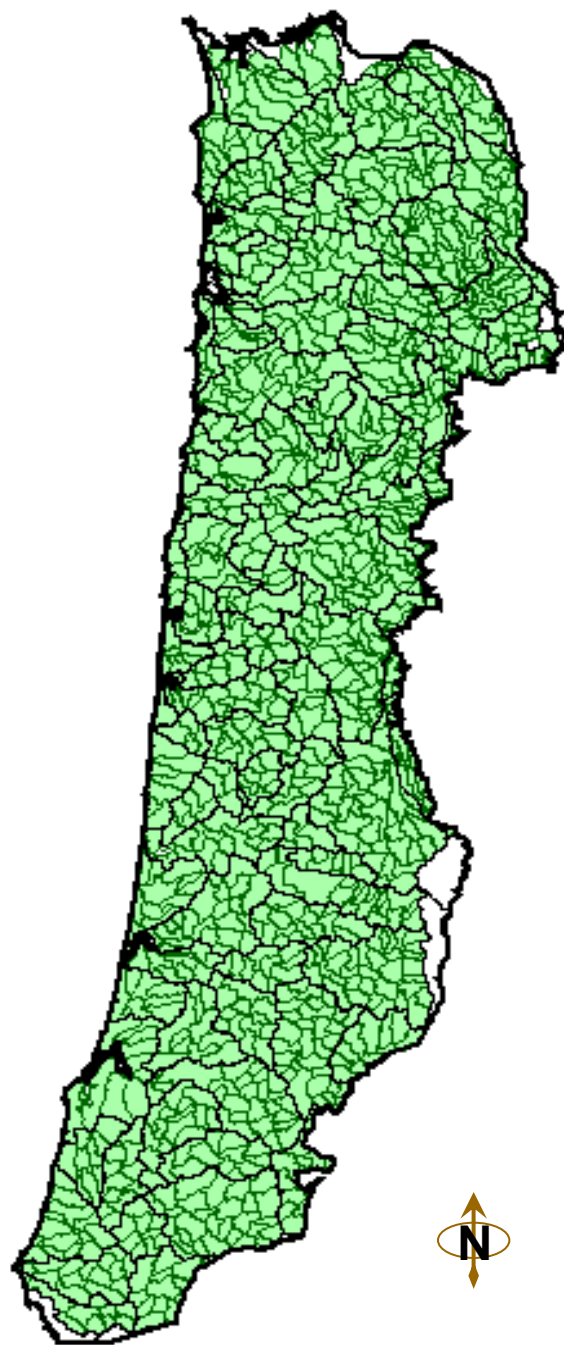


Demands on Aquatic-Riparian Ecosystems

- Support fish and other aquatic organisms
 - ESA
- Recreation
- Clean Water Act

The Aquatic View





Fine overbank alluvium

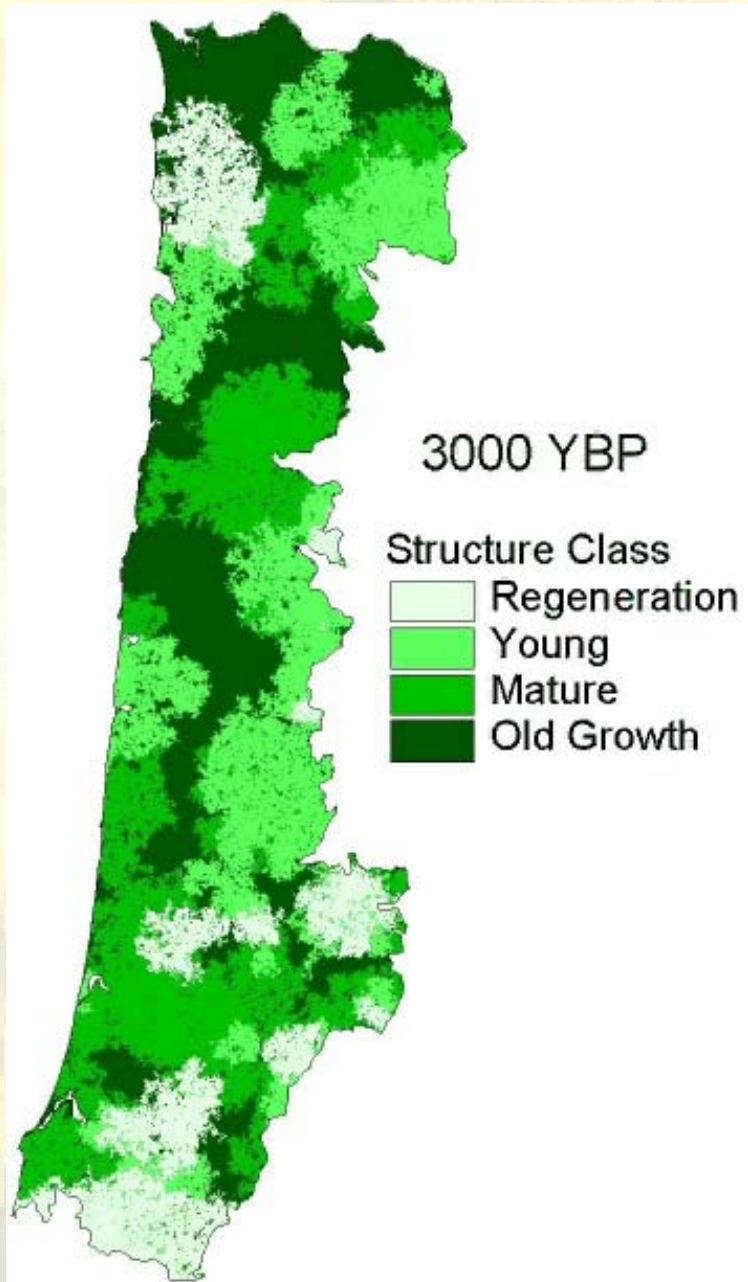
Channel gravels

Coarse charcoal

Channel gravels

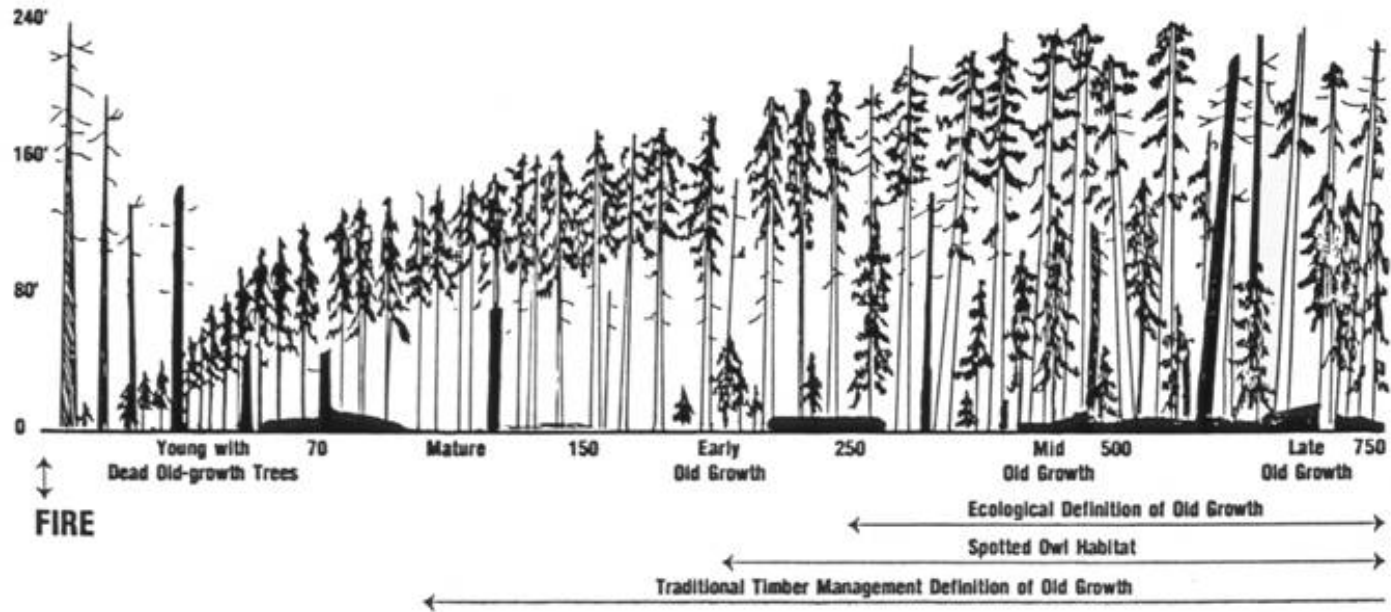
From: W. Russell

Limber Jim Creek,
Upper Grande Ronde River basin

