

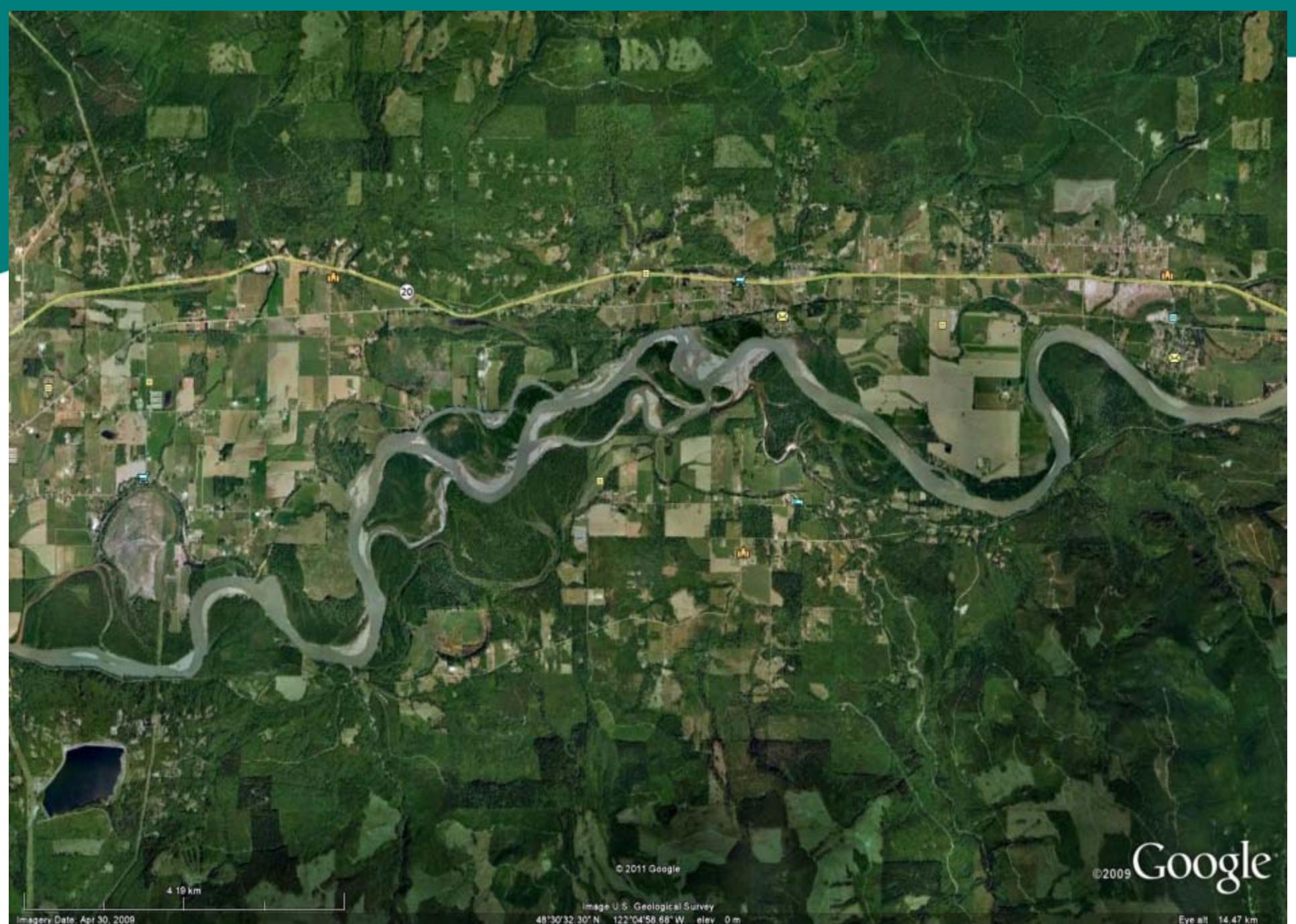


Value of floodplains for fish and flood management



**NOAA
FISHERIES
SERVICE**

NOAA



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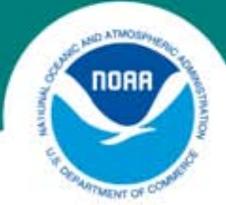
©2009 Google

