES COUNTY WILDLIFE

Combined Public Comments - General Flood Plain Comments

0119-0198

Deschutes County Planning Unit, 1992.

*Selected List	Use	Relative	Releative
	Period	Abundance	Abundance
Species	Period	Abundance	Key
			Key
			R = Rare
			F = Few
			C = Common
			A = Abundant
			U = Unknown
			X=Year Around
			S=Summer
			W=Winter
Hammond's Flycatcher	S	F	
Hermit Thrush	S	F	
Hooded Merganser	X	F	
Horned Lark	X	F	
House Finch	X	C	
House Sparrow	X	C	
House Wren	S	F	
Killdeer	X	C	
Lark Sparrow	S	F	
Lazuli Bunting	S	F	
Least Sandpiper	S	F	
Lesser Goldfinch	X	R	
Lesser Scaup	W	C	
Lewis' Woodpecker	S	F	
Lincoln's Sparrow	X	F	
Loggerhead Shrike	X	F	
Long-billed Curlew	S	R	
Long-billed Marsh Wren	S	F	
Long-eared Owl	X	F	
MacGillivray's Warbler	S	F	
Mallard	X	C	
Merlin	W	R	
Mountain Bluebird	X	C	
Mountain Chickadee	X	C	
Mourning Dove	X	C	
Nashville Warbler	X	F	
Northern Harrier	X	F	
Northern Oriole	S	F	
Northern Phalarope	S	F	
Three-toed Woodpecker	X	F	
Olive-sided Flycatcher	S	C	
Orange-crowned Warbler	S	F	
Osprey	S	C	
Peregrine Falcon	X	R	
Pileated Woodpecker	X	F	
Pine Grosbeak	X	R	
Pine Siskin	X	C	
Pinon Jay	X	C	
Pintail	W	C	
Prairie Falcon	X	C	

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## Deschutes County Planning Unit, 1992.

*Selected List	Use	Relative	Use	Relative	Releative
	Period	Abundance	Period	Abundance	Abundance
Species	Period	Abundance	Period	Abundance	Abundance
Purple Finch	X	F			
Pygmy Nuthatch	X	C			
Pygmy Owl	X	F			
Red Crossbill	X	F			
Red-breasted Nuthatch	X	C			
Redhead	W	F			
Red-shafted Flicker	X	C			
Red-tailed Hawk	X	C			
Red-winged Blackbird	X	C			
Ring-billed Gull	X	C			
Ring-neck Duck	W	F			
Ring-necked Pheasant	X	F			
Robin	X	C			
Rock Dove	X	C			
Rock Wren	S	C			
Rosy Finch	X	R			
Rough-legged Hawk	W	C			
Rough-winged Swallow	S	F			
Ruby-crowned Kinglet	X	F			
Ruffed Grouse	X	F			
Rufous Hummingbird	S	F			
Rufous-sided Towhee	X	F			
Sage Grouse	X	F			
Sage Sparrow	S	R			
Sage Thrasher	S	C			
Sandhill Crane	S	F			
Savannah Sparrow	S	C			
Saw-whet Owl	X	F			
Say's Pheobe	S	F			
Screech Owl	X	F			
Semipalmated Plover	S	R			
Sharp-shinned Hawk	X	F			
Short-eared Owl	S	F			
Shoveler	W	F			
Snowy Egret	S	F			
Solitary Vireo	S	F			
Song Sparrow	X	F			
Sora	S	F			
Spotted Owl	X	F			
Spotted Sandpiper	S	F			
Starling	X	C			

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*Selected List	Use Period Key	Relative Abundance Key
		R = Rare
		F = Few
	X=Year Around	C = Common
	S=Summer	A = Abundant
	W=Winter	U = Unknown
Species	Use Period	Relative Abundance
Steller's Jay	X	F
Swainson's Hawk	S	R
Swainson's Thrush	S	F
Townsend's Solitaire	X	C
Tree Swallow	S	C
Turkey	X	C
Turkey Vulture	S	C
Varied Thrush	X	F
Vaux's Swift	S	F
Vesper Sparrow	S	F
Violet-green Swallow	S	C
Virginia Rail	S	F
Warbling Vireo	S	F
Water Pipit	X	F
Western Bluebird	S	F
Western Flycatcher	S	F
Western Grebe	S	C
Western Kingbird	S	F
Western Meadowlark	S	C
Western Sandpiper	S	F
Western Tanager	S	F
Western Wood Pewee	S	F
White-breasted Nuthatch	X	F
White-crowned Sparrow	S	F
White-headed Woodpecker	X	F
Wigeon	X	F
Williamson's Sapsucker	X	F
Willow Flycatcher	S	R
Wilson's Phalarope	S	R
Wilson's Warbler	S	F
Winter Wren	X	F
Wood Duck	S	F
Yellow Warbler	S	F
Yellow-bellied Sapsucker	X	F
Yellow-headed Blackbird	S	F
Yellowthroat	S	F

**Amphibians and Reptiles**

Bullfrog	X	F
Cascades Frog	X	F

DESCHUTES COUNTY WILDLIFE

Deschutes County Planning Unit, 1992.

*Selected List	Use Period Key	Relative Abundance Key
		R = Rare
		F = Few
	X=Year Around	C = Common
	S=Summer	A = Abundant
	W=Winter	U = Unknown
Species	Use Period	Relative Abundance
N. Grasshopper Mouse	X	F
Northern Water Shrew	X	F
Norway Rat	X	F
N. Pocket Gopher	X	U
Ord's Kangaroo Rat	X	C
Pacific Mole	X	U
Pallid Bat	S	U
Pine Marten	X	C
Pinon Mouse	X	F
Porcupine	X	C
Pronghorn Antelope	X	C
Raccoon	X	C
Red Fox	X	F
River Otter	X	C
Rocky Mtn Elk	X	C
Roosevelt Elk	X	C
Sagebrush Vole	X	C
Shorttail Weasel	X	F
Silver-haired Bat	S	U
Small-footed Myotis	S	U
Snowshoe Hare	X	F
Striped Skunk	X	C
Townsend Ground Squirrel	X	C
Townsend's Big-eared Bat	X	F
Trowbridge Shrew	X	F
Vagrant Shrew	X	U
Water Vole	X	C
Western Gray Squirrel	X	C
Western Harvest Mouse	X	C
Western Jumping Mouse	X	F
Western Pipistrel	S	U
Whitetail Jackrabbit	X	R
Wolverine	X	R
Yellow Pine Chipmunk	X	C
Yellow-bellied Marmot	X	F
Yuma Myotis	X	F

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TABLE 1

DESCHUTES COUNTY WILDLIFE

0119-0202

Deschutes County Planning Unit, 1992.

\*Selected List

Use  
Period Key

Relative  
Abundance Key

R = Rare  
F = Few  
C = Common  
A = Abundant  
U = Unknown

X=Year Around  
S=Summer  
W=Winter

Species	Use Period	Relative Abundance
Common Garter Snake	X	F
Ensatina	X	R
Gopher Snake	X	C
Great Basin Spadefoot Toad	X	F
Long-toed Salamander	X	F
Night Snake	X	U
Northern alligator Lizard	X	F
Pacific Tree Frog	X	C
Racer	X	F
Red-legged Frog	X	F
Roughskin Newt	X	R
Rubber Boa	X	F
Sagebrush Lizard	X	F
Sharp-tailed Snake	X	U
Short-horned Lizard	X	R
Side-blotched Lizard	X	U
Spotted Frog	X	F
Striped Whipsnake	X	U
Tailed Frog	X	F
Western Fence Lizard	X	C
Western Rattlesnake	X	F
Western Skink	X	F
Western Toad	X	F

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**FISH HABITAT**

The many streams, lakes and reservoirs found in Deschutes County provide not only for a large fish population, but also for great variety in species. Each year many hundreds of thousands of angler days are spent in the pursuit of an equally huge number of fish. East and Paulina Lakes alone produced 154,027 fish during 1968. Table 2 identifies the local fish species and how they are distributed throughout the county.

Naturally spawning populations of native rainbow trout and whitefish along with introduced populations of rainbow, brown and brook trout and kokanee salmon are present in streams and reservoirs. Most natural lakes were historically barren of fish populations but today nearly all suitable lakes are stocked annually with fingerling or legal sized rainbow, brook, brown and cutthroat trout and kokanee, coho and Atlantic salmon. Lake trout have been introduced into Big Cultus Lake and have established a natural producing population. Most lakes do not provide suitable spawning habitat and populations can only be maintained by continued stocking. Stocking and management programs are designed to provide a diverse array of opportunities for resident and visiting anglers. It is important to sustain the naturally producing populations and to balance stocking programs with the proper habitats. One native species, the bull trout, has disappeared from the county due to a combination of habitat degradation, overfishing and competition from introduced species.

Historically, summer steelhead that spawned in the upper reaches of Squaw Creek were the only anadromous populations that reached Deschutes County. A series of natural barriers west of Terrebonne blocked access to the Upper Deschutes River. The construction of Round Butte Dam in the 1960's created an additional barrier and blocked the runs into Squaw Creek.

An illegal introduction, the Tui Chub or roach, has prospered in Big and Little Lava Lakes, David Lake, East Lake, Paulina Lake, Crane Prairie Reservoir and Wickiup Reservoir and competes vigorously with the desirable trout populations. Control efforts have been attempted, but have generally provided only short term relief.

Warmwater game fish such as bass and bluegill have been introduced into numerous private ponds but provide little recreation to the general public. An illegal, release (early 1980's) of largemouth bass into Crane Prairie Reservoir has

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prospered and provides a popular fishery. Fortuitously, this introduction appears to have had little adverse effect on the premier trout fishery in the reservoir.

Some fish habitat has been lost or damaged by man's activities. Most of the damage has occurred along the Deschutes River with lesser damage along the Little Deschutes River. Dredging, filling, riparian vegetation removal, and some types of stream bank protection have resulted in major loss of fisheries habitat. A large wood structure was removed from the river in the early 1900's to facilitate log drives. Cattle grazing has damaged riparian vegetation with most damage occurring along the Little Deschutes River. Four dams within Bend's city limits impede fish passage and considerable fish loss occurs when fish pass through the Pacific Corporation hydro plant turbines.

However, the major fish production loss is related to the water flow manipulation associated with the Deschutes River irrigation system. Between Wickiup Dam and Bend (62 river miles) the extreme low winter flow (20 cfs) and the wide range of flow fluctuations (20 cfs to 2100 cfs at Wickiup Dam) have resulted in dewatered spawning areas, reduced rearing habitat, high turbidity levels, decreased fish food production, stranding losses, and elimination of several cover components (large wood, undercut banks, and riparian vegetation).

The most drastic impacts are in the first 27 miles above Fall River (River Mile 200). Tributary inflow from Fall River, Little Deschutes River (River Mile 193) and Spring River (River Mile 190) has moderated the impacts of the present flow regime to some degree in the remaining 35 miles down to Bend.

Wickiup and Crane Prairie Dams have blocked access to high quality spawning areas and cut off the downstream transfer of gravel into lower spawning areas. While the reservoirs have created popular fisheries and recreation areas, the extreme fluctuations arising from irrigation withdrawal/storage detracts from their potential.

At Bend nearly all of the remaining flow is diverted into the irrigation system from early April through Mid-October. Summer flows below Bend are about 30 cfs until major springs add considerable volume below Lower Bridge. Natural summer flows were 1400 - 1600 cfs. The low summer flow results in very high water temperatures (high 70's to low 80's degrees F) and greatly reduced rearing areas in the 35 stream miles above Lower Bridge. Trout populations appear to be maintaining themselves at a low level, while populations below the spring inflow are excellent.

Other streams with major irrigation driven impacts are Squaw

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Creek, Indian Ford Creek, Tumalo Creek and Paulina Creek. Sections of all of these streams are completely dewatered during the irrigation season. Unscreened and inadequately screened irrigation diversions are another major source of fish production loss. Any fish entering these diversions is lost when the canals are dewatered at the end of the irrigation season. There are hundreds of miles of main canals and lateral ditches within the county and the extent of the fish loss is unknown. A recent (1991) study did estimate a loss of over 2600 trout in 13 miles of one major diversion canal off the Deschutes River. The canal was screened, but obviously the screen design was inadequate.

Historical fish populations were thought to be some of the best in the Pacific Northwest. Lake stocking programs have expanded the fishery resource throughout the county, but river populations have been greatly degraded.

Improvement in the extreme low flows and modification to the widely fluctuating flow regimes are critical to restoration efforts. Table 2 provides minimum recommended stream flows. These recommendations are not being met in any of the streams where flows are being diverted for irrigation.

The need for water conservation actions, improved irrigation systems, and alternative water sources is widely recognized. Recent state legislation facilitates developing and implementing such programs. A pilot project to evaluate irrigation canal lining is currently being implemented.

A substantial reduction in the loss of fish entering irrigation diversion canals is a key element in fish population restoration. Existing state laws require screening and recent legislation has expanded this to include the smaller diversions. This same legislation provides funding and technical assistance for implementing a screening program.

Alteration of stream banks and riparian areas continues to erode fish habitat. Existing state and county laws and ordinances provide considerable protection for stream banks and beds, wetland and flood plains. A 10-foot strip of streamside vegetation is protected by county ordinance. However, since all violations are not recognized and/or reported, prevention is a better means of protection than enforcement. Recent joint agency efforts have attempted to notify riverfront landowners and the real estate industry.

There is considerable support to restore the degraded fish habitats. ODFW and the U.S. Forest Service are active in planning, funding and implementing a variety of restoration projects. There is an unusually large number of active, dedicated volunteers willing to donate time, money and services toward restoration efforts. Some private landowners

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have expressed a commitment to restore or enhance habitat on their property. A unique mitigation plan tied to the Central Oregon Irrigation District hydro project will provide a substantial funding base for Deschutes River restoration efforts.

0119-0206

**FISH HABITAT INVENTORY AND ESEE ANALYSIS**

**Inventory, Location, Quantity and Quality:**

The inventory of the fish resource is contained in Table 2. Table 3 identifies the minimum stream flows necessary for fish in the Deschutes River Basin.

The Deschutes County/City of Bend River Study has been incorporated by amendment into this portion of the Resource Element (Ordinance 86-019). Chapter 5 of the River Study contains a detailed inventory of the fish habitat resource.

The Oregon Department of Fish and Wildlife has applied for instream water rights for the benefit of fish on the Deschutes River, Fall River, Indian Ford Creek, Squaw Creek, and Tumalo Creek. Table 4 describes the specific location of the instream water rights.

**Conflicting Uses:**

The major conflicts with the fish resource are removal of riparian vegetation, fill and removal activities within the bed and banks of streams or wetlands, hydroelectric facilities, rural residential development and water regulation.

The Deschutes County/City of Bend River Study identifies development of hydroelectric facilities as a potential conflict with fish habitat. Dredging, or fill and removal within the bed and banks of rivers and streams, removal of riparian vegetation and some types of stream bank protection cause loss of fish habitat. The major fish production loss is related to the water flow manipulation associated with the Deschutes River irrigation system. The fluctuation of water levels results in dewatered spawning areas, reduced rearing habitat, high turbidity, increased sediments in spawning gravels, decreased fish food production, stranding losses and elimination of several cover components including large wood, undercut banks, and riparian vegetation. Lack of screening on irrigation diversions also causes a loss in population of fish.

Rural residential development adjacent to streams and wetlands can cause conflict by increasing the impermeable surfaces, increasing sewage runoff, disruption of natural

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hydroelectric patterns, depletion of the water table and increasing erosion.

**Economic, Social, Environmental and Energy Consequences of conserving significant fish habitat**

For an analysis of the ESEE consequences see the following documents which are hereby incorporated by reference:

- a. Deschutes County/City of Bend River Study, April 1986, Chapter 3, pages 3-1 through 3-33; Chapter 4, pages 4-1 through 4-50; Chapter 5, pages 5-1 through 5-23; Chapter 7, pages 7-1 through 7-30; and Chapter 13, pages 13-1 through 13-42.
- b. River Study Staff Report, May 1986.

**Conclusion:** Based on the ESEE analysis, the county finds that the identified fish habitat and the conflicting uses are important relative to each other. Therefore, the county determines that conflicting uses should be specifically limited and the resource should be protected through a "3C" designation.

**Program to Achieve the Goal (Conserve Fish Habitat)**

The Deschutes County City of Bend River Study was completed in April 1986. The Board of Commissioners has adopted amendments to the comprehensive plan and the following ordinances to implement the River Study and provide protection for fish habitat.

Ordinance No. 86-018 amended Ordinance No. PL-15 to prohibit hydroelectric facilities in designated stretches of the Deschutes River and its tributaries, and to allow hydroelectric facilities in designated stretches of the Deschutes River and its tributaries, and to allow hydroelectric facilities as conditional uses in designated zones and stretches of the Deschutes River. (Title 18.96 and 18.116.130 and 18.128.040(W), Deschutes County Code).

Ordinance No. 86-056 amended Ordinance No. PL-15 to require a conditional use permit for any fill and removal, including removal of vegetation, within the bed and banks of any stream or wetland. The bed and banks of a stream is defined to include 10 feet on either side of the container of the waters of a stream. (Title 18.128.040(W), Deschutes County Code).

Ordinance No. 86-054 amended Ordinance No. PL-15 to require conservation easements as a condition of

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approval for land use actions on property adjacent to certain rivers and streams. (Title 18.116.310, Deschutes County Code).

0119-0208

Ordinance No. 86-053 amended PL-15 requirements for rimrock setbacks. (Title 18, all zones).

Ordinance 89-030 amended the Deschutes County Comprehensive Plan for Flood Hazard zones.

Ordinance 88-031 amended PL-15 to establish a new Flood Plain zone and use restrictions. (Title 18.96, Deschutes County Code)

Ordinance 89-009 established specific restrictions for boat docks, slips, piers or houses in the Flood Plain zone. (Title 18.96 and 18.116.070, Deschutes County Code).

All zones in Title 18 have a stream setback provision to protect fish and wildlife areas. The setback requirement is 100 feet from the ordinary high water mark along all streams or lakes. The provision applies to all structures and sewage disposal installations.

These ordinances along with the Landscape Management Zone, the Oregon State Scenic Waterway and the Federal Wild and Scenic designations on segments of the certain rivers and streams are the implementing measures to protect the fish habitat Deschutes River, its tributaries and inventoried lakes. The county notifies the Department of Oregon Department of Fish and Wildlife of all requests for fill and removal or development proposals in the flood plain zone, Wildlife Area Combining Zone, or along any designated river or stream.

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TABLE 2 - FISH SPECIES DISTRIBUTION IN DESCHUTES COUNTY

Combined Public Comments - General Flood Plain Comments

0119-0209

	Atlantic Salmon	Coho Salmon	Rainbow Trout	Brown Trout	Cutthroat Trout	Brook Trout	Lake Trout	Dolly Varden Trout	Kokanee	Mountain Whitefish	Largemouth Bass	Bluegill	Brown Bullhead	Bridgellip Sucker	Tui Chub	Gayling	Crayfish
Tyee Creek						2											
Hell Creek						2											
Spring River				2		2				1					2		1
Tumalo Creek			1			2											
Bridge Creek						2											
Fall Creek						2											
Satan Creek						2											
Soda Creek						2											
Crater Creek						2											
Goose Creek						2											
Indian Ford Creek			1			2								2			
Trout Creek			1														
Alder Creek			1														
Squaw Creek			1			2											
Pole Creek						2											
Snow Creek			1			2											
Deschutes River		3	*	2		2			3	1					2		1
Little Deschutes River			1	2		2				1			2		2		1
Park Creek						2											
Three Creeks Creek			3			3											
Sink Creek						2											
Deer Creek			1			2											
Quinn River			*			2			2	1					2		1
Quinn Creek	3					2											
Cultus Creek			*			2											
Cultus Lake, Big			3			2	2			1					2		1
Cultus Lake, Little			2			3											
Cultus River						2			2	1							
Moore Creek						2											
Charlton Creek						2											
Long Prairie Slough													2				2
Browns Creek			2	2		2			#	1							1
Fall River			*	2		2				1					2		1
Paulina Creek			3												2		1
Cache Creek			1														
Crane Prairie Res.			*			#			2	1	2				2		1
Wickiup Reservoir		3	3	#					#	1					2		1
Three Creeks Lake			3			3											
Devil's Lake			3			2											
Hosmer Lake	3					3											1
Irish Lake						3											

- 1 - Native, naturally reproducing
- 2 - Introduced, naturally reproducing
- 3 - Introduced, periodic stocking required to maintain population
- \* - 1 and 3
- # - 2 and 3

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TABLE 3  
Recommended Minimum Flows for Fish Life, Deschutes Basin, Deschutes County /1

Stream	J A		P E		M A		A P		M A		J U		J U		A U		S E		O C		N O		D E	
	N.	B.	R.	R.	Y	Y	E	Y	L	G.	T.	T.	V.	C.										
Deschutes River 1	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
Deschutes River 2	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
Deschutes River 3	660	660	660	660	660	660	660	660	660	660	660	660	660	660	660	660	660	660	660	660	660	660	660	660
Deschutes River 4	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
Deschutes River 5	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
Deschutes River 6	40	40	60	60	60	60	60	60	60	40	40	40	40	40	40	60	60	60	60	60	60	60	60	60
Squaw Creek 7	20	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10/20	30	30	30	30	20	20	20	20
Squaw Creek 8	10	10/20	30	30	30	30	30	30	30	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Indian Ford Creek	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3/4	6	6	6	4	4	4	4	4
Tumalo Creek	35	35	47	47	47	47	47	47	47	10	10	10	10	10	10/35	47	47	47	35	35	35	35	35	35
Spring River	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
Little Deschutes R.	80	80	80	200	200	200	150	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Fall River	70	70	100	100	100	100	70	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Brown Creek	15	15	25	25	25	25	15	15	15	15	15	15	15	15	15	25	25	25	25	25	25	25	25	25
Quinn River	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Cultus Creek	20	20	32	32	32	32	20	5	5	5	5	5	5	5	5/20	32	32	32	20	20	20	20	20	20
Cultus River	50	50	50	50	50	50	50	50	50	50	50	50	50	50	70	70	70	70	70	70	70	70	70	70

0119-0210

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TABLE 3 (Continued)  
Recommended Minimum Flows for Fish Life, Deschutes Basin, Deschutes County /L

0119-0211

Stream	J A	F E	M A	A P	M A	J U	J U	A U	S E	O C	N O	D E
Low Creek	15	15	30	30	30	20	15	15	15	30	30	20
John Creek	20	20	20	12	12	12	12	12	12/20	35	35	35
Yoda Creek	20	20	20	6	6	6	6	6	6/20	31	31	31
Small Creek	35	35	35	20	20	20	20	20	20/35	46	46	46
Loose Creek	7	7	7	4	4	4	4	4	4/7	10	10	10
Three Creek	7	7	10	10	10	7	2	2	2/7	10	7	7

Flows are expressed in cubic feet per second. The recommended flows should arrive at the point of recommendation and continue to the mouth of the stream or to the next point for which a different flow is recommended. Stream flows recommended in Appendix 1 are designed for game fish production and are not necessarily adequate for wildlife, especially waterfowl and furbearers. Neither would they necessarily be recommended below future impoundments.

- 1 Bend to Round Butte Reservoir
- 2 Deschutes R. to Spring River - Supported by Instream Water Right (1990)
- 3 Spring River to Bend - Supported by Instream Water Right (1990)
- 4 Wickiup Dam to Little Deschutes River - Supported by Instream Water Right (1990)
- 5 Crane Prairie Dame to Wickiup Reservoir
- 6 USGS Gage 14-0500
- 7 Below USGS Gage 14-0750
- 8 Below Camp Polk

Combined Public Comments General Floodplain Comments

03/11/92

INSTREAM WATER RIGHT PROGRAM  
DATABASE SUMMARY REPORT

0119-0212

BN	STREAM > PARENT STREAM	UPSTREAM LIMIT	DOWNSTREAM LMT	SPECIES	APP NO	CERT #	DATE
** BASIN 05							
05	DESCHUTES R > COLUMBIA R	CRN PRAIRIE RES	WICKIUP RES	RB,BT,BR,CO,K,	070764		10/11/90
05	DESCHUTES R > COLUMBIA R	LITTLE LAVA LK	CRN PRAIRIE RES	RB,BT,K,WF,	070763		10/11/90
05	DESCHUTES R > COLUMBIA R	193.0	190.0		MPS	59777	11/03/83
05	DESCHUTES R > COLUMBIA R	227.0	193.0		MPS	59776	11/03/83
05	DESCHUTES R > COLUMBIA R	190.0	165.0		MPS	59778	11/03/83
05	FALL R > DESCHUTES R	GAGE 14057500	MOUTH	RB,BT,BR,WF,	070762		10/11/90
05	INDIAN FORD CR > SQUAW CR	HEADWATERS	MOUTH	RB,	070760		10/11/90
05	LITTLE DESCHUTES R > DESCHUTES R	CRESCENT CR	MOUTH	RB,BT,BR,WF,	070757		10/11/90
05	METOLIUS R > DESCHUTES R	METOLIUS SPRING	CANYON CR	BUT,K,	070699		09/24/90
05	SNOW CR > DESCHUTES R	NEADWATERS	MOUTH	RB,BT,	070756		10/11/90
05	SQUAW CR > DESCHUTES R	S FK SQUAW CR	INDIAN FORD CR	RB,BT,	070754		10/11/90
05	TUMALO CR > DESCHUTES R	S FK TUMALO CR	MOUTH	RB,BT,BR,	070752		10/11/90

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DEER WINTER RANGE

0119-0213

Inventory Information: The deer winter range boundaries are mapped on the Big Game Habitat Area Map.

Location, Quantity and Quality: The Oregon Department of Fish and Wildlife (ODFW) identified the Metolius, Tumalo and North Paulina deer winter ranges during the initial comprehensive planning in the county. The boundaries of these winter ranges are shown on the Big Game Sensitive Area map in the Comprehensive Plan (1978) and have been zoned with the Wildlife Area Combining Zone since 1979.

The Tumalo Winter Range Study, 1977, includes detailed information about the plant communities, physiological needs of deer and use of the habitat area.

ODFW has reviewed the boundaries of the Metolius, Tumalo and North Paulina deer winter ranges and does not recommend any changes to the boundaries at this time. ODFW reports that the deer populations in the county are currently stable. The habitat is important to provide winter feeding areas, thermal and hiding cover and isolation from conflict with human activities. The winter ranges support a population of approximately 15,000 deer.

The deer winter ranges are mostly zoned EFU or Forest with minimum lot sizes ranging from 20 to 80 acres. There is a small amount of land zoned Rural Residential or Multiple Use Agriculture with a 10 acre minimum lot size. The deer winter range is contains Bureau of Land Management, U.S. Forest Service, State, County and private land.

On February 27, 1992, the Ochoco District Office of the Oregon Department of Fish and Wildlife provided information to the planning staff regarding deer winter range in the north east corner of the county, north of the Crooked River, in the Smith Rock State Park area. This area is part of deer winter range that has been identified by ODFW since the late 1970's. It was not identified in the initial comprehensive plan because it is under the jurisdiction of the Ochoco District Office. The area is part of the Grizzly Wildlife Management Unit. The Ochoco District did not participate in Deschutes County's original comprehensive planning process. ODFW recognizes this area as significant deer winter range and recommends that it be included in the Deschutes County inventory and protected with the same measures applied to other deer winter range in the county. The area has been included in the inventory and mapped on the Big Game Habitat Area and Wildlife Area Combining Zone Map.

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0119-0214

**Conflicting Uses:**

Researchers and the Oregon Department of Fish and Wildlife have identified dwellings, roads and dogs as the major conflicts with wintering deer. Actions which cause deterioration of forage quality and quantity or cover are conflicting uses. Fences that do not allow safe passage of deer are also a conflicting use. Limiting conflicting uses greatly enhances the chances of survival for deer during the winter when they are gathered in the winter range and are competing for forage.

The Department of Fish and Wildlife Land Use Planning Guide (1989) states that destination resorts, because of their intensity and scale of use, can result in direct loss of habitat, interference with migration routes, increase in stress on animals through harassment, increase game caused damage, reduction in overall population levels and curtail recreational hunting opportunities.

**Economic, Social, Environmental and Energy Consequences of conserving significant deer winter range**

1. **Economic Consequences:** The positive economic consequences of limiting conflicts in deer winter range habitat are the reduction in staff time of ODFW attempting to resolve conflicts between rural residents and wildlife. Deer hunters depend on the survival of healthy deer populations. Deer hunters spend an average of \$46.69 per hunter day; in Deschutes County there are 75,885 deer hunter days per year in the county for a value of \$3,543,100.

The negative economic consequences of applying regulations to limit conflicts in deer winter range are generally borne by individuals prevented from doing an activity such as building a home or road, or dividing land or developing a use which would cause increased traffic or a change in the vegetation which could decrease the quality of the forage or cover.

2. **Social Consequences:** The positive social consequences of limiting development to protect deer winter range are the retention of the stable deer populations for hunters and the public which enjoys viewing wildlife. Negative social consequences are restriction of residential uses and resorts which could provide recreational opportunities. The opportunities to live in rural areas may be somewhat reduced by limiting partitions which would otherwise be allowed by the underlying zoning. Siting standards to protect habitat could result in a property owner not being able to locate a dwelling in the preferred location; however, flexibility can be provided in siting standards to balance the need to protect irrigated farm land and still provide habitat protection.

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3. **Environmental Consequences:** Opportunities for big game to flourish in a habitat without repeated interference or disturbance from man would be a positive environmental consequence. Other species of wildlife benefit from large open space environment and a low density of development. Requirements to cluster dwellings or site them near existing roads would limit disturbance of vegetation which provides cover and forage.

4. **Energy Consequences:** The energy consequence from limiting development in deer winter range is a reduction in trip generation associated with development located in rural areas. As a result, development should occur closer to urban areas where services are more available and can be provided with less energy cost.

For additional ESEE consequences see the discussions in the following documents which are hereby incorporated by reference:

- a. The Deschutes County/City of Bend River Study Chapter 6, pages 6-1 through 6-16; Chapter 7, pages 7-1 through 7-30.
- b. River Study Staff Report, May 1986, pages 21-26.
- c. ODFW Central Region Administrative Report No. 86-2 and 92-1.
- d. Tumalo Winter Range Study, 1977.

5. **Conclusion:** Based on the ESEE analysis, the county finds that the identified deer winter range habitat and residential and other conflicting uses within the deer winter range are important relative to each other, and that the conflicts should be balanced by restricting or regulating certain uses and prohibiting others. Therefore, the county determines that conflicting uses should be specifically limited and the resource should be protected through a "3C" designation.

6. **Program to Achieve the Goal (Conserve Deer Winter Range):**

The Wildlife Combining Zone, Title 18.88, (WA) is applied to all areas designated as deer winter range on the Big Game Habitat Wildlife Area Combining Zone Map. The WA zone requires a 40 acre minimum lot size for all new land divisions, prohibits certain conflicting uses (i.e. golf courses, churches, schools etc.), establishes siting and fencing standards, and requires that all land divisions in the Rural Residential (RR-10) or Multiple Use Agriculture (MUA-10) Zone be cluster or planned developments.

The underlying zoning in most of the deer winter range is resource zoning: EFU-20, EFU-40, EFU-80, Forest (F-1, F-2), Flood Plain. These resource zones provide for large lot sizes

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and Public Commitments, General Planning Comments  
Combining uses that are not compatible with farm or forest  
uses. Because of the low density of development in these zones  
and the limitations on uses, the resource zones themselves  
provide considerable protection to wildlife habitat.

The Oregon Department of Fish and Wildlife is notified of any  
land use action in the WA zone and provides comments on  
development proposals. The requests of ODFW are usually  
incorporated into the conditions of approval.

Destination Resorts have been identified as a conflicting use  
with significant big game habitat. The Board of County  
Commissioners has adopted a policy (Ordinance 92-040) to  
prohibit siting of destination resorts in the Wildlife Area  
Combining Zone pending completion of the Goal 8 mapping process  
which shall be accomplished by December 31, 1992.

**DEER MIGRATION CORRIDOR**

0119-0217

**Inventory Information:** The Bend/La Pine migration corridor was identified in the original comprehensive plan resource element and mapped on the Big Game Sensitive Area map included in the Fish and Wildlife Chapter of the Resource Element of the Deschutes County Year 2000 Comprehensive Plan. Based on on going inventory and study of the corridor by the Oregon Department of Fish and Wildlife which is reported in ODFW Central Region Reports 86-2 and 92-1 the location is more accurately mapped and the rate of use of the corridor has been more accurately identified. The County has mapped the Bend/La Pine deer migration corridor Big Game Habitat Area - Wildlife Area Combining Zone Map.

**Location, Quantity and Quality:** The Oregon Department of Fish and Wildlife identified the Bend/La Pine deer migration corridor which was mapped on the Big Game Sensitive Area Map in the Resource Element of the Comprehensive Plan. The corridor is approximately 56 miles long and 3 to 4 miles wide and parallels the Deschutes and Little Deschutes Rivers. The corridor is used by deer migrating from summer range in the forest along the east slope of the Cascades to the North Paulina deer winter range in Deschutes County and the Hole-in-the-Ground and Devil's Garden winter ranges in north Klamath County.

ODFW has conducted a survey of deer tracks to determine the level of use in the corridor during the migration period. The results of the study are published in the Oregon Department of Fish and Wildlife Central Region Administrative Reports No. 86-2 and 92-1. The reports identify areas of high, moderate and low frequency of use.

The La Pine Area Wildlife/Subdivision Study, 1977, describes the geology, soil hydrology, vegetation, migration routes and other characteristics and conflicts in the migration corridor area.

The underlying zoning in most of the Bend/La Pine deer migration corridor is Rural Residential 10 (RR-10). Although the zone has a 10 acre minimum lot size, much of the development in the La Pine area occurred prior to zoning in the county. There are extensive areas of preexisting subdivisions with lots ranging in size from less than an acre to 5 acres. Most of the RR-10 zone is made up of lots less than the 10 acre minimum lot size.

The planned community of Sun River is located in the migration corridor. The Mule Deer Track Count Study found that the frequency of deer migration in the Sunriver area was low.

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The migration corridor includes some EFU-80, Forest and Flood Plain zoned land. The La Pine State Park is zoned Open Space Conservation. These resource zones provide for large lot sizes and limit uses that are not compatible with farm, forest or open space uses. Because of the low density of development in these zones and the limitations on uses, the resource zones themselves provide considerable protection to the migration corridor.

#### **Conflicting Uses:**

Researchers and the Oregon Department of Fish and Wildlife have identified dwellings, roads and dogs as the major conflicts with migrating deer. The ODFW mule deer track count studies document the conflict between dogs and migrating deer through data indicating that when dog tracks increase deer tracks decrease. Fences that do not allow safe passage of deer are also a conflicting use. The areas which are relatively undeveloped with residential uses are the areas that have the highest frequency of deer passage.