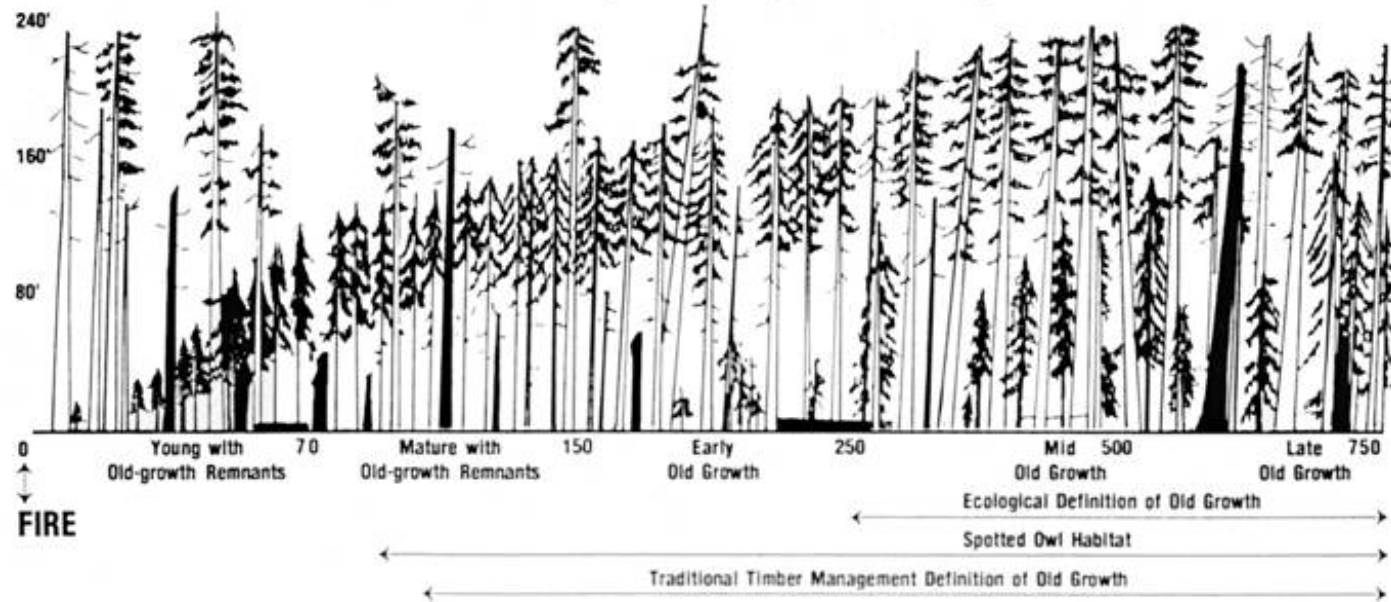


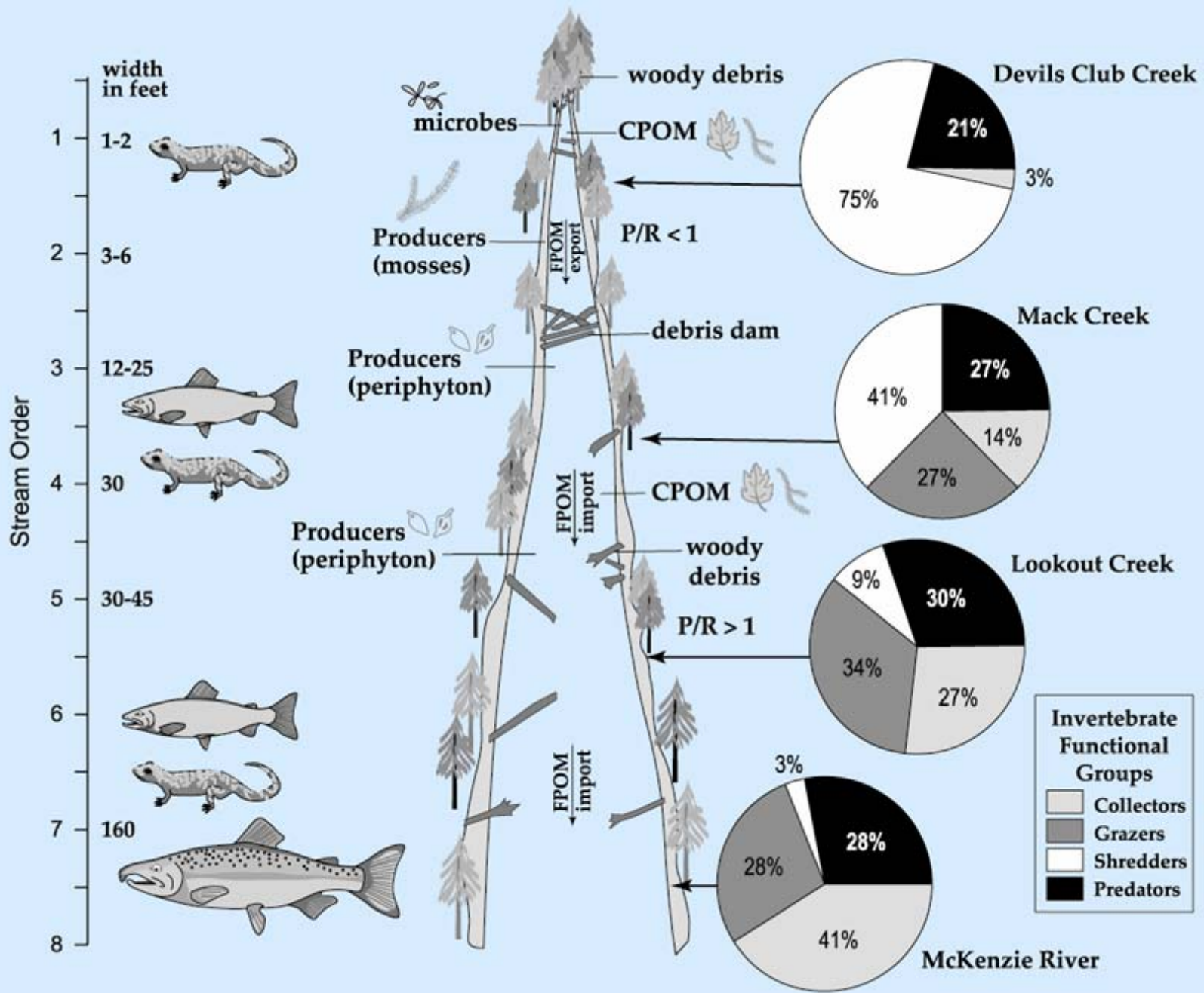
3000-year simulation
of pre-settlement
landscape dynamics
generated with the
LADS model

Natural Forest Development Following Catastrophic Wildfire

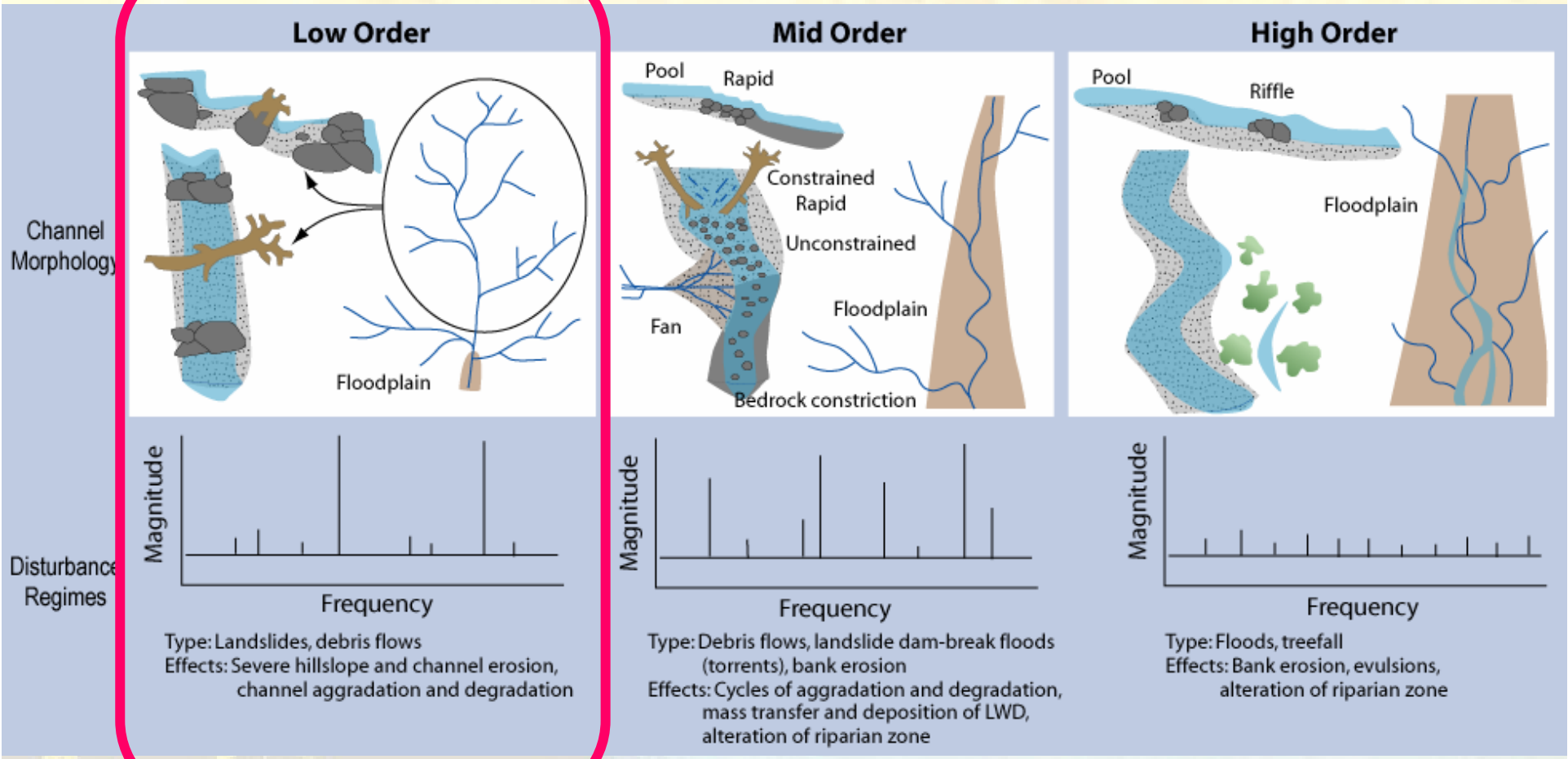


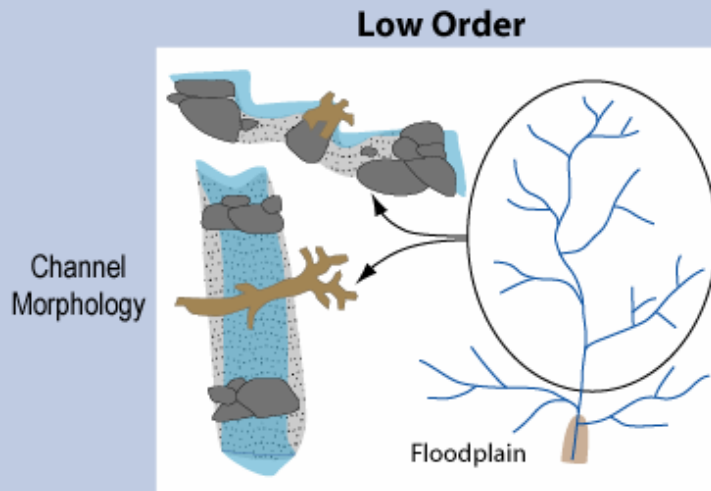
Natural Forest Development Following Moderate Severity Wildfire



