

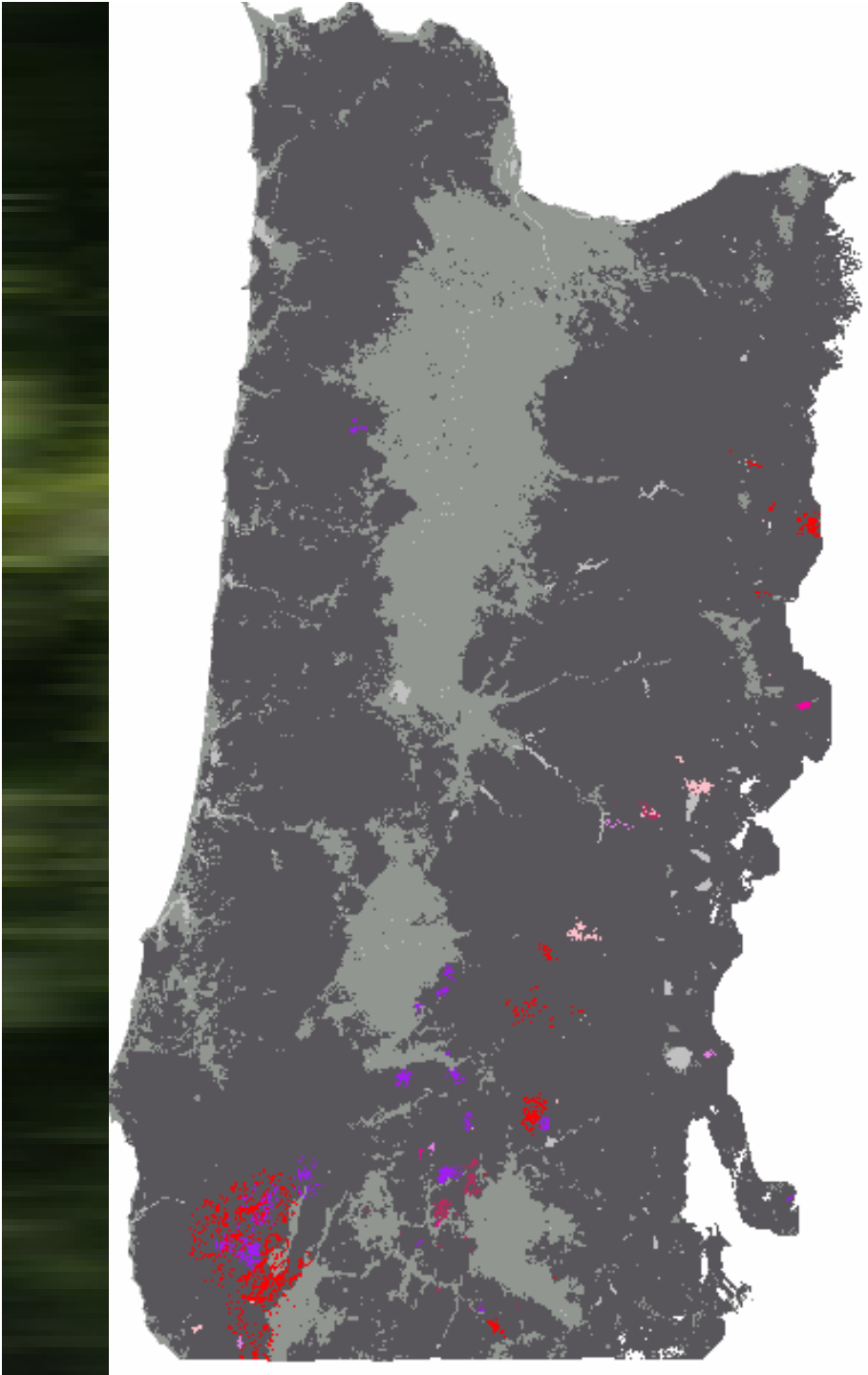
Natural
Processes in
Oregon
Landscapes

Fred Swanson
USDA Forest Service
Pacific Northwest Research Station

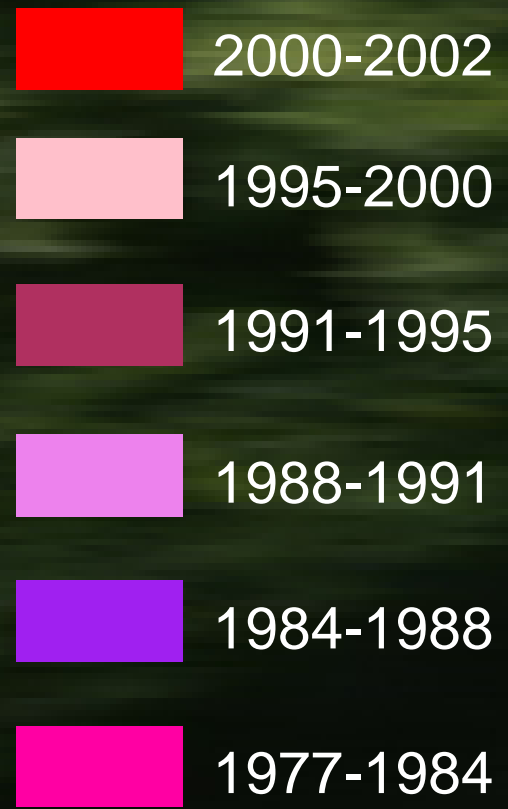
August 24, 2003

