

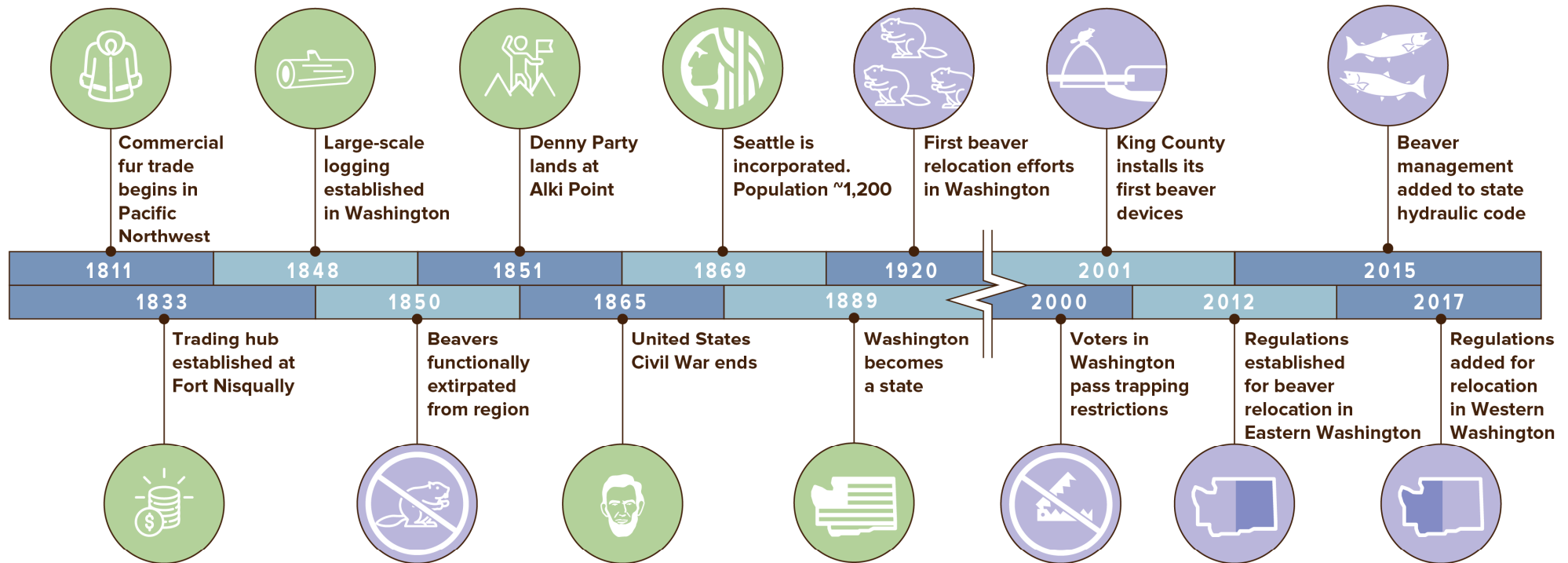
6PPD-Q intersections with Beavers

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Topics

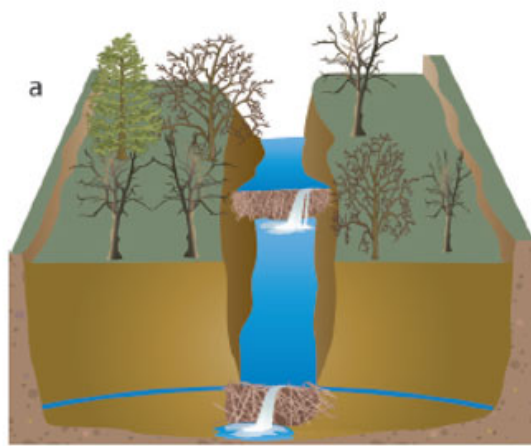
- History of beavers in Washington & how that's relevant to recent salmon distribution maps
- Beaver ponds as coho (and steelhead) rearing habitat
- Sediment storage & water quality

