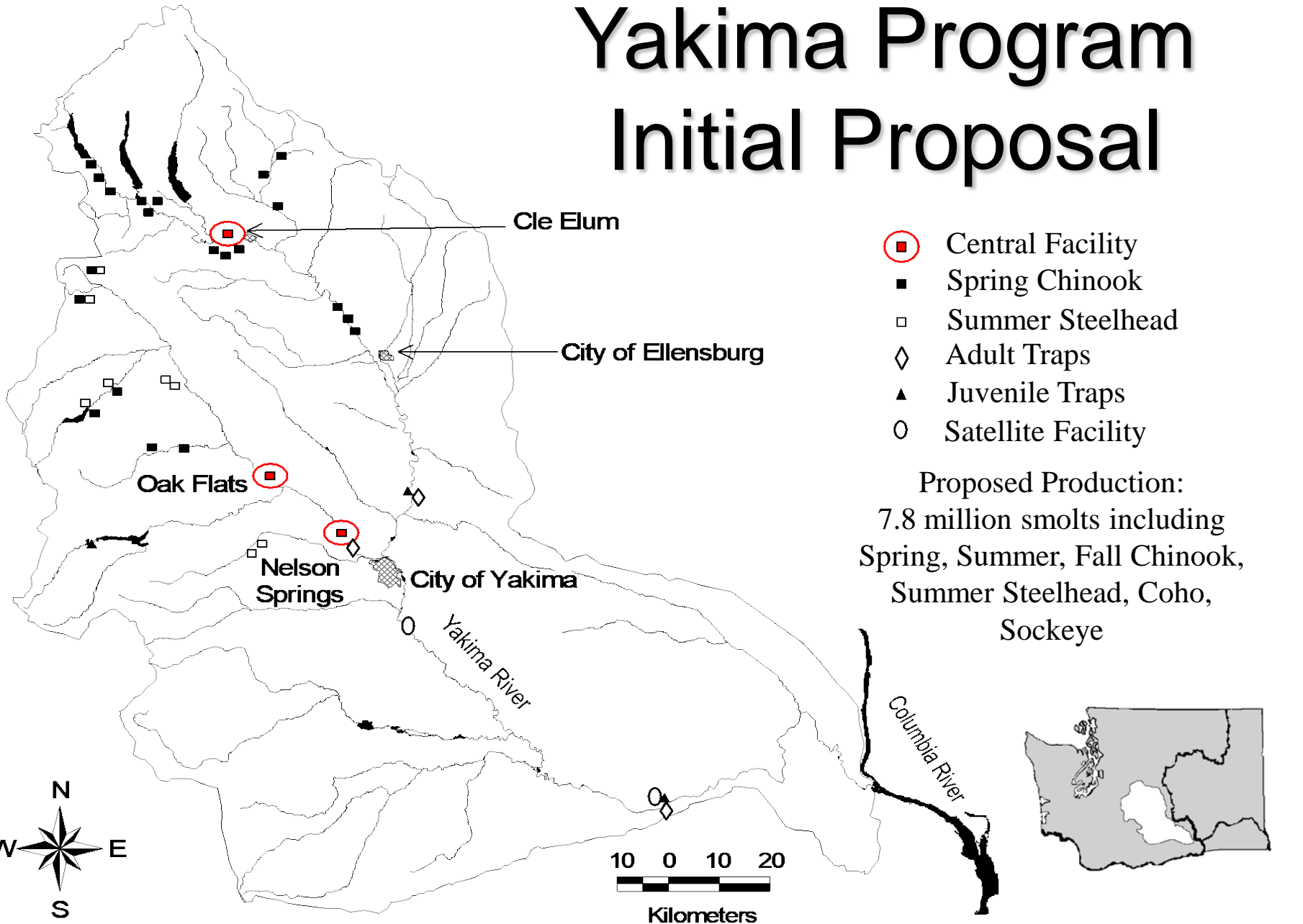


Risk Management of Non-target Fish Taxa as Related to Salmon Supplementation

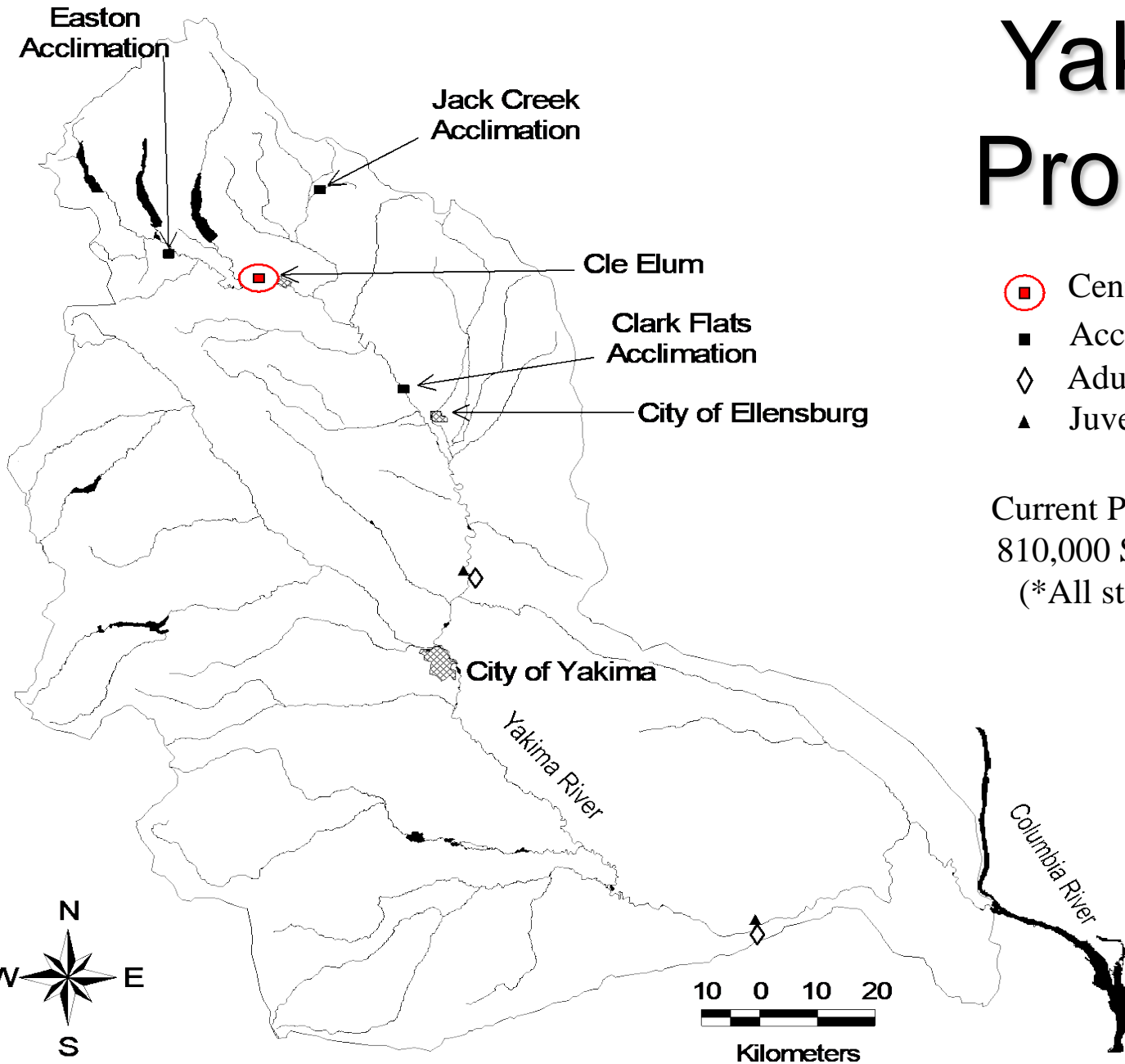
Presented by:
