

# 2019 FBRI/WFCA Reforestation Survey Results

A Presentation for the  
Inland Empire Reforestation Council Meeting  
Coeur d'Alene, Idaho  
March 5, 2019

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# **Economic Results of a PNW Silvicultural Cost Survey: Are you swimming above or below the Financial Waterline?**

**2016 PNW Reforestation Council Annual Meeting**

James D. Arney, Ph.D.

**Forest Biometrics Research Institute**

Portland, Oregon

October 4, 2016



# Thank Yous!

- ▶ *Mr. Patrick Whalen*
- ▶ *Dr. Jim Arney*
- ▶ *Mr. Richard Zabel*
- ▶ *Ms. Melinda Olson*
- ▶ *Mr. Brock Purvis*
- ▶ *The 53 Respondents!!!*

*Any screw ups are all mine...*



## 2019 Silviculture and Harvesting Cost Survey

The Forest Biometrics Research Institute and Western Forestry and Conservation Association are surveying Pacific Northwest foresters on the operating costs for growing and harvesting trees. We are looking to collect average costs for site prep, planting, brush control, precommercial thinning, and harvesting/hauling. All answers will be anonymous, grouped into averages, and not tied to any specific ownership.

**The compiled survey results will be available to anyone who requests them at the end of the survey. In addition, we plan to compare the 2019 survey data with data collected from two prior surveys. Survey respondents who have made a request for results, will also receive this cost trend analysis.**

We hope you will take the time to contribute information to this valuable set of data to establish a current baseline for operational forestry costs. If you have any questions regarding this survey, please contact Dan Opalach at (971) 940-2409 or [dan@forestbiometrics.org](mailto:dan@forestbiometrics.org).

# Cost Categories in the Survey

- ▶ **Annual Operating Expense**
  - Staff, Buildings, Roads, Overhead
- ▶ **Site Preparation**
  - Herbicide, Manual, Mechanical
- ▶ **Planting**
- ▶ **Brush Control**
  - Herbicide, manual, mechanical
- ▶ **Pre-Commercial Thinning**
- ▶ **Commercial Thinning**
- ▶ **Harvesting Operations**
  - Clearcut, Selection

# Summary by Region

- ▶ **53 Organizations Responded to the 2019 Survey\***
  - Not Everyone Provided Input to Every Question
  - Breakdown by Region

Region	Acres	Count
Westside Oregon or Washington	3,231,296	37
Eastside Oregon or Washington	289,543	3
Northern Idaho	1,115,552	7
Montana	807,500	2
Northern California	115,495	4
Total	5,559,386	53

*\*58 organizations contributed to the 2016 survey, covering 5,969,000 acres*

# Responses by Ownership Category

Ownership Category	Count
Public non-federal	8
Private	34
Tribal	3
Management service / consulting firm	7
Non-governmental organization	1
Total	53



