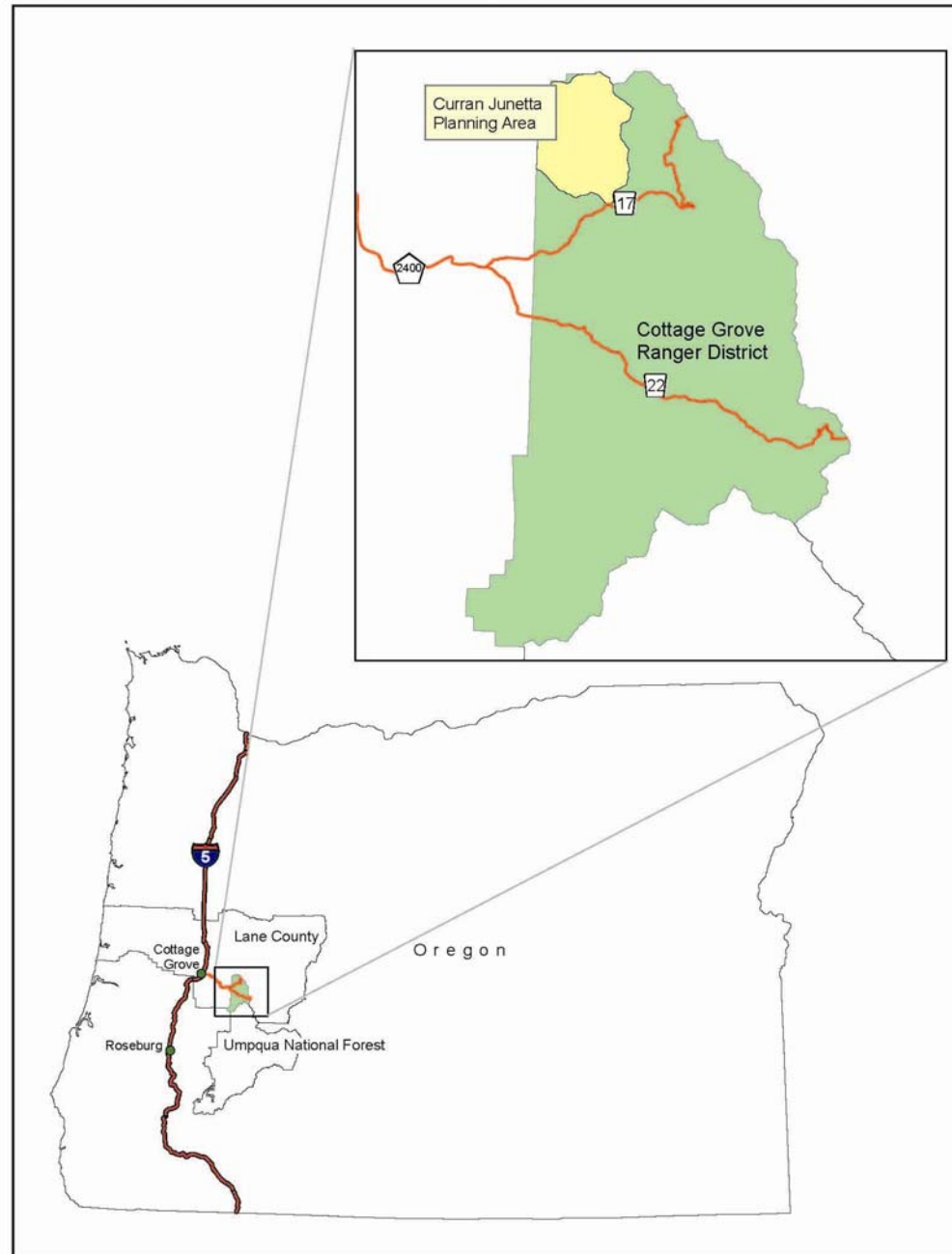




Curran Junetta Thin

Suzanne Schindler, Project Team Leader/Silviculturist
Cottage Grove RD, Umpqua NF
(541)767-5040, sschindler@fs.fed.us

Leslie Elliott, Silviculturist
Detroit and Sweet Home RD, Willamette NF
(541) 367-3961, ljelliott@fs.fed.us

