

A black bear is walking through a grassy clearing in a forest. The bear is in the lower right quadrant of the image, facing right. The clearing is filled with tall grasses and ferns. In the background, there is a dense forest of evergreen trees. The lighting is bright, suggesting a sunny day.

# Wildlife in Managed Forest Settings

Food, Water, Cover, etc.

Habitat Diversity matters

by Ken Bevis

WA DNR Stewardship Wildlife Biologist

# Presentation Outline

- What we do
- Food, Water, Cover, Space - Basic needs
- Management and enhancements



# WA Dept. of Natural Resources Forest Stewardship/ Service Forestry Program



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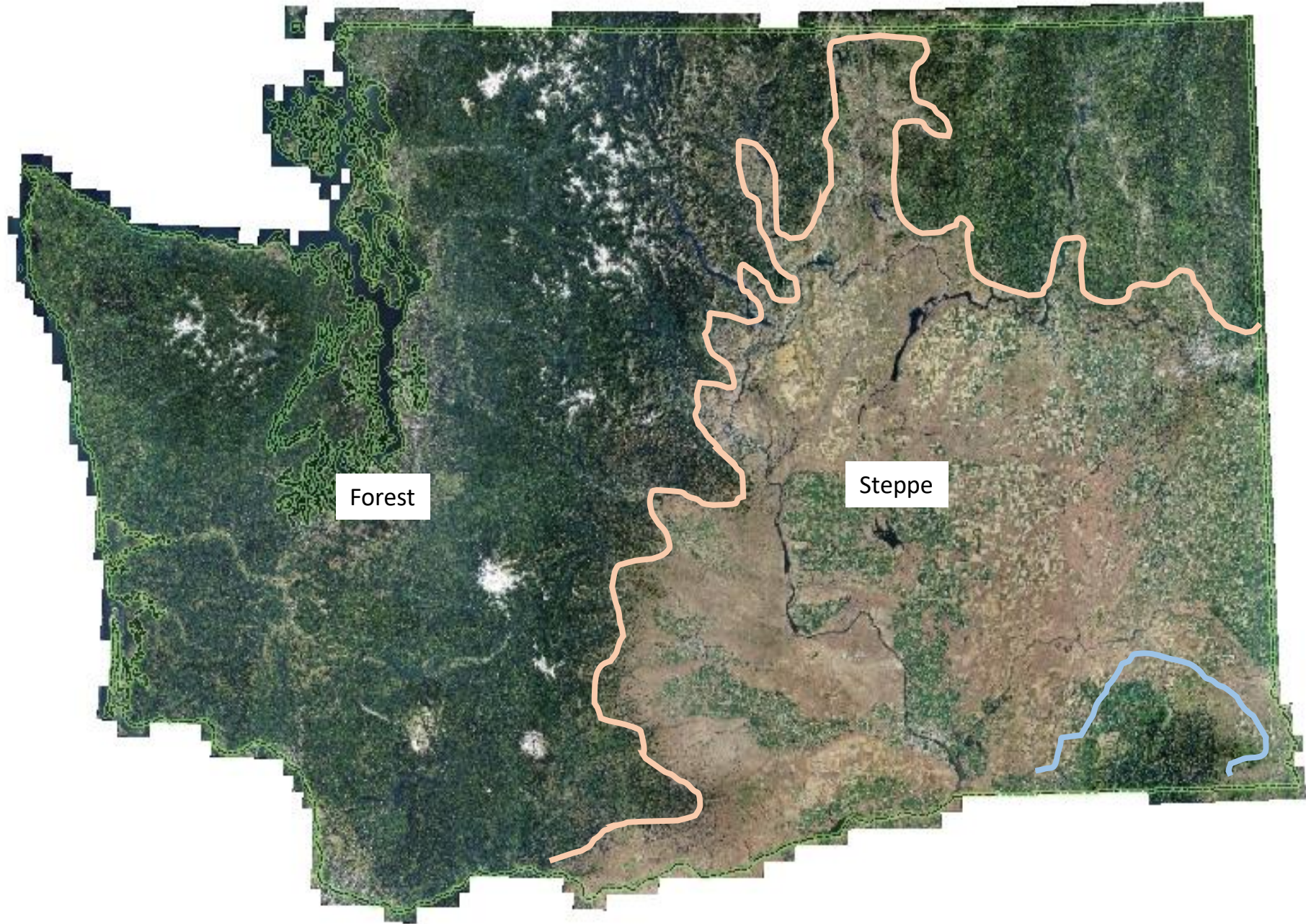
- We help people with 5-2,000 acres with writing Stewardship Plans, cost shares, technical advice.
- Work with WSU Extension, sometimes Idaho and Conservation Districts extensively
- WA DNR Small Forest landowner for contact info and programs - [dnr.wa.gov/sflo](http://dnr.wa.gov/sflo)

(FDCNR AFDFS WHBT)

**We work with lots of Wonderful landowners  
who love their forests and habitats, like you!!!**



# Washington is 2/3 naturally forested



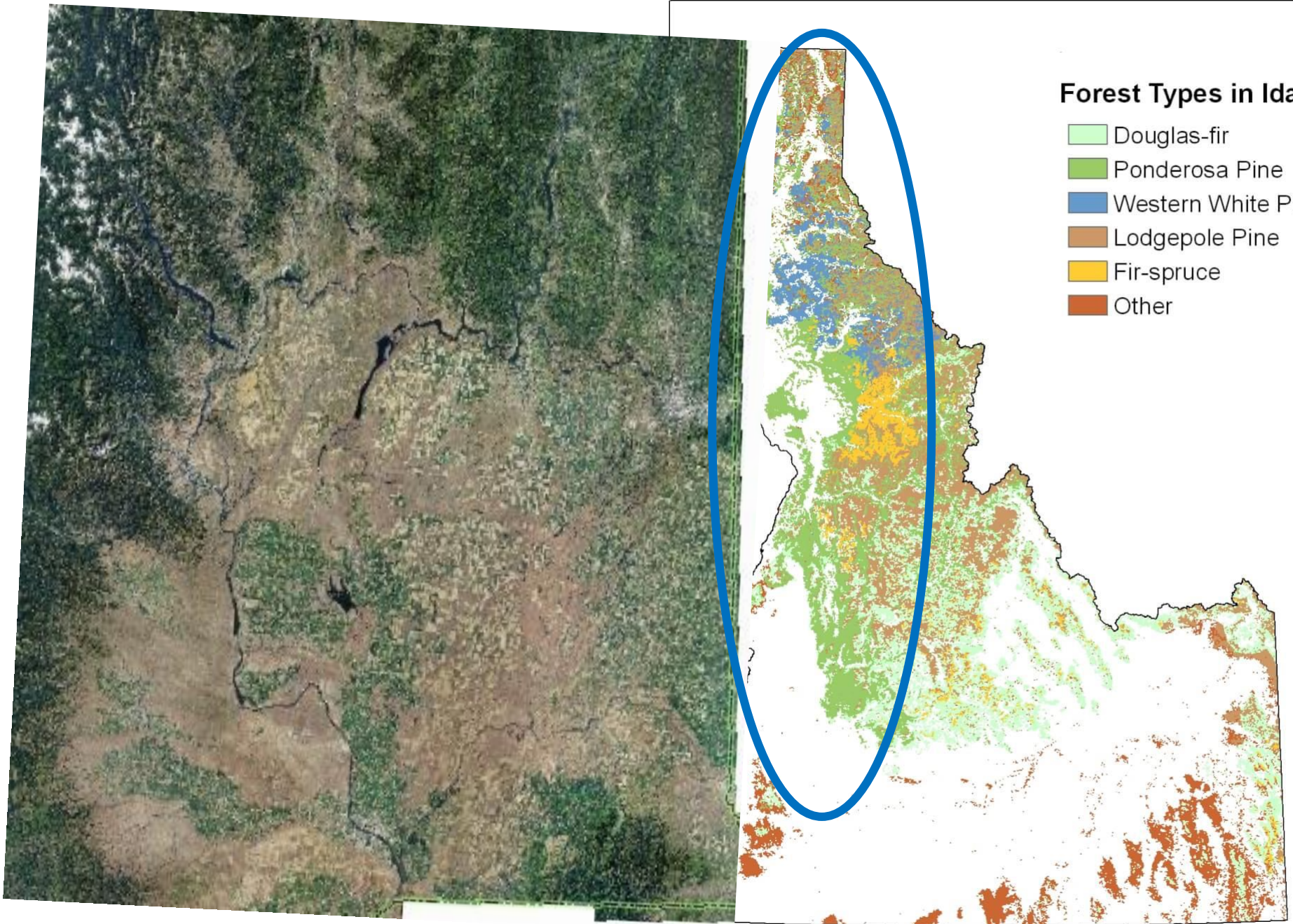
**We have conifer dominated forests in complex landscapes**