Gabriel M. Temple



Yakima Program Initial Proposal

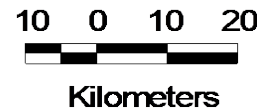


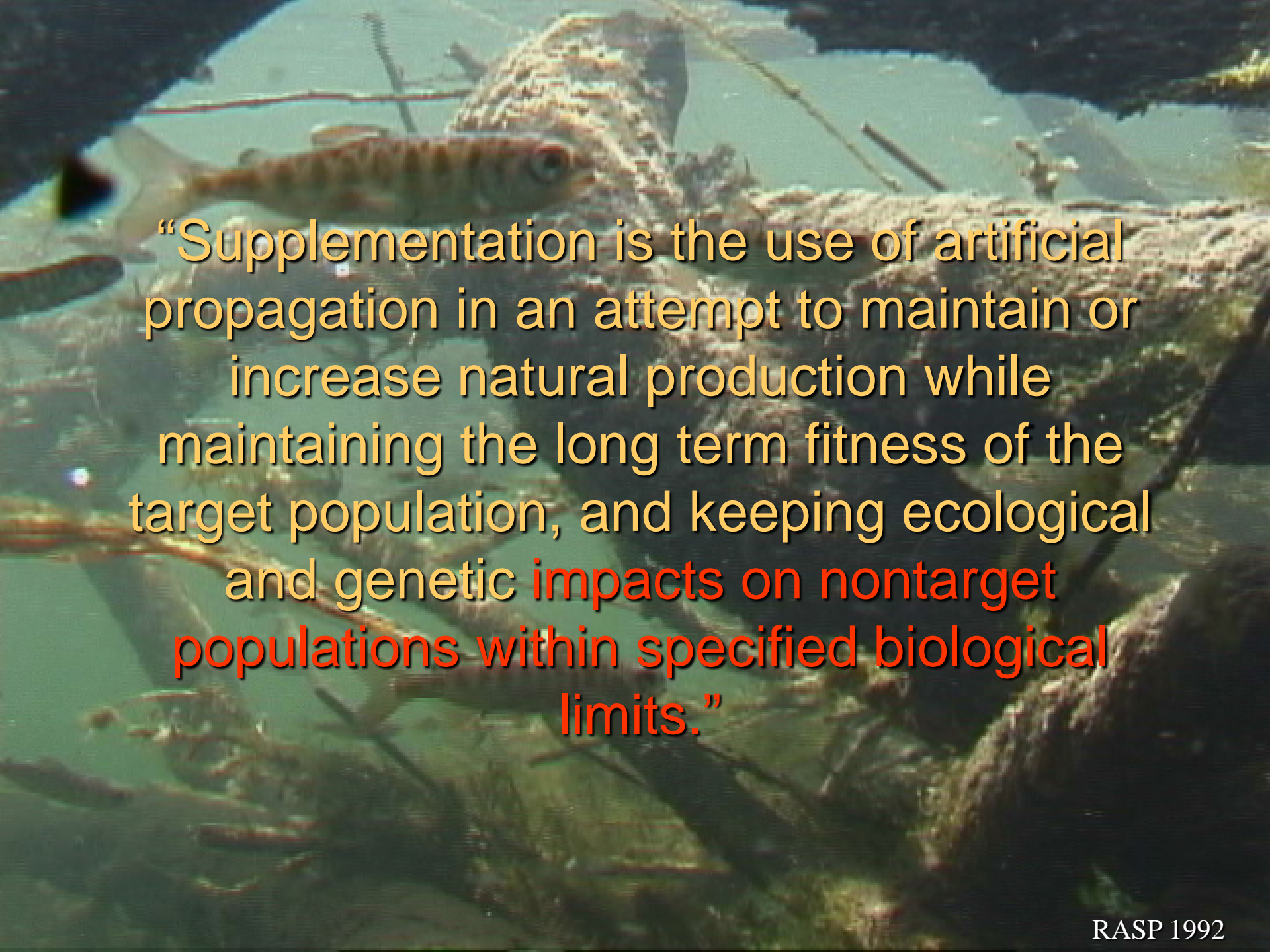
Yakima Program



- ◻ Central Facility