# Set 1 — Admin Costs

## ► All Annual Costs not Assigned to a Stand

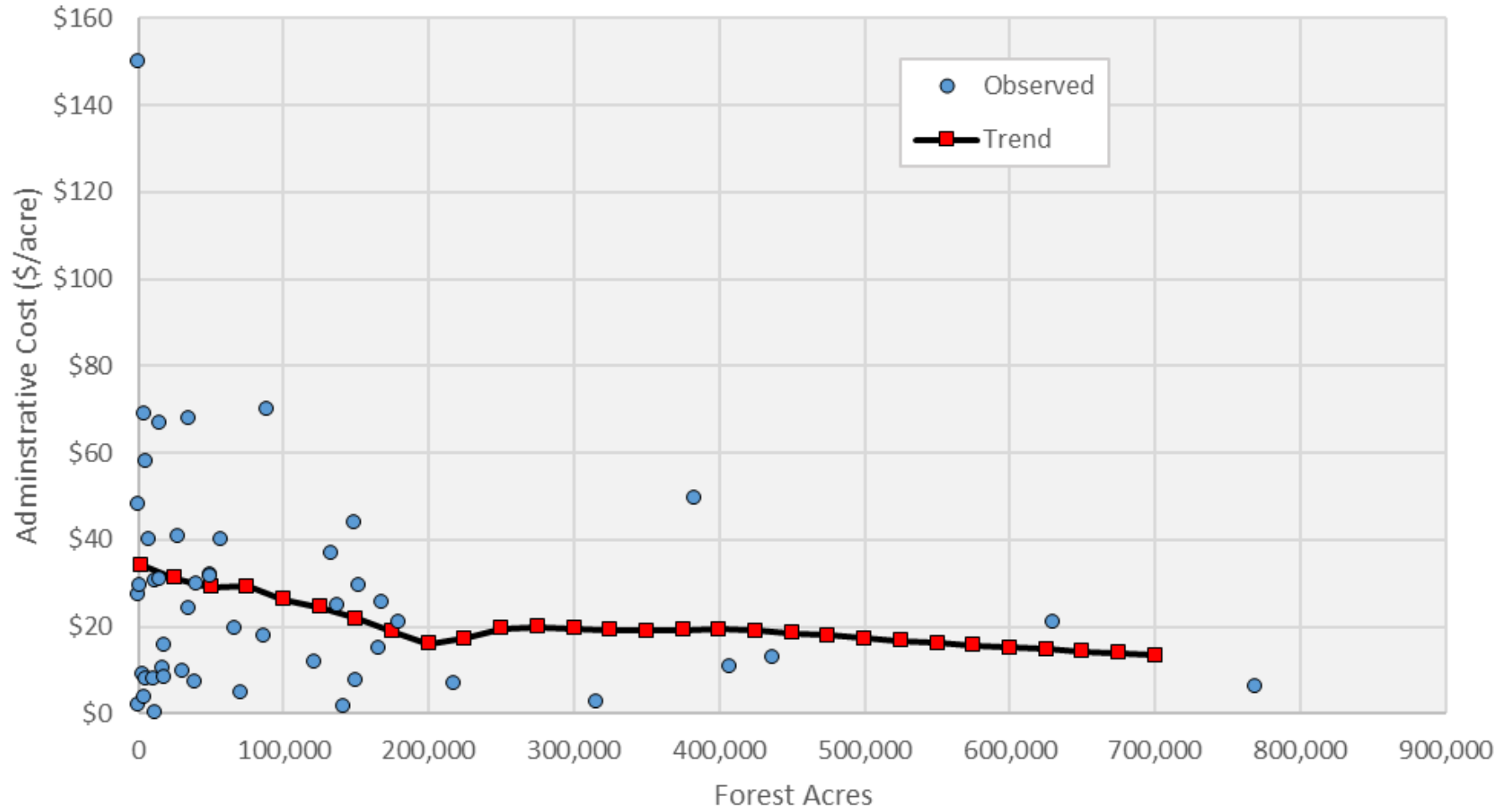
- Payroll, Health, Pension, Human Services
- Buildings and Infrastructure
- Roads, Right-of-Ways, Communications
- Operating Expenses – Electricity, Gas

## ► Divide Annual Admin / Forest Acres

- Average 1982 Response = \$12.70 /ac /yr
- Average 1997 Response = \$23.58 /ac /yr
- Average 2002 Response = \$18.79 /ac /yr
- Average 2016 Response = \$33.18 /ac /yr
- Average 2019 Response = \$33.17 /ac /yr



### Average Annual Admin Cost / Acre



# Set 2 – Site Prep & Plant

- ▶ **There is lots of Variation in the Data**
- ▶ **Site Preparation Costs / Acre**
  - Herbicide, Mechanical, or Prescribed Burning
- ▶ **Cost of Seedlings / Tree**
- ▶ **Number of Trees / Acre Planted**
- ▶ **Planting Cost / Acre**



