# Perspectives on Historic Variability, Climate Change, and Forest Management in Western Oregon and Washington

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# Where I’m coming from

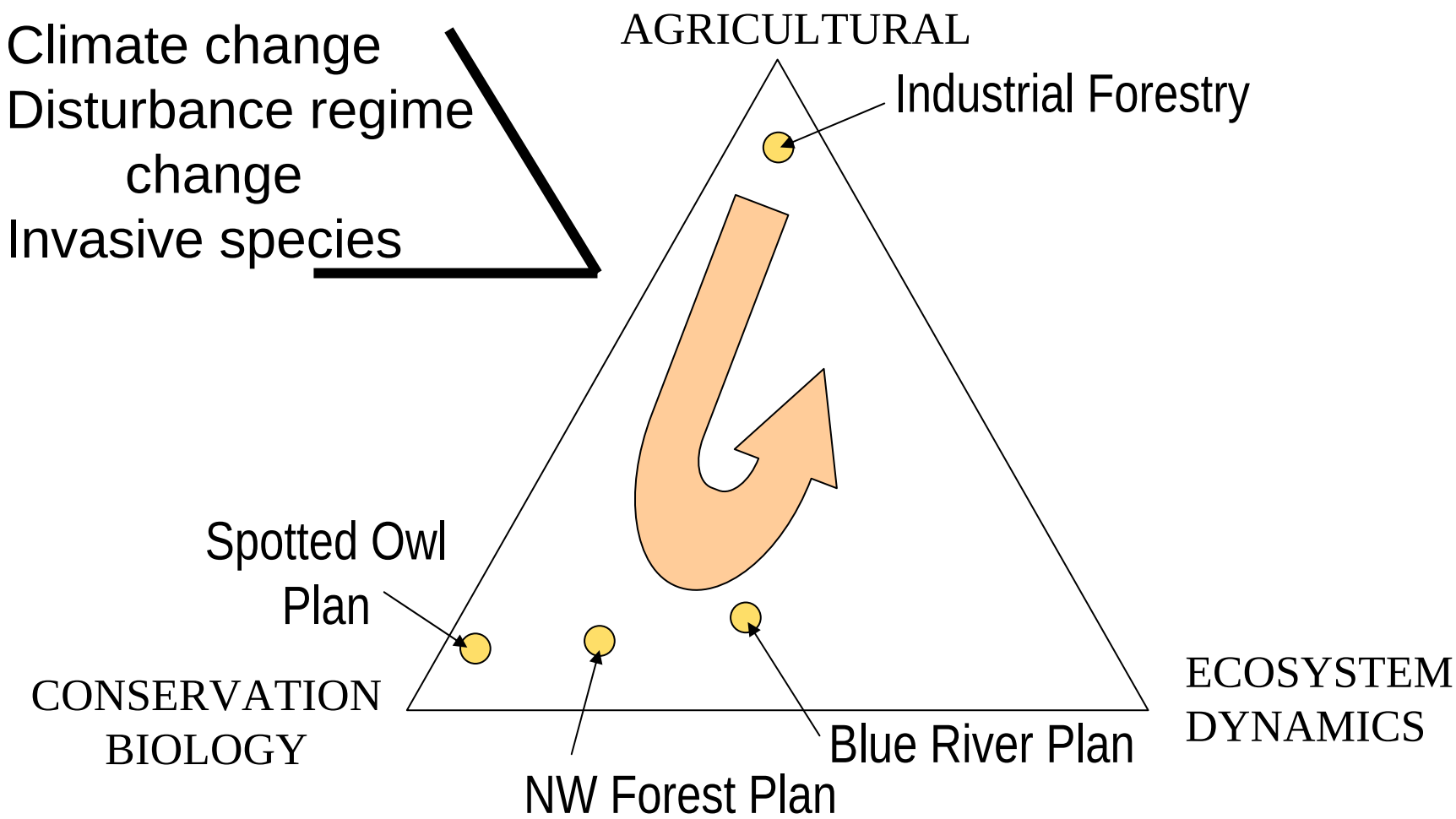
- A scientist working at  the research-management interface at a local level and in an adaptive management context
- One who values history
- Experience with NW Forest Plan

# A Succession of US Forest Service Management Paradigms

- Stewardship  (through WW II)
- Timber production  (post-WW II to ca. 1990)
- It’s biodiversity, stupid!  (NW Forest Plan 1994)
- And a whole lot more (water, fire/fuels, …)
- What is the future paradigm?

