

W.M. Beaty & Associates Forestland Management in Northeastern California

www.wmbeaty.com

WBA Managed Tract, SE Lassen County

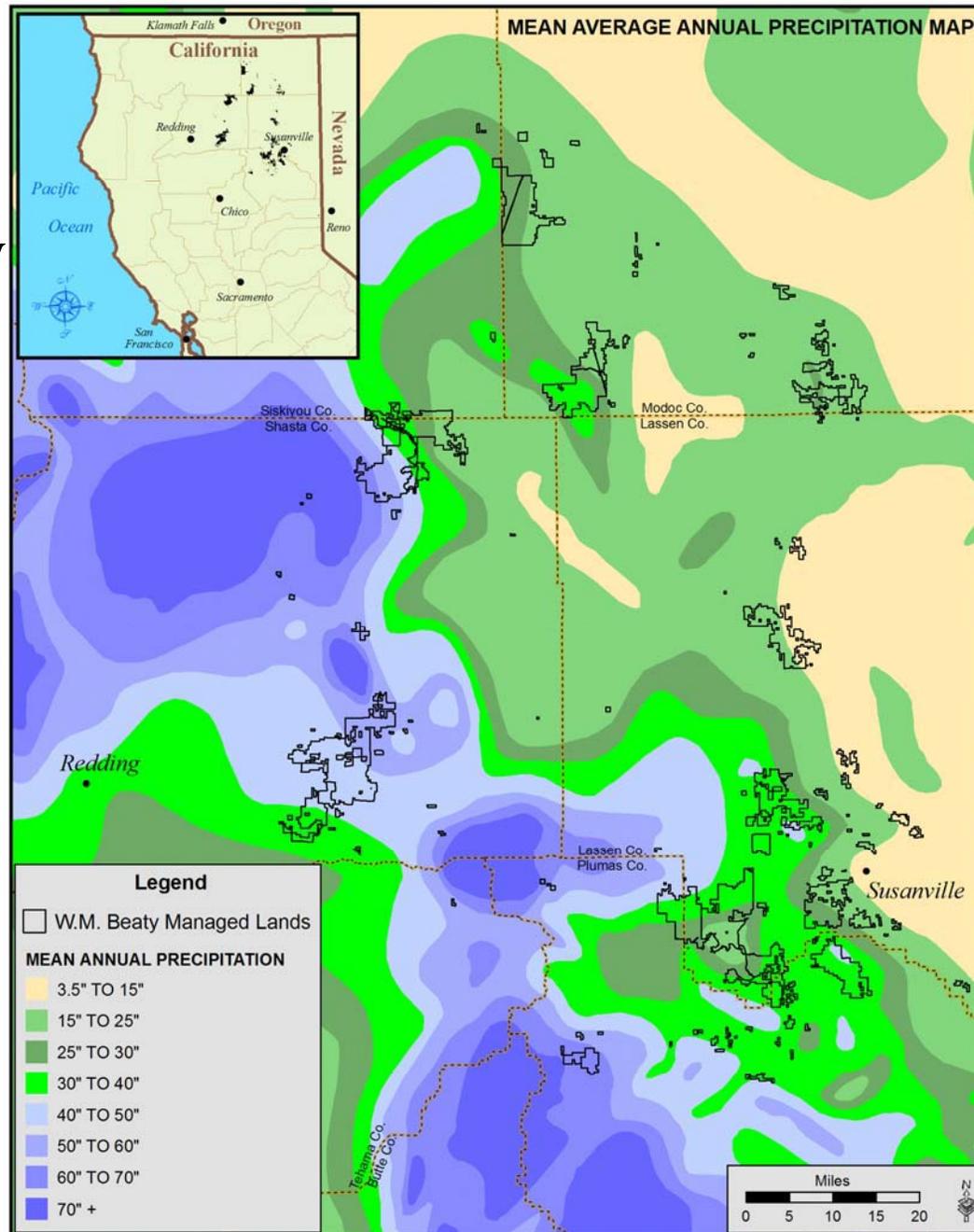
W. M. Beaty & Associates

- **Established in 1970**
- **Manage + 284,000 acres of family-owned forests in NE Calif. (do not own or operate manufacturing facilities)**
- **We also provide forestry consultation services for other owners or entities**



Much of PPT
In form of snow

Elev: 2,000' to
6,500'





California Forests & Mediterranean Climate

- Cool/wet Winters
 - vegetation/fuel
- Warm/dry Summer
 - Annual fire season
 - Soil moisture is limiting factor for conifer seedling survival
 - Native brush & non-native annual grasses: **severe competition w/ conifer seedlings**
 - Periodic prolonged droughts
 - **Management of Tree Stocking Levels is critical**