**NE.WA - Idaho – Mesic and dry  
Rocky Mountain Forests -  
Rich and diverse habitats**

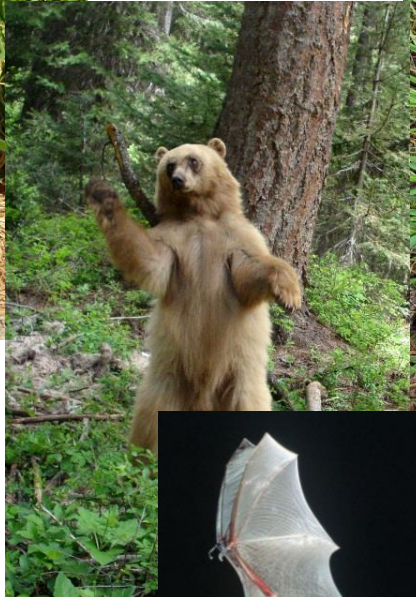
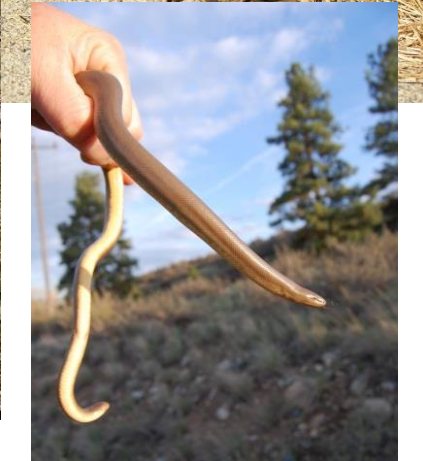


Idaho and Washington forests and wildlife are similar





Over 400 species of wildlife live in our Northwestern forests



**Wildlife is an “Emergent Property” of habitats**



**Complex habitats provide the most opportunity for wildlife**



- Humans often (usually) simplify habitats



# Stands are “Parked Out”



Too “clean” for good habitat



**We can manage for habitat complexity**



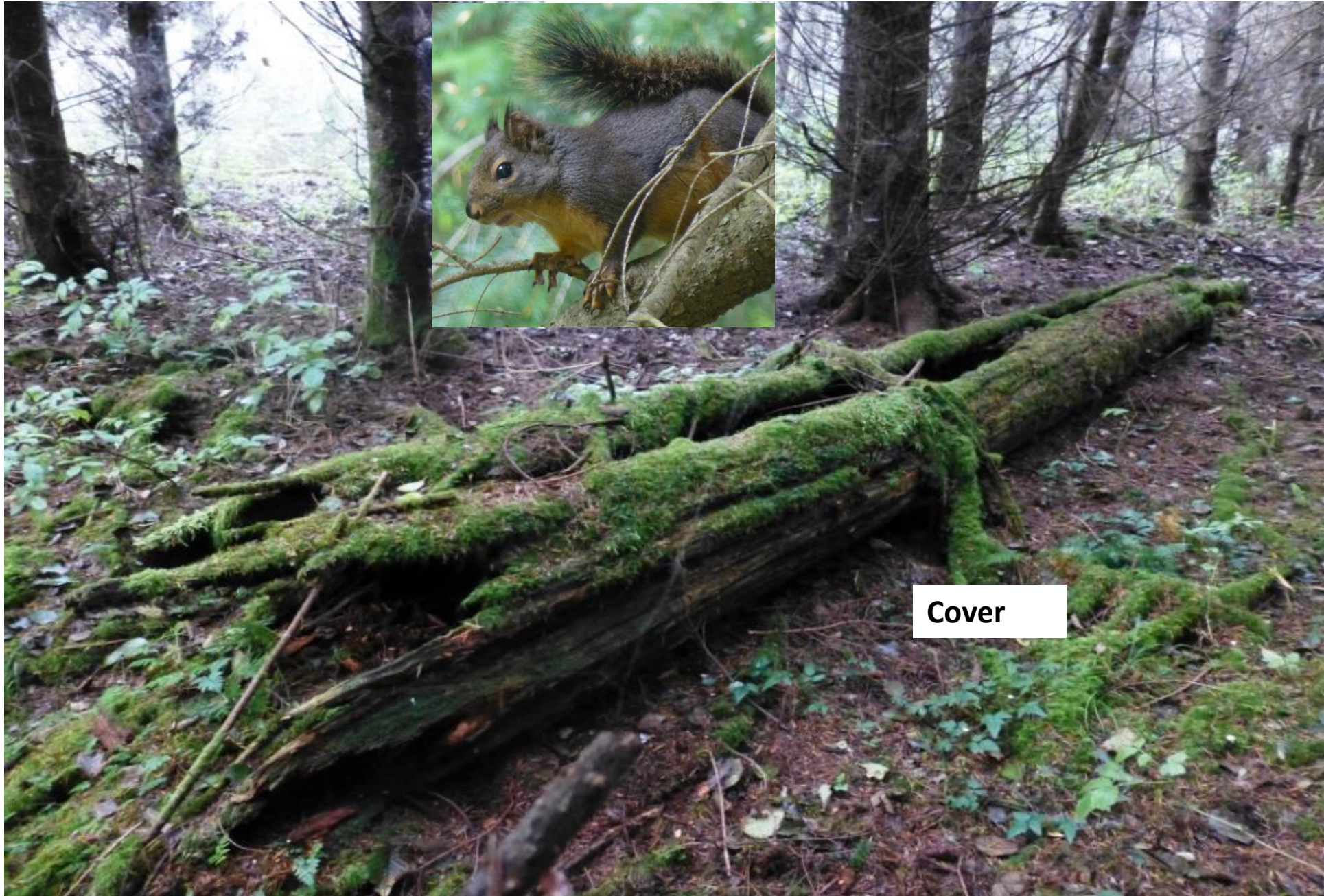
**But it should be on purpose, not just by accident!**

# - Wildlife Biology – basic needs

- Food
- Water
- Cover
- Space



## Wildlife has 4 basic needs –

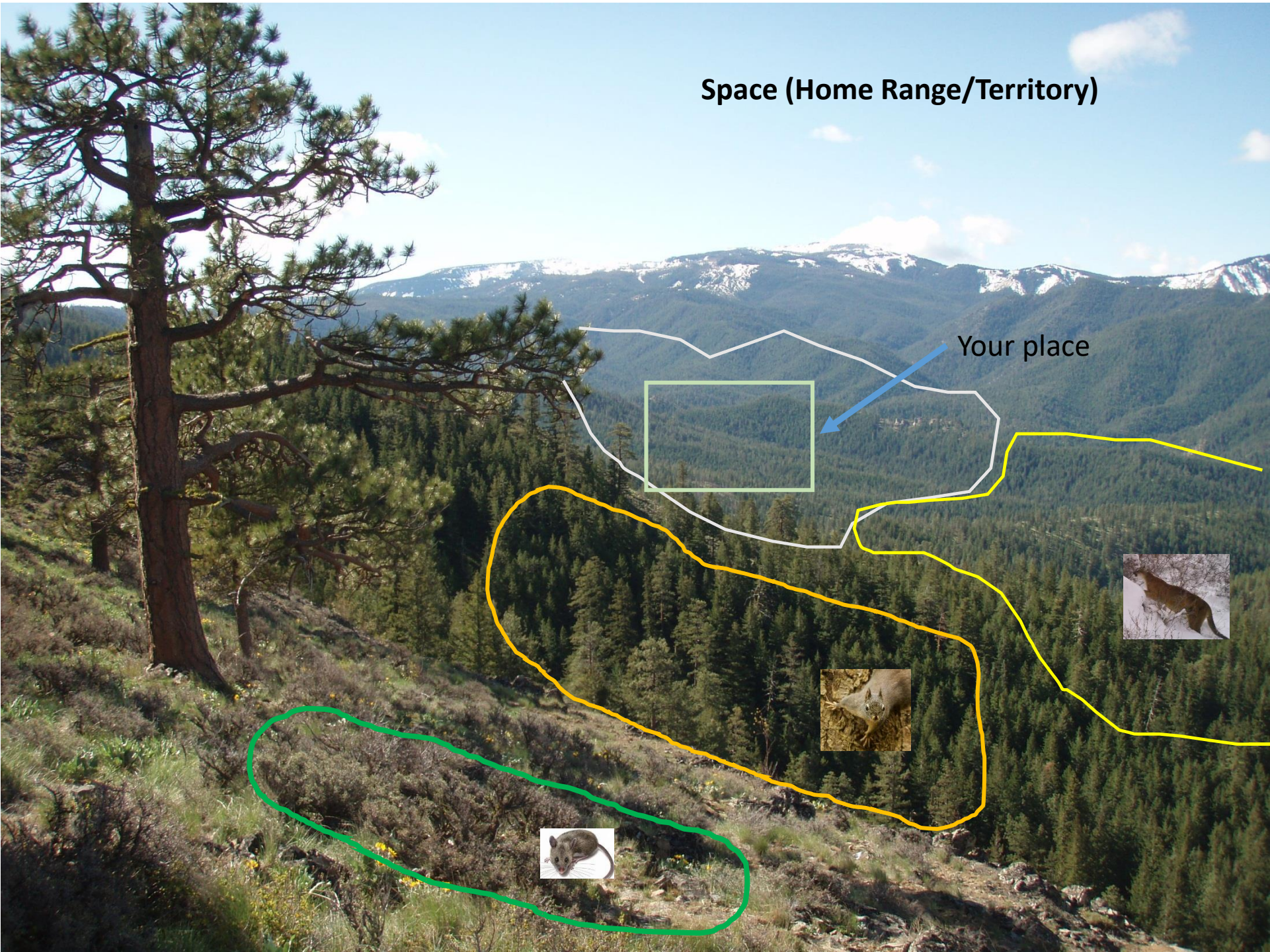


Cover



Space (Home Range/Territory)

