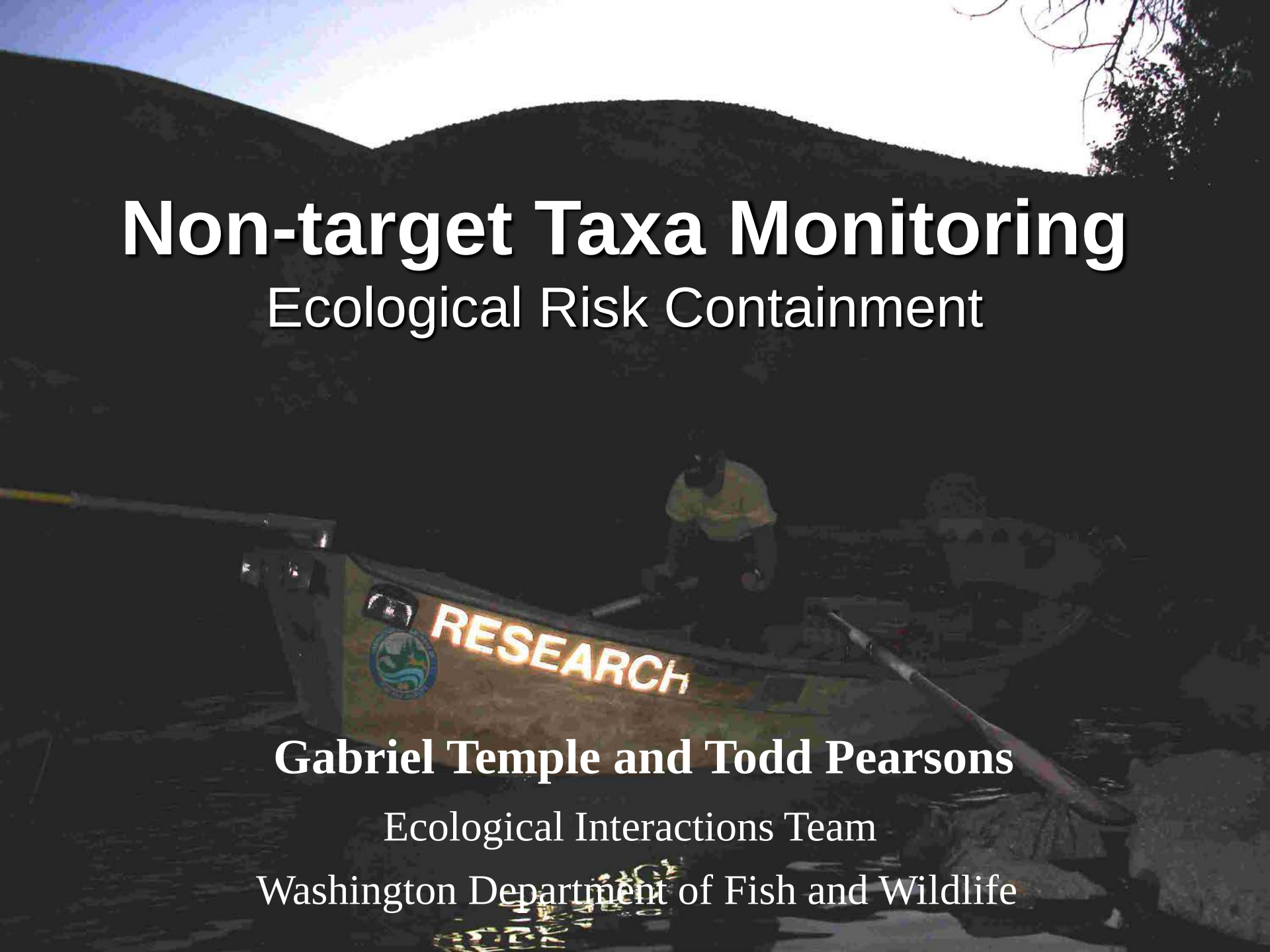
Non-target Taxa Monitoring

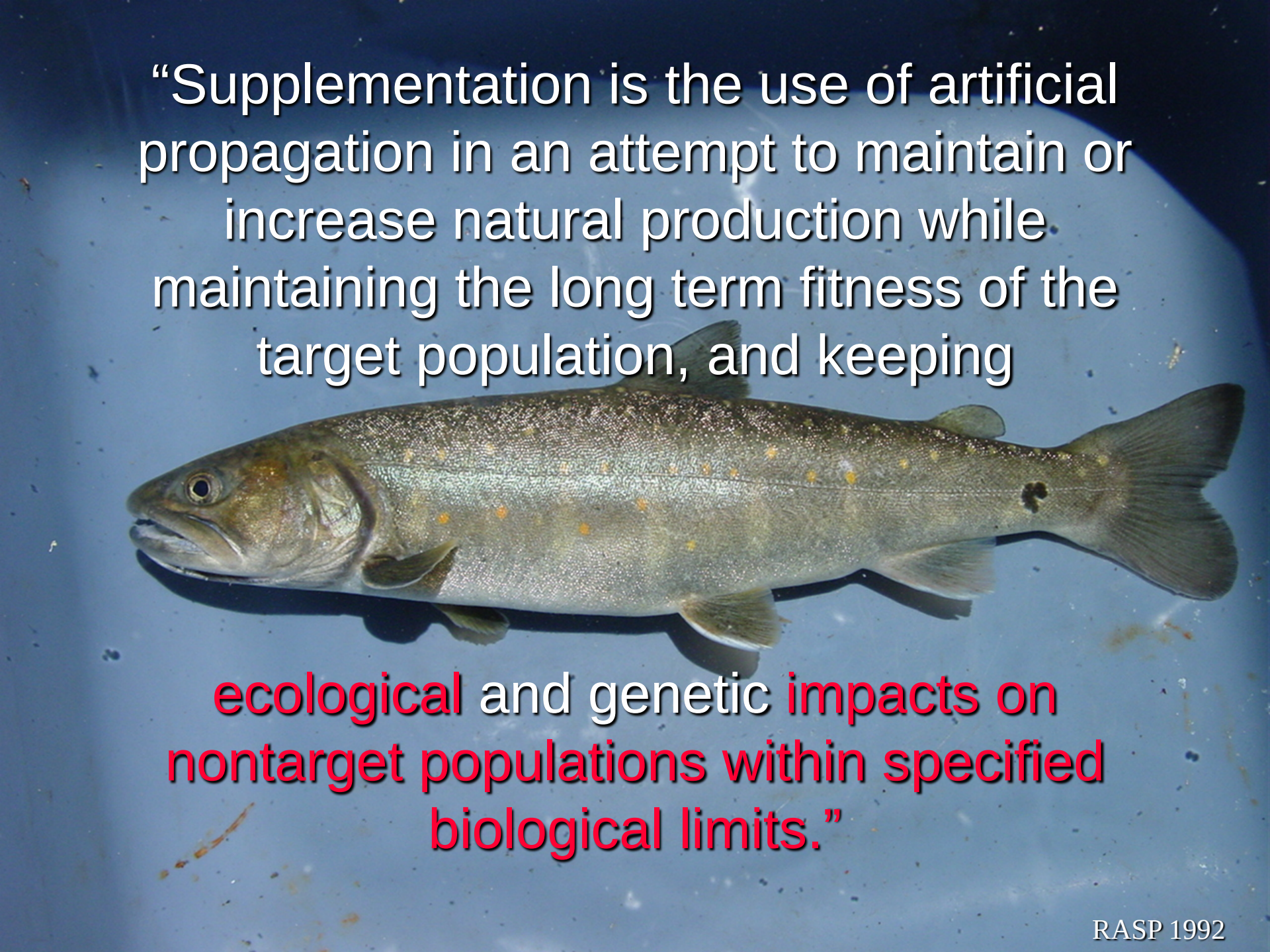
Ecological Risk Containment



Gabriel Temple and Todd Pearsons

Ecological Interactions Team

Washington Department of Fish and Wildlife


“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.”
RASP 1992

Containment Objectives

≤0%

≤5%