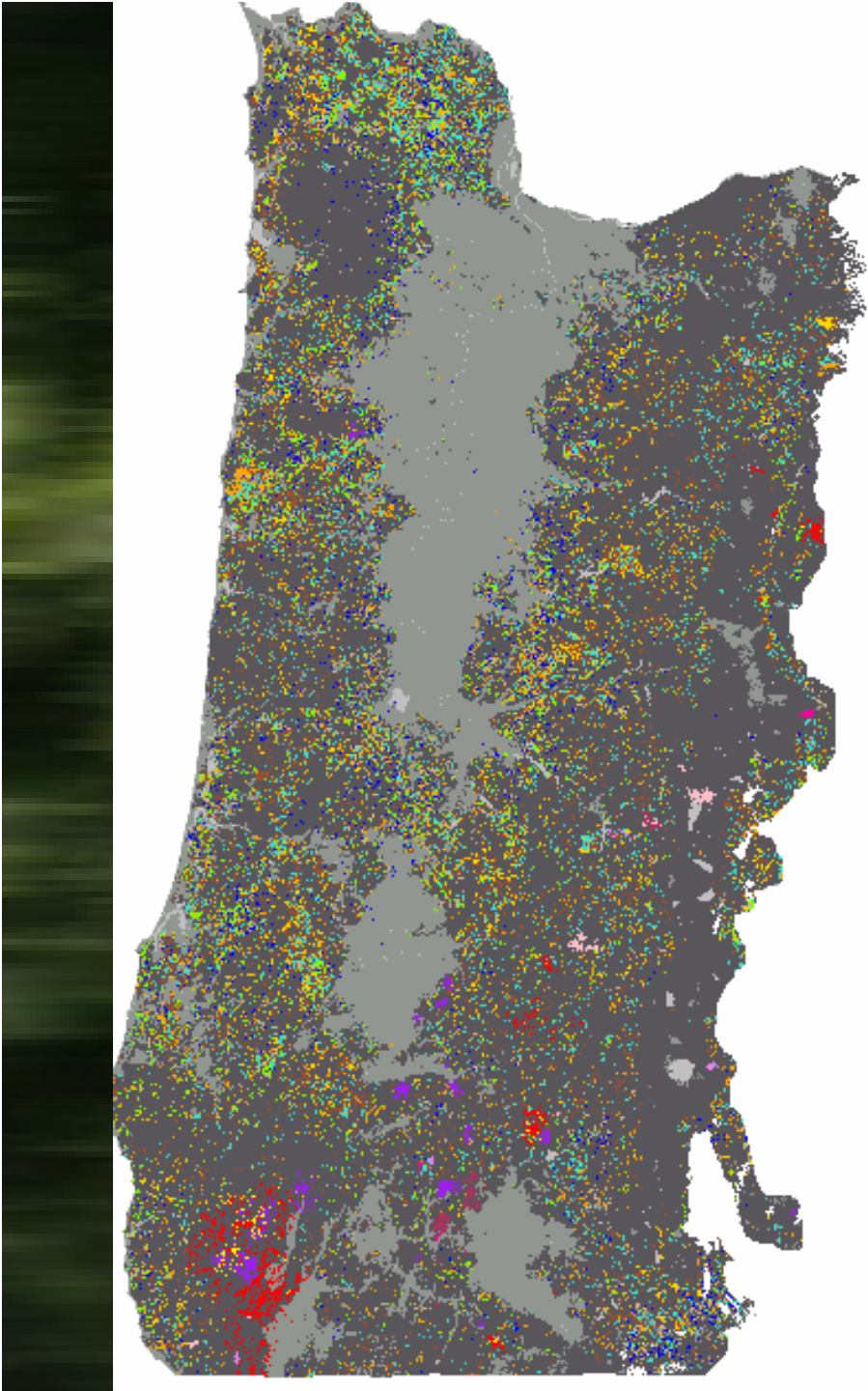


Courtesy: <http://www.fs.fed.us/r6/centraloregon/fires/2003/b-b/photo-8-24-03.shtml>



Stand-Replacing Disturbance Fires

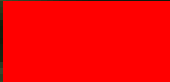
