# World Views of Forest Resource Management

## A Challenge for Integration



# Where we are in PNW today?

NW Forest Plan attributes:

- Attention to species dominates (founded on the Endangered Species Act, regulations for National Forest Management Act, and related litigation)

- Habitat focus (focus not on species interactions, not historic landscape dynamics, not legacies of wild forest)

# Policy (NW Forest Plan) vs. Reality

- Harvest level
- Some harvest of old growth anticipated
- Old-growth habitat for owls plus
- “Fine-filter” attention of species conservation
- Watershed analysis to modify default guides
- Adaptive Management – process and areas
- Fire policy – is it sustainable?
- Are other expectations not fulfillable:  e,g., road maintenance and watershed restoration?

# Evolution of the NW Forest Plan

- Incremental changes – attempts to change Aquatic Conservation Strategy, Survey and Manage, AMAs, etc.

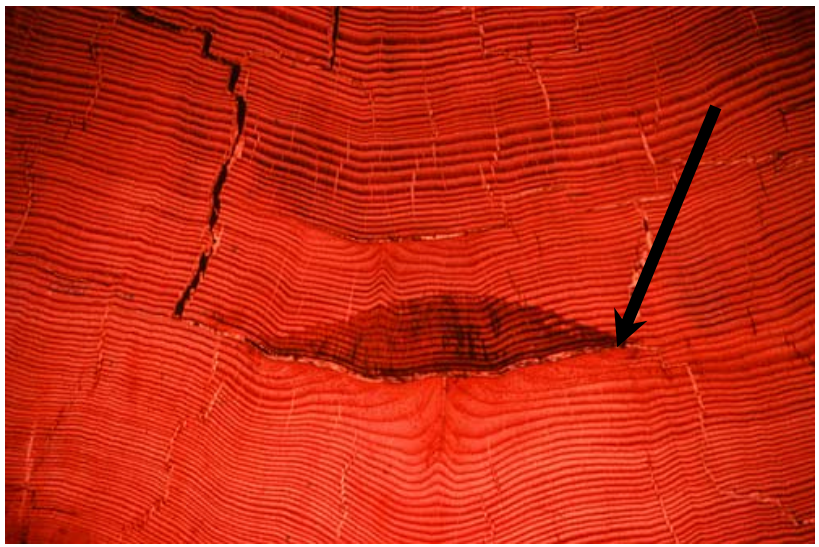
- Revisions of plans for National Forests and Bureau of Land Management just getting underway

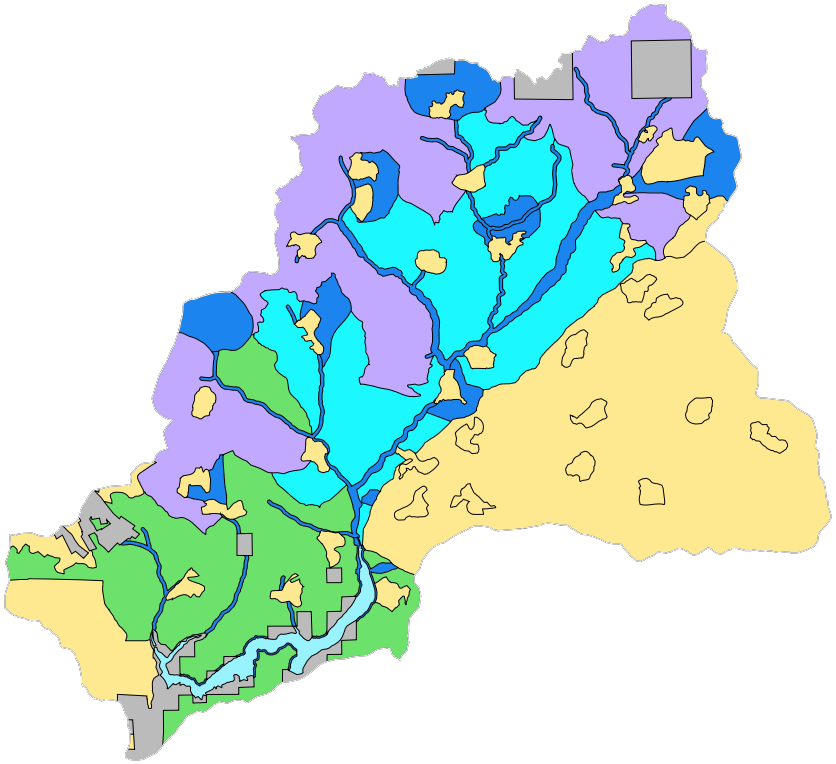
# Is this a good landscape or a bad landscape?