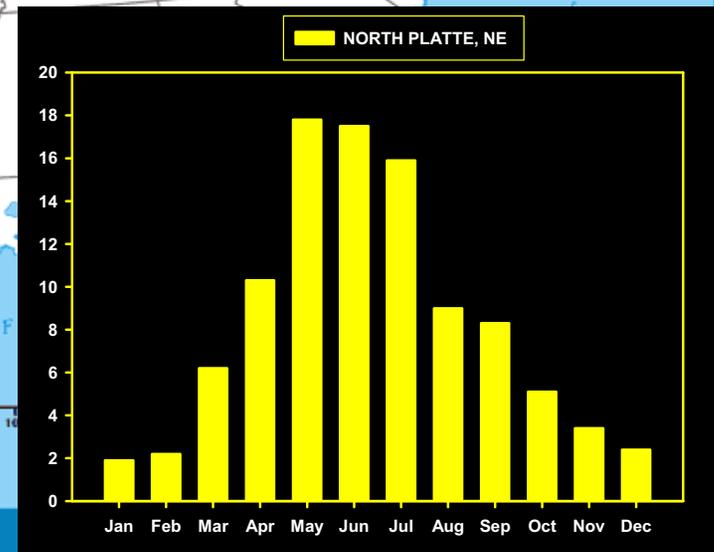
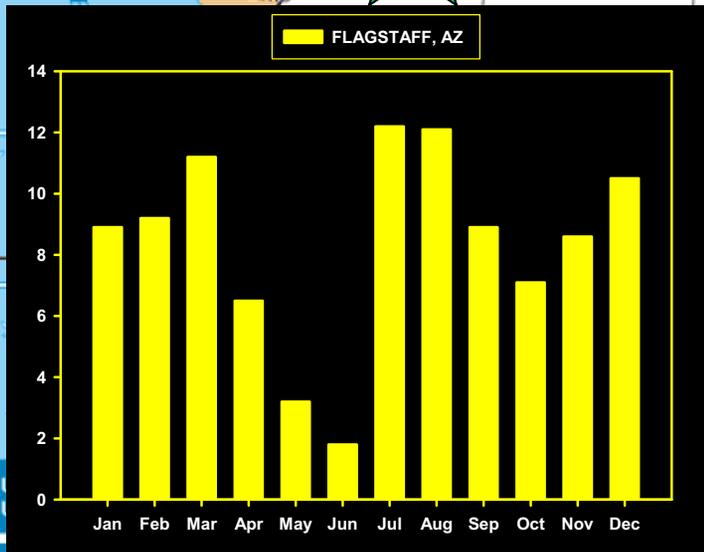
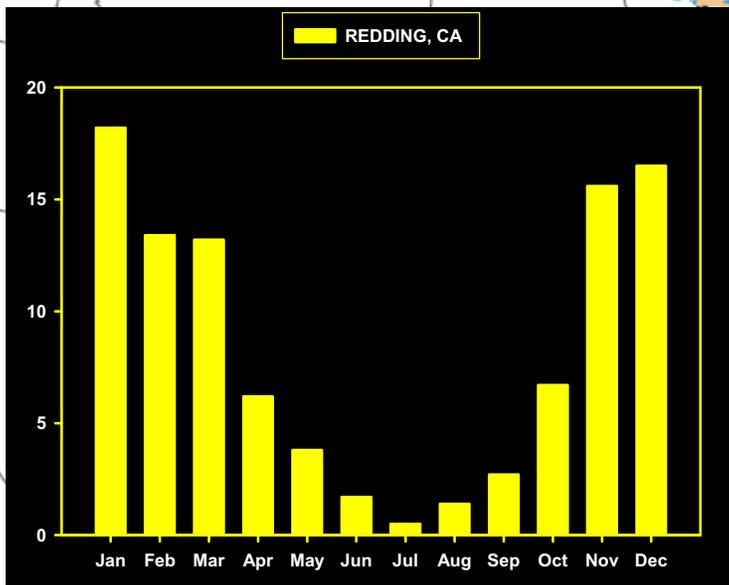
Lightning/Fire

- Historic vs. current fire frequencies & intensities



Climate - Precipitation Patterns

STATES
established



Overall Management Objectives

- Annual income for landowners while increasing asset value, forest structure & growth over time by harvesting less than growth
- Maintain and/or improve soils, water quality, riparian habitat, forage, aesthetics and recreation
- Minimize risk of catastrophic losses from fire, pathogens and insects.
- Provide broad & diverse wildlife habitat types across landscape

Timber Management Objectives

- **Grow large trees for sawlogs/veneer logs (fiber and fuel chips, small logs, poles etc. produced as by-products of timber sales or as products of stand improvement treatments)**
- **Increase timber inventory (total volume, individual tree size & value), growth and harvest over time**
- **Regulate forest structure over time**
- **Promote regional economic vitality (e.g. mills)**

W. M. Beaty & Associates

Long Term Plans

- **Sustained Yield Plans - comprehensive, 100-year management plans to enhance on a sustainable basis:**
 - **timber**
 - **wildlife and**
 - **watershed values**

W.M. BEATY & ASSOCIATES, INC.



1 Billion Bd. Ft.
initial inventory

also harvested 1.6 Billion Bd. Ft.
& several hundred thousand tons
of fuel & pulp chips

Grown under WBA mgt.

± 38 years



2.5 Billion Bd. Ft.
current inventory

CURRENT INVENTORY

Even though the largest tree size required by FPR's is 18" dbh we have:

- **Approx. 3 million trees \geq 20" dbh**
- **More than 1.3 million trees \geq 24" dbh**
- **Approx. 370,000 trees \geq 30" dbh**

Projected Inventory,
Growth & Harvest for
next 100 years for one
Beaty managed Forest

Period	MBF by 5-Yr Period			Ending Inventory
	Starting Inventory	Harvest	Growth	
1	<u>1,069,678</u>	<u>179,142</u>	<u>225,205</u>	<u>1,115,741</u>
2	1,115,741	193,815	231,828	1,153,754
3	1,153,754	198,953	235,819	1,190,620
4	1,190,620	213,467	236,635	1,213,788
5	1,213,788	195,640	239,434	1,257,582
6	1,257,582	202,024	253,195	1,308,753
7	1,308,753	208,643	247,562	1,347,672
8	1,347,672	191,825	294,742	1,450,589
9	1,450,589	225,494	317,850	1,542,945
10	1,542,945	220,622	310,507	1,632,830
11	1,632,830	244,137	313,355	1,702,048
12	1,702,048	247,689	327,864	1,782,223
13	1,782,223	289,388	334,556	1,827,391
14	1,827,391	235,433	333,335	1,925,293
15	1,925,293	284,121	319,257	1,960,429
16	1,960,429	266,876	335,763	2,029,316
17	2,029,316	285,747	326,934	2,070,503
18	2,070,503	264,081	333,044	2,139,466
19	2,139,466	326,883	324,322	2,136,905
20	2,136,905	282,898	326,953	2,180,960

Conservative estimate of Net tCO₂e over next 100 years for one Beaty managed Forest

5 year Period	MBF by 5-Yr Period			tCO ₂ e	tCO ₂ e	tCO ₂ e	
	Starting Inventory	Harvest	Growth	Ending Inventory	Losses	Addition	net gain
1	<u>1,069,678</u>	<u>179,142</u>	<u>225,205</u>	<u>1,115,741</u>	<u>992,575</u>	<u>2,715,215</u>	<u>1,722,640</u>
2	1,115,741	193,815	231,828	1,153,754	1,073,768	2,759,557	1,685,789
3	1,153,754	198,953	235,819	1,190,620	1,102,105	2,770,944	1,668,839
4	1,190,620	213,467	236,635	1,213,788	1,182,419	2,744,287	1,561,868
5	1,213,788	195,640	239,434	1,257,582	1,083,798	2,740,073	1,656,275
6	1,257,582	202,024	253,195	1,308,753	1,119,063	2,858,771	1,739,708
7	1,308,753	208,643	247,562	1,347,672	1,155,764	2,757,251	1,601,488
8	1,347,672	191,825	294,742	1,450,589	1,062,484	3,237,579	2,175,095
9	1,450,589	225,494	317,850	1,542,945	1,248,172	3,442,723	2,194,551
10	1,542,945	220,622	310,507	1,632,830	1,221,849	3,315,628	2,093,779
11	1,632,830	244,137	313,355	1,702,048	1,351,166	3,298,043	1,946,877
12	1,702,048	247,689	327,864	1,782,223	1,371,824	3,400,531	2,028,707
13	1,782,223	289,388	334,556	1,827,391	1,602,039	3,418,695	1,816,656
14	1,827,391	235,433	333,335	1,925,293	1,303,865	3,355,161	2,051,296
15	1,925,293	284,121	319,257	1,960,429	1,573,129	3,164,559	1,591,431
16	1,960,429	266,876	335,763	2,029,316	1,478,210	3,276,742	1,798,533
17	2,029,316	285,747	326,934	2,070,503	1,581,728	3,140,503	1,558,775
18	2,070,503	264,081	333,044	2,139,466	1,462,508	3,148,183	1,685,675
19	2,139,466	326,883	324,322	2,136,905	1,809,019	3,016,060	1,207,040
20	2,136,905	282,898	326,953	2,180,960	1,566,525	2,990,448	<u>1,423,923</u>
TOTAL net gain tCO₂e					35,208,944		