- Acclimation Facility
- ◇ Adult Trap
- ▲ Juvenile Trap

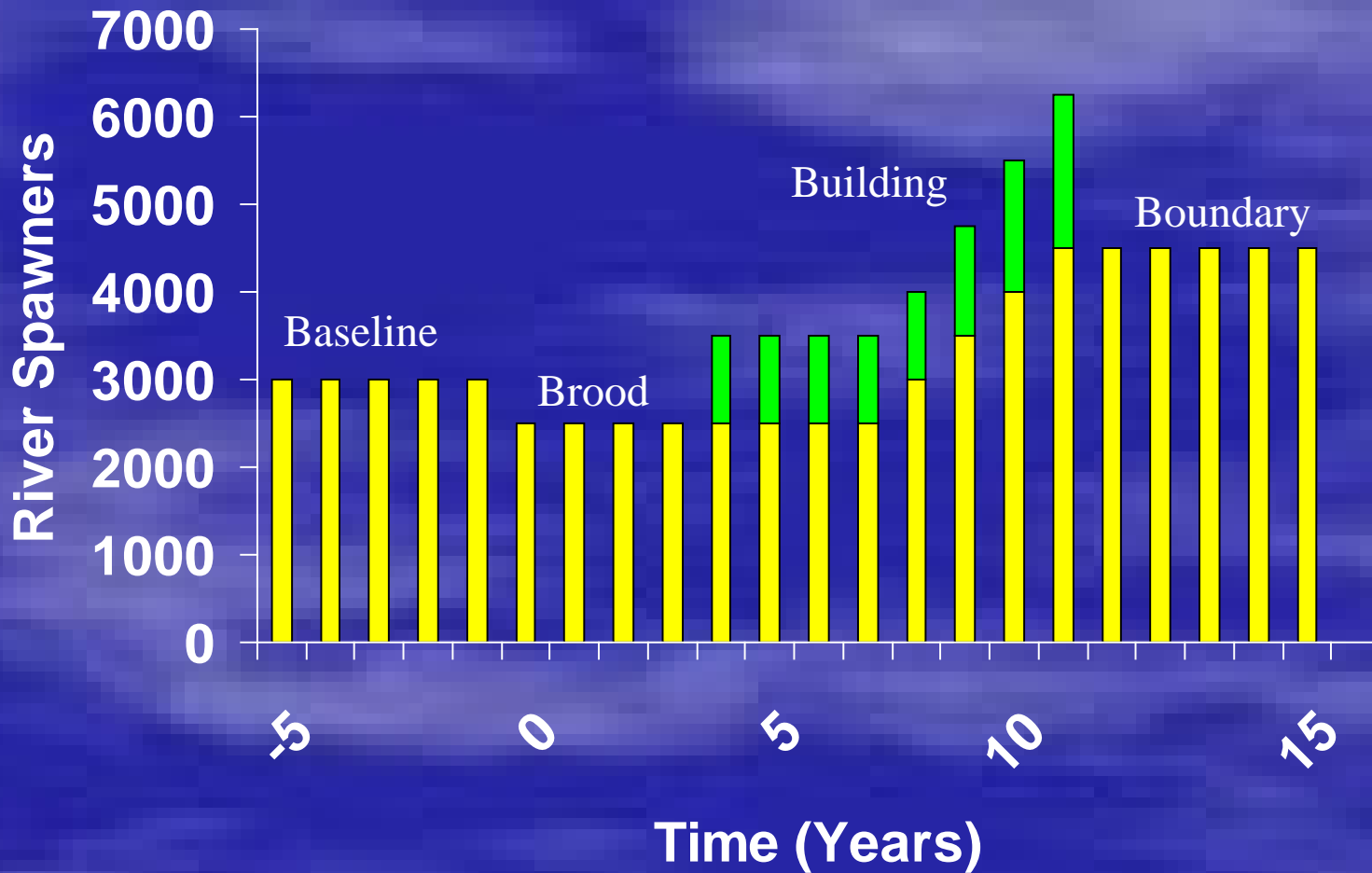
Current Production Goal:
810,000 Spring Chinook
(*All stock initiative)