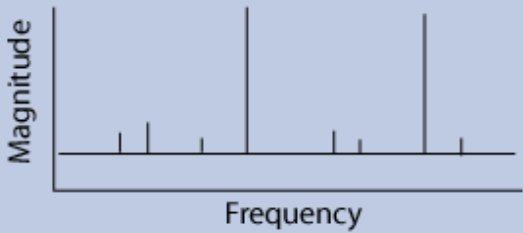


FPOM is fine particulate organic matter; CPOM is coarse particulate organic matter; P/R is the production/respiration

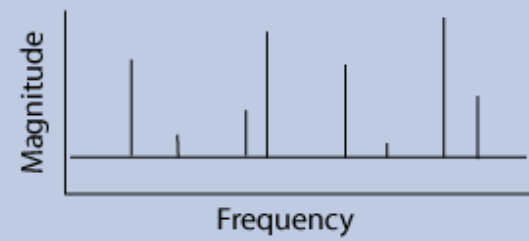
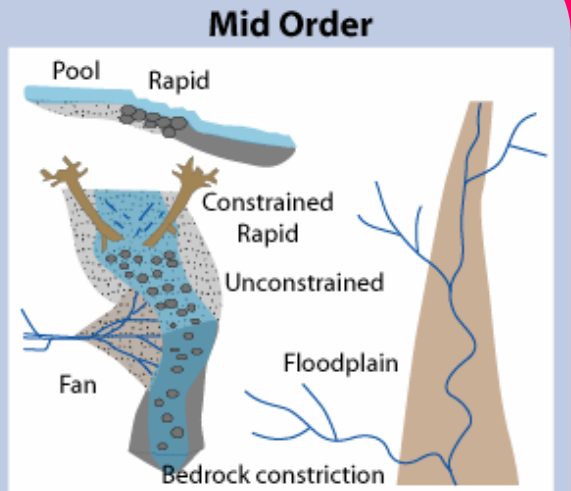




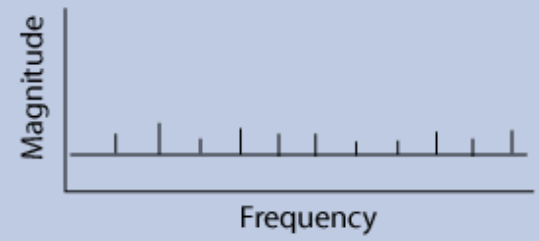
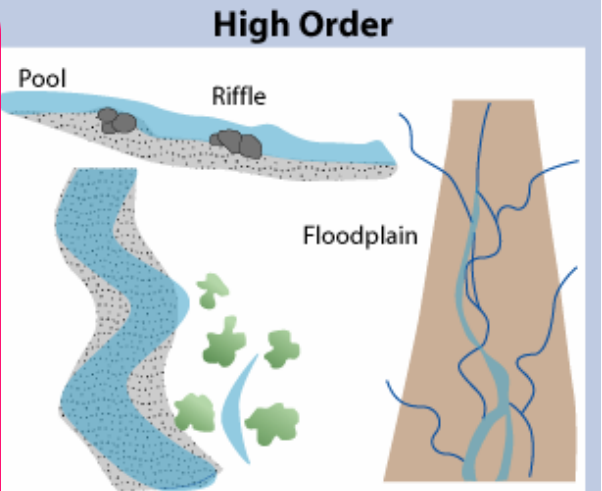
Disturbance Regimes



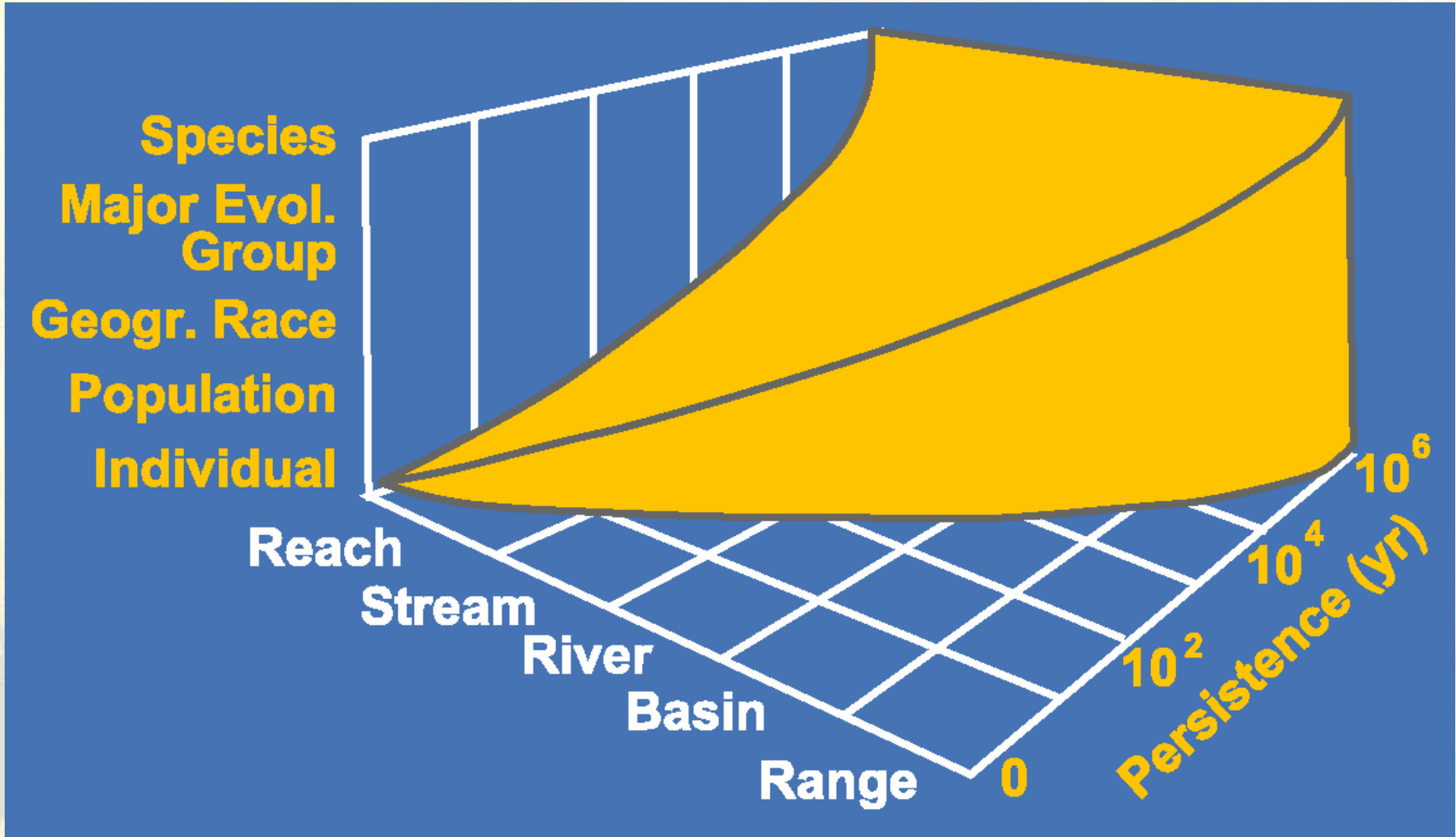
Type: Landslides, debris flows
 Effects: Severe hillslope and channel erosion, channel aggradation and degradation

