



Identifying and Reporting Exotic and Invasive Weeds

Wyatt Williams, Invasive Species Specialist

December 5, 2019



**Oregon Department
of Forestry**

*Promoting and Practicing
Sustainable Forestry*

ODF Private Forests Division Forest Health Unit

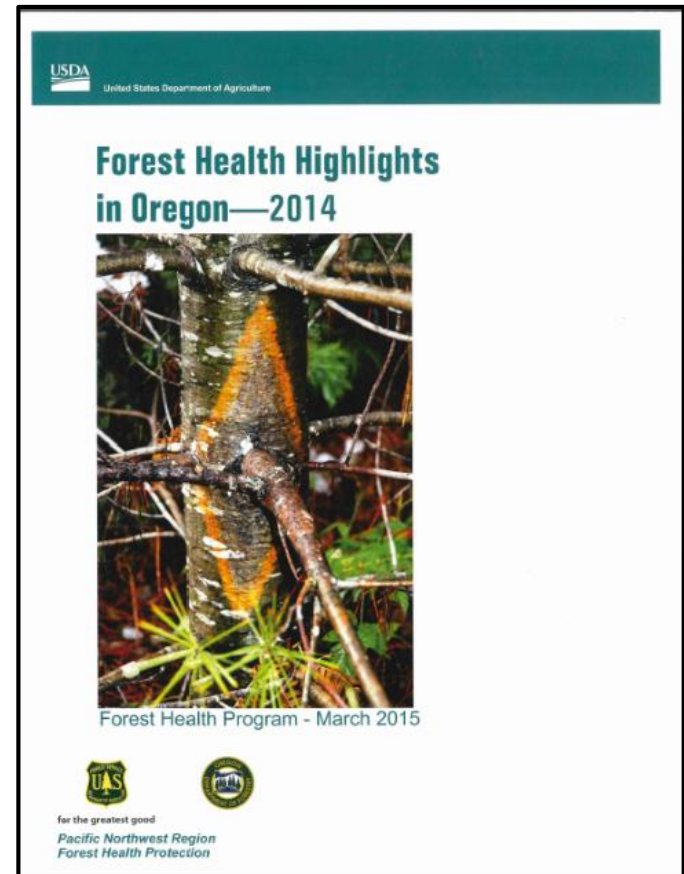


Technical specialists:

- Forest insects & disease
- Exotic, invasive species
- Abiotic tree damage
- Annual survey and monitoring
- Research

11 million acres of state and private forests

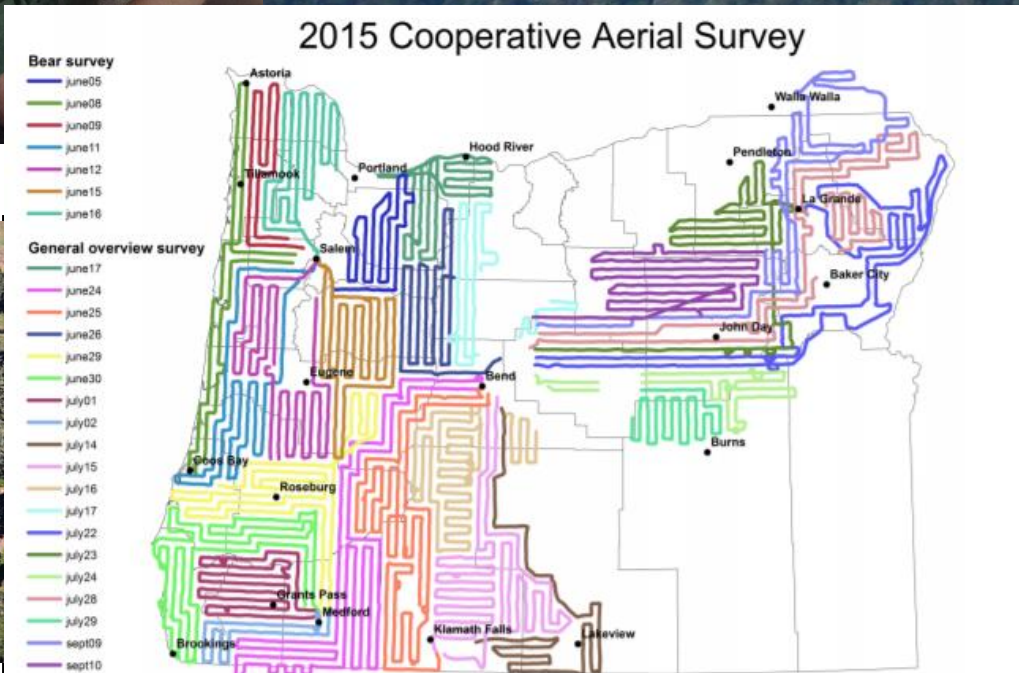
Christine Buhl, Forest Entomologist
Sara Navarro, Forest Pathologist
Wyatt Williams, Invasive Species
Danny Norlander, Survey Specialist



Fact sheets and highlights:
<http://tinyurl.com/ODF-ForestHealth>

ODF-USFS Aerial survey

>30 million acres surveyed annually



Forest Health Fact Sheets



Insects, disease, weeds, and abiotic damage.

<http://tinyurl.com/ODF-ForestHealth>



Oregon
Department
of Forestry

Several species of geraniums have been introduced to the western United States. Two species—**shiny geranium** and **Herb Robert geranium**—are still expanding their range. Both species can reach high population densities where they crowd native herbaceous plants, likely affecting native species that rely upon woodland systems.

Introduction

Shiny geranium and **Herb Robert** are exotic forbs found in forests and agriculture of western Oregon. Both are designated *List B Noxious Weeds* by the Oregon Department of Agriculture. **Shiny geranium** thrives in shade of oak, ash or Douglas-fir woodlands. Although it does not directly compete with timber seedlings, it can displace native forbs, forming nearly 100% monocultures. **Herb Robert** can occupy sunnier sites but still reaches incredible densities—up to 250 plants per square meter. Ecological impacts to soil, native flora and fauna are largely unknown.

Growth and Reproduction

Both geraniums are winter annuals (in some cases, biennials); seeds germinate after the first fall rains. Seedlings grow significantly during the winter months, crowding out natives by April, at which time the geraniums begin to flower. By late June to July, flowering is complete and seeds become apparent. Like most geraniums, natural seed dispersal can reach 10-20 feet, when spring-loaded fruit capsules dry out in the summer. Seeds can remain viable in the soil for many years and can be transported on clothing and equipment. **Shiny geranium** can re-sprout from roots.



Shiny geranium has long-lived seeds and is capable of dominating the forest floor (left). It has red stems, deeply lobed leaves (right), and pink, 5-petaled flowers (above). It escaped from gardens and has been rapidly expanding in forests of western Oregon. Environmental effects are largely unknown.



What are "herbicides"?

Herbicides are a class of pesticides used to control unwanted plants. Herbicides are used in agriculture, residential and urban areas, forestry, industrial sites, railroads, and other settings.

How are herbicides used in forestry?

Oregon's Forest Practices Act requires planting of tree seedlings within two years after a timber harvest. To meet this objective, both families with small properties and large industrial companies use herbicides to control unwanted vegetation so tree seedlings can

How often are herbicides used in forestry? Forest landowners are responsible for only 4 percent of all pesticides (including herbicides) used every year in Oregon. In Western Oregon forests, herbicides are typically applied in the first two or three years after harvest. Because of different management methods on the slower-growing forests in eastern Oregon, herbicides are used much less in that region of the state.

What laws regulate forest herbicide use? All pesticides used in the United States must be



What are invasive species?