Unevenage mixed conifer stand in NE Shasta Co. where Beaty management is increasing forest structure, timber volume, growth and average tree size over time.

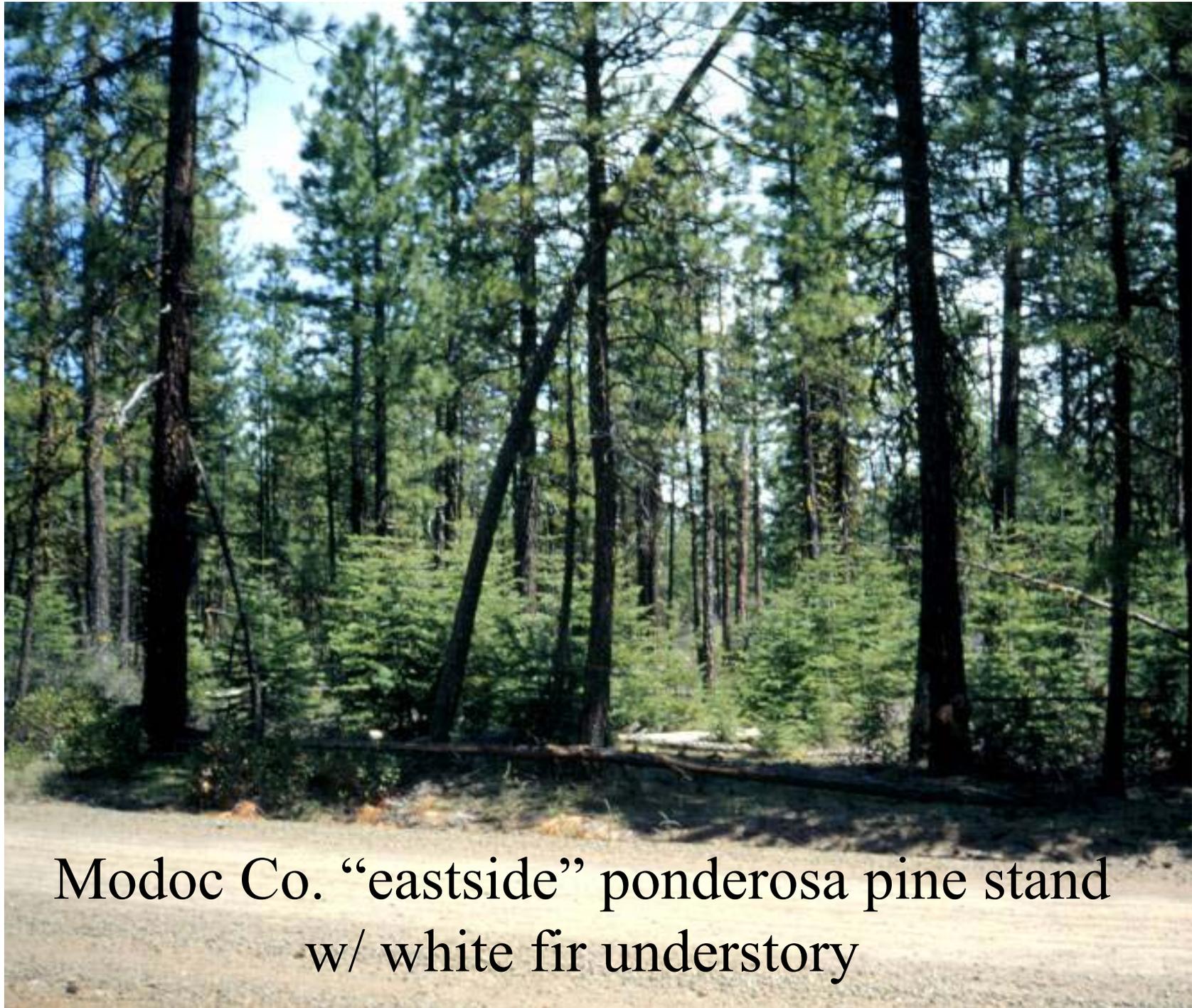


Beaty
foresters/markers
trained by Wildlife
Biologist to ID &
retain WL habitat
elements:



Group Selection to recruit young pine & DF





Modoc Co. “eastside” ponderosa pine stand
w/ white fir understory

Increasing Productivity & Carbon Sequestration by Reforesting brush-occupied old burns on forest lands

7&½ years after planting

brushfield from old burn
in eastern Shasta County



Increasing Productivity & Carbon Sequestration by timely reforestation after catastrophic wildfire