Stand-Replacing Disturbance

Fires

Harvests

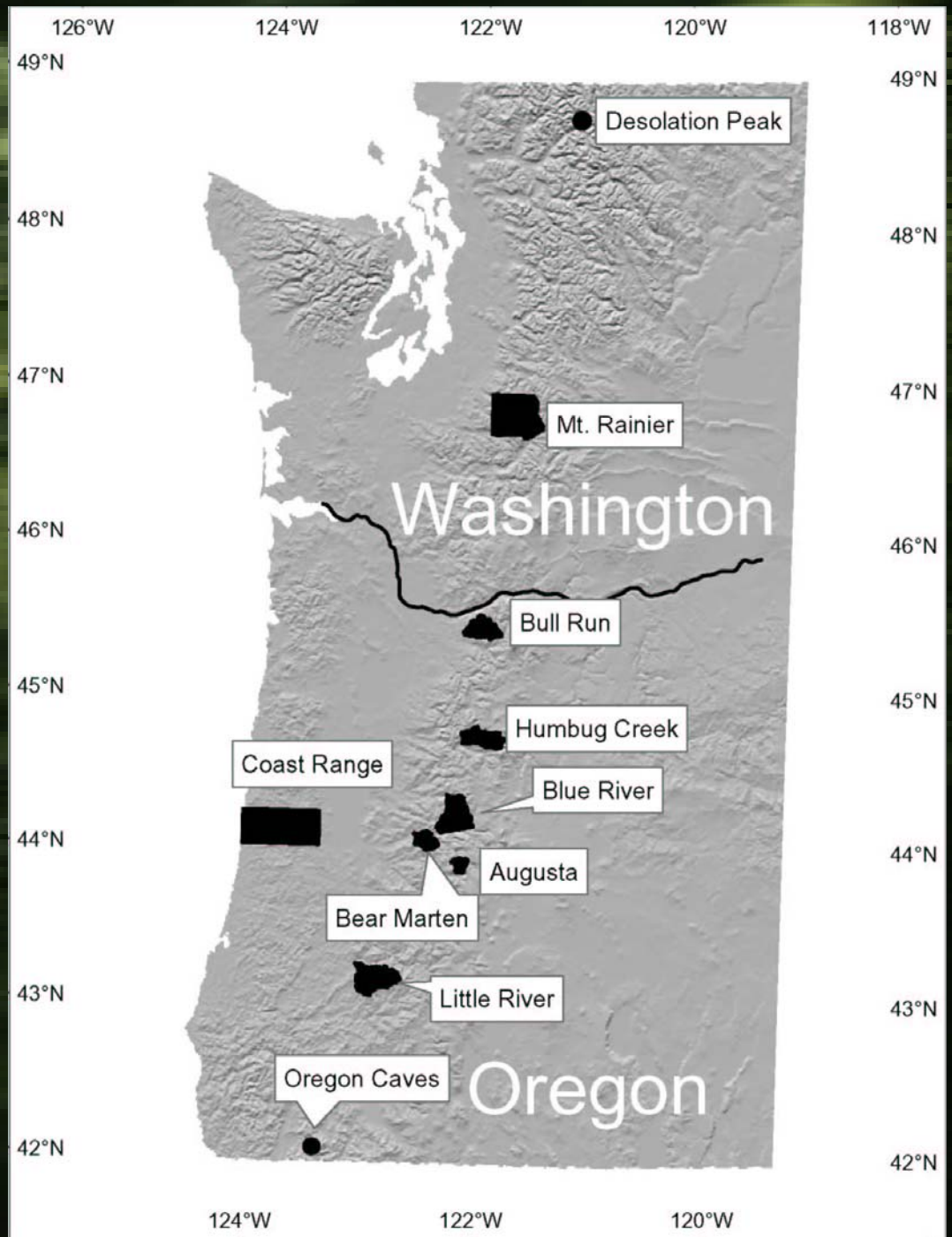
	2000-2002		2000-2002
	1995-2000		1995-2000
	1991-1995		1991-1995
	1988-1991		1988-1991
	1984-1988		1984-1988
	1977-1984		1977-1984
			1972-1977