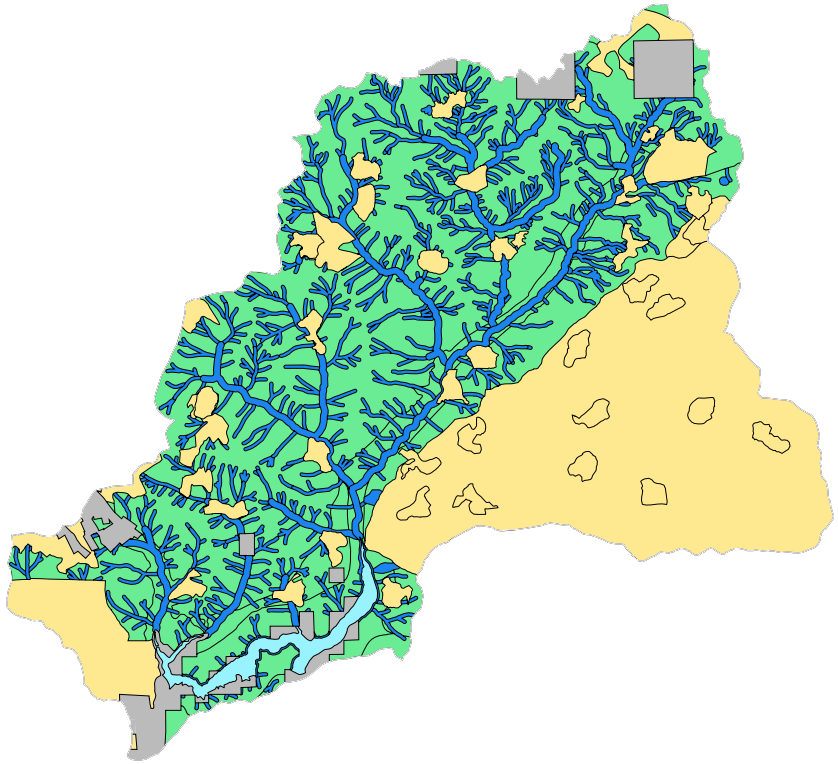
# Fire History Studies

● **Sampled sites**

▲ **Opportunistic sites**



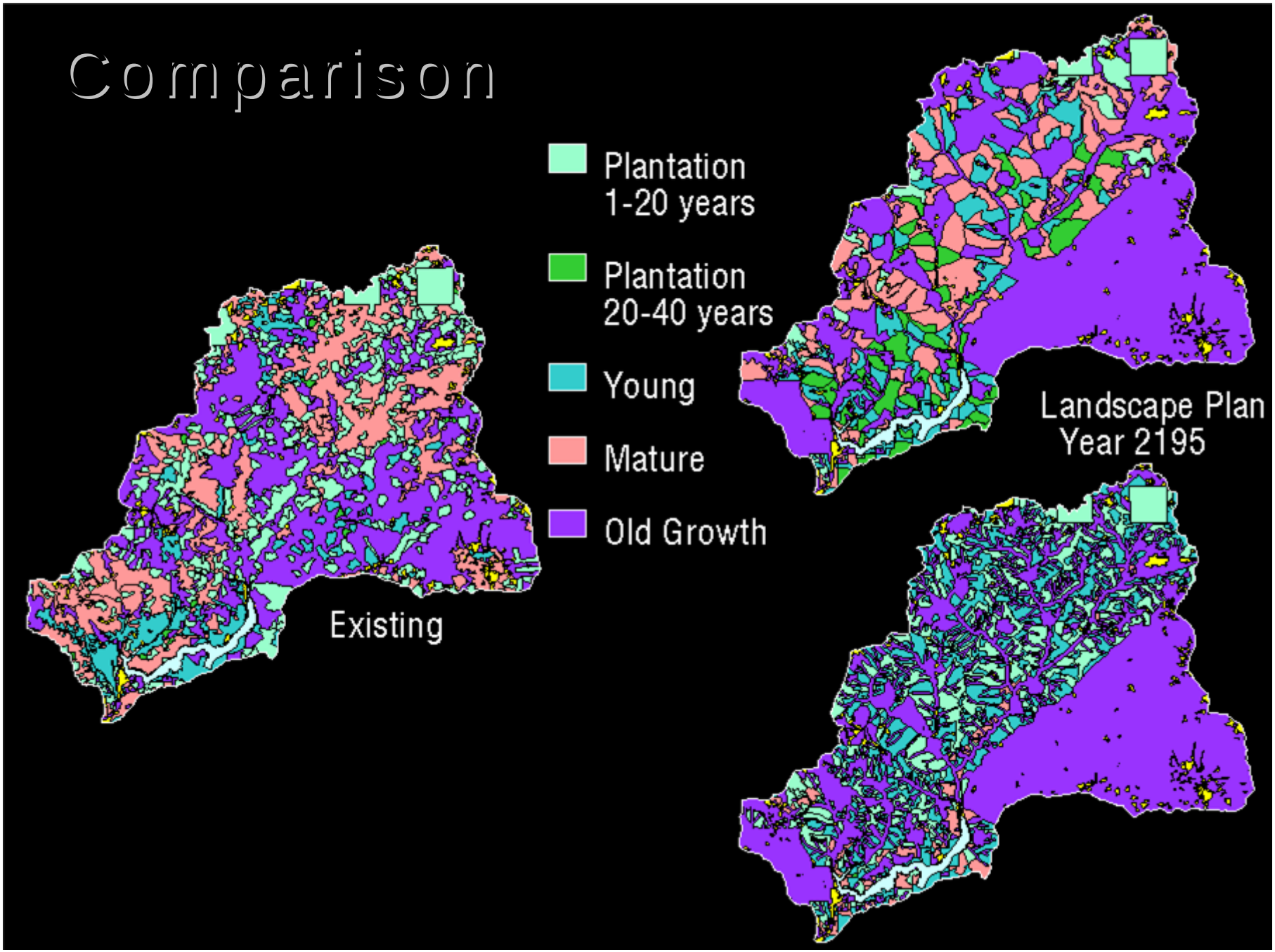




Special Area Reserves
Aquatic Reserves
Landscape Area 1
Landscape Area 2
Landscape Area 3

Special Area Reserves
Riparian Reserves
Matrix

# Comparison


Plantation
1-20 years
Plantation
20-40 years
Young
Mature
Old Growth
Existing
Landscape Plan
Year 2195