A photograph of a fish, likely a trout, swimming in a stream. The fish is in the foreground, slightly out of focus. In the background, there is a large, weathered log partially submerged in the water. The water is clear and reflects the surrounding environment. The text is overlaid on the image in a yellow, sans-serif font with a drop shadow. The words "impacts on nontarget populations" are highlighted in red.

“Supplementation is the use of artificial propagation in an attempt to maintain or increase natural production while maintaining the long term fitness of the target population, and keeping ecological and genetic **impacts on nontarget populations within specified biological limits.**”

Supplementation Chronology



NTT Risk Containment Process

Identify NTTOC

Set Containment Objectives

Implement Detection Strategies

Identify Changes to NTT Status

Determine Causation

Adaptive Management

Containment Objectives

$\leq 0\%$



$\leq 5\%$



$\leq 10\%$



$\leq 40\%$



sustainability



Methods.....



Special thanks: BPA, YN, and WDFW staff

NTT Risk Containment Process: Sieve Approach

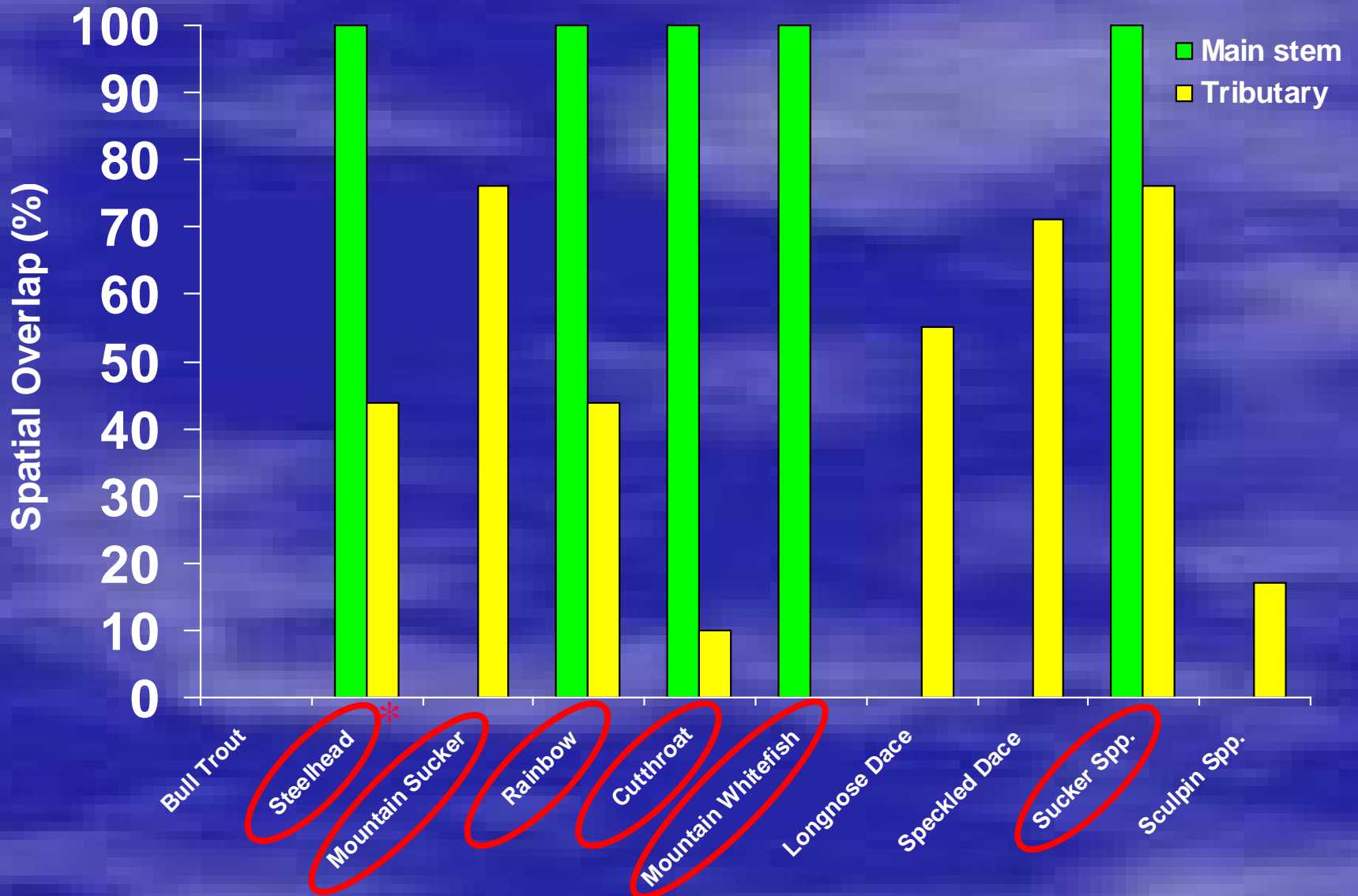


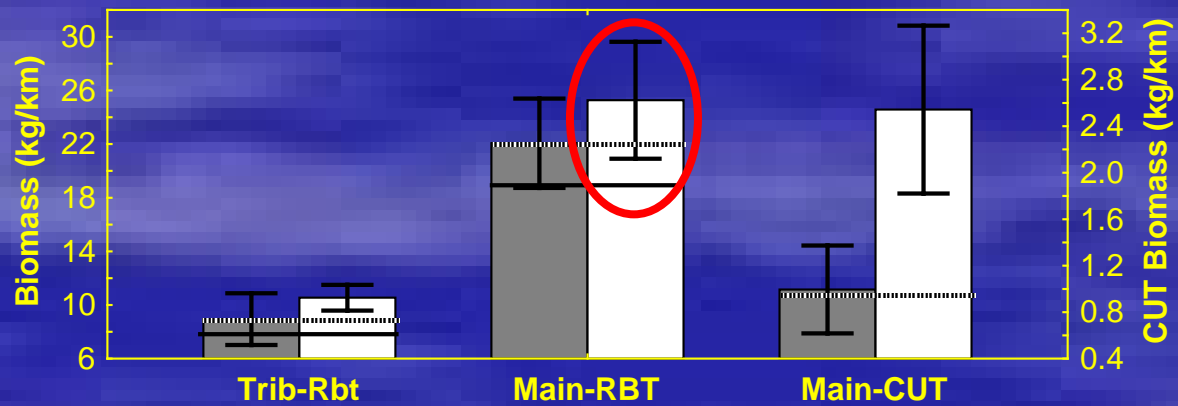
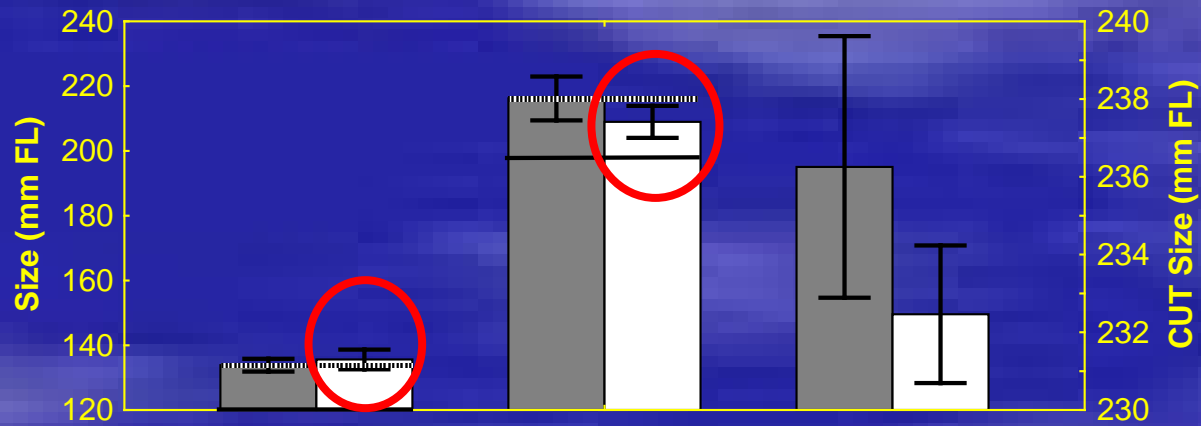
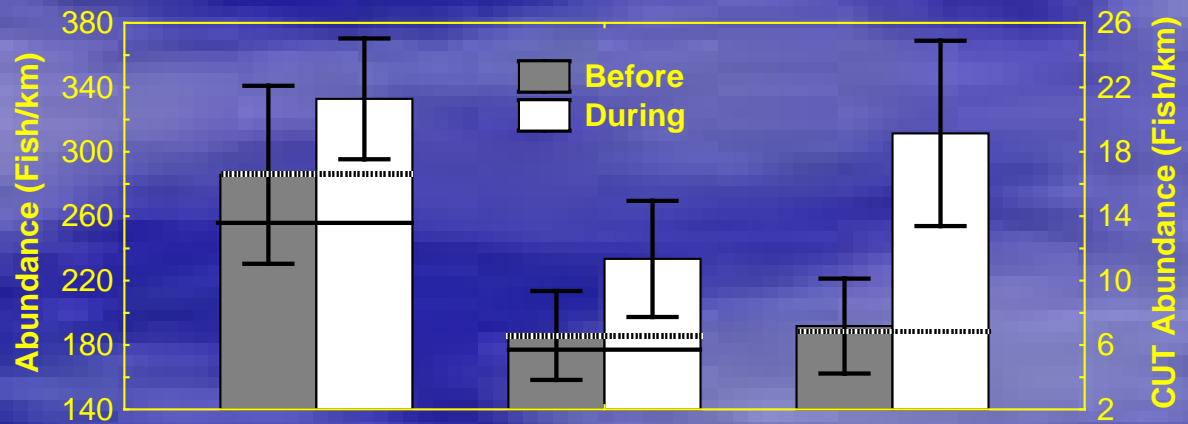
- 1) Overlap

