

# Aerial Herbicide Spray on State Forest Lands

Beyond Toxics

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North Coast Watershed Protectors

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# Tonight's Topics

1. Pesticides and Human Health
2. ODF's regime of clear cuts and herbicide sprays
3. Do Oregon Laws Protect Drinking Water Sources:
  - Chemical Drift & Volatilization
  - Deposition on Surface Water
  - Sediment run-off on steep slopes







# Case Study of the Tillamook State Forest and Herbicide Spray Use 2015-2018

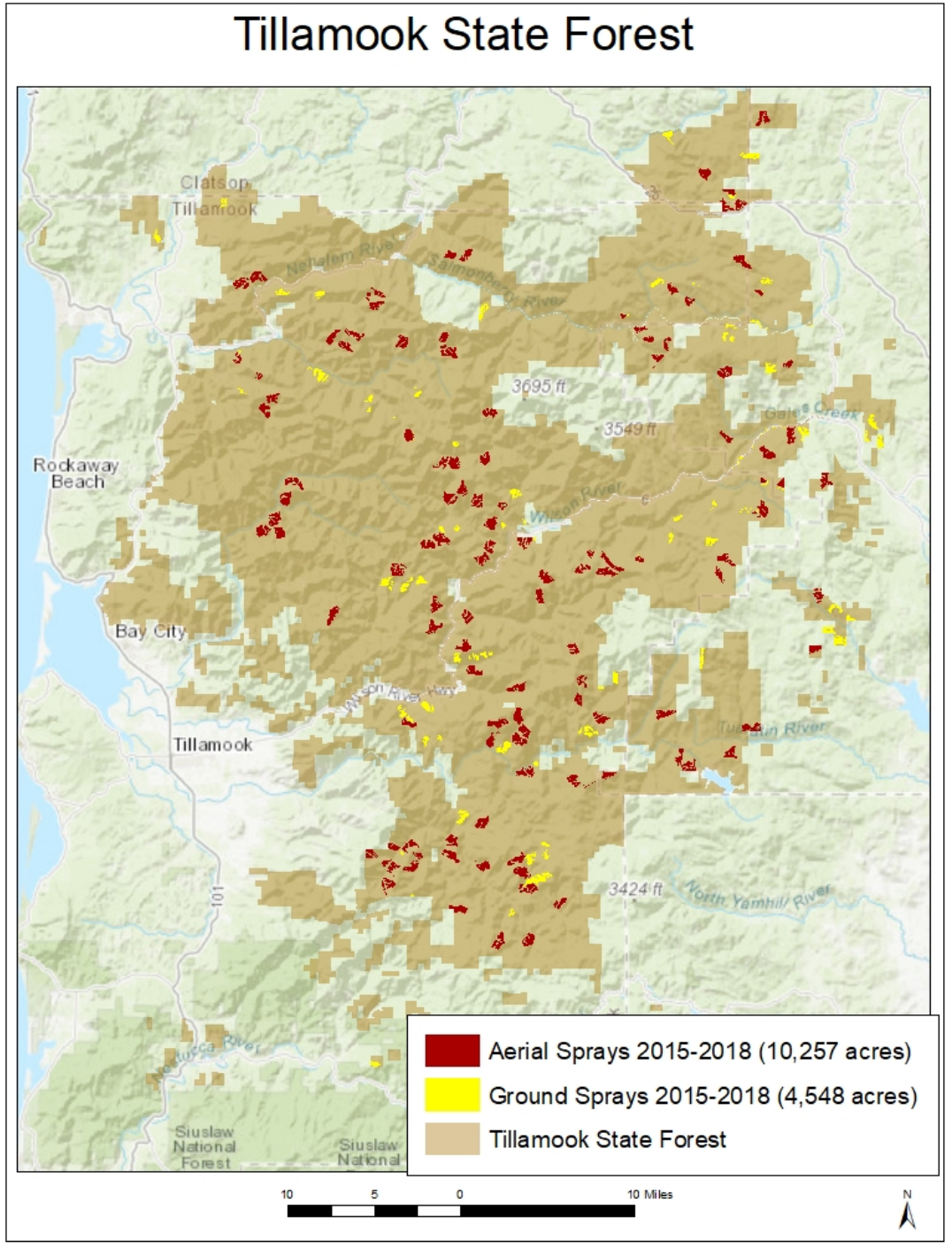


Front Cover of 2019 ODF Tillamook Forest Plan





10,257 Acres Aerial  
4,548 Acres Ground  
14,805 Total



Approximately  
70% of the  
Forestry Units  
Were Aerially  
Sprayed

# Oregon State Forest Compared to Washington State

## Oregon Tillamook State Forest

- Aerial sprays (70%)
- Ground and broadcast sprays (30%)

## Washington State Forests

- Aerial sprays (7%) - 4 out of 56 contracts
- Spot sprays while planting (7%) - 4 out of 56 contracts
- Ground sprays (86%) - 48 out of 56 contracts