2000 Storrie Fire



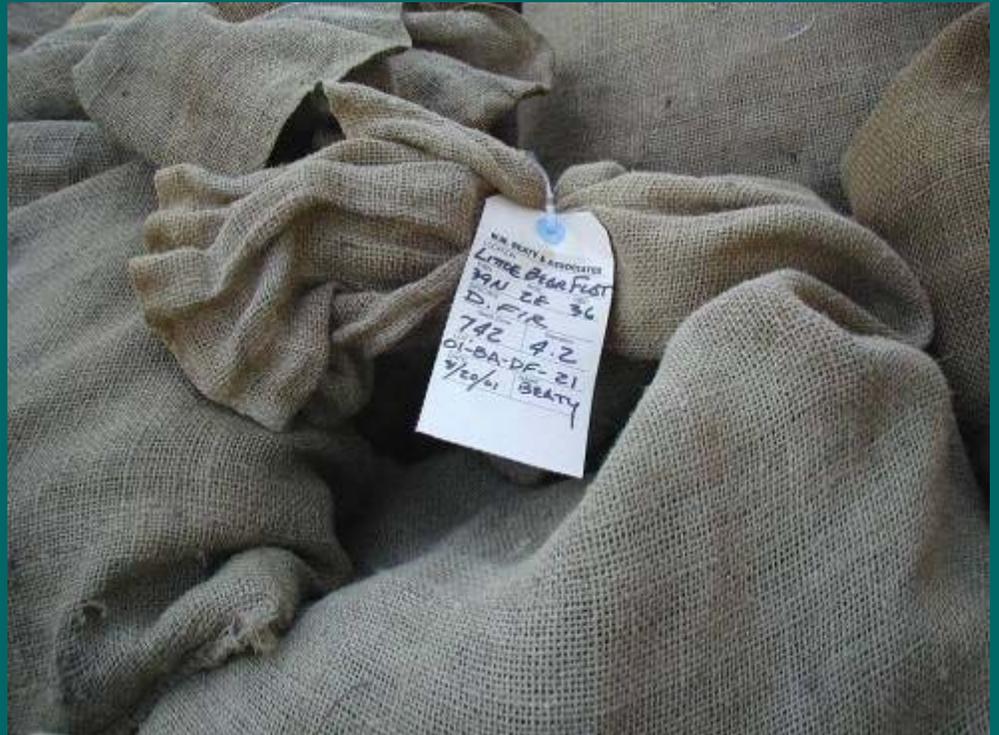
**8 year-old trees in the Storrie Fire
planted April 2022**



Conifer Seed Inventory:

Inventory by:

- Species (PP, JP, SP, DF, WF, RF, IC)
- Elevations (2,000' – 6,500')
- Seed Zones (8 seed zones)



North Sierra Tree Improvement Association Ponderosa Pine Seed Orchard



“The best insurance policy against global climate change may well be an active tree improvement program involving a diverse land base, multiple species, and several cooperators.”

Jay Kitzmiller, Ph. D., Regional Geneticist USFS (retired)

16 yr old BLM & private plantations on Day Fire (Modoc Co.)

Only Difference = weed control



No weed control





Challenge Experimental Forest
42 year old pond pine planted @ 6' x 6' spacing: QMD = 6.5"



Veg control

Challenge Experimental Forest
42 year old pond pine planted @ 18' x 18' spacing: QMD = 16.0"

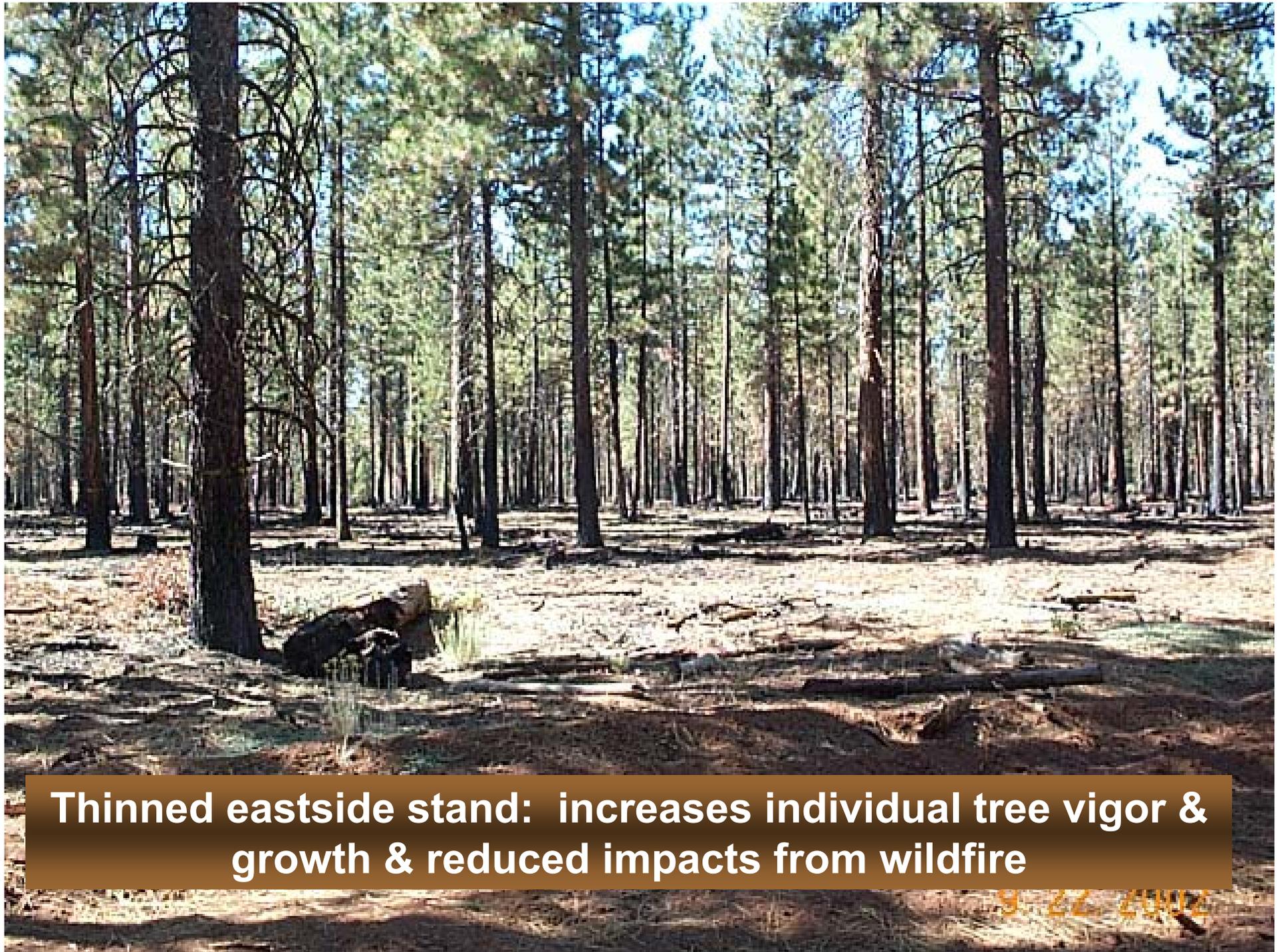
A photograph of a forest with several people gathered around a large tree. A yellow tag is attached to the tree trunk. The scene is a managed mature pine forest near McCloud. The forest floor is covered in grass and pine needles. The trees are tall and thin, with a dense canopy. The lighting is bright, suggesting a sunny day. The people are dressed in casual outdoor attire, including hats and t-shirts. One person is standing and talking to a group of people sitting on the ground. The overall atmosphere is one of a field study or a guided tour.