- 2) Status

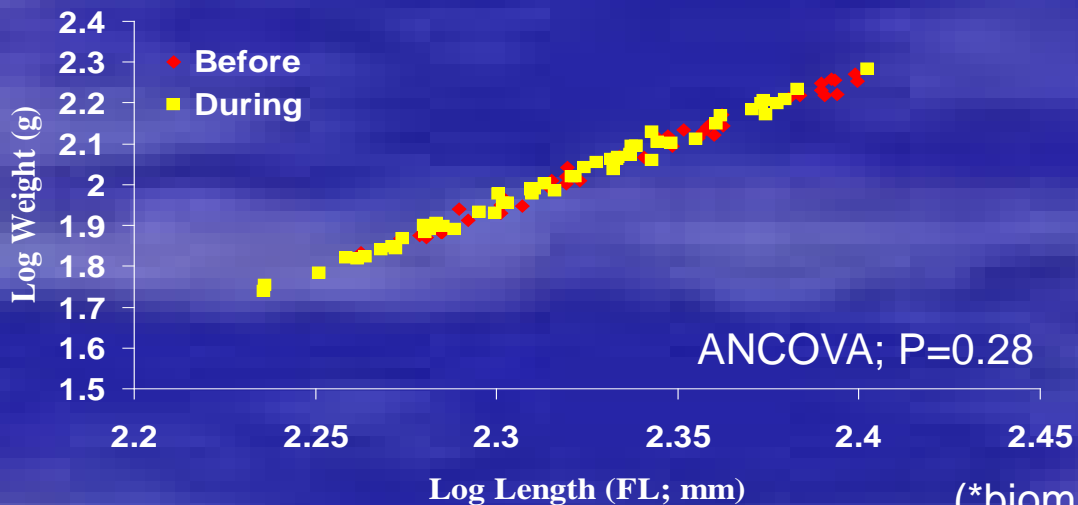
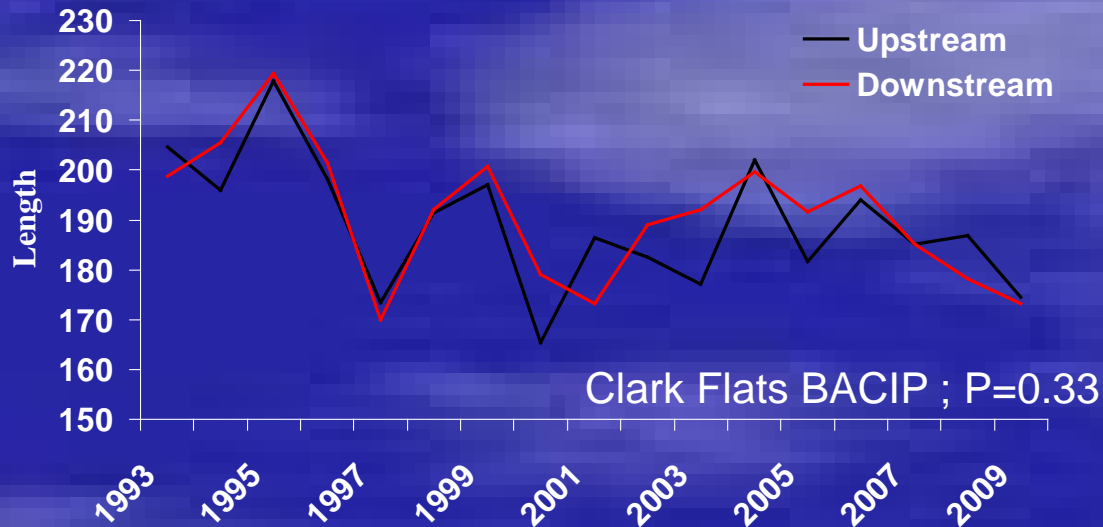
- 3) Causation