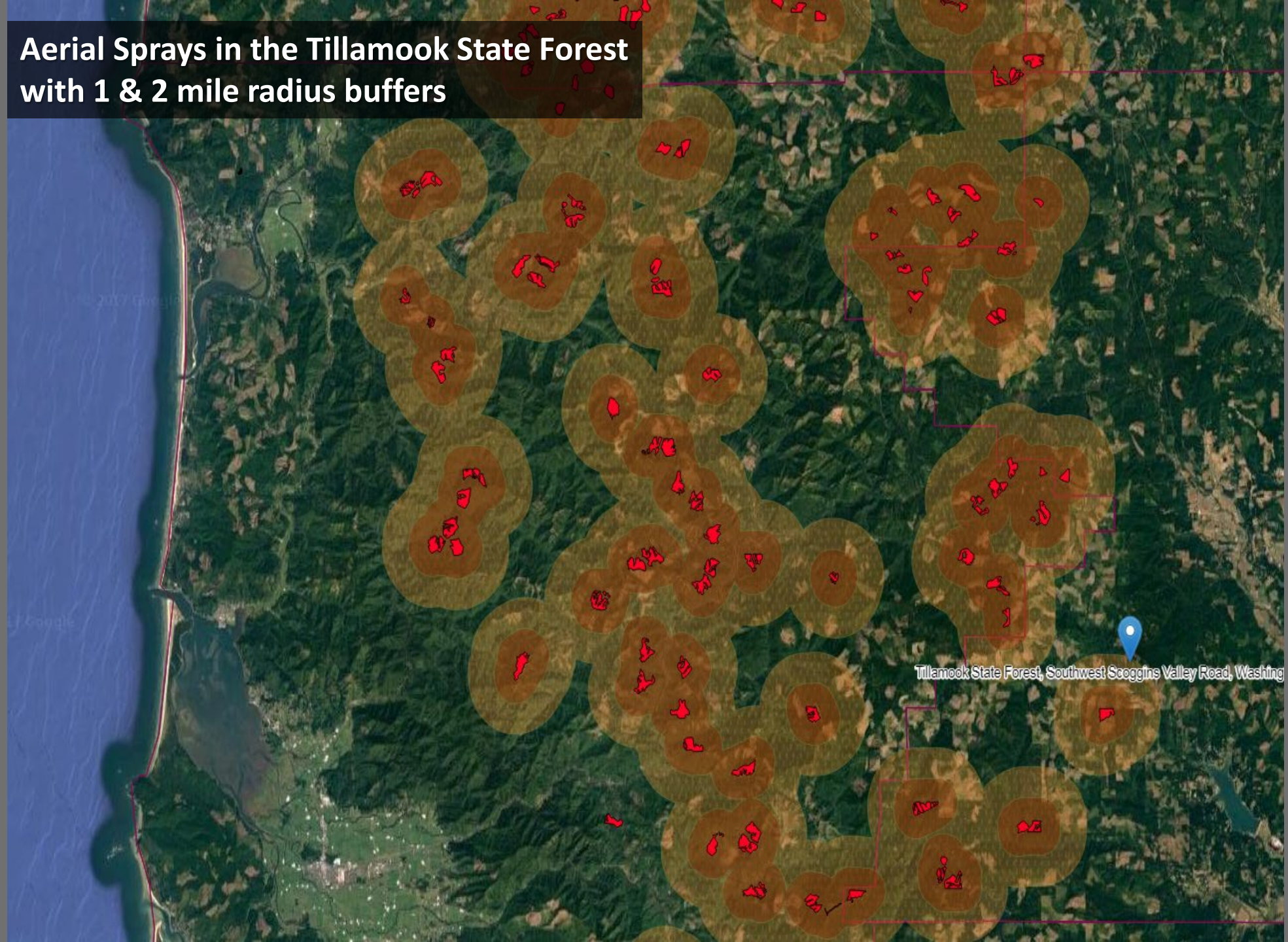


# Oregon Aerial Spray Stream Buffers vs Washington

Protection Area	Oregon Forest Practices for State Forests	Washington Forest Practices for State Forests
Fish-Bearing Stream Buffer	60'	150'
Domestic Water Use Stream	60' (10' ground spray)	200' and SEPA review (100-150' ground spray)
Perennial Non-Fish Stream Buffer	0'	75'-100'
Intermittent Non-Fish Stream Buffer	0'	50'-100'
Ground Water Protection Areas	0'	SEPA Review & banned AI's



# Aerial Sprays in the Tillamook State Forest with 1 & 2 mile radius buffers

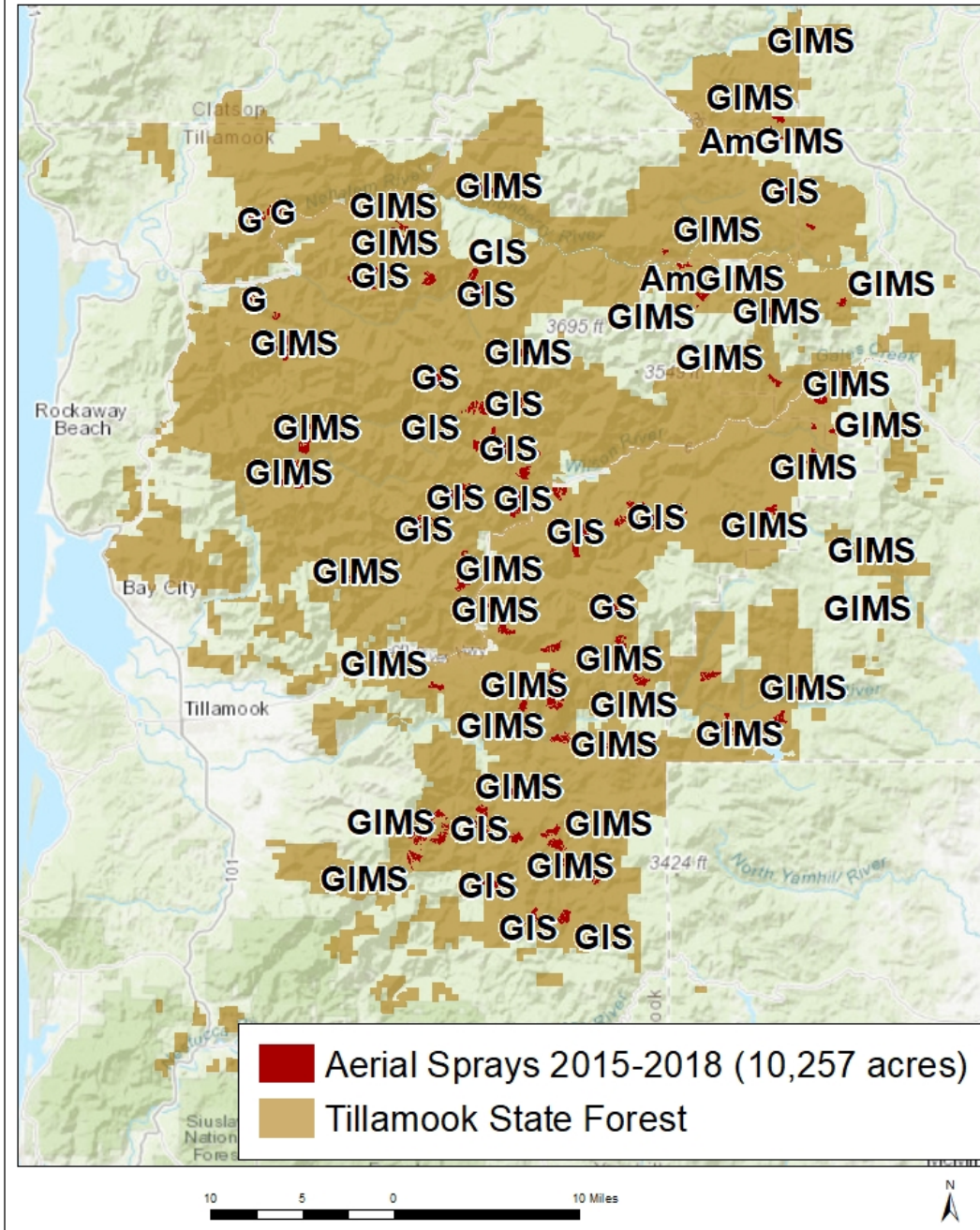




# Tank mixes of 3-5 chemicals

Am = Aminopyralid  
G = Glyphosate  
I = Imazapyr  
M = Metsulfuron methyl  
S = Sulfometuron methyl

## Tillamook State Forest



Aerial Sprays:  
100% of all aerial  
sprays contained  
glyphosate.



