

Understory Response to Timber Thinning

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Abstract

Thinning of overstory timber will change forest function and productivity of understory vegetation. Increased solar exposure promotes understory growth, and disturbance caused by thinning will create an opportunity for species establishment. We set up a study to collect baseline data on the understory community at the Metolius Preserve. Our data was collected in thinned and un-thinned areas for comparing to future collected data. We ran four, 100 ft transects in both of the survey areas, collecting information on sapling/seedling density and height, percent cover and frequency of small vegetation, (grasses/forbs/sedges), percent cover for shrubs, and amount of litter/duff in centimeters. The litter/duff studies were done because prescribed fires will be set in certain areas to be determined at a later date. This data will possibly provide insight about nutrient release, and intensity of fires with different amounts of litter/duff. We found that there are many different plant species at the Metolius Preserve, but we will not be able to present results until repeat studies in following years are conducted.

Metolius Preserve



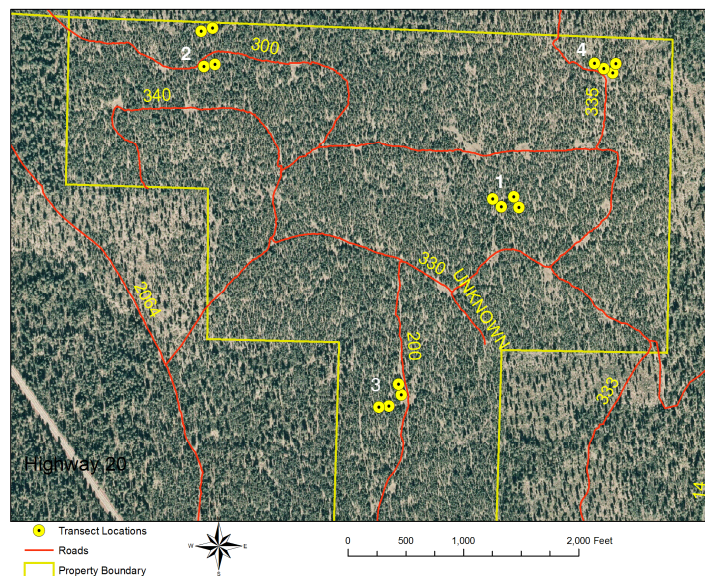
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Plant species identified:

Common name	Scientific name
Elk Sedge	<i>Carex geyeri</i>
Prickly Lettuce	<i>Lactuca serriola</i>
Squirrel Tail	<i>Justicia betonica</i>
Wild Strawberry	<i>Fragaria virginiana</i>
Pussytoes	<i>Antennaria pulcherrima</i>
Blue-eyed Mary	<i>Collinsia parviflora</i>
Redstem Ceanothus	<i>Ceanothus sanguineus</i>
Service Berry/Saskatoon	<i>Amelanchier alnifolia</i>
Tall Oregon-Grape	<i>Mahonia aquifolium</i>
Western Yarrow	<i>Achillea millefolium</i>
Desert Parsley	<i>Lomatium attenuatum</i>
Bitter Brush	<i>Purshia tridentata</i>

Tree species identified:

Common name	Scientific name
Ponderosa Pine	<i>Pinus ponderosa</i>
Grand Fir	<i>Abies grandis</i>



Un-thinned

Transect 4



Notice:

- ❖ Differences in amount and size of ground litter
- ❖ Tree density
- ❖ Percent of ground cover
- ❖ Canopy cover
- ❖ Fire hazards
- ❖ Forage availability

Thinned

Transect 2



Data collected:

The data that was collected is for baseline comparison, because thinning was done within the last year.

It may take several years for plant growth to show results.

Table 1- Seedlings found. Note higher abundance of fir, and little difference between thinned and un-thinned.

Transect number	Thinned		Un-thinned/Retention	
	Grand Fir	Ponderosa	Grand Fir	Ponderosa
1	18	1	8	3
2	37	1	47	1
3	19	10	21	0
4	8	0	18	5
Total	82	12	94	9

Table 2- Saplings found. Note lower densities in thinned areas.

Transect number	Thinned		Un-thinned/Retention	
	Grand Fir	Ponderosa	Grand Fir	Ponderosa
1	2	0	0	4
2	0	0	1	3
3	3	1	3	0
4	0	0	0	3
Total	5	1	4	10

Table 3- Litter and duff layer averages. Note very little differences in thinned vs. un-thinned. T=thinned and R=un-thinned

Transect		Average
1T	Duff (cm)	3.3
	Litter (cm)	2.5
1R	Duff (cm)	1.1
	Litter (cm)	1.1
2T	Duff (cm)	1.9
	Litter (cm)	1.5
2R	Duff (cm)	3.9
	Litter (cm)	1.7
3T	Duff (cm)	1.5
	Litter (cm)	4.4
3R	Duff (cm)	2.5
	Litter (cm)	4.8
4T	Duff (cm)	3.1
	Litter (cm)	2.7
4R	Duff (cm)	2.3
	Litter (cm)	2.7