*Prescribed burning site preparation treatment*  
*25 Responses*  
*47%*



*Mechanical site preparation treatment*  
*31 Responses*  
*58%*



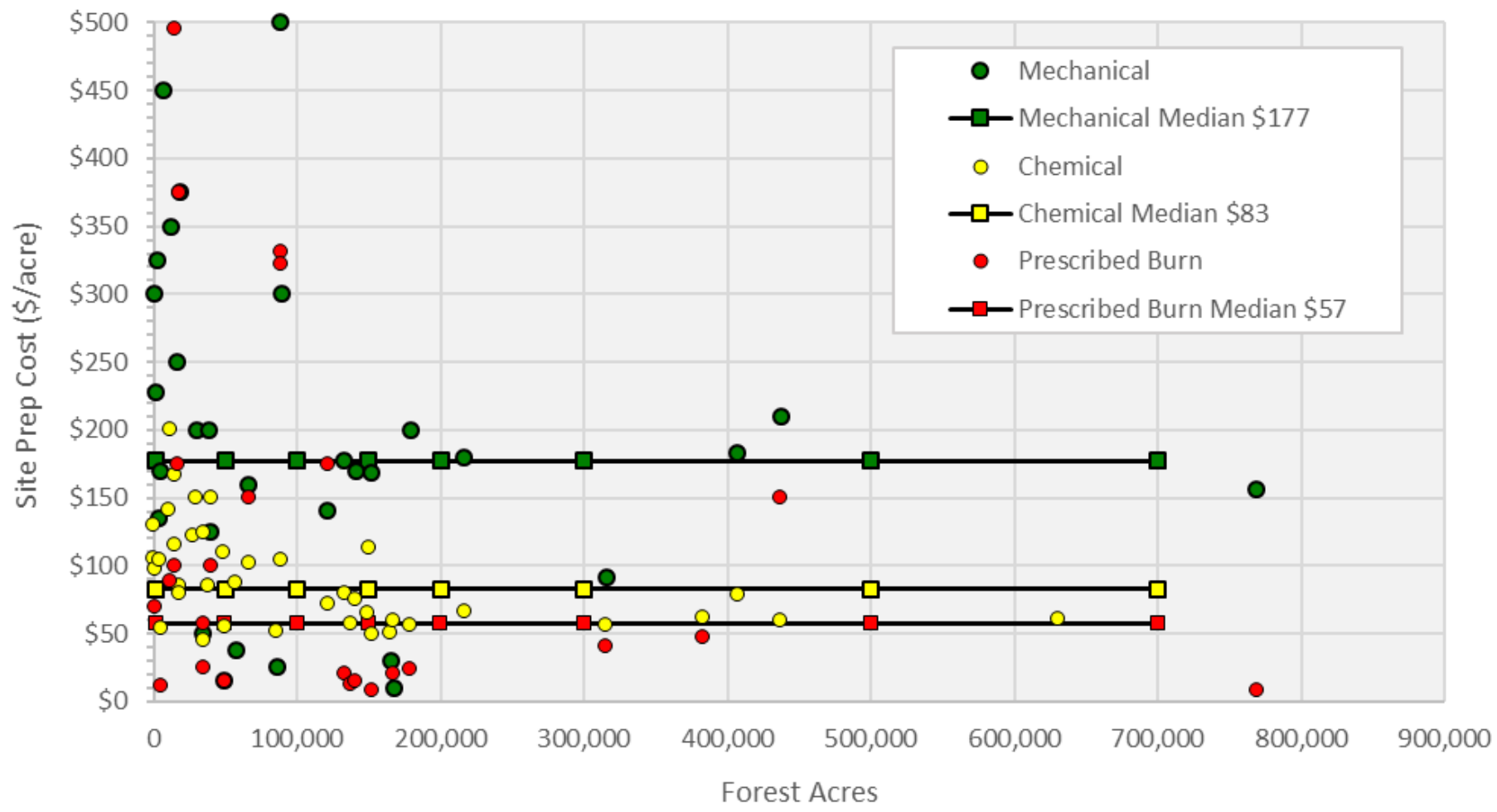
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*Herbicide site preparation treatment*  
*40 Responses*  
*75%*



# Site Preparation Costs / Acre







*Glenn Lehar at the Green Diamond  
Containerized Nursery in Korbey,  
California, showing off a  
redwood clone  
(\$1.50 per tree)*