- *Non-native in origin*
- *A pest (competes with humans for resources)*
- *Tremendous negative consequences*



Native



Non-native



Hypothetical community



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Native

Invaders

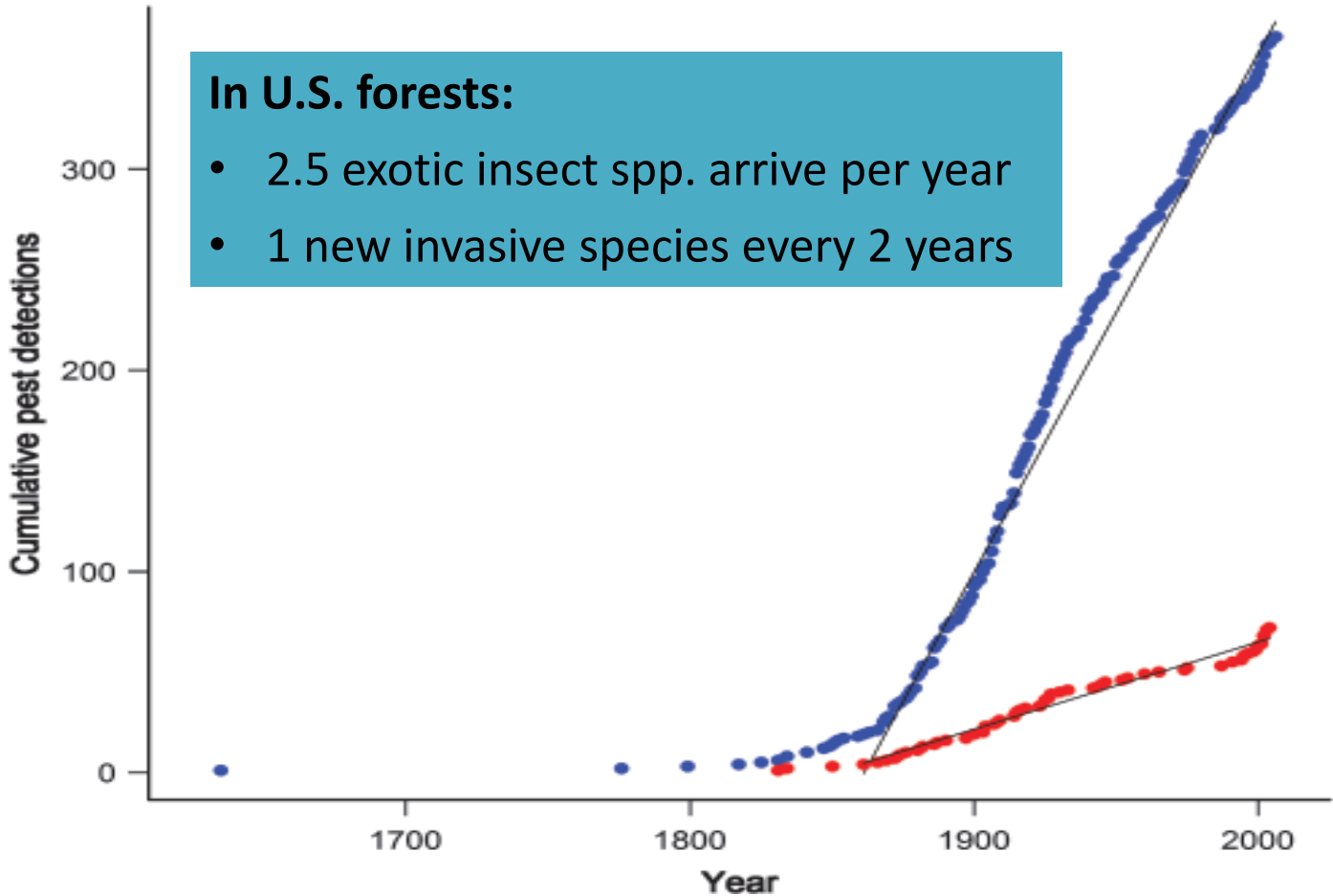
Non-native



Hypothetical community



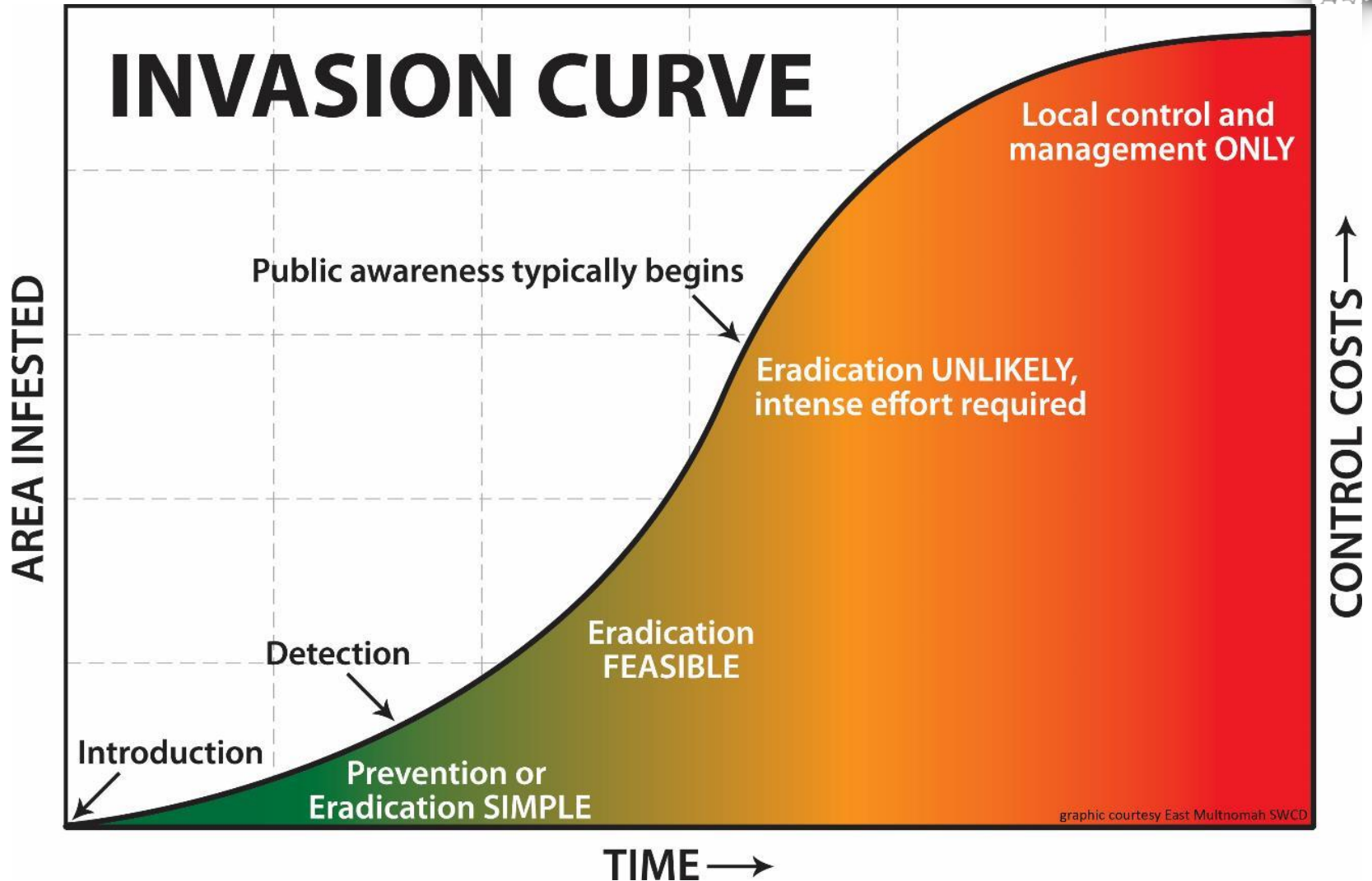
Forest invaders are still arriving in the U.S.