**89 year-old USFS
Plantation near McCloud**

**Managed mature pine forest
= High carbon storage +
resilient to fire**



High stocking levels on eastside resulting in stagnating trees & fire hazard.



Thinned eastside stand: increases individual tree vigor & growth & reduced impacts from wildfire



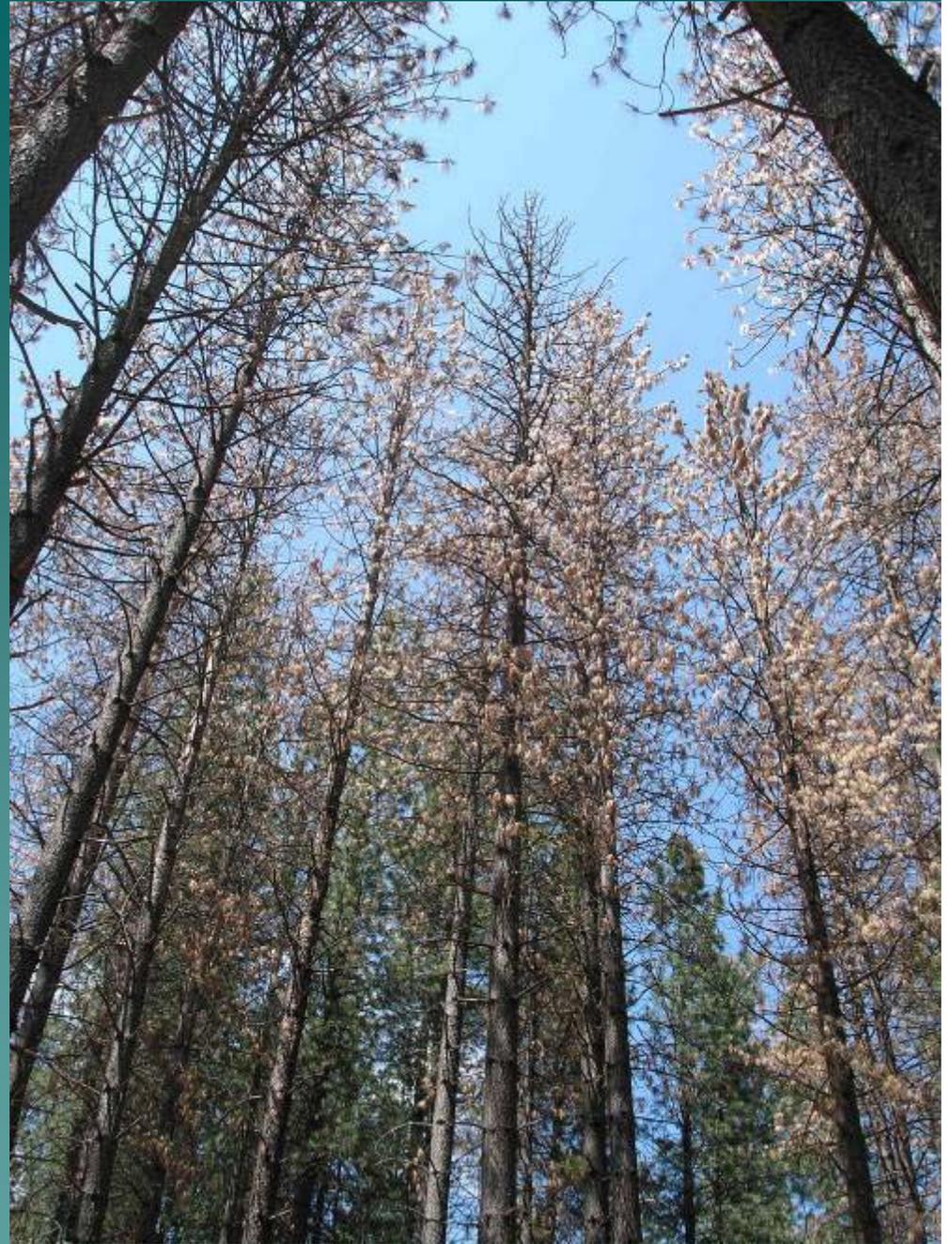
**5-year
Growth
Increments**

Plumas Co.
Planted @
300 TPA





Levels Of Growing Stock Studies USFS Elliot Ranch Plantation



These ponderosa pine trees are a part of a long term study comparing tree growth and bush development when trees are thinned to different spacings. The trees were planted in 1950 following Elliot Ranch fire and have been thinned three times since 1970 by the U.S. Forest Service Experiment Station. The results of this study will help guide the management of pine plantations resulting from wildfires throughout the Sierras.



Wildfires with much less damage due to Beaty thinning projects where crown fires went to ground facilitating direct attack & containment

1. 1992 Mud Fire in Lassen County
2. 1994 Widow Fire Incident in Modoc County (near Lookout)
3. 1996 Dixie Fire in Lassen County
4. 2003 Whitmore Fire in Shasta County (near Whitmore)
5. 2008 Sanctuary Fire incident in Shasta County (near Shingletown)
6. 2008 Corral Fire (portion of fire)
7. Numerous spot fires from lightning strikes in thinned areas that were put out before the fire got into un-thinned timber and became actual wildfire incidents.