Conflicting uses are documented in the ODFW Central Region Administrative Report No. 86-2 and 92-1 and in the La Pine Area Wildlife/Subdivision Study, 1977. These documents are incorporated herein by reference.

Additionally, the ESEEs for surface mines in the deer migration corridor identify the migration corridor as a conflicting use with the surface mining activity. There are four surface mines in the migration corridor (Sites 342, 426, 427, and 432)

#### **Economic, Social, Environmental and Energy Consequences of conserving significant deer winter range**

1. **Economic Consequences:** A positive economic consequences of limiting conflicts in the deer migration corridor is the reduction in staff time of ODFW attempting to resolve conflicts between rural residents and wildlife. Deer hunters depend on the survival of healthy deer populations. Deer hunters spend an average of \$46.69 per hunter day; in Deschutes County there are 75,885 deer hunter days per year in the county for a value of \$3,543,100.

The negative economic consequences of applying regulations to limit conflicts in deer migration corridors are generally borne by individuals prevented from doing an activity such as building a home or road, or dividing land or developing a use which would cause increased traffic or a change in the vegetation which could decrease the quality of the forage or cover. Limiting surfacemining activity could increase the cost of operation of the surface mine.

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2. **Social Consequences:** The the positive social consequence of limiting development to protect deer migration corridors is the retention of the stable deer populations for hunters and the public which enjoys viewing wildlife. Negative social consequences are restriction of residential uses and resorts which could provide recreational opportunities. The opportunities to live in rural areas may be somewhat reduced by limiting partitions which would otherwise be allowed by the underlying zoning. Siting standards could limit the ability of people to site their dwellings in their preferred location.

3. **Environmental Consequences:** Opportunities for big game to travel freely without undue disturbance, obstacles or harassment would be a positive environmental consequence of protecting deer migration corridors. Other species of wildlife benefit from undeveloped habitat and a low density of development. Requirements to cluster dwellings or site them near existing roads would limit disturbance of vegetation and provide more open space. Limiting the area available for extraction of aggregate resources provides more area for the deer to pass through in their migration.

4. **Energy Consequences:** Energy consequences from limiting development in the deer migration corridor winter range will be a reduction in vehicle trip generation associated with development located in rural areas. As a result, development should occur closer to urban areas where services are more available and can be provided with less energy cost.

For additional ESEE consequences see the following documents incorporated herein by reference:

- a. The Deschutes County/City of Bend River Study Chapter 6, pages 6-1 through 6-16; Chapter 7, pages 7-1 through 7-30.
- b. River Study Staff Report, May 1986, pages 21-26.
- c. ODFW Central Region Administrative Report No. 86-2 and 92-1.
- d. La Pine Area Wildlife/Subdivision Study, 1977.

5. **Conclusion:** Based on the ESEE analysis, the county finds that the identified deer migration corridor and residential and other conflicting uses within the corridor are important relative to each other, and that the conflicts should be balanced by restricting or regulating certain uses and prohibiting others. Therefore, the county determines that conflicting uses should be specifically limited and the resource should be protected through a "3C" designation.

**6. Program to Achieve the Goal (Protect Deer Migration Corridor)**

The Bend/La Pine deer migration corridor has been added to the Wildlife Combining Zone by Ordinance 92-040 which adopts comprehensive plan policies regarding the corridor, by ordinance 92-041 which adopts these ESEE findings as part of the Resource Element of the Deschutes County Year 2000 Comprehensive Plan, and by Ordinance 92-046 which amends the zoning map to include the migration corridor as part of the Wildlife Area Combining Zone.

The Wildlife Area Combining Zone, Title 18.88, (WA) has been amended by Ordinance No. 92-042 to require cluster development for all land divisions in the RR-10 zone in the Bend/La Pine migration corridor. A 20 acre parcel is the minimum size required for a cluster development. Although much of the land is already divided into lots less than 5 acres, the 20 acre minimum lot size and the requirement for cluster developments will retain the much of the limited open space important for the passage of deer. The siting standards and fencing standards in the WA zone apply in the deer migration corridor. The fencing standards are those recommended by ODFW to allow for safe passage of the deer.

The Oregon Department of Fish and Wildlife shall be notified of any land use action in the migration corridor and will have the opportunity to comment on development proposals.

The county has created a map of the migration corridor that shows the parcelization pattern in 5 size categories. Most of the land is already divided into parcels 5 acres or less. The county and ODFW will work together to identify priority areas for land acquisition and work with Federal agencies to assure that land important for migration is retained in federal ownership or protected with conservation easements to retain the limited amount of open space in the corridor.

Ordinance 92-040 amended the Comprehensive Plan add the following policies to the Fish and Wildlife Resources chapter:

14. The county shall maintain an inventory of county owned property in the Bend/La Pine deer migration corridor. Prior to sale or exchange of county owned property in the corridor, the county shall consult the Oregon Department of Fish and Wildlife to determine the value of the land for deer migration.
15. The county shall work with ODFW to identify specific areas where the county and ODFW shall encourage public retention and acquisition of land or seek conservation easements for the protection of the migration corridor.

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The conflicting use of surface mining activity is limited by Title 18.52.110(K) which limits the extraction area to five acres, excluding access roads, equipment storage areas, processing equipment sites and stockpiles.

Destination Resorts have been identified as a conflicting use with significant big game habitat. The Board of County Commissions has adopted a policy (Ordinance 92-040) to prohibit siting of destination resorts in the Wildlife Area Combining Zone pending completion of the Goal 8 mapping process which shall be accomplished by December 31, 1992.

#### **Metolius Deer Migration Corridor**

The Oregon Department of Fish and Wildlife has provided the county with a map showing the overall boundary of the migration corridor used by deer to move between the summer range and the Metolius and Tumalo winter ranges and between the two winter ranges. The general corridor boundary is identified on the attached "1B" Deer Migration Corridor Map. However, ODFW is not able at this time to provide the the County with documented evidence of the precise location or quantity of the resource. Migration occurs throughout the identified area, however ODFW does not have specific information on the numbers of animals, or density of use except for Oregon Department of Transportation road kill reports. ODFW may be able to study the migration corridor with the use of radio collars. However, budget constraints may limit the study.

Because there is insufficient information on the location, quality and quantity of the resource for the Metolius deer migration corridor, the County is designating the corridor as a "1B" Goal 5 resource. Ordinance 92-040 adopted Policy 13 which requires the county to review the "1B" Metolius migration corridor during the next periodic review or as additional information on the location, quality and quantity of the resource becomes available.



ELK HABITAT

0119-0223

Description: Elk habitat significant for calving, summer and winter range.

Inventory, Location, Quality and Quantity: The Land and Resource Management Plan for the Deschutes National Forest identifies 6 key elk habitat areas in Deschutes County. The Oregon Department of Fish and Wildlife also recognizes these areas as critical elk habitat for calving, winter or summer range. Except for the Ryan area, ODFW confirms the boundaries of the habitat areas identified by the Forest Service. In the Ryan area, ODFW has expanded the boundary north to Forest Service Road 4601. The following areas are mapped on the Big Game Habitat Area Map and in maps in the Deschutes National Forest Land and Resource Management Plan Appendix 16.

Tumalo Mountain  
Kiwa  
Ryan  
Fall River  
Crane Prairie  
Clover Meadow

Biologists from the Deschutes National Forest and Oregon Department of Fish and Wildlife have also identified two additional areas which are presently used by elk; however, there is not sufficient information to establish that these areas are significant habitat which require additional protection. The ODFW has not conducted population surveys of these areas to determine the extent of use or the importance of the Goal 5 habitat. Therefore, these two areas will be included in the inventory as 1B habitat areas and will be addressed through the Goal 5 process in the next periodic review, or prior to that time as post acknowledgement plan amendment if sufficient information on the location, quality and quantity is available to complete the Goal 5 review process.

The first 1B area is adjacent to the Fall River habitat area and is located between the Deschutes and Little Deschutes Rivers in townships 21S, 22S, and 23S. The second area is adjacent to the Ryan habitat area and extends north from the Inn of the 7th Mountain and includes the area between the forest boundary and the east boundary of the Tumalo deer winter range. These two areas are identified on the maps entitled La Pine "1B" Elk Habitat Area and Bull Flat "1B" Elk Habitat Area.

**Conflicting Uses:**

Tumalo Mountain, Kiwa and Crane Prairie, and Clover Meadow

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are located entirely within the national forest and are managed under the Deschutes National Forest Land and Resource Management Plan to protect their value as elk habitat areas. The zoning on these areas is Forest (F-2 or F-1), Landscape Management Combining Zone - LM, Open Space Conservation - OS&C, or Flood Plain - FP. Ryan and Fall River habitat areas are adjacent to and include some private land; the areas contain F-1, F-2, LM, Surface Mining - SM, and FP zoning. Except for the surface mining site, there are no other identified significant Goal 5 resources which would conflict with elk habitat.

The major conflict is the loss of habitat due to increased residential densities in the habitat areas. Increased human disturbance (i.e. snowmobilers, cross county skiers, dogs, residential development, new roads) can cause conflict with elk. The use of land which necessitates the removal of large amounts of vegetative cover can also alter the quality of elk habitat.

### **Economic, Social, Environmental and Energy Consequences of conserving significant elk habitat**

1. **Economic Consequences:** The positive economic consequences of limiting conflicts with elk habitat are the reduction in staff time of ODFW attempting to resolve conflicts between rural residents and wildlife. Hunters depend on the survival of healthy elk populations. Elk hunters spend an average of \$48.94 per hunter day and in Deschutes County there are 10,108 elk hunter days, per year with a value to the local economy of \$494,690.

The negative economic consequences of applying regulations to limit conflicts in significant elk habitat are generally borne by individuals prevented from doing an activity such as building a home or road, or dividing land, or developing a use which would cause increased traffic or a change in the vegetation which could decrease the quality of the forage or cover. However, since the elk habitat is generally zoned for forest use, the restrictions to protect forest land require relatively large minimum lot sizes and dwellings are not an outright permitted use. Protection of vegetation for habitat and cover could limit the harvest of commercial tree species.

2. **Social Consequences:** The positive social consequences of limiting development to protect elk habitat are the retention of the elk populations for the enjoyment of the public. The negative social consequence is limited to the small amount of private land identified as significant elk habitat. In order to limit the density of development, private land owners may be prohibited

from dividing their land and constructing a dwelling on a new parcel.

0119-0225

3. **Environmental Consequences:** Opportunities for big game to flourish in a habitat without repeated interference or disturbance from man would be a positive environmental consequence. Other species of wildlife benefit from large open space environment and a low density of development.
4. **Energy Consequences:** The energy consequence from limiting development in elk habitat will be a reduction in trip generation associated with development located in rural areas. As a result development should occur closer to urban areas where services are more available and can be provided with less energy cost.

For additional ESEE consequences see the following documents which are hereby incorporated by reference:

- a. The Deschutes County/City of Bend River Study Chapter 6, pages 6-1 through 6-16; Chapter 7, pages 7-1 through 7-30.
  - b. River Study Staff Report, May 1986, pages 21-26.
5. **Conclusion:** Based on the ESEE analysis, the county finds that the identified elk habitat and residential, recreational and other conflicting uses of lands within the habitat are important relative to each other and that the conflicts and the value of the habitat should be balanced by regulating or restricting certain uses and prohibiting others. Therefore, the county determines that conflicting uses should be specifically limited and the resource should be protected through a "3C" designation.
  6. **Program to Achieve the Goal (Conserve Significant Elk Habitat):** The Wildlife Area Combining Zone, Title 18.88 (WA) zone will be applied to all areas identified as significant elk habitat. The county WA Zone has been amended to require a 160 acre minimum lot size for areas identified as significant elk habitat. Certain uses normally allowed in the underlying zones are also prohibited in the WA zone, and siting standards to minimize the conflict of residences with habitat protection are required.

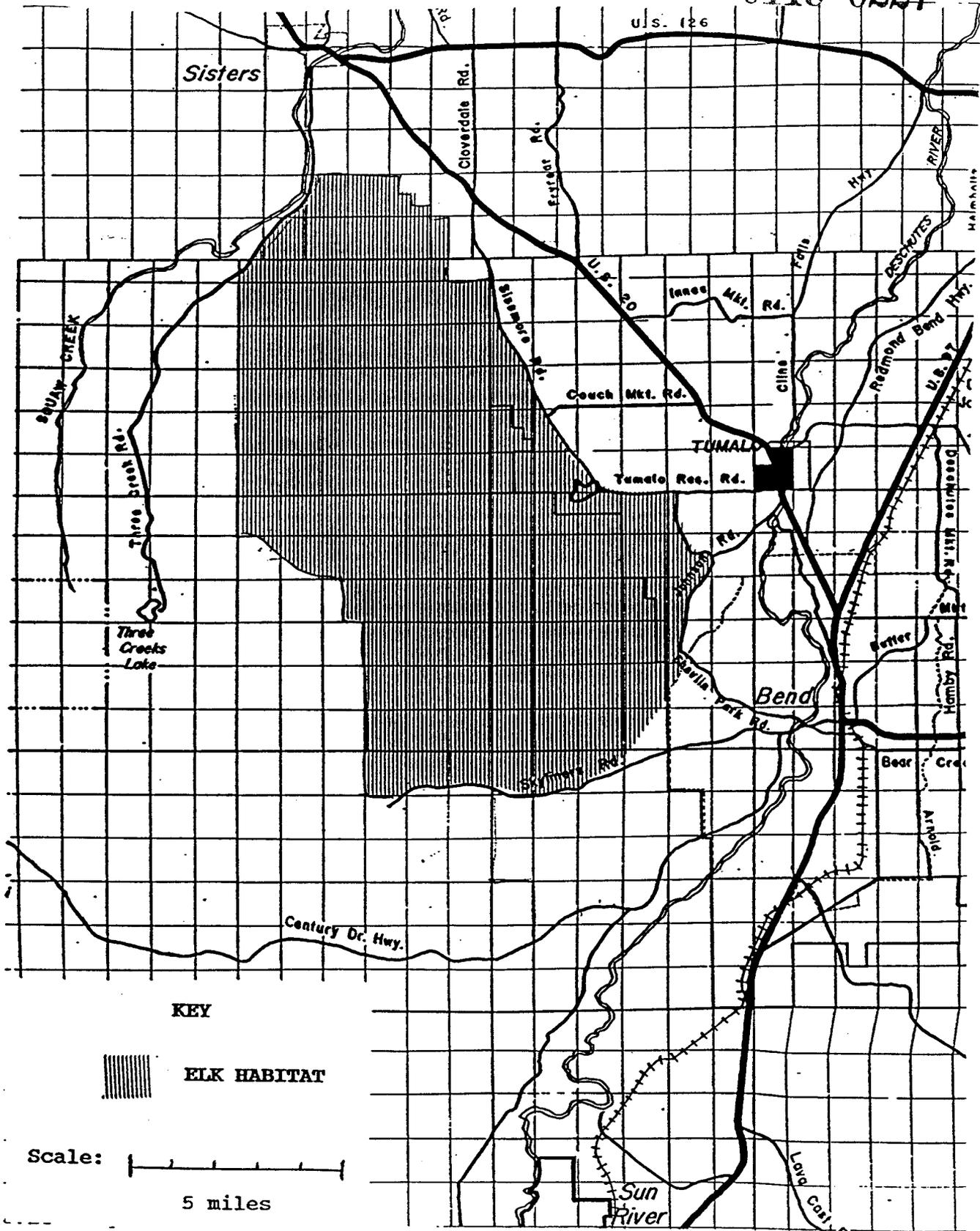
The underlying zoning in the elk habitat areas is either Flood Plain, Forest, or Open Space and Conservation. These resource zones restrict high density residential development and prohibit industrial and commercial uses. Most of the elk habitat is managed by the Deschutes National Forest. The Deschutes National Forest Land and

Resource Management Plan establishes specific elk habitat management objectives for each identified area.

A comprehensive plan policy to require review of the two 1B elk habitat areas in the next county periodic review shall be adopted.

Destination Resorts have been identified as a conflicting use with significant big game habitat. The Board of County Commissioners has adopted a policy (Ordinance 92-040) to prohibit siting of destination resorts in the Wildlife Area Combining Zone pending completion of the Goal 8 mapping process which shall be accomplished by December 31, 1992.

0119-0227

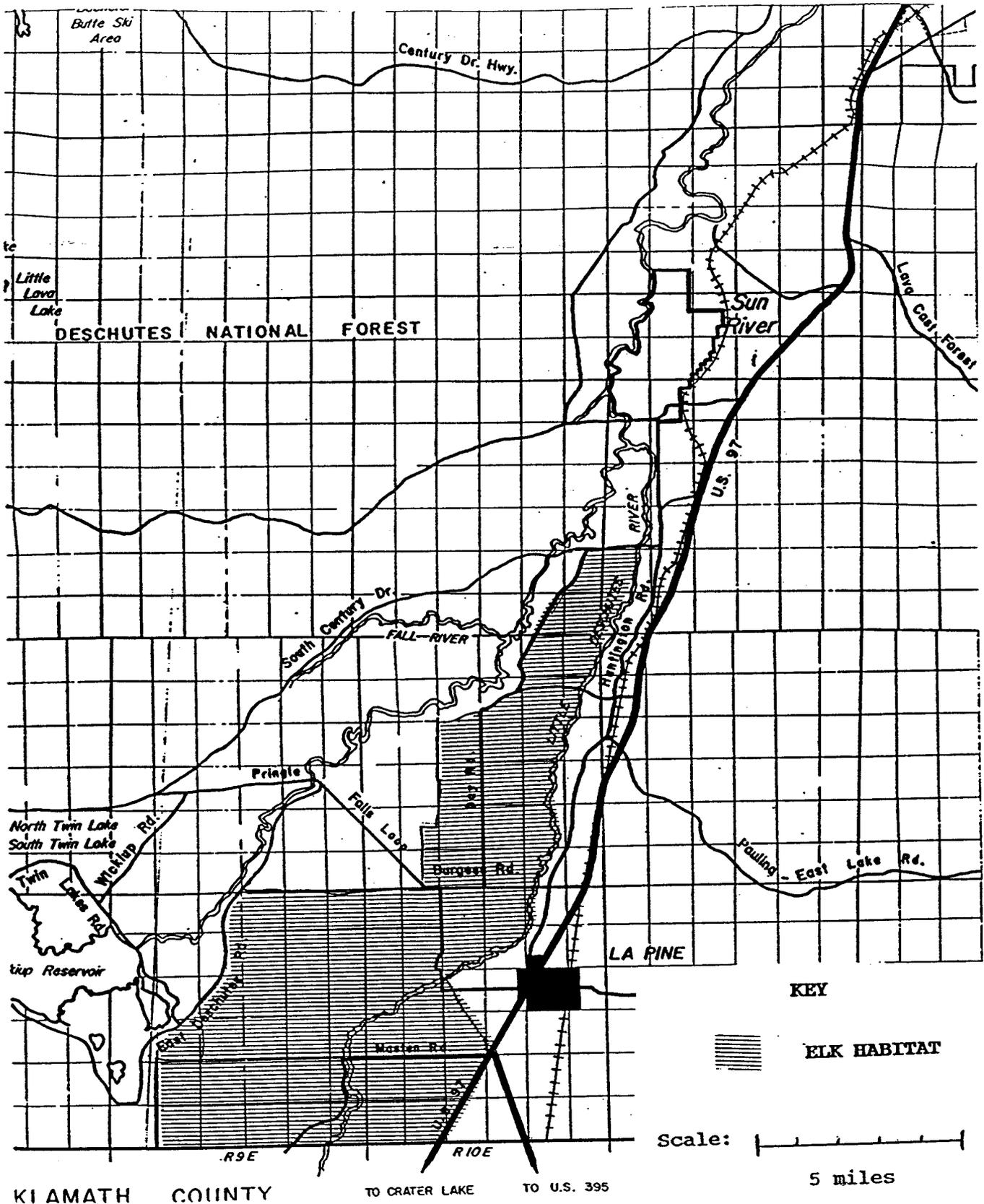


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# LA PINE "1B" ELK HABITAT AREA

0119-0228

Combined Public Comments - General Flood Plain Comments



KIAMATH COUNTY

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**Inventory Information:** The Bend and Ochoco District offices of the Oregon Department of Fish and Wildlife have provided maps of the antelope range and antelope winter range. The available information is adequate to indicate that the resource is significant. The antelope habitat is mapped on the Big Game Habitat-Wildlife Area Combining Zone Map.

**Location, Quantity and Quality:**

In 1978 the Oregon Department of Fish and Wildlife identified antelope range in the eastern part of Deschutes County. This area is known as the North Paulina antelope range. The area is mapped on the Big Game Habitat-Wildlife Area Combining Zone Map.

The antelope winter range areas are Millican and Kotzman Basin in the Bend ODFW District and the Hampton/Brothers area in the Ochoco District. These areas are where the antelope typically congregate in herds during the winter months. During the spring, summer and fall the animals are more dispersed throughout the range. These winter ranges are zoned EFU 320.

ODFW has provided new information on expansion of the North Paulina antelope range. The expanded habitat area includes land in T18S, R14E; and T19S, R14E and R15E. The area is predominately Bureau of Land Management (BLM) land. The land is zoned EFU 40.

Most of the antelope range is zoned EFU-320. The area inside of the Deschutes National Forest boundary is zoned Forest (F-1) with an 80 acre minimum lot size.

The communities of Brothers, Millican and Hamilton are located within the antelope range. These communities have limited area zoned Rural Service Center (RSC). Millican also and Hamilton also have approximately 15 acres zoned Rural Service Center - 5 (RSR-5). The area zoned RSC and RSR-5 is less than 40 acres for each center.

The vegetation in the antelope range is sage, juniper and bitterbrush plant community. In the summer antelope require rather open terrain with a good supply of forbs and grasses coupled with some rather thick stands of sage brush for concealment of young. Winter habitat requires extensive flat areas of mainly forbs, low sage and grasses.

**Conflicting Uses:** Land uses or development activities which would result in the loss of habitat, and animal harassment and disturbance associated with human activity. Except for the rural service centers, the antelope habitat is zoned

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Comprehensive Plan - Fish & Wildlife Chapter 39  
The uses permitted and conditionally permitted in the EFU and Forest zone are listed in Title 18.16 and 18.36 and 18.40. Agricultural use (grazing) practiced in the area is not a conflicting use according to ODFW. Antelope are currently causing agricultural damage to a pivot irrigated alfalfa operation during the late fall and winter months.

0119-0230

Residential development at a density greater than 1:320 could be a conflicting use. High use recreational facilities, or uses which would cause congregation of people such as churches or schools could be conflicting uses. The ODFW Wildlife Guide for Land Use Planning recommends an acceptable density of development in the antelope winter range of 1:320 acres.

The uses permitted in the RSC and RSR-5 zone are listed in 18.64 and 18.72. Because the extent of the commercial, tourist and residential uses in the RSC and RSR-5 zones are limited to small, compact area of the rural service centers, within the extensive habitat area, they should not be a conflict with the antelope habitat.

There are 19 sites zoned for surface mining in the antelope range. The ESEEs for the surface mining recognize the antelope use in the vicinity of the surface mining. The mines are mostly located along the highway and the rock extraction is of limited duration. According to ODFW, the mining activities will not cause a significant conflict with the antelope.

#### **Economic, Social, Environmental and Energy Consequences of conserving significant antelope habitat**

1. **Economic Consequences:** The positive economic consequence of limiting conflicts with antelope habitat are the reduction in staff time attempting to resolve conflicts between residential uses and wildlife. Antelope hunters contribute to the economy of the county and they depend on the survival of stable antelope populations.

The negative economic consequences of applying regulations to limit conflicts in antelope range are generally borne by individuals prevented from doing an activity such as building a residence or road, or dividing land, or developing a use which would cause increased traffic or a change in the vegetation which could decrease the quality of the forage or cover.

2. **Social Consequences:** The positive social consequences of limiting development to protect antelope populations and habitat are the retention of open space and the populations of antelope for the enjoyment of the public. The negative social consequence is limited to the private land identified

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as antelope habitat. In order to limit the density of development private land owners could be prohibited from dividing land and constructing a dwelling on a new parcel.

3. **Environmental Consequences:** Opportunities for antelope to flourish in a habitat without repeated interference or disturbance from man would be a positive environmental consequence. Other species of wildlife, including sage grouse, benefit from a large open space environment and a low density of development.

4. **Energy Consequences:** The positive energy consequences of limiting certain development in the antelope range are the reduction in trip generation associated with residential or other non resource related development in the EFU or forest zones. There are no identified negative energy consequences.

5. **Conclusion:** Based on the ESEE analysis, the county finds that the identified antelope habitat and the conflicting uses are important relative to each other. Therefore, the county determines that conflicting uses should be specifically limited and the resource should be protected through a "3C" designation.

6. **Program to Achieve the Goal (Conserve Antelope Habitat)**

Based on the ESEE analysis the county finds that the uses conflicting with antelope habitat should be specifically limited by the application of the Wildlife Area Combining Zone (Title 18.88). This zone limits specific conflicting uses including schools, golf courses and churches. In the antelope range the minimum lot size is to be 320 acres. The rural service centers of Millican, Hamilton and Brothers shall be excluded from the Wildlife Area Combining Zone. The siting and fencing standards in the Wildlife Area Combining Zone apply in the antelope habitat.

Destination Resorts have been identified as a conflicting use with significant big game habitat. The Board of County Commissioners has adopted a policy (Ordinance 92-040) to prohibit siting of destination resorts in the Wildlife Area Combining Zone pending completion of the Goal 8 mapping process which shall be accomplished by December 31, 1992.

**HABITAT AREAS FOR SENSITIVE BIRDS**

**Description:** Nest sites for for northern bald eagle, osprey, golden eagle, prairie falcon, great grey owl, and great blue heron rookeries.

**Inventory:** The information presented in Tables 5 - 20 has been provided by the Oregon Department of Fish and Wildlife, the Oregon Department of Forestry, Oregon State University Cooperative Wildlife Research Unit and the Oregon Natural Heritage Data Base. The inventory is divided into three categories for each species: 1) sites on federal land (U.S. Forest Service or Bureau of Land Management), 2) sites on non-federal land and sites where the sensitive area around the nest site could extend onto non-federal land, 3) "1B" sites where there is insufficient locational information.

The sites located on federal land are not analyzed further in the Goal 5 process as they protected through the management and planning process for federal lands.

**Location, Quality and Quantity:**

The location of the sites is either specifically located and identified on the Sensitive Bird and Mammal Habitat Map as a known location site. If the site is identified only to the nearest quarter section, the site is identified on the Sensitive Bird and Mammal Combining Zone Map as a general location site. When the locational information is available only to the nearest quarter section, ODFW will specifically identify exact habitat site location at the time of a development proposal near the habitat site. Sites which are not located to at least a quarter section are listed as "1B" sites because there is insufficient locational information for the site.

The quality of the habitat sites is good as the sites are currently being used for nesting purposes. However, the Deschutes County/City of Bend River Study (p. 6-9) notes that the number of active nest sites for golden eagles has decreased 75 percent in the 20 year observation period 1965 - 1984. This decrease is attributed to the increase in land development and human activities. The Deschutes County/City of Bend River Study, Chapter 6 provides detailed information on the habitat needs of the sensitive bird species.

The area required for each nest site varies between species. The minimum area required for protection of nest sites has been identified by the Oregon Department of fish and wildlife in their management guidelines for protecting colony nesting birds, osprey, eagles and raptor nests. The area recommended for eagle, osprey and prairie falcon nests is a radius of

1320 feet from the nest site. The recommended radius from a great blue heron rookery is 300 feet and 900 feet from a great gray owl nest site.

**Conflicting Uses Determination and Analysis:**

0119-0233

The nest sites are found in forest, exclusive farm use and Open Space Conservation zones in the county. The uses permitted in these zones that could conflict with the habitat site are surface mining, residential use, recreation facilities including golf courses and destination resorts, roads, logging, air strips. In general, any activity which would disturb the nesting birds, including intensive recreational use or removal of the trees or vegetation that make the site desirable, could conflict with the habitat site.

Chapter 6 of the Deschutes County/City of Bend River Study contains additional information on the location, quality and quantity of the sensitive birds and their habitat and identifies conflicting uses and ESEE consequences.

**Economic, Social, Environmental and Energy Consequences of Conserving sensitive bird sites**

1. **Economic Consequences:** Limiting the extraction of aggregate to protect sensitive bird nest sites could make a potential aggregate resource site unavailable. The economic consequences of protecting sensitive bird nest sites from residential conflicts could prohibit the development of a property for residential use which would lower its value. Regulating or prohibiting conflicting uses associated with intensive recreational use or resort development could restrict the area available for such development.

The positive economic consequences of limiting conflicts are the protection of the birds which are an important amenity for tourists to the area.

2. **Social Consequences:** The negative social consequence of limiting residential or recreational development near sensitive bird nest sites could be the inability to locate a residence or development in the desired location. Limiting recreational opportunities would cause those activities to be channeled to other areas. However, by limiting such conflicting uses bird watchers would have enhanced opportunities.

3. **Environmental Consequences:** The environmental consequences of limiting development near sensitive bird nest sites are positive. Opportunities for birds to nest in a habitat without repeated interference or disturbances from man should be a positive consequence.

119-234  
92-19-0234

Restricting vegetation removal through a management plan will retain habitat features which are necessary for birds. Limiting residential, recreational and resort development in the vicinity of a nest would limit disturbance which could cause the birds to leave the habitat site.

- 4. **Energy Consequences:** There are no significant energy consequences associated with protection of nest sites.
- 5. **Conclusion:** Based on the ESEE analysis, the identified consequences should be balanced so as to allow the conflicting uses but in a limited way so as to protect the resource to a desired extent.
- 6. **Program to Achieve the Goal (protect sensitive bird sites)**

For supporting Findings, Goals and Policies see the Deschutes County/City of Bend River Study pages 13-17 through 13-20, and the River Study Staff Report page 1 through 99.

Ordinance 86-019 adopted goals and policies to implement the Deschutes County City of Bend River Study to protect wildlife resources.

Ordinance 92-042 adopted the Sensitive Bird and Mammal Combining Zone for the sensitive birds and the Townsend's big-eared bat. The zone requires that a management plan be developed with the Oregon Department of Fish and Wildlife if a development is proposed within the inventoried habitat site. The zone does not regulate forest practices which are regulated by the Forest Practices Act.

Ordinance 92-046 adopted the Sensitive Bird and Mammal Habitat Combining Zone Map.

Ordinance 92-040 amended the Deschutes County Year 2000 Comprehensive Plan to adopt Policy Number 7 in the Fish and Wildlife Chapter to require protection of sensitive bird and mammal species with the Sensitive Bird and Mammal Habitat Combining Zone.

The Deschutes National Forest Land and Resource Management Plan and the Bureau of Land Management Brothers/LaPine Resource Management Plan identify the habitat needs of the sensitive birds and require management to protect the nest sites on federal lands. The Forest Practices Act also has provisions to protect sensitive nesting, roosting and watering sites.