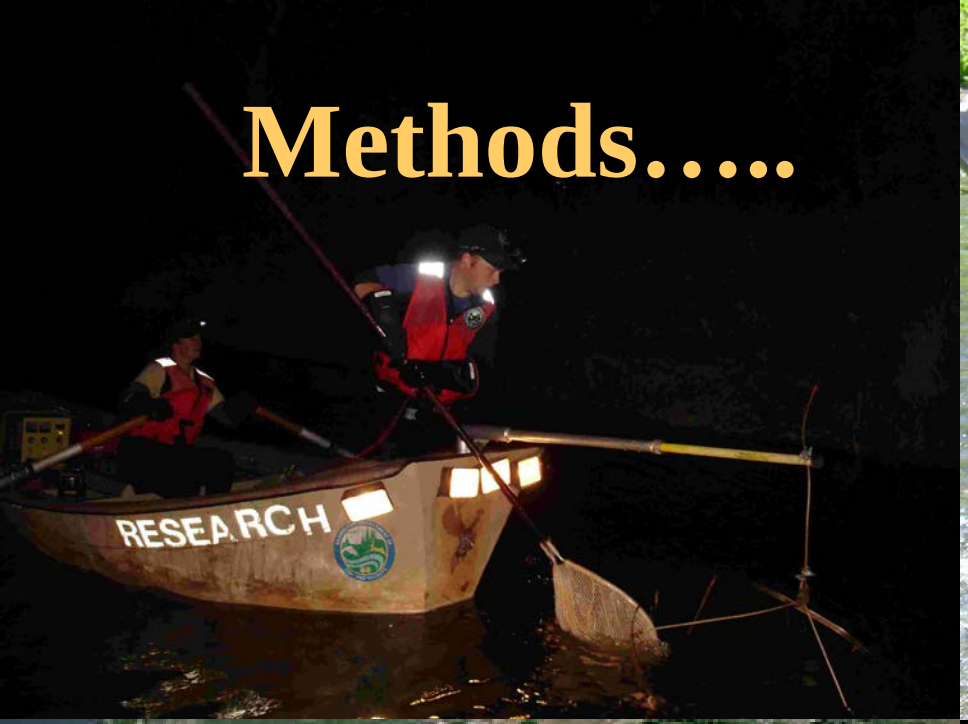
≤10%

≤40%

sustainability

Pearsons et al. 1998, BPA Report DOE/BP 64878-6

Methods…..



Special thanks: BPA, YN, and EIT staff

Results Through 2006

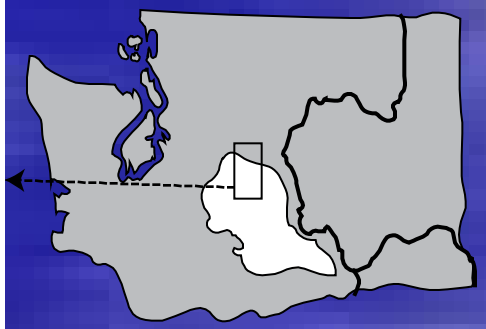
Status of most species remain within acceptable limits

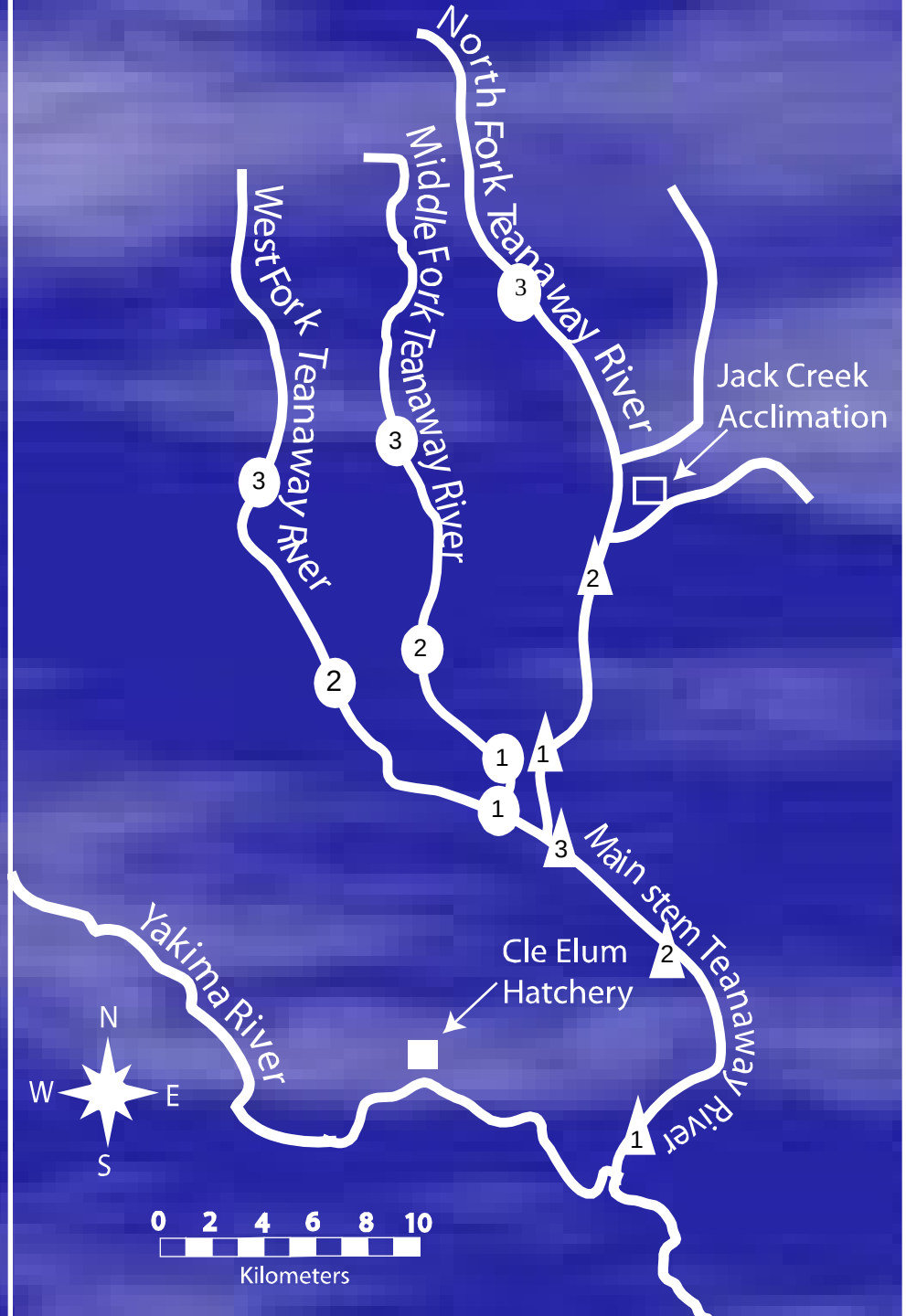
Notable Exceptions:

-Steelhead size index (main stem Yakima)

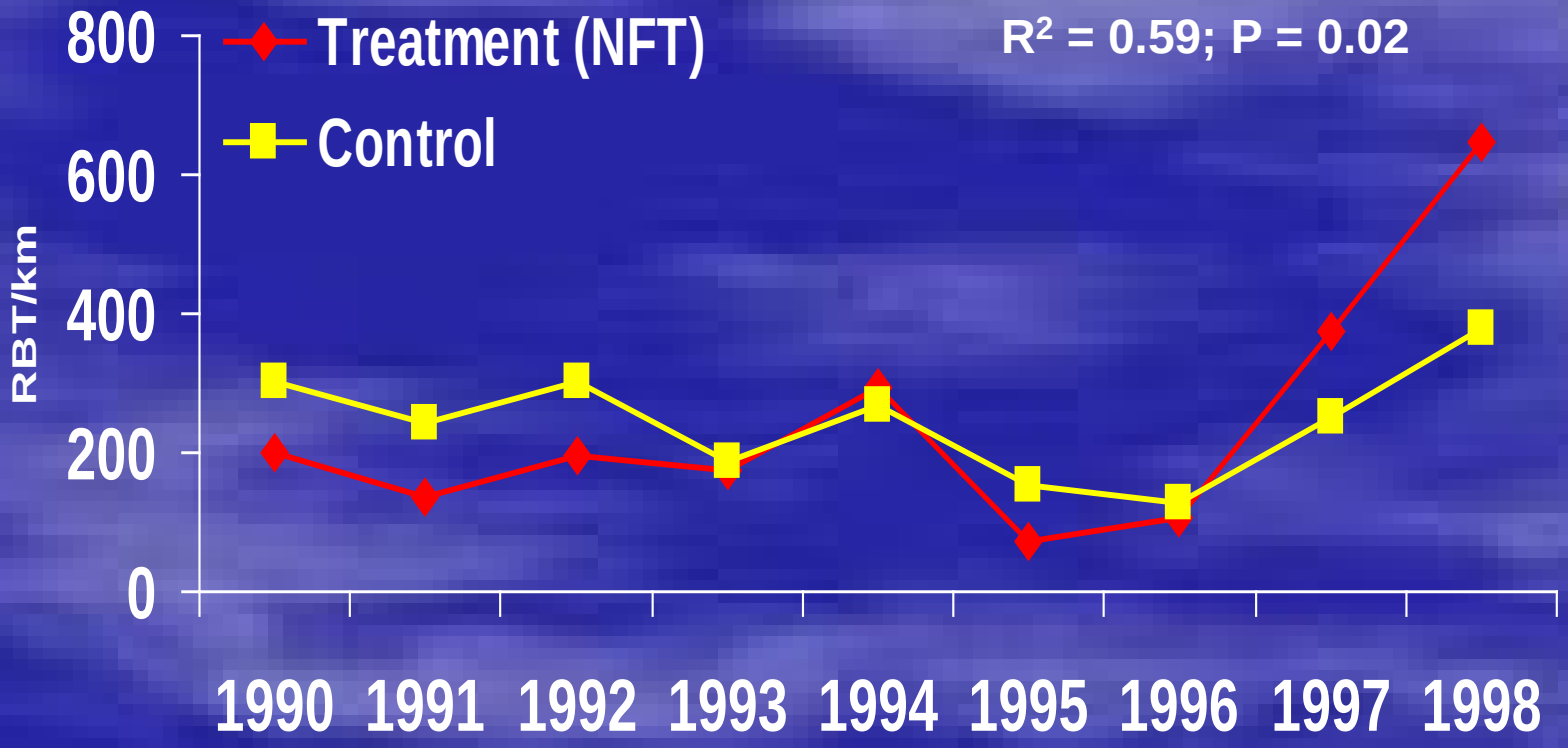
-Steelhead abundance index (tributary)