# Harvest

15% retention

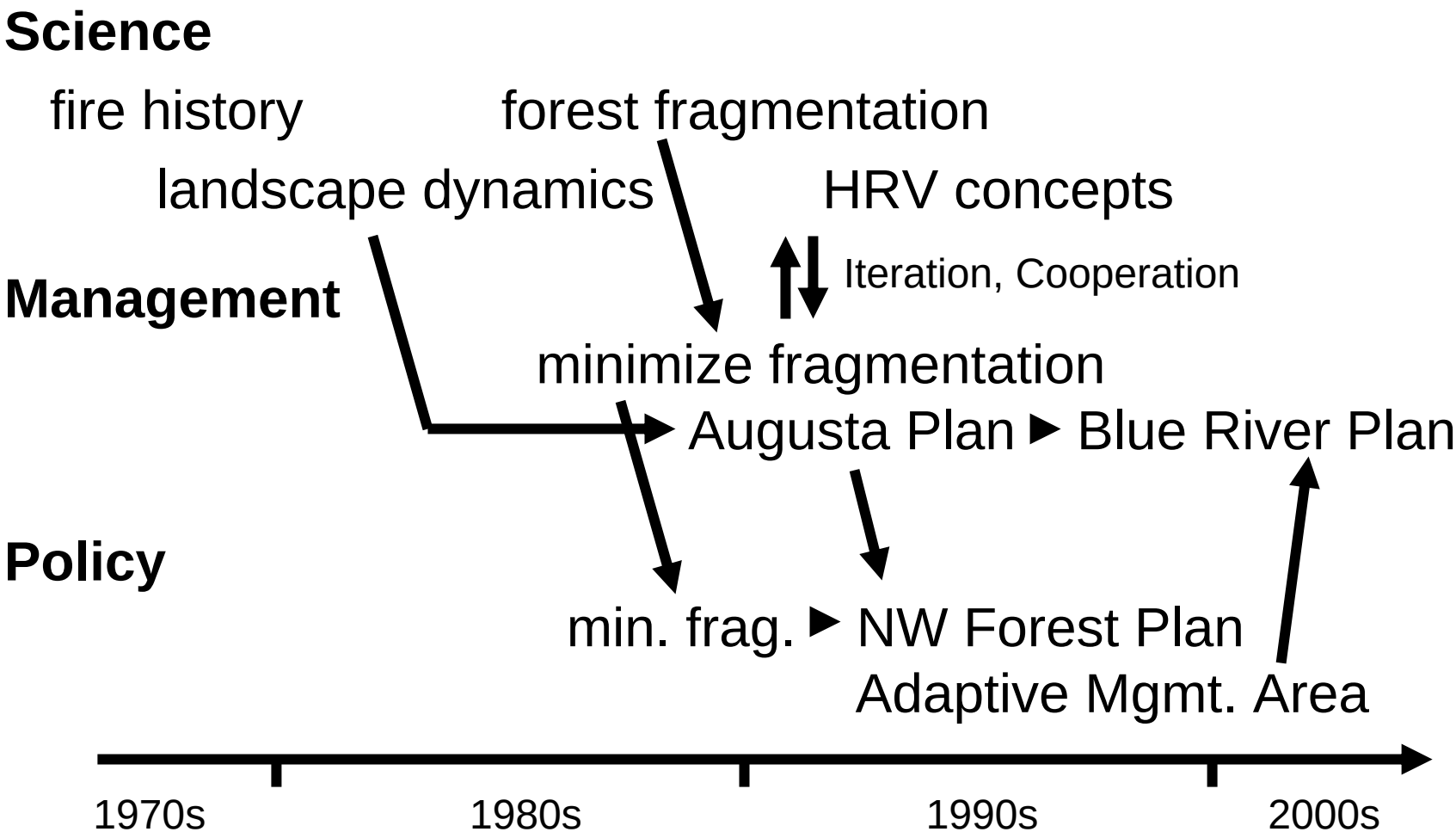
30% retention

50% retention

# Blue River Face Timber Sale

(30% live tree retention + snag creation by prescribed fire)

# Science-Management-Policy Links
# Landscape Dynamics and Management



# Issues affecting relevance of historic disturbance regimes

- Fit of fire regime with feasible management regime
- Dealing with different disturbance processes
- Social and legal contexts
- Openness of managers to complex prescriptions

# Challenges to using history – How do we deal with:

- Limits to our ability to understand history
- Climate variability past and future – what is reference system? What is future range of variability? Is history dead?
- Historic roles of native people
- Exotic species, chemicals, and structures in the landscape

So, where do we go from here?

# Science questions

- What are consequences of different types and degrees of deviation from distribution of past conditions?  Given change, what from the past do we try to hold onto?

- How do we design and conduct an adaptive management program to confront climate and other change by design rather than accident?

# Climate change questions

- What is the state of ecological resilience and the pace of response in relation to feasible climate change scenarios?
- What will be the roles of gradual change vs. pulse events?

# Stand management questions and options

What are near-term management practices that might anticipate climate change?

- Leaf area control (relation to fire/fuel hazard mitigation?  economic feasibility?)
- Management of genotypes and species composition

# Landscape management question and options

What is the significance of terrain heterogeneity for ecological change and stability?