4.19 km

Imagery Date: Apr 30, 2009

Image U.S. Geological Survey
48°30'32.30" N 122°04'58.66" W elev 0 m

Eye alt 14.47 km



What Features are Important



Main Channel

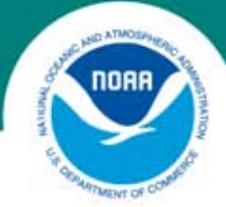
Logjams

Meanders

Floodplain channels

Beaver Ponds

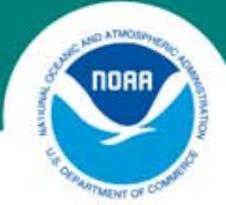
Mid-Channel Islands



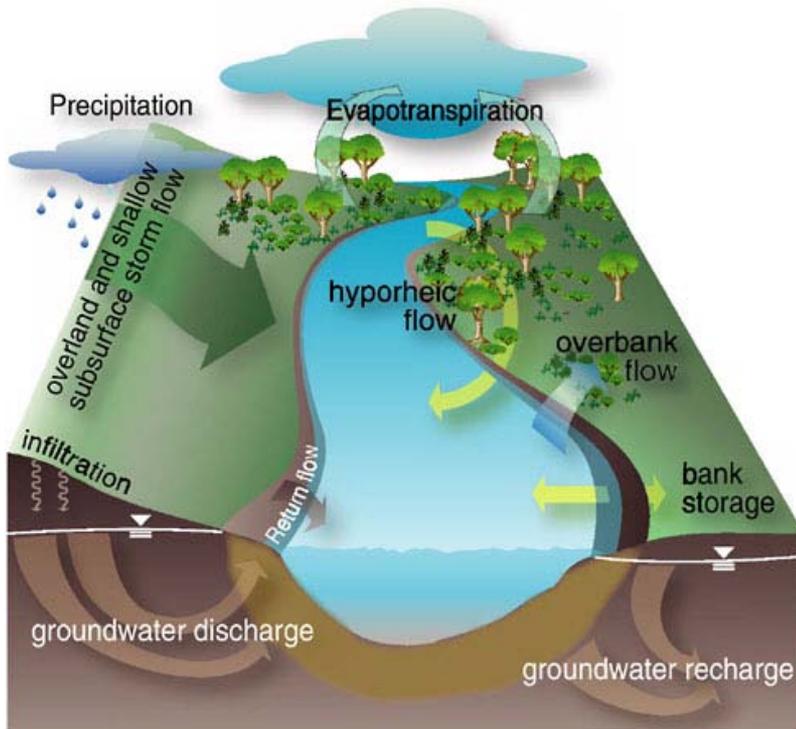
Edge Habitat



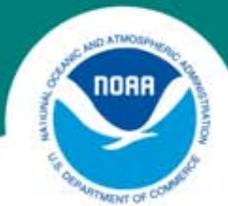
Shallow shoreline
Heterogeneous
Vegetation cover
Cutbanks
LWD