Teanaway Basin BACIP Sites



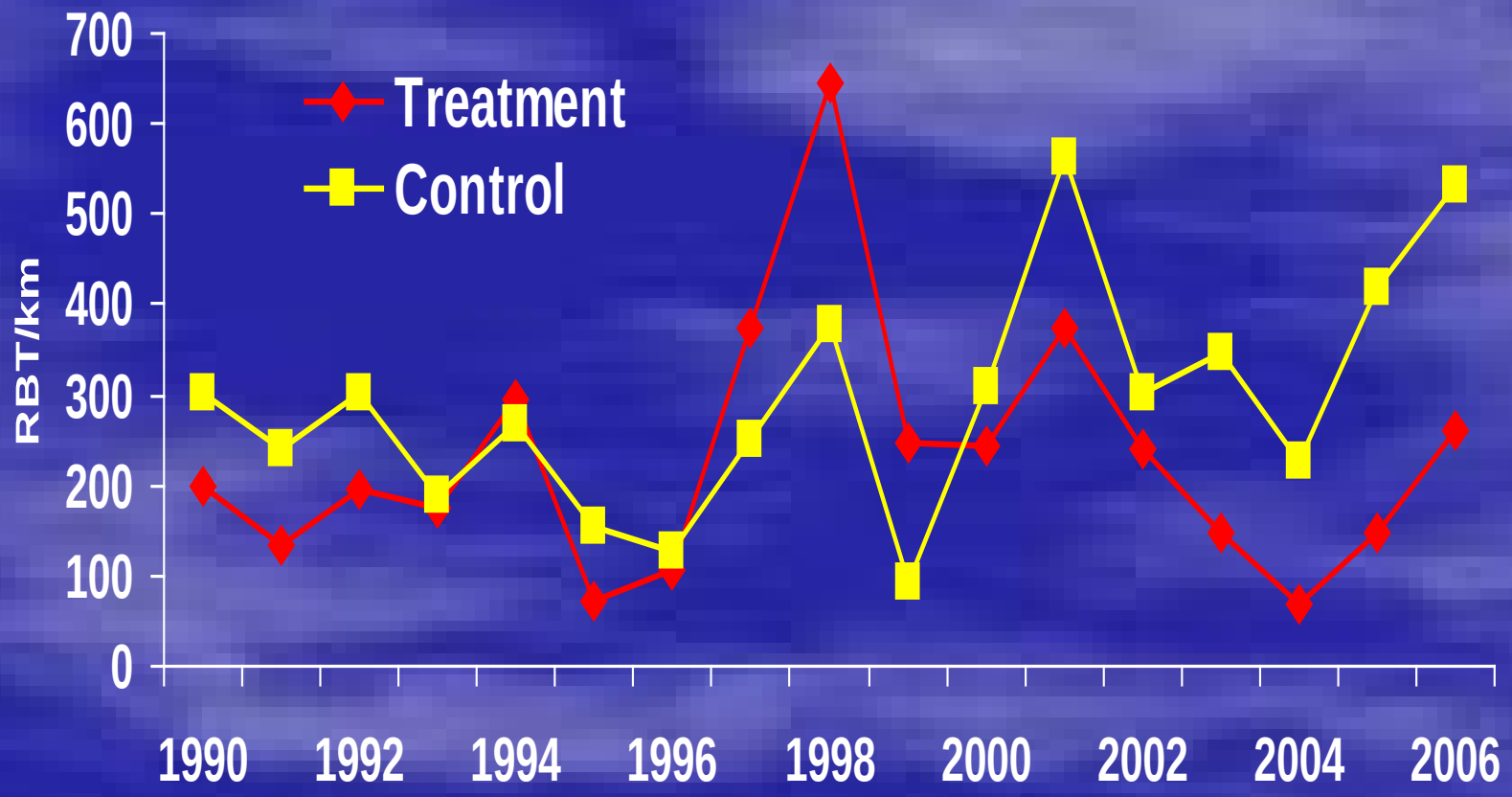


Baseline Validation of Control Sites

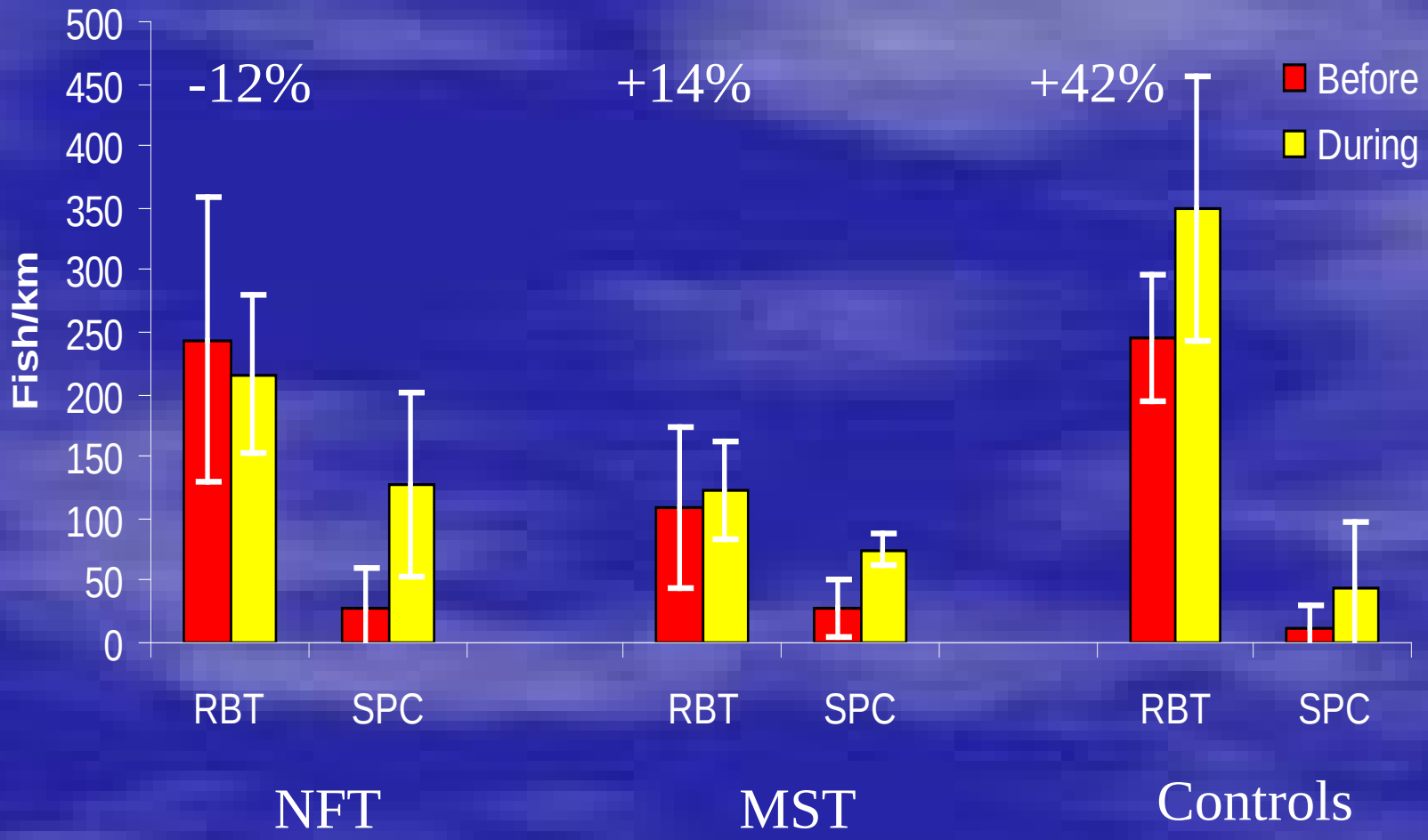


Additionally, Main stem Teanaway R^2 = 0.82; P = 0.03

RBT Abundance in NFT Treatment vs. Control sites



Rainbow Trout and Spring Chinook Abundance