POST CONTACT HISTORY OF BEAVER MANAGEMENT IN WASHINGTON STATE



King County
Beaver Working
Group Program





From Pollock et al. 2014

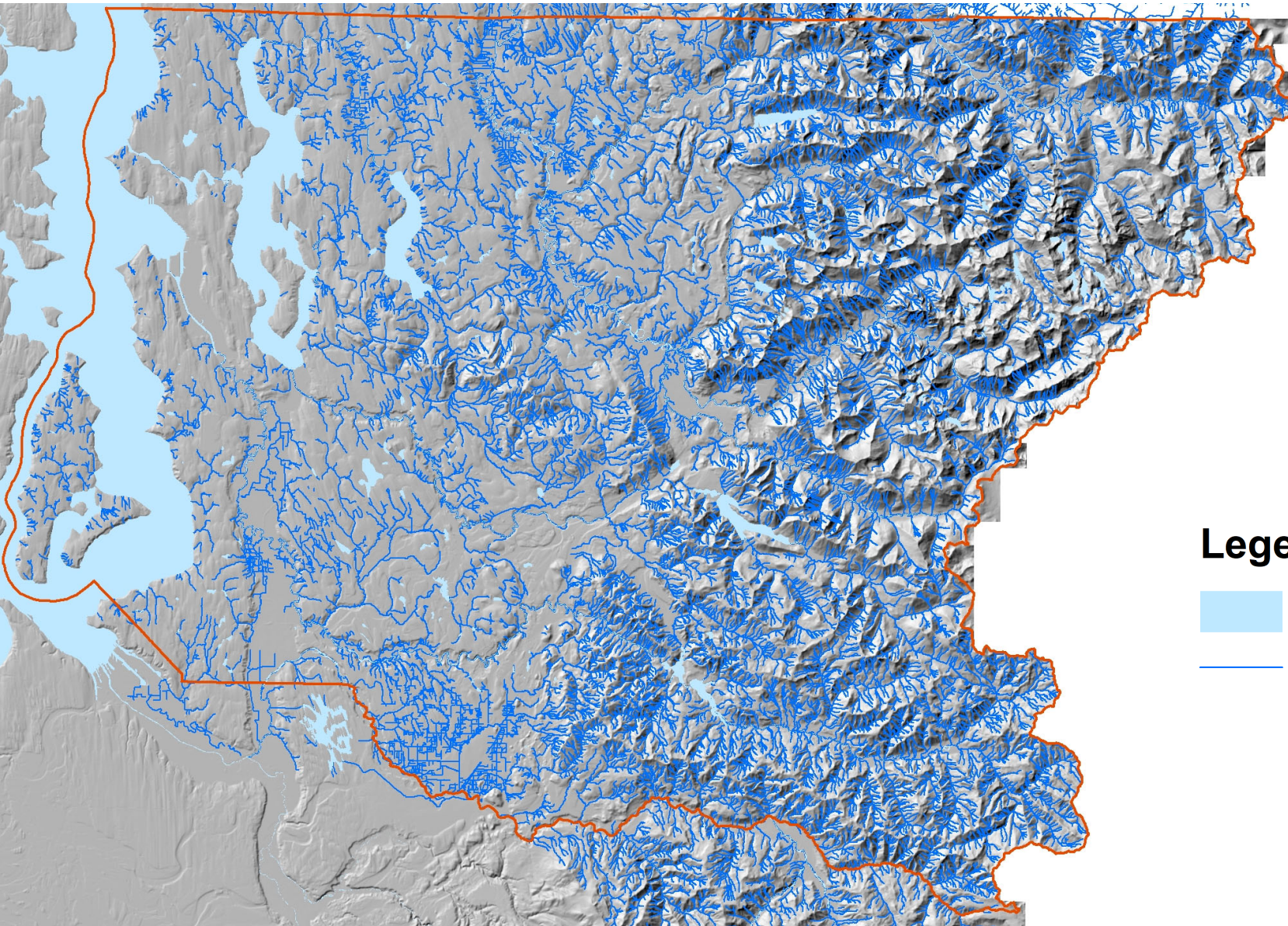




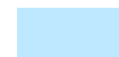
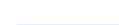


Salmon Habitat

- Beaver ponds are prime coho rearing habitat
 - Pollock et al. (2004) examined the potential population-level effect of the widespread loss of beaver ponds on coho salmon in the Stillaguamish.
 - Summer and winter smolt production potential from beaver ponds down 89% and 94%, respectively, from historic levels.
- Also steelhead rearing (Bouwes et al. 2016)






Legend

-  Large waterbodies
-  Streams and Rivers



Legend

-  Large waterbodies
- King County BIP**
-  Suitable
-  Unsuitable

Sediment storage

- Quebec study by Naiman et al. (1986):
 - “In several instances a small [beaver] dam (4-18 m³) of wood, properly positioned, could retain 2000-6500 m³ of sediment.”
 - Amount of sediment depends on pond size (not dam size).
- Mission Creek, Cashmere, WA by Scheffer (1938):
 - Ave of 266 yds³ in 22 ponds.
- British Columbia study by Green and Westrook (2009):
 - Ave. sediment volume across 8 ponds: 51 m³

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Sediment Storage

- In Current Creek in Wyoming:
 - 1980, pre-beaver dam silt load of 33 tons/day.
 - Beavers were imported and supplied with aspen
 - 1983, with beaver dams, silt load down 90% to 4 tons/day.

Sediment Storage

- In nearby Sagehen, aspen logs weren't enough. The humans provided truck tires.
- The tires helped stabilize the bank and it retained 10 times more sediment.

BAD IDEA

Rate of Sedimentation

- Very little data.
- Very site specific.
- Can be very low or very high (<1cm/yr to 40cm/yr).

Water Quality

- Several studies report on water quality “filtering” effect of beaver ponds.
 - Extensive lit review needed.
- Sediment can be remobilized with removal or loss of dam.

Starter List of Questions

- Do toxins continue to leach in beaver ponds?
- Does buried depth affect leaching?
- Where are current beaver ponds in relation to known high incidences of coho PSM?
- What salmon recovery projects are planned in areas of high coho PSM?
- Are rearing juv. fish being affected by toxins?
- (Are coho more susceptible because they are exposed as juveniles?)
- Are macroinvertebrates that juv. fish eat being affected?