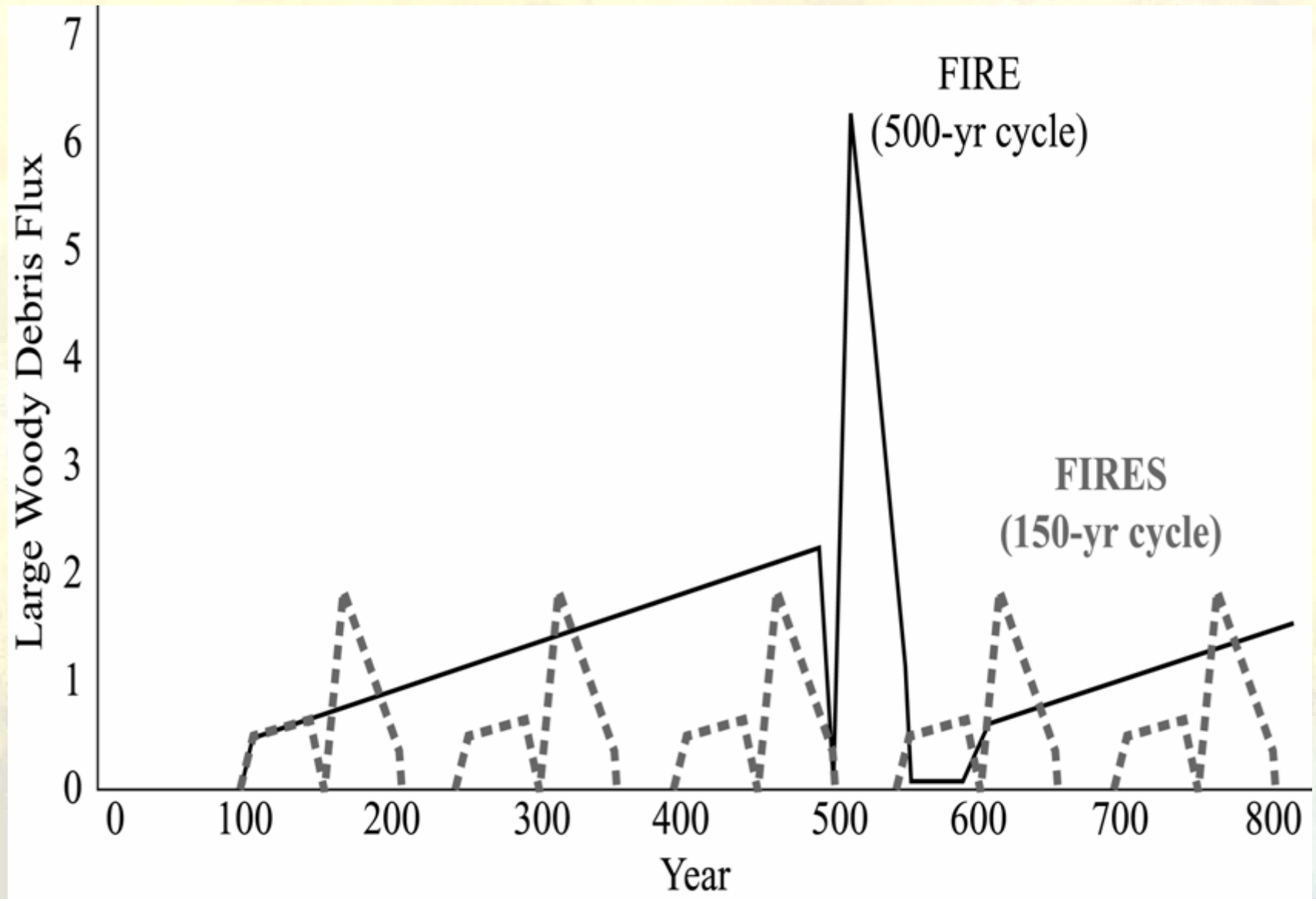


Type: Debris flows, landslide dam-break floods (torrents), bank erosion
 Effects: Cycles of aggradation and degradation, mass transfer and deposition of LWD, alteration of riparian zone



Type: Floods, treefall
 Effects: Bank erosion, evulsions, alteration of riparian zone



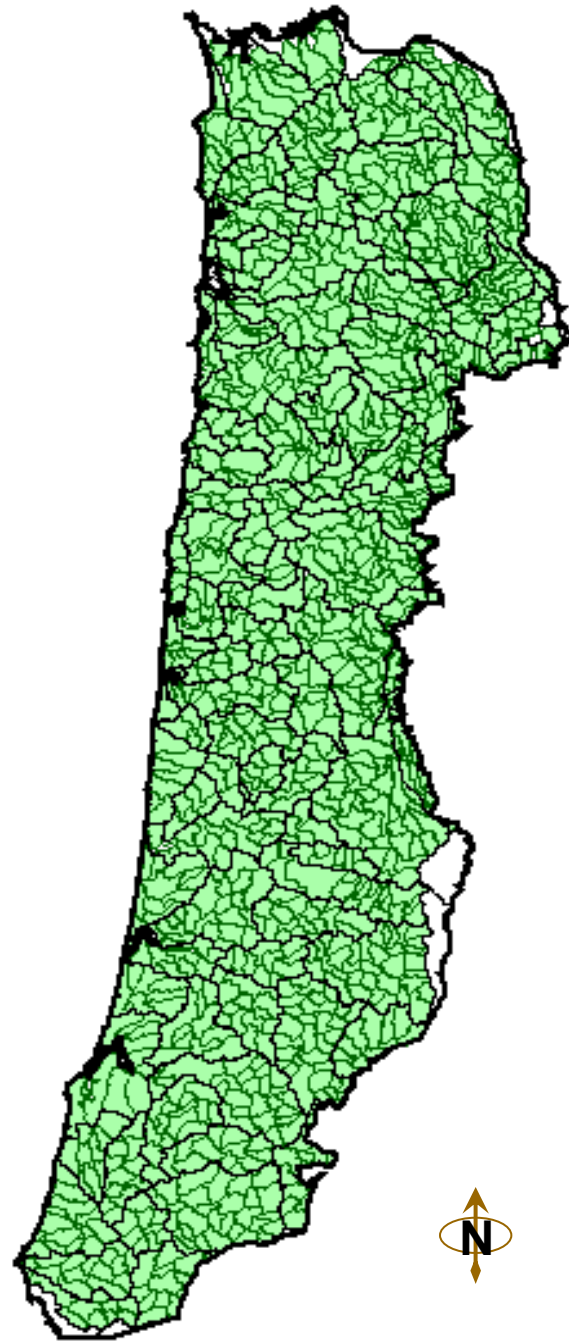


From: Benda and Sias 2003

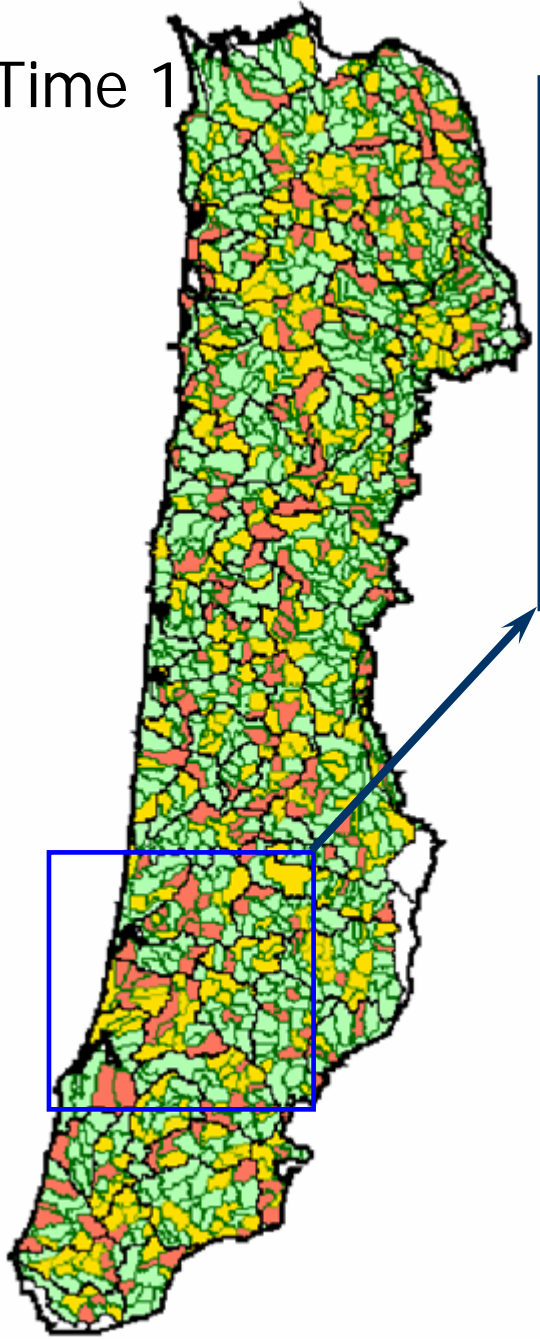
Adaptations of Stream Salmonids to Dynamic Environments

- ▶ Straying of adults
- ▶ High fecundity
- ▶ Mobility of juveniles

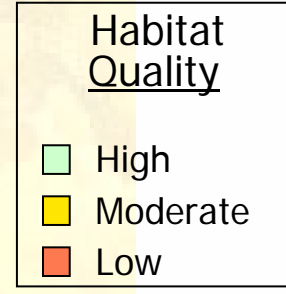
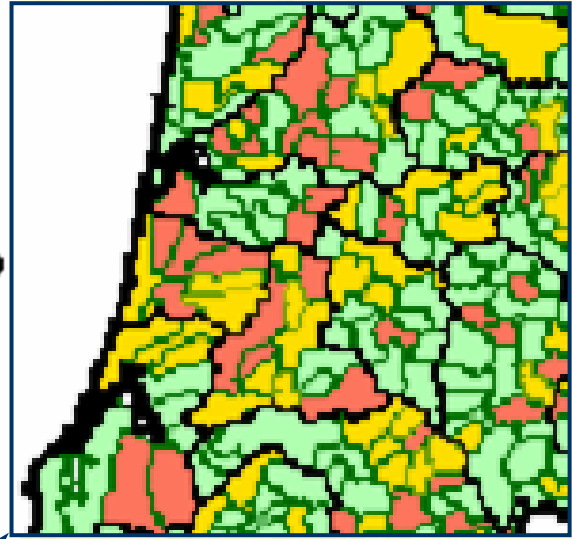
The Aquatic View?