Your place



All must be present in home range for Wildlife to survive and reproduce





**Our private forests  
have been subjects of  
Long term management**

**Our forests have complex habitat niches**

**Canopy**

**Stem**

**Understory**

**Ground**

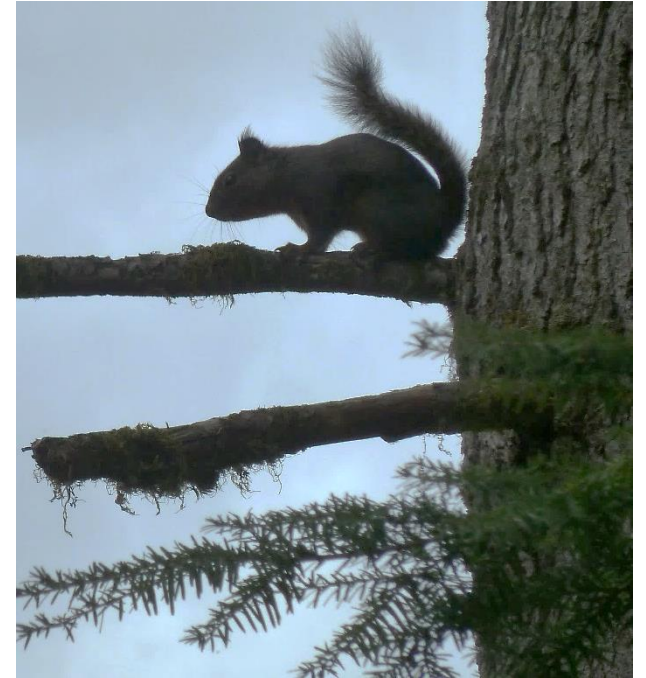
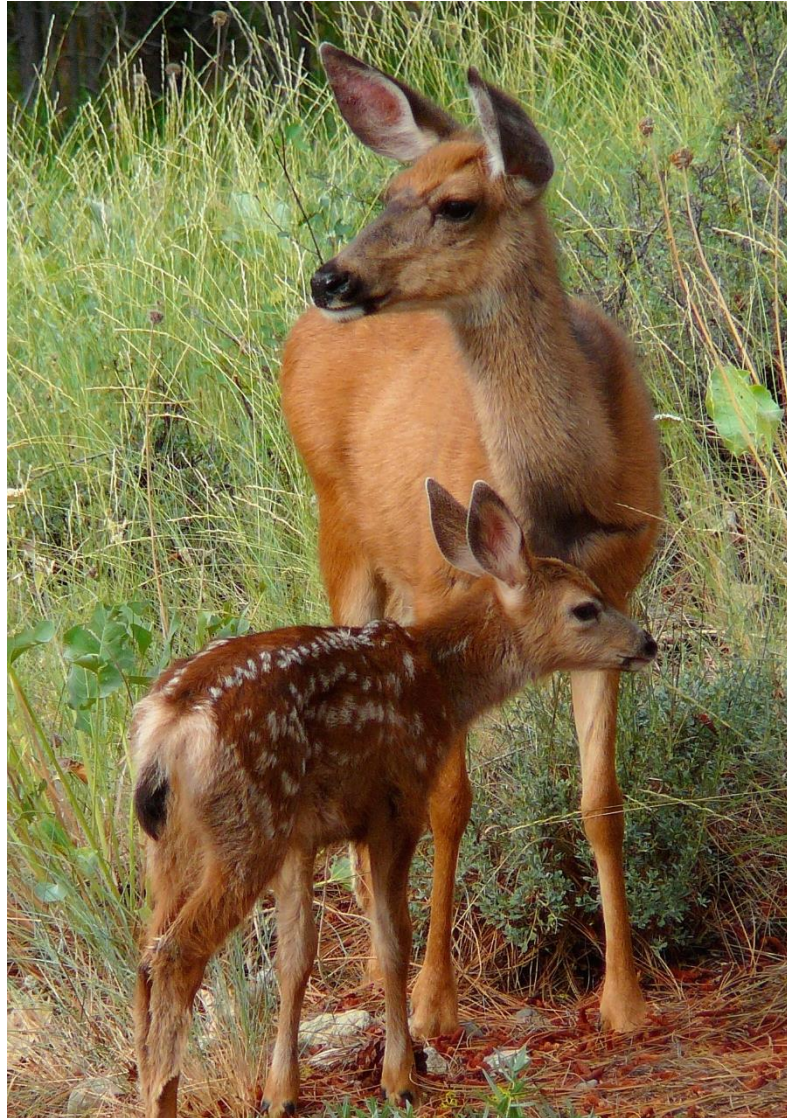
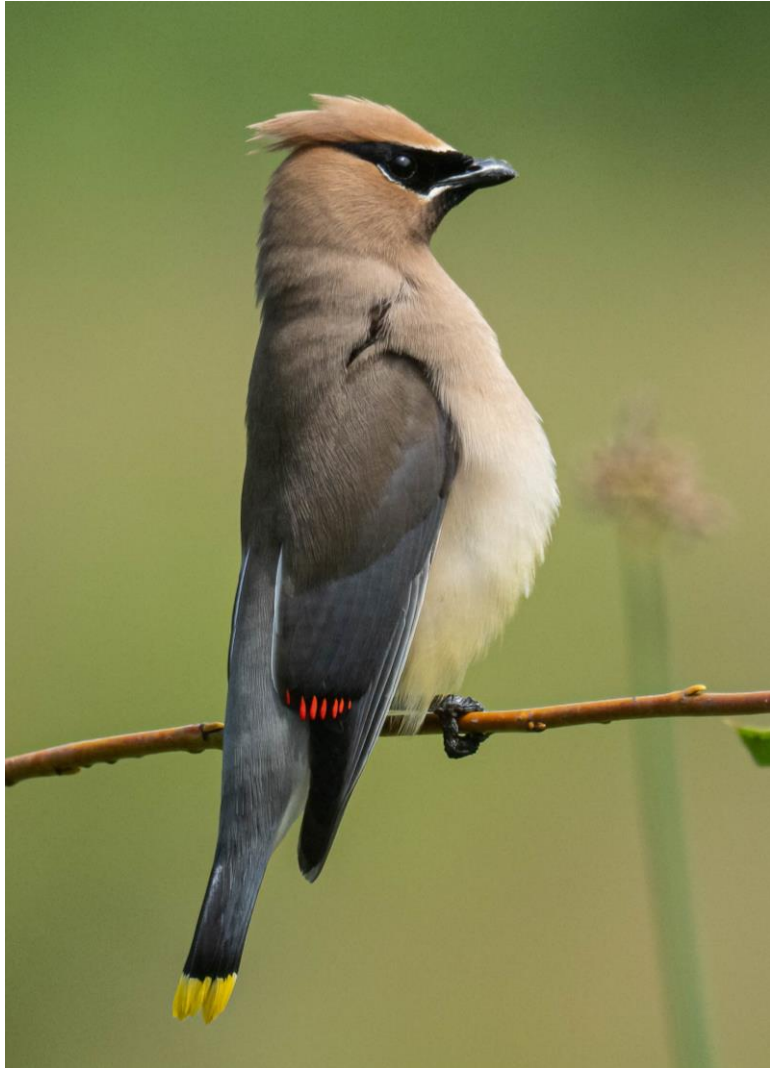


All forest ages and structures are beneficial to some wildlife.