The largest and most “catastrophic” fires that occurred on our managed lands in the past 30 years were on tracts w/ no biomass thinning

Oct. 2003 Whitmore Wildfire

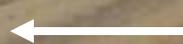
Stand thinned in 2002

Un-thinned stand



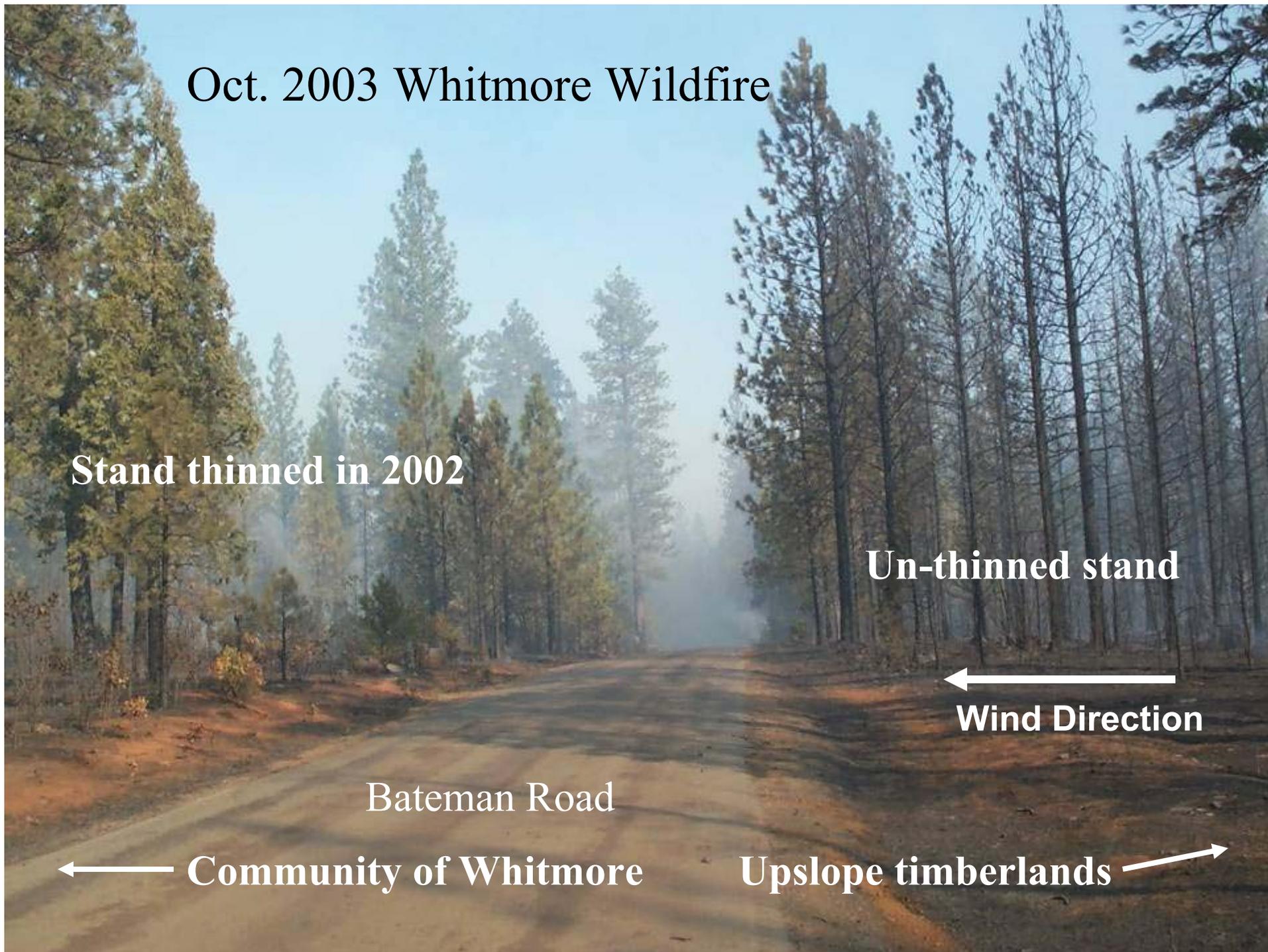
Wind Direction

Bateman Road



Community of Whitmore

Upslope timberlands



Whitmore Fire Plantation



Storrie Fire 2007

USFS

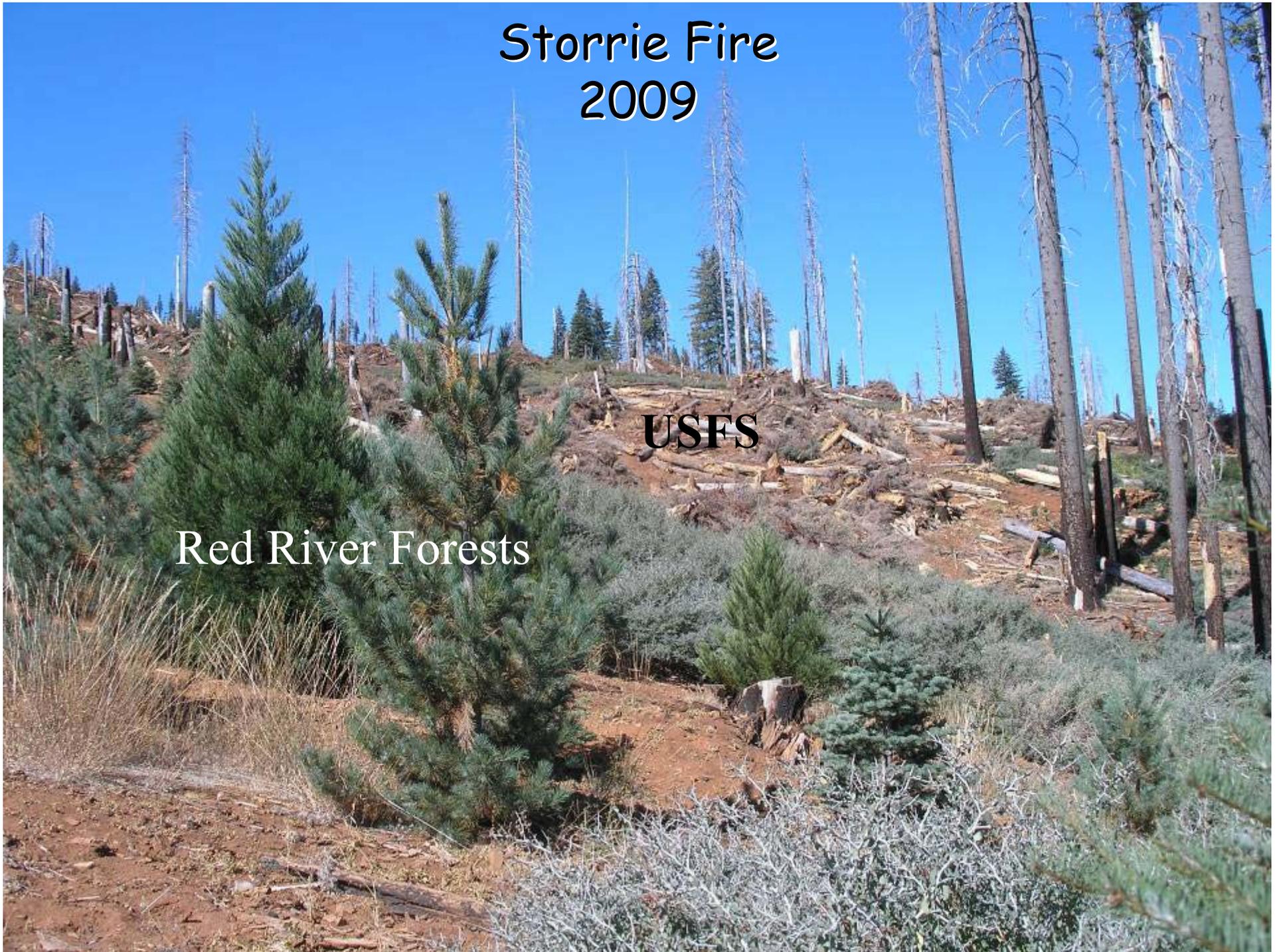
Red River Forests