TABLE 1

[2014 (FY15)] 2015 (FY16) Tillamook and Forest Grove Aerial Herbicide  
Rates Per Acre

Unit Number	Tillamook District Unit Name	Acres	Sulfomet XP (ounces)	Rodeo (quarts)	MSM 60DF/ Escort XP (ounces)	LI 700 (ounces)	Chopper/ Polaris SP (ounces)	Conquer (ounces)	Water (gallons)	Total Mix (gallons)
1	Cougar Camp Area 2	61	3	1.5			16	16	9.4	10
2	Cougar Camp Area 4	80	3	1.5			16	16	9.4	10
3	Upper Cut Area 1	49	3	1.5			16	16	9.4	10
4	Upper Cut Area 2	11	3	1.5			16	16	9.4	10
5	Upper Cut Area 3	78	3	1.5			16	16	9.4	10
6	Upper Cut Area 4	12	3	1.5			16	16	9.4	10
7	N x NW	89	3	1.5			16	16	9.4	10
	Forest Grove District Unit Name		Opensight (ounces)	Spyder Extra/ Oust Extra *ounces)	Accord XRT II (quarts)	MSM 60DF/ Escort XP (ounces)	Chopper/ Polaris AC (ounces)	MSO (ounces)	Water (gallons)	Total Mix (gallons)
24	Batty Baldwin Area 1	44		4	1.5		8	16	9.4	10
25	Batty Baldwin Area 2	49		4	1.5		8	16	9.4	10
26	Batty Baldwin Area 3	53	3.3		1.5	1	8	16	9.4	10
27	Gale Force	119		4	1.5		8	16	9.4	10
28	Tree Beard Area 1	20	3.3	4	1.5		8	16	9.4	10
29	Tree Beard Area 2	48	3.3	4	1.5		8	16	9.4	10
30	Wiggle Worm	95		4	2		8	16	9.3	10



## Article

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### The presence of glyphosate in forest plants with different life strategies one-year after application

Lisa June Wood, PhD

Published on the web 08 January 2019.

Received August 08, 2018.

*Canadian Journal of Forest Research*, <https://doi.org/10.1139/cjfr-2018-0331>

#### ABSTRACT

Persistent non-lethal doses of glyphosate in plant tissue may have implications for the edible and/or medicinal use of native plants. This study investigated native plants growing in northern British Columbia (BC), Canada, to determine glyphosate presence and location-within-tissue in select species of traditional-use value with different life strategies. Perennial herbaceous and woody plants were collected one year after forestry-based applications of glyphosate in the Peace River Region of BC. Shoot, fruit, and root portions of select species were analyzed for glyphosate and aminomethylphosphonic acid (AMPA) residues using HPLC-IPCMS. Glyphosate residues were found one-year post-application. The highest and most consistent levels of glyphosate and AMPA were found in herbaceous perennial root tissues, but shoot tissues and fruit were also shown to contain glyphosate in select species. Levels found in some cases were greater than expected. Findings indicate the ability of glyphosate to be stored in root structures of perennial plants during dormancy periods, and move up to shoot and fruit portions in years following applications in some species. Further investigation is required to determine the timeline associated with glyphosate presence in plant tissues.