Different stages



# Focus on these key habitat elements for wildlife



**Food** – for Herbivores, provide different plants, especially fruit bearing shrubs and legumes.

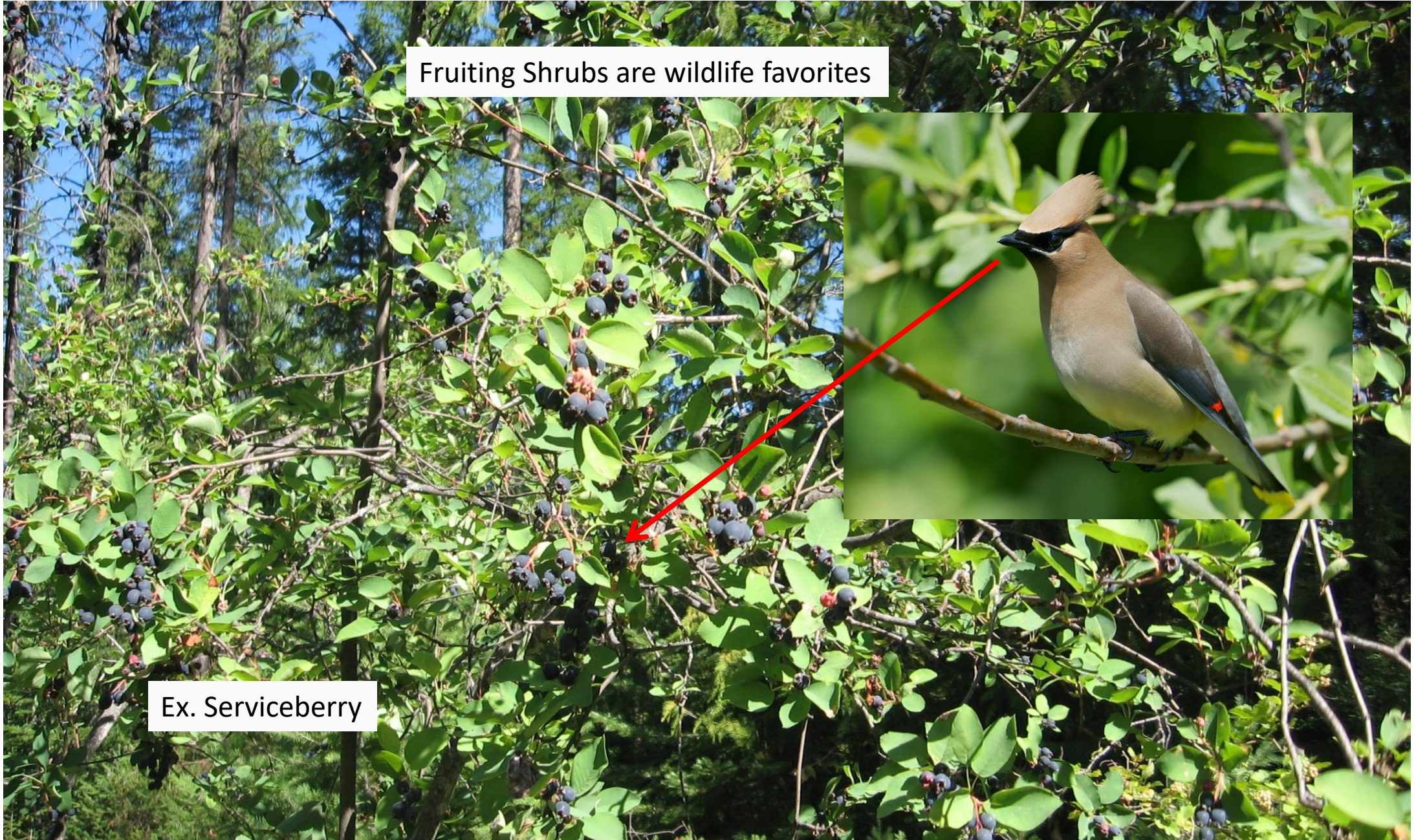


# Shrub layer is extremely valuable habitat

Fruiting Shrubs are wildlife favorites



Ex. Serviceberry





**Native plants that  
bear fruit are great**

**Cascara**

**Currant**

**Elderberry**

**Serviceberry**

**Chokecherry**

**Hawthorne**

**Huckleberry**

**Salmonberry**



***Plant what grows  
On and near your property!***

# Elk



**Size:** 4-6 ' tall

**Weight:** 400 -900 lbs

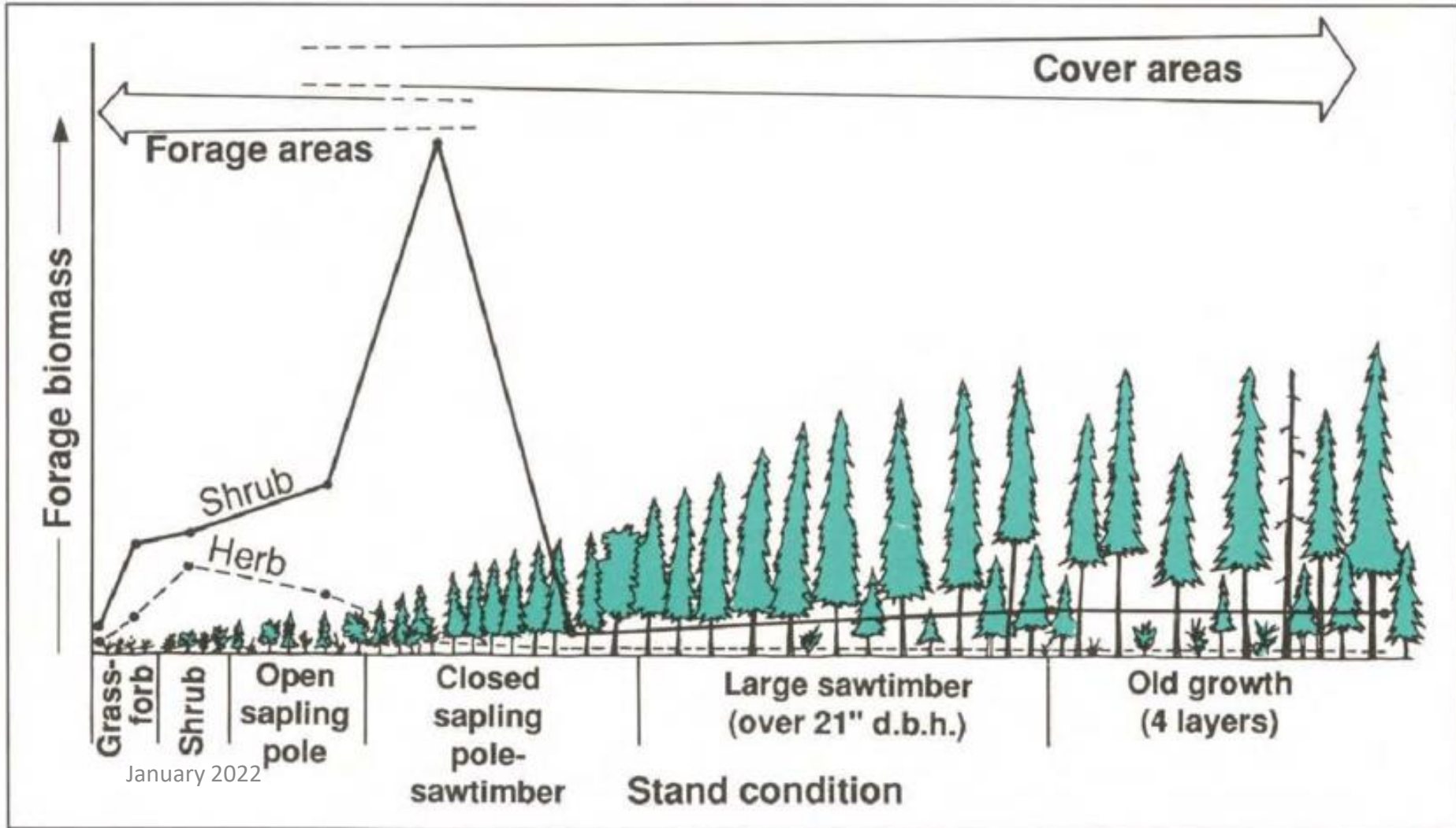
**Early seral for food**  
**Later seral for cover**

**Food:** Herbaceous plants/ grass

**Habits:** Bed down in dense  
Cover. Feed in openings,  
often at night  
Some migrate elevationally  
Highly sought. Generally wary.



# Deer and Elk habitat and succession





**Food – For Carnivores, provide small mammal habitats**



**Food – for many carnivores – down wood, dense shrubs, grassy openings**



## Black bear

Uses shrub and down log habitats



**Size:** 5' – 6' long  
2' -3' shoulder ht.

**Weight:** 200 – 475 lbs

**Food:** Omnivorous

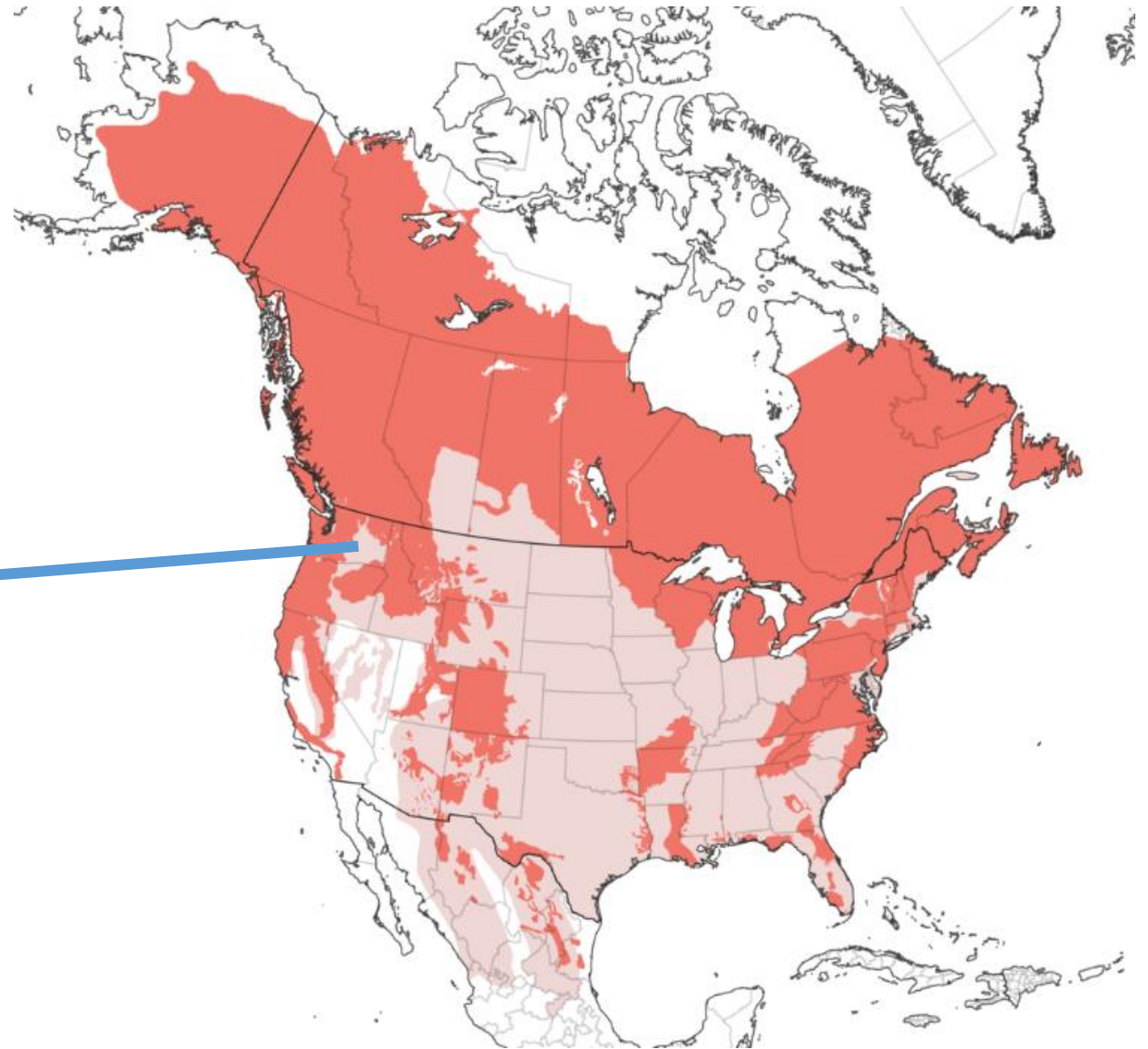
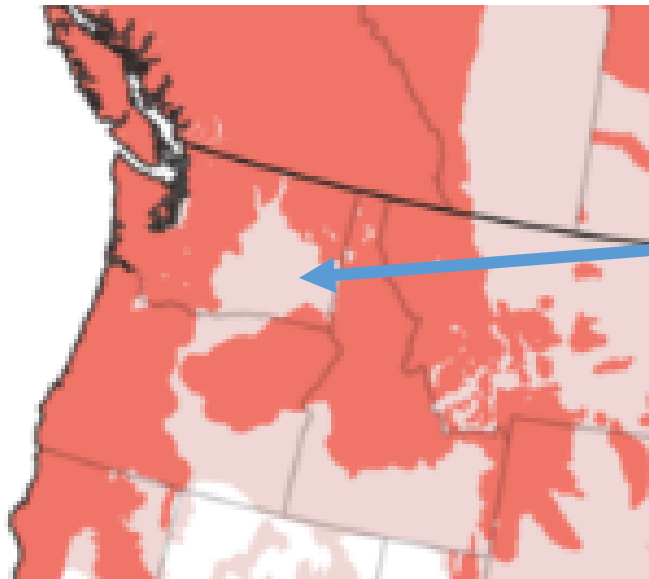
**Habits:** Nocturnal  
Semi-hibernates,  
Seldom aggressive  
Ranges 15 miles  
Color varies from blonde  
To black. Western Wa  
Mostly black