Distribution



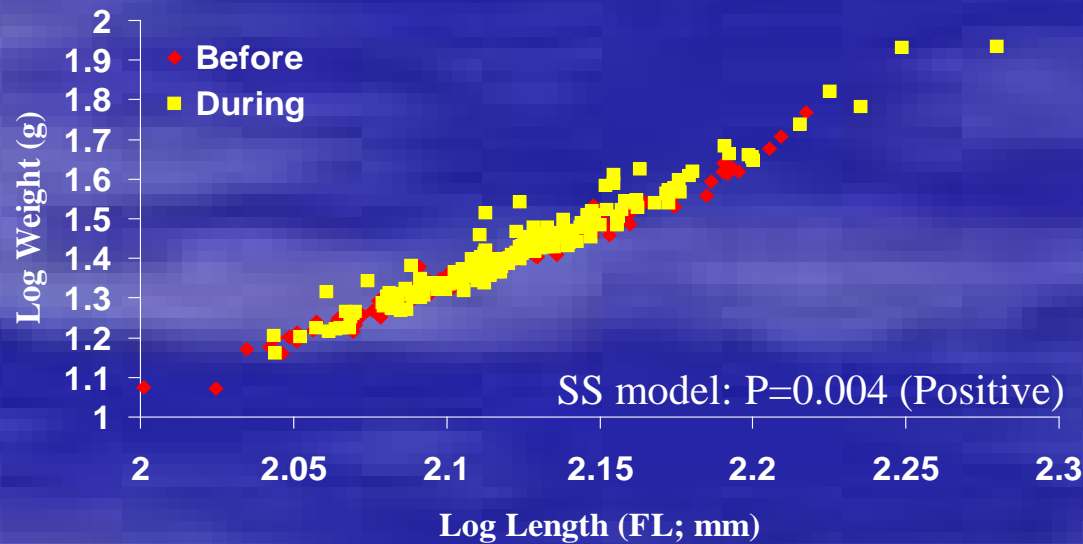
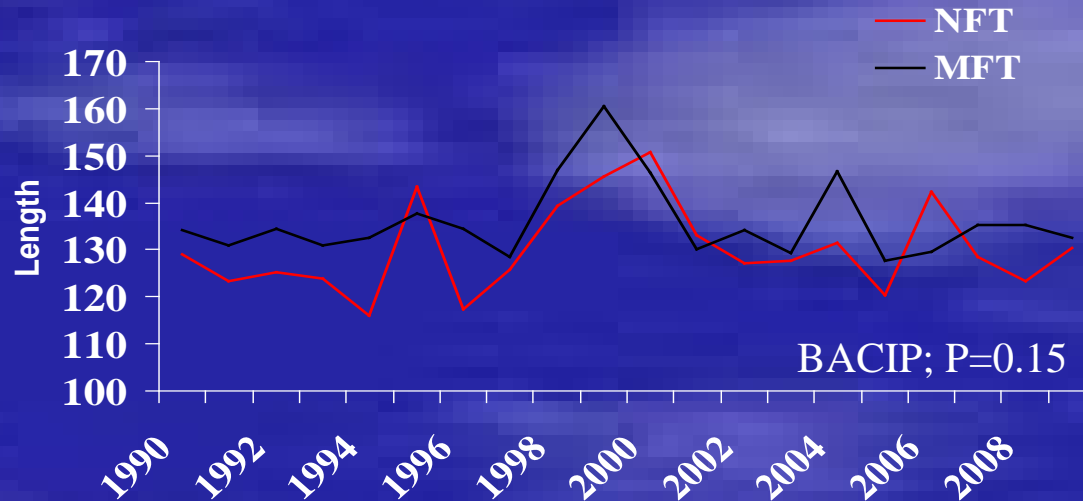