Glyphosate residues  
were found one-year  
post-application

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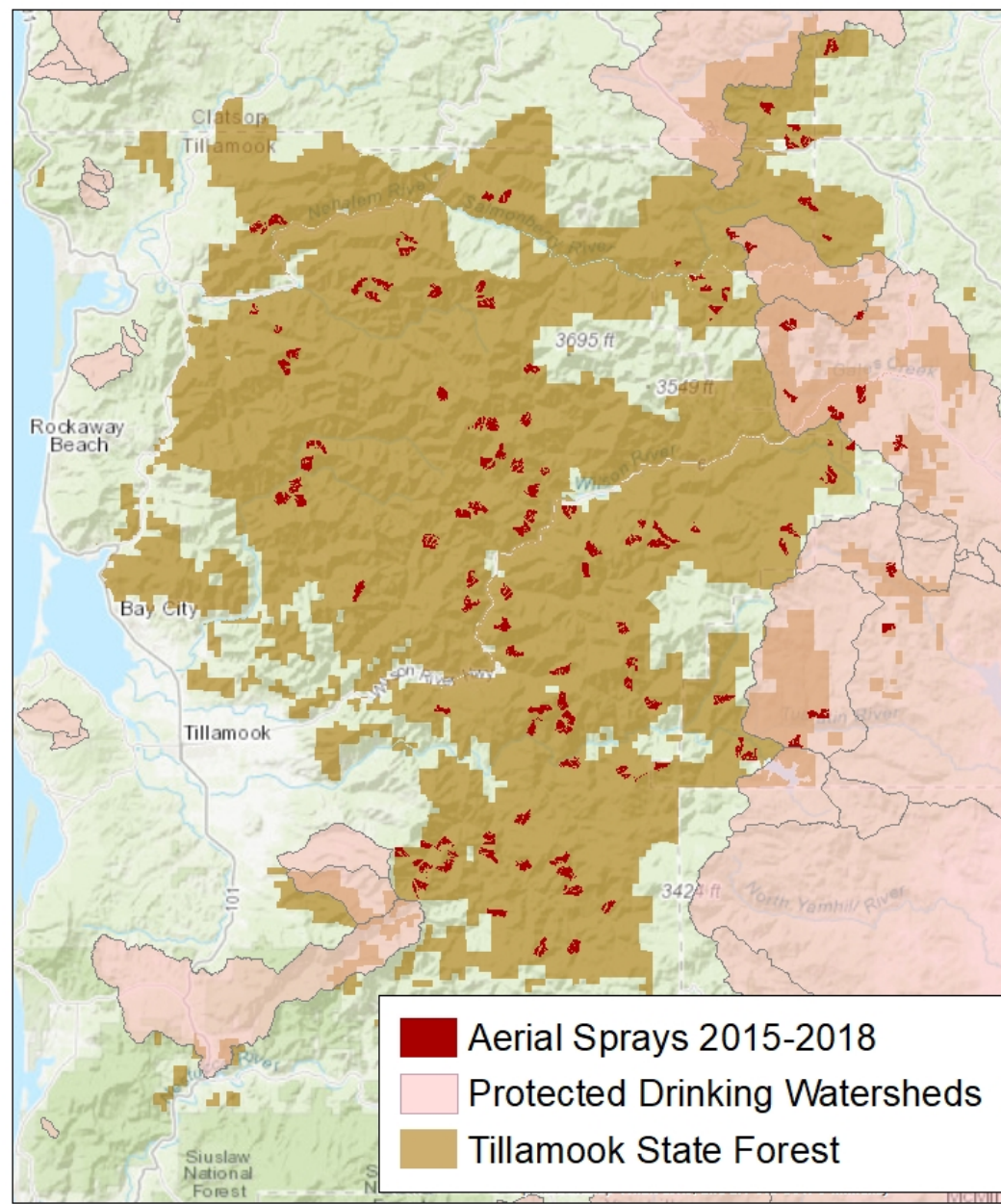