# Food – Omnivo





Range of  
Black bear  
In NW N. America



**Water – Aquatic and Terrestrial organisms universally need some.**



- Water Sources are critical – provide pools, ponds and puddles



# Ephemeral Water!



Created  
water  
sources  
Are great!



Cover - Dense vegetation for shade, (food) and predator avoidance.





- Down wood provides cover (and food) for many species





# Ground Level – down wood



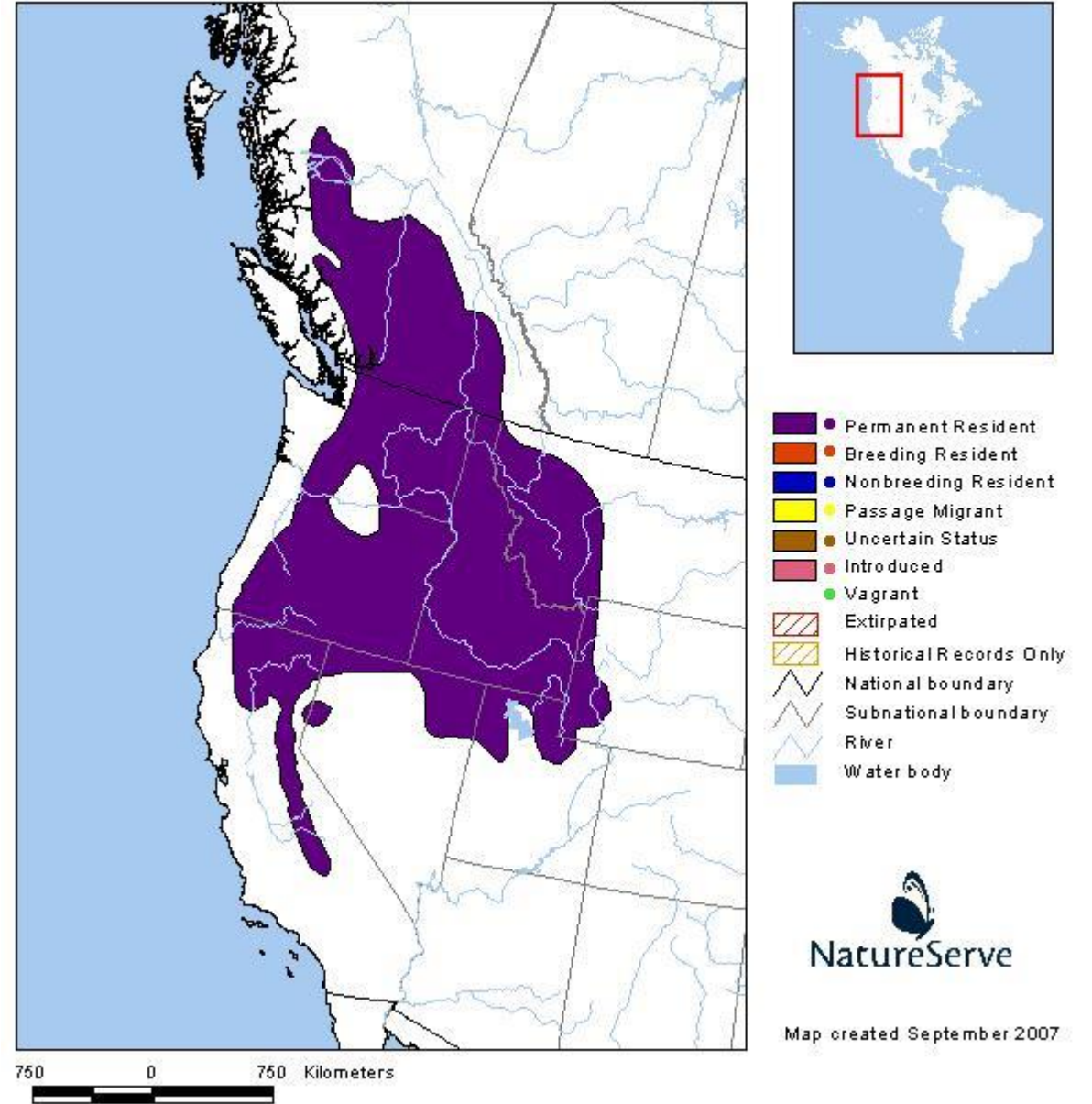
Yellow pine chipmunk

Seed eaters. Use down wood, soil and piles.