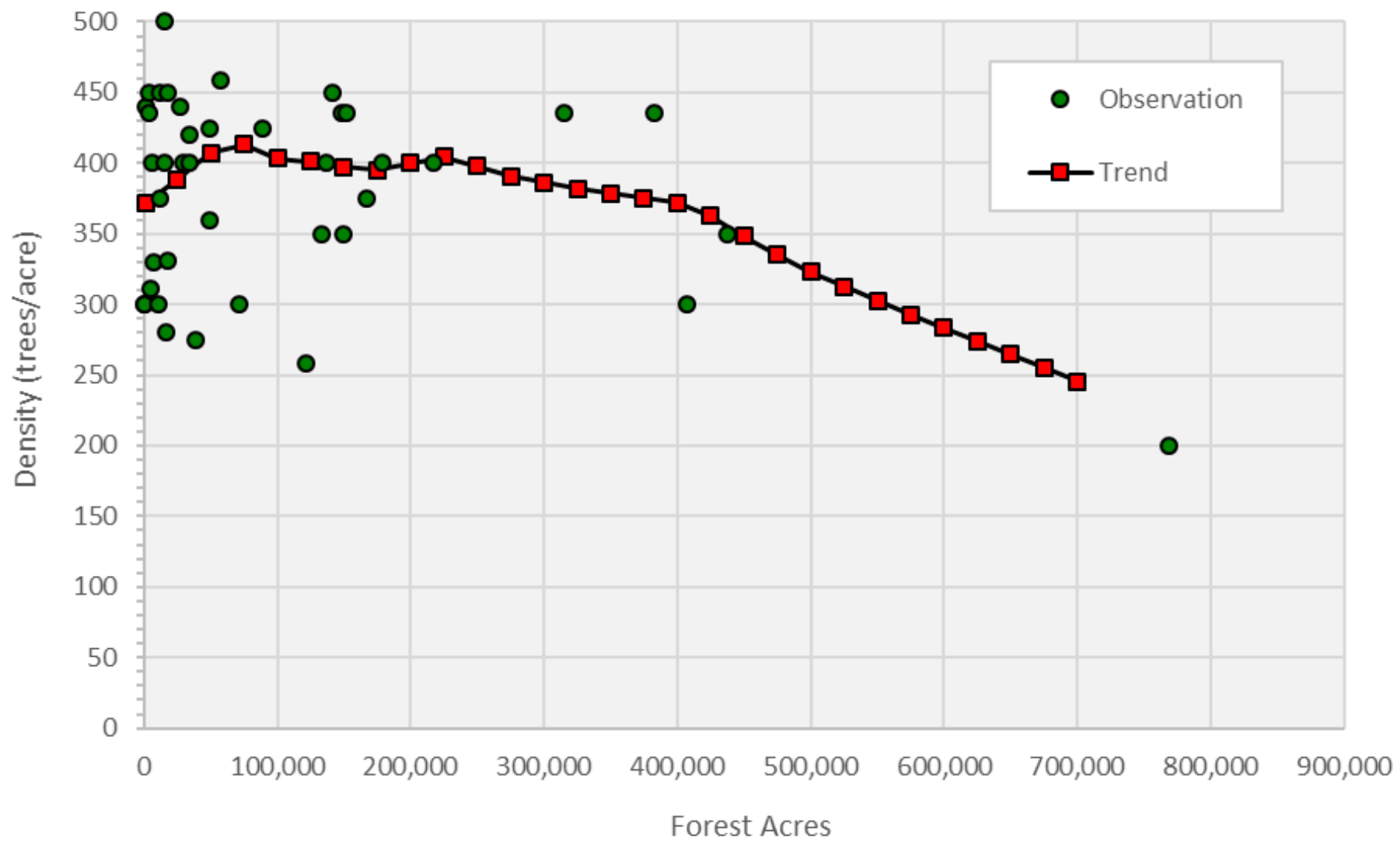
A photograph of a nursery facility showing rows of Douglas-fir plugs in white containers. The plants are densely packed and appear healthy. In the background, there is a large building with a dark facade and green structural elements. The text is overlaid on the left side of the image.

*Douglas-fir plugs at the Green Diamond  
Containerized Nursery in Korbek, California  
(\$0.50 per tree)*





## Planting Density











01/22/2009



# Set 3 – Brush Control

- ▶ **Treatment of unwanted competition after planting**
- ▶ **Methods**
  - **Herbicide**
  - **Manual**
  - **Mechanical**



# Brush Control Summary

<b>Treatment</b>	<b>Primary</b>	<b>Secondary</b>
Herbicide	31	15
Manual	4	5
Mechanical	3	3
Total	38	23
Percent (n=53)	72%	43%