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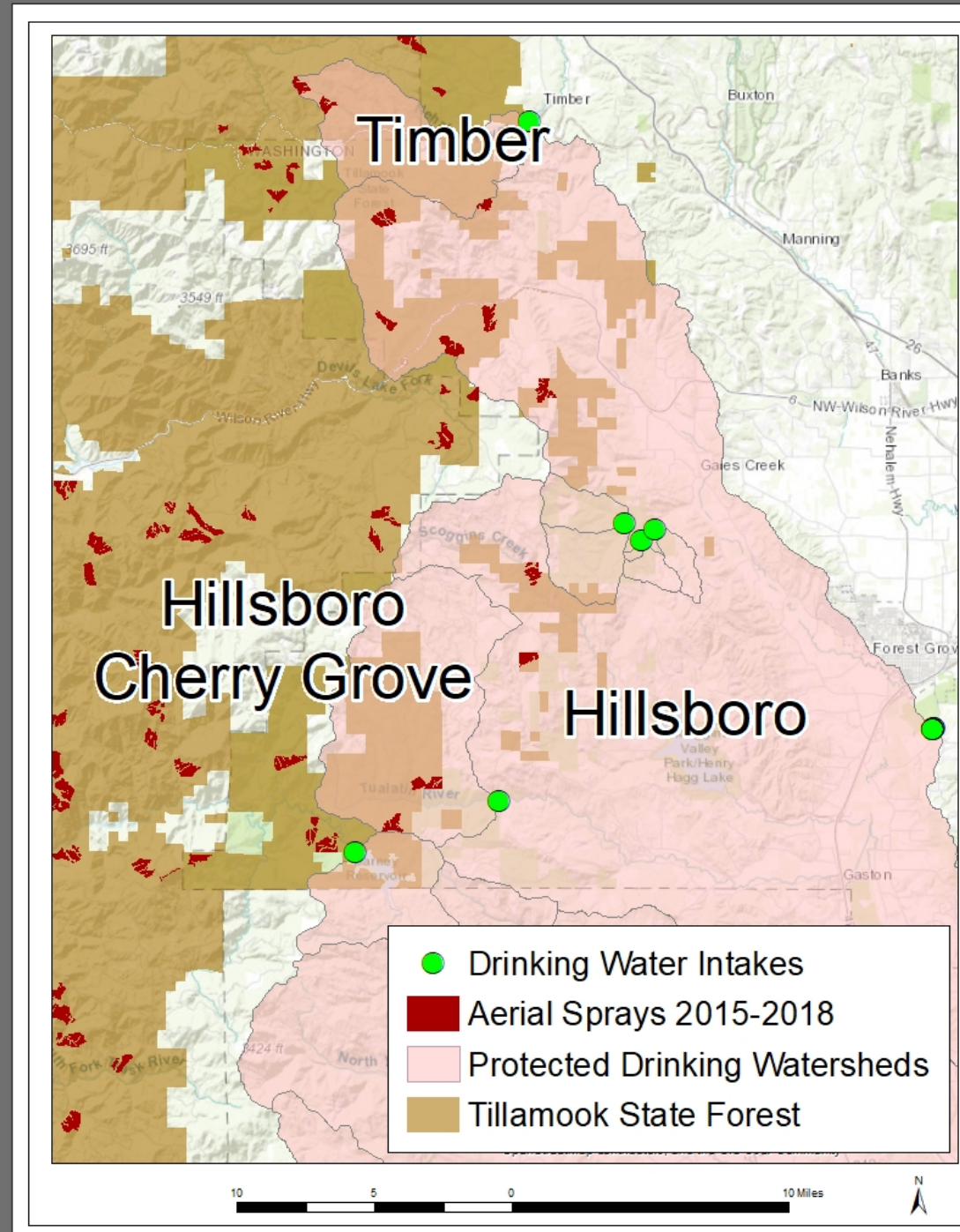
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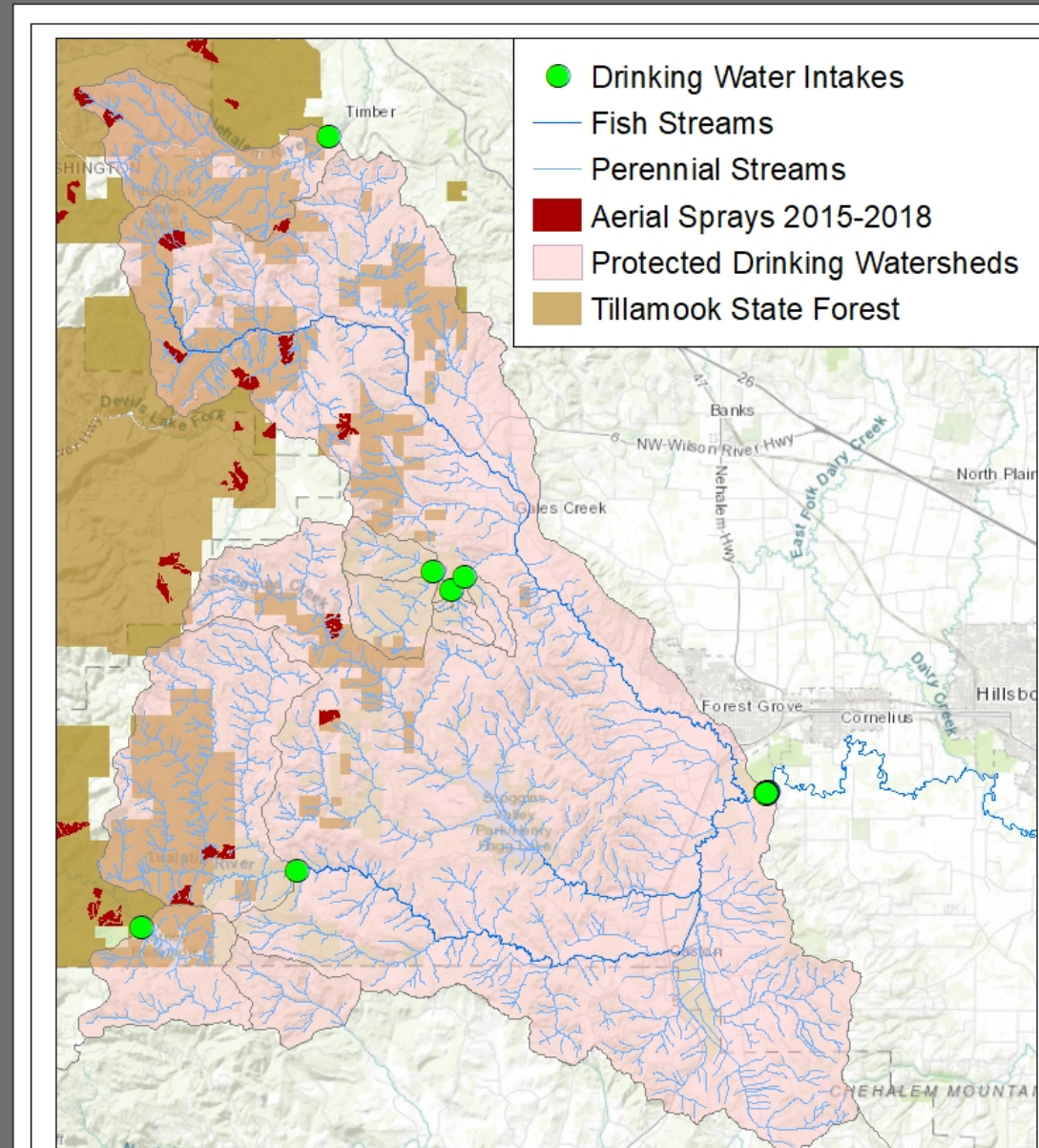