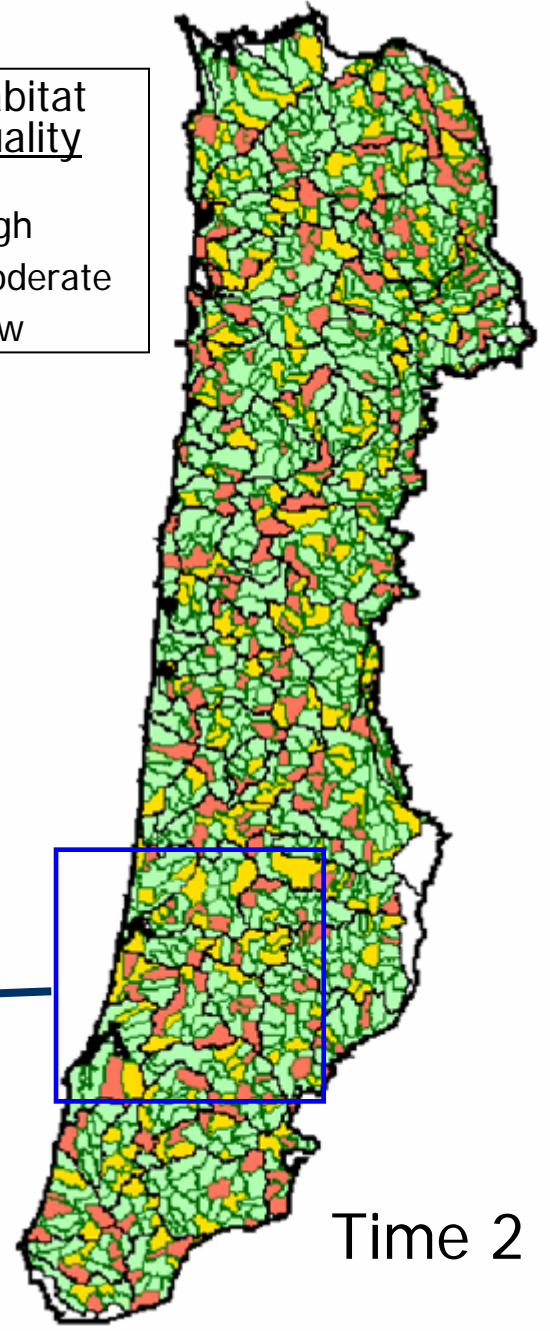
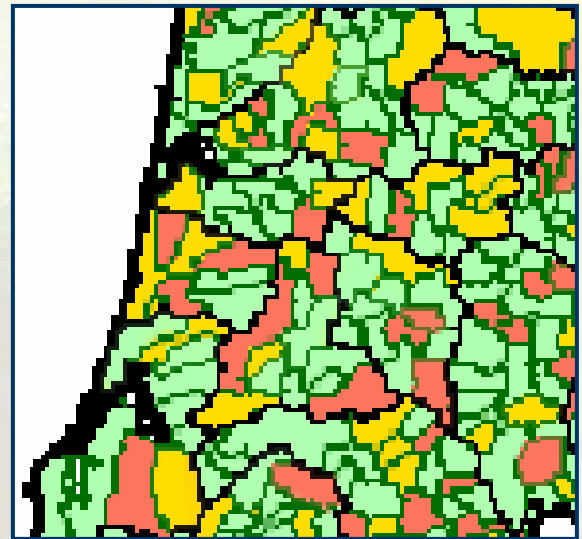
Time 1