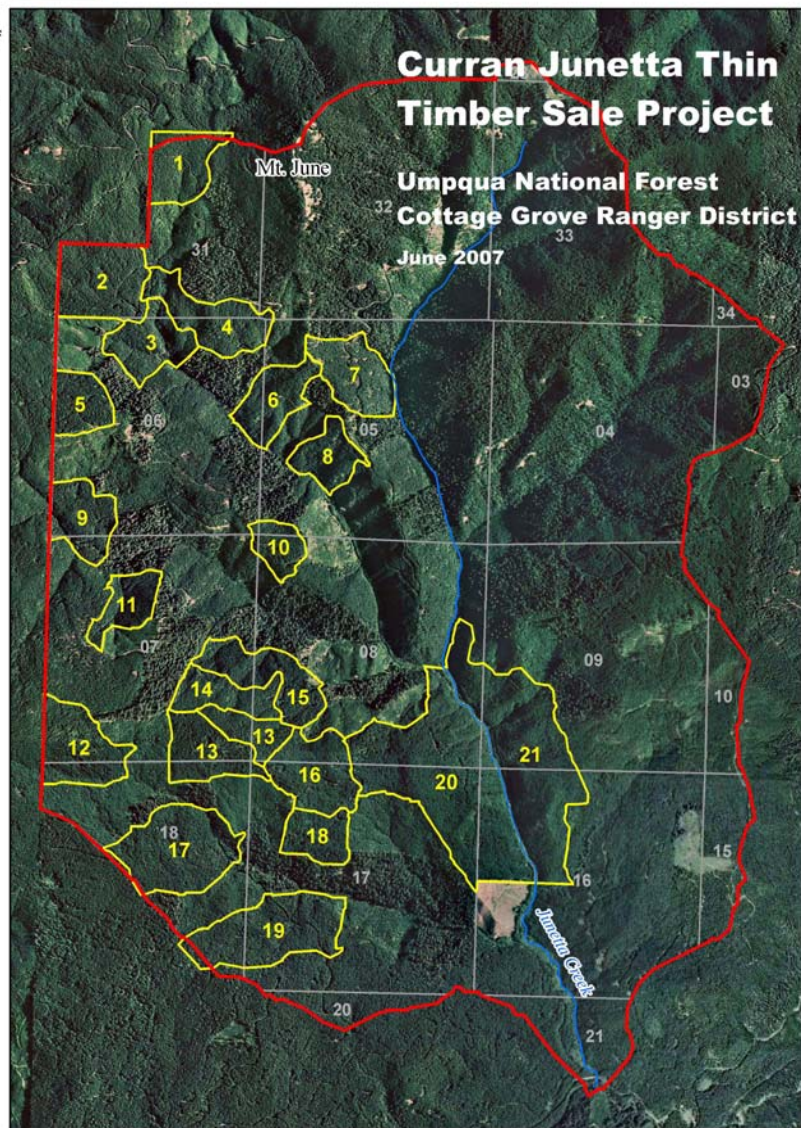




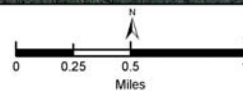
United States
Department of
Agriculture

Forest Service

Pacific
Northwest
Region



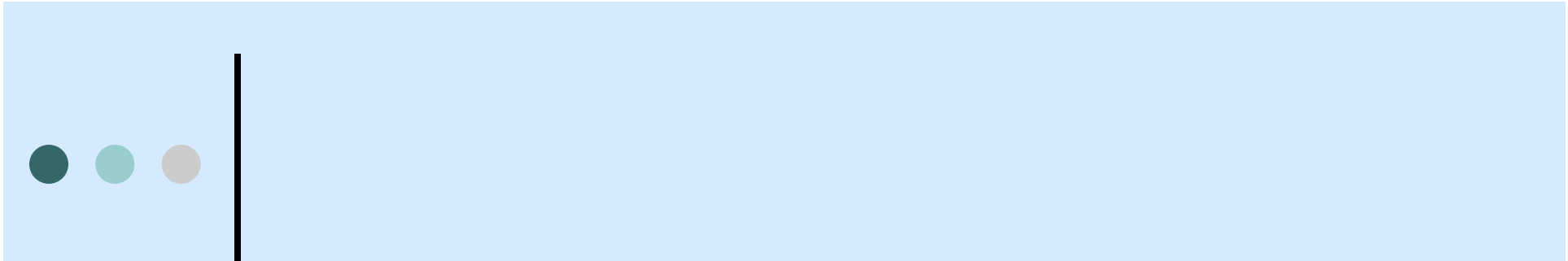
— Junetta Creek
— Project Area
— Curran Junetta Stands

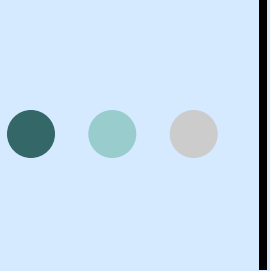


Question 3: Objectives

The purpose of the project is to reduce tree density in second growth timber (stem exclusion stands) in order to restore species and structural diversity and improve condition class in the municipal watershed by improving stand fire resiliency, while providing wood products to the local community.