# Tillamook State Forest







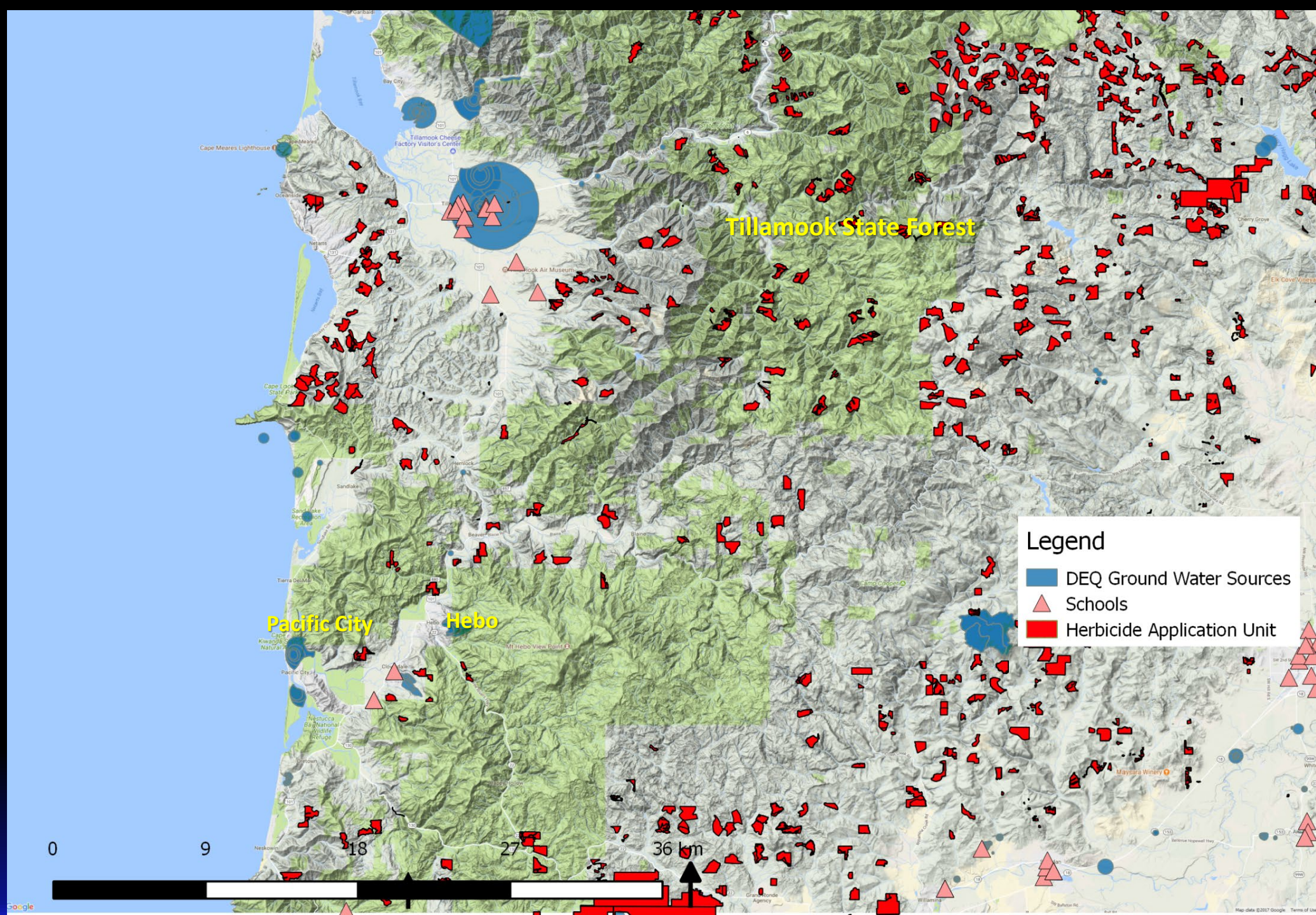


1,140 acres were  
aerially sprayed in  
protected drinking  
watersheds.

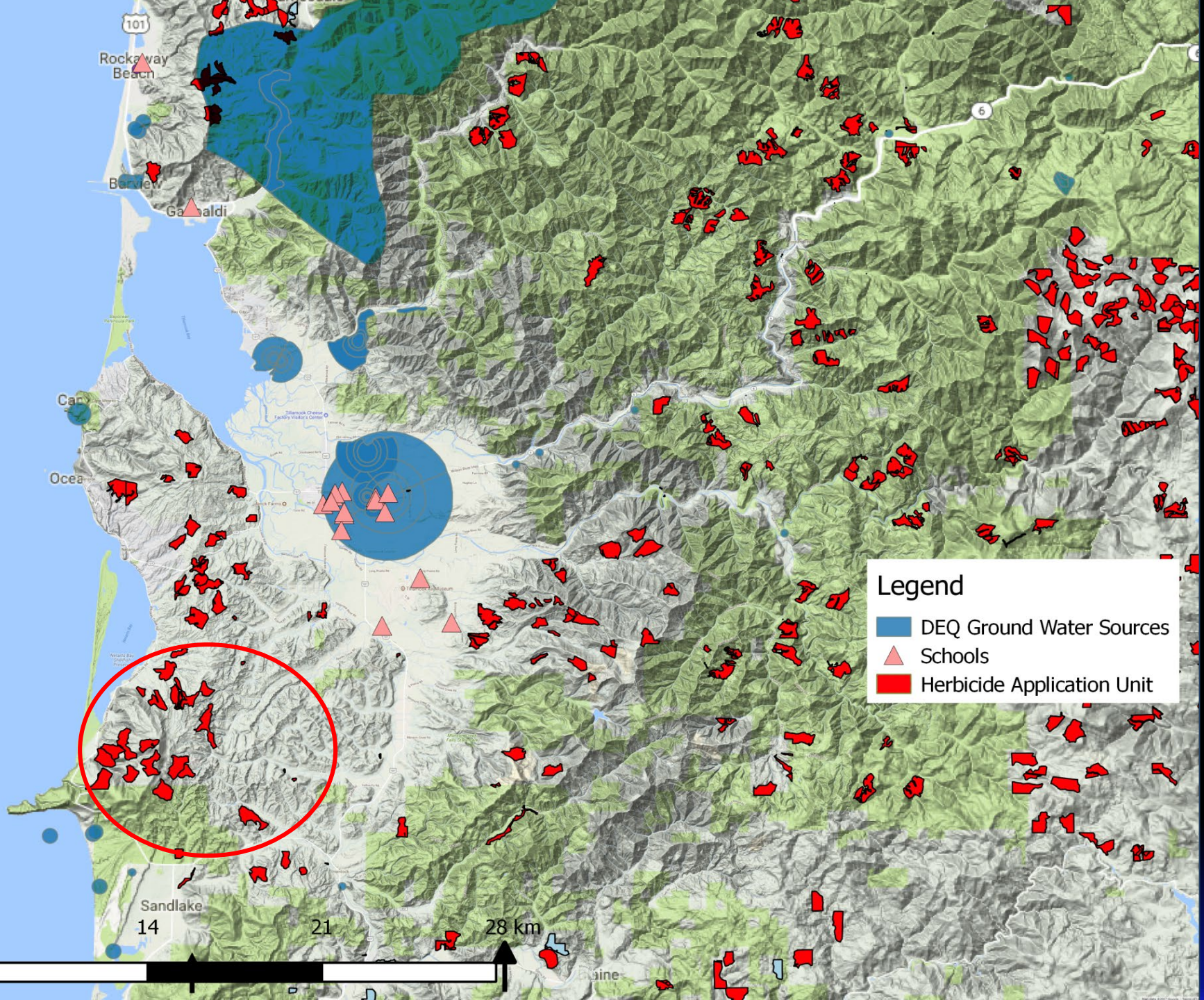
88% of these acres  
were sprayed within  
the 1,000' designated  
stream buffers.