Hydrologic Effects

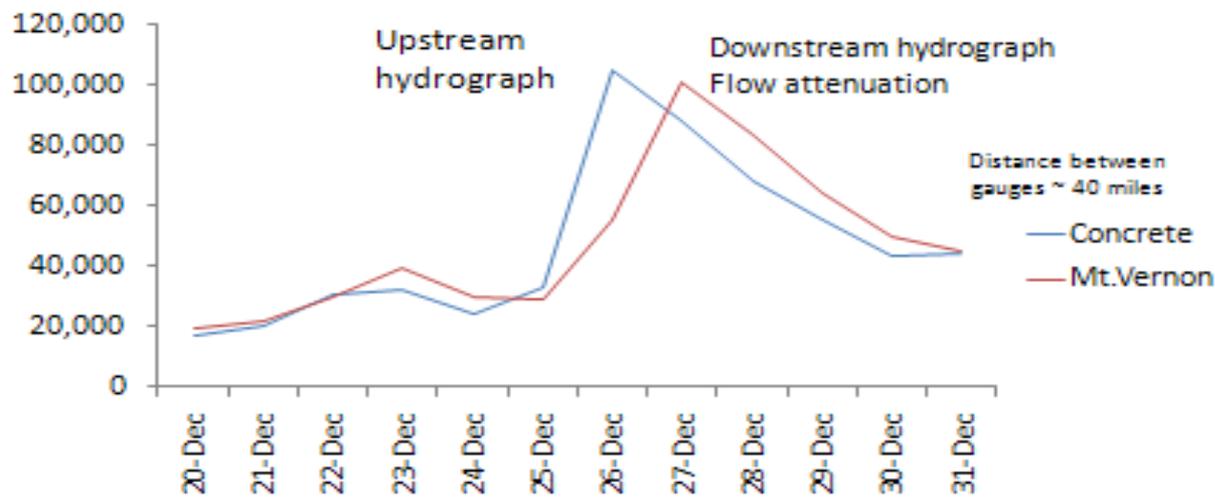


Flood storage
Groundwater recharge
Summer low flows
Hyporheic flows



Flood Management