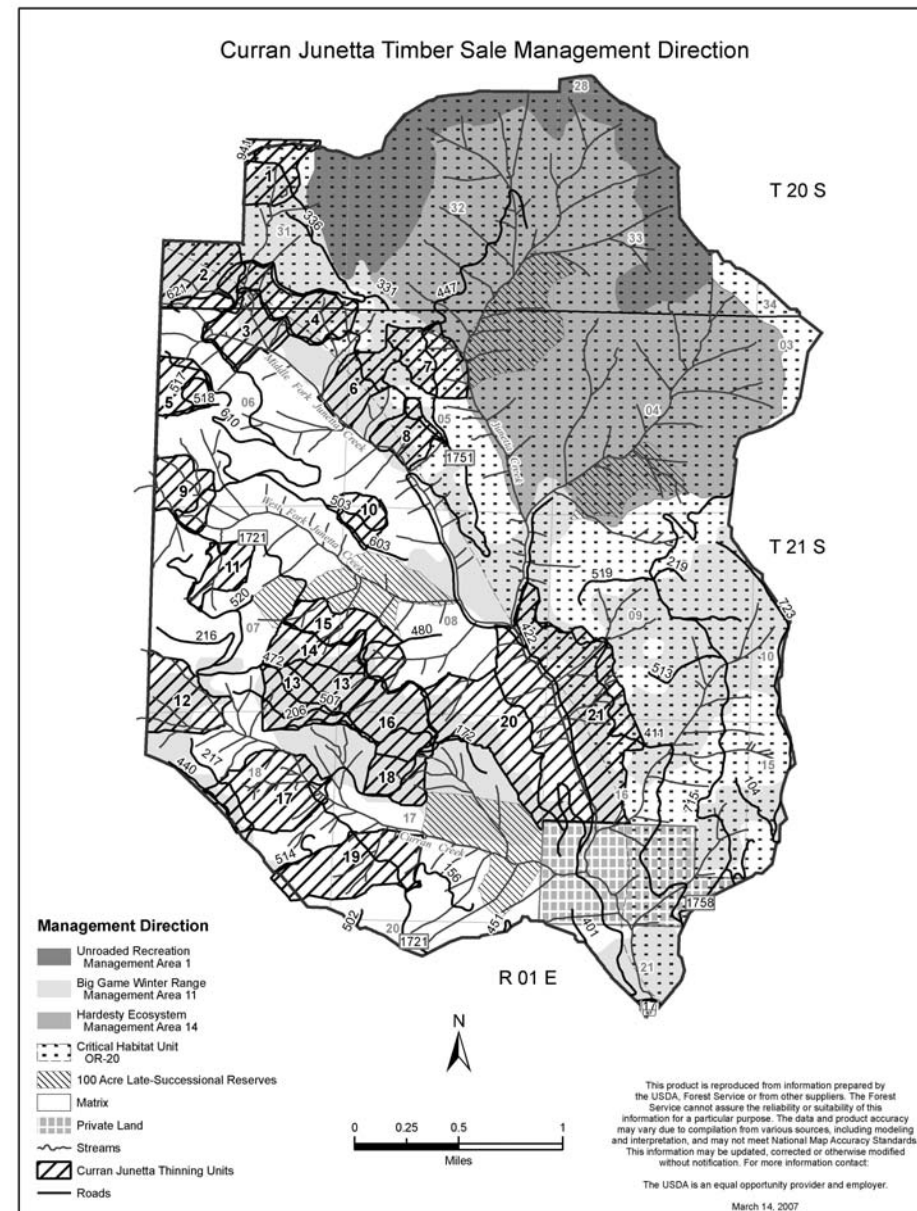
Question 4:

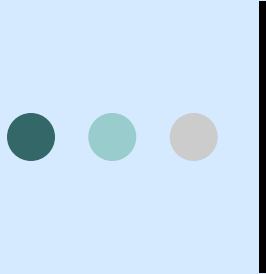
What district, forest or regional goals or directives were underlying the project?

- **Landscape variable thinning**
- **Desired stand conditions would have lower, more variable densities that mimic the natural stand development processes of a moderate severity fire regime.**
- **In the absence of wildfire, setting a course for stand development that leads to more the uneven structure characteristics of the historic late successional forest in Layng Creek would require thinning and gap creation.**

Question 4 cont.

- NW Forest Plan: Matrix, RR,
- NSO direction/CHU
- Big Game Winter Range
- Fire Resilient Stands





QUESTION 5:

What was the condition of the forest stand pre-treatment? (DBH, TPA, Age, Etc)

	Age	DBH (inches)	Height (feet)	TPA (≥7" dbh)	Total TPA	BA/ AC	Curtis RD	BF/AC	Total canopy closure
Ave.	52	14	83	175	310	190	50	28,577	64%
Range	41- 59	11-17	50-106	120- 299	155- 505	156- 305	42-73	21,253- 52,090	54-74%





Question 6: Post Treatment Overview - Silvicultural Prescription Considerations

- **Landscape Areas**
- **Disturbance Patterns**
- **Aspect/Plant Associations**
- **Desired Stand Conditions**
- **Wildlife Considerations**
- **Other Considerations**

LANDTYPE ASSOCIATIONS OF THE UMPQUA CASCADES

Map Units for Evaluating Landscape-scale Vegetation Potential and Fire Behavior

Don Morrison, Umpqua National Forest
March 2006

Landtype Associations were developed as a framework for Forest Planning and Fire Regime Condition Class reporting.