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TABLE 5

BALD EAGLE NEST SITE INVENTORY

NEST SITES ON NON-FEDERAL LAND OR WITH POTENTIAL NON-FEDERAL  
HABITAT AREAS

Township	Range	Section	Quarter	General Location
15S	10E	23	NWNE	Cloverdale NE
15S	10E	23	NENE	Cloverdale SE
17S	11E	26	NW	Shevlin Park
20S	10E	34	NESW	Bates Butte
22S	09E	04	NE	Wickiup Reservoir
22S	09E	04	SW	Haner Park
22S	09E	06	SW	Wickiup Dam

TABLE 6

0119-0236

**BALD EAGLE NEST SITE INVENTORY  
NEST SITES ON FEDERAL LAND**

Township	Range	Section	Quarter	General Location
18S	08E	32	NE	Elk Lake
18S	08E	33	NE	Hosmer Lake
19S	08E	27	SW	Lava Lakes - W
19S	08E	27	SE	Lava Lakes - E
20S	07E	35	SW	Lemish Butte
20S	07E	35	S 1/2	Lemish Butte
20S	08E	08	SE	Benchmark Bu - W
20S	08E	09	SW	Benchmark Bu - SE
20S	08E	09	SW	Benchmark Bu - NE
20S	08E	33	SE	Crane Pr Res NE-S
20S	08E	33	SE	Crane Pr Res NE-NE
20S	08E	33	SE	Crane Pr Res NE
20S	08E	33	NE	Crane Pr Res NE - NW
21S	07E	01	SE	Crane Pr Res W
21S	07E	01	SW	Crane Pr Res W
21S	07E	01	SE	Crane Pr Res W
21S	07E	01	NW	Quinn River
21S	08E	05	SE	Crane Pr Res E
21S	08E	04	NW	Crane Pr Res E
21S	08E	04	W 1/2	Crane Pr Res E - SE
21S	08E	04	W 1/2	Crane Pr Res E - NW
21S	08E	07	SE	Crane Pr Res S
21S	08E	08	SW	Crane Pr Res S

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119-237

Township	Range	Section	Quarter	General Location
21S	08E	08	SW	Crane Pr Res S
21S	08E	20	SE	Browns Mountain
21S	08E	32	NE	Browns Creek - W
21S	08E	32	NE	Browns Creek -E
21S	08E	34	SW	Wickiup Res N
21S	08E	34	SE	Wickiup Res N
21S	08E	34	SE	Wickiup Res N
21S	08E	34	SE	Wickiup Res N
21S	08E	34	SE	Wickiup Res N
21S	08E	34	SE	Wickiup Res N
21S	08E	34	SE	Wickiup Res N
21S	09E	13	NE	Tetherow Mdw
21S	09E	34	NE	Deschutes R Ox
21S	13E	19	SE	East Lake E
21S	13E	19	SW	East Lake SW
21S	13E	19	S 1/2	East Lake SE
22S	07E	26	SW	Davis Lake NW
22E	07E	26	SW	Davis Lake NW
22E	07E	34	SW	Davis Lake W - W
22S	07E	34	SW	Davis Lake W - E
22S	08E	07	NE	Davis Creek - S
22S	08E	06	SE	Davis Creek - N
22S	08E	06	SE	Davis Creek
22S	08E	06	SE	Davis Creek - E
22S	08E	15	SW	Wickiup Res W - W
22S	08E	15	SE	Wickiup Res W - E

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Township	Range	Section	Quarter	General Location
22S	08E	23	NE	Wickiup Res S - E
22S	08E	23	N 1/2	Wickiup Res S - S
22S	08E	23	NW	Wickiup Res S - W
22S	08E	23	NW	Wickiup Res S - N
22S	08E	25	NE	Round Swamp - E
22S	08E	24	S 1/2	Round Swamp - NE
22S	08E	25	NE	Round Swamp - S
22S	08E	24	SE	Round Swamp - N
22S	09E	06	SE	Wickiup Dam - E
22S	09E	20	SW	Eaton Butte
22S	09E	20	SW	Eaton Butte
22S	09E	20	SW	Eaton Butte

**TABLE 7**

**0119-0239**

**GOLDEN EAGLE NEST SITE INVENTORY  
NEST SITES ON NON-FEDERAL LAND OR WITH  
POTENTIAL NON-FEDERAL HABITAT AREA**

<b>Township</b>	<b>Range</b>	<b>Section</b>	<b>Quarter</b>	<b>General Location</b>
14S	11E	03	NENW	Squaw Creek Rimrock Ranch
14S	11E	23	NWSW	McKenzie Canyon
14S	11E	24	NWSE	Deep Canyon
14S	12E	29/28 line		Buckhorn Canyon
14S	12E	23	SWNW	N. Odin Falls
14S	13E	11	NENE	Smith Rock State Park French Tent Nests
14S	13E	11	NENE	Smith Rock State Park Monument Nests
14S	13E	11	NENW	Smith Rock State Park Little Three Fingered Jack Nest
14S	13E	11	SENW	Smith Rock State Park Misery Ridge Nest
14S	13E	11	NESW	Smith Rock State Park Red Wall
15S	11E	17	SENW	Fryear Road - 1
15S	11E	16	SWSW	Fryear Road - 2

**TABLE 8**

**GOLDEN EAGLE NEST SITE INVENTORY NEST SITES  
ON FEDERAL LAND**

19S	13E	05	Center	Coyote Butte
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TABLE 9

0119-0240

PRAIRIE FALCON NEST SITE INVENTORY  
 NEST SITES ON NON-FEDERAL LAND  
 OR WITH POTENTIAL NON-FEDERAL HABITAT AREA

Township	Range	Section	Quarter	General Location
14S	13E	11	NENE	Smith Rock State Park French Tent Nests
14S	13E	11	NWSW	Smith Rock State Park Monkey Face
14S	13E	11	SWSW	Smith Rock State Park Asterisk Pass

TABLE 10

0119-0241

OSPREY NEST SITE INVENTORY  
NEST SITES ON NON-FEDERAL LANDS OR  
WITH NON-FEDERAL HABITAT AREA

Township	Range	Section	Quarter	General Location
20	11	07	NENW	Sunriver/Meadowland

0119-0242

OSPREY - NEST SITE INVENTORY

NEST SITES ON FEDERAL LAND

Township	Range	Section	Quarter	General Location
	18S	11E	04	Desch Ri/Dillon Fall
	18S	11E	34	Desch Ri .2 mi W
	18S	11E	35	Desch Ri 1.2 mi W
	19S	08E	09	Lava Lake .5 mi S
	19S	08E	14	Lava lake 1.1 mi SW
	19S	08E	23	Lt Lava Lake .2 mi W
	19S	08E	27	Lt Lava Lake .2 mi N
	19S	08E	33	Lt Lave Lake 2.2 mi N
	19S	09E	15	Lava Lake .3 mi SW
	19S	10E	18	Desch River
	19S	11E	09	Desch Ri/Benham Fall
2	19S	11E	09	Desch River
	19S	11E	10	Desch Ri 1.1 mi W
	19S	11E	16	Desch River
	19S	11E	19	Desch River
	20S	08E	03	Lt Lava Lake 2.3 mi N
	20S	08E	08	Crane Pra Lake 4.6 MS
	20S	08E	14	Crane Pra Lake 3.1 MS
	20S	08E	23	Crane Pra Lake 3.1 MS
3	20S	08E	27	Crane Pra Lake
2	20S	08E	28	Crane Pra Lake
3	20S	08E	29	Crane Pra Lake

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## Combined Public Comments - General Flood Plain Comments

Township	Range	Section	Quarter	General Location
5	20S	08E	31	Crane Pra Lake
4	20S	08E	32	Crane Pra Lake
7	20S	08E	33	Crane Pra Lake
3	20S	08E	34	Crane Pra Lake
2	20S	08E	36	Crane Pra Lake
	20S	10E	02	Desch Ri 1.0 mi W
	20S	10E	30	Fall River .6 mi S
3	21S	07E	01	Crane Pra Lake
	21S	07E	02	Crane Pra Lake
2	21S	07E	14	Crane Pra Lake
	21S	07E	25	Crane Pra Lake
4	21S	08E	04	Crane Pra Lake
4	21S	08E	05	Crane Pra Lake
5	21S	08E	08	Crane Pra Lake
3	21S	08E	09	Crane Pra Lake
3	21S	08E	16	Crane Pra Lake
	21S	08E	17	Crane Pra Lake
2	21S	08E	21	Crane Pra Lake
2	21S	09E	01	Fall River
	21S	09E	02	Fall River
	21S	09E	09	Desch Ri 2.1 mi SE
	21S	09E	11	Desch Ri 1.3 mi S
	21S	09E	13	Desch Ri 1.0 mi S
	21S	09E	15	Crane Pra Lake 4 ME
	21S	09E	15	Desch River

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Township	Range	Section	Quarter	General Location
3	21s	09e	22	Desch River
2	21S	09E	23	Desch River
2	21S	09E	26	Desch River
	21S	09E	27	Desch River
	21S	09E	28	Desch River
2	21S	09E	33	Desch River
3	21S	09E	34	Desch River
	21S	10E	29	Desch Ri 4.0 mi W
	21S	10E	30	Desch Ri 3.5 mi W
	21S	11E	36	Paulina Lk 3 mi E
	21S	12E	18	Paulina Lk 1.9 mi SE
5	22S	07E	01	Crane Pra Lake 3 MW
	22S	07E	02	Wickiup Lake
3	22S	07E	10	Wickiup Lake
2	22S	07E	11	Wickiup Lake
	22E	07E	12	Crane Pra Lake
	22S	07E	15	Wickiup Lake
3	22S	07E	16	Wickiup Lake
3	22S	07E	22	Wickiup Lake
	22S	07E	23	Wickiup Lake
3	22S	07E	28	Wickiup Lake
	22S	08E	09	Crane Pra Lake
	22S	09E	04	Desch River
2	23S	09E	08	Wickiup Lake

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0119-0245

TABLE 12

HERON ROOKERY SITE INVENTORY  
ROOKERY SITES ON NON-FEDERAL LANDS OR  
WITH NON-FEDERAL HABITAT AREA

Township	Range	Section	Quarter	General Location
14	09	10	SWNE	Black Butte Ranch

TABLE 13

HERON ROOKERY SITE INVENTORY  
ROOKERY SITES ON FEDERAL LANDS

Township	Range	Section	Quarter	General Location
21	08	03	NENW	E. of Crane Prairie Reservoir

0119-0246

TABLE 14

GREAT GRAY OWL SITE INVENTORY  
 HABITAT SITES ON NON-FEDERAL LANDS OR  
 WITH NON-FEDERAL HABITAT AREA

Township	Range	Section	Quarter	General Location
22S	09E	36	SESW	Wagon Train North
21S	10E	14	SE	Burgess Road

TABLE 15

GREAT GREY OWL SITE INVENTORY  
 SITES ON FEDERAL LANDS

Township	Range	Section	Quarter	General Location
22S	09E	09	SESW	Dorrance Meadow

**WATERFOWL HABITAT**

0119-0247

**Inventory:** Habitat areas for waterfowl include all of the rivers, streams and lakes in the county as well as the perennial wetlands and ponds identified on the 1990 U.S. Fish and Wildlife Wetland Inventory Maps. The riparian areas associated with these water features are also important habitat for waterfowl. The City of Bend sewage treatment ponds (Hatfield Lake) has also been identified as a significant habitat area for waterfowl.

The map in the original 1979 comprehensive plan entitled "Wildlife Habitat Sensitive Areas" identified the following especially sensitive areas for waterfowl:

1. Benham Falls nesting area
2. Sparks Lake
3. Crane Prairie Reservoir
4. Wickiup Reservoir
5. Davis Lake

These 5 areas are all under federal ownership and management and are protected under the Deschutes National Forest Land and Resource Management Plan. They are included in the inventory as waterfowl habitat but are not subject to the Goal 5 process because they are federally managed.

**Location Quality and Quantity:**

The significant habitat includes nesting feeding and resting areas with nesting habitat being the most critical need. The Oregon Department of Fish and Wildlife has provided a list of all bird species in the county which identifies the time of year they are present in the county and their relative abundance. Waterfowl are included in this inventory. This information is displayed in Table 1. The ODFW has also provided a list of birds found at the City of Bend sewage treatment ponds.

The Deschutes County/City of Bend River Study, Chapter 6, provides information on waterfowl habitat location, quality and quantity.

**Conflicting Uses Determination and Analysis:**

Future resort and vacation home development, human activity associated with recreation rivers and lakes, timber-cutting around sensitive habitats, fill and removal of material in wetlands and within the bed and banks of rivers and streams and removal of riparian vegetation are conflicting uses with waterfowl habitat. Fluctuating water levels are also a conflict as they may flood nest sites and/or allow them to be exposed to predators.

**Economic, Social, Environmental and Energy Consequences of Conserving Waterfowl Habitat areas.**

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1. **Economic Consequences:** The positive economic consequences of limiting conflicting uses are the protection of habitat which will maintain or increase waterfowl populations and the natural quality of the areas. Abundant waterfowl and other wildlife attract tourists and hunters to the region. The maintenance of riparian and wetland habitat required for waterfowl may increase the value of property because of the aesthetic values often associated with natural areas and wildlife.
2. **Social Consequences:** By limiting residential development or other development or restricting fill and removal, including removal of vegetation, owners of the affected parcels may be negatively restricted from developing their property in the way they desire. However, there are land owners who consider the habitat and presence of waterfowl to be an amenity which increases the value of their property.
3. **Environmental Consequences:** The environmental consequences of limiting development in waterfowl habitat areas are positive. Opportunities for birds to mate, nest and fledge their young in a habitat without repeated interference or disturbances from man is a positive consequence of conservation.
4. **Energy Consequences:** Restricting development of hydro-electric development is a negative energy consequence. This consequence is discussed thoroughly in Chapter 4 of the Deschutes County/City of Bend River Study ESEE findings and conclusions.

Additional information and ESEE analysis is provided in the Deschutes County/City of Bend River Study, Chapter 6 and the River Study Staff Report.

5. **Conclusion:** Based on the ESEE analysis, the identified consequences should be balanced so as to allow the conflicting uses but in a limited way so as to protect the resource to a desired extent.
6. **Program to Achieve the Goal (protect waterfowl habitat)**

The findings of the Deschutes County/City of Bend River Study resulted in the adoption of the Deschutes River Corridor Chapter in the Comprehensive Plan. This chapter was adopted by Ordinance 86-19. The adopted goals and policies protect the water, fish and wildlife, open space, recreation, archaeological, energy, historical and cultural resources of the and resources of the Deschutes River and its tributaries.

The ordinances implementing the River Study goals and policies which either directly or indirectly protect waterfowl habitat are:

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Ordinance No. 86-016 amended Ordinance No. PL-15 to prohibit hydroelectric facilities in designated stretches of the Deschutes River and its tributaries, and to allow hydroelectric facilities in designated stretches of the Deschutes River and its tributaries, and to allow hydroelectric facilities as conditional uses in designated zones and stretches of the Deschutes River. (Title 18.96 and 18.116.130 and 18.128.040(W), Deschutes County Code).

Ordinance No. 86-056 amended Ordinance No. PL-15 to require a conditional use permit for any fill and removal, including removal of vegetation, within the bed and banks of any stream or wetland. The bed and banks of a stream is defined to include 10 feet on either side of the container of the waters of a stream. (Title 18.128.040(W), Deschutes County Code).

Ordinance No. 86-054 amended Ordinance No. PL-15 to require conservation easements as a condition of approval for land use actions on property adjacent to certain rivers and streams. (Title 18.116.310, Deschutes County Code).

Ordinance 89-030 amended the Deschutes County Comprehensive Plan for Flood Hazard zones.

Ordinance 88-031 amended PL-15 to establish a new Flood Plain zone and use restrictions. (Title 18.96, Deschutes County Code)

Ordinance 89-009 established specific restrictions for boat docks, slips, piers or houses in the Flood Plain zone. (Title 18.96 and 18.116.070, Deschutes County Code).

All zones in Title 18 have a stream setback provision to protect fish and wildlife areas. The setback requirement is 100 feet from the ordinary high water mark along all streams or lakes. The provision applies to all structures and sewage disposal installations.

Title 18.84, Landscape Management Zone requires retention of existing vegetation to screen development from the river or stream. The retention of vegetation can provide a buffer between development and the nesting and feeding sites of waterfowl.

Ordinance 92-040 added the following policy to the fish and Wildlife policies of the Deschutes County Year 2000 Comprehensive Plan: The county shall work with the ODFW and the Deschutes Basin Resource Committee to review existing protection of riparian and wetland area vegetation and recommend comprehensive plan and ordinance amendments, if necessary, by December 31, 1993.

Ordinance 92-045 adopts the U.S. Fish and Wildlife Service

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National Wetlands Inventory maps for Deschutes County as the inventory of wetlands in the county.

0119-0250

Ordinance 92-042 adopts the Sensitive Bird and Mammal Combining Zone, Title 18.90. This zone requires management plan prior to development with in the impact area of great blue herons, and osprey.

These goals, policies, and ordinances along with, the Oregon State Scenic Waterway and the Federal Wild and Scenic designations on segments of the certain rivers and streams are the implementing measures to protect waterfowl habitat on the Deschutes River and its tributaries and perennial wetlands and ponds. The Deschutes National Forest Land and Resource Management plan also contains provisions to protect identified waterfowl habitat.

In addition, the forest and EFU zones require large minimum lot sizes which limits the potential density of development in the areas adjacent many of the rivers, streams, wetlands and ponds used for waterfowl habitat.

The county notifies the Oregon Department of Fish and Wildlife of all requests for fill and removal or development proposals in the flood plain zone, Wildlife Area Combining Zone, or along any designated river or stream or wetland.

For additional supporting Findings, Goals and Policies see the Deschutes County/City of Bend River Study and the River Study Staff Report.

0119-0251

UPLAND GAME BIRD HABITAT

**Inventory**

The following upland game birds are found in Deschutes County:

Estimated upland game population in 1980 (ODF&W 1985):

Ring-necked Pheasant	200
Valley Quail	10,000
Mountain Quail	50
Chukar Partridge	300
Turkey	50
Blue Grouse	900
Sage Grouse	1,800
Ruffed Grouse	100
Mourning Dove	8,000

**Location, Quality and Quantity**

The habitat for upland game birds is dispersed throughout the county in the riparian, forest, agricultural and rangeland areas of the county. Valley quail and mourning doves are the most common upland game birds. Pheasants, and to a lesser extent valley quail, are truly products of and dependent upon agriculture for their existence. Ideal habitat includes a varied patchwork of seed-producing crops interspersed with brushy fence rows, ditches, streams and woodlots. This type of land cover pattern provides their basic needs of food, water and cover. These birds are primarily found in the Terrebonne and Alfalfa areas. Since pheasants are products of agriculture, they are generally found on farmlands, with no area being essentially more critical than another. However, in many places, riparian vegetation is the only cover available and these thin strips are considered as sensitive areas.

The Oregon Department of Fish and Wildlife has not identified critical habitat areas for any of the upland game species except for the sage grouse. Sage grouse inhabit the sagebrush-grass areas in the eastern portion of the County. The population of sage grouse has shown considerable fluctuation over the years. Present populations are somewhat below average. Areas of particular concern for the sage grouse are the strutting grounds, known as leks. Strutting grounds are flat areas with vegetation less than six inches high on which the males exhibit a breeding display called strutting to attract the females. The sage grouse range and known strutting grounds are shown on the

**Sensitive Bird Habitat Map.** The inventory of sage grouse leks is also listed in Tables 12 and 13 in the Sensitive Bird section of this chapter.

Ruffed grouse and turkey are found mostly on the Deschutes National Forest in forested and riparian habitat. Blue grouse are also mostly on the national forest and are frequently found on ridge tops. Chukars live in grass land habitat and in grassy canyons and also rely on riparian habitat.

#### **Conflicting Uses Determination and Analysis:**

Pheasant and quail are affected whenever agricultural land is taken out of production through urban sprawl, road construction, industrial development, and other land clearing activities. Farming practices on existing agricultural lands also have an impact. The trend today is to farm as much land as possible. Brushy fence rows, woodlots, and riparian vegetation are constantly being removed at the expense of upland game bird use. Reduced acres of agricultural land combined with clean farming techniques (burning fence rows and removing brush areas) has significantly reduced the ring-necked pheasant population in Deschutes County.

The Deschutes County/City of Bend River Study identifies conflicting uses with upland game bird habitat (Chapter 6) and is incorporated here by reference.

Sage grouse depend on large areas of undeveloped rangeland habitat. Activities or development which would interfere with the strutting grounds or displace the birds from the areas used for strutting are conflicting uses. These activities could include road construction, surface mining, or any structural development.

#### **Economic, Social, Environmental and Energy Consequences of Conserving riparian and wetland habitat**

1. **Economic Consequences:** The positive economic consequences of limiting conflicting uses are the protection of habitat which will maintain or increase the upland game bird populations in the county. Abundant wildlife and natural areas are a main reason tourists visit the county. The maintenance of riparian and wetland habitat may increase the value of property because of the aesthetic values often associated with natural areas and wildlife.
2. **Social Consequences:** The positive social consequence of limiting conflicting uses is the the protection of habitat which has aesthetic qualities appreciated by

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residents of the area and tourists. Limiting conflicting uses could prevent someone from developing their property in a manner they desire. However, the county does not regulate accepted farming practices which could cause destruction of some habitat outside of riparian areas.

3. **Environmental Consequences:** The environmental consequences of limiting conflicts with upland game bird habitat are positive. The habitat would be retained or enhanced which results in stable upland game populations. There are no significant negative environmental consequences.
4. **Energy Consequences:** Except for the possible limits on development of hydroelectric facilities, the energy consequences are not significant. The consequences of hydroelectric development are described in detail in the Deschutes County/City of Bend River Study.

Additional information and ESEE analysis is provided in the Deschutes County/City of Bend River Study, Chapter 6 and the River Study Staff Report which are hereby incorporated by reference.

5. **Conclusion:** Based on the ESEE analysis, consequences should be balanced to allow the conflicting uses but in a limited way in order to protect the resource to the desired extent.
6. **Program to Achieve the Goal (protect upland game birds):**

For all of the upland game birds except sage grouse, the habitat is adequately protected by the existing exclusive farm use and forest zoning and the provisions to protect wetlands and riparian areas. The habitat for upland game birds is in the farm and forest zones which provide for minimum lot sizes greater than 20 acres to limit the density of development and the consequent conversion or deterioration of habitat. Any residential development in either the EFU or forest zone requires a conditional use permit.

Agriculture is a permitted use in the exclusive farm use zone and the county does not regulate ordinary farming practices which could cause some loss of cover habitat.

The county provisions to protect riparian areas and wetlands protect one of the most significant components of upland game habitat. The Oregon Forest Practices Act also contains provisions which regulate forest activities in riparian areas.

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Comments on the General Flood Plain Comments  
Nest of the ruffed grouse, blue grouse, and turkey are found  
on National Forest lands where the habitat is managed under  
the Deschutes National Forest Land and Management Plan 0119-0254

Conflicts with sage grouse habitat are limited by exclusive farm use zoning with a 320 acre minimum lot size throughout their range. In sage grouse habitat the Oregon Department of Fish and Wildlife is notified of any conditional use permit and provided an opportunity to identify any conflicts. However, because of their sensitivity and importance, the sage grouse leks or strutting grounds need additional protection. Therefore, the leks identified in Table 14 and on the Sensitive Bird and Mammal Habitat Combining Zone Map are included in the Sensitive Bird and Mammal Combining Zone. The combining zone requires a habitat management plan for any activity located within a 1,320 foot radius of the lek which may cause the lek to be abandoned or destroyed.

Because new leks may be established over time, it is possible that mining activities proposed in the future could conflict with a lek not yet established in the sage grouse range. Therefore, prior to expansion or operation of a mining activity, the Goal 5 program to protect surface mining requires consultation with ODFW to develop adequate setback and closure period restrictions to protect any new lek that is not on the inventory. This consultation will assure that the conflicting surface mining activity will not adversely affect the lek.

TABLE 16

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SAGE GROUSE LEK INVENTORY  
SITES ON FEDERAL LANDS

Township	Range	Section	Quarter	General Location
19E	14E	26	SESE	Millican Borrow Pit
20S	17E	05	NWSW	County Line/ Audobon Site
20S	18E	05	SW	Circle F Reservoir
20S	19E	13-24		Todd Well
21S	15E	12	NENSW	Kotzman Basin
21S	16E	22/24	NESW	Mahogany Butte/ The Gap
21S	17E	18	NE	Whiskey Springs
21S	17E	28	NENE	Moonshine
21S	18E	22	NENE	South Well
21S	18E	24	SWSE	Viewpoint
22S	16E	11	SWSE	Antelope Butte
22E	17E	02	SENW	Spicer Flat
22S	17E	16	NW	The Rock
22S	17E	32	SWSW	Jaynes Well
22S	18E	06	SWNE	Little Mid Lake
22S	18E	11	SENEW	Squaw Lake

TABLE 17

0119-0256

SAGE GROUSE LEK INVENTORY  
LEKS ON NON-FEDERAL LANDS OR  
WITH NON-FEDERAL HABITAT AREA

Township	Range	Section	Quarter	General Location
20S	14E	10	NENW	Evans Well
20S	16E	25	NWSW	Moffit Ranch
20S	16E	26	NWNW	Moffit Ranch Satellite
22S	17E	06	SWSW	4-Corners/Dickerson Well
22S	19E	18	NENE	Nweshal Well

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**FURBEARER HABITAT**

0119-0257

**Inventory**

Estimated furbearer population in Deschutes County (ODF&W 1985):

Beaver	250
Muskrat	1,000
River Otter	100
Mink	500
Marten	300
Fisher	5
Coyote	2,600
Red Fox	50
Bobcat	400
Wolverine	6
Raccoon	430
Skunk	100
Badger	250
Weasel	500
Yellow-Bellied Marmot	200
Ground Squirrels	15,000
Snowshoe Hare	1,000
Blacktailed Jackrabbit	5,000
Cottontail	2,000
Porcupine	750

**Location, Quality and Quantity**

The nongame furbearing animals are broadly distributed throughout the county in various habitats including forest, open rangeland, agricultural land and land that is developed. These habitats are found in most zones in the county especially forest and exclusive farm use zones. However, some of the animals thrive in developed, and even urban areas, where habitat still exists. Riparian habitat is especially important for many of the species including beaver, muskrat, otters and mink. Most of the other species also use riparian habitat to some extent. The Oregon Department of Fish and Wildlife has not identified any specific habitat sites other than riparian and wetland areas that are critical for the listed species.

**Conflicting Uses Determination and Analysis:**

The conflicting uses are those activities or development which would degrade or destroy habitat or disturb the animals causing them to relocate. Conflicts between furbearers and other land uses are minimal in the county. However beavers cut down desired trees, block road culverts, and build dams at the head of irrigation ditches. Other

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species can prey on livestock (coyote) or cause damage to forests (porcupine) or agriculture and landscaping (ground squirrels, rabbits).

0119-0258

**Economic, Social, Environmental and Energy Consequences of Conserving riparian and wetland habitat**

1. **Economic Consequences:** The positive economic consequences of limiting conflicting uses are the protection of habitat which will maintain or increase the diversity of nongame wildlife in the county. Abundant wildlife and natural areas are a main reason tourists visit the county. The maintenance of riparian and wetland habitat may increase the value of property because of the aesthetic values often associated with natural areas and wildlife.

The negative economic consequence of protecting the habitat some of the species is the damage that they cause to livestock, agriculture, forests, and landscaping.

2. **Social Consequences:** The positive social consequence of limiting conflicting uses is the the protection of habitat which has aesthetic qualities appreciated by residents of the area and tourists. Limiting conflicting uses could prevent someone from developing their property in a manner they desire. However, the county does not regulate accepted farming practices which could cause destruction of some habitat outside of riparian areas. Some of the furbearing nongame animals, including rabbits, ground squirrels and porcupine can cause damage to forest and agriculture, and residential landscaping and gardens.

3. **Environmental Consequences:** The environmental consequences of limiting conflicts with furbearer habitat are positive. The habitat would be retained or enhanced which results in stable and diverse furbearer populations. There are no significant negative environmental consequences.

4. **Energy Consequences:** There are no significant energy consequences.

Additional information and ESEE analysis is provided in the Deschutes County/City of Bend River Study, Chapter 6 and the River Study Staff Report which are hereby incorporated by reference.

Additional analysis of conflicts is also included in the following documents:

- a. Wildlife Resources of Deschutes County, (ODFW

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1985).  
b. Oregon Non-Game Wildlife Management Plan, (ODFW 1984) pages III-61 through III-82, and pages IV-1 through VI-3.

5. **Conclusion:** Based on the ESEE analysis, consequences should be balanced to allow the conflicting uses but in a limited way in order to protect the resource to the desired extent.

6. **Program to Achieve the Goal (protect furbearers)**

The furbearer habitat is adequately protected by the existing exclusive farm use and forest zoning and the provisions to protect wetlands and riparian areas. The farm and forest zones require large minimum lot sizes and many uses are permitted only as conditional uses. The large minimum lot size and limited development retains much of the habitat and restricts the density of development which reduces the possibility for harassment from human activity. The measures to protect riparian and wetland habitat are detailed in this plan in the Riparian and Wetland Habitat section.

Agriculture is a permitted use in the exclusive farm use zone and the county does not regulate ordinary farming practices which could cause some loss of cover habitat. The Oregon Forest Practices Act regulates forest management activities on private forest land and also contains provisions which regulate forest activities in riparian areas. The Forest Service and Bureau of Land Management manage furbearer habitat under their land management plans.

For supporting Goals and Policies see the Deschutes County Comprehensive Plan page 114 through 138; Deschutes County/ City of Bend River Study, pages 13-1 through 13-45; Oregon Non-Game Wildlife Management Plan, pages IV-1 through VI-3.

HABITAT AREAS FOR TOWNSEND'S BIG-EARED BATS

**Description:** Caves and other sites used by the Townsend's big-eared bats for hibernating, roosting and nursery.

**Inventory:** The inventory information presented in the following tables has been provided by the Oregon Department of Fish and Wildlife, and the Oregon State University Cooperative Wildlife Research Unit and the Oregon Natural Heritage Data Base. The sites are used by Townsend's big-eared bats as nursery and hibernating habitat.

The inventory separates sites located on federal land from those on private land. The federal sites are not analyzed further in the Goal 5 process as they protected through the management and planning process for federal lands. The sites located on private land are mapped on the Sensitive Bird and Mammal Map. The federal sites are not included on the map unless the impact area around the habitat site extends into private land.

One site is listed as "1B" because there is insufficient information to precisely locate the site.

TABLE 18

**TOWNSEND'S BIG-EARED BAT HABITAT SITES INVENTORY  
PRIVATE LAND SITES**

Township	Range	Section	Quarter	General Location
15S	13E	21	SE	Redmond Cave
19S	13E	13	E 1/2	Stokey Ranch

TABLE 19

**TOWNSEND'S BIG-EARED BAT HABITAT SITES ON FEDERAL LAND**

Township	Range	Section	Quarter	General Location
19S	09E	14	SE 1/2	Edison Ice Cave
19S	11E	26	SE 1/4	Lava River Cave
19S	13E	04	SW 1/4	Skeleton Cave
19S	13E	08	SE 1/4	Boyd Cave

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TABLE 19 - Continued

Township	Range	Section	Quarter	General Location
19S	13E	14	SE 1/4	Wind Cave
19S	13E	14	SE 1/4	Pictograph Cave
19S	13E	23	SW 1/4	Charley the Cave
19S	13E	27	NENW	Charcoal Cave
19S	13E	23	W 1/2	DEG Cave
22S	15E	07		Lees Cave
22S	15E	16	SW 1/4	LQM Cave

TABLE 20

**TOWNSEND'S BIG-EARED BAT HABITAT "1B" SITE  
INSUFFICIENT LOCATIONAL INFORMATION**

18	12	21	5 miles SE of Deschutes River
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The Oregon Department of Fish and Wildlife non-game biologist recommends that the impact area around the cave site where Townsend's big-eared bats are found should be a radius of 1,320 feet. The biologist recommends that prior to approval of any development within the radius of the cave that a management plan be developed to protect the habitat needs of the bats. Researchers are currently studying the bats to learn more about the extent of the habitat.

**Location, Quality and Quantity:**

The location of the habitat sites is described above in Tables 1, 2, and 3. Information on the number of bats is available in a report by J. Mark Perkins, Summary of Fort Rock District Use by Bats With Emphasis on Plecotus Townsendii - 1985-1991.

The Townsend's big-eared bat is listed as an Oregon sensitive species with a vulnerable classification. The bat is classified as a Federal Category 2 sensitive species. The Category 2 species need additional information in order to be proposed for federal listing as a threatened or endangered species under the federal Threatened and Endangered Species Act.

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**Conflicting Uses Determination and Analysis:**

The Redmond Cave site is zoned Exclusive Farm Use-40. The Stookey Ranch site is zoned Exclusive Farm Use-320. The uses permitted in these zones that could conflict with the habitat site are surface mining, recreation facilities including golf courses and destination resorts, roads, logging, air strips. The report identified above cites recreational conflicts at most of the caves located on federal land. Large numbers of visitors can disturb the bats. The Deschutes National Forest has also identified the removal of nearby riparian vegetation where the bats feed as a conflicting use.

**Economic, Social, Environmental and Energy Consequences of Conserving sensitive bird sites**

1. **Economic Consequences:** Limiting aggregate extraction as a conflicting use does not have an economic consequence at this time because there are not any identified aggregate sites adjacent to the identified bat habitat sites located on non-federal land. There are no identified aggregate sites within the impact area of the identified habitat sites on private land. The economic consequences of protecting sensitive bat habitat sites from residential conflicts could prohibit the development of a property for residential use which would lower its value. However, both of the identified sites are located on large parcels where a residence could be located outside of the habitat site. Regulating or prohibiting conflicting uses associated with intensive recreational use or resort development to protect could restrict the area available for such development.

Caves are visited by tourists who are interested in geology and natural history. By limiting development and vegetation removal around the bat caves, the caves retain their natural characteristics and attraction to some tourists. If tourist use is limited to reduce conflict with the bats, there could be a minor negative economic consequence.

2. **Social Consequences:** The negative social consequence of limiting recreational use in or near an identified significant bat cave would cause those activities to be channeled to other areas. Limiting such recreational use on federal lands is not within the jurisdiction of the county. By limiting conflicting uses people interested in wildlife would have enhanced opportunities for viewing the bats in their natural habitat.
3. **Environmental Consequences:** The environmental consequences of limiting development near sensitive bat

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caves are positive. Opportunities for bats to thrive in a habitat without repeated interference or disturbances from man should be a positive consequence. Restricting vegetation removal through a management plan will retain habitat features which are necessary for the foraging bats. Limiting residential, recreational and resort development in the vicinity of a cave would limit disturbance which could cause the bats to leave the habitat site.

4. **Energy Consequences:** There are no significant energy consequences associated with limiting conflicts with bat habitat sites.
5. **Conclusion:** Based on the ESEE analysis, the identified consequences should be balanced so as to allow the conflicting uses but in a limited way so as to protect the resource to a desired extent.
6. **Program to Achieve the Goal (protect sensitive bird sites)**

Ordinance 92-042 adopted the Sensitive Bird and Mammal Combining Zone for the sensitive birds and the Townsend's big-eared bat. The zone requires that a management plan be developed and reviewed by the Oregon Department of Fish and Wildlife if a development is proposed within the 1,320 feet of an inventoried Townsend's big-eared bat habitat site on private land. The zone does not regulate forest practices which are regulated by the Forest Practices Act.

The Deschutes National Forest Land and Resource Management Plan has provisions for cave management which prohibit clear cutting within 250 feet of the entrance of caves with significant bat populations. The plan also requires a 150 to 200 foot wide forested corridor between the entrance of the cave and the nearest foraging area. If the foraging area is a nearby stream, trees will not be harvested for 75 to 100 feet on either side. The Forest Service has a guideline which states that significant and potentially significant caves will be protected and managed in accordance with the Federal Cave Resources Protection Act of 1988.

0119-0264

**WETLANDS AND RIPARIAN AREAS****Inventory**

The 1979 Deschutes County Year 2000 Comprehensive Plan Resource Element identified riparian areas on a map titled Wildlife Habitat Sensitive Areas. However, the mapping is at a such a small scale that it is impossible to determine anything more than the general location of riparian areas along the identified streams. The Deschutes County/City of Bend River Study inventoried the riparian areas associated with the following rivers and streams as significant: Deschutes River, Little Deschutes River, Crooked River, Squaw Creek, Tumalo Creek, Fall River, Spring River, Indian Ford Creek and Paulina Creek. The River Study inventory was adopted by the Board of County Commissioners on June 30, 1986.

The county has not conducted an inventory of riparian areas adjacent to lakes and ponds on private land; however, many of these areas are included in the National Wetland Inventory Maps. Riparian areas adjacent to the many lakes on federal lands are managed and protected under the federal land and resource management plans and are not included in the county inventory.

Ordinance 92-045 adopted all wetlands identified on the U. S. Fish and Wildlife Service National Wetland Inventory Maps as the Deschutes County wetland inventory.

**Location, Quality and Quantity**

The location and description of wetlands is shown on the U.S. Fish and Wildlife Wetland Inventory Maps.

Riparian areas are located adjacent to the rivers and streams listed in the inventory adopted in the Deschutes County/City of Bend River Study. The extent of the riparian area varies depending on the soil, terrain, vegetation and hydrology of the area. The riparian area ranges from a narrow band of vegetation directly adjacent to the stream to an extensive area including a broad flood plain and associated wetlands.

The wetlands and riparian areas are essential habitat for waterfowl and significant habitat for upland game birds including grouse, quail, mourning doves and pheasants. Many non-game species also depend on the riparian habitat. The riparian vegetation is also an important component of fish habitat to stabilize stream banks and provide shade to maintain desirable water temperatures.

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**Conflicting Uses Determination and Analysis:**

Conflicting uses include fill and removal of material, including vegetation which could cause reduction in the size or quality or function of a wetland or cause destruction or degradation of the riparian habitat and vegetation. Locating structural development in wetlands or riparian areas would reduce the habitat and the use of the structure could cause conflicts such as harassment or disturbance of wildlife dependent on the habitat. Cutting of riparian vegetation can remove important shade for streams, eliminate habitat for various waterfowl, furbearers, and nongame bird species and can also increase the potential for erosion or bank instability in riparian areas. Hydroelectric development could alter or destroy riparian habitat.