Fire History Studies

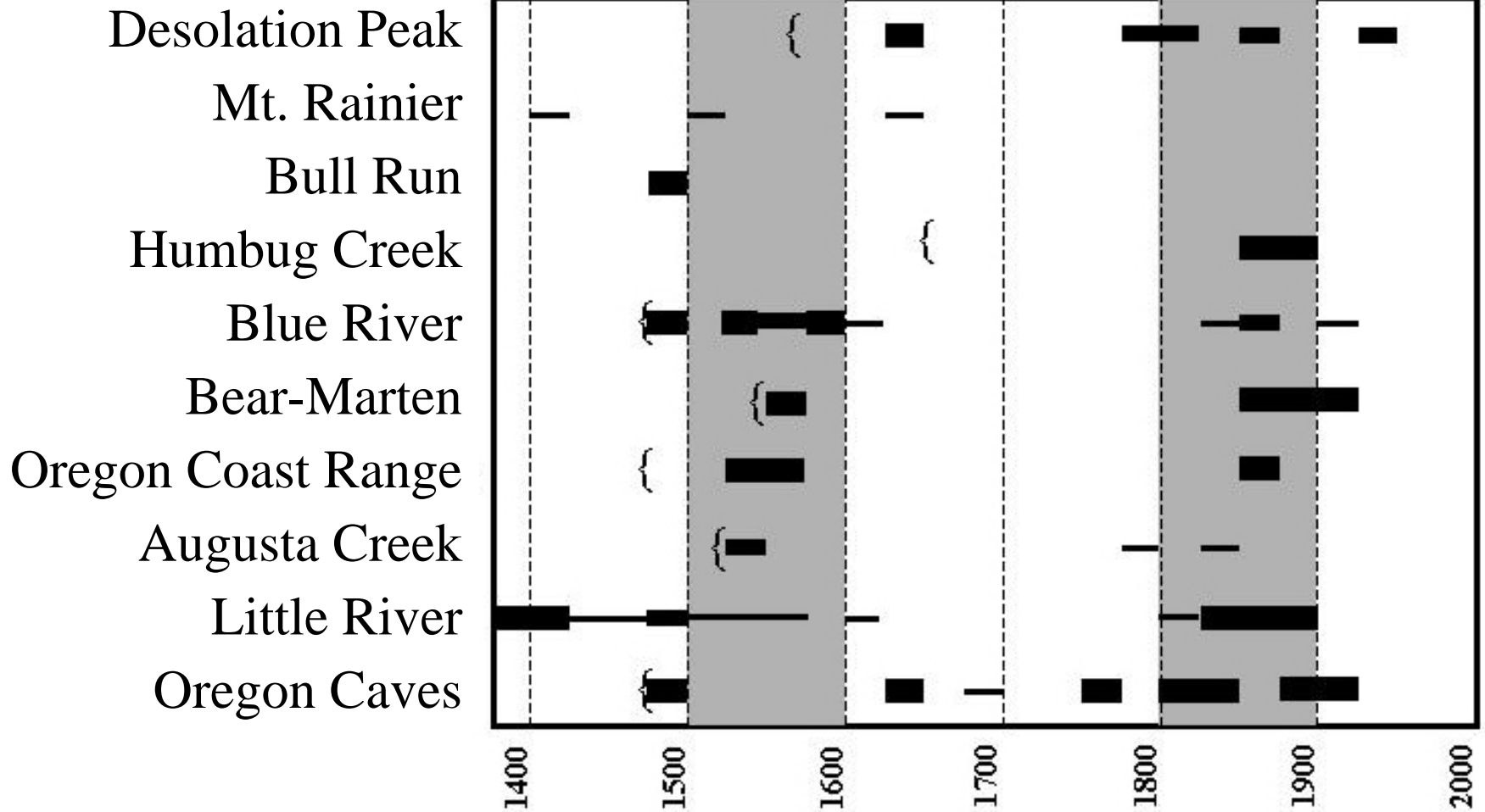


- Sampled sites
- ▲ Opportunistic sites

PNW Fire History Sites



PNW Fire Timeline



Percent of Study Site Burned in 25-year Intervals

- 20 - 29% study site
- 30 - 49% study site
- > 50% study site

Comparison

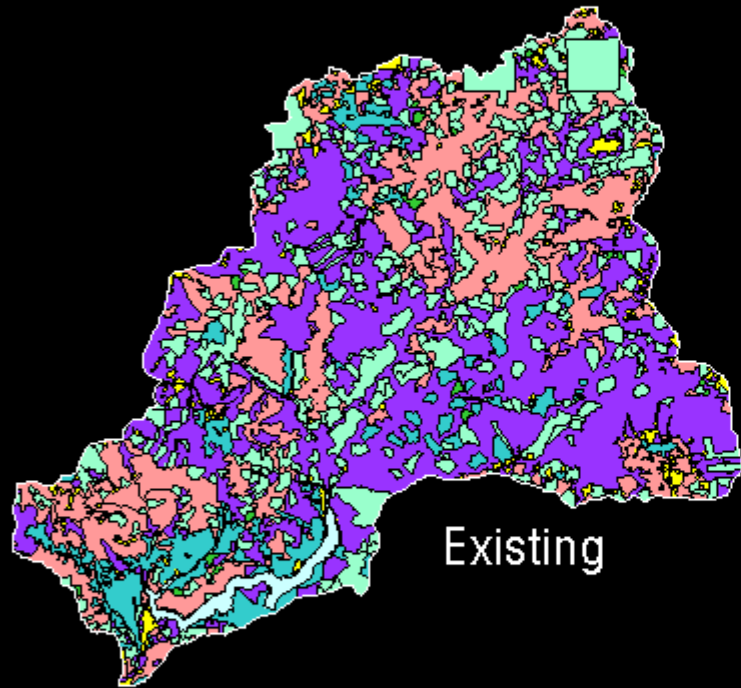