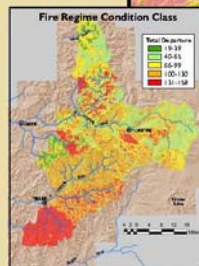
Wildfire Effects in Steep Terrain



Fire Gap in Inner Gorge

Methods: A digital elevation model with elevation, slope gradient, and slope position attributes was developed to model relationships between plant series, climate, topography and fire regimes.

A simple, landscape-scale model is used to delineate differences in vegetation and fire behavior associated with low versus high elevation climates, gentle versus steep terrains and valley bottom versus upland geomorphic units.

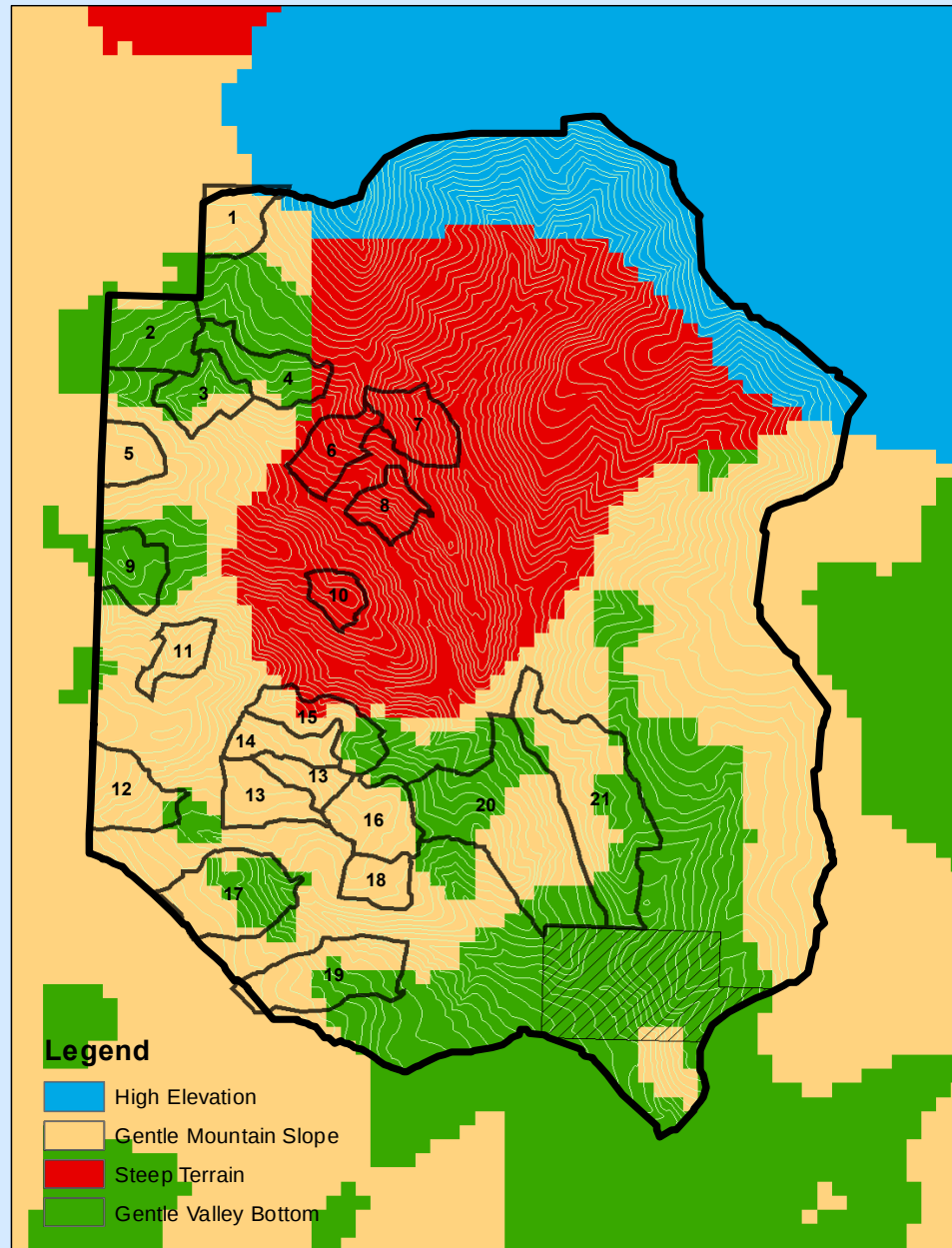


Landtype Associations

Steep Mtn. Slopes - No. Umpqua	Western Cascades - 20/50
Steep Mtn. Slopes - No. Umpqua	Cascade - Silver Fir
Inner Gorge - No. Umpqua	Steep Mtn. Slopes - So. Umpqua
Steep Valley Bottoms - No. Umpqua	Steep Mtn. Slopes - So. Umpqua
Cascade Crest - Mt. Hood	Steep Valley Bottoms - So. Umpqua
Cascade - Subalpine/Alpine	Steep Mtn. Slopes - Willamette
High Cascade Gorge - Low Elev. White Fir	Steep Mtn. Slopes - Willamette
High Southern Cascade - White Fir	Steep Valley Bottoms - Willamette
High Southern Cascade - Largescale Pine	Diamond Lake
High Southern Cascade - Mt. Hood	Sub-forelands
Southwestern Cascade - MT 20/50	