**Economic, Social, Environmental and Energy Consequences of Conserving riparian and wetland habitat**

1. **Economic Consequences:** The positive economic consequences of limiting conflicting uses are the protection of habitat which will maintain or increase the fish and wildlife populations and diversity and the natural quality of the areas. Abundant wildlife and natural areas are a main reason tourists visit the county. The maintenance of riparian and wetland habitat may increase the value of property because of the aesthetic values often associated with natural areas and wildlife.
2. **Social Consequences:** The positive social consequence of limiting conflicting uses is the the protection of habitat which has aesthetic qualities appreciated by residents of the area and tourists. Limiting conflicting uses could prevent someone from developing their property in a manner they desire.
3. **Environmental Consequences:** The environmental consequences of limiting conflicts with wetland and riparian habitat are positive. The habitat would be retained or enhanced which results in stable and diverse fish and wildlife populations and high water quality for fish. There are no significant negative environmental consequences.
4. **Energy Consequences:** Limiting hydroelectric development as a conflicting use could reduce the opportunity for hydroelectric energy production and require that power be produced from other sources.

Additional information and ESEE analysis is provided in the

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Deschutes County/City of Bend River Study, Chapter 6 and the River Study Staff Report which are incorporated herein by reference.

5. **Conclusion:** Based on the ESEE analysis, consequences should be balanced to allow the conflicting uses but in a limited way in order to protect the resource to the desired extent.
6. **Program to Achieve the Goal (protect riparian and wetland habitat)**

#### **Policies and Goals:**

The Deschutes County/City of Bend River Study resulted in the amendment of the Comprehensive Plan to include a chapter entitled Deschutes River Corridor (Ordinance 86-019). Goals and policies in the Water Resource, Open Space, Recreation, Fish, and Wildlife sections address riparian habitat protection and enhancement.

The public has expressed concern that the County is not adequately protecting riparian vegetation with the existing provisions adopted as a result of the River Study. In order to review the adequacy of riparian area vegetation protection, the County has adopted the following Comprehensive Plan policy in the Fish and Wildlife chapter of the comprehensive plan (Ordinance 92-040):

The county shall work with ODFW and the Deschutes Basin Resource Committee to review existing protection of riparian and wetland area vegetation and recommend comprehensive plan and ordinances amendments, if necessary, by December 31, 1993.

#### **Zoning Ordinance:**

In all zones, the county zoning ordinance requires a 100 foot setback from the ordinary high water mark of all streams or lakes for all sewage disposal installations and structures.

Title 18.96, Flood Plain Zone - protects riparian habitat and wetlands by requiring a conditional use for any development. One of the specific purposes of the zone is to conserve riparian areas and maintain fish and wildlife resources. The Flood Plain zone also regulates docks and piers and requires a finding that the structure will not cause the deterioration or destruction of wildlife habitat.

Title 18.128(W), Fill and Removal - requires a conditional use permit for any fill and removal, including vegetation, in wetlands or within the bed and banks of any streams or river. The bed and bank of a stream includes the container of the

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stream at bank full stage plus 10 feet.

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Title 18.84.080(1), Landscape Management Zone requires retention of vegetation to screen development from the river. The zone includes land within a state scenic waterway or within 660 feet of the other rivers and streams identified as landscape management.

Title 18.84.080.(10), Landscape Management Zone, requires conservation easements for all site plan reviews adjacent to the landscape management rivers and streams. The conservation easements shall not require public access.

Title 18.116.220 requires a conservation easement as a condition of approval for all land use actions adjacent to rivers and streams in order to protect natural resources, natural values and water quality.

Title 18.128(V) requires conditional use permits for development of hydroelectric facilities. This provision resulted from the Deschutes County/City of Bend River Study (Ordinance 86-018). The regulations require river enhancement and maintenance or enhancement of existing fish and wildlife habitats.

**HABITAT AREAS FOR THREATENED AND ENDANGERED SPECIES**

The State of Oregon has listed the northern bald eagle, the northern spotted owl, and the wolverine as threatened and the peregrine falcon as endangered. The inventory, ESEE and program to protect the eagle nest sites is located in the Sensitive Bird Habitat section of this chapter.

The northern spotted owl and wolverine habitat are located exclusively on national forest lands. The Deschutes National Forest has inventoried northern spotted owl nest sites and habitat areas and has developed a program to protect the species in accordance with federal requirements.

The county has not inventoried or mapped habitat areas for northern spotted owl and wolverine because they are protected by Federal regulations and the Deschutes National Forest Land and Resource Management Plan and/or the Oregon Forest Practices Act and are therefore not subject to the Goal 5 process. There are no known spotted owl or wolverine habitat sites on private land in the county.

There are no identified peregrine falcon nest sites in the County.

Therefore, in conformance with OAR 660 Division 16, the county has analyzed the data and determined that the northern spotted owl, wolverine and peregrine falcon should not be included on the plan inventory (1A) at this time. During the next periodic review the county will re-examine the available information on threatened and endangered species to determine if they need to be included in the plan inventory and protected as significant Goal 5 resources.

EXHIBIT "B"

0119-0269

FINDINGS OF BOARD OF COUNTY COMMISSIONERS  
SUPPORTING ADOPTION OF RESOURCE ELEMENT OF THE COMPREHENSIVE PLAN,  
AMENDMENTS TO TITLE 18.88 OF THE DESCHUTES COUNTY CODE.

Purpose

1. The purpose of these findings is to support the adoption by the Board of County Commissioners (Board) of: 1) a new Fish and Wildlife Chapter to the Resource Element of the Deschutes County Year 2000 Comprehensive Plan including the inventory, conflicts analysis and the analysis of the economic, social, environmental and energy (ESEE) consequences of protecting or not protecting County fish and wildlife resources; 2) amendments to the Goals and Policies in the Fish and Wildlife Chapter of the Deschutes County Year 2000 Comprehensive Plan; 3) amendments to Title 18.88 Wildlife Area Combining Zone of the Deschutes County Code; 4) Title 18.90 Sensitive Bird and Mammal Combining Zone; 5) the National Wetland Inventory Maps for the Wildlife Area Combining Zone and the Sensitive Bird and Mammal Combining Zone.
2. The wildlife inventory, and ESEEs are required to comply with Statewide Planning Goal 5 and its implementing administrative rule OAR 660-16-000. The adoption of the inventories and amendments to the Comprehensive Plan and Title 18 have been conducted pursuant to the periodic review of the County's comprehensive plan and implementing ordinances required by ORS Chapter 197 and OAR 660-19-000.

Procedural Background

3. On November 1, 1979, the Board of County Commissioners adopted its County Comprehensive Plan, including goals and policies for protection of fish and wildlife resources. The Fish and Wildlife chapter of the Resource Element of the Comprehensive Plan contains inventories and discussion of fish and wildlife resources in the county. On November 1, 1979, the Board adopted PL-15 which containing the provisions for the Wildlife Area Combining Zone.
4. On June 30, 1986, the Board adopted the Deschutes County/City of Bend River Study as an amendment to the Deschutes County Year 2000 Comprehensive Plan. The River Study contains inventories of fish and wildlife resources and ESEEs analyzing the uses conflicting with the fish and wildlife resources in the Deschutes River corridor and its tributaries. On the same date, the Board adopted amendments to the Comprehensive Plan regarding fish and wildlife resources in the river corridor and implementing ordinances to implement programs to protect the river corridor and its fish and wildlife resources.

1 - EXHIBIT "B" FOR ORDINANCE NO. 92-041 (8/5/92)

5. The County submitted a draft periodic review order to the Department of Land Conservation and Development (DLCD) in 1989. The draft periodic review order contained fish and wildlife inventories and ESEEs. On August 27, 1990, DLCD submitted comments to the County on the draft periodic review order. The comments identified deficiencies in the ESEE analysis, conclusions and program to implement Goal 5, and also, identified criteria in the Wildlife Area Combining Zone that were not clear and objective as required by OAR 660-16-010(3).
6. The Deschutes County Planning Commission conducted two public hearings on March 11 and April 22, 1992, to take testimony on the draft fish and wildlife element of the Comprehensive Plan and draft amendments to Title 18 and the Deschutes County Zoning map for the Wildlife Area Combining Zone and Sensitive Bird and Mammal Combining Zone. The Planning Commission conducted work sessions on the Goal 5 wildlife amendments on February 12 and March 25, 1992. On May 13, 1992, the Planning Commission recommended approval of the proposed fish and wildlife changes to the Deschutes County Year 2000 Comprehensive Plan and Title 18 to the Board of County Commissioners.
7. The Board of County Commissioners held a public hearing on May 26, 1992, to consider testimony on the recommendation of the Planning Commission on the proposed amendments to the Comprehensive Plan and Title 18.

Compliance with Goal 5.

8. Goal 5 is met through (a) the adoption of Goals and Policies in Ordinance 92-040 reflecting Goal 5 requirements; (b) the adoption of Ordinance 92-041, which pursuant to the Goal 5 rule amends the comprehensive plan to inventory each Goal 5 resource, analyze conflicting uses, and analyze the ESEE consequences of protecting or not protecting inventoried fish and wildlife resources, (c) the adoption of zoning ordinance provisions in Ordinance 92-042, as applied to inventoried sites by the map adopted by Ordinance 92-046, which together constitute the County's program to meet the Goal, and (d) the adoption of specific timelines in Ordinance 92-040 for revisiting resource sites inventoried as so-called "1B" sites under the Goal 5 rule.
9. To comply with the requirements of Goal 5 and OAR 660-16-000, the County worked with the Oregon Department of Fish and Wildlife to obtain the most recent inventory information on fish and wildlife resources in the county and to identify uses conflicting with the fish and wildlife resources. This inventory information was used to update the inventories in the draft periodic review order and amend the draft ESEE

2 - EXHIBIT "B" FOR ORDINANCE NO. 92-041 (8/5/92)

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analyses. In addition, ODFW provided information to support zoning ordinance provisions to resolve conflicts between fish and wildlife resource protection and development.

10. The Board finds that the Goal 5 analysis contained in Ordinance 92-041 for each resource is sufficient to meet the Goal 5 requirements without requiring additional findings here.

Compliance with Other Goals

11. GOAL 1 - CITIZEN INVOLVEMENT. The Board finds that Goal 1 is complied with by the notice given and public hearings, as detailed in the findings set forth herein, held both before the Commission and before the Board during this Goal 5 process and by the provisions for citizen participation under the County's Development Procedures Ordinance, codified at Title 22 of the Deschutes County Code.
12. GOAL 2 - LAND USE PLANNING. The purpose of Statewide Planning Goal 2 is to establish a land use planning process and to assure an adequate factual base for land use decision-making. The goal is satisfied in this case by: (a) the adoption of an inventory of fish and wildlife resources as part of the County's comprehensive plan; (b) the conflicts and ESEE analysis for each resource; (c) the existence of a zoning ordinance that, as amended, will implement the ESEE decisions through clear and objective standards; (d) by the adoption of maps showing wildlife areas; and (e) by the extensive factual record generated by the inventory and ESEE process and the site specific treatment of each site.
13. GOAL 3 - AGRICULTURAL LANDS. This ordinance does not conflict with Goal 3. It does not promote new non-farm uses on farm lands. Where there have been conflicts identified with farm uses, such as with the fencing standards found in Chapter 18.88 or the siting standards of Chapter 18.88, those conflicts have been recognized and accommodated. It does not preclude continuation of any existing farming practices. Consequently, adoption of the County's historic resources package does not conflict with Goal 3.
14. GOAL 4 - FOREST LANDS. The Goal 4 analysis with respect to forest lands is the same as that set forth under Goal 3 with respect to farm lands.
15. GOAL 6 - AIR, LAND, AND WATER RESOURCES. Preservation of inventoried fish and wildlife resources does not conflict with Goal 6, since protection of such resources does not promote additional development.

3 - EXHIBIT "B" FOR ORDINANCE NO. 92-041 (8/5/92)

16. GOAL 7 - AREAS SUBJECT TO NATURAL DISASTERS AND HAZARDS. Not applicable.
17. GOAL 8 - RECREATION NEEDS. Providing for recreational needs is important to the Deschutes County economy. Enjoyment of fish and wildlife resources is an integral part of outdoor recreational experiences.

With respect to destination resorts, the Board finds that the decision on the siting of destination resorts in the Wildlife Area Combining Zone should be delayed and be considered at the time the Board completes the Goal 8 destination resort mapping for irrigated agricultural lands. Goal 8 prohibits siting of destination resorts in areas identified as "especially sensitive big game habitat". The County has inventoried and mapped significant big game habitat as a Goal 5 resource; and to specifically limit conflicting uses on this identified habitat. Under this package, such inventoried lands are zoned with the Wildlife Area Combining Zone (Title 18.88).

The County inventoried big game habitat is more extensive than the area identified as "especially sensitive big game habitat". Until the Board reconciles the difference between the Goal 8 "especially sensitive big game habitat" and the Goal 5 inventoried significant big game habitat, no applications will be accepted for any part of a destination resort in the Wildlife Area Combining Zone. The Goal 8 requirement precluding siting of destination resorts in the especially sensitive big game habitat is met by this interim bar to applications in all the County's wildlife areas.

18. GOAL 9 - ECONOMY OF THE STATE. Preservation of fish and wildlife resources contributes to Oregon's increasingly important tourism industry. The Board finds that the restrictions set forth in the wildlife provisions in the zoning ordinance will further the preservation of fish and wildlife resources by providing for a review of proposed alterations and demolitions of historic structures. The restrictions on siting of structures does not prevent structures from being built on any lot or parcel.
19. GOAL 10 - HOUSING. This Goal is not implicated by the fish and wildlife policies adopted as part of this package. The Plan to implement the Goal applies wildlife restrictions in designated Wildlife Area overlays. These overlays apply only outside Urban Growth Boundaries. Under the Goals, housing needs are to be addressed chiefly by measures taken inside the urban growth boundary.

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20. GOAL 11 - PUBLIC FACILITIES. Not particularly applicable, as the proposal does not propose new development. The provisions encourage clustering, which can make the delivery of public services more efficient.
21. GOAL 12 - TRANSPORTATION. Not particularly applicable, as the wildlife package does not propose new development. The provisions encourage clustering, which can make for more efficient transportation.
22. GOAL 13 - ENERGY CONSERVATION. Not applicable, as no new development is proposed by the package. The promotion of clustering and siting of development close to existing roads will result in energy conservation.
23. GOALS 14 - 19. Not applicable.

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5 - EXHIBIT "B" FOR ORDINANCE NO. 92-041 (8/5/92)

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ROSEMARY PATTERSON, CO. CLERK

DESCHUTES COUNTY

ZONING ORDINANCE

OF 1979

ORDINANCE NO. PL-15

ENACTED ON THE 1st DAY OF November, 1979.

in no case shall a housing type be allowed that is other than conventional or modular housing permanently attached to real property.

- (3) Use Limitations. All use and dimensional conditions contained in the underlying zones shall apply to the CH zone.

Section 4.210. FLOOD PLAIN ZONE. FP.

- (1) Purpose: The purposes of the Flood Plain Zone are to protect the public from the hazards associated with flood plains to conserve important riparian areas along rivers and streams for the maintenance of the fish and wildlife resources and to preserve significant scenic and natural resources while balancing the public interests with those of individual property owners in the designated areas.
- (2) Uses Permitted Outright
- (A) Agricultural use conducted without establishing or utilizing a structure except for a boundary fence designed to impede as little as possible the movement of floodwaters and flood-carried material.
- (B) Industrial or commercial use not requiring a structure other than crushed rock or gravel surfacing at ground level for such uses as loading or parking areas or which require only temporary structures that will be removed from the zone during the period of annual flood risk.
- (C) Recreational uses requiring only structures having an insignificant effect on flood waters such as golf course primary buildings, tennis courts, driving ranges, archery ranges, picnic grounds, boat launching ramps, swimming areas, wildlife or nature preserves, game farms, fish hatcheries, shooting preserves, target ranges, trap or skeet ranges, hunting or fishing areas, or hiking or riding trails.
- (D) Portions of a recreation vehicle park or camping area that are occupied only temporarily and that do not contain buildings.
- (E) Portions of a residential use that do not contain buildings, such as lawn, garden or parking or play areas.
- (3) Conditional Uses Permitted in the Floodway of an FP zone.

- (A) A roadway, bridge or utility structure except a landfill, that will not impede the waters of a base flood.
- (B) Incidental storage of material or equipment that is either not subject to damage by flood or is mobile and readily removable from the area within time available after flood warning. If not readily removable, the material or equipment shall be anchored to prevent flotation and shall not obstruct water flow. Material or equipment stored shall be only items which will not create a hazard to the health or safety of persons, property, animals or plant life should the storage area be inundated.
- (4) Permit for Use or Development in an FP Zone. No person shall construct, reconstruct expand or install a development or mobile home, or divide land, in an FP zone unless a permit has been received for the work, except for those uses permitted by subsection (2) of this section. Except for improvement of an existing structure which is less than substantial as determined by the County Building Inspector, Planning Director and Hearings Officer, no permit shall be issued unless the work will be reasonably safe from flooding and otherwise complies with this ordinance. The following information shall be submitted with the permit application:
- (A) The location of the property with reference to channel stations and flood profile elevations.
- (B) The existing topography and proposed grading plan for the property. Contour intervals shall not be more than one-foot for ground slopes up to five percent and for areas immediately adjacent to a stream, two-foot for ground slopes between five and ten percent, and five-foot for greater slopes.
- (C) The location of existing and proposed diking or revetments, if any.
- (5) Structural Elevation Data Required.
- (A) A building permit application for substantial improvement to an existing structure or for a new installation within a FP zone shall, where the Planning Director determines that the structure may be in the flood plain, contain the following data referenced to mean sea level:
- (1) The level of the lowest habitable floor and of any basement floor whether or not intended to be habitable.

(2) The level to which the structure is to be floodproofed, if applicable.

(B) A statement shall note whether the structure contains a basement.

(C) The information required by this subsection shall be maintained in the files of the Building Department with the subject building permit.

(6) Regulation of Structures in an FP Zone.

(A) The lowest habitable floor, and any basement floor whether or not the basement is intended to be habitable, of a new or substantially improved residential structure and the floor of a newly installed mobile home shall be elevated at least one foot above the base flood level.

(B) Unless the lowest floor elevation, including a basement floor, is one foot above the base flood elevation, a newly constructed or substantially improved non-residential structure shall be designed so that the structure is substantially impermeable to the passage of water and otherwise flood-proofed, at least to a level of two feet above the base flood level. The structural components shall have the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy.

(C) When floodproofing is utilized for a structure, a registered engineer or licensed architect shall certify that the floodproofing method is adequate to withstand the flood depths, pressures, velocities, impact and uplift forces and other factors associated with a base flood and otherwise conforms to the floodproofing standards of the State Structural Specialty Code in effect at the time of construction.

(D) Unless the site on which a mobile home is to be installed is above the base flood level, a mobile home or an addition to a mobile home shall be anchored to resist flotation, collapse, and lateral movement as follows:

(1) Over-the-top ties shall be provided at each of the four corners of the mobile home, with two additional ties per side at intermediate locations except that a mobile home less than 50 feet long need have only one additional tie per side.

(2) Farm ties shall be provided at each corner of the home with five additional ties per side at

intermediate points except that a mobile home less than 50 feet long need have only four additional ties per side.

- (3) All components of the anchoring system, including ties, shall be capable of carrying a force of 4,800 pounds.

(7) Land Development Standards in a Flood Hazard Area.

- (A) In addition to the terms of subsections (8) and (9) of this section, a subdivision or other land development within an FP zone shall be designed and constructed to minimize flood damage, including special provisions for adequate drainage to reduce exposure to flood hazards.
- (B) A land development which will alter or relocate a watercourse shall be designed, constructed and maintained to retain the flood-carrying capacity of the watercourse.
- (C) A proposed land development of greater than either 50 lots or 5 acres shall include data showing the base flood elevation.

(8) Additional Mobile Home Land Development Standards.

- (A) Except in the locations described in subsection (8)(B) below, a mobile home site in an FP zone shall comply with the following:
  - (1) The mobile home stand on the site shall be elevated on compacted fill or pilings so that the floor of the mobile home will be one foot above the base flood elevation level.
  - (2) Adequate surface drainage shall be provided.
  - (3) Access for a hauler shall be provided.
  - (4) If the mobile home stand is elevated on pilings, the stand shall be large enough to permit steps. Piling foundations shall be placed in stable soil no more than 10 feet apart and lateral reinforcement shall be provided for pilings extending more than six feet above ground level.
- (B) Provisions of subsection (8)(A) are not applicable to a mobile home site in an existing mobile home park or subdivision which by deed restriction limits the use of lots to the installation of mobile homes, provided that the site was originally constructed with the following improvements:

- (1) It abuts a roadway suitable for all-weather travel.
  - (2) It has been leveled to permit a mobile home installation.
  - (3) Connections to a water supply and sewage disposal system exist on the site.
- (C) A site for a mobile home also shall comply with subsection (8)(A) if it is in an existing mobile home park which has, after the effective date of this ordinance, undergone substantial repair, reconstruction or improvements of streets, utilities and pads.
- (D) The placement of a mobile home in the floodway is prohibited.
- (9) Facility Standards in a Flood Hazard Area.
- (A) A public utility or facility associated with a land development within a FP zone shall be designed, located and constructed to minimize or eliminate flood damage and to avoid raising the water elevation in a regulatory floodway.
  - (B) Any new or replacement water supply system shall be designed, located and constructed to minimize or eliminate infiltration of floodwaters into the system.
  - (C) Any new or replacement water supply system shall be designed, located and constructed to minimize or eliminate infiltration of floodwaters into the system and discharge from the system into the flood waters.
  - (D) An on-site septic tank system or other individual waste disposal system shall be located to avoid impairment or contamination during flooding.
- (10) Land Grading Standards in a Flood Hazard Area.
- (A) When required by the Building Inspector the application for a grading or excavation permit shall be accompanied by two sets of plans or specifications, and other supporting data considered necessary to act on the application.
  - (B) After review of a grading or excavation permit application, the application shall be denied if it is determined that the proposed excavation, filling or other grading will raise the water elevation in the subject floodway.

- (11) Regulations Not a Guarantee. The degree of flood protection afforded by the provisions of this ordinance is considered reasonable for regulatory purposes and is based upon conventional engineering and scientific methods of study. Larger floods than those anticipated by these provisions may occur on occasion or the flood height may be increased by human or natural causes such as logjams, ice formations or bridge openings restricted by debris. The identification of areas subject to flooding pursuant to the provisions of this ordinance does not imply that lands outside such areas will be free from flooding or flood damage. This ordinance shall not be considered a guarantee against flood damage.
- (12) Technical Variances. A technical variance from the requirements of this section may be granted by the Hearings Officer for new construction and for improvements to existing structures which could not otherwise be authorized, provided the construction or improvements are to be erected or installed on a parcel of land one-half acre or less in size, contiguous to or more or less surrounded by lots with existing structures constructed below the minimum floor elevation established for flood protection purposes. A parcel of land in excess of the one-half acre in single ownership on the effective date of this ordinance is not excluded from the granting of a technical variance, but the burden of proof required for issuing the variance increases as the size of the property under single ownership increases, and the variance shall be granted only if required to equalize circumstances, considering previously developed land adjacent to the parcel for which a variance is sought.
- (13) Historic Variance. A variance for historic preservations may be granted for the reconstruction, rehabilitation or restoration of a structure listed on the National Register of Historic Places of the State Inventory of Historic Places.
- (14) Other Variances. All other variance applications shall be considered according to the terms of Article 9 of this ordinance and the following criteria:
- (A) The danger that materials may be swept onto others property.
  - (B) The danger to life and property due to flooding or erosion damage.
  - (C) The susceptibility of the proposed facility to flood damage and the effect of such damage on the individual owner.

- (D) The importance of the services provided to the community by the proposed facility.
  - (E) The necessity to the use of a waterfront location, where applicable.
  - (F) The availability of alternative locations not subject to flooding or erosion damage.
  - (G) The relationship of the use to the area flood-plain management program.
  - (H) The safety of access to the property in times of flood for ordinary and emergency vehicles.
  - (I) The expected height, velocity, duration, rate of rise and sediment transport of the floodwaters and the effect of wave action, if applicable, expected at the site.
  - (J) The cost of providing governmental and utility services during and after flood conditions including maintenance and repair of public utilities and facilities such as sewer, gas, electrical and water system, streets and bridges.
- (15) Applicants for a variance shall include with their application the following information:
- (A) The location of the property with reference to channel station and flood profile elevation.
  - (B) The existing topography and proposed grading plan for the property. Contour interval shall not be more than one foot for ground slopes up to five percent and for areas immediately adjacent to a stream, two feet for ground slopes between five and ten percent, and five feet for greater slopes.
  - (C) The location of existing and proposed diking or revetments if any.
- (16) Granting of Variances.
- (A) If the findings warrant, the Hearings Officer may grant a variance if he finds the variance will not result in increased flood heights, additional threats to public safety or extraordinary public expense.
  - (B) An applicant to whom a varinace is granted shall be given written notice that the structure is permitted. The notice shall designate the elevation

of the lowest floor compared to the base flood elevation and shall advise the applicant that the cost of flood insurance will be commensurate with the increased risk resulting from any reduced floor elevation authorized by the variance.

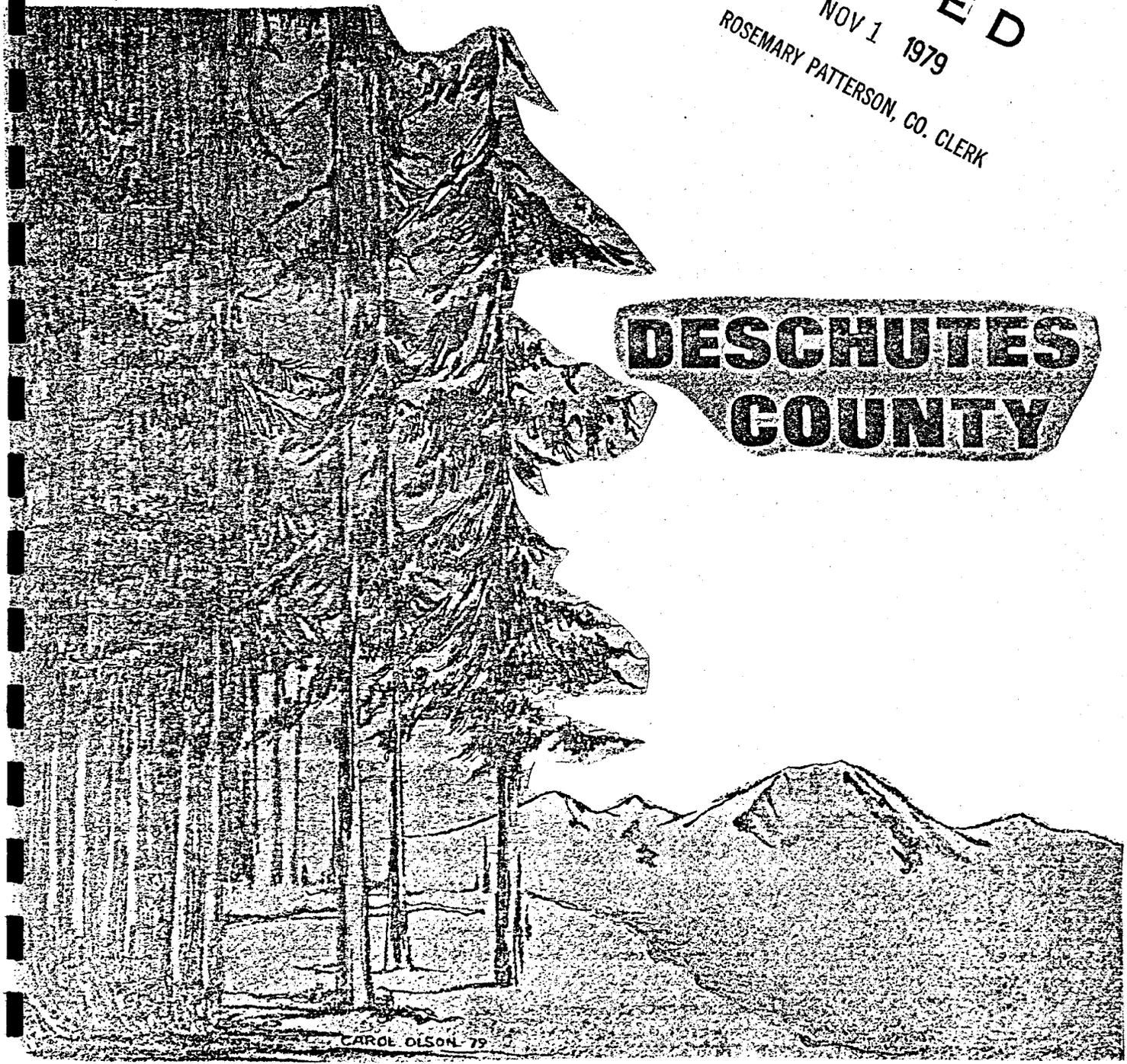
Section 4.220. RURAL INDUSTRIAL ZONE. R-I. In an R-I zone, the following regulations shall apply:

- (1) Purpose: The purposes of the Rural Industrial Zone are to encourage employment opportunities in rural areas and to promote the appropriate economic development of rural service centers which are rapidly becoming urbanized and soon to be full-service incorporated cities, while protecting the existing rural character of the area as well as preserving or enhancing the air, water and land resources of the area.
- (2) Uses Permitted Outright. In a R-I zone, the following uses and their accessory uses are permitted outright except as limited by subsection (4) of this section and unless located within 600 feet from a residential dwelling, a lot within a duly platted subdivision or a residential zone.
  - (A) Automotive wrecking yard totally enclosed by a sight-obscuring fence.
  - (B) Farming.
  - (C) Residence for caretaker or night watchman on property.
  - (D) Freight depot.
  - (E) Contractor's or building materials business and other construction-related business including plumbing, electrical, roof, siding, etc., provided such use is wholly enclosed within a building or no outside storage is permitted unless enclosed by sight-obscuring fencing.
  - (F) Ice or cold storage plant.
  - (G) Wholesale distribution outlet including warehousing but excluding open outside storage.
  - (H) Welding, sheet metal or machine shop provided such is wholly enclosed within a building or all outside storage is enclosed by sight obscuring fencing.
  - (I) Veterinary clinic or kennel.
  - (J) Laboratory for experiment, research or testing.

# COMPREHENSIVE PLAN

FILED  
NOV 1 1979  
ROSEMARY PATTERSON, CO. CLERK

## DESCHUTES COUNTY



CAROL OLSON '79

The protection of fish and wildlife resources has been an on-going controversy in Deschutes County. Both those committed to the protection of the resources and those who wish to subdivide or otherwise develop in sensitive wildlife areas have often pressed their positions, sometimes resulting in court action to resolve the conflict.

It is generally recognized that failure to protect fish and wildlife resources will result in: loss of habitat and declining species populations due to development pressures, increased numbers of endangered species, declining tourist expenditures, loss of recreational opportunities and loss of quality of life. Already, Deschutes County has witnessed the serious degrading of the cold water fishery by irrigation withdrawals, loss of sensitive deer winter range lands to development and the disturbance of deer migration corridors due to residential and recreational construction.

Testimony by representatives of the Oregon Department of Fish and Wildlife indicated that their studies have shown that there is significant deer migration from the Deschutes National Forest west of the Deschutes River to wintering ranges east of the river identified as the North Paulina Devil's Garden and Hole-In-the-Ground Ranges. They further expressed a belief, based on their training and experience, that rural housing at a density of more than one residence per 40 acres can seriously threaten deer winter survival. And, that rural residents often owned dogs which, especially in packs, were a threat to all wildlife.

One type of area of particular concern is the riparian area or wetlands along streams and lakes. These areas not only serve as essential habitat for many species

and as migration corridors for big game, but are particularly in need of protection because of their limited nature.

Not only the wetter more forested areas of the County provide wildlife habitat but the dry high plains in the eastern portion of the County have large populations of sage grouse and antelope. These wildlife species are highly dependent on the open unrestricted character of this area for their survival.

Throughout committee discussions and public testimony concern that local fish and wildlife resources be protected was expressed. To set reasonable objectives the following goals were determined:

GOALS:

1. To conserve and protect existing fish and wildlife areas.
2. To maintain all species at optimum levels to prevent serious depletion of indigenous species.
3. To develop and manage the lands and waters of this county in a manner that will enhance, where possible, the production and public enjoyment of wildlife.
4. To develop and maintain public access to lands and waters and the wildlife resources thereon.

POLICIES:

1. Certainly one of the more controversial issues in the County has been the deer winter ranges. In light of the need to protect these sensitive areas and to be consistent with plan policies restricting rural sprawl, the Metolius, North Paulina and Tumalo Deer Winter Ranges shall be protected by special zones. The winter ranges shall be as designated on the Fish

and Wildlife Resource Maps contained in this plan's resource element. Within the winter ranges the minimum lot size shall be 40 acres. Planned developments (including cluster developments) may be permitted on parcels 160 acres or larger in size. However, man's activities must be limited to 20 percent of the development's lands with 80 percent left as open space. In the case of planned developments the density shall be determined by the underlying zone.

2. In the three deer ranges and along deer migratory routes all dogs shall be leashed or kenneled, and a County leash law shall be established which provides for effective enforcement by requiring fines sufficient to support administration.
3. While the new 10 acre rural minimum lot size will do much to protect the deer migration corridors, in instances where identified deer migration corridors are found to be largely unimpeded by development the minimum lot size shall be 20 acres.
4. Because public access to fish and wildlife areas is so important to the economic and livability aspects of Deschutes County, walking easements and periodic boat access points shall be provided in areas where public river access is limited, as determined appropriate by the County and State Department of Fish and Wildlife.
5. Consistent with Policy #4 and in order to protect the sensitive riparian areas, as well as to protect people and property from flood damage, the zoning ordinance shall prohibit development (except floating docks) within 100 feet of the mean high water mark of a perennial or intermittent stream

- or lake. Pre-existing lots unduly restricted by this requirement shall be eligible to apply for a variance with the usual filing fee. Variances shall also be possible where it is shown that the structure is removed from the riparian area because of a high bluff or steep slope.
6. In addition to state and federal laws, County ordinances shall require all identified nesting sites for eagles, ospreys, prairie falcons or other species listed on the official endangered species list shall be protected. An acceptable protection program for the nests or sites shall be created and used during and after construction of the development.
  7. Because the antelope and sage grouse populations require large amounts of open space, the minimum parcel size east of Horse Ridge (exclusive of the Brother, Hampton and Millican townsites) shall be 320 acres. This policy shall be reviewed for its effectiveness every two years.