Blue = All exotic forest insects
Red = Invasive forest insects and disease

Aukema et al. 2010.

Prevention & early detection are key

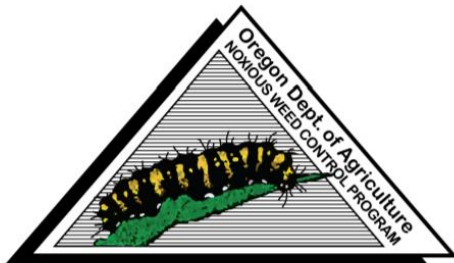


Noxious weeds in Oregon

“Plants that are a menace to the public” ORS 569-350

Oregon Department of Agriculture

Noxious Weed Policy
and Classification System
2019



Noxious Weed Control Program

“A” List – top priority,

Must eradicate

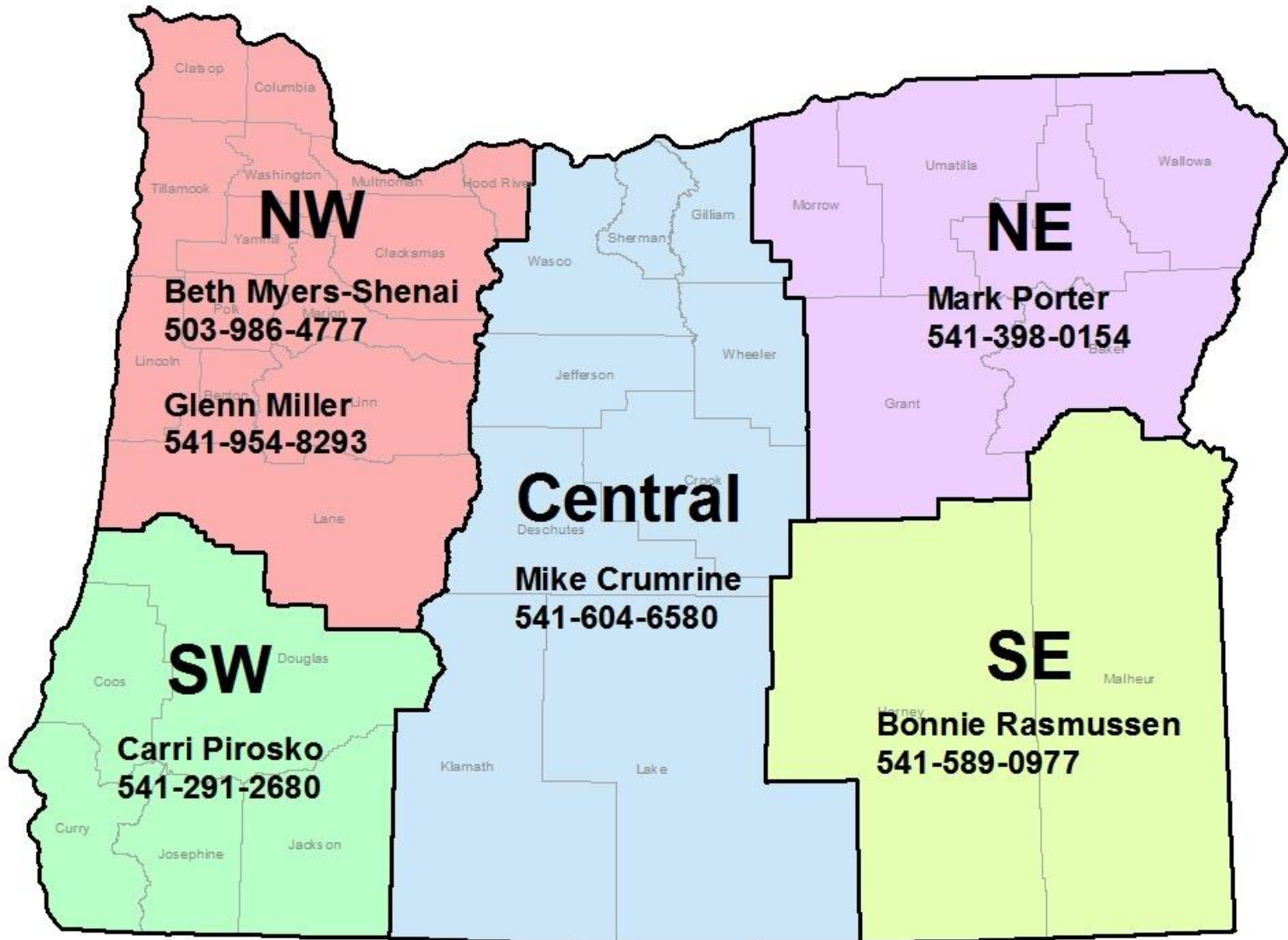
46 species

“B” List – prohibited to
buy/sell/transport

89 species

Total = 135 species

Oregon Department of Agriculture Noxious Weed Field Staff



ODF exotic weeds of concern:



Regulated (noxious):

Hawkweeds
Gorse
English Ivy
Scotch Broom
Himalayan Blackberry
Knotweeds
Thistles – Canada and bull
False brome
Geraniums
Knapweeds
Spurge
Toadflax

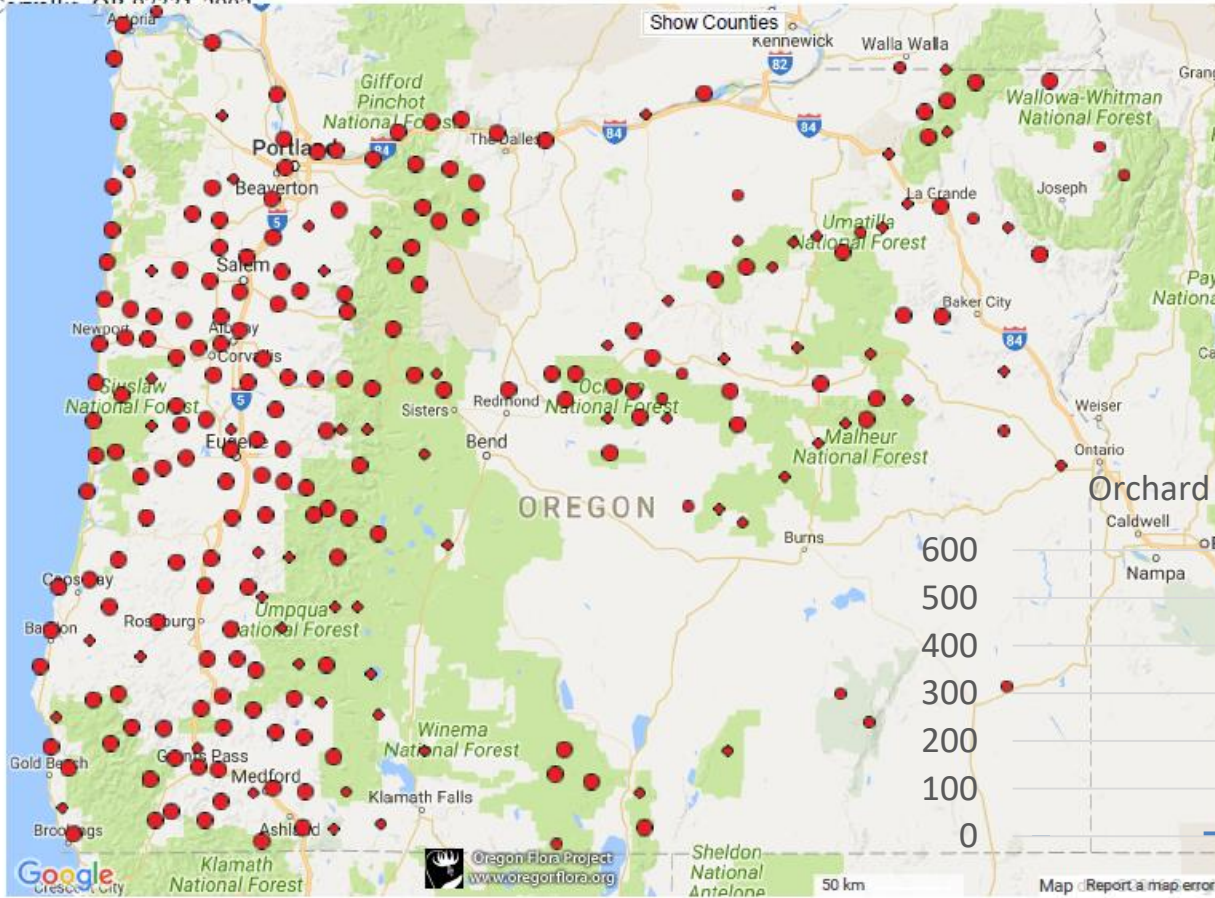
Unregulated:

Wall-lettuce
Woodland groundsel
Prickly lettuce
Oxeye daisy
Foxglove
Perennial grasses – Orchard, velvet, rye
English holly
Clover
Vetch
English hawthorn
Reed canary grass

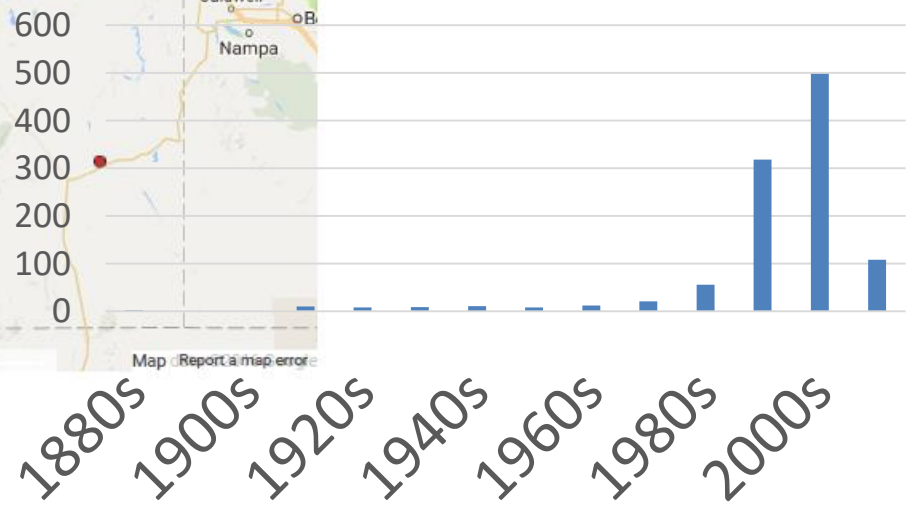
Orchard grass

 Oregon Flora Project *Poaceae Dactylis glomerata* ;
Oregon Plant Atlas
Oregon Flora Project

Dept. Botany & Plant Pathology
Oregon State University
Corvallis, OR 97331-2002
[Home Atlas Checklist Flora The Rare Plant Guide Photo Gallery Newsletter About Us Support OFP Gardening](#)



Orchard grass recorded by OR Herbaria



Ventenata grass

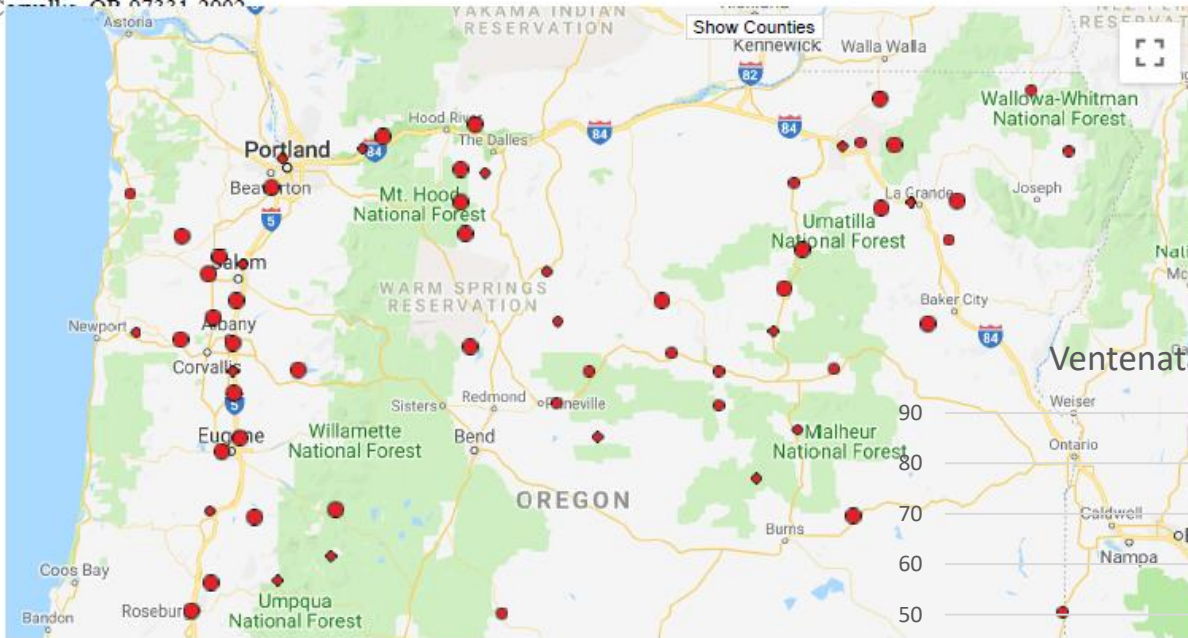
5/7/2019

Oregon Flora Project | Atlas



Poaceae Ventenata dubia ;
Oregon Plant Atlas
Oregon Flora Project

Dept. Botany & Plant Pathology
Oregon State University
Corvallis, OR 97331-3000
[Home](#) [Atlas](#) [Checklist](#) [Flora](#) [The Rare Plant Guide](#) [Photo Gallery](#) [Newsletter](#) [About Us](#) [Support OFP](#) [Gardening](#)



Ventenata grass recorded by OR Herbaria



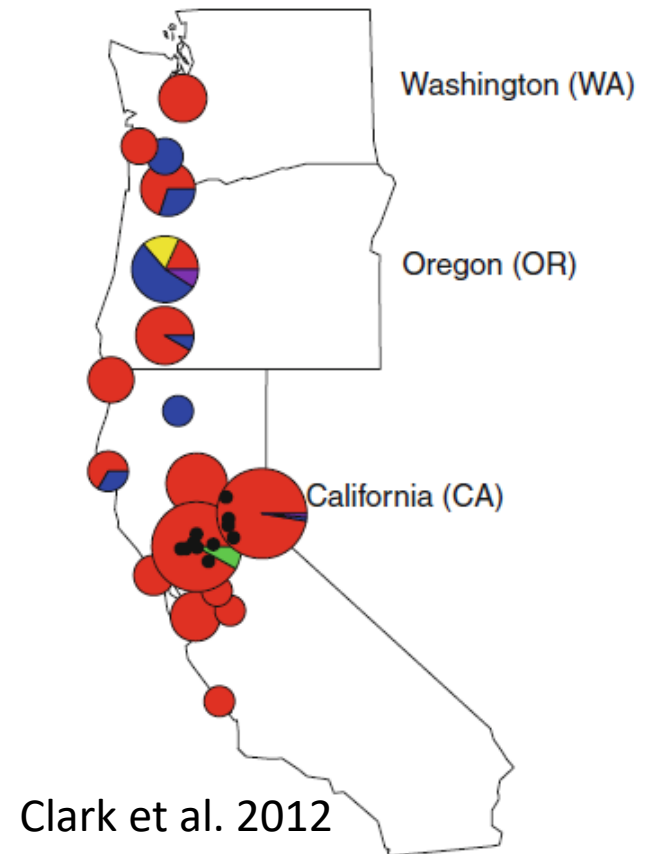
1880s 1890s 1900s 1910s 1920s 1930s 1940s 1950s 1960s 1970s 1980s 1990s 2000s 2010s