## Year-Round Streams in Protected Drinking Watersheds









Legend

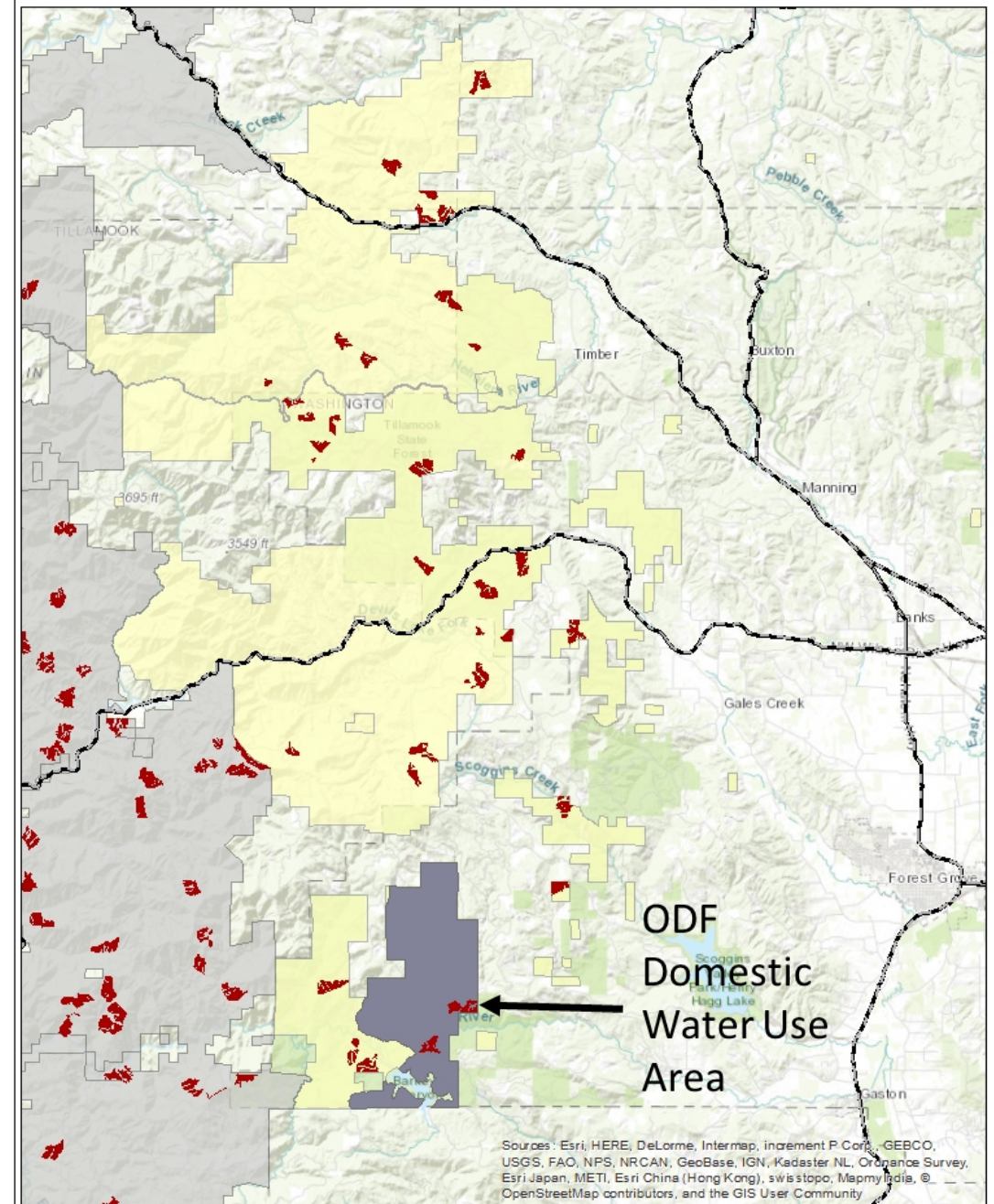
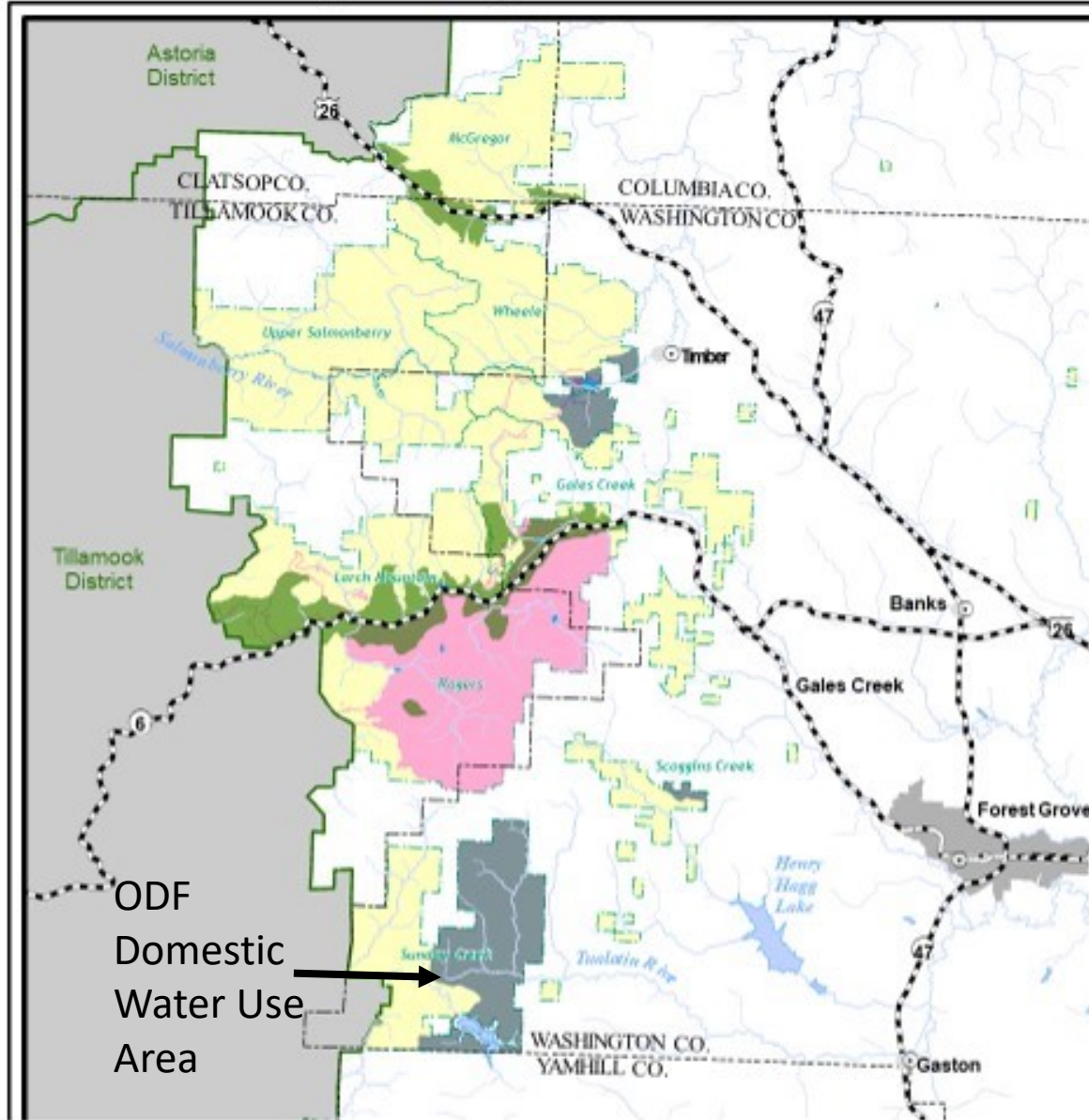
- DEQ Ground Water Sources
- Schools
- Herbicide Application Unit