Additional policies effecting fish and wildlife may be found in the Rural Development chapter.

86-12412

REVIEWED  
*KG*  
LEGAL COUNSEL

BEFORE THE BOARD OF COUNTY COMMISSIONERS OF DESCHUTES COUNTY, OREGON

1986 JUN 30 PM 4:16

An Ordinance Amending Ordinance No. 80-216, The General Plan For The Bend Area, As Amended, By Adoption Of Deschutes River Corridor Goals and Policies, Adopting Findings and Conclusions, And Declaring An Emergency. \*

MARY SUE PENNIGLOW  
COUNTY CLERK

VOL 72 PAGE 340

KEYPUNCHED

JUL 2 1986

ORDINANCE NO. 86-020

THE BOARD OF COUNTY COMMISSIONERS OF DESCHUTES COUNTY, OREGON, ORDAINS as follows:

Section 1. Ordinance No. 80-216, The General Plan For The Bend Area, as amended, is further amended by adoption of the "Goals and Policies", attached hereto as Exhibit "A" and incorporated by reference herein, as a chapter entitled "Deschutes River Corridor".

Section 2. Ordinance No. 80-216, The General Plan For The Bend Area, as amended, is further amended by adoption of the "Deschutes County/City of Bend River Study" as resource documents.

Section 3. The Board of County Commissioners adopts as its findings and conclusions supporting the amendment in Sections 1 and 2 of this Ordinance the Staff Report, dated May 21, 1986, relating to the Deschutes River Corridor.

Section 4. This Ordinance being necessary for the immediate preservation of the public peace, health and safety, an emergency is declared to exist, and this Ordinance takes effect on its passage.

DATED this 30<sup>th</sup> day of June, 1986.

BOARD OF COUNTY COMMISSIONERS  
OF DESCHUTES COUNTY, OREGON

*Lois Bristow Prante*  
LOIS BRISTOW PRANTE, Chair

ATTEST:

*Laurence A. Tuttle*  
LAURENCE A. TUTTLE, Commissioner

*Susan Stonema*  
Recording Secretary

*Dick Maudlin*  
DICK MAUDLIN, Commissioner

1 - ORDINANCE NO. 86-020

## GOALS AND POLICIES

VOL

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WildlifeGOALS

- A. Ensure the long-term protection and enhancement of wildlife, sensitive riparian habitat, and natural plant and animal communities along the Deschutes River and its tributaries.

Policies:

1. Deschutes County, in cooperation with the ODFW and USFS, shall modify land use practices and consider acquiring land or development rights where conflicts arise with any of the following:
  - a) Sensitive wildlife habitats necessary for feeding, nesting, reproduction, or rearing.
  - b) Sensitive elk and deer winter range habitat.
  - c) Sensitive elk and deer migration corridors.
2. Deschutes County, in cooperation with the ODFW and USFS, shall consider wetlands and riparian areas as sensitive wildlife habitat due to their scarcity and unique characteristics to serve a wide range of wildlife species and shall protect them. Modification/alteration of these areas may only be permitted in unique situations and after consultation with the ODFW.
3. Deschutes County shall support periodic or seasonal closures of roads, trails, or areas in sensitive wildlife areas to motorized vehicles. The County should also request the USFS to continue to support these closures in order to minimize human disturbance.
4. Deschutes County, in cooperation with the USFS and ODFW, shall protect and enhance lands containing sensitive wildlife habitat.
5. Deschutes County shall petition the Oregon Fish and Game Commission to close the Sheep Springs area to hunting during the bald eagle migration and feeding period.
6. Deschutes County shall promote and support educational programs on riparian natural history, river maintenance and courtesies, impacts of habitat alteration, and habitat disturbance by domestic animals and human activities.

7. Deschutes County shall request that the USFS and ODFW adopt a winter elk management plan for the Benham Falls elk herd. Emphasis should be given to identification of their sensitive habitat in order to minimize potential conflict with development and recreation activities.
8. Deschutes County shall support the continued consumptive and nonconsumptive use of wildlife.
9. Deschutes County shall support efforts by local conservation clubs to develop a waterfowl and wetlands habitat improvement program along the Deschutes River.
10. Deschutes County shall encourage and assist citizens, the Department of Forestry, USFS, and private landholders in adopting forest management practices along rivers and streams that consider the needs of wildlife, such as preserving snags, riparian cover, and other habitat characteristics that will maintain optimal use by wildlife. Desired changes in habitat conditions resulting from forest management practices should concurrently avoid adverse impacts to water quality and visual quality for the specific reach.
11. Deschutes County shall continue to use conservation easements as a means to preserve wildlife habitat.
12. Deschutes County shall adopt regulations pertaining to fill-and-removal of material in waterways and adjacent wetlands.

**BEFORE THE  
LAND CONSERVATION AND DEVELOPMENT COMMISSION  
OF THE STATE OF OREGON**

<b>IN THE MATTER OF PERIODIC REVIEW OF THE COMPREHENSIVE PLAN AND LAND USE REGULATIONS FOR DESCHUTES COUNTY</b>	) ) ) ) )	<b>REQUIRED AMENDMENTS REMAND ORDER 93-RA-883</b>
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This matter came before the Land Conservation and Development Commission on June 10, 1993 as a final periodic review order pursuant to former ORS 197.644, Oregon Laws 1991, Chapter 612, Section 8(1) and the Commission Periodic Review Rule, OAR 660, Division 19. The Commission, having fully considered Deschutes County's periodic review order, comments and objections of interested parties and the written report of the Director of the Department of Land Conservation and Development, now enters its:

Findings of Fact

1. For the reasons set out in the Department of Land Conservation and Development Director's May 21, 1993 report, considered, amended and adopted by the Commission on June 10, 1993 and incorporated herein (Exhibit T), the Commission finds that Deschutes County's periodic review order, comprehensive plan and land use regulations adequately address the periodic review factors (93-SUSTAIN-881) except as provided below:

**Requirements:**

**Factor One:**

1. Assess the cumulative effects of implementation actions on the protection of riparian habitat located within:  
(1) Landscape Management River and Stream corridors;  
(2) 100 feet of the ordinary high water mark of Perennial Streams; and (3) the Flood Plain Zone or Base Flood area. If the county finds that the cumulative effects of implementation actions has resulted in a significant loss of

inventoried riparian habitat, amendments to the plan and/or land use regulations will be necessary to comply with periodic review (OAR 660-19-055(1)).

**Factor Two:**

**Goal 3**

1. Revise the provisions regarding "secondary" and "ranch hand residences" to comply with ORS 215.283(1)(e) and ORS 215.263(7) as specified in this report.
2. Amend Section 18.96.040 of the Flood Plain (FP) Zone to require that a dwelling satisfy the standards for either a farm dwelling (OAR 660-05-030) or a nonfarm dwelling (ORS 215.283(3)).
3. Amend Section 18.96.040(G) of the FP Zone to include only those recreational uses allowed under ORS 215.283.
4. Either delete "public and nonprofit museums and exhibits" (Section 18.48.030(D)) as an outright permitted use in the OS&C Zone or adopt an exception to Goal 3.
5. Either delete the commercial and public recreational uses allowed as conditional uses in the OS&C Zone that are not allowed under ORS 215.283 (Sections 18.48.030(F) and (G)) or adopt an exception to Goal 3.
6. Amend the minimum lot size standards under the FP and OS&C zones to be consistent with the Goal 3 Rule.

**Goal 4**

1. Amend Section 18.96.040(C) of the Flood Plain Zone to require that dwellings satisfy the standards for either a forest management dwelling under OAR 660-06-027 or a nonforest dwelling under OAR 660-064-028.
2. Amend Section 18.96.040(G) of the Flood Plain Zone to include only those recreational uses allowed under OAR 660-06-025.
3. Either delete "public and nonprofit museums and exhibits" (Section 18.48.030(D)) as an outright permitted use in the OS&C Zone or adopt an exception to Goal 4.
4. Either delete golf courses (Section 18.48.030(D)) and the commercial and public recreational uses allowed as conditional uses in the OS&C Zone that are not allowed under OAR 660-06-025 (Sections 18.48.030(F) and (G)) or adopt an exception to Goal 4.
5. Either amend Section 18.48.040 of the OS&C Zone to be consistent with the requirements for new land divisions under OAR 660-06-026 or adopt an exception to Goal 4.

6. Amend the Flood Plain and Open Space & Conservation zones to include the siting standards and fire siting standards for structures and design standards for roads, as appropriate, under the Goal 4 Rule.

#### Goal 5

1. Either: (1) adopt a "1B" policy to inventory site specific scenic resources not currently protected by the Landscape Management Combining Zone and to complete the Goal 5 process prior to the next periodic review; or (2) reconsider the recommendation to adopt the "1B" policy.
2. Identify specific conflicting uses and evaluate the ESEE consequences of those conflicting uses for the inventoried sensitive bird habitat sites.
3. Revise the Sensitive Bird and Mammal Habitat Combining Zone to: (1) require that any special condition resulting from the site-specific ESEE analysis (e.g., setbacks, timing of activities, etc.) be applied as a condition of approval to the development approval; (2) clarify how a proposed action in the identified "sensitive" area triggers a review; and (3) delete the repetitive step in the review process (Section 18.90.050(A)) (See the attachment to the Director's report for suggested amendments to comply with Goal 5.)
4. Adopt a "1B" policy to inventory and complete the Goal 5 process for the Townsend's Big-eared Bat habitat site located south of Bend.
5. Revise the ESEE analysis for wetlands and riparian habitats to explain why some provisions are applied to certain riparian habitats and not to others. For wetlands, revise the ESEE analysis (or adopt a separate ESEE) to clarify the regulations that protect the county's inventoried wetlands.
6. Amend the plan to clarify the status of Indian Ford Creek regarding riparian habitat protection.
7. Adopt a "1B" policy for the 19 historic sites designated as potential "1B" resources.
8. Complete the Goal 5 process for Bull Creek Dam and Tumalo Diversion Dam and Headgate identified as significant "1C" historic resources under Goal 5.
9. Adopt a plan policy and implementing measures, as appropriate, which ensure preservation of the six historic sites, designated as "2A" resource sites, and the one historic site designated as a "3A" resource site.
10. Adopt a "1B" policy that states when information is available on the location, quality and quantity of groundwater

resources, the county will determine the significance of the resource and complete the Goal 5 process for groundwater resources (OAR 660-16-000 (5) (b)).

Goal 8

11. Revise the map indicating where destination resorts may occur in the county (Ord. No. 92-002) and the "Comprehensive Plan Destination Resort Map and Zoning Map of Destination Resort Combining Zone" (Ord. No. 92-003) to exclude land within three miles of a high value crop area from being eligible for destination resorts, regardless of county boundaries as required by the remand from LUBA and the Court of Appeals in ARLUDeCo v. Deschutes County.

**Factor Three:**

Goal 12

1. Amend the Airport Height Combining Zone (Chapter 18.80) correcting goal deficiencies identified by the Oregon Aeronautics Division.

2. Based on the Director's report, as amended, the Commission finds that the additional work required to meet the above periodic review requirements can be completed by

**March 31, 1994.**

3. Issues raised by 1000 Friends of Oregon regarding the Supreme Court decision 1000 Friends of Oregon v. LCDC (Curry County), 301 Or 447, 724 P2d 268 (1986), shall be considered by the county and the Commission pursuant to LCDC's resolution of these issues (93-PR/POST-882).

Conclusion

Based on the foregoing findings and the Director's report, as amended, the Commission concludes that the comprehensive plan, land use regulations and periodic review order of Deschutes County require amendments as described in this order to meet statutory and rule requirements for periodic review.

THEREFORE, IT IS HEREBY ORDERED THAT:

1. Deschutes County must complete work on its comprehensive plan, land use regulations and periodic review order to meet statutory and rule requirements for periodic review as stated in the Director's report and adopted by the Commission.

2. The planning work required by the order must be resubmitted to the Director pursuant to OAR 660-19-075 to OAR 660-19-090, at the Department of Land Conservation and Development's Salem office, no later than March 31, 1994.

DATED THIS 18TH DAY OF AUGUST, 1993.

FOR THE COMMISSION:



Richard P. Benner, Director  
Department of Land  
Conservation and Development

**NOTE:** You are entitled to judicial review of this order. Judicial review may be obtained by filing a petition for review within 60 days from the service of this final order. Judicial review is pursuant to the provisions of ORS 183.482 and 197.650.

Copies of all exhibits listed in Attachment A are available for review at the Department's office in Salem.

RPB:DW/bh  
<orders>

ATTACHMENT A

Exhibits

Land Conservation and Development Commission Orders  
Deschutes County Periodic Review

93-SUSTAIN-881  
93-RA-883  
93-PR/POST-882

Exhibits

- A. Deschutes County comprehensive plan and land use regulations acknowledged by the Land Conservation and Development Commission (LCDC) on April 30, 1981.
- B. Oregon Court of Appeals decision remanding the Commission's 1981 acknowledgment order (Coats v. LCDC, 67 Or App 504 (1984)).
- C. Deschutes County comprehensive plan and land use regulations except for areas zoned surface mining and surface mining reserve and for mineral and aggregate resources under Goal 5 acknowledged by LCDC on January 30, 1986.
- D. Deschutes County comprehensive plan and land use regulations for mineral and aggregate resources under Goal 5 except for two surface mining sites acknowledged by LCDC on March 7, 1991.
- E. Deschutes County comprehensive plan and land use regulations for two surface mining sites acknowledged by LCDC on November 8, 1991.
- F. Oregon Court of Appeals decision affirming the Commission's 1991 acknowledgment order (Kinsey v. LCDC et al, 116 Or App 248 (1992)).
- G. The Department of Land Conservation and Development's (DLCD) notice to Deschutes County advising the county of periodic review process.
- H. Deschutes County's proposed periodic review order.
- I. DLCD comments on Deschutes County's proposed order.
- J. Alliance for Responsible Land Use in Deschutes County's (ARLUDeCo) appeal of the Director's decision to extend the county's periodic review schedule.
- K. LCDC's denial of ARLUDeCo's appeal.
- L. ARLUDeCo's petition for reconsideration.

- M. LCDC affirming the county's periodic review schedule.
- N. Deschutes County notice indicating their choice to remain under the "old" periodic review process.
- O. LCDC's approved periodic review schedule for jurisdictions remaining under "old" process.
- P. ARLUDeCo's second petition for reconsideration of LCDC's extension of the county periodic review.
- Q. ARLUDeCo's letter withdrawing their petition for reconsideration.
- R. Deschutes County final periodic review submittal.
- S. DLCD order 93-POST-861.
- T. May 21, 1993 Director's report.
- U. Written Exceptions to the Director's report.
- V. June 10, 1993, Goal 3 amendments to the Director's report.
- W. June 10, 1993, Goals 5 and 8 amendments to the Director's report.
- X. Written testimony presented to LCDC June 10, 1993.
- Y. Written Exceptions to the Director's June 10, 1993, amended report from 1000 Friends of Oregon, received June 21, 1993.

**NOTICE OF COMPLETED WORK TASK  
PERIODIC REVIEW**  
*See OAR 660-25-130*

JURISDICTION: Deschutes County FINAL DECISION DATE: July 20, 1994

DLCD WORK TASK #: 6 SCHEDULED SUBMITTAL DATE: July 29, 1994

**NOTE: THIS FORM SHOULD ACCOMPANY ALL PRODUCTS  
SUBMITTED AS PART OF A SPECIFIC WORK TASK IDENTIFIED ON  
AN APPROVED WORK PROGRAM**

**DESCRIPTION OF COMPLETED WORK TASK/PRODUCTS:**

Adoption of Ordinance 94-007 amending Resource Element of Comprehensive  
Plan to adopt amended ESEE findings and decision for riparian areas and  
wetlands.

LOCAL GOVERNMENT CONTACT: Catherine Morrow, Principal Planner  
Community Development Department  
1130 NW Harriman  
Bend OR 97701  
(503) 388-6575

Send to: Department of Land Conservation and Development  
1175 Court Street, N.E.  
Salem, Oregon 97310-0590

Local governments are required to provide notice of its action to person who participate in the local periodic review process and request such notice in writing (OAR 660-25-140(1)).

NOTE: If more copies of this form are needed, please contact the DLCD office at 373-0081, or the form may be duplicated on yellow paper.

<pr>wktask.fm



NOTICE OF FINAL PERIODIC REVIEW WORK TASK

DEPARTMENT OF  
LAND  
CONSERVATION  
AND  
DEVELOPMENT

August 4, 1994

TO: Subscribers of Final Periodic Review Work Task  
FROM: Micheal J. Rupp, Rural Plan Review Coordinator  
SUBJECT: Receipt of Work Task # 6 from Deschutes County regarding a revised ESEE analysis and a new wetland inventory.

Task #6 of the approved Deschutes County work program was received by the Department of Land Conservation and Development on July 27, 1994. Any objections to the attached work task must be received by DLCD by **August 25, 1994**.

In order to be considered valid, an objection to a work task must:

- (1) Be filed within the 21-day objection period;
- (2) Clearly identify an alleged deficiency in the work task;
- (3) Suggest specific revisions that would resolve the objection; and
- (4) Demonstrate that the objecting party participated at the local level orally or in writing during the local review process.

Local Government Contact: Catherine Morrow  
Phone: (503) 388-6575

DLCD Field Representative: Brent Lake  
Phone: (503) 388-6424

DLCD Task #6 Reviewer: Doug White  
Phone: (503) 373-0083

MJR/bh  
<nprntc>

Enclosures

cc: Periodic Review Assistance Team  
Catherine Morrow, Planning Director  
Brent Lake, Field Representative  
PR File  
Doug White, DLCD Task Reviewer  
Interested Parties

Barbara Roberts  
Governor



1175 Court Street NE  
Salem, OR 97310-0590  
(503) 373-0050  
FAX (503) 362-6705



# Community Development Department

Administration Bldg., 1130 N.W. Harriman, Bend, Oregon 97701

(503) 388-6575

Planning Division

Building Safety Division

Environmental Health Division

July 25, 1994

Doug White  
Department of Land Conservation and Development  
1175 Court Street NE  
Salem, Oregon 97310



Dear Doug:

Enclosed please find Ordinance 94-007 and the periodic review work task completion report form. This Ordinance is submitted as completion of Periodic Review Work Task number 6. The ordinance adopts a revised ESEE analysis for riparian areas and a new wetland inventory and ESEE analysis and decision. I have also included the staff reports to the Planning Commission and Board of County Commissioners.

We will be hiring someone in mid August to assist in completing Periodic Review Work Task 4, the riparian areas cumulative effects analysis.

Sincerely,  
DESCHUTES COUNTY PLANNING DIVISION

Catherine Morrow, Principal Planner

CDM:slr

DEPT OF  
JUL 27 1994  
LAND CONSERVATION  
AND DEVELOPMENT

REVIEWED  
BWW  
COUNTY COUNSEL  
OREGON

BEFORE THE BOARD OF COUNTY COMMISSIONERS OF DESCHUTES COUNTY, OREGON

- \*An Ordinance Amending \*
- \*The Deschutes County \*
- \*Comprehensive Plan Resource \*
- \*Element To Amend ESEE Conflict \*
- \*Analysis and Decision For \*
- \*Wetlands and Riparian Areas \*
- \*and Declaring An Emergency. \*

ORDINANCE NO. 94-007

WHEREAS, the Land Conservation and Development Commission issued a Remand Order 93-RA-883, requiring Deschutes County to amend the Deschutes County Comprehensive Plan Resource Element economic, social, environmental and energy consequence analysis (ESEE) for riparian areas and wetlands in order to comply with periodic review Factor 2; and,

WHEREAS, The Deschutes County Planning Commission conducted a public hearing on the amendment to the Riparian Area ESEE and the Wetland Area ESEE in the Resource Element of the Comprehensive Plan and has made a recommendation to the Board of County Commissioners, and the Board of County Commissioners has conducted a public hearing on the amendment; therefore,

THE BOARD OF COUNTY COMMISSIONERS OF DESCHUTES COUNTY, OREGON, ORDAINS AS FOLLOWS:

Section 1. That the Wetlands and Riparian Areas inventory and the ESEE analysis adopted by Ordinance 92-041 (p. 73 - 76) be deleted and replaced by the inventory and ESEE analysis contained in Exhibit "A", Riparian Areas, and Exhibit "B", Wetlands.

Section 2. SEVERABILITY. The provisions of this ordinance are severable. If any section, sentence, clause, or phrase of this ordinance or any exhibit thereto is adjudged to be invalid by a court or competent jurisdiction that decision shall not affect the validity of the remaining portions of this ordinance or exhibit thereto.

Section 3. CODIFICATION. County Legal Counsel shall have the authority to format the provisions contained herein in a manner that will integrate them into the County Code consistent with the County Legal Counsel form and style for ordinance codification. Such codification shall include the authority to make format changes, to make changes in numbering systems and to make such numbering changes consistent with interrelated code sections. In addition, as part of codification of these ordinances, County Legal Counsel may insert appropriate legislative history reference. Any legislative history references included herein are not adopted as part of the substance

of this ordinance, but are included for administrative convenience and as a reference. They may be changed to correct errors and to conform to proper style without action of the Board of County Commissioners.

Section 4. REPEAL OF ORDINANCES AS AFFECTING EXISTING LIABILITIES. The repeal, express or implied, of any ordinance, ordinance provision, code section, or any map or any line on a map incorporated therein by reference, by this amending ordinance shall not release or extinguish any duty, condition, penalty, forfeiture, or liability previously incurred or that may hereafter be incurred under such ordinance, unless a provision of this amending ordinance shall so expressly provide, and such ordinance repealed shall be treated as still remaining in force for the purpose of sustaining any proper action or prosecution for the enforcement of such duty, condition, penalty, forfeiture, or liability, and for the purpose of authorizing the prosecution, conviction and punishment of the person or persons who previously violated the repealed ordinance.

Section 5. EMERGENCY. This Ordinance being necessary for the immediate preservation of the public peace, health and safety, an emergency is declared to exist, and this Ordinance takes effect on its passage.

DATED this 20 day of July, 1994.

BOARD OF COUNTY COMMISSIONERS OF  
DESCHUTES COUNTY, OREGON

  
NANCY POHE SCHLANGEN, Chair

  
TOM THROOP, Commissioner

  
BARRY SLAUGHTER, Commissioner

ATTEST:

  
Anita Mutchie  
Recording Secretary

EXHIBIT "A" FOR ORDINANCE 94-007

RIPARIAN AREAS

Inventory

Riparian areas are areas adjacent to rivers, streams, lakes or ponds where there is vegetation that requires free or unbound water or conditions that are more moist than normal. Riparian areas form an interconnected system within a watershed. At the water's edge they define the transition zone between aquatic systems and terrestrial systems. Riparian areas often contain a diversity of vegetation not found in upland areas. Riparian areas are limited in Deschutes County and are important habitats for both fish and wildlife.

In Deschutes County significant riparian habitat is located in one or more of the following three areas:

1. The area within 100 feet of the ordinary high water mark of an inventoried river or stream.

The 100 foot wide area may contain both riparian vegetation and upland vegetation. Wetlands and flood plain are also frequently within 100 feet of a stream or river. In some cases the riparian vegetation may extend beyond 100 feet from the ordinary high water mark if it is a designated wetland or flood plain.

In forested areas, the Oregon Department of Forestry identifies the riparian management area along Class 1 streams as an area on each side of a stream averaging three times the stream width but not averaging less than 25 feet or more than one hundred feet.

The Oregon Department of Fish and Wildlife (ODFW) Land Use Planning Guide contains a section identifying protection policies and standards for various habitats and species. The recommended model ordinance for riparian areas in the handbook identifies a 100 foot area as measured from the ordinary high water line of all Class I and Class II streams.

2. The area adjacent to an inventoried river or stream and located within a flood plain mapped by the Federal Emergency Management Agency and zoned Flood Plain by the county.

The flood plain may extend beyond 100 feet from the ordinary high water mark of the stream and may contain wetland.

**3. The area adjacent to a river or stream and inventoried as a wetland on the National Wetlands Inventory Map.**

A riparian wetland may extend beyond 100 feet from the ordinary high water mark and may be included in a flood plain.

The county has not conducted an inventory of riparian areas adjacent to lakes and ponds on private land. However, many of these areas are included in the National Wetland Inventory Maps and are subject to County, State and/or Federal wetland fill and removal regulations. Riparian areas adjacent to the many lakes on federal lands are managed and protected under the federal land and resource management plans and are not included in the county inventory and are not considered in the ESEE analysis of conflicting uses.

The three areas described above are further identified in the Deschutes County/City of Bend River Study, the Federal Emergency Management Agency (FEMA) Flood Plain maps, the U.S. Department of the Interior National Wetlands Inventory maps, the Deschutes County Year 2000 Comprehensive Plan and Title 18 of the Deschutes County Code.

Deschutes County/City of Bend River Study

The Deschutes County/City of Bend River Study (1986) inventoried the following significant riparian habitat and completed an ESEE analysis of this habitat. The River Study inventory and ESEE analysis for riparian habitat are incorporated herein by reference.

The River Study resulted in adoption of a 100 foot setback for structures and septic systems, fill and removal regulations, provisions for conservation easements and prohibition of hydro-electric facilities on certain reaches of the Deschutes River and its tributaries.

**Riparian Area Inventoried In River Study (Table 6-2)**

STREAMS	ACRES
Deschutes River	1,440
Little Deschutes River	2,920
Paulina Creek	846
Fall River	43
Crooked River	38
Squaw Creek	47
Tumalo Creek	50
Indian Ford Creek	<u>573</u>
	5,966

FEMA Maps

The Federal Emergency Management Agency (FEMA) maps flood plain adjacent to the following rivers and streams. The flood plain along these rivers and streams is zoned Flood Plain (FP) by Deschutes County.

- Deschutes River
- Little Deschutes River
- Squaw Creek
- Crooked River
- Paulina Creek
- Long Prairie
- Dry River
- Spring River
- Indian Ford Creek

Portions of Indian Ford Creek and the Deschutes River near Sunriver have not been surveyed and mapped by FEMA. These areas are not zoned flood plain. However, the Flood Plain Zone, Title 18.96.020, states: "When base flood elevation data has not been provided in the flood insurance study, the Planning Division will obtain, review and reasonably utilize any base flood elevation or flood way data available from federal, state or other sources in determining the location of a flood plain or flood way."

National Wetlands Inventory Maps

The U.S. Department of Interior National Wetlands Inventory Maps are the county inventory of wetland habitat. These mapped wetlands are subject to county, state and federal fill and removal regulations.

Deschutes County Year 2000 Comprehensive Plan

The Deschutes County Year 2000 Comprehensive Plan, adopted in 1979, mapped riparian areas along the following rivers and streams.

<u>River or Stream</u>	<u>Ownership</u>
Deschutes River	Private/Federal
Little Deschutes River	Private/Federal
Fall River	Private/Federal
Tumalo Creek	Private/Federal
Three Creek	Private/Federal
Squaw Creek	Private/Federal
Trout Creek	Private/Federal
Dry Creek	Private/Federal
Cache Creek	Private/Federal
Indian Ford Creek	Private/Federal
Cultus River	Federal
Charlton Creek	Federal
Deer Creek	Federal

Cultus Creek	Federal
Quinn Creek	Federal
Fall Creek	Federal
Moore Creek	Federal

Title 18.88, the Wildlife Area Combining Zone, contained a provision which required advice from the Oregon Department of Fish and Wildlife to determine the minimum lot sizes in these mapped riparian areas. This provision was deleted from Title 18.88 by Ordinance 92-042 because it was not a clear and objective standard. The Comprehensive Plan map was repealed and replaced with a Wildlife Habitat Combining Zone Map that does not include mapped riparian areas.

Title 18 - Deschutes County Zoning Ordinance

Title 18.04.030 of the Deschutes County Code includes the following streams in the definition of "perennial stream." These streams, in addition to all those listed above, are subject to the 100 foot setback for structures and septic systems.

Perennial Streams Listed in Title 18.04.030

Alder Creek	Lake Creek - Middle Fork
Bottle Creek	Metolius Creek
Bridge Creek	Park Creek - East Fork
Brush Draw	Park Creek - West Fork
Bull Creek	Pole Creek
Cache Creek	Rock Creek
Charlton Creek	Snow Creek
Cultus Creek	Soap Creek
Cultus River	Spring Creek
Deer Creek	Soda Crater Creek
Dry Creek	Squaw Creek - North Fork
Fall Creek	Three Creek
First Creek	Todd Lake Creek
Full Creek	Trout Creek
Goose Creek	Tumalo Creek - North Fork
Indian Ford Creek	Tumalo Creek - Middle Fork
Jack Creek	Tumalo Creek - South Fork
Kaleetan Creek	

All of these streams, except portions of Indian Ford Creek, Cache Creek and Dry Creek, are located on federal land and are subject to either the Deschutes National Forest or the Bureau of Land Management Resource Management Plans.

### Location, Quality and Quantity

The extent of riparian area varies depending on the soil, terrain, aspect, vegetation and hydrology. In the south county, there are extensive areas of flood plain and wetland adjacent to the Deschutes and Little Deschutes Rivers. In the north county, where the Deschutes, Crooked River and Squaw Creek are located in canyons, the riparian area is typically a narrow band confined by the canyon.

Native wildlife depend on the limited riparian habitat. According to the Oregon Department of Fish and Wildlife, 37 percent of reptiles, 46 percent of birds and 69 percent of mammals use riparian habitat. Riparian areas are essential habitat for waterfowl and significant habitat for upland game birds including grouse, quail, mourning doves and pheasants. Many non-game species also depend on the riparian habitat. The riparian vegetation is also an important component of fish habitat to stabilize stream banks and provide shade to maintain desirable water temperatures. The riparian areas are used as migration corridors by deer and are travel corridors for many other species of wildlife.

The quality of the riparian areas is poor in some areas of the south county where extensive development on small lots has occurred along the Deschutes and Little Deschutes Rivers. Some land owners have removed native vegetation to the river's edge and constructed retaining walls and docks, planted lawns or have removed vegetation to enhance their view of the river.

Some grazing damage has occurred on isolated private tracts in the canyons of the Deschutes River and Squaw Creek and along Indian Ford Creek and the Little Deschutes River. However, where residential development or grazing has not occurred adjacent to the streams, the riparian vegetation is generally in fair to good condition.

The water level in the Deschutes River fluctuates because of storage and release of water for irrigation from Wickiup and Crane Prairie Reservoirs. The fluctuating water flows cause erosion and increased turbidity. Low flows during the fall and winter greatly diminish the size of wetted area and can render cover near the banks unsuitable for fish habitat. The low flows also create unstable streambank conditions leading to erosion. The timing and velocity of high flows during the spring and summer reduce the potential for revegetation of stream banks.

In forested riparian areas the width of the significant habitat area depends on the size (class) of the stream. The Oregon Department of Forestry (ODF) defines riparian habitat in three classifications: riparian area, riparian area of influence and riparian management area.

The ODF riparian area is the wet soil area next to streams lakes, and wetlands. These areas have high water tables and soils which exhibit characteristics of wetness. Water loving plants are often associated with these areas.

The ODF riparian area of influence is the transition area between the riparian area and upland vegetation. It contains trees which may provide shade or contribute fine or large woody material or terrestrial insects to a stream. It also may contain trees that provide habitat for wildlife associated with the riparian management area.

The ODF riparian management area is the area subject to the regulations in the Forest Practices Act administered by the the Oregon Department of Forestry along class I streams. The width of the riparian management area on each side of the stream is 3 times the width of the streams but not less than 25 feet or greater than 100 feet. This area usually includes a riparian area and riparian area of influence.

Commercial forest harvest operations are subject to the State Forest Practices Act and are not regulated by the county.

### Conflicting Uses Determination

Conflicting uses identified include:

1. Fill and removal of material, including vegetation, which could cause reduction in the size, quality or function of riparian habitat or cause destruction or degradation of the riparian vegetation.
2. Locating structural development in riparian areas can reduce the habitat and the use of structures could cause conflicts such as harassment or disturbance of wildlife dependent on the habitat.
3. Cutting of riparian vegetation can remove important shade from streams needed to maintain water temperature for fish, eliminate habitat for various waterfowl, furbearers, and nongame bird species and can also increase the potential for erosion or bank instability in riparian areas.

The county does not regulate commercial forest practices; they are regulated by the Oregon Department of Forestry.

4. Hydroelectric development can alter or destroy riparian habitat.
5. Locating septic systems in riparian area could cause pollution of ground and surface water systems. The potential for this conflict depends on the characteristics of the soil and hydrology.

The Department of Environmental Quality regulates the placement and construction of septic systems. The purpose of Department of Environmental Quality regulations (OAR 340-71) is to restore and maintain the quality of public waters and to protect the public health and general welfare of the people of the State of Oregon.

6. Recreational use of the riparian area including boat landing areas, formal and informal trails and camping areas can cause soil compaction and destruction of vegetation.
7. Overgrazing can cause bank erosion and destruction of riparian vegetation leading to increased siltation and higher water temperatures.

Farm use, including grazing is a permitted use in most zones outside of the rural service centers. ORS 30.930 to 30.947 contains "right to farm" provisions which prohibit right of action or claim for relief based on nuisance or trespass arising from a farm or forest practice. Therefore the county may not be able to regulate grazing activities in EFU or Forest zoned land.

- 8. Irrigation water storage, release and diversion alters the natural hydrologic cycles in riparian areas causing erosion and alteration of natural riparian vegetation.

The county does not have have control over storage, release, use or diversion of water. Water flows and water appropriation are regulated and administered by the Oregon Department of Water Resources.

- 9. Depending on the hydrology and geology of an area, wells in or adjacent to riparian areas could affect hydrology and alter the amount or quality of water in riparian areas.

The State Water Resources Department enforces state statute (ORS 537) and administrative rules (OAR 690) regarding construction and maintenance of wells. ORS 537.769 prohibits adoption of any ordinance, order or regulation by a local government to regulate the inspection or construction of wells.

- 10. Increase in density of residential lots in or adjacent to riparian areas could result in a decrease of habitat effectiveness because of disturbance to wildlife.

The minimum lot size for land adjacent to riparian areas outside of urban growth boundaries and rural service centers is determined by zone as follows:

ZONE	MINIMUM LOT SIZE
Exclusive Farm Use	
Farm Parcel	23 acres irrigated land or more
Nonfarm Parcel	20 acres
Forest Zone	80 acres
Multiple Use Agriculture	10 acres
Rural Residential	10 acres
Flood Plain	
Exception area	10 acres
Non-exception area	80 acres

The Board finds that new parcels meeting the minimum lot size in the resource zones (Exclusive Farm Use, Forest, Non-exception Flood Plain) will not cause an increase in residential density that would conflict with riparian habitat values.