*Primary treatment - tanoak treated with imazapyr*





*Secondary treatment – blueblossom/tanoak treated with triclopyr*



05/13/2009

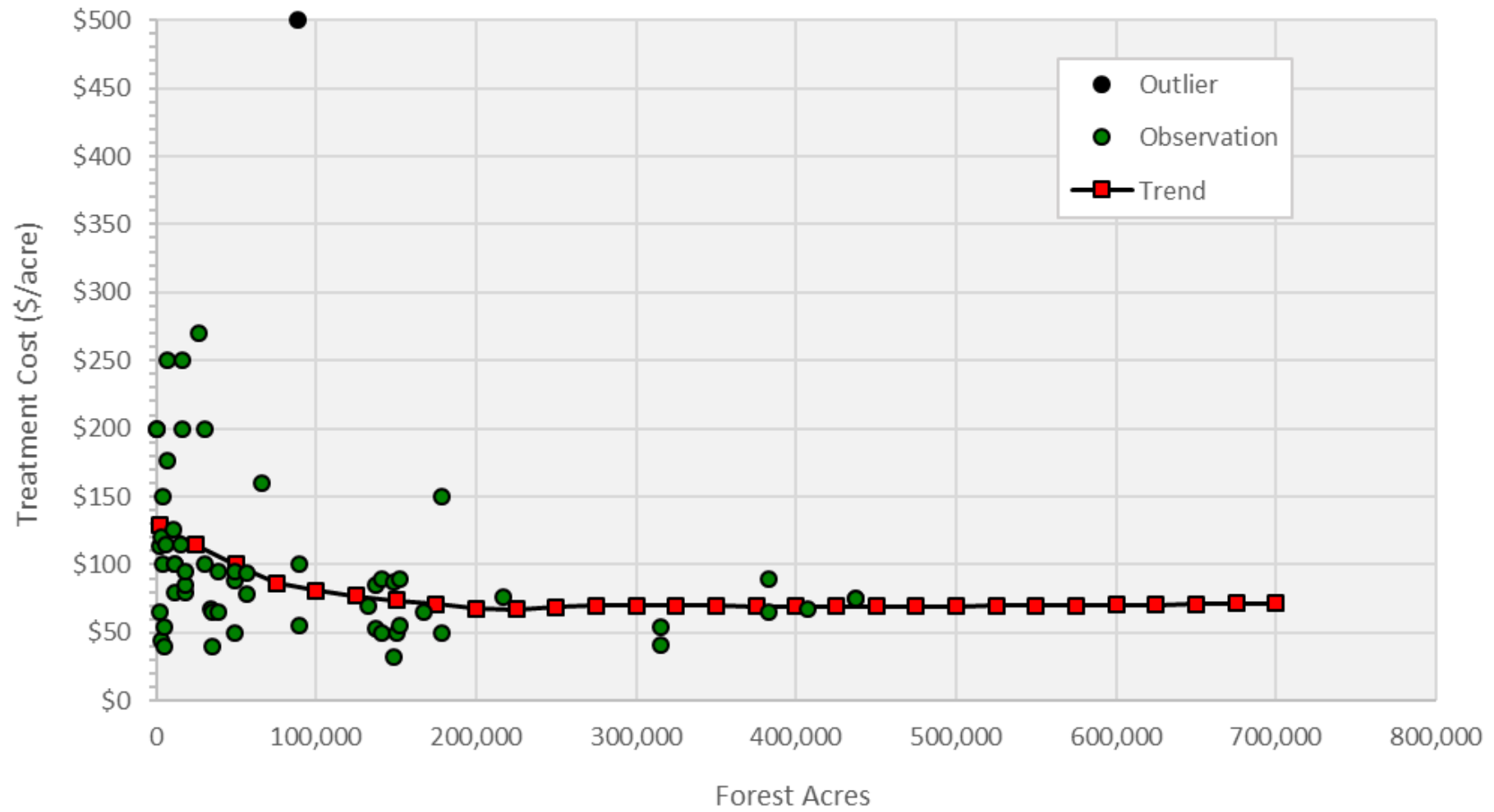


*Manual brush control treatment*





# Brush Control Cost / Acre



# Set 4 – Pre-Commercial Thin

## ▶ Objective is to:

- Reduce Stocking
- Improve Species Composition
- Remove Unwanted Hardwoods

## ▶ 39 of 53 Organizations Reported PCT Data

## ▶ Most Responses = #Cut > #Planted

- Survey 2011 = \$138 / Acre to Remove 700 Tpa
- Survey 2016 = \$154 / Acre to Remove 400 Tpa
- Survey 2019 = \$250 / Acre to Remove 470 Tpa















## Caspar Creek PCT Study on Jackson Demonstration State Forest\*

Treatment (TPA after PCT)	Net Bf/Acre at age 50	Average Log Size	Margin/Acre	Margin/Acre Difference from Control	Discounted Value of the Margin/Acre	Net Present Value	Internal Rate of Return
Control	65,048	66	\$31,493	N/A	N/A	N/A	N/A
100	64,321	133	\$38,417	\$6,924	\$910	\$610	11.0%
150	87,056	127	\$53,377	\$21,885	\$2,875	\$2,575	15.4%
200	64,697	86	\$33,308	\$1,815	\$238	-\$62	6.2%
250	90,988	89	\$48,141	\$16,648	\$2,187	\$1,887	14.3%
300	71,396	80	\$36,618	\$5,125	\$673	\$373	9.9%
Ave. Treatment	75,692	103	\$41,972	\$10,479	\$1,377	\$1,077	12.6%
% of Control	116%	155%	133%				

Sort	Trended Redwood prices
6" - 12"	\$750
13" - 18"	\$850
19"+	\$950

Discount rate =	7.0%
Cost of PCT =	\$300
FBYL&H small logs =	\$289
FBYL&H large logs =	\$241

# Questions?