Attenuate peak flows



1980 Skagit River flood example

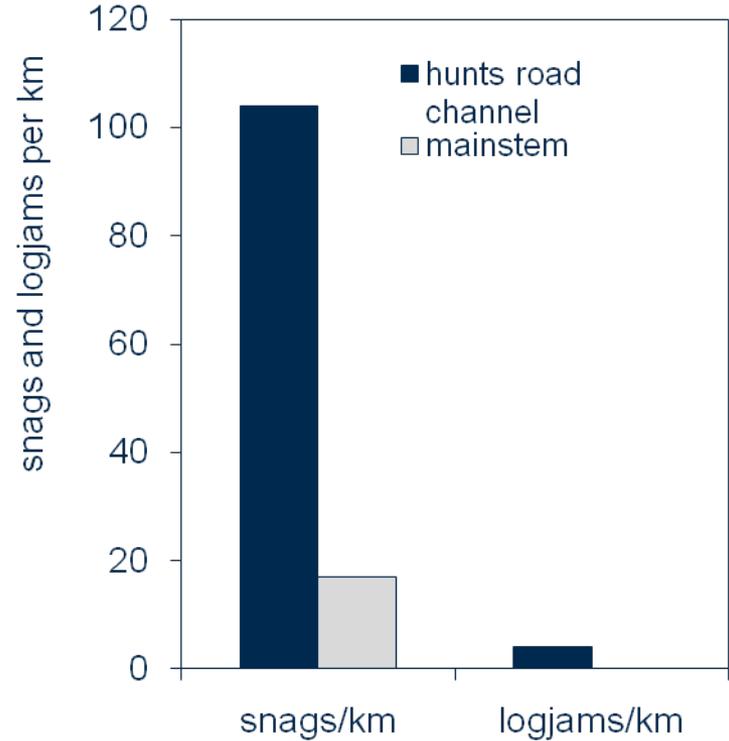
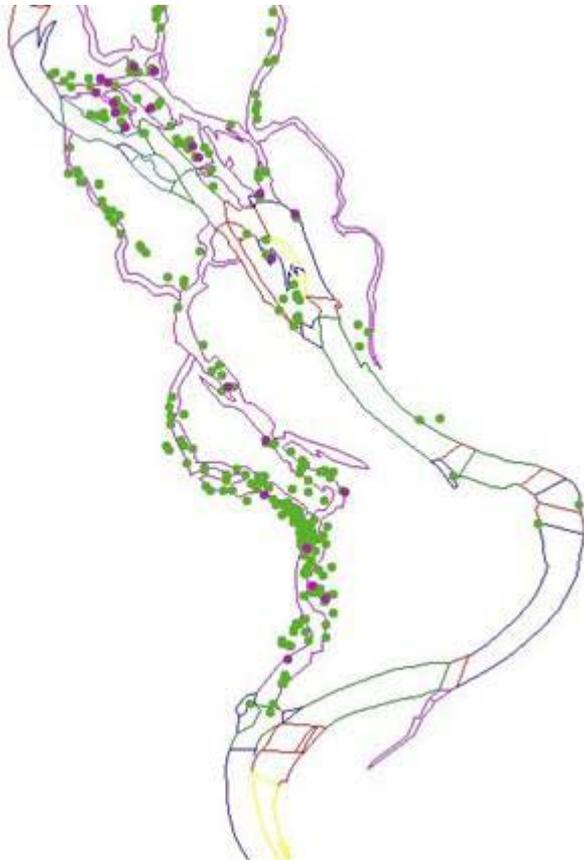