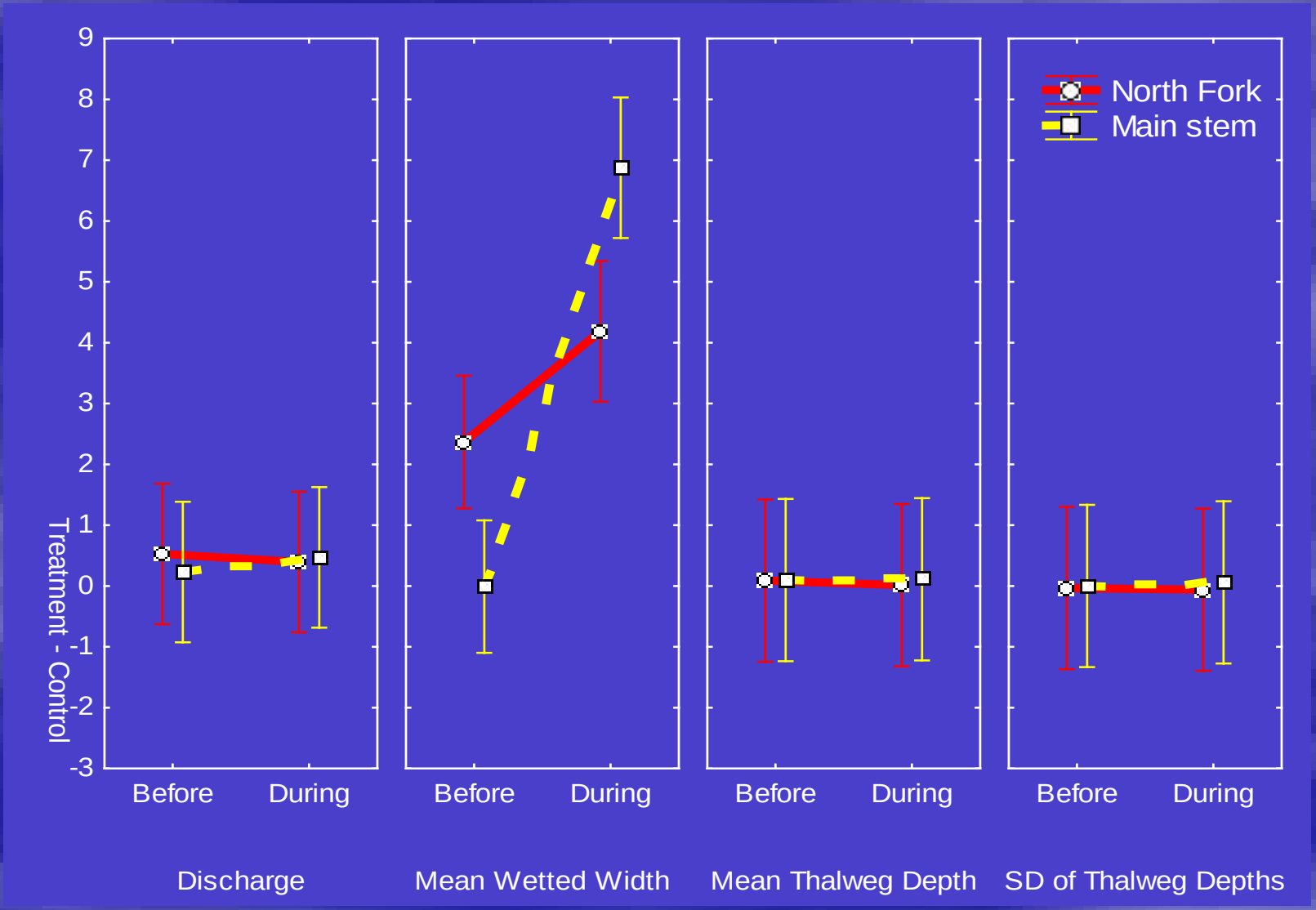


Hypotheses

- H1 Differential environmental effects
- H2 Differential angling effects
- H3 Supplementation activities



H1 – Environmental Differences



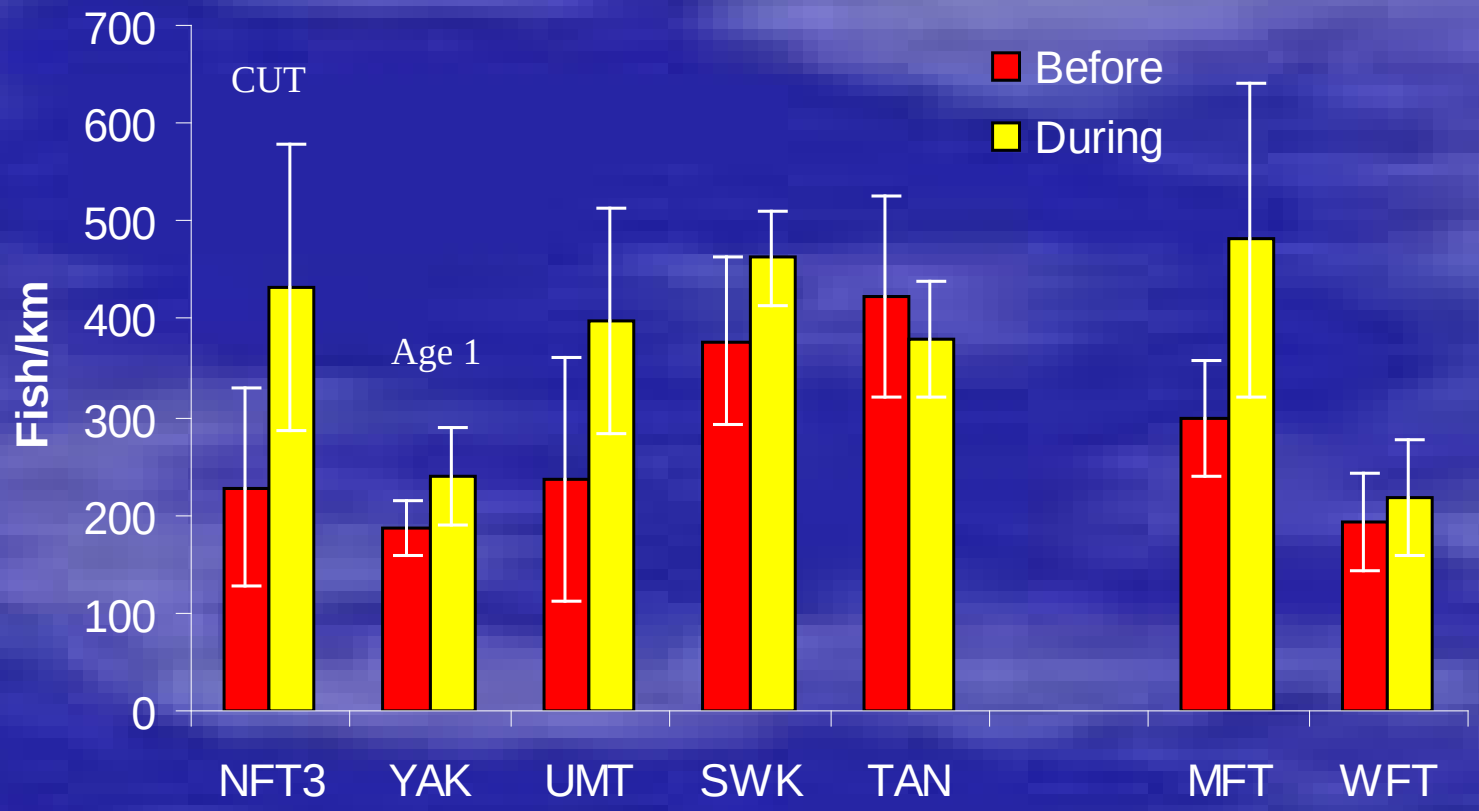
NFT 3 1996

NFT 3 2003

WFT 1
1996 (August)