Plantation
1-20 years

Plantation
20-40 years

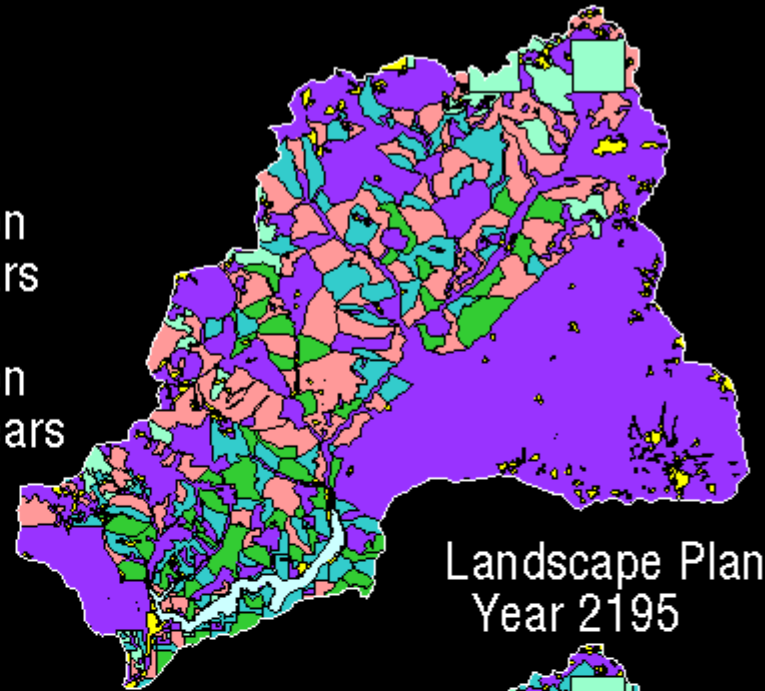
Young

Mature

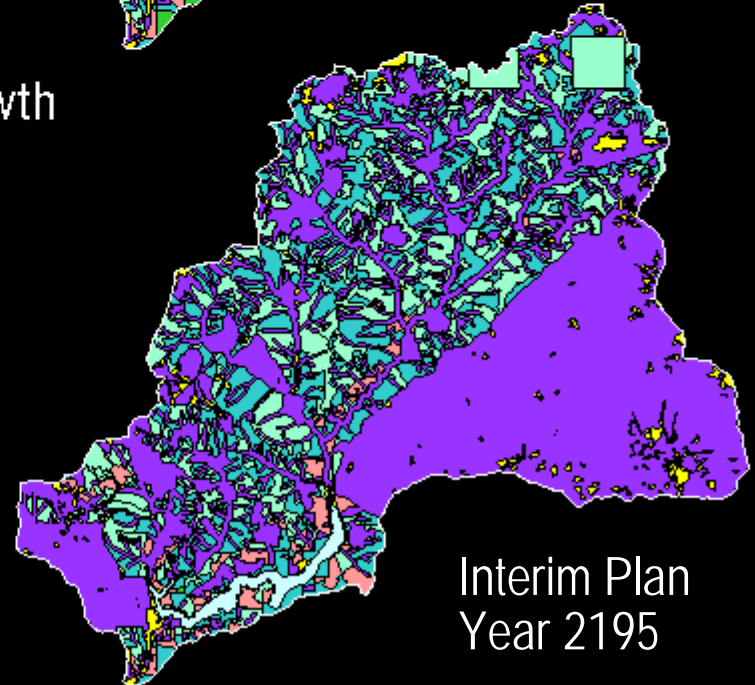
Old Growth



Existing



Landscape Plan
Year 2195



Interim Plan
Year 2195

Blue River Landscape Study



N. Fork Quartz Creek



The relevance of history

- Why consider history?
- Is history dead?
- If we use history as a template, what from the past is relevant to the future? State what is included/excluded from consideration.
- A science agenda: What are the consequences of different types and degrees of deviation from past forest conditions?