Levee Vegetation



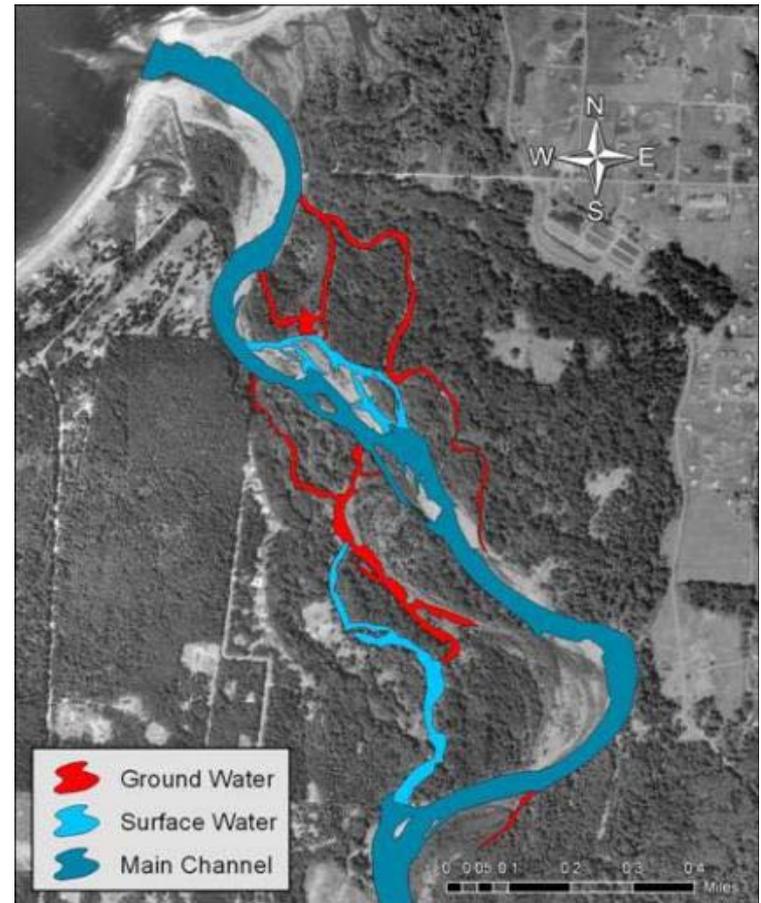
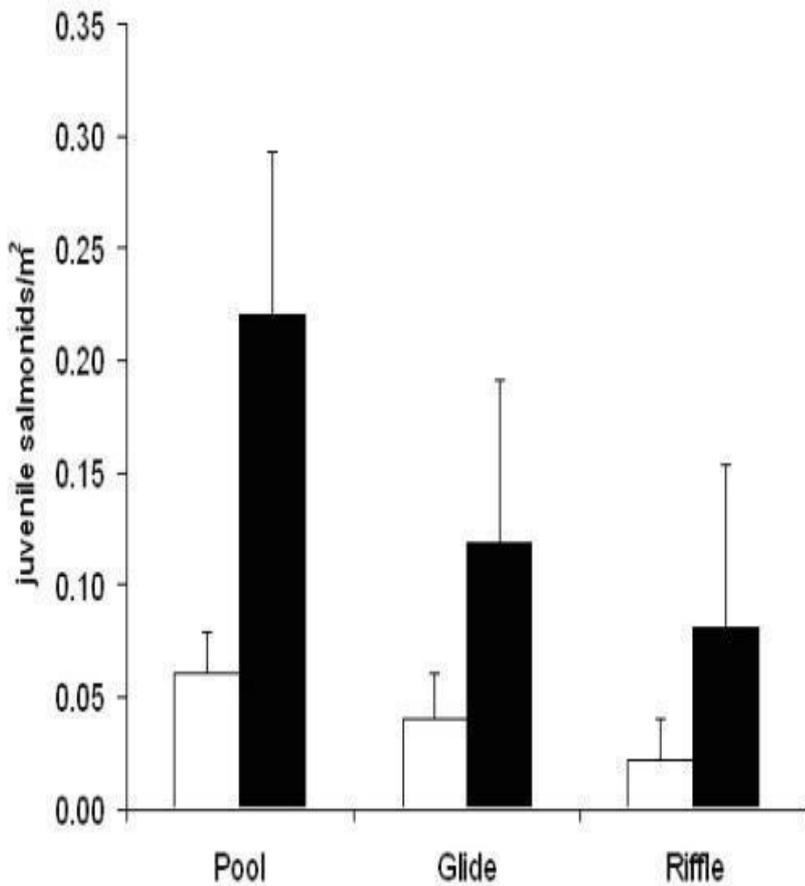