# Forest Grove District

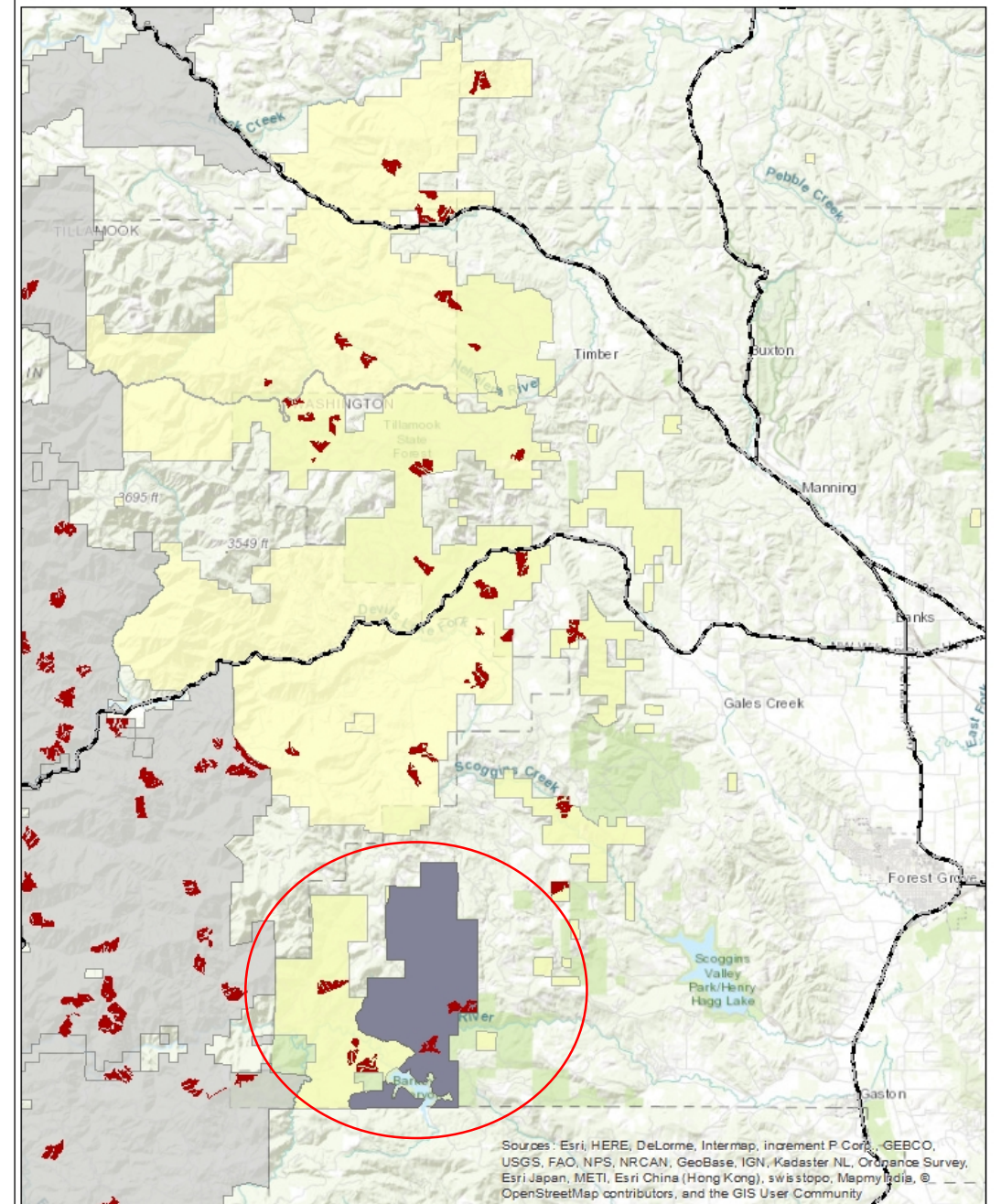
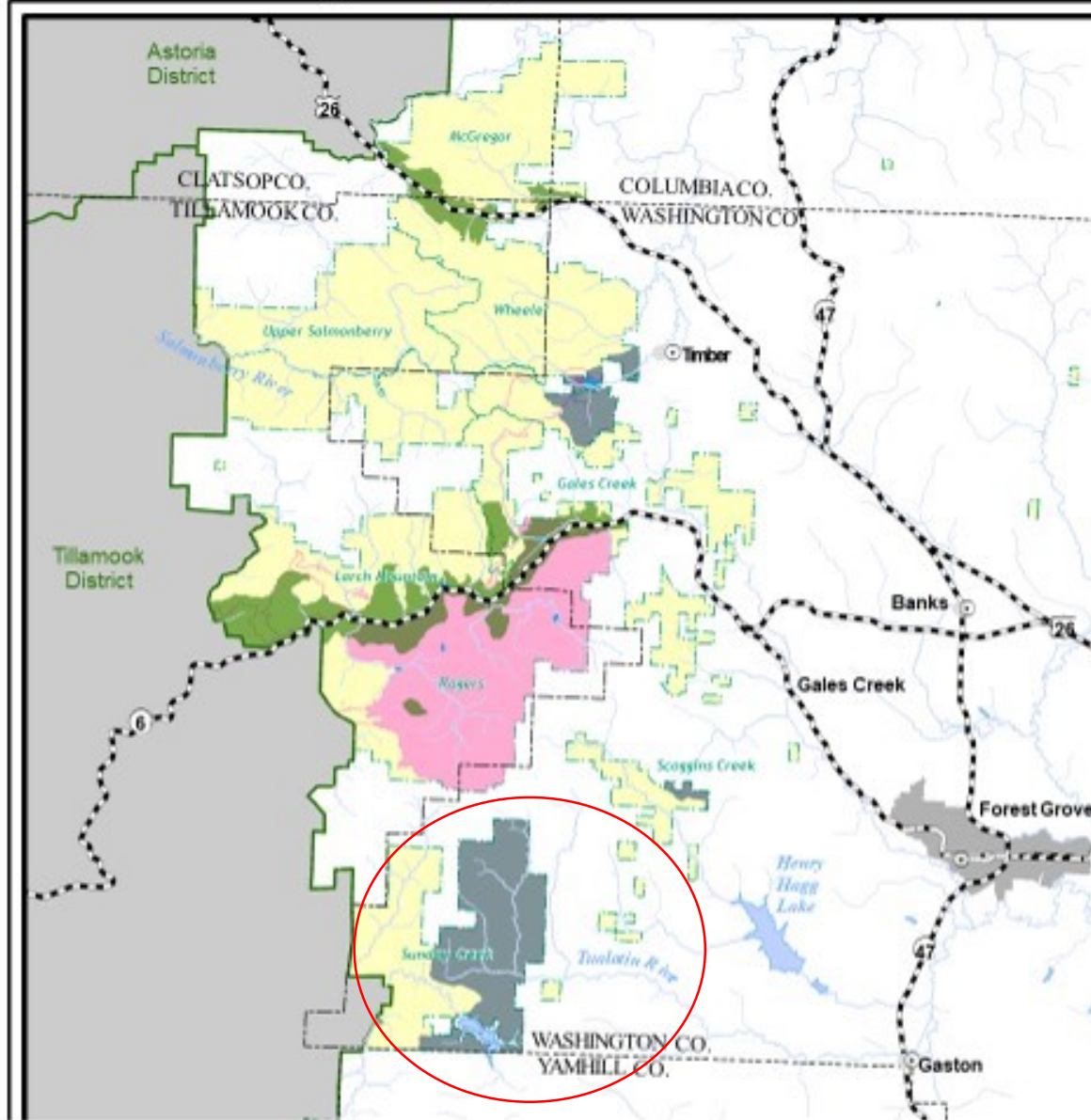
## Stewardship Classifications - Social Subclasses





# Forest Grove District

## Stewardship Classifications - Social Subclasses



REQUIREMENT	WASHINGTON	OREGON
PESTICIDE RECORDS	Complete spray records must be given to State before contract is paid	No records required by the State Forester. No records required for payment.
FLAGGING	Blue dye added to the pesticide mix required indicating “visible coloring on the treated foliage during treatment;” Colored flagging required on all scotchbroom and blackberry plants	No flagging required
WEATHER RESTRICTIONS	Ground: wind < 12 miles/hr; rain; run-off Aerial: wind < 7 miles/hr; wait 1 hr after rain. Elevation of spray = 25’.	No weather guidance other than what is on the product label. Elevation of spray= 40’
SPRAY BUFFERS	Buffers measured horizontally from the bankfull width. AERIAL SPRAY: 75’ on perennial and intermittent streams; 100’ on the windward side. GROUND SPRAY: 25’-50’ of all standing or flowing water.	Buffers measured along the slope of the terrain from the high water mark. AERIAL SPRAY: <ul style="list-style-type: none"> <li>• 60’ on F &amp; D streams.</li> <li>• 0’ on perennial and intermittent streams</li> <li>• 500’ buffer from residences</li> </ul> GROUND SPRAY: 10’ on F & D streams



REQUIREMENT	WASHINGTON	OREGON
INSURANCE	\$1MIL liability insurance; 10% of contract withheld until proof of industrial insurance premiums fully paid;	“Contractor shall use every reasonable and practicable means to avoid damage to property or injury to persons.” (North cascades district 2019 p.9)
SECURITY DEPOSITS	Contractors must provide a \$5000 or 10% security and performance deposit that remains available to DNR throughout the contract in case of damages or default.	No security deposit
WORKER TRAINING	Chemical information and training Required. DNR has access to all Worker exposure records.	None

State Contracts requires 500’ no-spray buffer from residences.  
 OFPA requires only 60’ from the wall of residences and schools.



# State-identified special areas need protection

“Critical Fish  
Production Reaches”

“Protected Drinking  
Watersheds”

- “Cookie-cutter “buffer” regulations
- Cumulative impacts from repeated toxic chemicals
- Synergistic and additive toxicity of mixing multiple herbicides, adjuvants and carriers
- Poisons should not be sprayed in designated “Critical” and “Protected” areas, nor public lands



# Main Points: Oregon must...

- Regulate protections in Protected Drinking Watersheds (PDW);
- Give DEQ jurisdiction for regulating non-point pollution sources in PDW (Require DEQ approval for timber activities in PDW);
- Establish chemical protections for streams in PDW by banning aerial herbicide sprays;
- Require DEQ's 1000' riparian protection areas and slope standards on F & D streams to deter erosion – protect N streams;
- Establish larger no-spray buffers for ground sprays; (100 ft.);



Fishing & Camping



Clean water for drinking



Ecological Stewardship and Protection of Park Users

Support no aerial spray in state forests