Tom Munson photos

# Range of Yellow pine chipmunk In NW N. America



**Cover – Holes in trees for Rest, thermal shelter and reproduction**



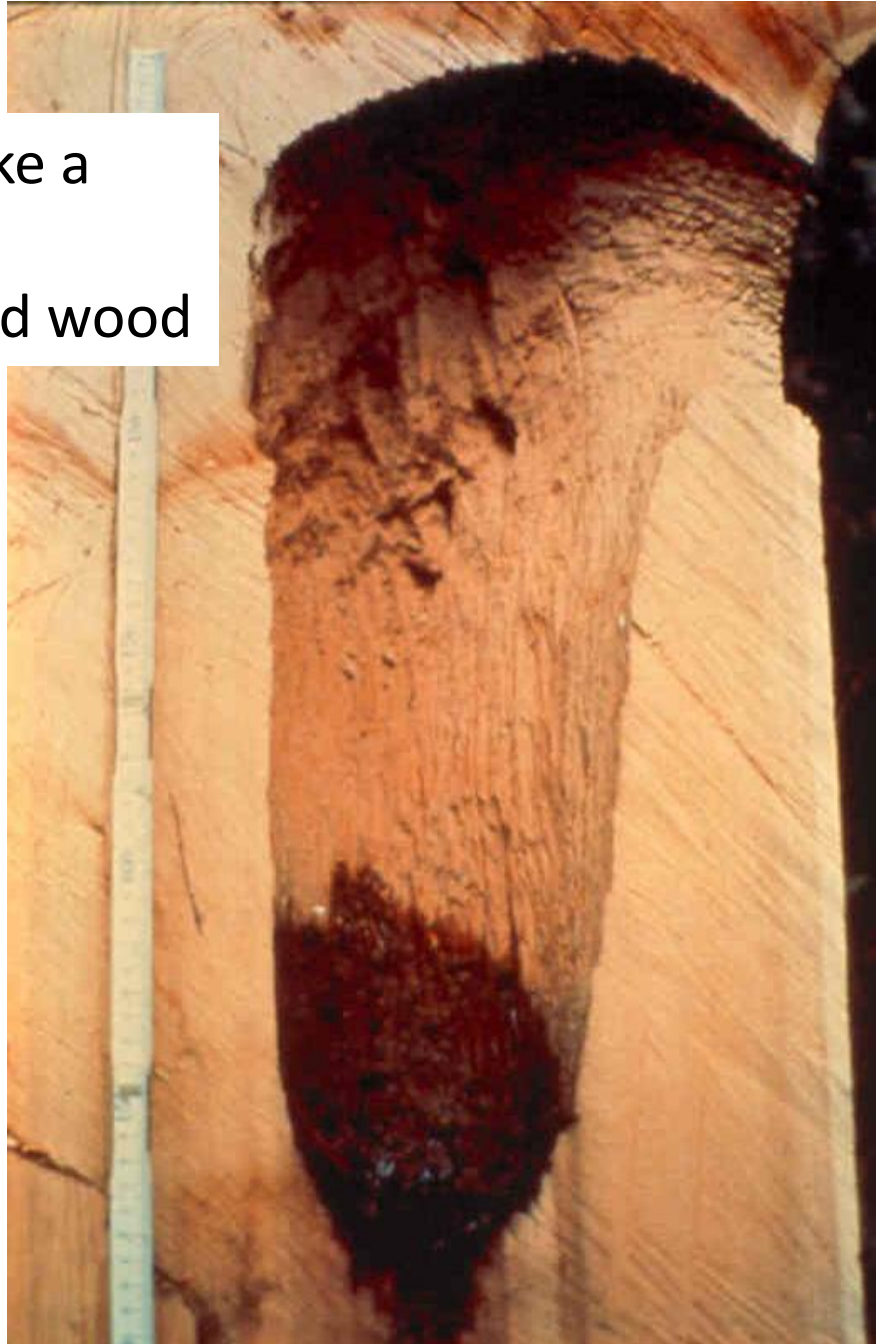
- Cover in dead trees - cavities

- Protect existing snags and create them where they aren't

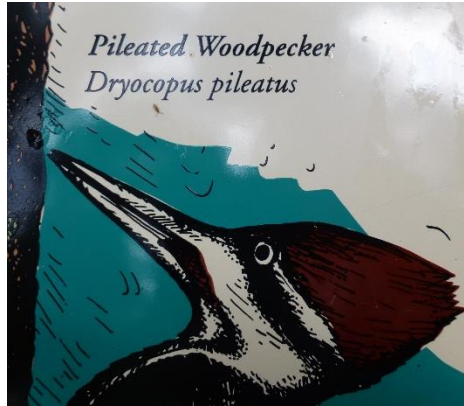




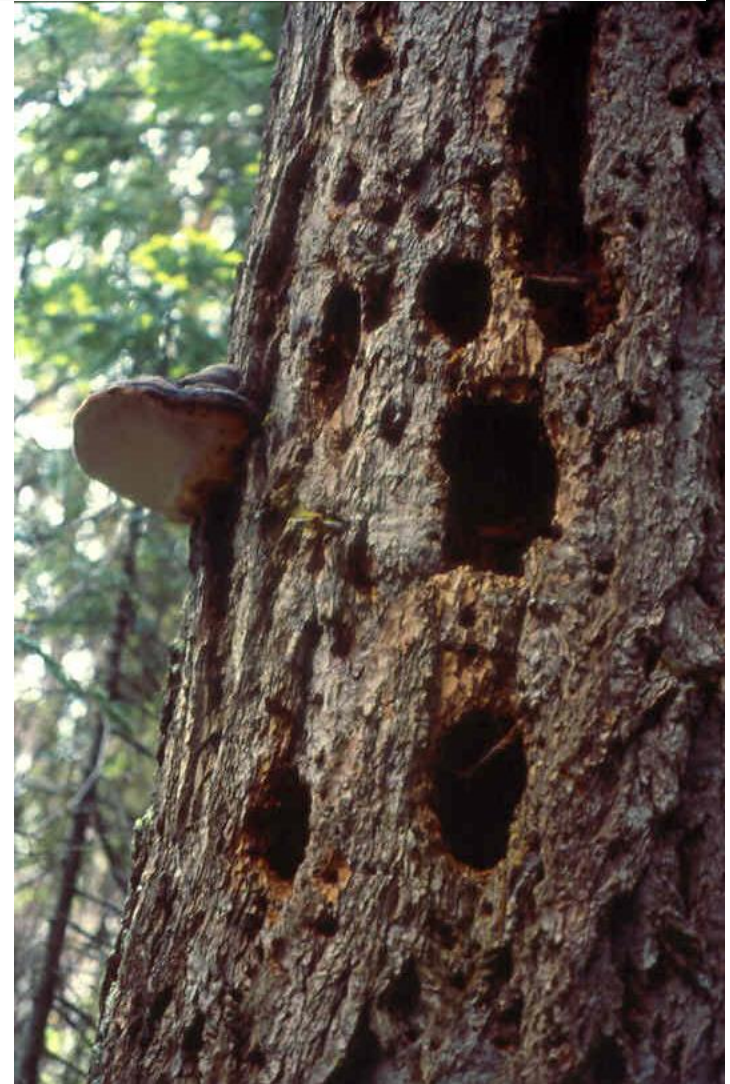
Woodpeckers make a  
Big, hollow nest  
Cavity in soft, dead wood



# Dead tree users



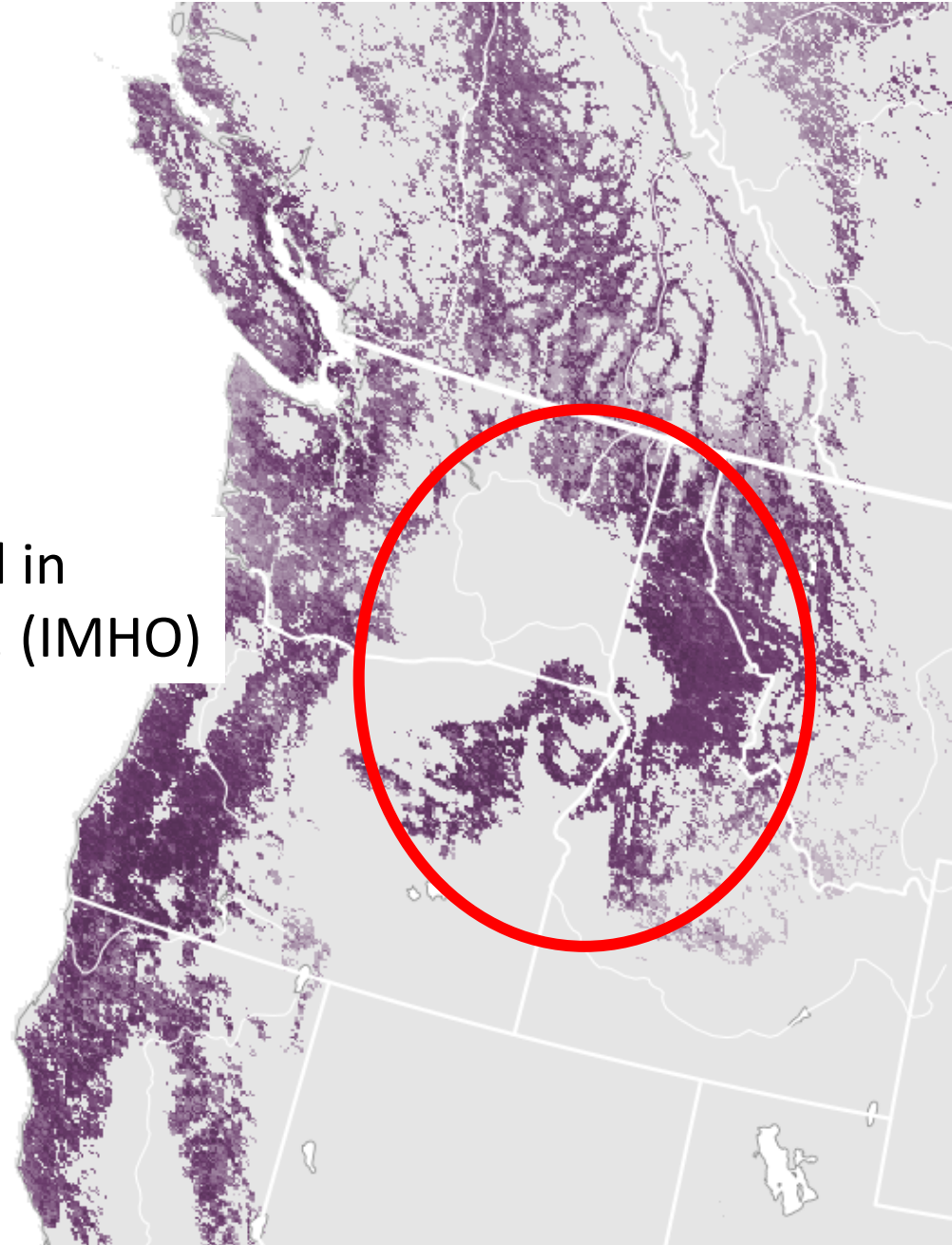
Primary Cavity Excavators -  
Pileated Woodpecker



Range of  
Pileated Woodpecker  
In NW N. America



Coollest bird in  
Our forests! (IMHO)