- Microclimatic refuges in landscapes may be places for old-forest and special species reserves

Fire History in Blue River Area

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Sherry Giglia's Compilation and Search for Super Old Growth

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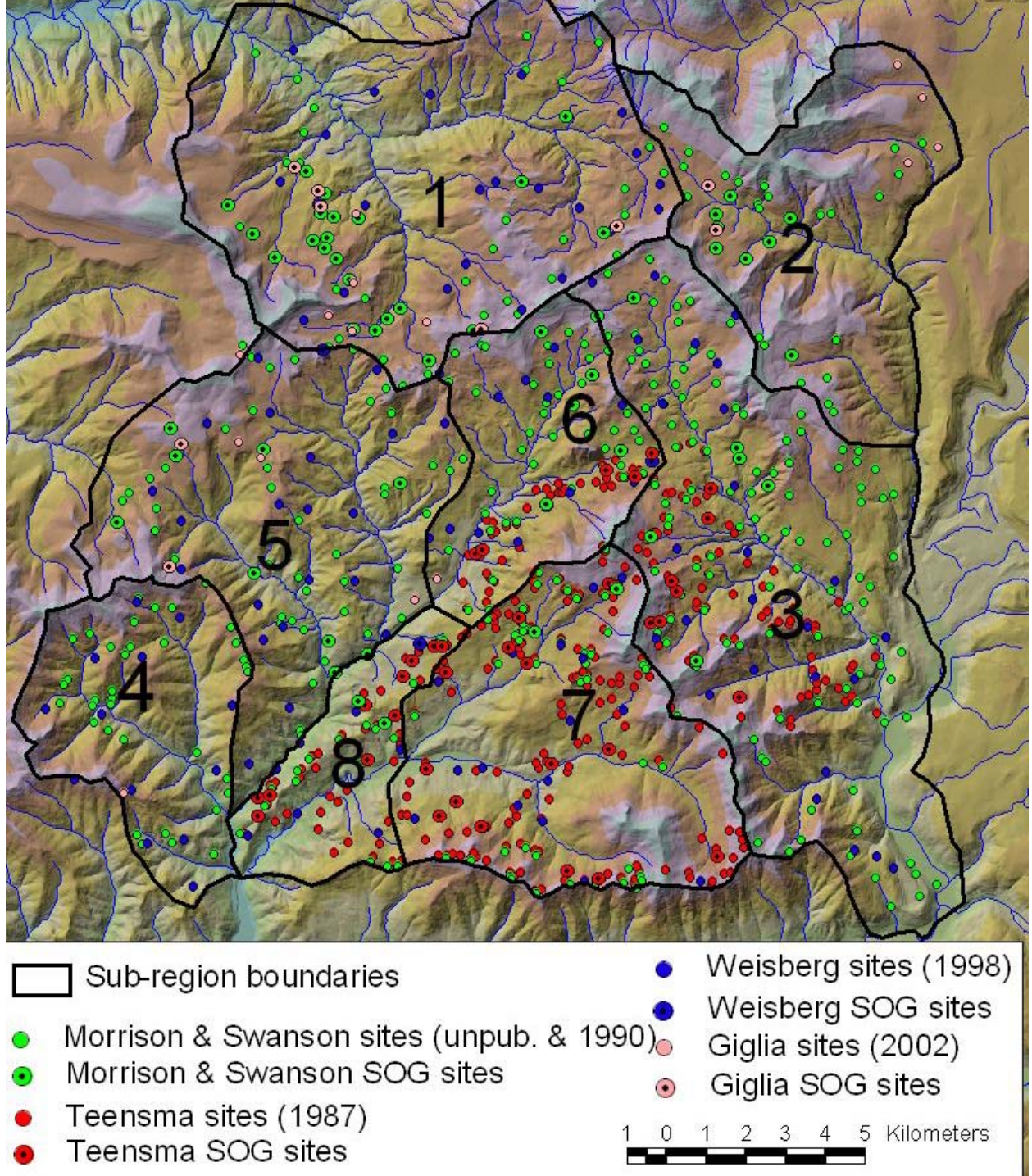
Blue River, OR



# Summary of Questions

- How good are climate change forecasts?
- How good are forecasts of ecosystem change – both with and without climate change?
- What do we do about the forecast future and uncertainties?
  - -- in policy
  - -- in practice
  - -- in learning processes

Future paradigm –

A blending of relevant themes rather than a *de novo* fresh view?

Manage for resilience in the face of change rather than desired future conditions.

But, in the U.S. case –

We are not very successful in meshing policy and management today, even disregarding the complexities of forces of environmental change.