Fifty-one new 10 acre parcels could potentially be created in the Rural Residential, Multiple Use Agriculture and Flood Plain zone found adjacent to inventoried riparian areas. This number does not include a 376 acre property along Tumalo Creek with over a mile of creek frontage. The potential land divisions are distributed as follows:

<b>LOCATION</b>	<b>POTENTIAL NUMBER OF NEW PARCELS</b>
Squaw Creek	14
Indian Ford Creek	16
Little Deschutes River	4
Deschutes North of Bend	5
Deschutes South of Bend	12
Tumalo Creek	Undeveloped 376 acre parcel, One mile of creek frontage

Creation of new 10 acre parcels would not significantly increase the overall density of residential use adjacent to riparian areas because the areas where new parcels could be created, with the exception of Tumalo Creek, are already divided into lots considerably smaller than 10 acres.

**Economic, Social, Environmental and Energy Consequences of Conflicting Uses**

Although there may be economic, social, environmental and energy consequences of 1) permitting or limiting water flow; 2) grazing in the Exclusive Farm Use zones; 3) the number and location of wells; or 4) commercial forest practices in riparian areas, regulation of these conflicting uses is not within the jurisdiction of the county. Therefore, the following ESEE analysis does not consider the consequences of permitting or limiting these conflicting uses.

**Economic Consequences:**

A positive economic consequence of limiting conflicting uses is the protection of habitat which will maintain or increase the fish and wildlife populations, vegetation diversity and the natural quality of the areas. Abundant wildlife and natural areas are a main reason tourists visit the county.

The maintenance of riparian habitat may increase the value of private property because of the aesthetic values often associated with natural areas and wildlife. However, requiring retention of riparian vegetation on residential land adjacent to rivers and streams may reduce the value of the property depending on the preferences of potential buyers.

An economic consequence of limiting removal of riparian vegetation including timber could be a reduction in material available for the timber industry. Prohibiting forest management in riparian areas could also increase the incidence of tree mortality and fire hazard due to insect infestation which could result in increase cost for controlling wildfire.

Maintaining riparian vegetation can stabilize stream banks and thereby prevent loss of land due to erosion.

Restricting or regulating recreational development in riparian areas could have an economic consequence because fewer sites would be available for tourists.

Owners of property zoned for 10 acre minimum lot sizes would face a reduction in the potential value of their property if they were prohibited from dividing their property adjacent to riparian areas.

**Social Consequences:**

The positive social consequence of limiting conflicting uses is the protection of habitat which has aesthetic qualities appreciated by both county residents and tourists. Limiting conflicting uses also helps maintain wildlife populations which are valued by county residents and visitors.

Limiting conflicting uses such as docks, decks, and other structures could prevent someone from developing their property in a manner they desire. Restricting removal of native vegetation may prevent property owners from increasing their view of a river or stream or prevent them from developing introduced landscaping including lawns.

Limiting public improvements such as trails, campgrounds, public boat launching facilities could result in more crowding in existing facilities and an inability to expand existing or develop new facilities for recreation.

Limiting land division in exception areas to create new parcels in, or adjacent to, riparian areas would have a social consequence of reducing the number of potential homesites in areas that are zoned for residential development. The positive social consequence would be retention of larger areas of open space free from development. The current minimum lot size in exception areas is 10 acres. In the Rural Residential and Multiple Use Agriculture Zone (exception areas) there is the potential to create a approximately 51 new parcels adjacent to riparian areas. However, it is unlikely that this many new parcels will be created because of limitations of topography, access and flood plain and the desire of owners for parcels larger than 10 acres.

#### Environmental Consequences:

The environmental consequences of limiting conflicts with riparian habitat are positive. The habitat would be retained or enhanced which results in stable and diverse fish and wildlife populations and high water quality for fish. Limiting fill and removal activities associated with construction projects and stream bank stabilization will maintain water quality for people and wildlife.

Strictly prohibiting management of forest vegetation in riparian areas could lead to increased fire hazard due to increased fuel build up and tree mortality from insect infestations. Wildfire could be an environmental consequence leading to destruction of vegetation and damage to soil causing increased erosion.

#### Energy Consequences:

Limiting hydroelectric development as a conflicting use could reduce the opportunity for hydroelectric energy production and require that power be produced from other sources.

Additional information and ESEE analysis is provided in the Deschutes County/City of Bend River Study, Chapter 6 and the River Study Staff Report which are incorporated herein by reference.

**Conclusion:**

Based on the above ESEE analysis and the ESEE analysis found in the Deschutes County/City of Bend River Study, consequences should be balanced to allow the conflicting uses but in a limited way in order to protect the resource to the desired extent (OAR 660-16-010(3)).

## Program To Achieve Goal 5 For Riparian Habitat

### Policies and Goals

The Deschutes County/City of Bend River Study resulted in the amendment of the Comprehensive Plan to include a chapter entitled Deschutes River Corridor (Ordinance 86-019). Goals and policies in the Water Resource, Open Space, Recreation, Fish, and Wildlife sections of this chapter address riparian habitat protection and enhancement.

The Fish and Wildlife chapter of the Comprehensive Plan has a policy (Policy #15) to retain and encourage public ownership of significant fish and wildlife habitat and riparian areas. The Water Resources chapter contains policies to protect water quality and reduce erosion (Policy #9).

### Zoning Ordinance

Deschutes County has numerous zoning regulations which serve to protect the riparian resource. Not every regulation applies to every inventoried stream. Some of these regulations were adopted primarily to protect other Goal 5 resources; however, they also provide some protection of riparian resources as well.

For example, the Landscape Management Zone (LM) was adopted to protect scenic and open space values as seen from the designated rivers and streams, but it also has provisions to retain riparian vegetation with a conservation easement within 10 feet of the ordinary high water mark. The fill and removal regulations protect wetlands which are frequently riparian areas. Other regulations such as flood plain restrictions were adopted to reduce hazards but also serve to prohibit most development in riparian areas which are also flood plain zones.

The regulations which apply to conflicting uses in riparian areas are discussed below along with a description of the rivers and streams where each regulation applies. The following two provisions apply to all rivers and streams identified in the inventory:

1. In all zones the county zoning ordinance requires a 100 foot setback from the ordinary high water mark of all streams or lakes for all sewage disposal installations and structures. No structures, septic tanks or drain fields are permitted within 100 feet of any inventoried River Study or perennial stream.
2. In all zones a conditional use permit is required for fill and removal of any material, including vegetation, within a wetland or within the bed and banks of an inventoried stream. This provision applies to all wetlands mapped on the National Wetland Inventory Maps. The bed and banks of a stream is defined as the container below full bank stage plus the land 10 feet on either side of the container.

Flood Plain Zone - Title 18.96

Where the riparian area is zoned Flood Plain because it is mapped as flood plain on the FEMA maps, the regulations of Title 18.96 apply. Permitted uses in the flood plain are limited to agriculture, forest management, open space, and residential uses not containing structures. Conditional use permits are required for all other uses. One of the specific purposes of the zone is to conserve riparian areas and maintain fish and wildlife resources. The Flood Plain zone also regulates docks and piers and requires a finding that the structure will not cause the deterioration or destruction of wildlife habitat.

Landscape Management Zone - Title 18.84

The following rivers and streams are designated as Landscape Management streams and are subject to the provisions of Title 18.84, the Landscape Management Combining Zone.

Deschutes River  
Little Deschutes River  
Squaw Creek  
Crooked River  
Tumalo Creek  
Paulina Creek

Title 18.84.080(1) requires retention of vegetation to screen development which would be visible from the designated river or stream. This provision may protect riparian vegetation. The zone includes land within 1320 feet of a state scenic waterway (segments of Deschutes River) or a federal Wild and Scenic River (segments of Deschutes River and Squaw Creek), or within 660 feet of the other rivers and streams identified as landscape management.

Title 18.84.080.(10) requires a conservation easement for landscape management site plan reviews adjacent to the landscape management rivers and streams. The conservation easement includes the area 10 feet from the ordinary high water mark of the river or stream. The conservation easements shall not require public access.

Other Provisions in Title 18

Title 18.113.070(D), Destination Resort Zone, requires complete mitigation of any loss or net degradation of fish and wildlife resources from destination resort development.

Title 18.113.070(E), Destination Resort Zone, requires maintenance of riparian vegetation within 100 feet of streams rivers and significant wetlands in new destination resorts.

Title 18.116.220 requires a conservation easement as a condition of approval for all land use actions involving properties adjacent to the Deschutes River, Crooked River, Fall River, Little Deschutes River, Spring River, Paulina Creek Squaw Creek and Tumalo Creek in order to protect natural resources, natural values and water quality. The conservation easement includes all property within 10 feet of the ordinary high water mark of the river or stream.

Concurrent with the adoption of this inventory and ESEE analysis, the Board of County Commissioners has directed the Planning Division to begin the process to amend Title 18.116.220 to add Indian Ford Creek to the list of streams requiring a conservation easement as a condition of approval for land use actions involving properties adjacent to certain streams.

Title 18.128(V) establishes criteria for conditional use permits for development of hydroelectric facilities. This provision resulted from the Deschutes County/City of Bend River Study (Ordinance 86-018). The regulations require river enhancement and maintenance or enhancement of existing fish and wildlife habitats.

#### Federal Wild and Scenic River

Segments of the Deschutes River and upper Squaw Creek are designated as Federal Scenic Rivers. The U.S. Forest Service is in the process of developing a management plans for the Deschutes River. The county is participating in technical review committees developing the plan.

#### State Scenic Waterway

The Deschutes River, except for the portion adjacent to the Sunriver planned development, is designated an Oregon Scenic Waterway. Development within one quarter mile of state scenic waterways is subject to review by the Oregon State Parks and Recreation Department to assure compatibility with the scenic values along the river. New dams are prohibited. Although, the principle objective of the State Scenic Waterways is to protect scenic characteristics, a secondary benefit is retention of riparian vegetation for screening and scenic qualities.

#### Commercial Forest Practices

Commercial forest practices in riparian areas on private land are regulated by the Oregon Department of Forestry. Riparian area management on federal land is subject to either Bureau of Land Management or U.S. Forest Service land management plans.

#### Agricultural Practices

Agricultural practices including grazing are a permitted use in most zones. In the EFU zone, state statute prohibits

regulations that make farm practices a nuisance or trespass. Therefore, the county does not regulate farm practices.

Oregon Department of Fish and Wildlife

The Oregon Department of Fish and Wildlife (ODFW) Land Use Planning Guide identifies acceptable riparian protection ordinances in its Riparian Handbook for Planners. One of the referenced ordinances is Deschutes County's. The handbook specifically describes the 100 foot setback for structures and the Landscape Management Combining Zone as measures protecting riparian areas in Deschutes County.

EXHIBIT "B" FOR ORDINANCE NO. 94-007

WETLANDS

Inventory

Deschutes County Ordinance 92-045 adopted all wetlands identified on the U. S. Fish and Wildlife Service National Wetland Inventory Maps as the Deschutes County wetland inventory. Wetlands are those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal conditions do support a prevalence of vegetation typically adapted for life in saturated soil conditions.

Location, Quality and Quantity

The location and description of wetlands is shown on the U.S. Fish and Wildlife Wetland Inventory Maps. Wetlands in Deschutes County are found adjacent to rivers, streams, and springs, in low lying areas with soils that inhibit drainage, in and adjacent to natural and constructed lakes and ponds and as a result seepage from irrigation canals and distribution ditches.

Wetlands are identified by three indicators: hydrology (is the areas saturated or inundated with water at some time during the growing season); hydric soils (are the soils those that are commonly found in wetlands); and vegetation (is there a predominance of vegetation that commonly grows in wet areas). In the arid climate of Deschutes County, wetlands are essential habitat for waterfowl and significant habitat for upland game birds including grouse, quail, mourning doves and pheasants. Many non-game species also depend on the wetland habitat. The wetlands adjacent to rivers and streams are important hydrological components of the habitat for aquatic species.

Conflicting Uses Determination and Analysis

Conflicting uses include fill and removal of material, including vegetation, which could cause reduction in the size, quality or function of a wetland. Fill and removal in riparian wetlands can result in erosion and increased stream turbidity.

Locating structural development in wetlands would reduce the habitat and the use of the structure could cause conflicts such as harassment or disturbance of wildlife dependent on the habitat.

Draining wetlands for agriculture or other development purposes destroys the hydrological function of the wetland and alters the habitat qualities that certain wildlife depend on.

Cutting of wetland vegetation adjacent to streams can remove important shade for streams, eliminate habitat for various waterfowl, furbearers, and nongame bird species and can also increase the potential for erosion or bank instability in riparian areas.

Economic, Social, Environmental and Energy Consequences of Conflicting Uses

Economic Consequences:

The positive economic consequences of limiting conflicting uses are the protection of habitat which will maintain or increase the fish and wildlife populations and natural diversity. Abundant wildlife and natural areas are a main reason tourists visit the county. The maintenance of wetland habitat may increase the value of property because of the aesthetic values often associated with natural areas and wildlife.

Restriction of fill and removal in agricultural wetlands could create increased cost for normal maintenance of irrigation storage ponds.

Construction in wetlands would cost more than in upland areas because of the amount of fill required to make the ground dry and stable for construction.

Social Consequences:

The positive social consequence of limiting conflicting uses is the the protection of habitat which has aesthetic qualities appreciated by residents of the area and tourists. Limiting conflicting uses in riparian wetlands will help maintain water quality for wildlife and

Limiting conflicting uses could prevent a property owner from developing their property in a manner they desire.

Environmental Consequences:

The environmental consequences of limiting conflicts with wetland habitat are positive. The habitat would be retained or enhanced which results in stable and diverse fish and wildlife populations and high water quality for fish. There are no significant negative environmental consequences.

Energy Consequences:

Modifying or filling wetlands to allow development may require more use of equipment and fuel than comparable development on upland areas.

Additional information and ESEE analysis is provided in the Deschutes County/City of Bend River Study, Chapter 6 and the

River Study Staff Report which are incorporated herein by reference.

Conclusion:

Based on the ESEE analysis, consequences should be balanced to allow the conflicting uses but in a limited way in order to protect the resource to the desired extent.

Program To Achieve Goal 5 For Wetland Habitat

The Deschutes County/City of Bend River Study, the Deschutes County Comprehensive Plan and Title 18 of the Deschutes Code contain policies and regulations to limit conflicting uses.

Deschutes County/City of Bend River Study

The Deschutes County/City of Bend River Study resulted in the amendment of the Comprehensive Plan to include a chapter entitled Deschutes River Corridor (Ordinance 86-019). The following goals in the Deschutes River Corridor chapter of the Comprehensive Plan address wetland habitat:

**FISH**

7. Deschutes County shall adopt regulations pertaining to fill and removal of material in waterways and adjacent wetlands.
12. Deschutes County, in cooperation with the irrigation districts, USFS, ODFW, and Bureau of Reclamation, should explore means to restore and stabilize riparian and wetland habitats. Emphasis should be on stabilizing flows caused by water regulations. Consideration should also include, but not be limited to, bank erosion control revegetation programs, and elimination of inappropriate levels of riparian livestock grazing along rivers and streams.

**WILDLIFE**

4. Deschutes County, in cooperation with the USFS and ODFW, shall protect and enhance lands containing sensitive wildlife habitat.
9. Deschutes County shall support efforts by local conservation clubs to develop a waterfowl and wetlands habitat improvement program along the Deschutes River.
12. Deschutes County shall adopt regulations pertaining to fill and removal of material in waterways and adjacent wetlands.

## OPEN SPACE

1. Deschutes County shall include areas along the Deschutes River, Little Deschutes River, Crooked River, Spring River, Fall River, Tumalo Creek, Paulina Creek and Squaw Creek into the Landscape Management Zone. In these areas, the LM zone may include all riparian areas, wetlands and canyons.

Goals and policies in the Water Resource, Open Space, Recreation, Fish, and Wildlife sections of the Comprehensive Plan address riparian habitat protection and enhancement. Riparian areas in Deschutes County often contain wetlands.

### Title 18 - Deschutes County Zoning Ordinance

In all zones, the county zoning ordinance requires a 100 foot setback from the ordinary high water mark of all streams or lakes for all sewage disposal installations and structures. Wetland areas are often found within 100 feet of streams.

Title 18.128(W), Fill and Removal, establishes the criteria for the conditional use permit. All zones in the county outside of urban growth boundaries require a conditional use permit for fill and removal activity in a wetland or within the bed and banks of a stream or river. The criteria require: (1) review by the Oregon Department of Fish and Wildlife; (2) control of erosion; (3) minimizing disturbance of existing vegetation; (4) a determination that there is no practical alternative for development. A conservation easement is required as a condition for a fill and removal conditional use permit.

Title 18.120.050 establishes exceptions to the requirement for fill and removal conditional use permits. A conditional use permit is not required for fill and removal of less than 50 cubic yards for the purpose of removing diseased or insect-infested trees or shrubs, trees presenting a safety hazard or normal maintenance and pruning. An exception to the requirement for a conditional use permit may be granted for: (1) minor fill or removal for vegetative enhancement; (2) maintenance and repair of existing bridges, dams, irrigation facilities that will not alter the existing characteristics of the wetland; (3) maintenance of nonconforming structures or boat docks; (4) emergency actions to mitigate fill and removal violations in order to benefit fish and wildlife habitat; 5) fish and wildlife habitat enhancement projects approved or sponsored by the Oregon Department of Fish and Wildlife.

Title 18.96, Flood Plain Zone - protects wetlands within flood plains by requiring a conditional use permit for any development. One of the specific purposes of the zone is to conserve riparian areas and maintain fish and wildlife resources. The Flood Plain zone also regulates docks and piers

and requires a finding that the structure will not cause the deterioration or destruction of wildlife habitat.

Division of State Lands

The Oregon Division of State Lands requires permits to fill or remove more than 50 cubic yards of material from a wetland.

U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers administers federal regulations on fill and removal in wetlands. A federal permit may be required for fill and removal of material in a wetland.

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FILED  
NOV 1 1979  
ROSEMARY PATTERSON, CO. CLERK

IN THE BOARD OF COUNTY COMMISSIONERS  
OF THE STATE OF OREGON  
FOR DESCHUTES COUNTY

In the Matter of an Ordinance )  
Establishing a Comprehensive )  
Plan for Deschutes County )

ORDINANCE NO. PL-20

The Board of County Commissioners of Deschutes County, a political subdivision of the State of Oregon ordains as follows:

1. The Deschutes County Year 2000 Plan as amended to the date hereof (herein referred to as "The Plan"), is adopted pursuant to ORS 203.045 , 215.050, and 215.060 as the Comprehensive Plan for Deschutes County. A true copy of said Plan is attached hereto as Exhibit "A," incorporated herein by reference. The Map entitled "Deschutes County Comprehensive Plan", attached hereto as Exhibit "B," and signed on the date hereof by the Board of County Commissioners (herein referred to as "The Board"), is adopted as part of the Comprehensive Plan for the lands shown therein.

2. Quasi-judicial amendments may be made to The Plan in accordance with the procedures described in ORS Chapter 215, and County Procedural Ordinance PL-9 and subsequent amendments and revisions thereof.

The Map referred to herein shall be maintained by the County Clerk, and any quasi-judicial amendments thereto shall contain legal descriptions of the affected areas, be filed in the Journal of the Board of County Commissioners, and shall become effective upon the date signed by The Board. The Planning Director shall maintain a true copy of the original map and draw thereon all quasi-judicial amendments to The Plan, as they are made by The Board.

Failure so to revise said Map shall not affect the validity of any Plan amendment. The Board may, from time to time, direct the Planning Director by order to replace Exhibit "B" or a portion thereof with a map which includes all lawful amendments to The Plan to the date of said order. Such map, or portion thereof, shall bear the dated, authenticating signature of The Board, and shall be filed as a replacement superseding Exhibit "B" with the County Clerk. Any map or portion thereof thereby replaced shall be retained in a separate file by the County Clerk.

3. In that the Land Conservation and Development Commission of the State of Oregon has required Deschutes County to adopt a Comprehensive Plan for Deschutes County by November 1, 1979, in order to be in compliance with Statewide planning goals affecting the health, safety and general welfare of the public, an emergency is declared to exist, and this ordinance, pursuant to ORS 203.045(9) shall take effect upon adoption.

ADOPTED this 1st day of November, 1979.

BOARD OF COUNTY COMMISSIONERS

*Clay Chapman*  
CHAIRMAN

*Robert C. Larson, Jr.*  
COMMISSIONER

\_\_\_\_\_  
COMMISSIONER

ATTEST:

*[Signature]*  
County Clerk



**FILED**  
NOV 1 1979  
ROSEMARY PATTERSON, CO. CLERK

F I N A L

D E S C H U T E S C O U N T Y

G O A L E X C E P T I O N S T A T E M E N T

## INTRODUCTION

The purpose of this document is to identify the lands where Deschutes County shall request the Oregon Land Conservation and Development Commission grant an exception to meeting the requirements of either Planning Goal 3 (Agricultural Lands) or Goal 4 (Forest Lands). Further, this statement shall also explain, the findings and reasoning which justifies such an exception be granted.

During the preparation of the Deschutes County Comprehensive Plan it became apparent that many of the rural areas in the County had already received substantial development. These lands have largely been sold and become committed to non-resource uses. The County's plan is to restrict future division of the resource lands while recognizing that development which exists, and establishing a more efficient development pattern.

Because of the rural development there have been created rural service centers to provide necessary public (i.e. schools) and private services to the rural population. These service centers reduce transportation requirements and serve as a focus for social and some economic activities. Deschutes County has chosen to emphasize the rural service centers as the appropriate location for the services and facilities needed by the rural residents and to encourage most additional rural residences to be constructed in the rural service centers. This development of the service centers would then permit some limited rural living opportunities, while ensuring they occur in areas of existing development at higher densities, compatible with the rural environment and consistent with future transportation and utility networks. To accommodate the rural service centers some of the less productive resource lands are being committed to non-resource uses. The commercial areas are those

lands already developed or committed to commercial use, while the residential areas are relatively small surrounding areas where some development has already occurred.

The other areas being used for non-resource uses are those lands included within the urban growth boundaries. Each of the three urban areas has identified an urban growth boundary (UGB). Inside the UGB the ultimate use of the land is to be of an urban nature. Each urban area plan contains the findings and reasoning which justifies the lands contained within that UGB; therefore, this statement will not address resource lands which are included in the urban areas.

The flexibility which the exceptions process permits will allow Deschutes County to accommodate the existing and future needs of the County's ever-growing population, while serving as a base upon which the County can construct its plans for the protection of the resource lands which are so important to the local economy and environment.

## METHODOLOGY

To determine where an exception to the state goals is required it was first necessary to obtain adequate data as to the location of the lands with agricultural and timber capabilities. The Resource Element of the Deschutes County Comprehensive Plan contains maps which reflect the information that was gathered, and serves as much of the basis by which the County has determined what lands have agricultural and/or forest capabilities.

## Agricultural Lands

One of the most hotly debated issues in the preparation of the Deschutes County Plan was agricultural lands. Considerable testimony and evidence was submitted which indicated that the County is a relatively marginal agricultural producer. Other information pointed to the livestock capability of the area and the stability of agricultural production locally.

Complicating the issue further was (and is) a lack of detailed soils information, which would have permitted the identification of lands with agricultural capability Classes I - VI. The General Soil Map that was available for the county-wide area did not reflect the character of the soils locally. Much of the soil in the western and southern areas of the County is derived from pumice and ash that has been deposited in depressions in the underlying basalt. The result is pockets of soil with adequate rooting depth intermixed with some very low productivity areas. The result is certain areas, such as Lower Bridge, Terrebonne, Cloverdale, Alfalfa, Tumalo and Redmond have a mixture of cropland, rangeland and non-productive land. Other areas do not have the cropland and may find the rangeland varying in its ability to support livestock.

An example of the difficulty in using the General Soils Map is the Deschutes-Deskamp Association which has the best agricultural capabilities in the County. Of that association six percent of the soils have "good" irrigation capability (the rating system uses excellent, good, fair, poor and very poor). "Fair" soils constituted 89 percent of the soils and the rest are poor or very poor. Yet a look at the topsoil capabilities of the soil indicate 50 percent is "good", "fair" is 12 percent, while "poor" is 38 percent. A look at the U.S. Soil Conservation Service data indicates the Deschutes Soils are generally class VI but can be classed as II and III when irrigated, while Deskamp Soils are classes III and IV when irrigated and otherwise class VI. Some other less productive soils also are part of this association. What this seems to indicate is that even in the "best" County soils the agricultural capability is limited, there is considerable mixing with poor soils and that without irrigation water the land is only suitable for livestock. Obviously, what was needed was more detailed soils mapping.

The local SCS office was able to furnish the County Planning Department with detailed soils mapping and agricultural capability maps for only that portion of the County near Terrebonne, Redmond, Bend and Tumalo. This small area constituting only a portion of the known agricultural lands. To supplement the soils information the County obtained high altitude infra-red photography of the County, which clearly revealed the irrigated lands. Since crops require irrigation in Central Oregon this information could be relied upon to have identified the cropland areas. To determine the rangeland areas the County Assessor's records were surveyed to obtain all lands on farm tax deferral. Because the County had an active deferral program it was determined that combining the soils, irrigated lands and farm deferral information would produce a reasonable representation of all the private agricultural lands in the County. Public lands in agricultural areas were assumed to be agricultural.

for purposes of zoning while public lands in forested areas were assumed to be timber areas, unless some toher use was known to exist on a particular site.

Using the preceding information and assumptions, the County was finally able to determine the local agricultural lands in an objective and empirical manner.

#### Forest Lands

The identification of lands with timber producing capabilities was not chacterized by as much controversy. Working with the Oregon Department of Forestry, the County Planning Staff utilized a document entitled, A Technique for Mapping Forest Land by Site Productivity Using Soil Survey Information. The techniques supplied by this document, coupled with the experience of local ODOF foresters, permitted the drafting of the Timber Productivity Map, which can be found on page 86 of the Comprehensive Plan's Resource Element. Utilizing this map, it was possible to determine the lands with commercial timber potential (High-site Class 4 through Moderate-site Class 6). It was immediately apparent that the Lapine and Black Butte areas, which have received significant recreational and rural development, were going to be in conflict with the requirements of the Forest Lands Goal. However, before taking any formal action, it was necessary to determine the extent of the lands already developed, and what remained to be utilized for timber.

EXCEPTIONS ANALYSIS

To determine which lands are already committed to development, aerial photography at a scale of 2" = 1 mile was obtained and used as a base map. Areas of concern not covered by the aerial photography were few and in these instances, other maps were obtained.

Lapine - First the public lands were identified. Since these areas are to be zoned for timber, they were excluded from consideration.

Next private agricultural and timber lands were identified and marked for an appropriate zone complying with the state goals. Thirdly, all lands upon which a house had been constructed, were identified. And, finally, all lands which had been subdivided or partitioned into parcels less than 10 acres in size, were added to the map. The result was a series of overlays indicating which areas are substantially committed to residential development; committed to timber or agriculture; and, uncommitted. In the Lapine area these categories amount to the following:

Residential Committed . . . . .	13,048 acres
Resource Committed . . . . .	18,232 acres
Uncommitted . . . . .	4,860 acres

Redmond - The major concern in the northern portions of the County was compatability with the Agricultural Lands Goal. Again, on the aerial photo base map, the private and public lands were identified. The public lands were marked for agricultural (or other resource) use. Lands which met the agricultural definition (SCS Class I -VI soils, or where detailed soils information was unavailable, identification as having obtained Farm Tax Deferral in the five years preceding the plan or found under irrigation as shown on the County's Irrigated Lands Map) were determined. Then the houses which had been constructed and the

lands which had been subdivided were added. From the resulting map, it was possible to determine those areas where substantial development had taken place, and therefore, to be identified as committed lands. In areas where agriculture continued to be the predominant use, the development was seen as not committing the area to further division and the area was to be zoned as an agricultural district.

In addition to the agricultural and forest lands, there is in addition, a 56 acre parcel containing aggregate deposits which is being excepted in the Tumalo area. This parcel is surrounded on three sides by existing residential development which would be incompatible with mining the resource, particularly when alternative aggregate sites exist.

The Redmond Map reflects the following figures:

Residential Committed . . . . .	16,868 acres
Resource Committed . . . . .	71,059 acres
Uncommitted . . . . .	14,780 acres

Bend - The process followed in the Bend area was the same as that for the Redmond area and the results were very similar, although even more residential development has occurred because of proximity to the City of Bend:

Residential Committed . . . . .	9,894 acres
Resource Committed . . . . .	46,718 acres
Uncommitted . . . . .	7,815 acres

In addition to the preceding, 95,227 acres East of Horse Ridge are being designated for Exclusive Farm Use. The remainder of the private lands in the County are either in private forest lands being protected for timber production or within one of the three urban growth boundaries.

Near the Bend Urban Growth Boundary an additional 360 acre area originally identified as Surface Mining Reserve has been changed to agricultural because of testimony indicating incompatibility with surrounding development. There also existed testimony that other sites were available which would not be so offensive.

## EXCEPTION AREA PLAN

It is apparent that Deschutes County has had significant rural development in the past. From the perspective of the state land use goals, perhaps this rural area growth is unfortunate, however, it is an existing reality. The County's efforts shall be aimed at recognizing those areas that are committed and servicing them in the most efficient and equitable manner possible. On the other hand, there are also policies in several sections of the Comprehensive Plan (particularly the Rural Development Agriculture, Forest Lands and Public Facilities chapters) which seek to prevent further losses of resource lands. Each of the three areas is dealt with separately and a program drafted to fit that area's particular needs. The major differences in the programs largely result from whether they involve agriculture or forest land.

## LaPine

The subdivisions in Lapine are characterized by small lots (one acre or less) and to a great extent have already been sold. Some have been purchased for retirement, others for speculation and some for an immediate permanent residence. In those areas where subdivision, construction and existing rural services have largely committed the land to residential use (see Lapine Map) Deschutes County proposes to zone the area for rural residential, rather than forest lands. The rural residential zone would permit the construction of homes, but the new 10 acre minimum lot size would prevent further significant division. These areas would then satisfy the need for recreational and lower cost rural lots in the County. Other County actions to encourage clustering, foster adequate public facilities and prevent development

in hazardous or resource areas, would ensure the growth of the area is consistent with appropriate economic, social, environmental and energy considerations (see the Rural Development chapter of the Comprehensive Plan).

Resource areas would be committed to resource use, as would be the uncommitted lands. The encouragement of small-forest land management for the smaller acreage timber lands that can be found between the residential and large-ownership timber areas shall be a County policy. In this way the small timber owners are compatible with each adjoining use, while buffering the residential and timber areas from each other.

#### Redmond

On the committed lands the County will establish a Multiple Use Agricultural (MUA) Zone which will encourage the use of these lands as agricultural, although at a "hobby farm" or non-commercial level which requires a subsidy of the agricultural operation by employment elsewhere. Here again the County seeks to supply the need for rural living opportunities and the need to subsidize more marginal farm land by non-agricultural employment to maintain the area's farm production (see Agricultural chapter of the Comprehensive Plan). But equally important is the recognition that the development and services exist already and must be dealt with. County policies shall seek to encourage clustering of housing and to otherwise improve the efficiency of supplying services to these existing areas while preventing substantial increases in the rural population. Better review of proposed development

is also established with the new plan and ordinances to assure the long-range economic, social, environmental and energy effects are acceptable.

The MUA areas also serve to provide a buffer between residential and agricultural lands, while permitting some people to enjoy a rural lifestyle. More stringent enforcement of the goal would save little agricultural land and would not make farming more viable than will the proposed course of action. A stricter policy would certainly adversely effect a large segment of the population and raise serious questions in regard to the County's ability to satisfy state Land Use Goal 10 (housing), which requires the County to provide a variety of housing opportunities to meet the needs of the area's population.

#### Bend

The conditions in the area covered by the Bend map are the same as those in the Redmond area. Actions proposed for the Bend area are the same as the Redmond area.

#### Rural Service Centers

Rural service centers are a special situation. Originally established to provide needed public and commercial services to rural areas thereby increasing public services while receiving transportation costs, these centers have had mixed results. Some have been very useful in providing necessary facilities, while others have been used to foster sprawl.

One of the purposes of the new County Comprehensive Plan is to identify which of the existing rural service centers should be continued and where new ones shall be established. The plan identifies nine RSC's and leaves the possibility of another in the future as an option if needed. The nine

identified were; Alfalfa, Brothers, Hampton, LaPine, Millican, Terrebonne, Tumalo, Whistlestop and Wickiup Junction. Of these only Brothers, Hampton and Millican are not on the three aerial photo base maps. All the others except Alfalfa, are within the areas identified as having significant existing development and are designated as already committed to development.

Alfalfa is a special case in that existing development consists of a small store, a public school and a few nearby farm and non-farm residences. The land identified for the center is that containing the store and lands owned by the Central Oregon Irrigation District and Alfalfa Water Users Association. The expectation is that these lands will be needed for facilities necessary to the continued existence of Alfalfa, which may include some limited commercial use and residences (at a five acre density three houses would be permitted). No other sites exist for the location of the center and the land is not presently creating agricultural products. The proposed development would certainly be compatible with existing and proposed uses and consistent with the County's long-range environmental, economic, social and energy policies.

Brothers, Hampton and Millican are small communities along Highway 20, in the eastern portion of the County. Each community has small existing commercial and residential areas. These uses serve important functions for the residents of the area and transients through the area. Without these centers local residents would have a long (sometimes impossible) drive into Bend for gasoline, groceries, etc. The areas identified in the plan are those already in existence. Once again the County is simply recognizing that which exists. The centers are also important public service and social activity focal points. No alternative sites are available or desirable, and their anticipated environmental, social, economic and energy consequences are seen as beneficial.

TOTAL AREA

The total area to be excepted from the State Land Use Planning Goals is 39,810 acres. These lands are those residentially developed, committed to development or needed for rural service centers. Once again the County's purpose here is to recognize that which exists, while attempting to foster an efficient and equitable plan for the County's growth.

## CONCLUDING REMARKS

This exceptions statement is not meant to be an elaborate document. Deschutes County is not proposing large new areas for rural development. The primary concern is simply to acknowledge the development which exists, and to seek reasonable ways to deal with those committed lands. Many areas which have some development, but not enough to justify identification as committed lands, have been placed in resource zones which will permit non-resource uses only by conditional use on non-productive sites. Only those areas with significant amounts of development have been identified and the County has developed policies to promote greater efficiency in the growth of those areas. In light of County policies encouraging other alternatives (i.e rural service centers and urban plans) when combined with increasing service and energy costs, it is anticipated actual development will not actually use all the excepted areas. To obtain approval of any future rural development will be more difficult than in the past, and shall be compatible with County needs and state planning goals.