Time 1

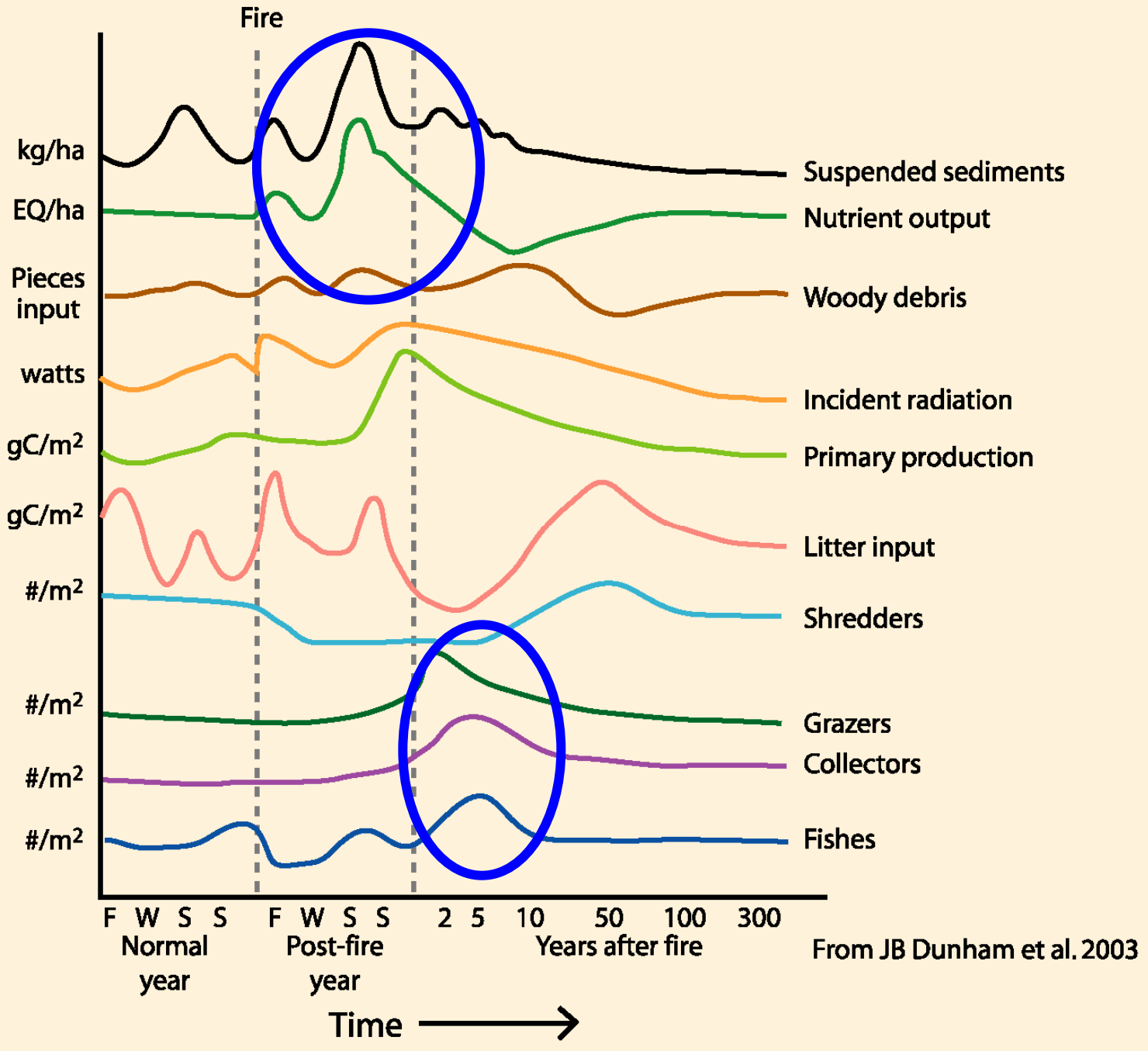


Time 2



Time 2

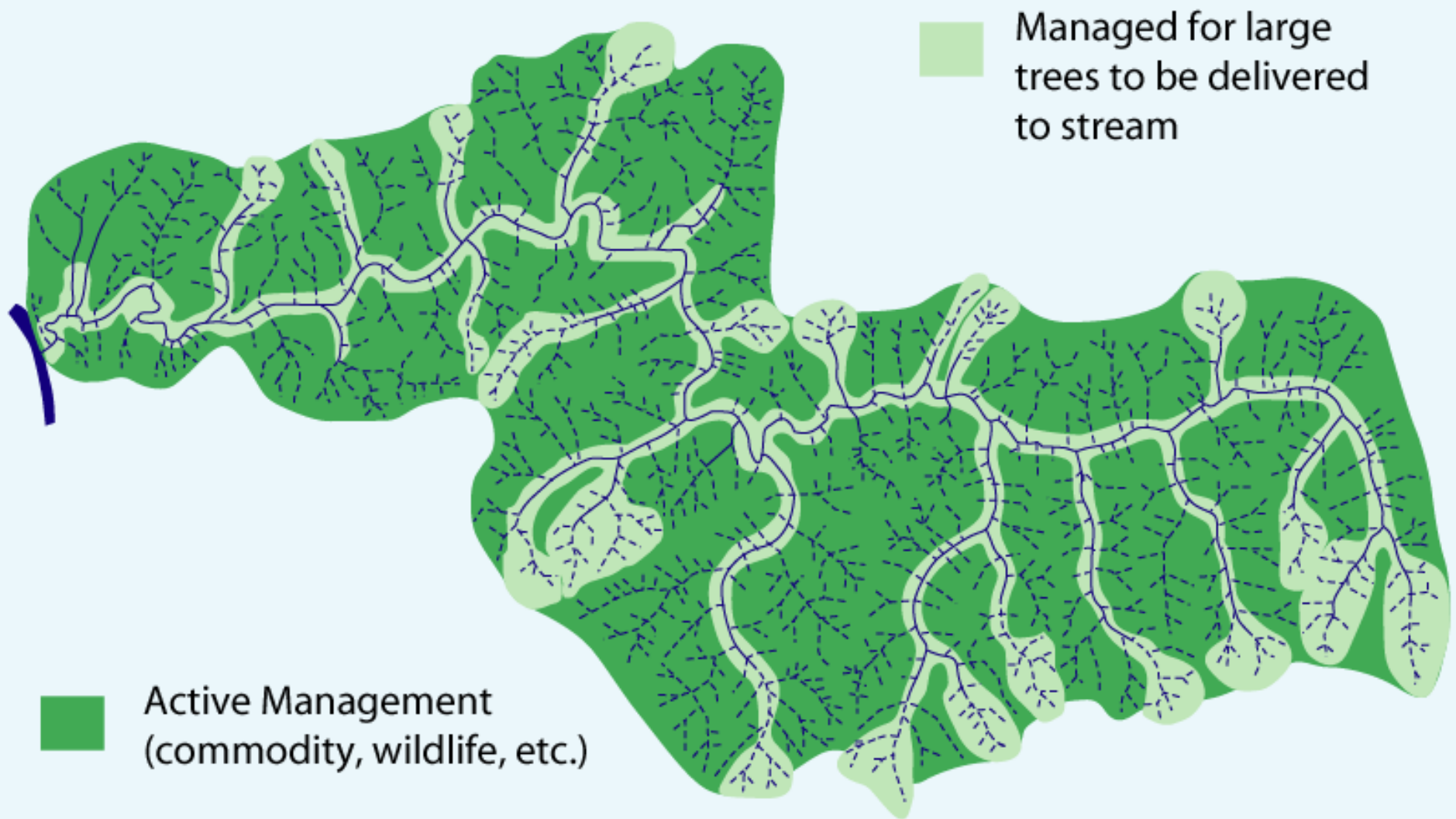




From JB Dunham et al. 2003



Suggested Riparian Management Scheme



Less Intensive Forestry

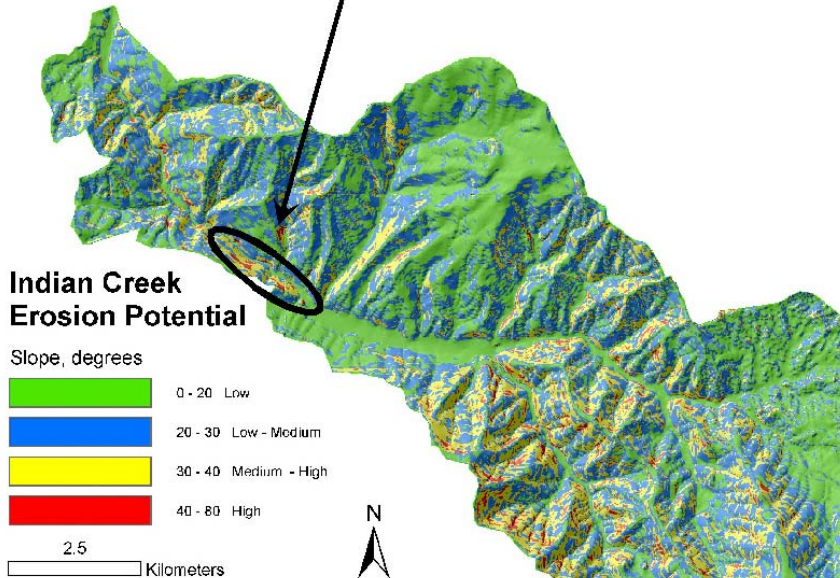
Intersection of high-quality fish habitat (low-gradient channel, larger floodplains, junction effect and canyon transition), and steep, erosion-prone slopes adjacent to channel

Indian Creek Channel Morphology (Habitat Types)

Channel % slope



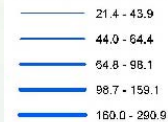
2 Kilometers



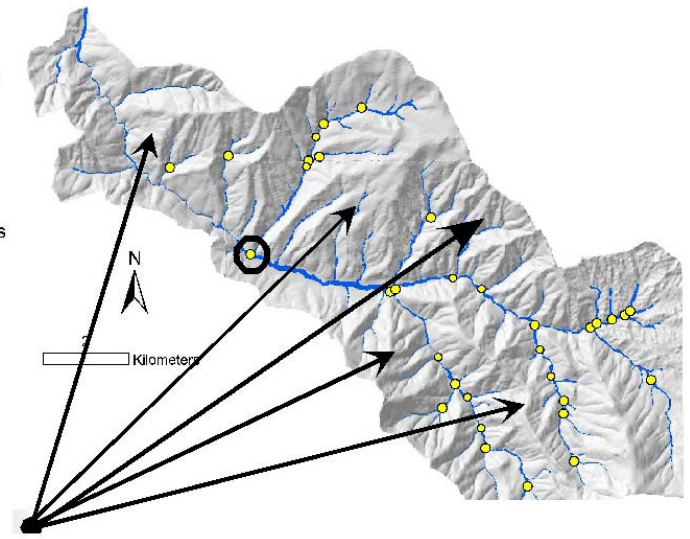
Timber Harvest Planning Example

Network

Valley Width, meters



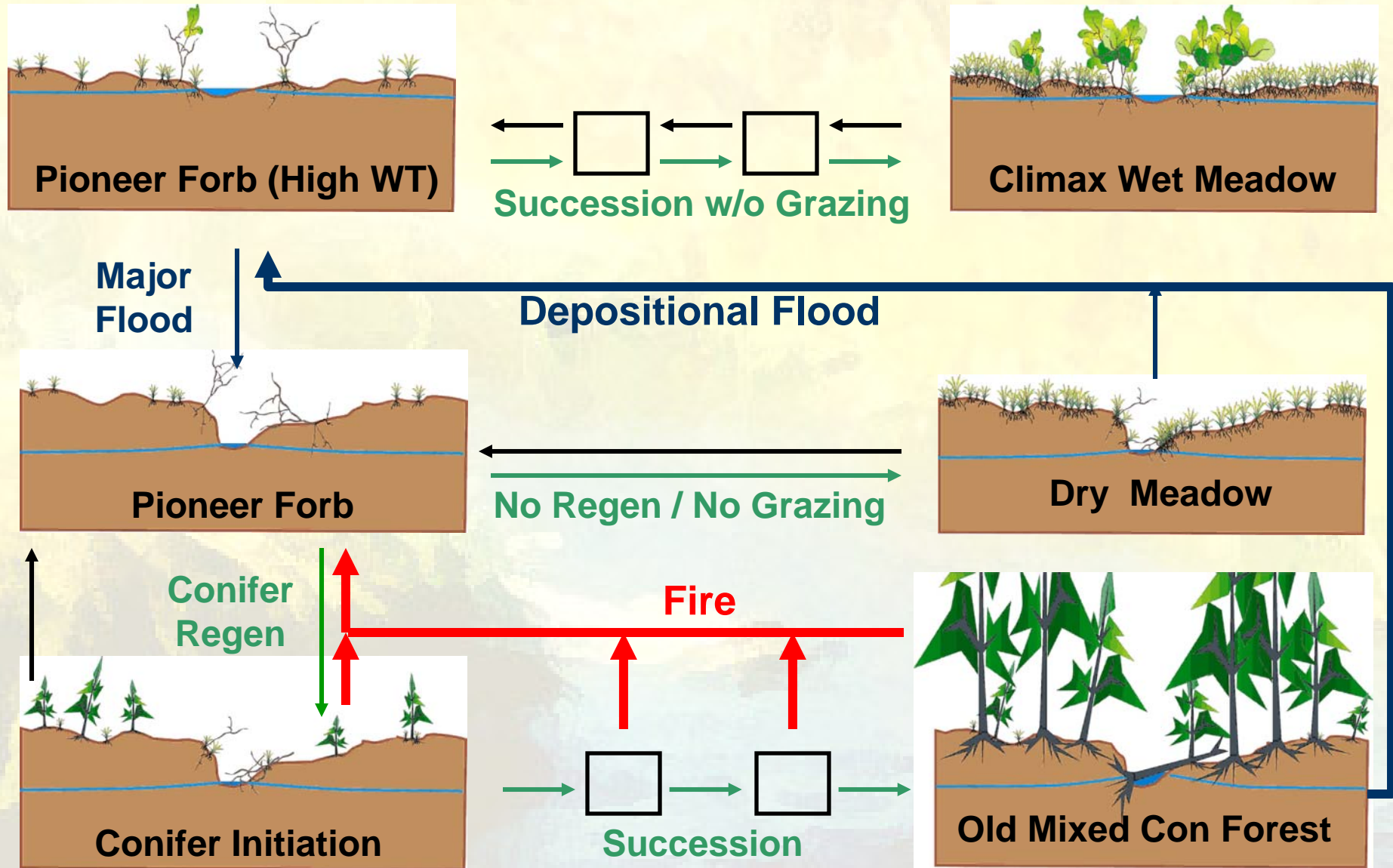
Probability of Effects



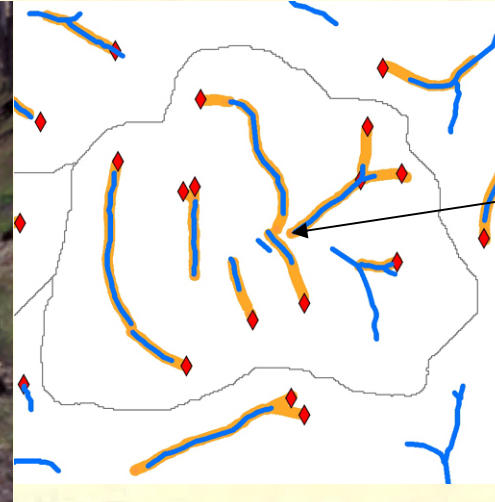
More Intensive Forestry



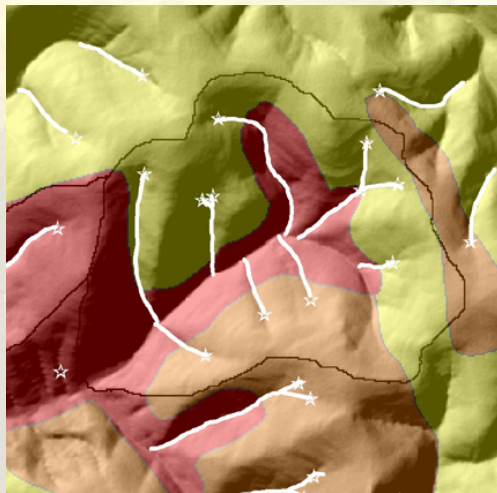
Hypothetical Effect of Fire on Meadow Riparian Ecosystems