WFT 1
2007 (June)

Large Scale Environmental Change

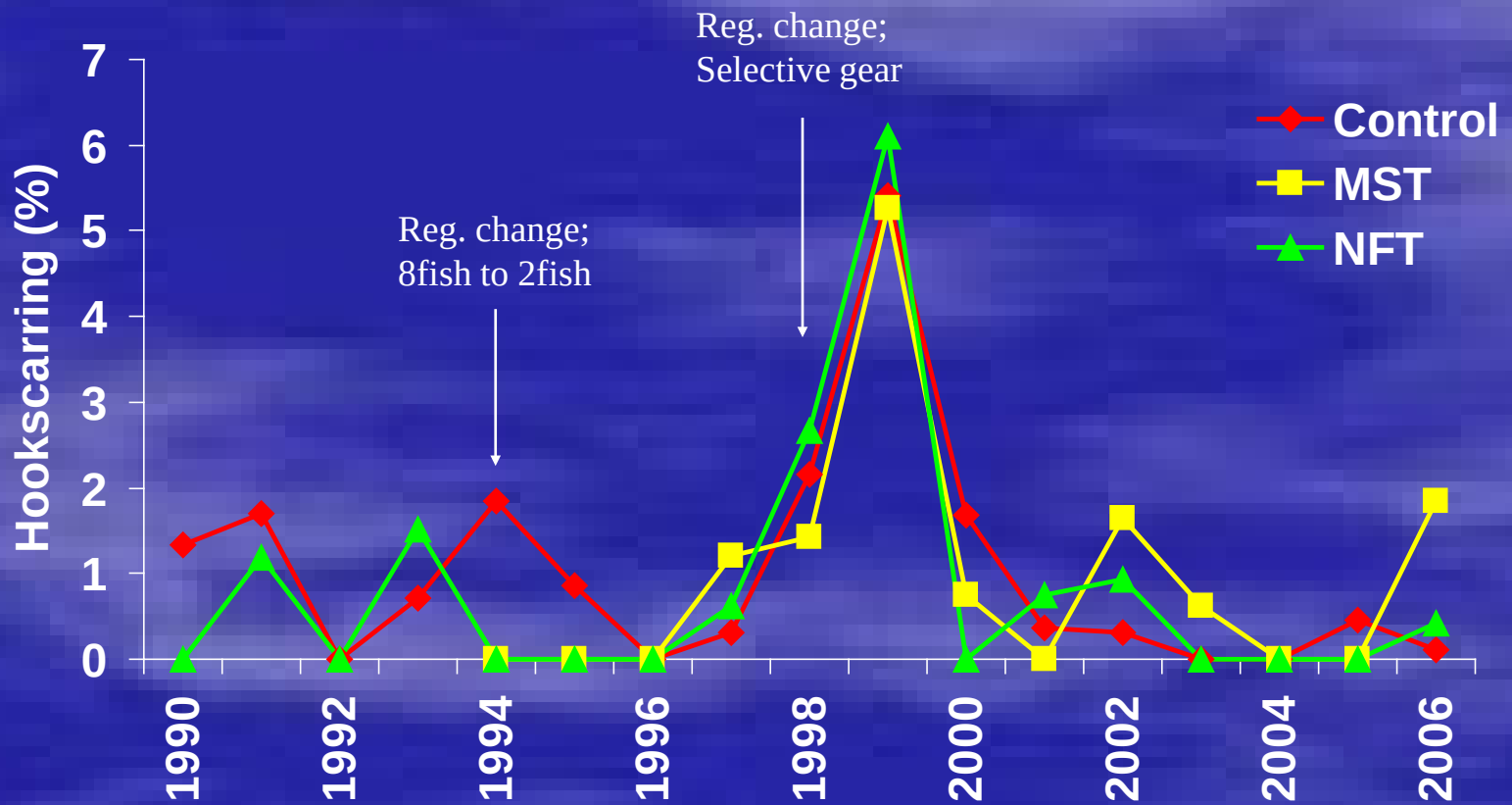


H2 - Differential Angling

- Is the decrease in abundance in treated areas (NFT) a result of differential angling pressure?