The Aquatic Conservation Strategy employs tactics for maintaining "natural" disturbance regimes. Landscape-scale map units work well for evaluating vegetation and fuel conditions at a scale commensurate with the disturbances from forest management and wildfires. Most watershed units used for this purpose do not have the appropriate scale or boundaries.

Landtype Units in CJ 11.21.06



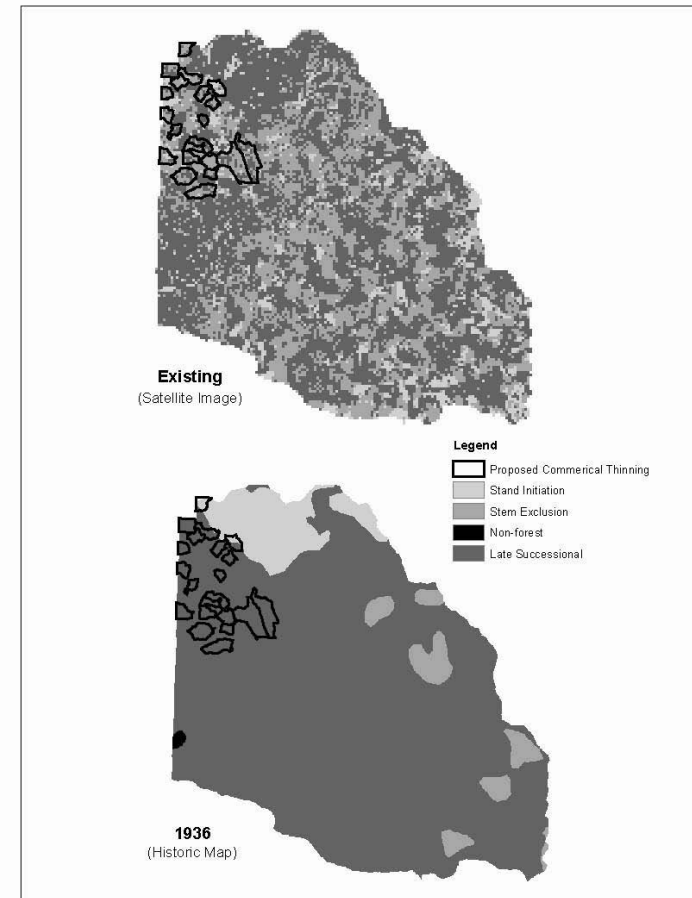
Landscape Area	Aspect/Plant Association	Disturbance/Objective
Gentle Valley Bottom	North-facing Slopes (Units: 19, 20) South-facing Slopes* (Units: 2, 3, 4, 9, 17, 21)	-Refuge from fire, generally surface fires; disturbance from root rot pockets/snowdown -Accelerate stand development, restore species and structural diversity, by thinning and small gap creation
Gentle Mountain Slope	North-facing Slopes (Units: 5,11,12,13,14, 15, 16) South-facing Slopes* (Units:1,18)	-Drier, fewer barriers to fire, larger patches of stand replacement -Apply thinning and canopy gap creation and underburning to restore structural & species diversity; larger gaps
Steep Terrain	North-facing Slopes (Unit: 7) South-facing Slopes* (Units: 6, 8,10)	-Steep slopes fire intensity greater & stand replacement fires more frequent -Improve resilience to fire, open canopies, even-aged management

***South facing slopes; tended to focus on heavy thin to promote fire resiliency**



Desired Stand Conditions

- The desired landscape condition would have larger patches in the different forest structure conditions compared to today's pattern.
- Desired patch sizes would approximate the infrequent historic fire events that covered thousands of acres.
- The desired pattern of vegetation patches would be less fragmented, as was produced by moderate severity fire effects.