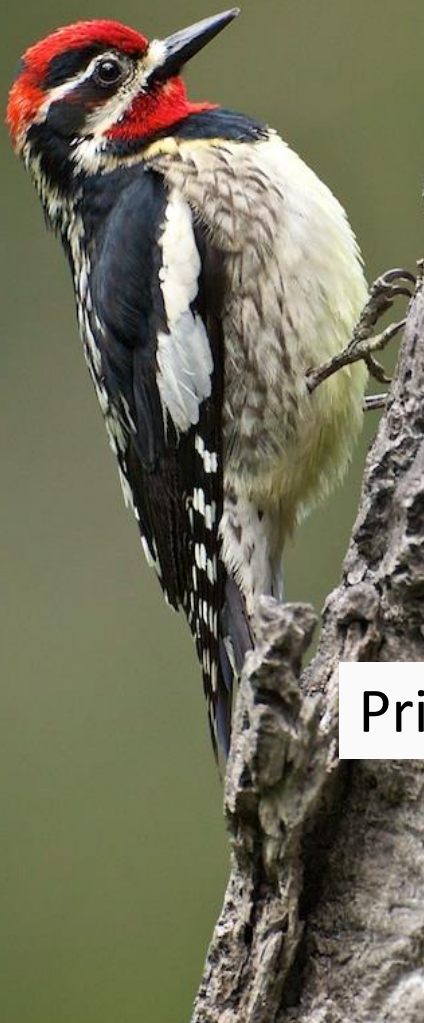






Dead  
tree  
users

Red-naped  
sapsucker



Hairy woodpecker

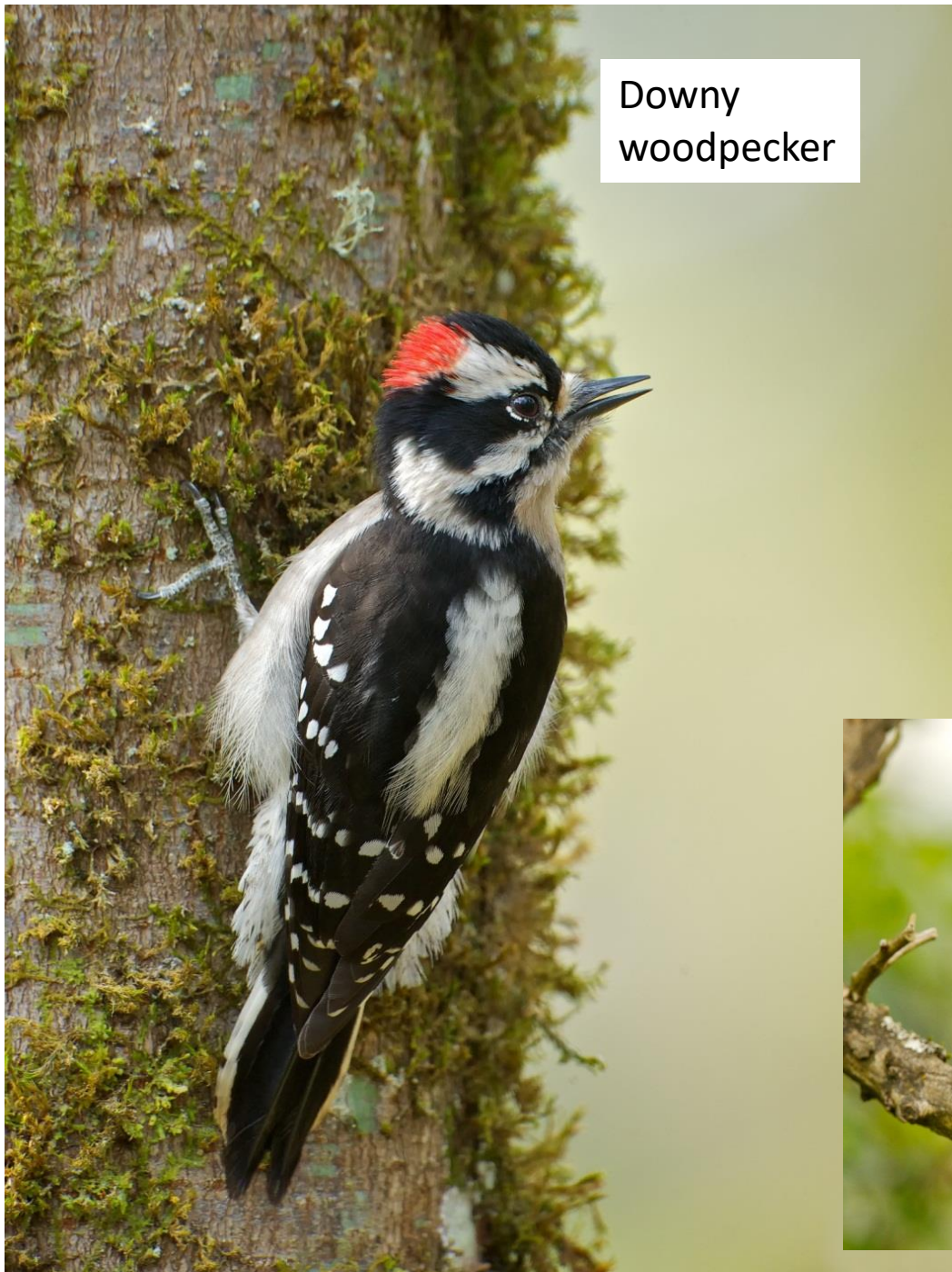


Primary Cavity Excavators -

**Hairy Woodpecker**



Dead  
tree  
users



Downy  
woodpecker

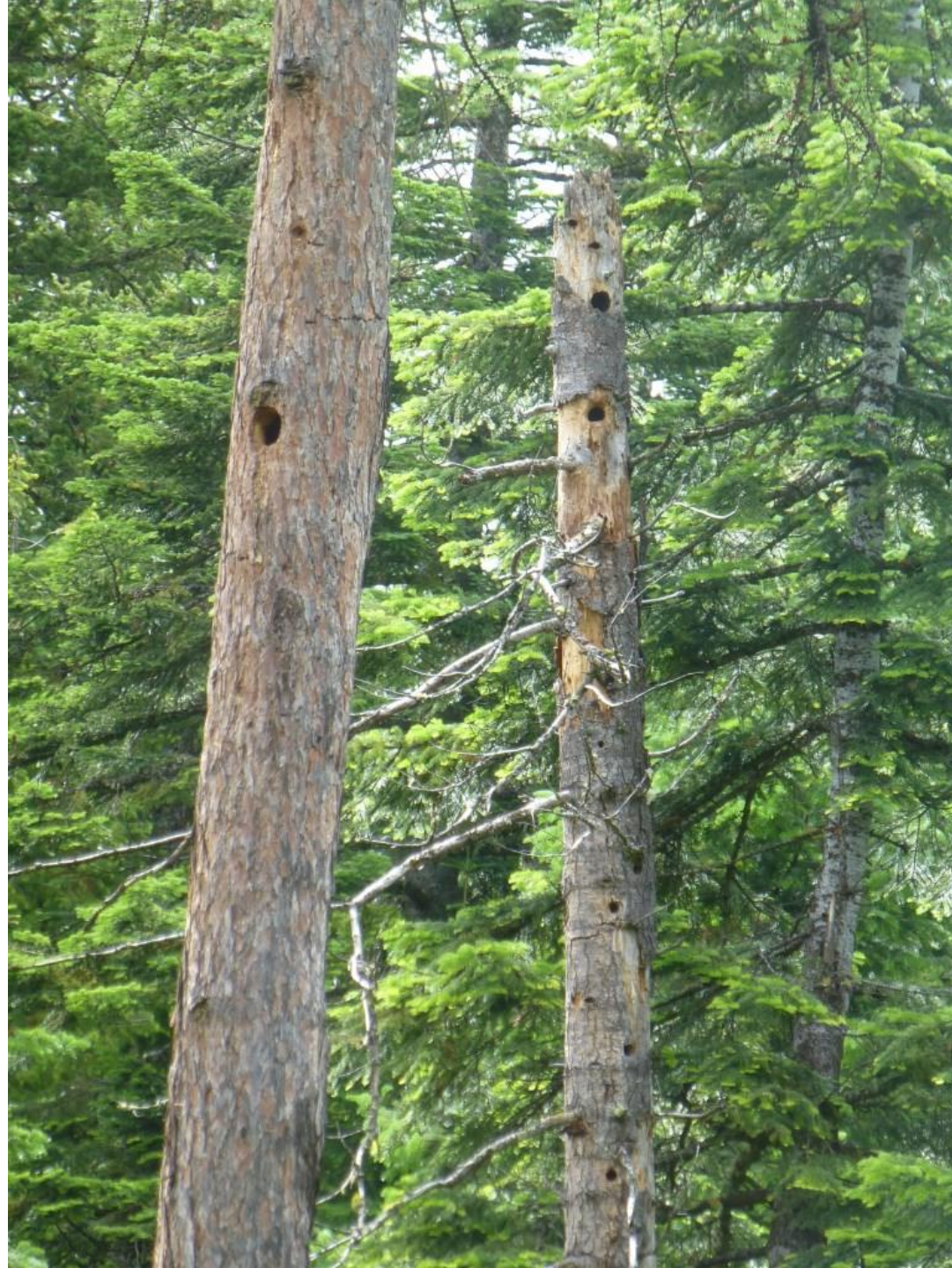


Red-breasted nuthatch



Northern  
flicker

**Key  
Habitat  
Features  
Used by  
Other  
Critters after  
Woody is  
done**



Secondary cavity users -  
Small owls



Pygmy  
owl



Screech  
owl

Secondary cavity users  
Mammals in cavities



Flying and red squirrels,  
Marten & bats



Overstory forest canopies are important habitats – big trees have more complexity.