Himalayan (Armenian) blackberry

Rubus armeniacus, *R. procerus*, *R. discolor*

- *Rubus* is a widespread genus
- Unique reproduction – seeds are almost entirely clonal
 - Pseudogamous apomixis
- Hundreds or thousands of “microspecies”
- Crops gone bad



Scotch broom (*Cytisus scoparius*)

- A legume (the pea family)
- Oregon's #1 Forestry weed
- Long-lived seeds – 40-70 years!
- Tip: don't transport contaminated soil
- Tip: disturb soil as little as possible



Scotch broom biological control agents



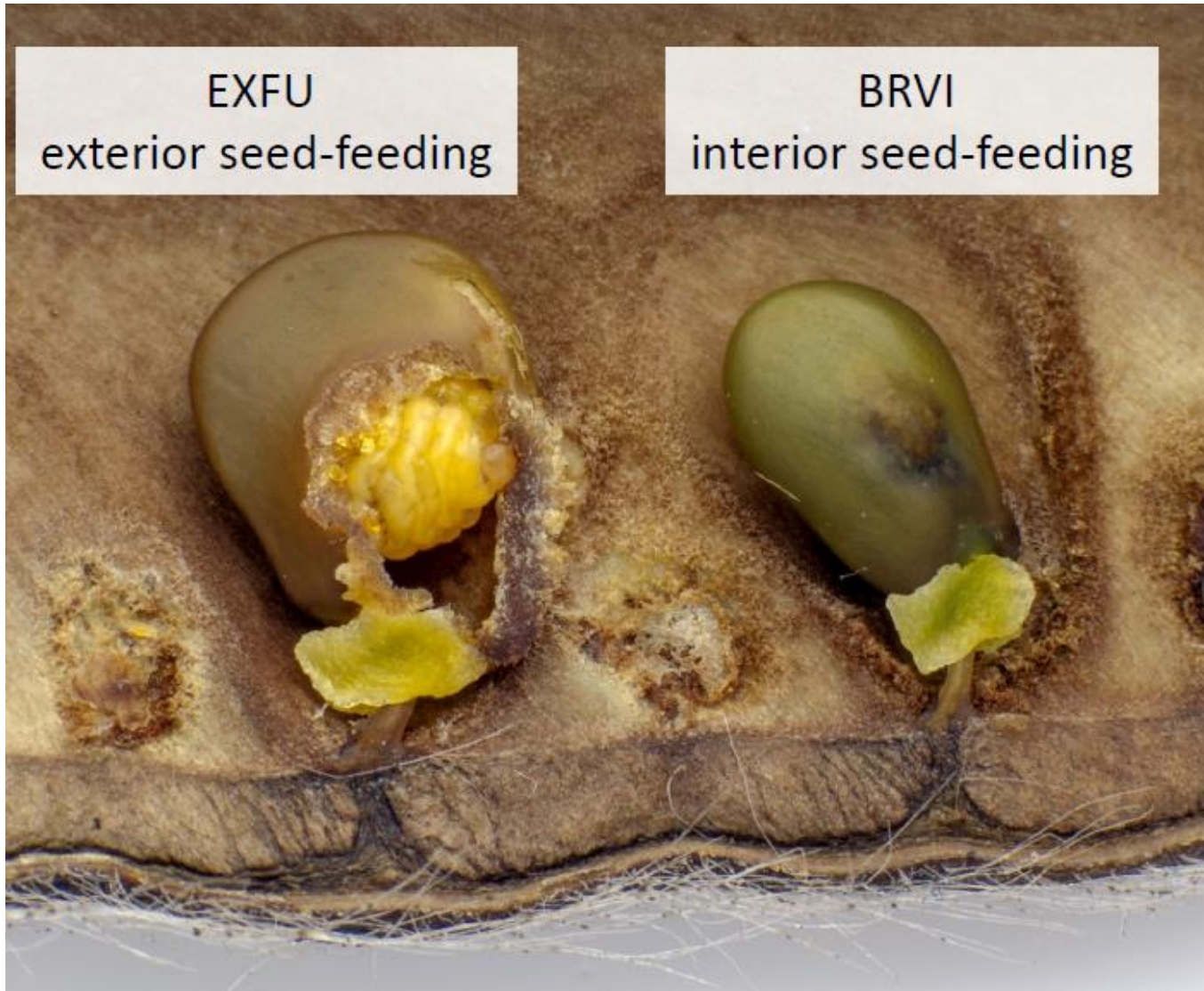
Bruchidius villosus (BRVI)
Scotch broom bruchid
Oregon, 1998



Exapion (=Apion) *fuscirostre* (EXFU)
Scotch broom seed weevil
California, 1964

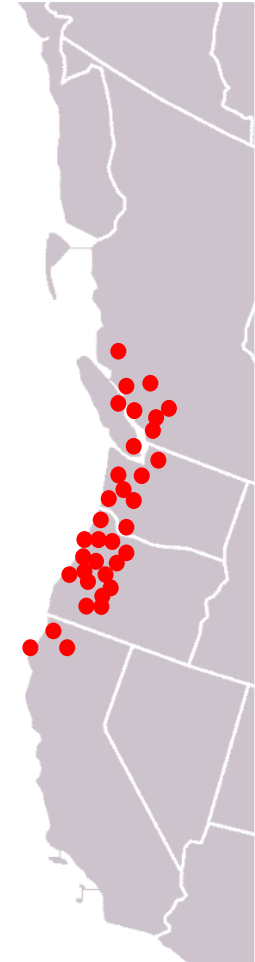
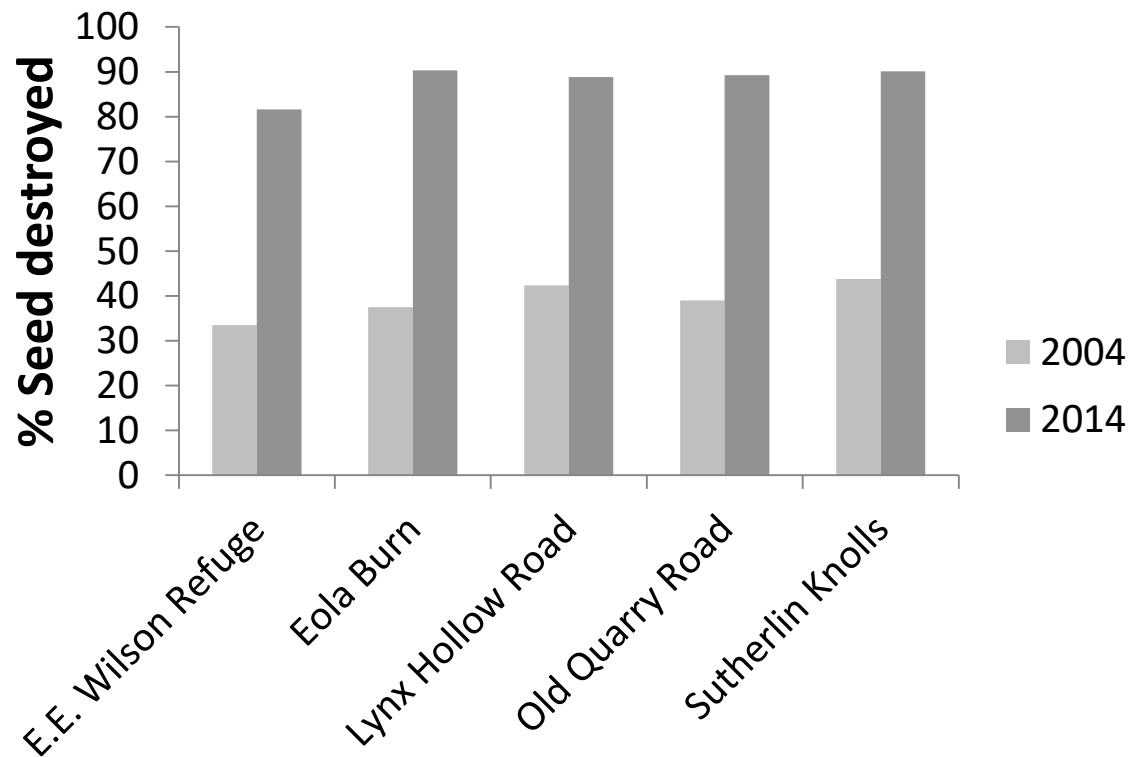