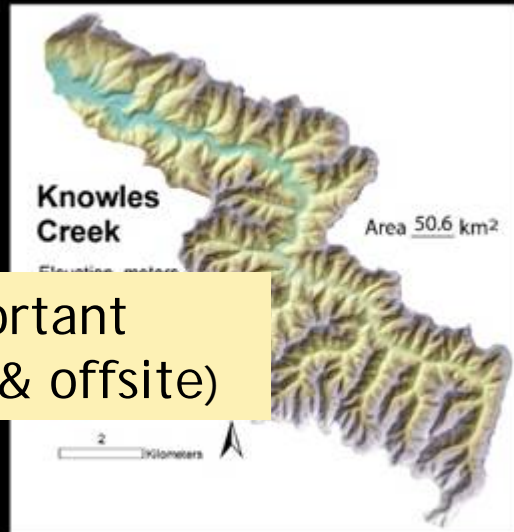
East Fork Cable Creek



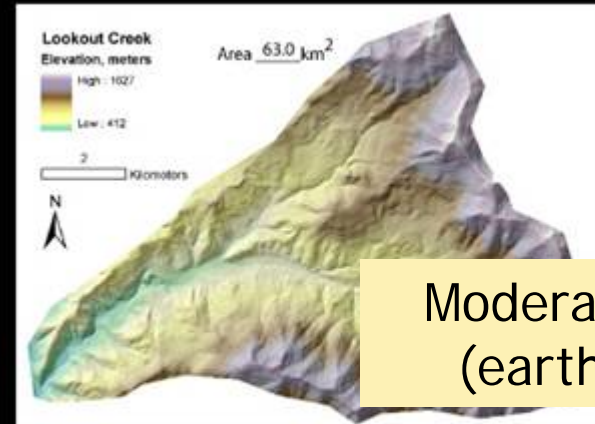
Radiocarbon
110 +/- 40 BP
Cal. Max 280 BP
Tree core ~110



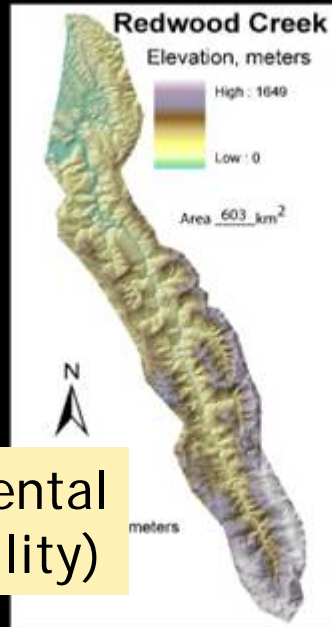
Relevance of Dynamic Events



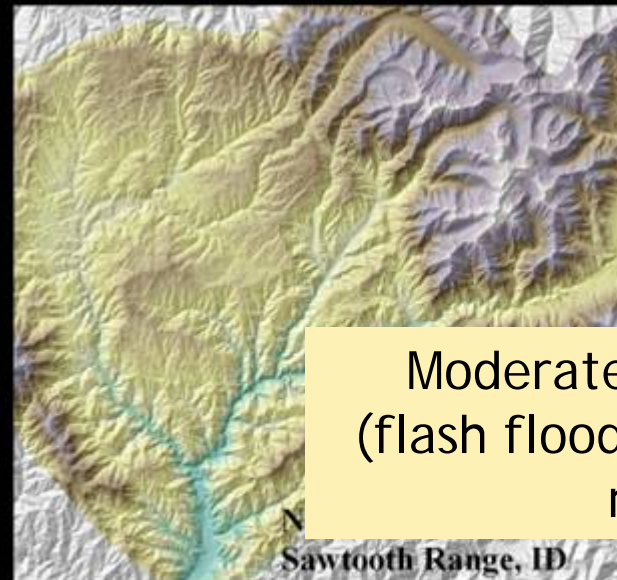
Very important
(confluences & offsite)



Moderately important
(earthflows/slides)

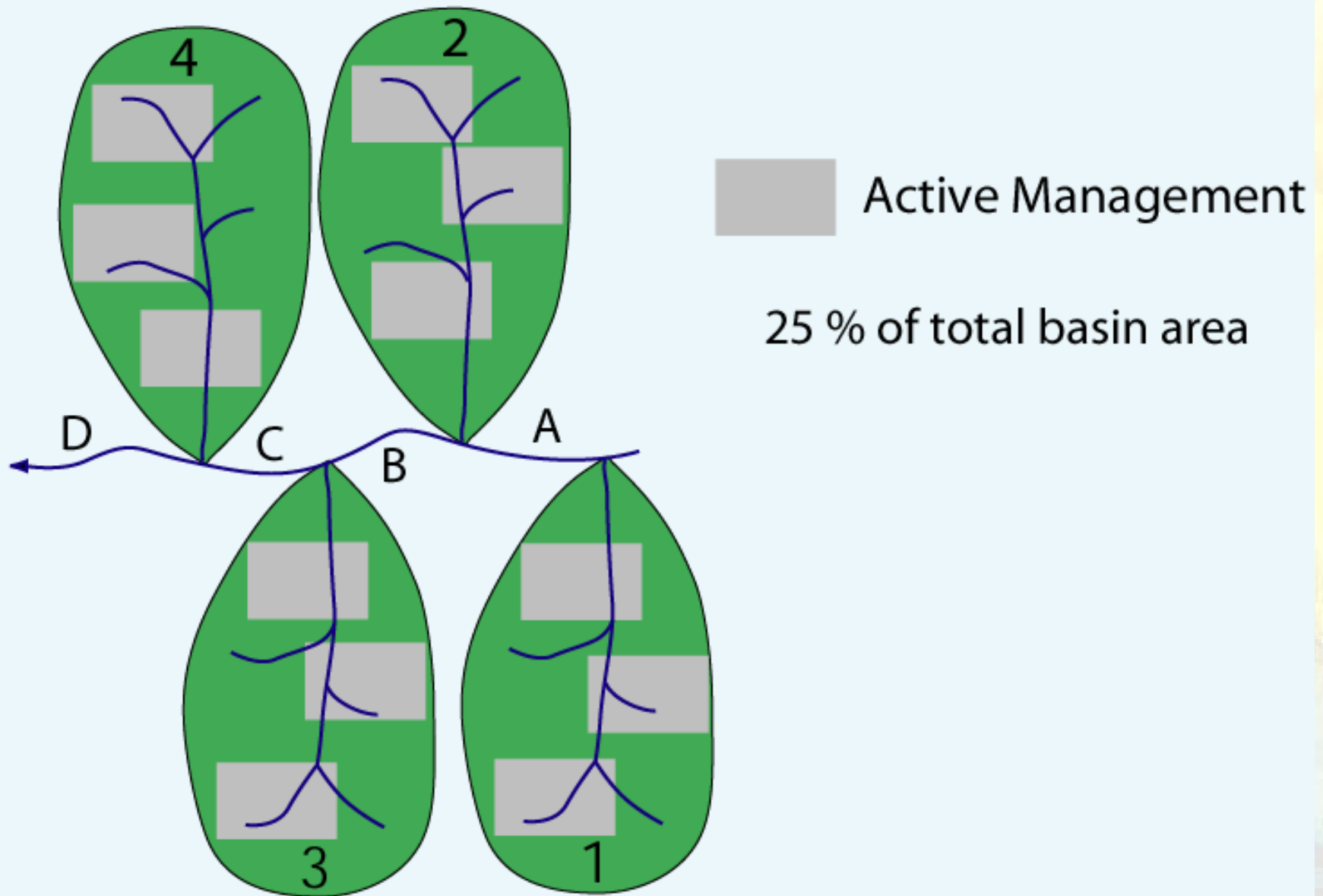


Little to Detrimental
(channel instability)