Photo thanks: ODFW

Index of Angling Pressure

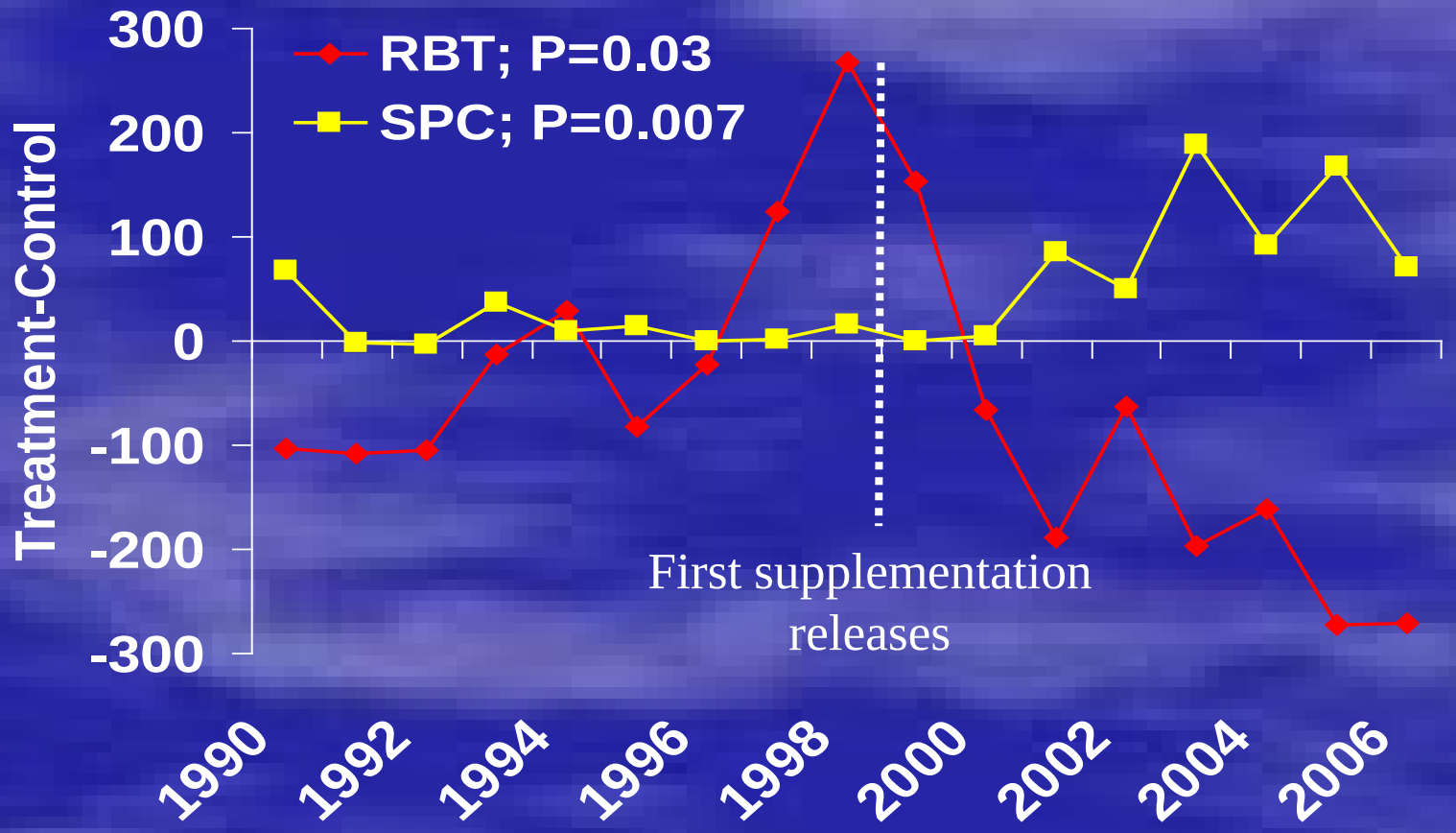


H3 - Supplementation

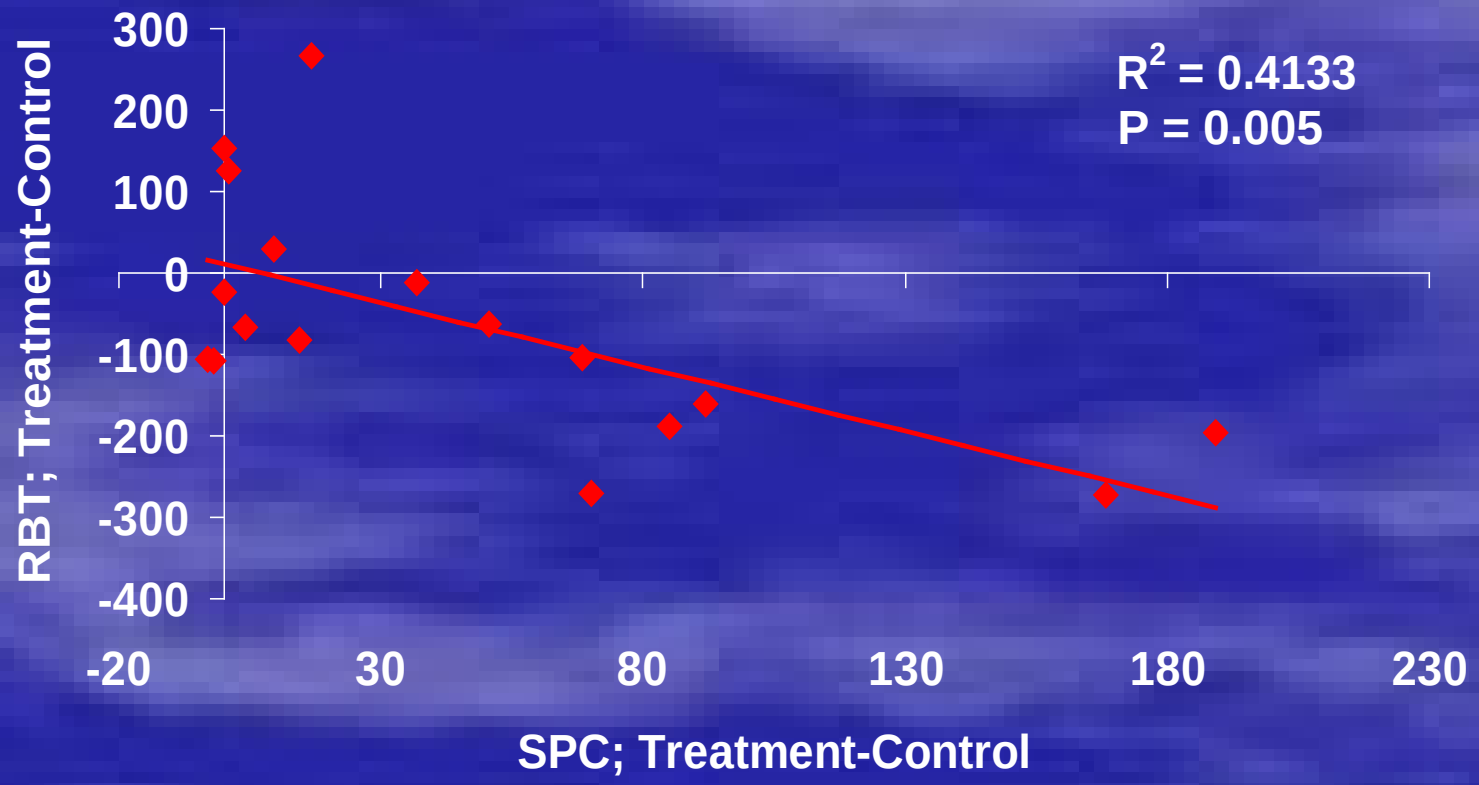
- Does an increase in the abundance of the target taxa negatively affect *O. mykiss* abundance?