Distinctive damage traits



Research and monitoring:

- Collected seeds from dozens of sites in 2014
- Dissected thousands of seeds
- Looking for percent seed consumed
- We know if seed destruction is 75-95%, then populations of Scotch broom will eventually decline



Gorse (*Ulex europaeus*)

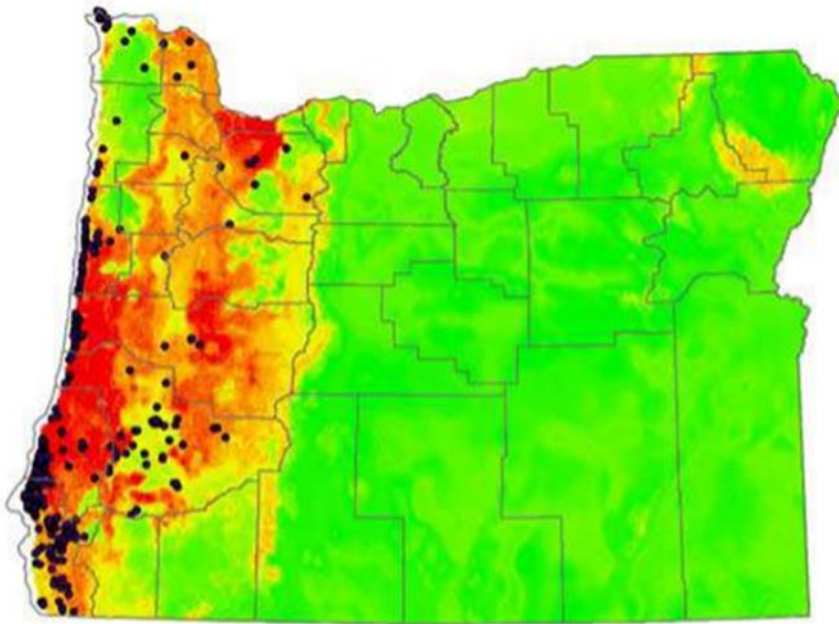
- Bandon, OR 1873
- Related to Scotch broom
- “List B” noxious weed





Risk of gorse to Oregon

- According to the models, gorse occupies only 1% of its potential range (red) in Oregon



Current Infestation		Susceptible Infestation	
Acres	Economic Impact	Acres	Economic Impact
28,000	\$441,000	16,580,000	\$205,576,000

Notes: The susceptible acres are from the KRESS model environmental variables using the "mean" statistical assumptions. Annual economic impact is measured by personal income in 2012 dollars and includes the "multiplier" effect.



2014 Gorse



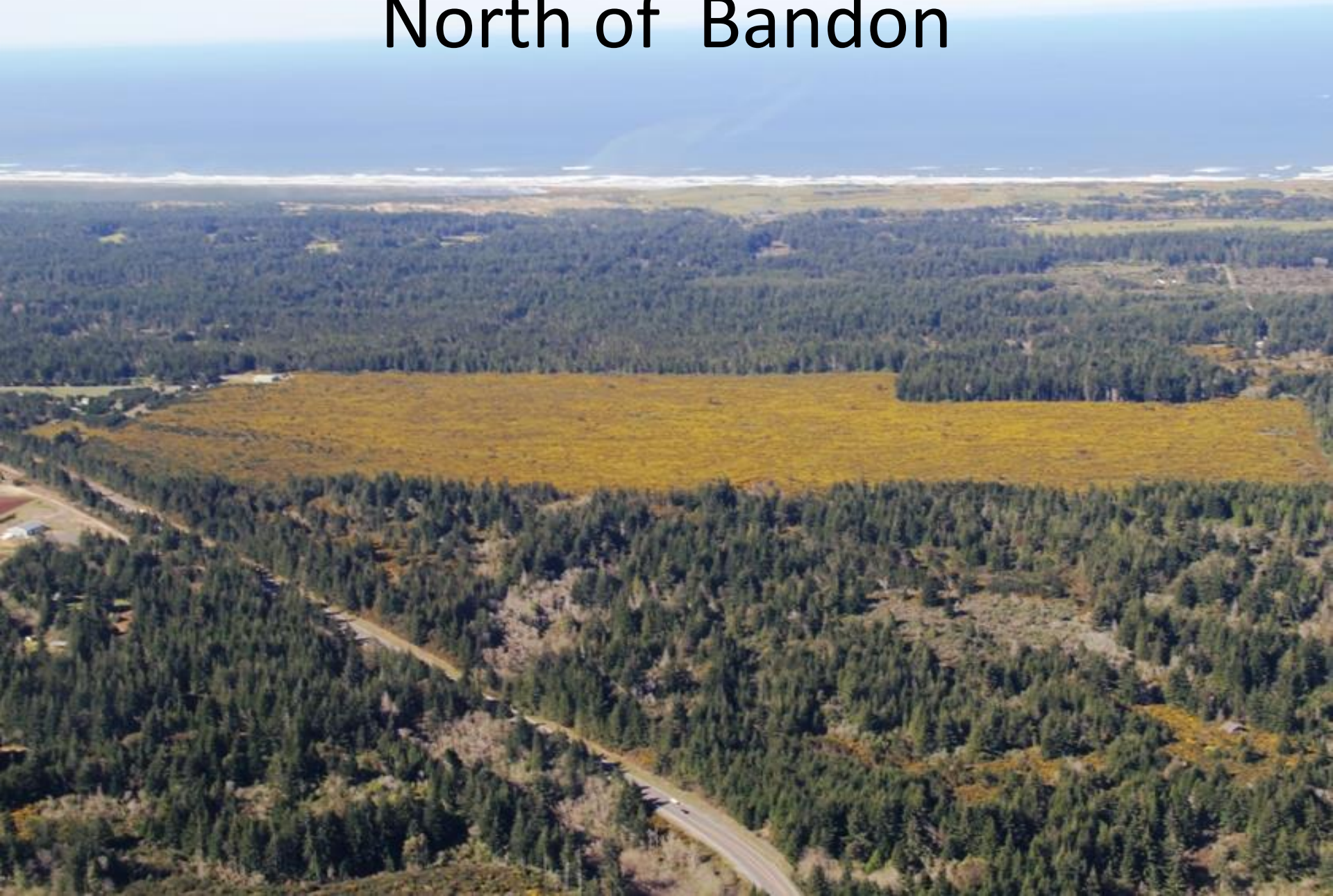
Bandon fire of 1936



Town of Bandon



North of Bandon



Orange Hawkweed



June, 2017

-Landowner in Astoria contacts ODF
-ODF Alert Sent to ODF State Forests

July, 2017

-ODA confirms hawkweed in Astoria

August, 2017

-Clatsop State Forests finds and treats small population

May-June 2018

-ODF staff monitor site

July 2018

-Flowers occur, population controlled
-Delimitation survey conducted



Overview

Orange hawkweed (*Hieracium aurantiacum*) is a Class A noxious weed in Oregon. It was recently reported in Clatsop County. It occurs in isolated populations on Mt. Hood and near Bend. It invades open meadows, forest openings, clearcuts and roadsides. Because of its legal status as public menace, private and state landowners and land managers are required by law to report and manage this plant. (ORS 569, OAR 603-052-1200)



Identification

Orange hawkweed is a member of the sunflower family. It is a perennial plant 8-36" in height. It reproduces through rhizomes and by seed. Flowers (about 1" diameter) are arranged in clusters of 3 to 12 and are red on the margin and orange in the center. Leaves are elliptical and are almost entirely basal with perhaps one or two small leaves on the flowering stalk. Leaves and stems have hairs on surface. Seeds have white bristles (pappus). Hand pull before seed is set. Herbicide options exist for spring treatments.