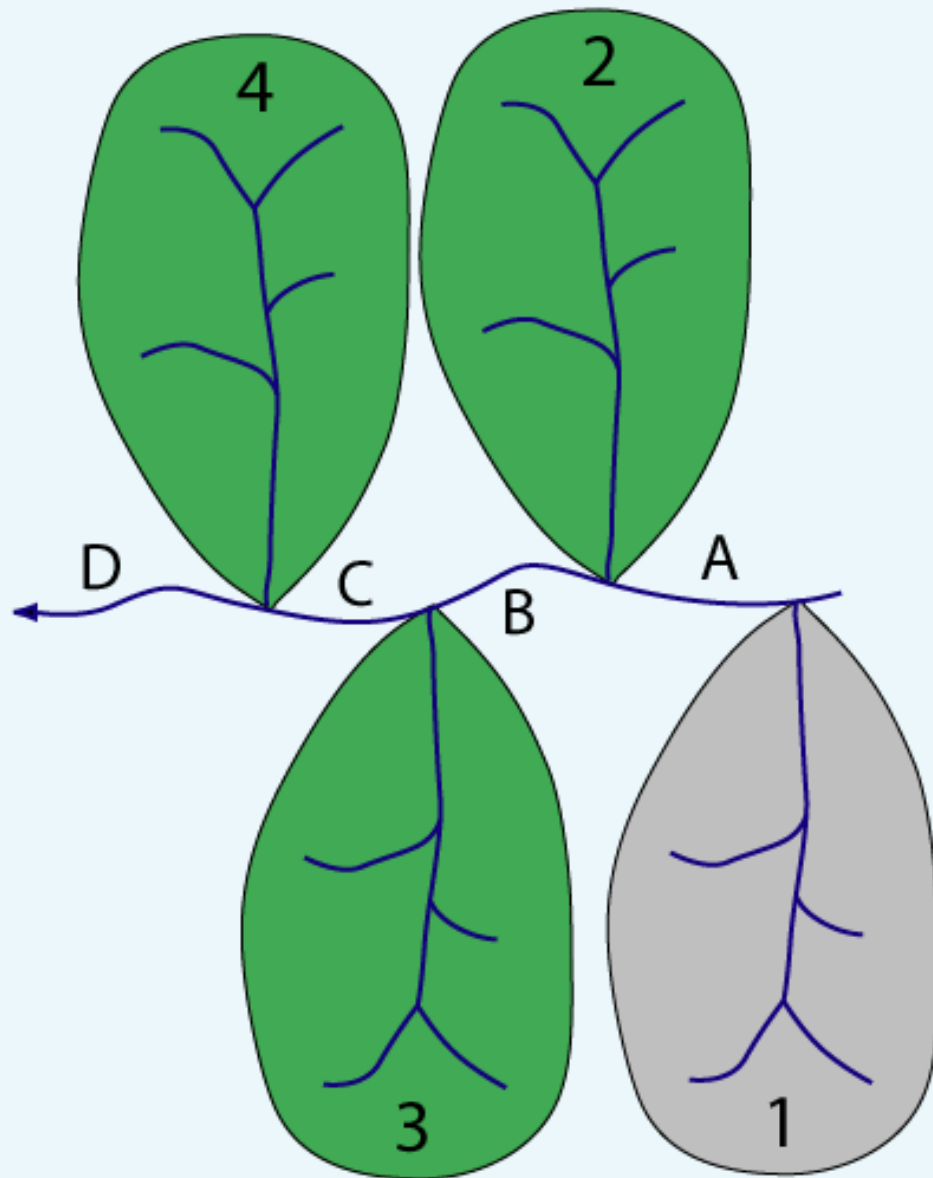


Moderately important
(flash floods/confluences,
rare)

Staggered Setting Scenario



Minimum Fragmentation Scenario

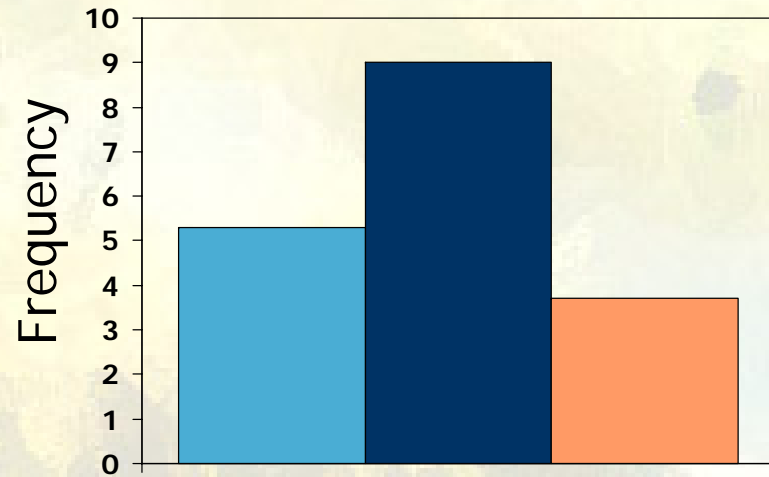


■ Active Management

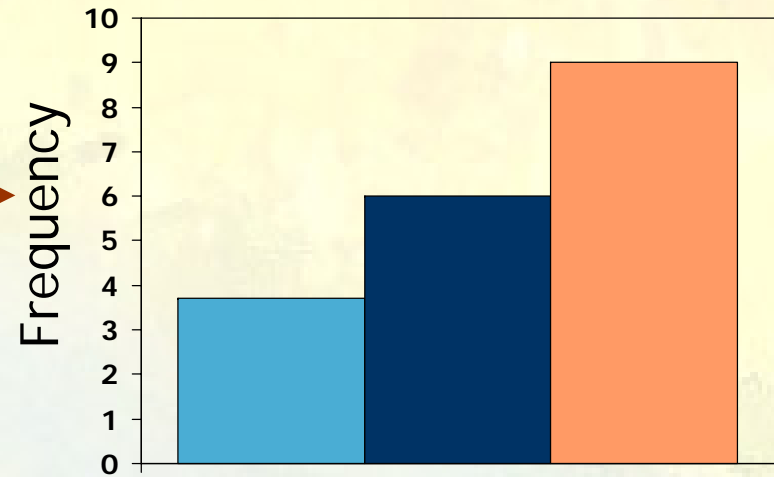
25 % of total basin area

Landscape Condition

Time 1



Time 2



Ecological State

Barriers

➤ Current Paradigms

- Limit Management Options
- Shape Public Perceptions & Expectations

The Sunday Oregonian

NOVEMBER 3, 2002

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THE MONSTER IN THE WOODS



The Florence fire surges through the Siskiyou National Forest in Southwest Oregon this

Decades of misguided forest management policy set the stage for an inferno that challenged the old rules of fighting wildfires

ANALYSIS

Hopefuls offer clear difference to voters

The philosophies of the candidates for governor diverge on issues from taxes to abortion

By JEFF MAPES
THE OREGONIAN

For the first time in 12 years, Oregon has a competitive race for governor — and this time it isn't hard to find big differences in the candidates.

In 1990, when Democrat Barbara Roberts won an upset victory over Republican Dave Frohnmayer, many voters complained they had trouble distinguishing between the two on issues. Both were veteran state officeholders who campaigned in favor of a sales tax and against the Measure 5 property tax limit and supported abortion rights.

No such problem this year.

Democrat Ted Kulongoski and Republican Kevin Mannix noisily disagree on taxes, spending, the economy, education, the environment, abortion, crime, government regulation and who has the best

VOTE
2002



KULONGOSKI

Don't borrow to balance budget

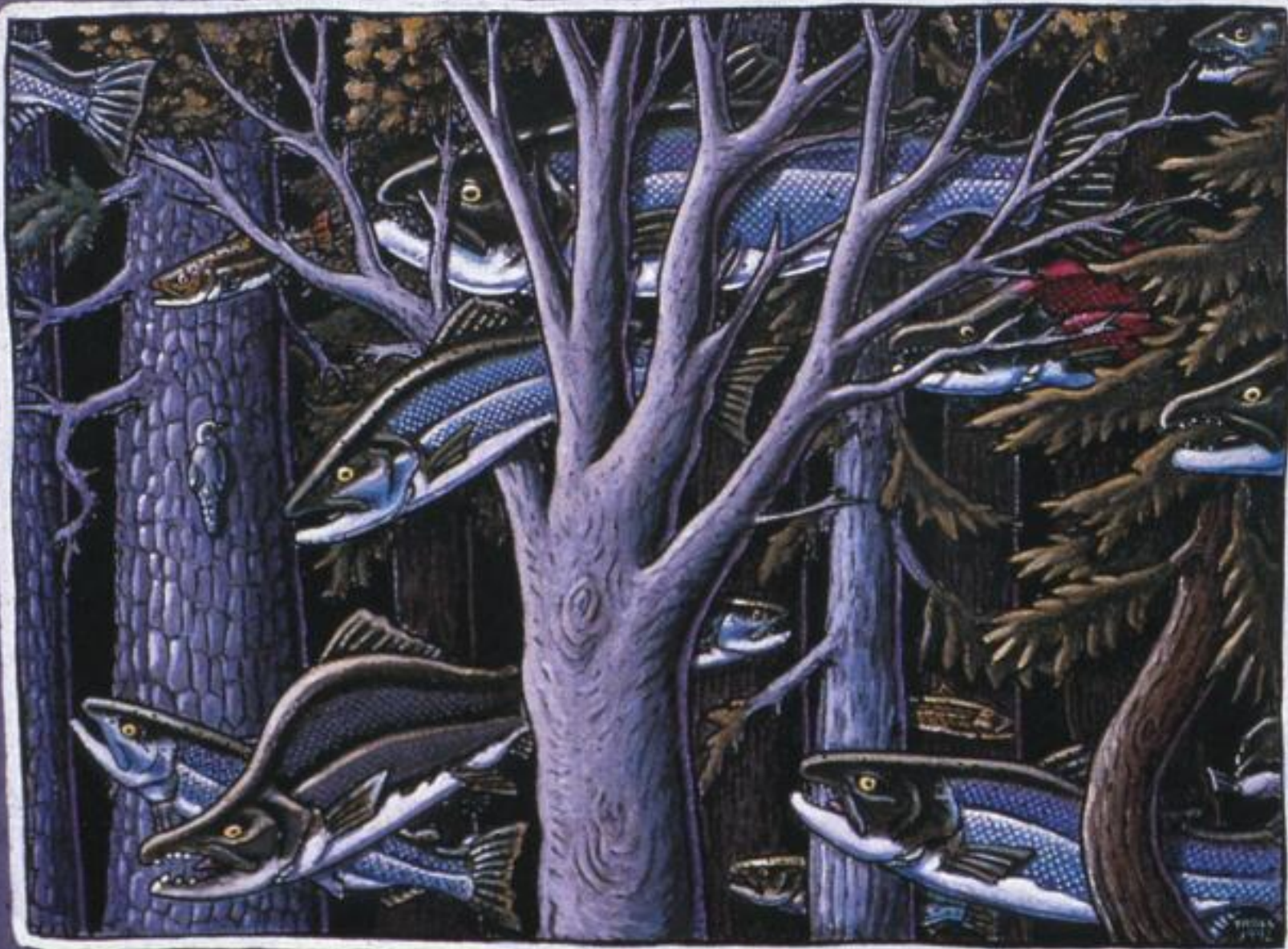


MANNIX

Keep existing

Barriers

- Current Paradigms
 - Limit Management Options
 - Shape Public Perceptions & Expectations
- Current Policies and Laws (e.g., Clear Water Act, Cumulative Effects)
- Mixed Ownership



FISH IN THE TREES