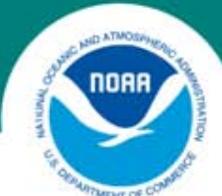
Storage of water, wood, sediment and nutrients



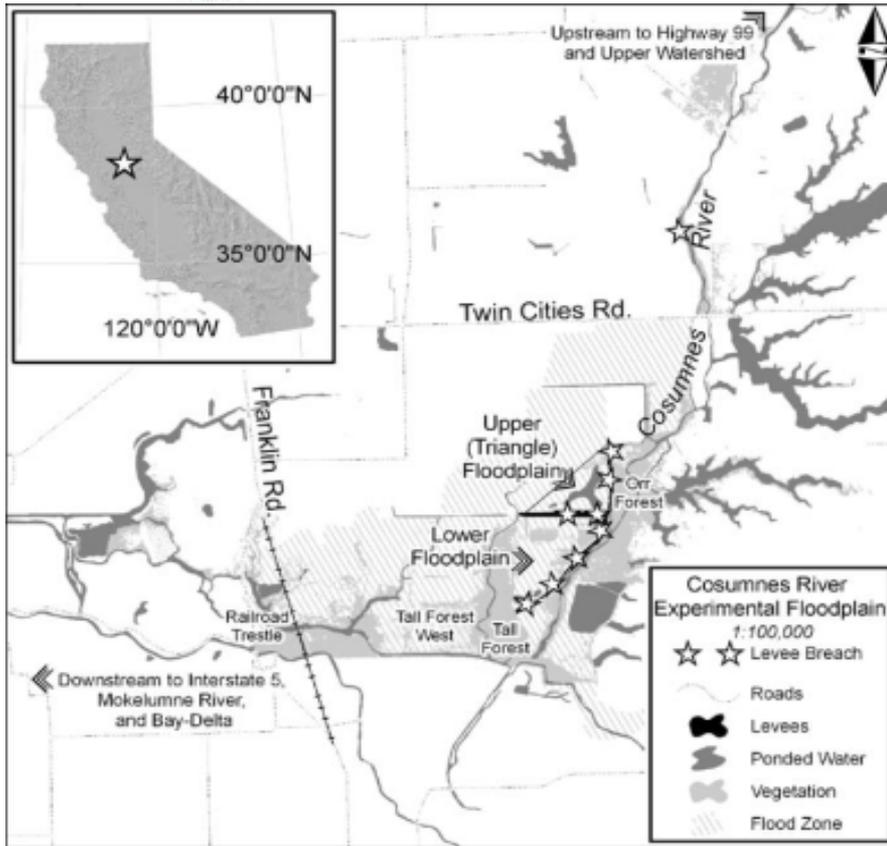


Salmonid Habitat



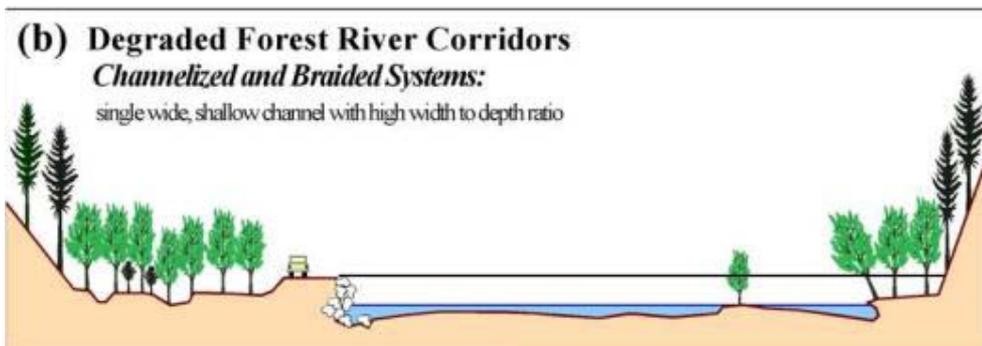
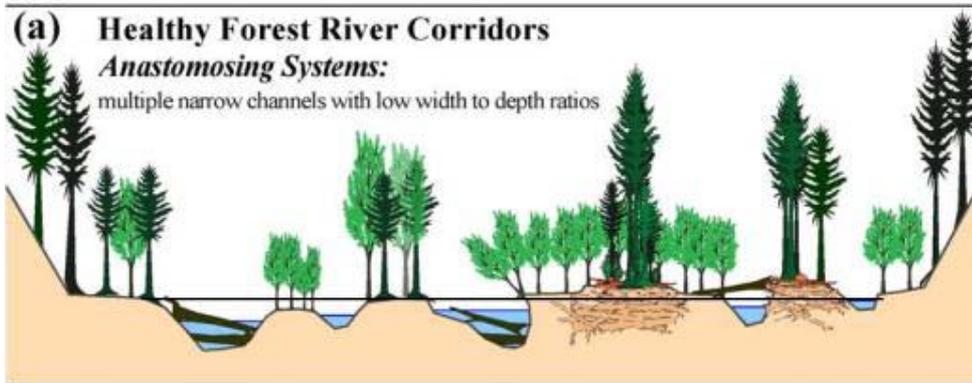