Reporting

Please report possible sightings of orange hawkweed to:

Wyatt Williams
Invasive Species Specialist
Oregon Department of Forestry
Wyatt.Williams@oregon.gov
503-945-7472

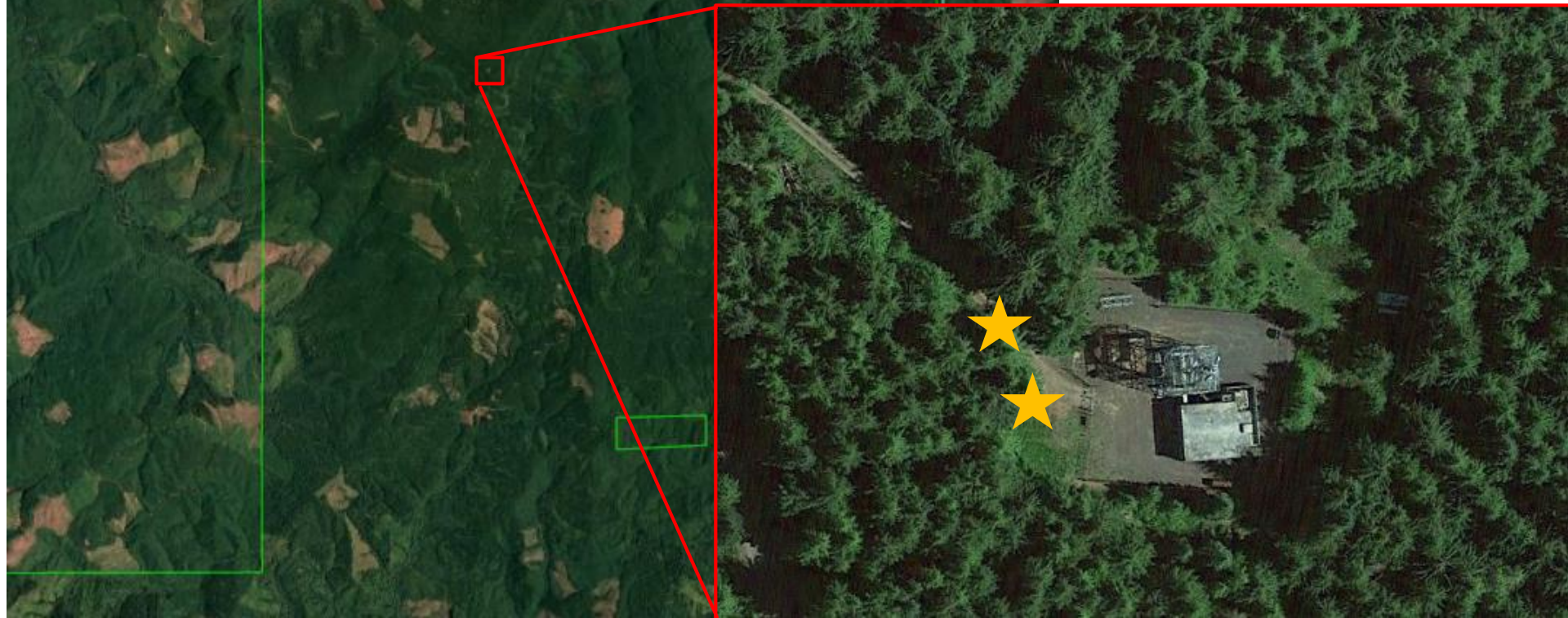
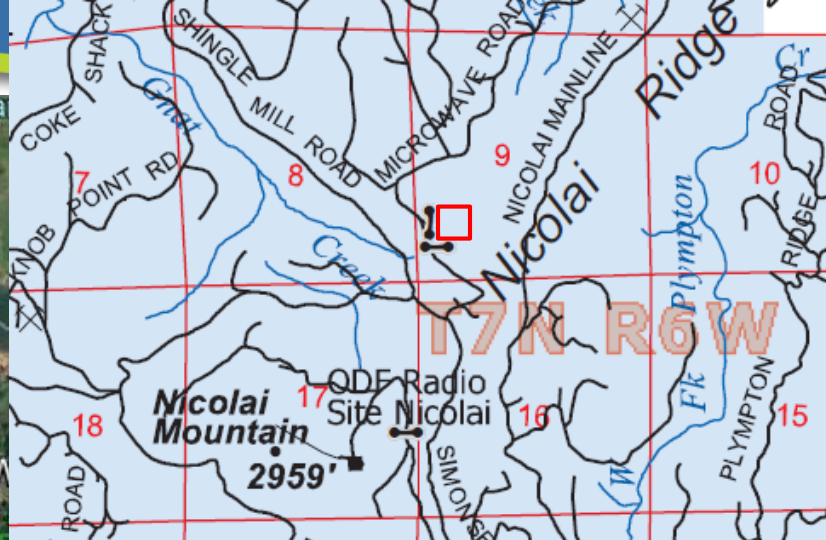
Beth Myers-Shenai
Integrated Weed Management Coordinator
Oregon Department of Agriculture
bmyers@oda.state.or.us
503-986-4777

Oregon Invasive Species Hotline:



June 28, 2017

CLATSOP State Forest
Astoria District
(503) 325-5451









Orange Hawkweed

July 11, 2018:

- **Delimitation road survey, Clatsop SF**
- **Over 30 miles surveyed, no detections**

July 13, 2018:

- **Pulled, bagged, disposed flowers**
- **Spot spray with Clopyralid (Transline)**
- **2.1 oz per gal of mix**
- **10 gal/acre application rate**
- **4 gallons total applied**
- **Follow up sprays in June/July 2019**



Charley Moyer, ODF Reforestation forester

English Ivy

Hedera helix, H. hibernica

- Large mats, climbing vines
- **Shade tolerant**
- Smothers native vegetation
- Can lead to tree decay, reduced growth
- Two growth stages
- Reproduces via fragments, seeds



Competition for Resources - Sunlight

- Vines up to 90 feet
- Ivy foliage blocks out host
- At some point (?), photosynthesis and growth of host decline
- In extreme cases, tree death



English Ivy/Forest health restoration project







KUBOTA Super Series

CAPITAL RENTALS
1887 574-1788

FB T&E

KX127

False Brome

Brachypodium sylvaticum

- Present up to 3,500' elevation
- Unpalatable, forms dense monocultures
- Hairy leaf margins, no stalks on spikelets
- **Shade tolerant**
- Linn/Lane Co is epicenter in Oregon



Thistles

Bull thistle

Cirsium vulgare

Biennial

Lobed, hairy leaves

Flowers: 1.5" to 2"



Canada thistle

Cirsium arvense

Perennial

Flowers: ½ to ¾"

Spreads via rhizomes



“List A” thistles in NE Oregon



- Welled thistle (*Carduus crispus*)
- Enterprise (Wallowa Co.)
- 350 ac (2016) → 15 plants (2018)



- Plumless thistle (*Carduus acanthoides*)
- Morrow, Grant, Wallowa Counties

Knapweeds - *Centaurea*

Meadow knap.