Fire Regime Condition Class





Integrated Prescriptions

Wildlife Considerations

- **CHUs**
- **Big game winter range**
- **Owl Cores**

Riparian

- **Protect primary shade zone on perennial Streams – 50'/60' buffer**
- **Protect unstable intermittent streams; Thin stable intermittents**

Noxious Weeds

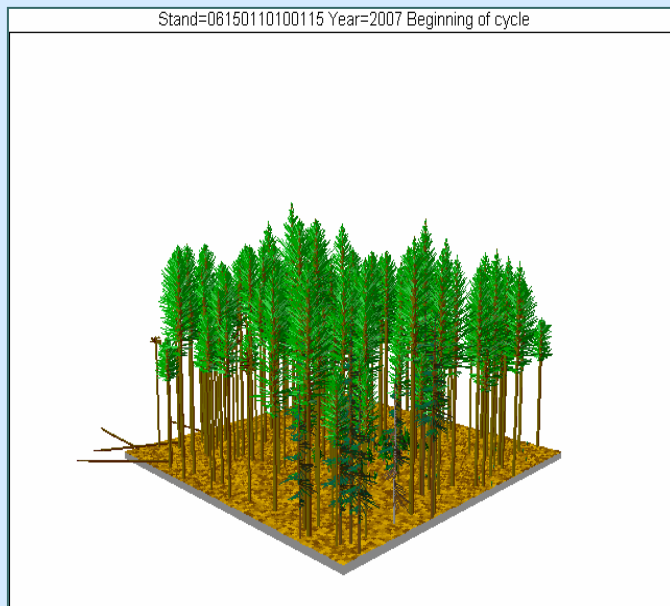


Integrated Prescriptions

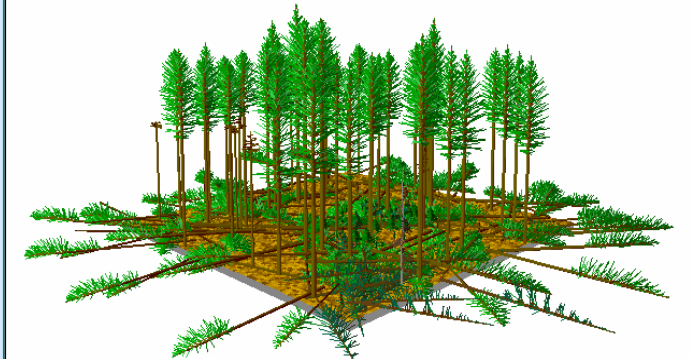
Prescriptions	Units	Acres
40-60 TPA - no gaps	13s, 11	64
40-60 TPA – 10 to 20% gaps	1, 2, 4,6, 8, 13s, 21	410
70-90 TPA – no gaps	3, 5, 7*, 13n, 15, 18	215
70-90 TPA – 10% gaps	9, 10, 12, 14, 16, 17, 19, 20	547
	Total	1,236