Abundance Trends in North Fork Teanaway

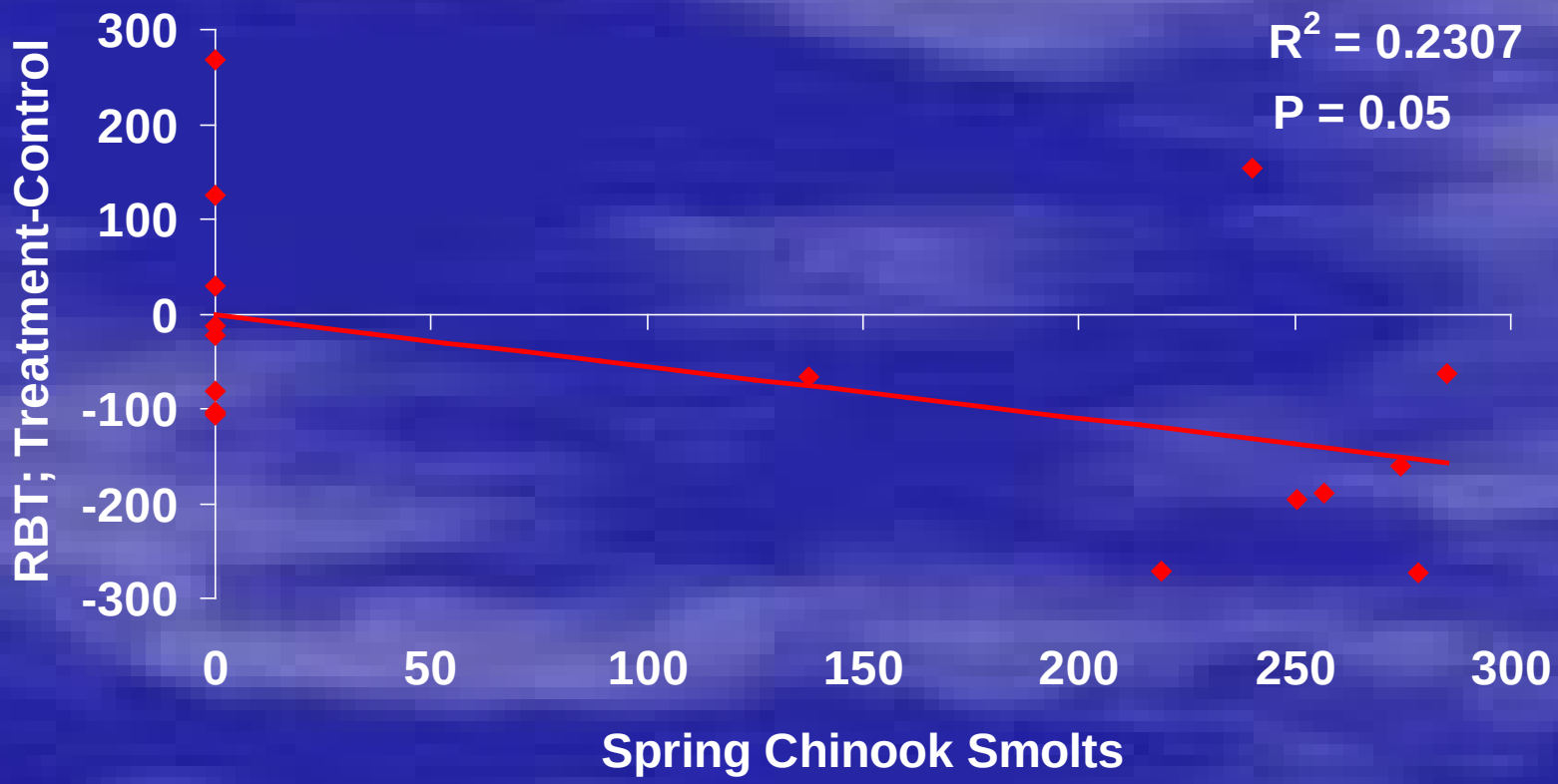
(relative to control sites)



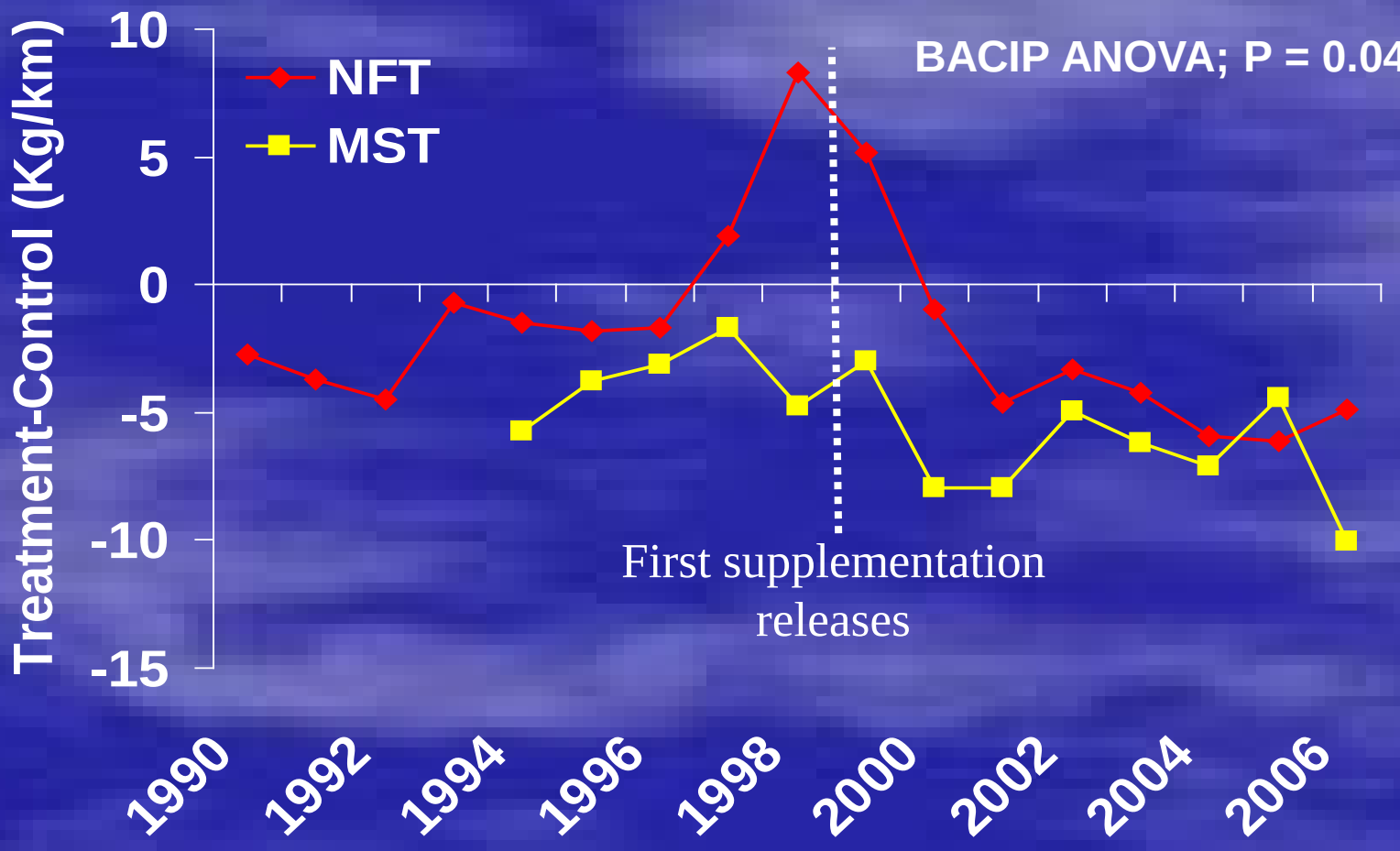
NP-SPC vs *O. mykiss* Abundance North Fork Teanaway



SPC Smolts vs RBT Abundance (NFT)



Total Combined Biomass (RBT+SPC)



Summary

- Containment objectives for steelhead in the NFT have been exceeded
- Combined rearing salmonid biomass has been reduced (efficiency)
- Management action should be considered to contain impact and facilitate recovery
- Collect data during summer 2007 (have another data point to see if the trend continues)

End