# Deschutes County Comprehensive Plan

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## Section 5.10 Goal Exception Statements

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### Background

The purpose of this section is to identify the lands where Deschutes County demonstrated an exception to meeting the requirements of the Statewide Planning Goals. The intent of goal exceptions is to allow some flexibility in rural areas under strictly defined circumstances. Goal exceptions are defined and regulated by Statewide Planning Goal 2 and Oregon Administrative Rule 660-004 (excerpt below).

*660-004-0000(2) An exception is a decision to exclude certain land from the requirements of one or more applicable statewide goals in accordance with the process specified in Goal 2, Part II, Exceptions. The documentation for an exception must be set forth in a local government's comprehensive plan. Such documentation must support a conclusion that the standards for an exception have been met.*

### Statewide Planning Goals with Deschutes County Exceptions

- Goal 3 Agricultural Lands
- Goal 4 Forest Lands
- Goal 11 Public Facilities and Services
- Goal 14 Urbanization

Three types of exceptions are permitted by Oregon Administrative Rule 660-004

- Irrevocably committed
- Physically developed
- Reasons

The summary below identifies approved goal exceptions and identifies the adopting ordinance for those interested in further information. The ordinances listed are incorporated by reference into this Plan.

### 1979 Exceptions

#### *Comprehensive Plan entire County – PL 20 - 1979*

During the preparation of the 1979 Comprehensive Plan it was apparent that many rural lands had already received substantial development and were committed to non-resource uses. Areas were examined and identified where Goal 3 and 4 exceptions were taken. At this time exceptions to Goals 11 and 14 were not required.

The total area excepted was 41,556 acres. These lands were residentially developed, committed to development or needed for rural service centers.

### Additional Exceptions

#### *Bend Municipal Airport – Ordinances 80-203, 1980 and 80-222, 1980*

The Bend Municipal Airport received an exception to Goal 3 to allow for the necessary and expected use of airport property.

#### *La Pine UUC Boundary – Ordinance 98-001, 1998*

Exceptions to Goals 3, 11 and 14 were taken to allow lands to be included in the La Pine UUC boundary and planned and zoned for commercial use.

*Spring River Rural Service Center – Ordinances 90-009, 1990; 90-010, 1990; 96-022, 1996; 96-045,, 1996*

A reasons exception was taken to Goal 14 to allow the establishment of the Spring River Rural Service Center on residentially designated lands.

*Burgess Road and Highway 97 – Ordinance 97-060, 1997*

An exception was taken to Goal 4 to allow for road improvements.

*Rural Industrial Zone – Ordinances 2010-030, 2010; 2009-007, 2009*

Two separate ordinances for rural industrial uses. The 2009 exception included an irrevocably committed exception to Goal 3 and a reasons exception to Goal 14 with a Limited Use Combining Zone for storage, crushing, processing, sale and distribution of minerals. The 2010 exception took a reasons exception to Goal 14 with a Limited Use Combining Zone for storage, crushing, processing, sale and distribution of minerals.

*Prineville Railway – Ordinance 98-017*

An exception was taken to Goal 3 to accommodate the relocation of the Redmond Railway Depot and the use of the site for an historic structure to be utilized in conjunction with the Crooked River Dinner Train operations.

*Resort Communities – Ordinance 2001-047, 2001*

An exception was taken to Goal 4 for Black Butte Ranch and Inn of the 7<sup>th</sup> Mountain/Widgi Creek during the designation of those communities as Resort Communities under OAR 660-22.

*Barclay Meadows Business Park – Ordinance 2003-11, 2003*

A reasons exception was taken to Goal 3 to include certain property within the Sisters Urban Growth Boundary.

*Sisters School District # 6 – Ordinance 2003-11, 2003*

A reasons exception was taken to Goal 3 to include certain property within the Sisters Urban Growth Boundary.

*Sisters Organization of Activities and Recreation and Sisters School District #6 – Ordinance 2003-017, 2003*

A reasons exception was taken to Goal 4 to include certain property within the Sisters Urban Growth Boundary.

*Oregon Water Wonderland Unit 2 Sewer District – Ordinances 2010-015, 2010; 2003-015, 2003*

A reasons exception was taken to Goals 4 and 11 to allow uses approved by the Board of County Commissioners in PA-02-5 and ZC-02-3 as amended by PA-09-4.

*City of Bend Urban Growth Boundary Amendment (Juniper Ridge) – Ordinance 97-060. 1997*

An exception was taken to Goal 3 to allow an amendment of the Bend Urban Growth Boundary to incorporate 513 acres for industrial uses.

*Joyce Coats Revocable Trust Johnson Road and Tumalo Reservoir Road Properties – Ordinance 2005-015, 2005*

An irrevocably committed exception was taken to Goal 3 to allow a change of comprehensive plan designation from Surface Mining to Rural Residential Exception Area and zoning from Surface Mining to Multiple Use Agriculture for Surface Mine Sites 306 and 307.

*Watson/Generation Development inc – Ordinance 2005-015*

An exception was taken to Goal 3 to include a portion of agricultural property.

*Oregon Department of Transportation – Ordinance 2005-019, 2005*

An exception was taken to Goal 3 to include a portion of agricultural property.

*Conklin/Eady Property – Ordinance 2005-035, 2005*

An exception was taken to Goal 3 to include a portion of agricultural property.

*City of Sisters Property – Ordinance 2005-037, 2005*

An exception was taken to Goal 4 to include a portion of forest property.

*McKenzie Meadows Property – Ordinance 2005-039, 2005*

An exception was taken to Goal 4 to include a portion of forest property.

*Bend Metro Park and Recreation District Properties – Ordinance 2006-025*

A reasons exception was taken to Goal 3 to include a portion of agricultural property.

*Harris and Nancy Kimble Property and Portion of CLR, Inc Property A.K.A. the Klippel Pit Property – Ordinance 2008-001, 2008*

An irrevocably committed exception was taken to Goal 3 to allow reclassification and zoning from Surface Mine to Rural Residential Exception Area and Rural Residential 10 acre for Surface Mine Site 294.

*Sunriver Service District, Sunriver Fire Department – Ordinance 2014-021, 2014*

A reasons exception was taken to Goal 4 to include a portion of forest property. To ensure that the uses in the Sunriver Utility District Zone on the approximate 4.28 acre site of Tax Lot 102 on Deschutes County Assessor's Map 19-11-00 are limited in nature and scope to those justifying the exception to Goal 4 for the site, the Sunriver Forest (SUF) zoning on the subject site shall be subject to a Limited Use Combining Zone, which will limit the uses on the subject site to a fire training facility and access road for the Sunriver Service District and Sunriver Fire Department.

*Frances Ramsey Trust Property – Ordinance 2014-027, 2014*

An "irrevocably committed" exception was taken to Goal 14 to allow for reclassification and rezoning from agricultural property to Rural Industrial for a 2.65 acre portion of a parcel zoned EFU/RI.

## Nicole Mardell

---

**From:** Daniel, Katherine <katherine.daniel@state.or.us>  
**Sent:** Monday, August 05, 2019 2:40 PM  
**To:** Nicole Mardell  
**Cc:** Adair, Celinda; Jinings, Jon; Crall, Matthew; Mansolillo, Robert; Edelman, Scott; William Groves  
**Subject:** RE: PAPA submission for 247-19-000530-TA/533-PA Floodplain Ordinance  
**Attachments:** PAPA response to Deschutes Co 247-19-000530-TA 533-PA 20190805.pdf

Good afternoon, Nicole

Please find attached the review of the referenced amendment to the Deschutes County code. All those on the DLCD Review Team are copied herein.

The two other proposals (247-19-000531-TA and 247-19-000532-TA) did not contain elements related to the NFIP, so no comments on those were provided.

Yours,  
Katherine



**Katherine Daniel, AICP, CFM**

Natural Hazards Planner | Planning Services Division  
Oregon Department of Land Conservation and Development  
Direct: 503-934-0010 | Main: 503-373-0050



# Oregon

Kate Brown, Governor

Department of Land Conservation and Development

635 Capitol Street NE, Suite 150

Salem, Oregon 97301-2540

Phone: (503) 373-0050

Fax: (503) 378-5518

[www.oregon.gov/LCD](http://www.oregon.gov/LCD)



August 5, 2019

Ms. Nicole Mardell, Assistant Planner  
Deschutes County Community Development  
117 NW Lafayette Avenue  
Bend, OR 97708

Re: Submission 247-19-000530-TA / 533-PA

Dear Ms. Mardell;

Thank you for the opportunity to comment on the proposed amendments to the Deschutes County Code Chapter 18.04.030 Definitions and Chapter 18.96 Flood Plain Zone – FP through the Post Acknowledgement Plan Amendment (PAPA) process. The proposed revisions were based on the minimum standards of the National Flood Insurance Program in the 2014 Oregon Model Flood Damage Prevention Ordinance. Please note that DLCD has prepared a new model ordinance, and FEMA is in the process of reviewing and approving the new model ordinance. We recommend that the county consider postponing this amendment so that it can be based on the updated model ordinance, and the county will not need to amend the county code again.

If the county prefers to proceed with an amendment based on the 2014 model ordinance, the following revisions highlighted in yellow are recommended.

In Chapter 18.04.030 Definitions

"Substantial improvement" means any repair, reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the ~~true-cash~~ market value of the structure either:

- A. Before the improvement or repair is started; or
- B. If the structure has been damaged and is being restored, before the damage occurred. For the purposes of this definition, "substantial improvement" is considered to occur when the first alteration of any wall, ceiling, floor or other structural part of the building commences, whether or not that alteration affects the external dimensions of the structure. ~~The term does not, however, include either;~~  
The term does not, however, include either:

- A. Any project for improvement of a structure to comply with correct existing violations of state or local health, sanitary or safety code specifications which have

- been identified by the local code enforcement official and which are solely the minimum necessary to assure safe living conditions; or  
B. Any alteration of a structure listed on the National Register of Historic Places or a State Inventory of Historic Places provided that the alteration will not preclude the structure's designation as a 'historic structure'.

In Chapter 18.96.080 Criteria to Evaluate Conditional Uses, subsection G.3

3. ~~Exception for Small Accessory Structures~~

If you have any questions or concerns about any of this, please contact me.

Yours,

*Katherine*



**Katherine Daniel, AICP, CFM**

Natural Hazards Planner | Planning Services Division  
Oregon Department of Land Conservation and Development  
635 Capitol Street NE, Suite 150 | Salem, OR 97301-2540  
Direct: 503-934-0010 | Main: 503-373-0050  
[katherine.daniel@state.or.us](mailto:katherine.daniel@state.or.us) | <https://www.oregon.gov/LCD>

**From:** [Punton, Amanda](#)  
**To:** [Nicole Mardell](#)  
**Cc:** [Edelman, Scott](#)  
**Subject:** DLCD comment on 247-19-000531-TA (DLCD File # Deschutes Co. PAPA 008-19)  
**Date:** Wednesday, August 07, 2019 5:25:13 PM  
**Attachments:** [Ideas for clear and objective riparian standards.docx](#)

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Ms. Mardell,

Please include this email, with attachment, in the record for the Planning Commissioners review of amendment to Deschutes County Zoning Ordinance, section 18.128.200.

The proposed amendment to section 18.128.200 is intended to implement findings in the county's analysis of the economic, social, environmental and energy (ESEE) consequences of allowing new uses that might conflict with locally-identified Goal 5 significant riparian resource sites. Oregon Administrative Rule 660-023-0050 requires that protection measures, implementing findings of an ESEE analysis, be clear and objective. Crafting clear and objective standards to implement an intended level of protection can be a challenging task. My suggestions are offered to support the county efforts to draft final code amendments.

Please contact me if you have any question or would like additional technical assistance on this matter.

Sincerely,  
Amanda Punton



**Amanda Punton**

Natural Resource Specialist  
Oregon Department of Land Conservation and Development  
800 NE Oregon Street, Suite 1145 | Portland, OR 97232  
Direct: 971-673-0961 | Main: 503-373-0050  
[www.oregon.gov/LCD](http://www.oregon.gov/LCD)

The following edits are recommendations for making the county's concept of a riparian area management plan more consistent with Goal 5 rule requirement for clear and objective protection measures.

**Deschutes County Zoning Code Chapter 18.128. CONDITIONAL USE**

**18.128.200. Cluster Development (Single-Family Residential Uses Only).**

*[Ideas for making this provision more clear and objective]*

B. The conditional use shall not be granted unless the following findings are made:

15. For Cluster Developments containing or adjacent to rivers, lakes or streams, in addition to compliance with other applicable zone development restrictions, uses and activities must be consistent with a required Riparian Area Management Plan (RAMPS). The intention of a Riparian Area Management Plan shall is to preserve and protect riparian resources. RAMPS shall, be prepared by a wildlife biologist, and include the following:

- a. An inventory of riparian resources within or adjacent to the Cluster Development;
- b. A map showing the inventoried riparian resources that identifies the area subject to the Riparian Area Management Plan;
- c. A prohibition on golf courses, tennis courts, swimming pools, marinas, ski runs or other developed recreational uses of similar intensity within the area subject to the Riparian Area Management Plan. Low intensity recreational uses such as bicycle, equestrian and pedestrian trails, and wildlife viewing areas located to minimize impact to the identified riparian resources may be permitted;
- d. A prohibition on off-road motor vehicle use within the area subject to the Riparian Area Management Plan.
- e. Measures to preserve and protect the identified riparian resources shall include:
  - i. A description of the required measure and its purpose;
  - ii. Clear and objective Performance standards for the measure's success;
  - iii. Contingent mitigation if monitoring reveals that performance standards are not satisfied;
  - iv. Who is responsible for implementing the actions required by the measure;
  - v. Where the measure is to take place;
  - vi. When must each measure be implemented; and
  - vii. Who will monitor-document the measure has been implemented and how and when monitoring will occur (something about getting this information back to the county).

16. For those Cluster Developments that include a Riparian Area Management Plan, the area requiring a Riparian Area Management Plan shall be contained in one or more lots designated as open space on the plat

**Commented [PA1]:** Maybe this should say something like "features that provide habitat functions (possibly list the ones you are most interested in) within the significant riparian protection area", or possibly "an assessment of riparian resources within or adjacent to the Cluster Development, which are identified for Goal 5 protection in the county's comprehensive plan." In some way make it clear that the directive is not to identify new Goal 5 significant riparian area, but to characterize the area already inventoried in your comp plan.

**Commented [PA2]:** Why not just prohibit these uses using code?

**Commented [PA3]:** List specifically the uses allowed.

**Commented [PA4]:** Again, why not prohibit directly via code?

**Commented [PA5]:** Monitoring of what and for how long? It is not stated that monitoring is required.

**Commented [PA6]:** What about funding? Should there be bond posted? Is the plan approved by some entity? Can the subdivision occur or building ensue before the plan is approved/implemented?

of the subdivision and held in common ownership of a homeowner's association of the development. This open space shall count towards any open space requirements for Cluster Developments.

*[Ideas for having a clear and objective path and a subjective RAMP option]*

B. The conditional use shall not be granted unless the following findings are made:

15. For Cluster Developments containing or adjacent to rivers, lakes or streams, in addition to compliance with other applicable zone development restrictions, uses and activities within the significant riparian protection area are limited to the following:

Bicycle, equestrian and pedestrian trails < /= [specified width, and something about construction materials]

Wildlife viewing areas, < /= [specified area, and something about what can be constructed e.g. bench shelter, platform]

[Other specific uses]

Except for golf courses, tennis courts, swimming pools, marinas, ski runs, and use of off-road motor vehicles, other uses and activities are allowed if must be consistent with a required Riparian Area Management Plan (RAMP). The Riparian Area Management Plan shall preserve and protect riparian resources, be prepared by a wildlife biologist, and The RAMP must include the following:

- a. An inventory of riparian resources within or adjacent to the Cluster Development;
- b. A map showing the inventoried riparian resources that identifies the area subject to the Riparian Area Management Plan;
- ~~c. A prohibition on golf courses, tennis courts, swimming pools, marinas, ski runs or other developed recreational uses of similar intensity within the area subject to the Riparian Area Management Plan. Low intensity recreational uses such as bicycle, equestrian and pedestrian trails, and wildlife viewing areas located to minimize impact to the identified riparian resources may be permitted;~~
- ~~d. A prohibition on off road motor vehicle use within the area subject to the Riparian Area Management Plan.~~
- e. A description of Measures-measures to preserve and protect the identified riparian resources;
- f. A mechanism for ensuring the plan is funded and executed

For each protection measure the plan shall include the following:

- ~~i. A description of the required measure and its purpose;~~
- ii. Performance standards for the measure's success;
- ~~iii. Contingent mitigation if monitoring reveals that performance standards are not satisfied;~~
- iv. ~~Who is~~Name(s) of the parties responsible for implementing the actions required by the measure;
- v. A site plan showing Wwhere the measure is to take place;

Re: Deschutes County Plan amendment 247-19-000531-TA (DLCD File # Deschutes Co. PAPA 008-19)

Department of Land Conservation and Development, August 7, 2019

Page 2 of 3

**Commented [PA7]:** Or whatever term the county uses for Goal 5 significant riparian resources.

vi. A schedule listing ~~when-when~~ must each measure is to be implemented; and

vii. Who will monitor the measure and how and when monitoring will occur.

16. For those Cluster Developments that include a Riparian Area Management Plan, the area requiring a Riparian Area Management Plan shall be contained in one or more lots designated as open space on the plat of the subdivision and held in common ownership of a homeowner's association of the development. This open space shall count towards any open space requirements for Cluster Developments.

**Commented [PA8]:** Is the intent of this monitoring to ensure implementation or something else?

Nicole Mardell  
Associate Planner  
Deschutes County  
Community Development Building  
117 NW Lafayette Avenue  
Bend, OR 97703

August 08, 2019

Re: Flood Plain Zone Amendments in Deschutes County, No. 247-19-000532-TA

Mr. Martin:

I am a tax payer, registered voter and reside at 8790 NW Teater Avenue, Terrebonne, OR 97760. I want to express my opposition to proposed Flood Plain Zone amendments specific to cluster/ planned developments for Deschutes County.

I believe the current Flood Plain Zones plans are adequate, clear and concise. Landowners who purchased property in Deschutes County that contained land in a flood plain know what is permissible in the flood plain and what is not.

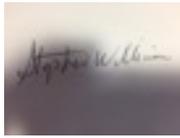
Hearing Officer Green's decision issued September 11, 2015 on Lower Bridge made very clear that allowing a floodplain density bonus to be used in calculations for open space in cluster and planned developments is prohibited. Therefore, I do not understand why this amendment is even under review and up for discussion. If you cannot build in the flood plain, you should not be able to use the land in open space calculations.

I fail to see how these proposed amendments improve or increase the County's ability to manage riparian habitat for fisheries and wildlife protection. People come to Oregon and more specifically to Deschutes county to enjoy our great natural resources. The proposed amendments risk our natural resources, conflicts with Goal 5 program and negatively impacts Deschutes County's rural character and quality of life.

It appears to me these amendments primarily benefit developers who want to construct high density developments in rural areas near rivers, streams and lakes at the expense of the public who want these areas preserved for recreation and enjoyment. The long-term outcome of such practice will have a negative impact on the current natural landscape and forever change the natural beauty of Oregon. I do not understand why our tax dollars for the time / effort by the Planning Commission

are being used to address only 20 properties in Deschutes County. To my knowledge, there are only 3 people who support these actions.

Unless there is specific language to the flood plain zone amendments that exclude areas in the Flood Plain Combining Zone from being eligible in the open land calculations for Cluster / Planned Developments, I cannot support the proposed amendments.

A rectangular box containing a handwritten signature in dark ink, which appears to read "Stephen Williams".

Respectfully,  
Stephen Williams

8790 NW Teater Avenue  
Terrebonne, OR 97760  
541-323-1750 (home)  
901-412-3524 (cell)

**From:** [Myles A. Conway](#)  
**To:** [Nicole Mardell](#)  
**Cc:** [William Groves](#)  
**Subject:** Letter for Planning Commission Hearing - FP Amendments  
**Date:** Thursday, August 08, 2019 12:51:10 PM  
**Attachments:** [Letter to Deschutes County Planning Commission \(Flood Plain Amendments- Split Zoned Properties\) - Final \(00571486-2xA9955\).pdf](#)

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[EXTERNAL EMAIL]

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Nicole, Will- attached above is a letter addressing the potential impact of the flood plain amendments on future lot line adjustments in the FP Zone. Please enter this letter into the record for tonight's hearing. Thank you. Myles

**Myles A. Conway**

Partner

---

D - 541 . 408 . 9291

C - 541 . 480 . 0811

E - [mconway@martenlaw.com](mailto:mconway@martenlaw.com)



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## MARTEN LAW

August 8, 2019

### **Via Email**

Deschutes County Planning Division  
c/o Nicole Mardell, Associate Planner  
Deschutes County Community Development Department  
117 NW Lafayette Avenue, Bend OR 97703

RE: Amendments- Land Division of Split Zoned Flood Plain Property  
County File 247-19-000532-TA

Dear Planning Commission Members:

We are writing to provide the following comments related to the proposed amendments to the Deschutes County Zoning Ordinance to add procedures for land divisions involving split zoned Flood Plain properties. We appreciate the significant efforts provided by planning staff and the Planning Commission to address and resolve existing complications and ambiguities related to land divisions in the Flood Plain Zone.

As noted in the July 9, 2019 memorandum from planning staff, the minimum lot size requirements applicable in the Flood Plain Zone significantly limit the ability of a property owner to divide their lands. Where the underlying base zone is EFU or Forestry, it can be difficult or impossible to create any new parcel that contains 80-acres of Flood Plain because most split zoned properties only have a narrow river-adjacent fringe of Flood Plain. The amendments proposed by staff provide a potential solution to this longstanding issue.

Unfortunately, the proposed amendments are ambiguous regarding their applicability to future lot line adjustments of existing split zoned properties. In the case of a lot line adjustment, no additional lots or parcels are created and the landowner seeks only to adjust the boundaries of its exiting lots. To the extent applicable, the requirements of the proposed text amendment (placing all Flood Plain zoned land into a single parcel, etc.) could effectively prohibit any future lot line adjustments of split zoned properties. To resolve this potential issue, we propose the following minor edits to the text of DCC 18.96.150 (*proposed additions underlined, deletions with strike-through*):

**18.96.150. Acreage Calculation for ~~Partition or Subdivision~~ of Certain Properties Containing Flood Plain Zoned Lands**

~~Partitions or subdivisions~~ of Properties that contain both Flood Plain zoned lands and exactly one other primary zone and which have only one comprehensive plan designation are subject to the following area calculation and configuration standards.

1. The Flood Plain and non-Flood Plain zoned area shall be summed for the purposes of lot area calculation.
2. The minimum lot size ~~for new lots or parcels resulting from such partitions or subdivision~~ shall be determined by the minimum lot size of the non-Flood Plain zone.
3. For partitions and subdivisions, all Flood Plain zoned lands from the parent lot or parcel must be contained within a single subdivision lot or partition parcel.

Our proposed edits are intended only to facilitate future lot line adjustments of split zoned properties and will not impact riparian areas or natural resource values. Resource zoned lands are subject to an 80-acre minimum lot size requirement and riparian areas are protected by the significant development restrictions that are applicable in both the flood plain and areas that are designated as wetland. For that reason, we respectfully request that you adopt our proposed changes to DCC 18.96.150.

Thank you for the opportunity to provide these comments.

Sincerely,



Myles A. Conway  
Attorney at Law

Direct: (541) 408-9291  
E-mail: [mconway@martenlaw.com](mailto:mconway@martenlaw.com)



Table of ~~Tables~~ Submittals - Reference Only AV  
 DESCHUTES COUNTY PLANNING COMMISSION

Sign-In Sheet

Meeting Location: 1300 NE Wall St. Bend, OR. 97703

Date: \_\_\_\_\_

File No(s): \_\_\_\_\_

\*Please write legibly and include complete contact information.

Name/Names	Mailing Address and Email	Phone
JACK GARDNER	40710 CAVE DR SEASER, OREGON	written - meeting
C. Hestell	Cafel doge Cafel	541.647.2938 written RLUWA
WILLIAM KISHM	W, Wm Risk Factor. com	4741588 3272 Oral
Liz Faucher	644 NW Broadway St Bend OR	written RLUWA
John Schimmoller	20525 Swallow Pl Bend OR	541 610-7826 <del>written</del> oral
Paula Kinzer	65180 76th St Bend, OR	541-390-5826
Kathleen Forke	63255 Stonewood Dr Bend 97701	307-766-9325 oral
ROBY ISHALL	50 SW Bond St. #4	541-847-2430 written MSP 411
Myles Cooney	404 SW Columbia Ln	591-405.9247 oral
Fred Braselton	5771 SW Elkhorn Lane Bend, OR	503-957-5614 oral
DAN LOZITO	P.O. Box 85 Fenelon, OR	written 531-TA 3 532-77A
JAMES TAYLOR	7695 NW 93RD ST TBAUNGE	509-5331-9199 written 532-TA
JENNICE TAYLOR	7695 NW 93RD ST TBAUNGE	oral
Karl Findling & Suzanne	Lunford	written - RLUWA

RLUWA



# DESCHUTES COUNTY PLANNING COMMISSION

## Sign-In Sheet

Meeting Location: 1300 NE Wall St. Bend, OR. 97703

Date: \_\_\_\_\_

File No(s): \_\_\_\_\_

\*Please write legibly and include complete contact information.

Name/Names	Mailing Address and Email	Phone
JACK GOSWAD	60710 CAVE DR SEAS, OREGON	
C. Hebert	Cahill Ave Corvallis	541.647.2938
William Kishm	www.kishm.com	541.588.3876
Liz Faucher	644 NW Broadway St Bend OR	
John Schimmler	20525 Swallow Rd Bend OR	541 610-7826
Paula Kinzer	65180 76th St Bend, OR	541-390-5826
Kathleen Forke	63255 Stonewood Dr Bend 97701	307-766 9325
Rory Isbell	50 SW Bond St. #4 97702	541-847-2430
Myles Conway	404 SW Columbia 97702	501-405.9241
Fred Braselton	5771 SW Elkhorn Lane Bend, OR	503-957-5614
Dana Lowitz	P.O. Box 85 Ferndonne OR	
JAMES TAYLOR	7695 NW 93RD ST TROUT	509-531-9199
Janice Taylor	7495 NW 93rd St Ferndonne	

August 7, 2019

**To:** Deschutes County Associate Planner, Nicole Mardell

**RE:** The Flood Plain Proposed Amendmen created to allow greater density

**File Numbers:** 247-19-000532-TA and 247-19-000532~~4~~-TA (Split Zones)  
*33-1A*

Dear Ms. Mardell:

The concept of a Split Zone and of using Flood Plain acreage to create enough Open Space requirements for a higher density sub-division has areas of concern.

In particular, the Mine Site at Lower Bridge, Lower Bridge Road LLC.

The former Mine Owners and then the current Applicant have tried since the early 2000's to take mine property, cleaned up to Industrial Standards, not Residential and create a higher density sub-division, a 2 Acres on average Cluster Development, in a Predominantly EFU- Exclusive Farm Use Zone for 10 miles along Lower Bridge Way in Terrebonne. Wanting to create a higher density sub-division.

After being denied by the then Hearings Officer and after DEQ (paid for by the applicant) was being co-operative to help the mine owners out, more Toxic Waste (PCBs) were found the site in May of 2008. They decided to do a "Split Zone" stating the money from the 19, avg. 2 acre lots (Total Mkt.Value only \$1,044,000) would pay for further testing and clean up on the West Side. A Split Zone used as a way out.

Their first step is to get this current application that over the years has been denied twice and withdrawn once, pushed through on the East Side.

Holding this out of state developer back, is coming up with enough "Open Space" acreage to conform to an RR10, Cluster Development PUD, Planned Unit Development

**The Applicant has shown incorrectly in their calculation:**

- A. Lot 1509 Acreage. That section on the top of the Mine Site's Tax Lot 1502 in 14/12, Township Range that is not owned by them but by Oregon Parks and Rec. Dept.
- B. Had the 100 yard radius setback of the HS, Historic Site on Tax Lot 1505, included.
- C. And the Flood Plain Acreage in the Flood Plain, below their proposed Lots
- D. And EFU land included.

Page Two

E. Parcel 3 which needs a Lot Line Adjustment or Partition created, was included.

None should be included but for the sake of this consideration by Deschutes County to change, amend the rules for this out of State Developer something to note is the argument by the Deschutes County Hearings Officer, Karen Green, that denied this development application in 2015 for various reasons including Daniels/Lower Bridge Road LLC's use of changing the FP Rules for their benefit. The Denial is File Nos. 247-15-000194-CU/195-TP, The TP Summary on page 9 of 101. **EXHIBIT A.**

A county that suddenly wants to change the Flood Plain regulations for the purpose of creating or allowing higher density vs. protecting the Fish and Wildlife in 1. the Wetland Area below the lots 2. a Wildlife Preserve at Lower Bridge, directly across from this proposed PUD, at River Mile 135, on a 3. Wild and Scenic River (Federal) and 4. State Scenic Waterway is not looking at the Goals of their own Comprehensive Plan. Goals 5 and 8 or the Protection of the Existing Nesting and Roosting Golden Eagles and other Wildlife that Tia Lewis, the applicant's attorney states would not be affected by 19 homes directly off the rim (50 ft. setback) where that habitat currently exists undisturbed. This would be a huge disturbance in this migratory path where we have seen coyotes, bobcats, cougar and deer cross at Lower Bridge for water and refuge.

The Flood Plain in Oregon already provides Open Space so this portion of the amendment is of no greater value with no apparent need.

**The Disturbances to Existing 5 Uses:**

Creating higher density in a major flyway zone where almost 200 birds are recognized at Lower Bridge in **EXHIBIT B** and ignoring not only the 4 protections above for fish and wildlife, including a Winter Deer Range but would, even more importantly, de-classify the "Scenic River" Classification (never been done before in the State of Oregon). And the 5. WHCMP- Wildlife Habitat Conservation Management Program on Lot 8, across the river to the east. Please see the attached Map, **EXHIBIT C.** showing the Mine Site's Lot 500 surrounded by EFU, larger Acreage Parcels #s 2 & 5 noted above. And includes all others numbered/noted above at this location.

Page Three

**The Applicant's Conceptual Drawing does not include most of the Required Setbacks:**

Even if the county were to bypass the state and rule on this new amendment plan to the flood plain acreage calculations to allow higher density housing on a Wild & Scenic River and State Scenic Waterway, you still have a proposed sub-division that was not surveyed with lot dimensions on all 19 lots. If this were done, most building envelopes to allow the home size minimum in their CC&Rs and the attached **EXHIBIT D Setbacks** would not comply with the regulations of an RR10 Cluster Development.

**Feasibility of the 19 Lots with all the setbacks, shown on a conceptual drawing, was never presented in this Application.**

*Per Hearings Officer Decision (part of her Denial) - 2015:*

*see pg. 96 of 247-15-000194-CU/195-TP-*

*"Does not fit applicable Standards of Title 17"*

*HO states the size of the lots will not work with the setbacks required to get 19 lots*

So for all these reasons, I hope you will reconsider this change that will greatly affect the Deschutes River, it's protections and land use goals already in place for many years.

Respectfully,  
Diane Lozito



Homeowner on the Deschutes River, EFU Property  
P.O. Box 85, Terrebonne, OR 97760

Attached: Attachments A to D

# EXHIBIT A

**A. SUMMARY:**

The Hearings Officer finds the applicant's proposed PUD cannot be approved because: (1) it includes land zoned EFU and FP in which PUDs are not permitted outright or conditionally; (2) it reconfigures and reduces the size of Parcel 3 of MP-80-96 without a partition or lot line adjustment; (3) the portion of the subject property remaining after the EFU- and FP-zoned land is subtracted is not large enough to permit 19 residential lots; and (4) the applicant failed to demonstrate the proposed PUD complies with all applicable conditional use, site plan, and subdivision approval criteria. However, because I anticipate this decision will be appealed to the board, and the board may elect to hear the appeal, I include in this decision recommended findings and conclusions on applicable approval criteria to assist planning staff and the board.

# EXHIBIT B

N— Nester M—Migrant

## LOWER BRIDGE ANNOTATED BIRD LIST

The following is a list of birds that have been recorded in and around the area known colloquially as Lower Bridge. This region consists of the section of river, canyon and natural area designated open to the public or areas observable from those public lands. This list was assembled using three primary sources: **eBird** - The world-wide bird database, **The Central Oregon Bird Database** - A collection of over 115,000 local bird records, and the **East Cascades Audubon Society Field Notes Archive** - A listing of unusual species going back to 1972. All of the listed species have been reviewed and vetted by local bird experts. None of these species have made this list due to conjecture, assumption or extrapolation. Each has been reported at or near Lower Bridge by an actual person.