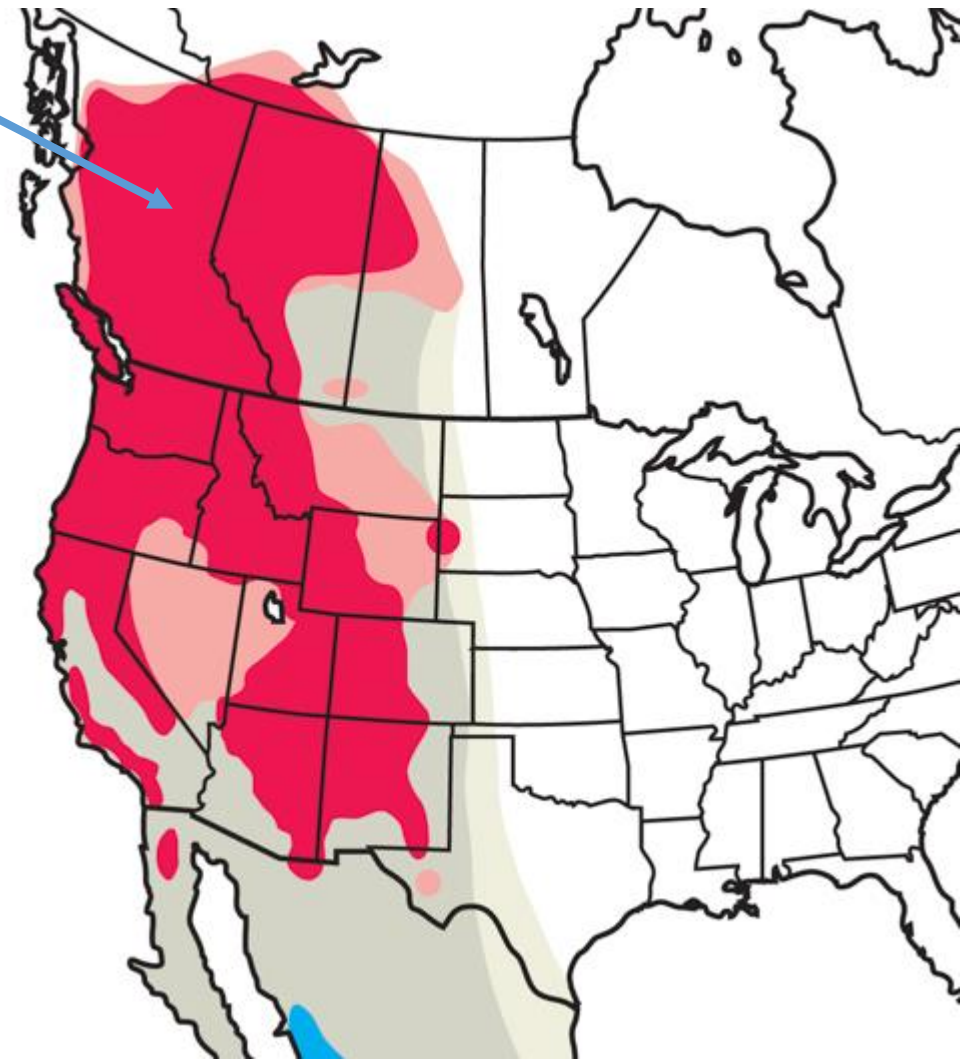
Big trees are  
essential  
backbone  
Habitat features in  
forests



Western tanagers  
like mature canopies



Range of migratory  
Western tanager  
In NW N. America (breeding)

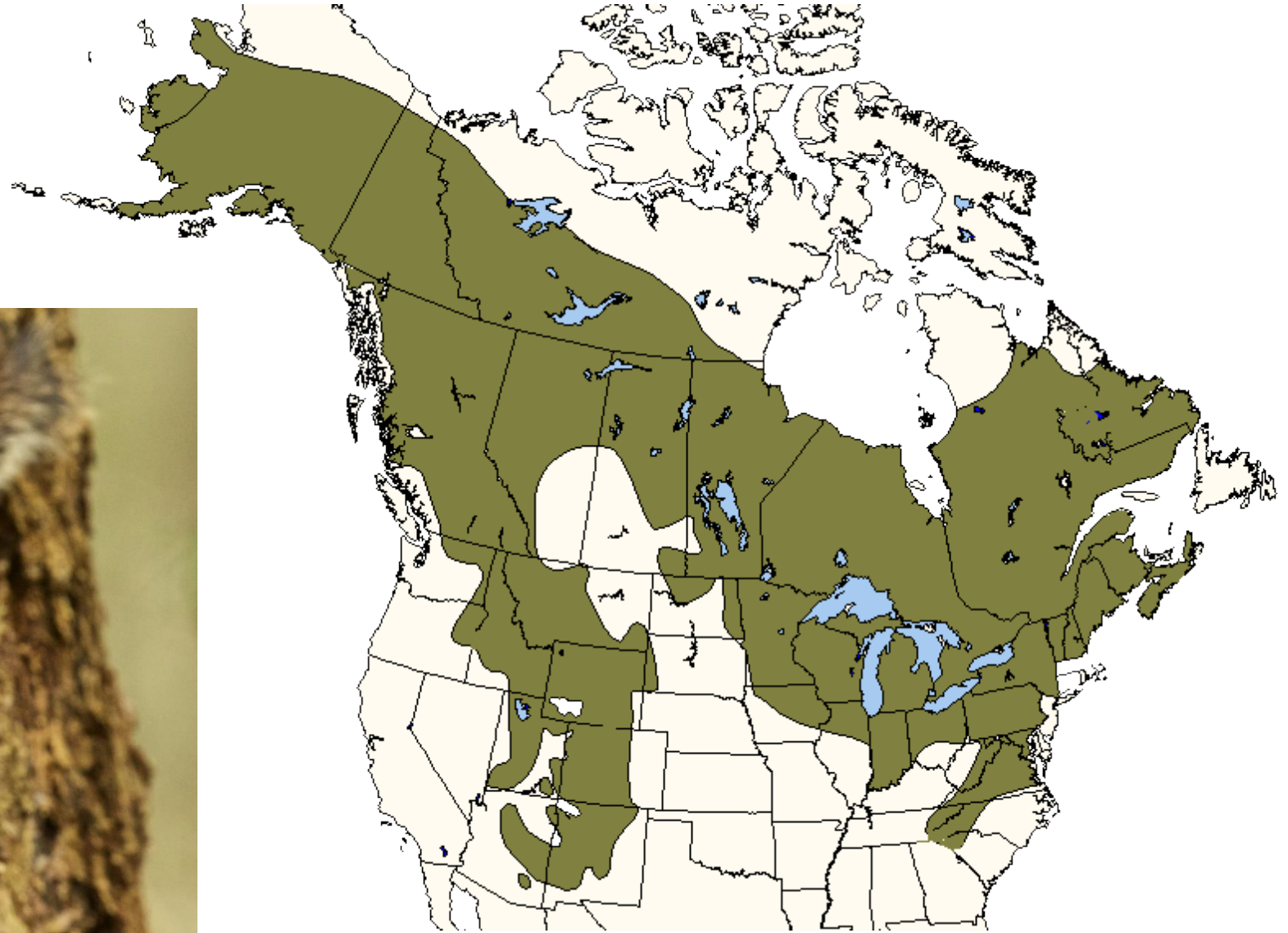


Red squirrels need canopy:  
They eat conifer seeds  
and gotta hide somewhere



Like dwarf mistletoe clumps!

Range of  
Red squirrel  
N. America



Cover: Provide patches of big trees and edges all mixed together.



We can Provide niches for multiple species



And provide enhancements that help wildlife survive





- Management can protect and mimic broken topped trees like these



## Snag Creation – top and rough it up



If no snags, (or not enough), or hazard tree opportunity  
Create some! –Arborists love this work!



- Hazard to Habitat – mimic broken tops



- Suncadia by Roslyn



- Kitsap Forest Theatre

If harvesting,  
Snag Creation  
With Hot Saw!



*Do this  
Always when  
Butt has defect  
Make part of  
Contract. 2/ac.*



**IT WORKS!!**

Bluebird nesting in  
Snag created by felling  
machine  
(13 years prior)



## Nest Boxes are Cavity surrogates



Make them so they can  
Be opened for cleaning-  
Attach with aluminum nails

- Nest boxes – imitate abandoned woodpecker cavities and hollow stems



Tree swallow



Nest Box users



Douglas Squirrel



Wood duck



- Build to specifications – I recommend two sizes. Song bird size and small owl - kestrel size

- Place 8-14 feet up if possible, but eye level is ok.
- Use aluminum nails or long screws to mount.



- Habitat Piles



- Big stuff on the bottom – make caverns



- Caution: no green ponderosa pine in Eastern WA between March and Sept (approx.) to reduce risk of ips beetles.





Make  
Den sites



# Create dens with thinning material

- Create den structures by arranging lowest pieces to make “tunnel”



Who might use your Habitat pile?



**Best Strategy for maximum species diversity is to Provide habitat complexity, and use strategic enhancements**





How can we help wildlife?





**Good Luck with your forests and wildlife!**



Thank you!

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## King of the Woods

I'm a woodpecker  
King of the trees  
I've got padded brains  
I do as I please  
Hey Hey  
I'm the King of the woods

I'm a crazy red hammer  
I make cavities  
Homes for you  
And homes for me  
Hey Hey  
I'm the king of the woods



I climb up the trees  
Tappin' tappy tap  
Lookin for that insect cave  
When I find that hollow sound  
I ax my way in  
And slip in my sticky  
Sticky tongue  
Yum!



I'm a woodpecker  
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I got rhythm in my bones  
I'm synchronized  
I bang on the highest  
Place I find  
I play my licks  
I do my tricks  
And sometimes I sing  
Just for fun!  
Yeah!

(Break!)

Huh duh ha ha hah!  
Wika Wika Wika Wik  
Hey Hey!



I'm a woodpecker  
King of the trees  
I've got padded brains  
I do as I please  
Hey Hey  
I'm the King of the woods

I'm a crazy red hammer  
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