Approaches to Forest Landscape Management

Climate change
Disturbance regime
change
Invasive species

AGRICULTURAL

Industrial Forestry

Spotted Owl
Plan

CONSERVATION
BIOLOGY

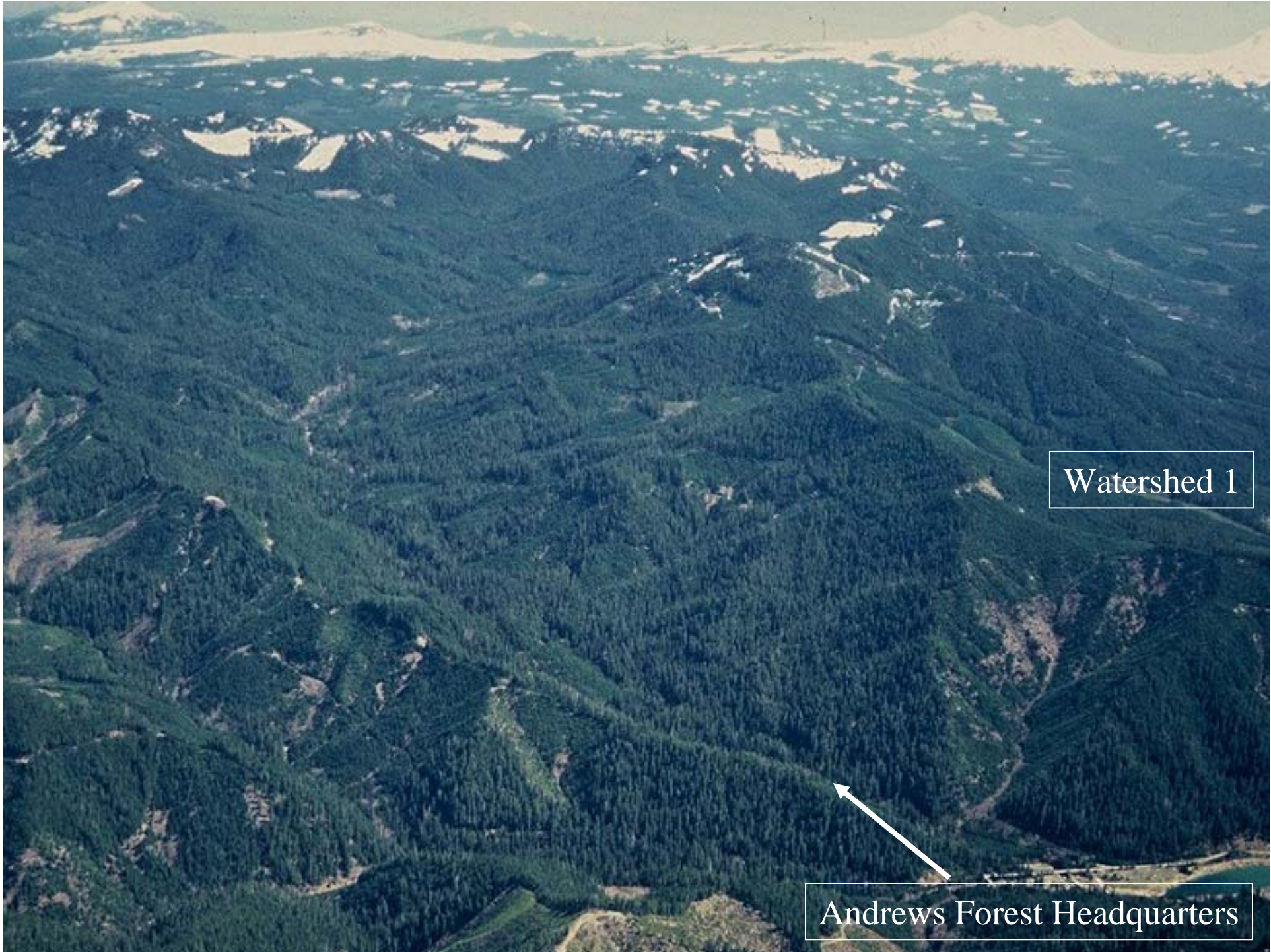
NW Forest Plan

Blue River Plan

ECOSYSTEM
DYNAMICS (HRV)







Watershed 1

Andrews Forest Headquarters



Lessons from Floods

- A learning opportunity
- Assess management effects over time
- Debris slides and flows in time and space
- Road-sediment routing
- Disturbance propagation
- Riparian vegetation disturbance



Climate change views

- It's real and important!
- Distinctive features of westside climate and forests may limit climate change and effects
- Importance of threshold ecosystem behaviors
- Triggers of climate and forest change: social, natural variability, gradual climate change
- We are still learning how to think about it – e.g., suppression vs. climate effects on fire
- Hard to predict watershed and ecological responses to climate change

Summary

- Our Pacific Northwest landscapes are very dynamic – the dynamics vary geographically
- We are still learning about the system – updating earlier views, updating long-term studies, identifying new issues to address
- Federal forest lands: a blend of land use legacies and native forests – present management is much reduced and largely restricted to existing plantations and roads

Summary

- Interactions of planned management and natural processes will determine future forest landscape patterns.
- Use of historic landscape dynamics to guide future Federal land management may help us balance our many management objectives
- Sustained, place-based research-management partnership is a critical learning environment.

Policy Considerations

- We need good, formal and informal communication between institutions at multiple levels
- Let's get serious about sustained, place-based adaptive management in research-management-public partnership
- Retain flexibility for local decisions to match practices with the land
- Work for public understanding of the complexities of forests and watersheds across ownerships