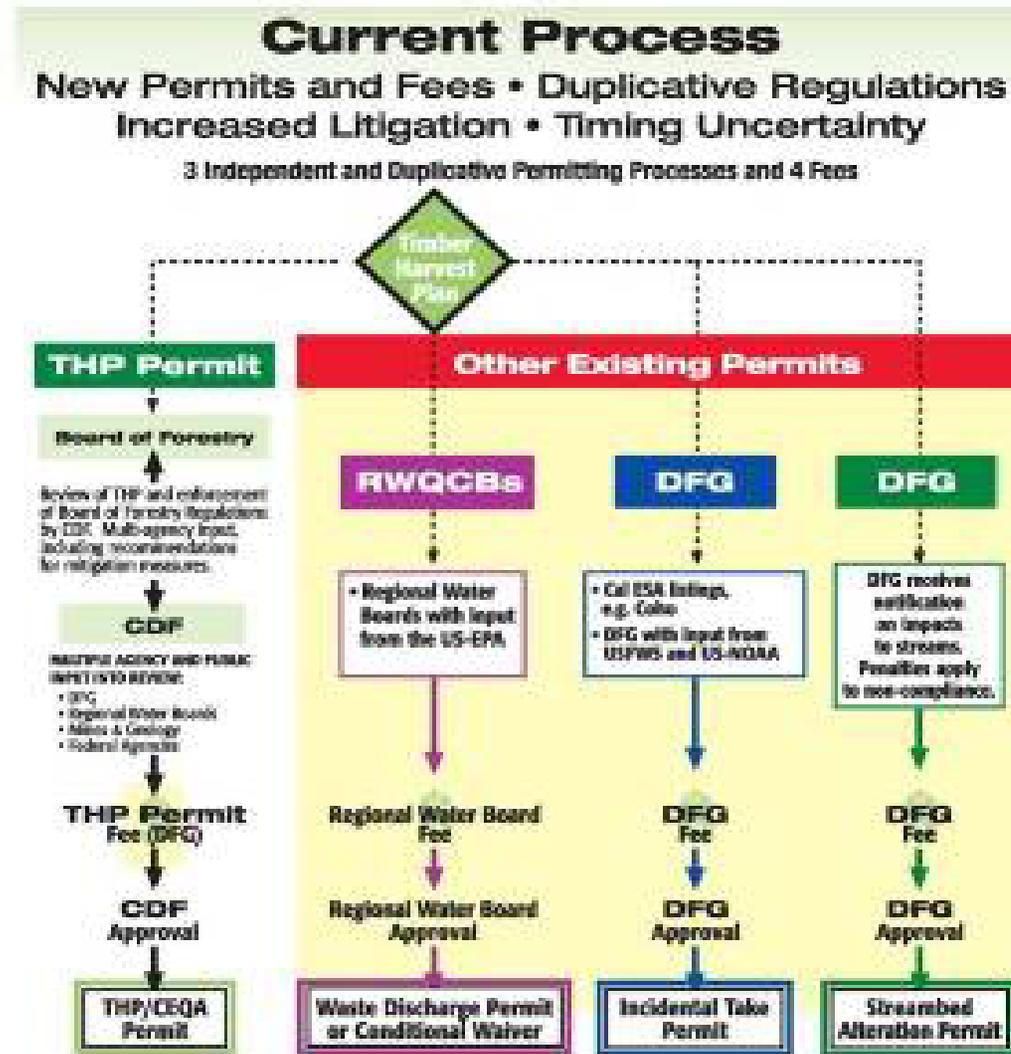
Storrie Fire 2009

USFS

Red River Forests



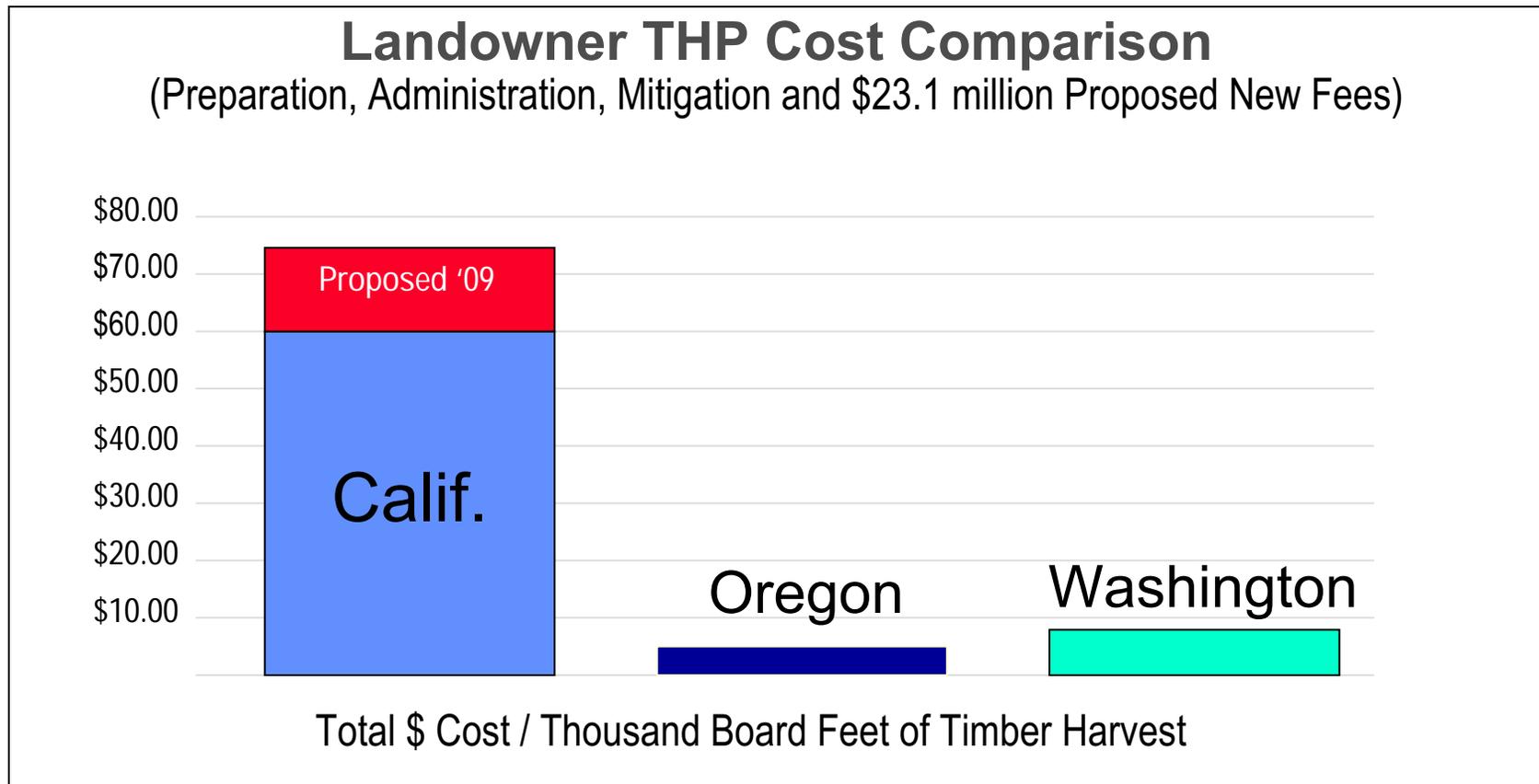
Private Forestland Regulation



Total Average Landowner Cost per THP: **\$42,000**
 Current Average THP Related Fees: **\$4,000**
 Average THP Fee under LAO Proposal: **Another \$46,000**

Private Forestland Regulation

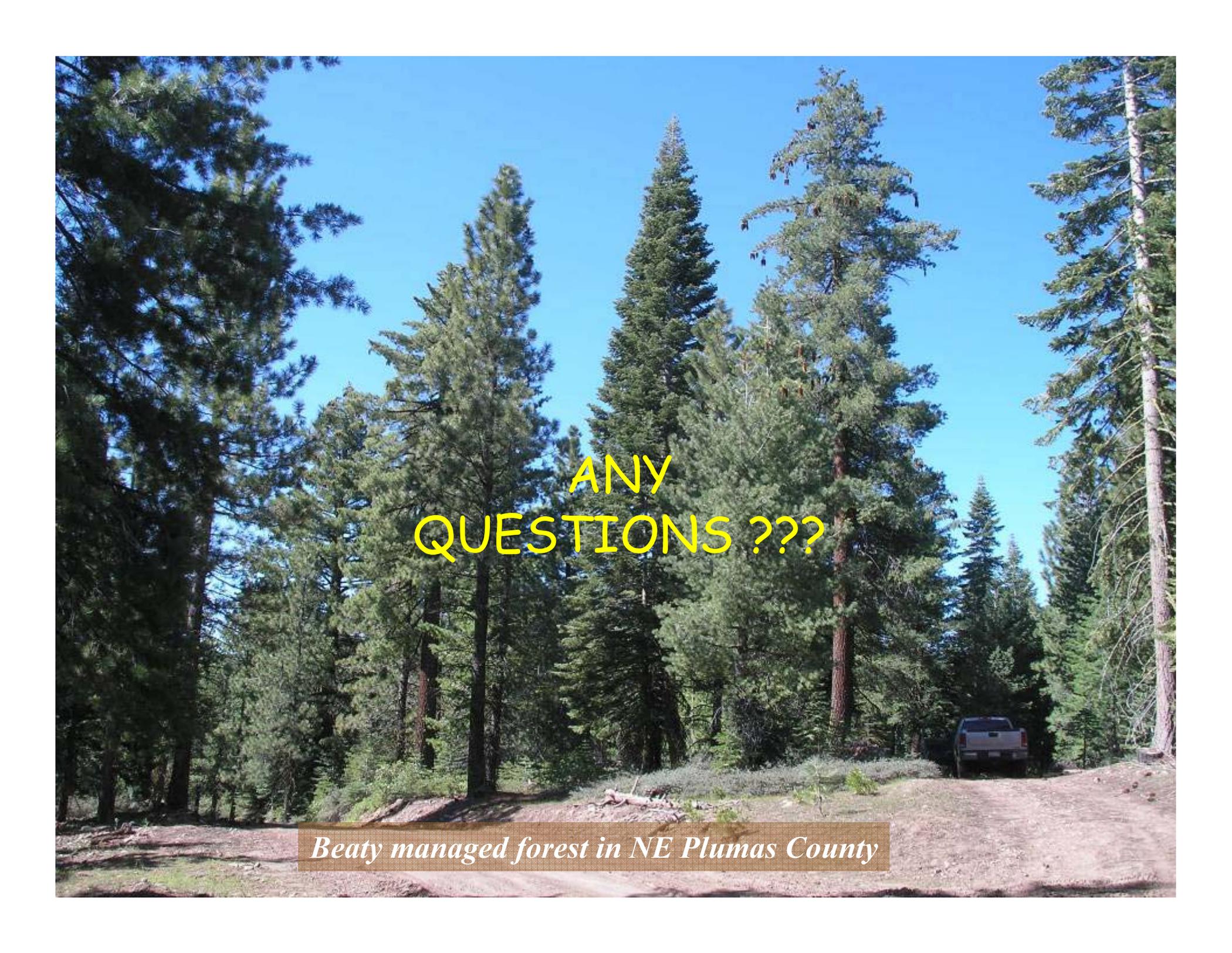
- **Cost increases**
 - **1,200 percent since 1975**
 - **Avg cost: \$40,000 per timber harvest plan**



Some concerns landowners have in achieving Long Term Objectives....

- **Markets/Infrastructure for forest products and ecosystem services**
- **Escalating & duplicative permitting costs**
- **USFS/CAL FIRE's increasing adversarial role as plaintiffs against forest owners who are good, long term forest stewards (in wildfire related claims)**

WBA Managed Tract, SE Lassen County



ANY
QUESTIONS ???

Beaty managed forest in NE Plumas County