Better Condition Factor





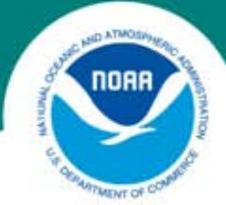
Functional vs Degraded Floodplains





How do we alter floodplain functions





Adverse alterations

Removal of vegetation

Bank Armoring

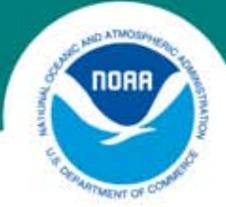
Channel straightening

Habitat Isolation

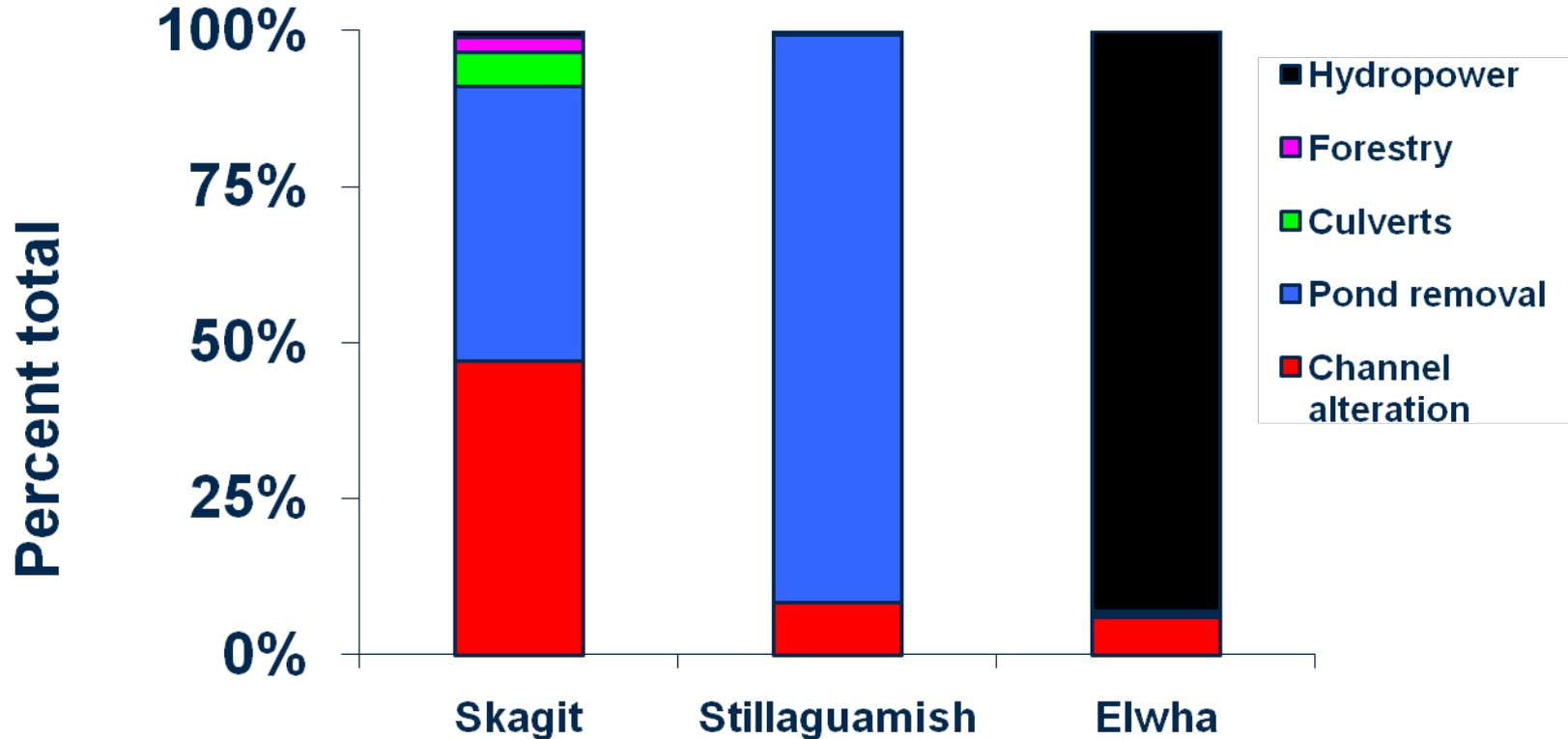
Reduced storage capacity

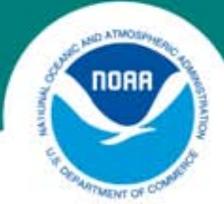
Degraded water quality

Construction effects (noise and turbidity)



Causes of Habitat Isolation





Summary

What is a floodplain?

What features are associated with floodplains?

- Slower water areas, accompanying vegetation & obstructions

Why are floodplains important to aquatic ecosystem function?

- Repository and increased residence time of water, wood, & nutrients
- Attenuate peak flows, enhance low flows
- Slower water environments for juvenile salmonids during critical times of their life cycle

How do we disturb and alter floodplains?

- Isolate or disconnect the floodplain from its main channel