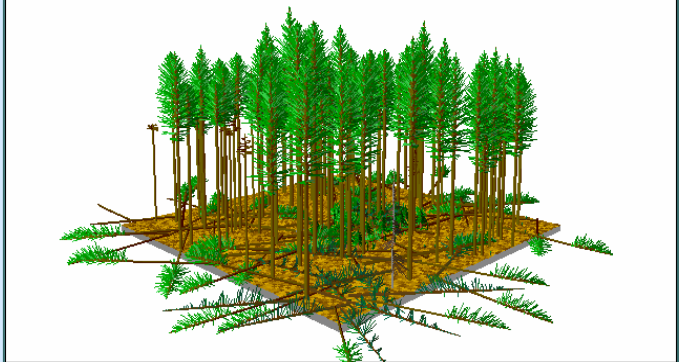
Pre-treatment



Thin to 40-60 tpa



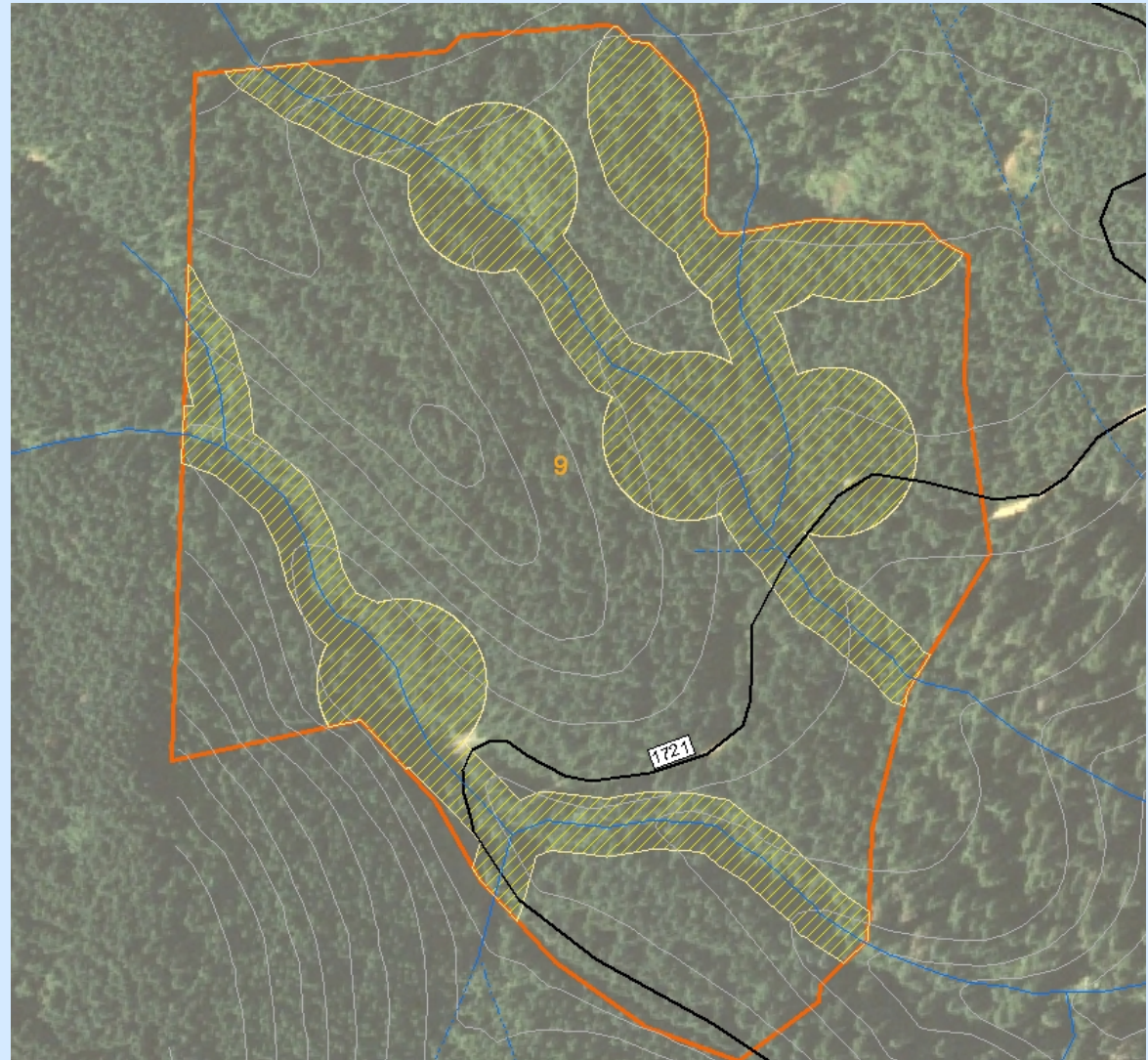
Thin to 70-90 tpa



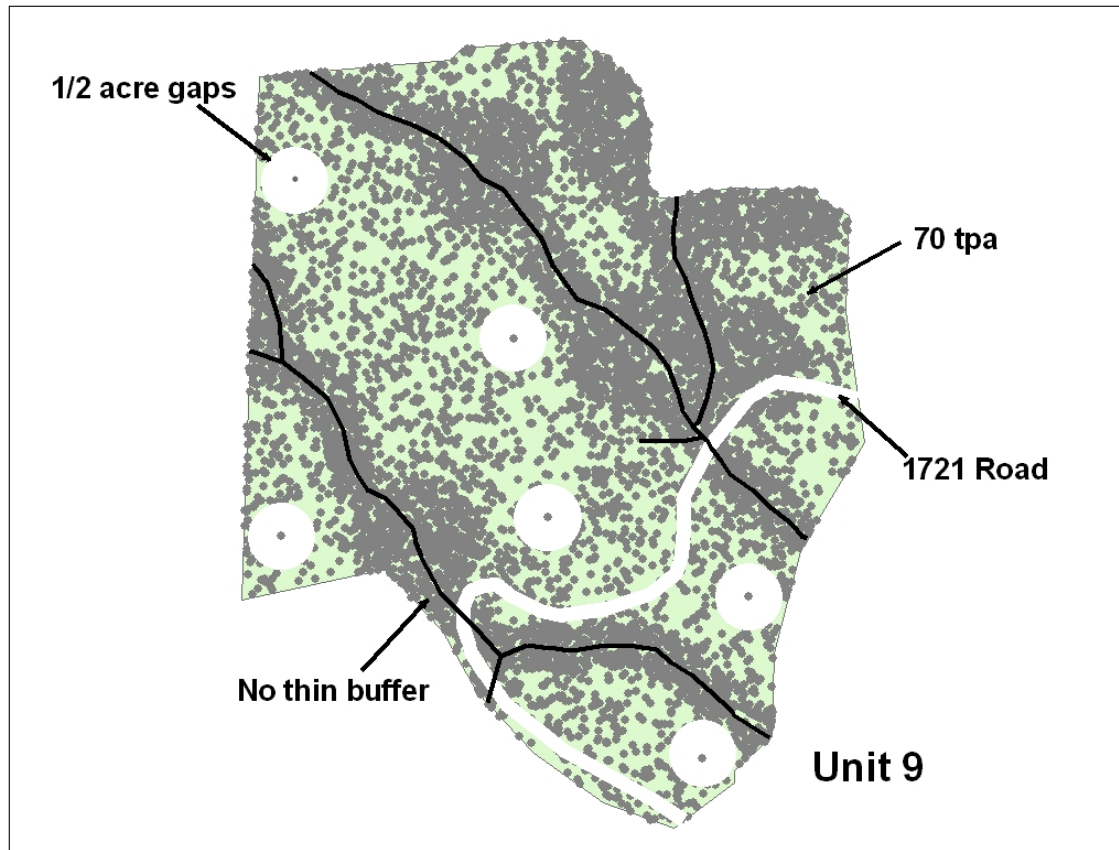


Unit 9

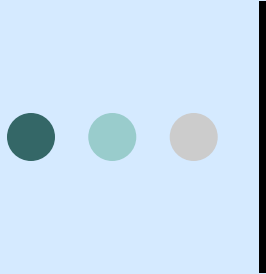
- Gentle Valley Bottom
- South/East Aspect
- TSHE/BENE/GASH
- Thin to 70 TPA w/gaps



Unit 9 – Post Treatment Model



- Stand Ave. 88 TPA
- Overall 44% CC including gaps & no thin buffers

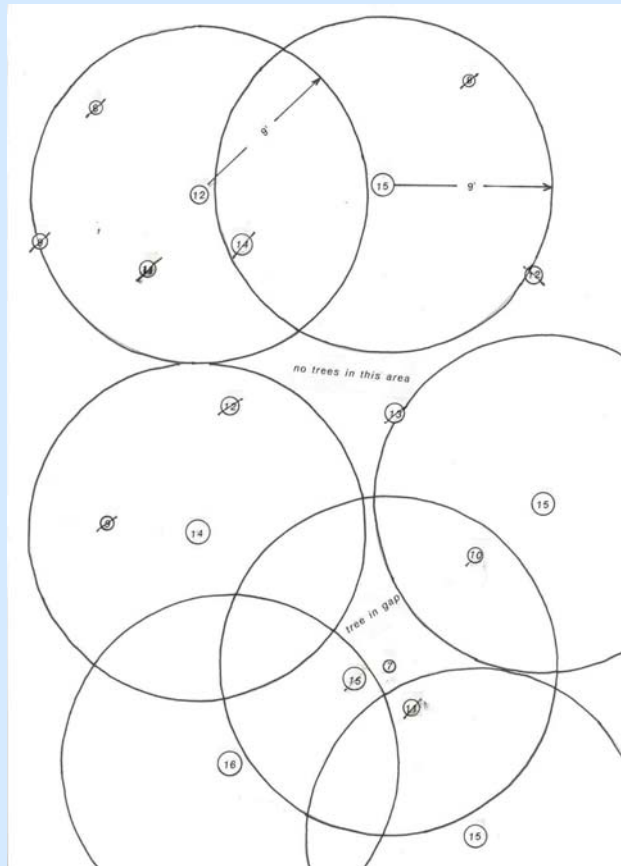


Unit 9 – Pre & Post Treatment Stand Attributes

Unit 9	Age	DBH >7"	Canopy Closure	BA/ AC >7"	Curtis RD	BF/AC	DxD
Existing 171 TPA	53	14.6	65%	199	52	31,438	
Thin to 70 TPA		17	44%	110	30	Removed 13,169 (Thin & 3 ac of gaps)	15



Designate by Description



- C2.35# (Option 1) – Individual Tree Designation

- **Description of Included Timber:**

Douglas-fir, Western hemlock, if within 15 feet of a live conifer tree with a larger D x D Diameter. All live trees with a larger D x D Diameter will remain standing after logging is complete.



DxD Examples





Questions 7-8:

QUESTION 7:

- What tools and/or resources aided you in designing and implementing this project (e.g., growth models, contractual options, research or other publications)?

Chan S. et al. 2006; Zenner E.K. 2005; Franklin J.F. et al 1986; FVS, See Curran Junetta Thin EA references cited

QUESTION 8:

- Were there any barriers that caused you to change your RX from what you preferred to do? i.e. contractual, legal, regulatory, etc.

To implement DxD need to keep prescriptions implementable. Geneally, one thinning RX per unit and if have gaps – only have one size/unit. Meet variable thinning objective across landscape. See spreadsheet for other considerations- Units 7 & 10 thinning lighter to retain > Canopy Closure for NS Owl cores.



Questions 9-11:

QUESTION 9:

- What assumptions did you use to guide this prescription and what were the bases for making these assumptions -professional experience, scientific literature, simulation models, etc.?

All of the above

QUESTION 10:

- What were the scientific uncertainties in this project?

Snag creation was estimated to be 5-10% mortality created by underburning if all goes right; from district FMO experience.

QUESTION 11:

- In the context of your forest, would this project represent widely accepted current practices, or newly developed, novel practices?

Landscape stratification and design prescriptions to use of DxD. Propose $\frac{1}{4}$ acre dominant tree release and $\frac{1}{2}$ ac gaps.



**Thanks to all those
involved!**