Mainstem *O. mykiss* Size



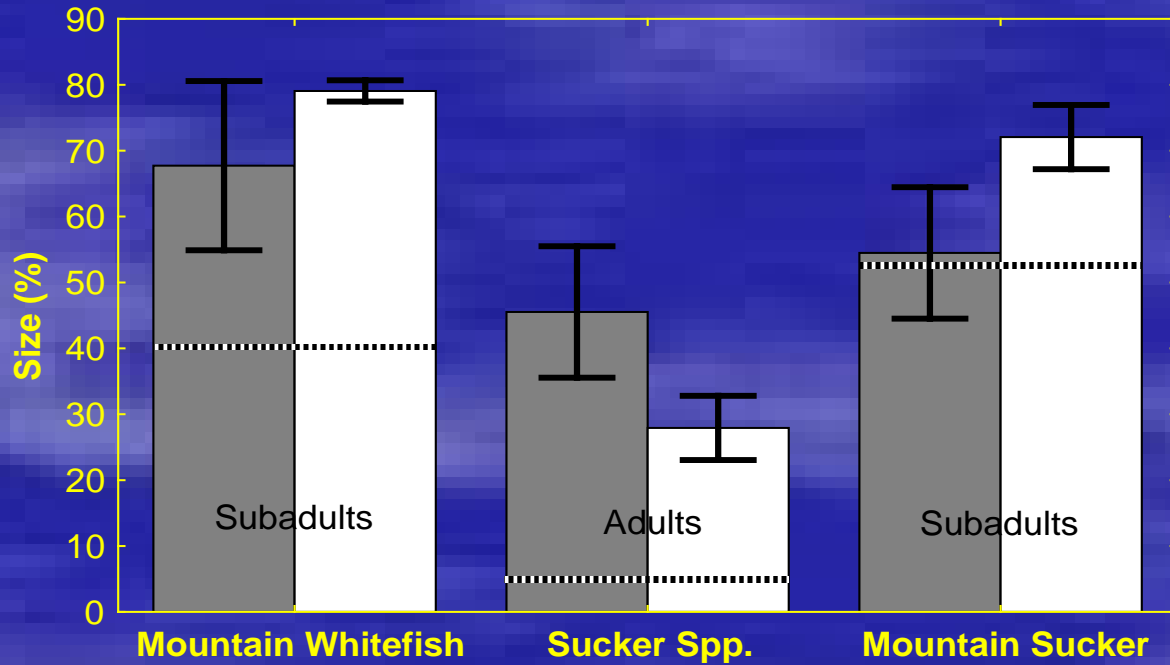
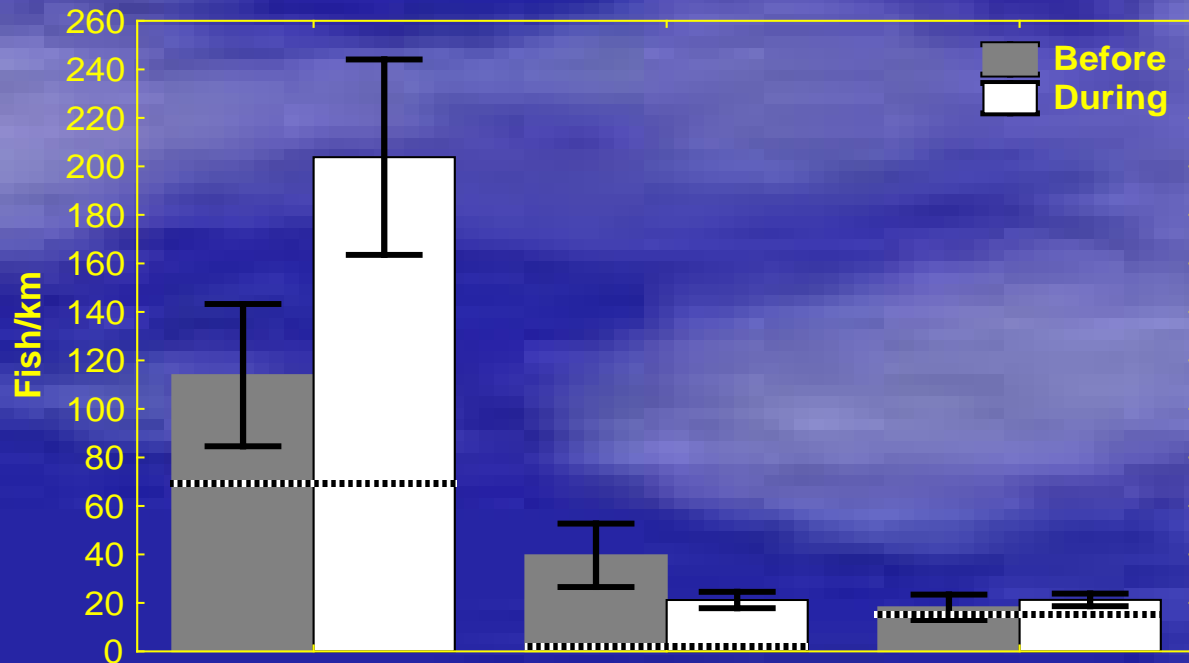
(*biomass BACIP; P=0.15)

Tributary *O. mykiss* Size



BACIP

- Decreased *O. mykiss* size not attributed to supplementation
- Abundance may be suppressed in the vicinity of a tributary hatchery release facility relative to reference streams (although we observed population level increases in abundance)
- Adaptive management (harvest regulation)



Summary

- Risk management monitoring of NTT is working as planned
- Currently monitoring the success of management action (harvest regulation)
- Developing refined methods to evaluate data gaps (remote sensing, PIT technology)

Lessons Learned

- Pre-implementation planning had bigger influence on ecological interactions than adaptive management monitoring (fine tuning)
- Sieve approach may not pick up changes of interest (e.g., Teanaway abundance)
- Value of reference sites/populations (NTT risk monitoring perspective)
- Adaptive monitoring as information becomes available (e.g., rare dispersed species-PAL, SND, LPD)
- Containment monitoring can support program from unfounded accusations (e.g., precocious males)