Charles Gates

Manager of the Central Oregon Bird Database

eBird Proctor for Cent. OR Historical Records

Cent. OR Regional Field Notes Editor OB Magazine

Founding Board Member East Cascades Audubon Society

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2	Wood Duck	M	32	Rough-legged Hawk	M	62	Northern Saw-whet Owl	M
3	Gadwall	M	33	Ferruginous Hawk	M	63	Common Nighthawk	N
4	American Wigeon	M	34	American Kestrel	N	64	Common Poorwill	N
5	Mallard	N	35	Merlin	M	65	Vaux's Swift	N
6	Cinnamon Teal	M	36	Peregrine Falcon	M	66	White-throated Swift	N
7	Northern Shoveler	M	37	Prairie Falcon	N	67	Black-chinned Hummingbird	M
8	Northern Pintail	M	38	Virginia Rail	N	68	Anna's Hummingbird	N
9	Green-winged Teal	M	39	Sora	N	69	Calliope Hummingbird	N
10	Bufflehead	M	40	American Coot	N	70	Rufous Hummingbird	M
11	Common Goldeneye	M	41	Killdeer	N	71	Belted Kingfisher	N
12	Barrow's Goldeneye	M	42	Spotted Sandpiper	N	72	Lewis's Woodpecker	M
13	Hooded Merganser	M	43	Solitary Sandpiper	M	73	Red-breasted Sapsucker	M
14	Common Merganser	N	44	Greater Yellowlegs	M	74	Downy Woodpecker	N
15	Ruddy Duck	M	45	Lesser Yellowlegs	M	75	Hairy Woodpecker	M
16	Chukar	M	46	Least Sandpiper	M	76	Northern Flicker	N
17	Ring-necked Pheasant	M	47	Western Sandpiper	M	77	Olive-sided Flycatcher	M
18	California Quail	N	48	Pectoral Sandpiper	M	78	Western Wood-Pee-wee	N
19	Pied-billed Grebe	M	49	Long-billed Dowitcher	M	79	Willow Flycatcher	M
20	Double-crested Cormorant	M	50	Wilson's Snipe	N	80	Hammond's Flycatcher	M
21	Great-blue Heron	M	51	Wilson's Phalarope	N	81	Gray Flycatcher	N
22	Turkey Vulture	N	52	Ring-billed Gull	M	82	Dusky Flycatcher	M
23	Osprey	N	53	California Gull	M	83	Pacific-Slope Flycatcher	M
24	Golden Eagle	M	54	Caspian Tern	M	84	Black Phoebe	M
25	Northern Harrier	N	55	Rock Pigeon	N	85	Say's Phoebe	N
26	Sharp-shinned Hawk	M	56	Eurasian Collared Dove	N	86	Ash-throated Flycatcher	N
27	Cooper's Hawk	M	57	Mourning Dove	N	87	Western Kingbird	N
28	Bald Eagle	M	58	Barn Owl	N	88	Eastern Kingbird	M
29	Swainson's Hawk	M	59	Western Screech-Owl	N	89	Northern Shrike	M
30	Red-tailed Hawk	N	60	Great Horned Owl	N	90	Cassin's Vireo	M

91	Warbling Vireo	N		121	Ruby-crowned Kinglet	M		151	White-throated Sparrow	M
92	Steller's Jay	M		122	Western Bluebird	N		152	Harris' Sparrow	M
93	California Scrub-Jay	N		123	Mountain Bluebird	N		153	White-crowned Sparrow	M
94	Pinyon Jay	N		124	Townsend's Solitaire	M		154	Golden-crowned Sparrow	M
95	Clark's Nutcracker	N		125	Hermit Thrush	M		155	Vesper Sparrow	M
96	Black-billed Magpie	N		126	Swainson's Thrush	M		156	Savannah Sparrow	N
97	American Crow	N		127	American Robin	N		157	Song Sparrow	N
98	Common Raven	N		128	Varied Thrush	M		158	Lincoln's Sparrow	M
99	Horned Lark	M		129	Gray Catbird	N		159	Sagebrush Sparrow	M
100	Tree Swallow	N		130	Northern Mockingbird	M		160	Spotted Towhee	N
101	Violet-green Swallow	N		131	Sage Thrasher	N		161	Green-tailed Towhee	M
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103	Bank Swallow	N		133	American Pipit	M		163	Lazuli Bunting	N
104	Cliff Swallow	N		134	Cedar Waxwing	N		164	Red-winged Blackbird	N
105	Barn Swallow	N		135	Orange-crowned Warbler	M		165	Tricolored Blackbird	M
106	Black-capped Chickadee	M		136	Nashville Warbler	M		166	Western Meadowlark	N
107	Mountain Chickadee	N		137	Yellow Warbler	N		167	Yellow-headed Blackbird	N
108	Bushtit	N		138	Yellow-rumped Warbler	M		168	Brewer's Blackbird	N
109	Red-breasted Nuthatch	M		139	Black-throated Gray Warbler	M		169	Brown-headed Cowbird	N
110	White-breasted Nuthatch	M		140	Northern Waterthrush	M		170	Bullock's Oriole	N
111	Brown Creeper	M		141	Townsend's Warbler	M		171	Cassin's Finch	N
112	Rock Wren	N		142	MacGillivray's Warbler	M		172	House Finch	N
113	Canyon Wren	N		143	Common Yellowthroat	N		173	Purple Finch	M
114	Bewick's Wren	N		144	Wilson's Warbler	M		174	Pine Siskin	M
115	House Wren	N		145	Yellow-breasted Chat	N		175	Red Crossbill	M
116	Pacific Wren	M		146	Western Tanager	M		176	Lesser Goldfinch	N
117	Marsh Wren	N		147	Chipping Sparrow	N		177	American Goldfinch	N
118	Blue-gray Gnatcatcher	M		148	Lark Sparrow	M		178	Evening Grosbeak	M
119	American Dipper	N		149	Fox Sparrow	M		179	House Sparrow	N
120	Warbling Vireo	N		150	Ruby-crowned Kinglet	M				

# EXHIBIT C



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-  Wildlife Habitat Conservation & Mgmt. Program, Lot 8 ERE
-  Borden Beck Wildlife Preserve
-  Lot 500



**Feasibility of the 19 Lots with all the setbacks, shown on a conceptual drawing, was never presented in this Application.**

*Per Hearings Officer Decision (part of her Denial) - 2015:*

*see pg. 96 of 247-15-000194-CU/195-TP-*

*“Does not fit applicable Standards of Title 17”*

*HO states the size of the lots will not work with the setbacks required to get 19 lots*

Applicant never gave a real “Conceptual Drawing”. That needs to be done.

On page 2 attached is the Applicants Proposed Lot Map of 19 homesites:

Look at Lots **7, 8, 9, 11** and **19**. How could the dimensions (with setbacks) work on these lots? Plus **Lot 2** that should be taken out due to Historic Site 100 yd. Required Setback plus recalculations for the incorrect Flood Plain Acreage used. Note the contour on this map on page 2 and location of the rim & slope versus the build site area above.

**NEEDED IS A CONCEPTIONAL DRAWING SHOWING THE ALL LOTS THAT DON'T FIT WITH THE SETBACK REQUIREMENTS PLUS THE FLOODPLAIN. Dimensions above the rimrock to be shown for each lot on the buildable space or building envelope.**

**Lot Coverage** -The main building and accessory buildings shall not cover in excess of 30 Percent of the total lot area. (Dimensional Standards 18.60.060). Note Minimum Square Footage of homes in the CC&Rs.

**SETBACKS in an RR10 Zone: These are “minimum” set back distances**

River/Streams	100 Ft. from High Water Mark
Rimrock	<b>50 Ft.</b>
Side Lot Lines	<b>10 Ft. (20 Ft. on Corner Lots)</b>
Rear Lot Line	<b>20 Ft.</b>
Front Lot Line	20 Ft. (in this case 50 Ft. from Rimrock)
Well to Septic Tank	<b>50 Ft.</b> and 5 ft. Min-Septic Tank to Hm.
Well to Home or Deck	<b>5 Ft.</b> Min. to a permanent structure
Well to Septic Drain Field	<b>100 Ft.</b>
Well to Neighboring Well	<b>*100 Ft. Minimum</b>
Drain Field Lengths, <b>300 Ft.=</b>	150 Ft. for Main plus 150 Ft. for Reserve Field

***\*You should site your well away from neighboring wells (100 feet minimum) to reduce the possibility of hydraulic interference, difficulties with neighboring septic systems or boundary line inaccuracies. (WRD).***



August 8, 2017

To: Deschutes County Associate Planner, Nicole Mardell. #247-19-000532-TA  
RE: Flood Plain proposal in respect to using FP Acreage for Open Space  
Requirements in a Cluster Development & Split Zone

Dear Ms. Mardell:

Please note the Flood Plain is already designated as Open Space with a Conservation Easement and a Landscape Management Zone @ Lower Br. So this change is unnecessary and perhaps against state code as it will affect the existing uses and designations below and already in place. **Map 1 attached.**

**Flood Plain Points at Lower Bridge, Terrebonne, OR & Mine Site Lots, Map 3.**

**Location, Wildlife, Habitat and Flood Plain current Uses there, in Conflict of:**

1. On a federal Wild & Scenic River
2. On a State Scenic Waterway
3. River Mile 135, this stretch is classified "Scenic River", to be primitive in nature with little development.
4. **Around the bend of Lower Bridge is all Protected Wildlife Properties: Map 1.**
  1. a Mine Site still in its Industrial State with Diatomaceous Earth, Dusty Silica, which is a composition of glass particles that is airborne on windy days there.
  2. The Scenic River Area mentioned above
  3. A Wildlife Preserve for almost 30 acres
  4. A Wetlands Area with much Wildlife Use: Including Duck, Geese, Cougar, Osprey, Egrets, Deer, Bobcat and 179 Species of Birds-**attached Exhibit A.**
  5. A Rim Area above the Deschutes River with: Golden Eagles, Bald Eagles, several varieties of Hawks and Osprey to name a few, roosting & nesting.
  6. **Across from the Applicant's Mine Site are major Protections for Wild-**

**life:**

1. A Wildlife Preserve - Borden Beck Park- established with rules for the trails and access to the river to be within wildlife protection's benefit. **On 23.22 Acres with additional acreage along the river on both sides.**
2. A Wildlife Habitat Conservation and Management Program - Exhibit B is located on Lot 8, Tax Lot 400 (141215-T/R/S) on 25.40 Acres.
7. The Wetlands Area off of Lot 1502, the Mine Site's Lot- is Borden Beck Park Wildlife, Oregon Parks & Rec. Property, not the Applicant's, yet they **added this additional acreage into their Flood Plain Calculations in error.** **Maps 1, 2 and 3 attached.**
8. And finally, Deschutes County Lots on Map 1. Deeded Lots at adjoining Lower Bridge Estates, Deeded use "for Wildlife Protection". No homes allowed.

Exhibits: Maps 1 to 3 & A to C - Attached. Exhibit C includes the above & Goals 5 & 8.

Sincerely, Diane Lozito, P.O. Box 85, Terrebonne, OR 97760

MAP 1

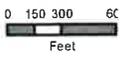
# Wildlife Protection Areas



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-  Lot 8 Eagle Rock Estates
-  Borden Beck Wildlife Park
-  County Lots



MAP 2

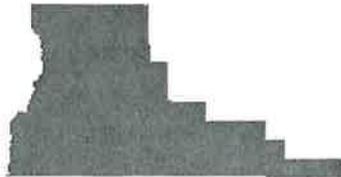
# Deschutes County Property Information - Dial

## Overview Map



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Deschutes County GIS.

Map and Taxlot: 1412000001800



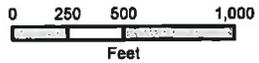
MAP 3



Map data provided from flight databases provided by the following companies: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, ICP, swisstopo, and the GIS User Community. Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Geomatics, Aerogrid, IGN, ICP, swisstopo, and the GIS User Community. © OpenStreetMap contributors, Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community.

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 FEMA Floodplain



# EXHIBIT A

N—Nester M—Migrant

## LOWER BRIDGE ANNOTATED BIRD LIST

The following is a list of birds that have been recorded in and around the area known colloquially as Lower Bridge. This region consists of the section of river, canyon and natural area designated open to the public or areas observable from those public lands. This list was assembled using three primary sources: eBird - The world-wide bird database, The **Central Oregon Bird Database** - A collection of over 115,000 local bird records, and the **East Cascades Audubon Society Field Notes Archive** - A listing of unusual species going back to 1972. All of the listed species have been reviewed and vetted by local bird experts. None of these species have made this list due to conjecture, assumption or extrapolation. Each has been reported at or near Lower Bridge by an actual person.

Charles Gates

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98	Common Raven	N		128	Varied Thrush	M		158	Lincoln's Sparrow	M
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112	Rock Wren	N		142	MacGillivray's Warbler	M		172	House Finch	N
113	Canyon Wren	N		143	Common Yellowthroat	N		173	Purple Finch	M
114	Bewick's Wren	N		144	Wilson's Warbler	M		174	Pine Siskin	M
115	House Wren	N		145	Yellow-breasted Chat	N		175	Red Crossbill	M
116	Pacific Wren	M		146	Western Tanager	M		176	Lesser Goldfinch	N
117	Marsh Wren	N		147	Chipping Sparrow	N		177	American Goldfinch	N
118	Blue-gray Gnatcatcher	M		148	Lark Sparrow	M		178	Evening Grosbeak	M
119	American Dipper	N		149	Fox Sparrow	M		179	House Sparrow	N
120	Warbling Vireo	N		150	Ruby-crowned Kinglet	M				

# EXHIBIT B

## **Landowner Guide to the Wildlife Habitat Conservation and Management Program**

*This document provides an overview of the Wildlife Habitat Conservation and Management Program, administered by the Oregon Department of Fish and Wildlife (ODFW), and the expectations of the program for interested landowners. ODFW recommends that interested landowners first read this Guide, and if eligible, contact the local ODFW biologists for more information. Additional resources are available on the following website: <http://www.dfw.state.or.us/lands/whcmp/>.*

### **Table of Contents:**

- A. Purpose of the habitat program
- B. Objective of the habitat program
- C. History of the habitat program
- D. Calculating a property's assessed value
- E. Dwellings and homesites
- F. Participating Counties
- G. Moving from one special assessment category to another
- H. Landowner process to participate in the program
- I. Information needed in a habitat plan
- J. Conservation and management actions in a habitat plan
- K. Resources counties and cities can provide to assist landowners
- L. Submission of a habitat plan for review
- M. Implementation of approved WHCMP plans
- N. Application for wildlife habitat special assessment
- O. Monitoring by ODFW
- P. Amending an approved habitat plan
- Q. Change of ownership
- R. Disqualification of a property from wildlife habitat special assessment
- S. Appendix
  - a. Certification of Eligibility Form
  - b. Landowner Interest Form
  - c. Annual Status Report Form

**A. Purpose of the habitat program: Provide an incentive for habitat conservation**

The Wildlife Habitat Conservation and Management Program (habitat program), administered by the Oregon Department of Fish and Wildlife (ODFW), is a cooperative effort involving state and local governments and other partners to help private landowners voluntarily conserve native wildlife habitat. The Oregon Legislature created the habitat program to offer an incentive for private landowners who want to provide wildlife habitat on their properties instead of, or in addition to, farming, growing timber or other land uses. Incentive programs help promote voluntary conservation on privately owned land and support the state effort in reaching strategic conservation goals as described in The Oregon Conservation Strategy. Under the habitat program, land subject to an approved Wildlife Habitat Conservation and Management Program Plan receives a wildlife habitat special assessment, where property taxes are assessed at the relatively low value that would apply if the land were being farmed or used for commercial forestry.

[OAR 635-430-0000]

**B. Objective of the habitat program: Preserve, enhance or improve significant native habitat**

The objective of the habitat program is to preserve, enhance or improve the composition, structure or function of habitat for native wildlife species. Prior to 2003 the habitat program was available only to rural landowners with properties zoned for exclusive farm use or mixed farm and forest use. House Bill 3564 in 2001 expanded the habitat program to include lands with a forest special assessment for property tax purposes. House Bill 3616 in 2003 added land that is clearly identifiable as containing significant wildlife habitat. Currently, counties and cities can select lands for eligibility based on zoning and/or significant native wildlife habitat.

Significant native habitats are defined as those that:

- Are scarce, becoming scarce or of special ecological significance (e.g., identified in the Oregon Conservation Strategy or Oregon Plan for Salmon and Watersheds);
- Are important habitats for ecological restoration to prevent additional loss of native habitats or species;
- Are important to achieve objectives for native habitats or species in public or private land management plans covering multiple land ownerships;
- Provide habitat for federal or state threatened, endangered or sensitive species; and/or
- Are identified as significant wildlife habitat in city or county comprehensive plans or by Metro to address statewide land use planning Goal 5 (see [www.oregon.gov/LCD/docs/goals/goal5.pdf](http://www.oregon.gov/LCD/docs/goals/goal5.pdf) for more information).

[ORS 308A.415; OAR 635-430-0020]

**C. History of the habitat program**

The Wildlife Habitat Conservation and Management Program (habitat program) began as a pilot in 1993 in Marion and Polk counties. It was expanded in 1997 as a voluntary program available to all Oregon counties. Only properties zoned for exclusive farm use and mixed farm and forest use were eligible.

House Bill 3564 in 2001 expanded the habitat program to include lands with a forest special assessment for property tax purposes. HB 3564 also made the habitat program mandatory, but gave counties the choice to opt out by the end of 2002. A county's decision to opt out or remain in the habitat program could not subsequently be changed, offering little flexibility for counties. Because of this inflexibility and various administrative issues, 22 counties opted out of the program by the end of 2002, leaving 14 counties participating. Since then, Washington County has opted back into the program. A map showing the participating counties is on page 4.

In 2002 a Conservation Incentives Work Group was convened to discuss the status of incentive programs in Oregon and to develop recommendations for the 2003 Legislature. The work group had diverse representation from state, federal and local governments, industrial and small woodland forestry, agriculture and conservation groups. One of the topics the work group discussed was the habitat program. House Bill 3616 in 2003 added significant new provisions to the habitat program, which:

- Allowed cities to participate in the program;
- Provided a way for counties and cities to add or remove lands eligible for the program;
- Clarified that establishing a home on a property in the program must meet all local and state requirements, the same as for property not in the program;
- Created a wildlife habitat special assessment that operates in parallel to other special assessments;
- Expanded eligible lands to include those zoned for forestry; and
- Expanded eligible lands to include significant habitat.

#### **D. Calculating a property's assessed value**

The habitat program provides two options for calculating a property's value: (1) for farm use, under ORS 308A.050 to 308A.128; or (2) as forestland, under ORS 321.354 or 321.812. Property that was specially assessed during the previous assessment year will continue to be valued as farm or forestland, whichever is applicable. Property that was not specially assessed during the previous assessment year is valued for the wildlife habitat special assessment as forestland if it meets relevant stocking and species standards or for farm use if it does not meet the forestland standards.

[ORS 308A.427]

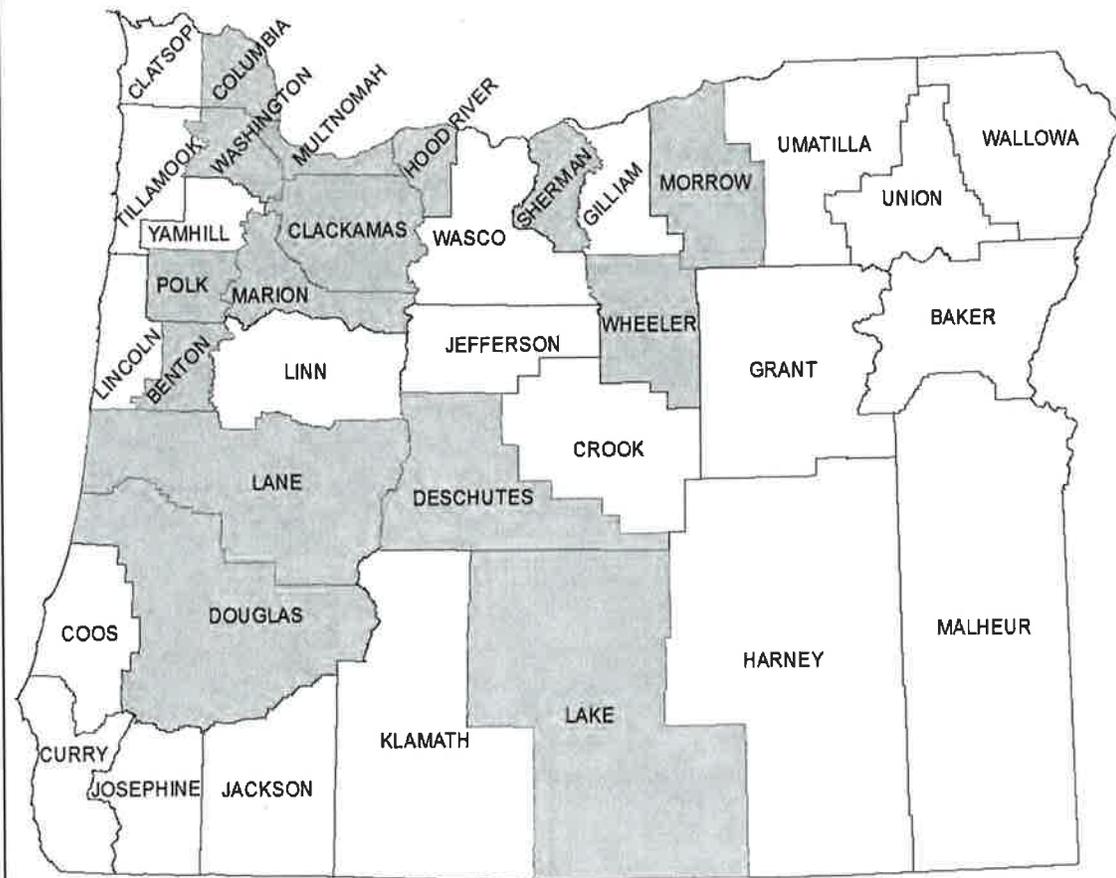
#### **E. Dwellings and homesites**

New dwellings must comply with all applicable state and local requirements, and the house location and landscaping must avoid impacts on native wildlife and habitat. Acreage associated with dwellings or homesites are not included in the WHCMP wildlife habitat special assessment.

[OAR 635-430-0060(6); 635-430-0100(1) - (2)]

F. Wildlife Habitat Conservation and Management Program County Participation

### Wildlife Habitat Conservation and Management Program County Participation as of October 1, 2015



- Participating counties:**  
Benton, Clackamas, Columbia, Deschutes, Douglas, Hood River, Lake, Lane, Marion, Morrow, Multnomah, Polk, Sherman, Washington, Wheeler
- Non-participating counties:**  
Baker, Clatsop, Coos, Crook, Curry, Gilliam, Grant, Harney, Jackson, Jefferson, Josephine, Klamath, Lincoln, Linn, Malheur, Tillamook, Umatilla, Union, Wallowa, Wasco, Yamhill

# EXHIBIT C

**PROTECTIONS AND SIGNIFICANCE OF THIS AREA: Including-**

Goal 5 Natural Resources, Scenic and Historic Areas, and Open Spaces

Goal 8 Recreational Needs

<https://www.oregon.gov/lcd/OP/Pages/Goals.aspx>

**Wildlife - Habitat is beneath the Rim and in the Wetland Area there**

Wildlife visible includes bald eagles, golden eagles, mule deer, and osprey. Bobcat, Coyote, Cougar, Mergansers, Drakes and Canadian Geese. Numerous song birds and bird life too long to list. Audubon considers Lower Bridge one of the best Birding Sites in Oregon due to it's rural area and protected wetlands and Wildlife Preserve there.

**Historical Sites:**

1. The Lynch & Roberts Sign- classified as Historic. Community called it out and then the applicant added the requirement to do the legal set back from it as it was part of their 19 Lots proposed for residential use.
2. The Lower Bridge Pioneer Crossing - Pioneers crossed at Lower Bridge.
3. The Old Military Road - cuts across Lower Bridge and this area.

**Wild River Section of the Deschutes: \*Chapter 736: 736-040-0040**

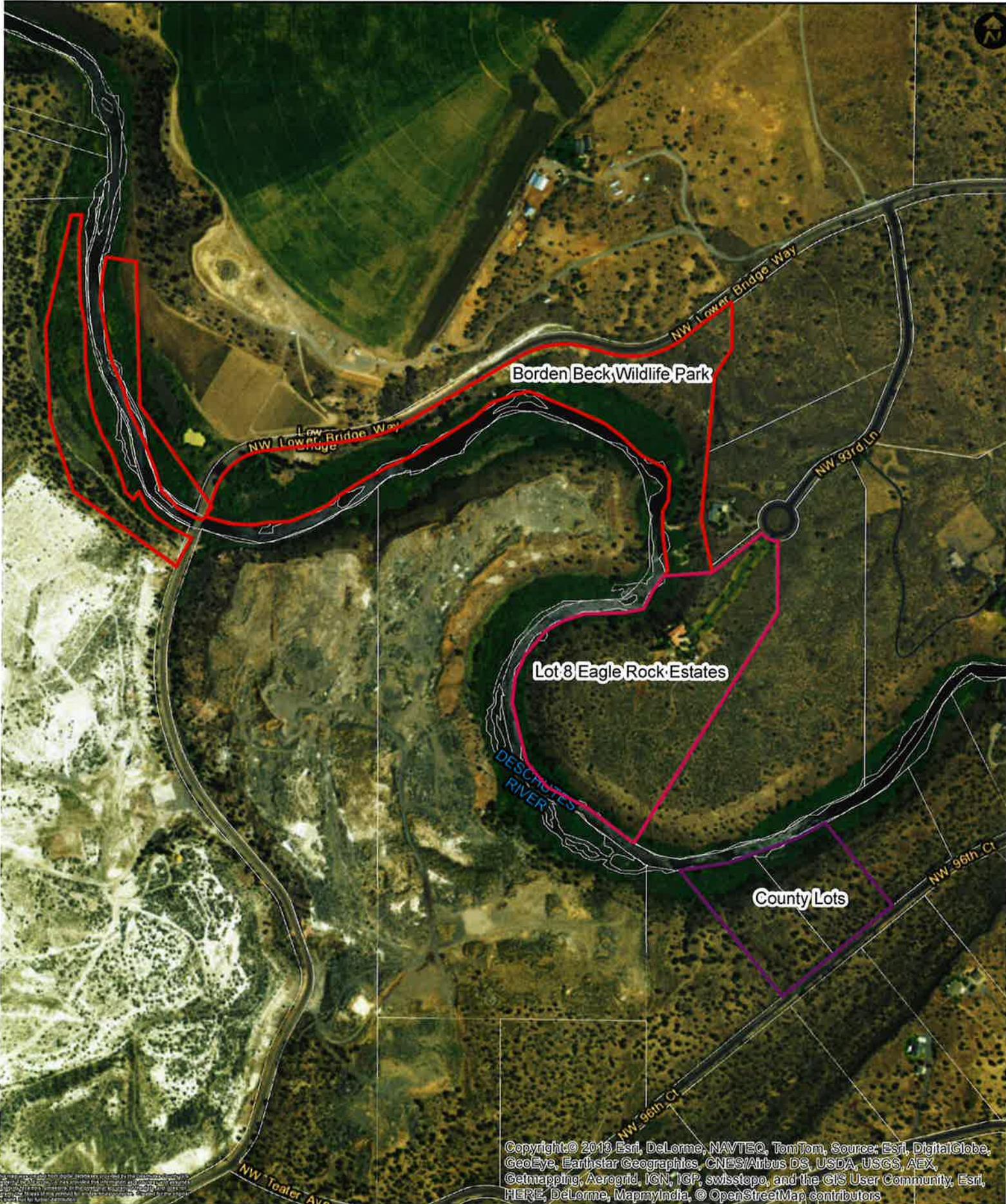
Wild & Scenic River (Federal, BLM)

State Scenic Waterway (State, OPRD)\*

Classification "Scenic River" - primitive and largely undeveloped per OAR Code

**Wildlife Habitat Conservation Program** - Adjacent to, across the River on Lot 8 of Eagle Rock Estates. An EFU Subdivision of Rural Lots. Lot 8 is 25.40 Acres.

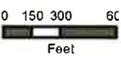
**Borden Beck Park and Wildlife Preserve** - has a low impact trail to the swimming hole at Lower Bridge. Around you is a lush Wetland on both sides of the river. Area is a getaway for Locals and Visitors from outside the area that come to Fly Fish, Bird Watch and Swim. With Urban Growth, an area like this is a much needed outside of Urban Central Oregon, per Goal 5 AND Goal 8.



Map data © 2015 Esri, DeLorme, NAVTEQ, TomTom, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors

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- Lot 8 Eagle Rock Estates
- Borden Beck Wildlife Park
- County Lots



Deschutes County Planning Commission  
1300 NW Wall Street  
Bend, Oregon 97703

August 8, 2019

RE: Flood Plain and Planned Unit Development Amendments (247-19-000531-TA)

Dear Planning Commissioners,

In 2017, I provided input and attended several meetings regarding the FP zone amendments originally proposed. Frankly, I came away from those interactions with the clear impression that any citizen involvement critical of the proposed amendments was simply an impediment to be overcome with time.

It was citizen involvement that initially pointed out to the Planning Commission what the effect of the proposed FP zone changes would have on allowable density increases for planned developments. At the time, Planning Commission reactions indicated that this was a significant revelation. However, statements made at the next meeting by commission members made it abundantly clear that behind the scenes access had been attained and lobbying achieved by amendment proponents. If I am so lucky as to make a salient point or two in this letter, I am certain similar efforts to supersede will occur. If that is true, I suggest you seek out alternative views in an attempt to equalize access and make a more fully informed decision.

As for the current amendments, at least their true intent is made clear. During the previous process, no mention was made of the effect of the proposed change on planned development density; here, fully 71 pages are dedicated to this topic. Yet, as stated in the Findings and Appendix A, only 20 properties in Deschutes County would be affected. More specifically, this proposal is being pushed forward by a mere 3 land owners. Language which exists in a current planned development application for one of those land owners is recited nearly verbatim in the Findings. Even though staff may rightfully seek to represent the interests of these landowners, they should at least at least use their own words and concepts. The overriding question which must be asked is why has the Community Development department invested so much time and effort for 20 properties and energized by 3 landowners?

Nevertheless, I introduce the following topics in opposition to the proposed amendments:

### **FP ZONE PLANNED DEVELOPMENT DENSITY**

For most parcels, not allowing use of FP zoned lands for planned development open space calculations does not prevent planned developments; it only limits the amount of density increase that can be achieved. The intent of PUD developers adjacent to FP zoned properties is logically to maximize their profit which requires maximizing the number of river-view lots and minimizing lot size (two acre minimum), so use of the FP zone simply increases profitability.

## **NEGATIVE FP ZONE PLANNED DEVELOPMENT IMPACTS**

Maximizing lots and minimizing lot size creates a close spacing of residences which will hamper Goal 5 program to conserve deer winter range, deer migration corridor, and furbearer habitat (as is acknowledged on page 14 of 25 Appendix A ESEE ANALYSIS). Mule deer and other furbearing animals require water. The local water source for lands adjacent to FP zones is most often a river. Without doubt, many side-by-side 2-acre lots will eventually be inhabited by owners of dogs. Dogs mark territory with scent and have a range that is far greater than the width of a 2-acre lot. The combination of these factors will create an obvious and continuous obstacle between the open space and the water source. Page 12 of 25 Appendix A suggests “the remaining open space area provides a buffer from neighboring resources” but this sentiment is oblivious to the fact that the open space is isolated from water resources by a virtual fence consisting of residences on 2-acre lots. The mule deer and other furbearers would be better served by a standard RR-10 development with 10-acre lots.

Beginning on page 14 of 25 Appendix A ESEE ANALYSIS, it is noted “There is a recognition that increases in population, especially in rural areas, displace habitat and diminish, incrementally, Deschutes County’s rural character and quality of life”. The next sentence in the ESEE states that the proposed amendments “could have negative consequences due to increased residential development and additional human presence near the inventoried Goal 5 resources which could lead to a reduced level of access and enjoyment for recreationalists”. Here it is acknowledged in plain language that the result of the planned development will diminish Deschutes County’s rural character and quality of life. Why, for the sake of twenty properties and three complaining owners, would anyone allow this to happen?

## **UNWORKABILITY OF THE RIPARIAN AREA MANAGEMENT PLAN PROCESS**

A requirement to produce and maintain a Riparian Area Management Plan (RAMP) is widely touted throughout the Findings and Appendix A. But once the developer produces the RAMP and sells the lots, the management reverts to an HOA. Anyone who has belonged to an HOA, or more significantly, to a few HOA’s knows the effectiveness of HOA management varies widely and is especially poor at maintaining attention, over time, to small matters. For instance, I recently reviewed a RAMP which required that dogs be kept on leashes in riparian areas. This is very nice but does anyone actually accept the notion that the HOA will police the riparian area to make sure dogs are leashed? Will the Deschutes County Sheriff be called if someone sees a dog off-leash? Very smart people can engage in paperwork exercises which sound great but have no real to reality. Moreover, the RAMP compliance plan requires that the HOA hire biologists to perform this task. Who sees to it that this happens? Is the Planning Staff going to add such items to its workload? Meanwhile, the developer is allowed to walk away with no responsibility for the paperwork they initiated. It is beyond naïve to think this RAMP requirement has a chance of succeeding in the way it was intended.

## **DESIRABILITY OF CLUSTER AND PLANNED UNIT DEVELOPMENTS**

On Page 12 of 25 Appendix A (with similar language elsewhere in the documents), it is stated that “Cluster and planned unit developments are preferable residential development patterns as they cluster all residential impacts associated with residences”. Such statements are indicative of a bias for localized site density over the ESEE Analysis’s own acknowledgements that they will hamper Goal 5 program to conserve deer winter range, deer migration corridor, and furbearer habitat and will displace habitat and diminish, incrementally, Deschutes County’s rural character and quality of life. This is not an acceptable trade. As I recall from my student days, when the concept of planned unit developments originally occurred, its purpose was to simulate rural space in an urban setting, not simulate urban space in a rural setting as occurs, in effect, with planned development proposals in RR-10 zones. Lining river canyon rims with 2-acre lots make the fatal mistake of leading the charge in the wrong direction.

## **HISTORY OF LEGAL OPINIONS REGARDING DEVELOPMENT OF FP-ZONED PROPERTY**

Many references are made to nine Hearings Officer’s interpretations of the code, which have allowed Flood Plain zoned land to be used in the acreage calculation as long as the Flood Plain land is used as open space versus recently, one Hearings Officer disagreed with this precedent and found that Flood Plain zoned land is not developable, cannot be included in this density and open space calculation, and instead should be seen as an additional riparian protection area. I suggest that without actually delving into the context and details of each and every one of these nine previous cases referenced, you cannot accept the statement at face value. The language mimics that of a current planned development application and I believe the research and subsequent language was not solely the work of staff, but rather was assisted by outside forces. Context is everything and to accept the statement as fact without being familiar with the specific contexts is dangerous. The only way to get an unbiased evaluation is through an independent legal opinion. It is noteworthy that in the next few weeks, another Hearings Officer will provide a new “most current” interpretation of the code as it pertains to FP-zoned property in planned development open space calculations. Why not wait a few weeks to gather all relevant information (after all, this process has been in the works since 2017)? The new information may help you make a more informed decision to the benefit of Deschutes County.

## **NEED FOR ADDITIONAL HOUSING IN DESCHUTES COUNTY**

This amendment will have an insignificant impact on housing units but it will negatively impact Deschutes County’s rural character, wildlife habitat, and in some cases, scenic river designations. As stated, only 20 parcels are affected county wide. Any housing comparison is not between developing vs not developing these parcels. Rather, the comparison is increasing the number lots slightly by including FP-zoned property vs developing them as a planned development without the additional increase, vs simply developing them as a standard RR-10 development. The notion that these amendments are going to have any noticeable impact on Deschutes County housing is a false narrative to the detriment of more traditional rural values.

## ALTERNATIVES TO THE AMENDMENTS

Develop a conditional use overlay process to acknowledge and mitigate zoning anomalies on a case-by-case basis for each of these 20 properties as needed. I believe if work had begun on such a process in 2017, it would have been completed long ago with far less use of staff time.

Thank you for the opportunity to provide citizen input. I have attempted to be civil and factual. In truth, I am angry with what I have perceived over many meetings to be unequal access to decision makers (both direct and indirect) by moneyed interests with a personal financial stake in the outcome. Please resist them! My email address is included below in case you may desire additional perspective.

James Taylor

A handwritten signature in blue ink, consisting of a stylized 'J' and 'T' followed by a horizontal line.

7695 NW 93<sup>rd</sup> Street  
Terrebonne OR 97760

[jat@ckjt.com](mailto:jat@ckjt.com)