C. nigra x jacea

Golden bracts

Pink, purple



Spotted knap.

C. stoebe

Dark triangle on tips of bracts

Purple, white



Diffuse knap.

C. diffusa

Spines on bracts

White flowers



Garlic mustard (*Alliaria petiolata*)

- Biennial, 2-3.5 ft
- Crushed stems smell like garlic
- Small, white flowers
- Shade-tolerant



2014 Garlic mustard



All photos this page: Emily Brown

Cape-ivy (*Delairea odorata*)

- Isolated occurrences in Curry County
- New listing = prevents commercialization



Exotic annual grasses and wildfire



Cheatgrass
Not listed



Ventenata
List B weed



Medusa head
List B



Weed Free Forage

As of March, 2016:

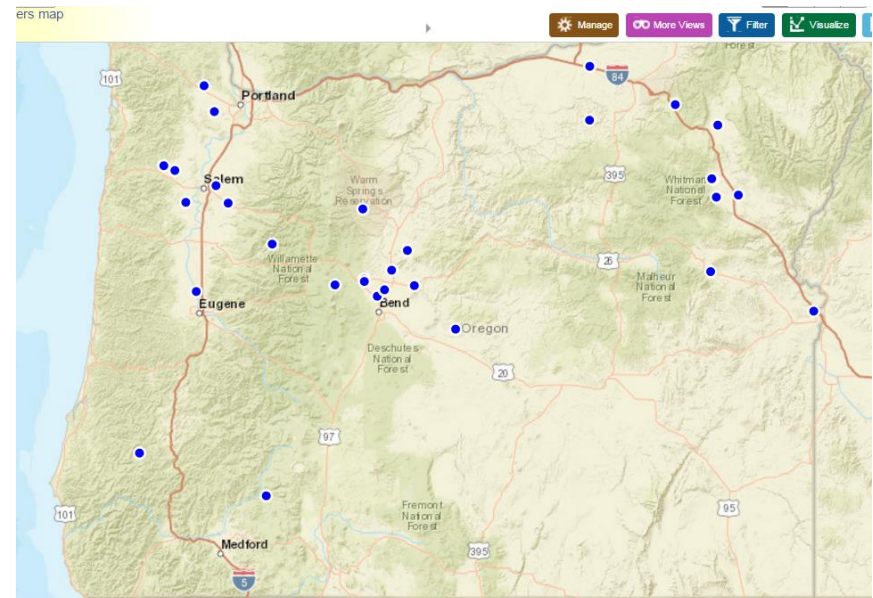
ODF requires the use of certified weed free forage on all state managed forestlands (OAR 629-025-0040)

- Passed unanimously by BOF
- Same as federal WFF requirements
- Enforced by Forest Officers

WFF Bale twine:



ODA WFF Directory:





Is this your
vehicle?



Oregon Forest Pest Detectors and the Oregon Invasive Species Online Hotline:



[Learn](#) [Search Reports](#) [Report Now](#) [My Account](#)
or call 1-866-INVADER

Have you seen something suspicious in your backyard or neighborhood? Are you having trouble identifying something you've found? Report potential invasive species you've found to the Online Hotline. Your submission will provide vital early detection information to the experts working to stop the next invasion before it starts!

[Report Now](#)

[Search Reports](#)

[About the Hotline ↓](#)

Google



Help stop the spread of invasive species in Oregon

Vegetation management & Forest Practices Act (FPA)



Following harvest, FPA requires...

- Replanting within 2 years
- Seedlings “Free to Grow” within 6 years

FPA doesn’t dictate how to achieve goals

But, herbicides commonly used during...

- Site prep
- Competitive release
- Roads/rock pits



Vegetation management & Forest Practices Act (FPA)



“Notification of Operations”
required at least 15 days in
advance:

- Road building
- Harvest
- **Pesticides***
- Several others

To notify: *Forest Activity
Electronic Reporting and
Notification System – FERNs*

*Only applies to reforestation activity



ODF FERNs website:

<https://ferns.odf.state.or.us/E-Notification>

ODF Incentives Program “Cooperative Forestry”



Financial incentives for landowners to meet forest plan objectives:

- NRCS grants
- USDA Forest Stewardship Program
- Conservation Reserve Enhancement Program
- OWEB, SWCDs, CWMAs,...and ODA weed grants?

Danny Norlander, Family Forestland Coordinator

Thomas Whittington, Incentives Field Support Coordinator

Herbicides and FERNS



When does FPA apply?

Forestry activities:

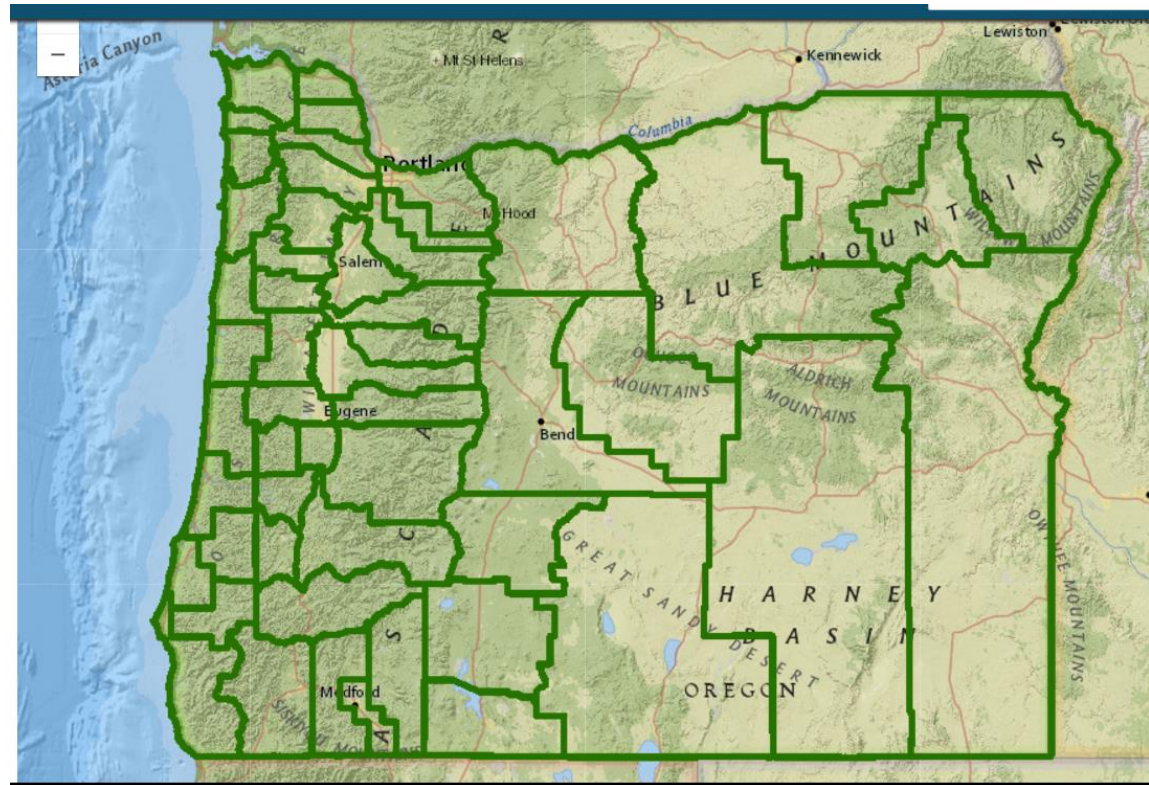
- “Forestlands”
- Timber harvest
- Reforestation
- Road building

When doesn't FPA apply?

Non-forestry activities:

- Targeted weed control
- Coop, ODA projects
- Homes, residences

Contact local ODF Stewardship Forester:



ODF “Find a Forester” online resource

Thank you for attending.



Wyatt Williams
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Oregon Dept. of Forestry
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503-945-7472