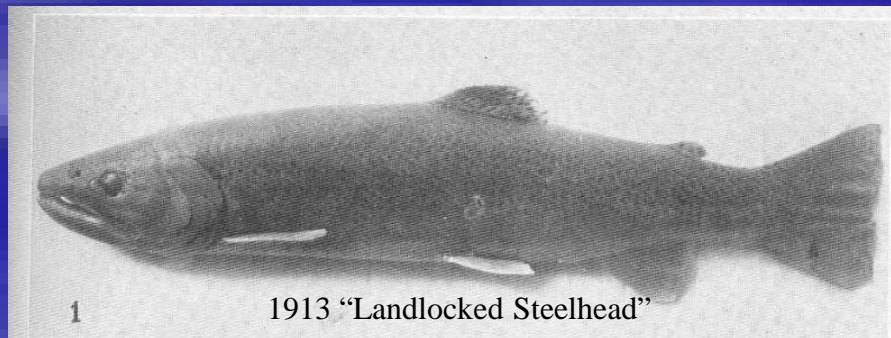


Yakima Steelhead VSP Project:

Resident/Anadromous Interactions

Gabriel M. Temple



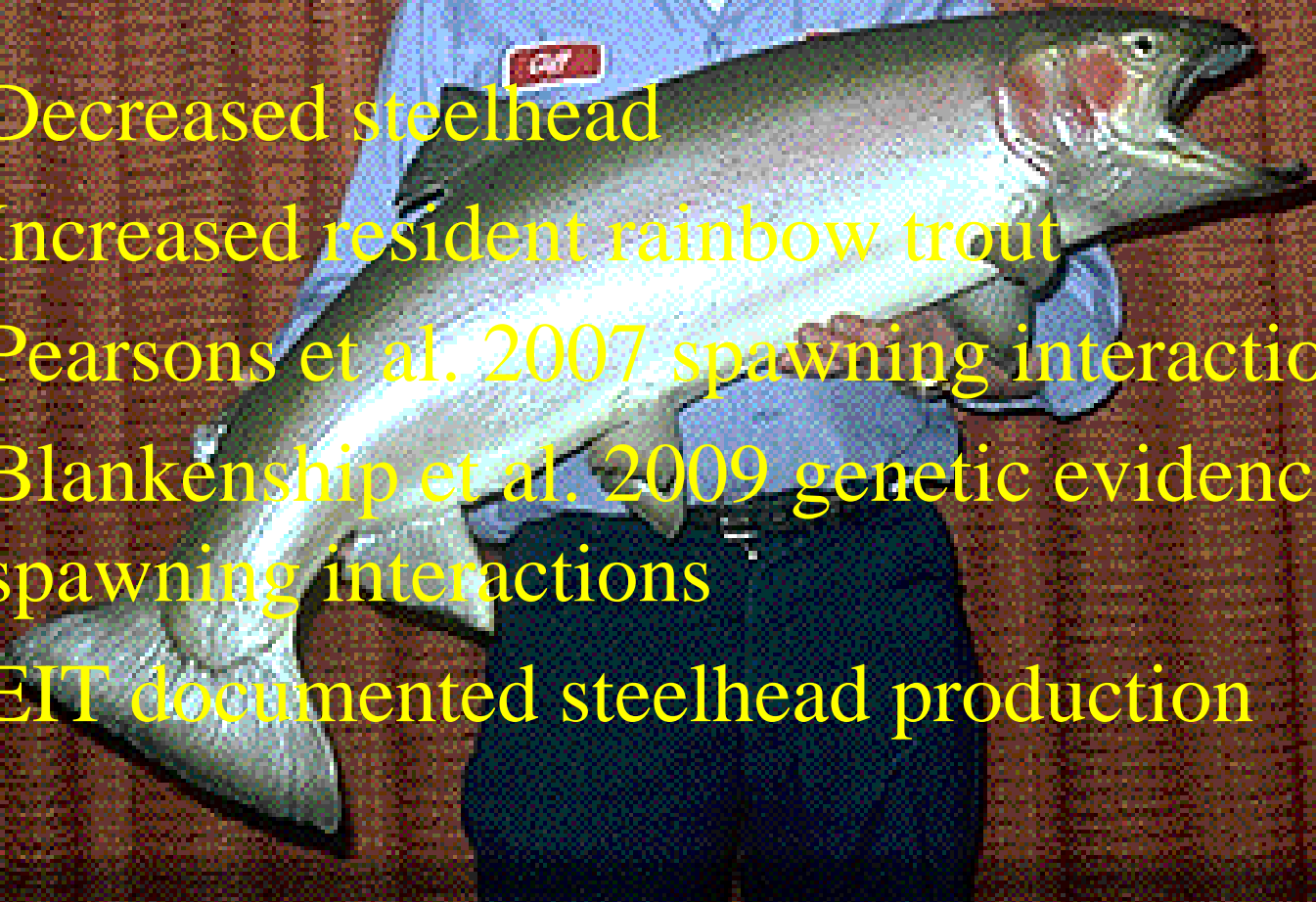
Resident Trout



Altered landscape and hatchery introgression (e.g. South Tacoma and Goldendale Hatcheries) probably contributed to a shift in life history expression of *O. Mykiss* in the Upper Yakima Basin favoring residency

Reality in the Yakima

- Decreased steelhead
- Increased resident rainbow trout
- Pearsons et al. 2007 spawning interactions
- Blankenship et al. 2009 genetic evidence of spawning interactions
- EIT documented steelhead production

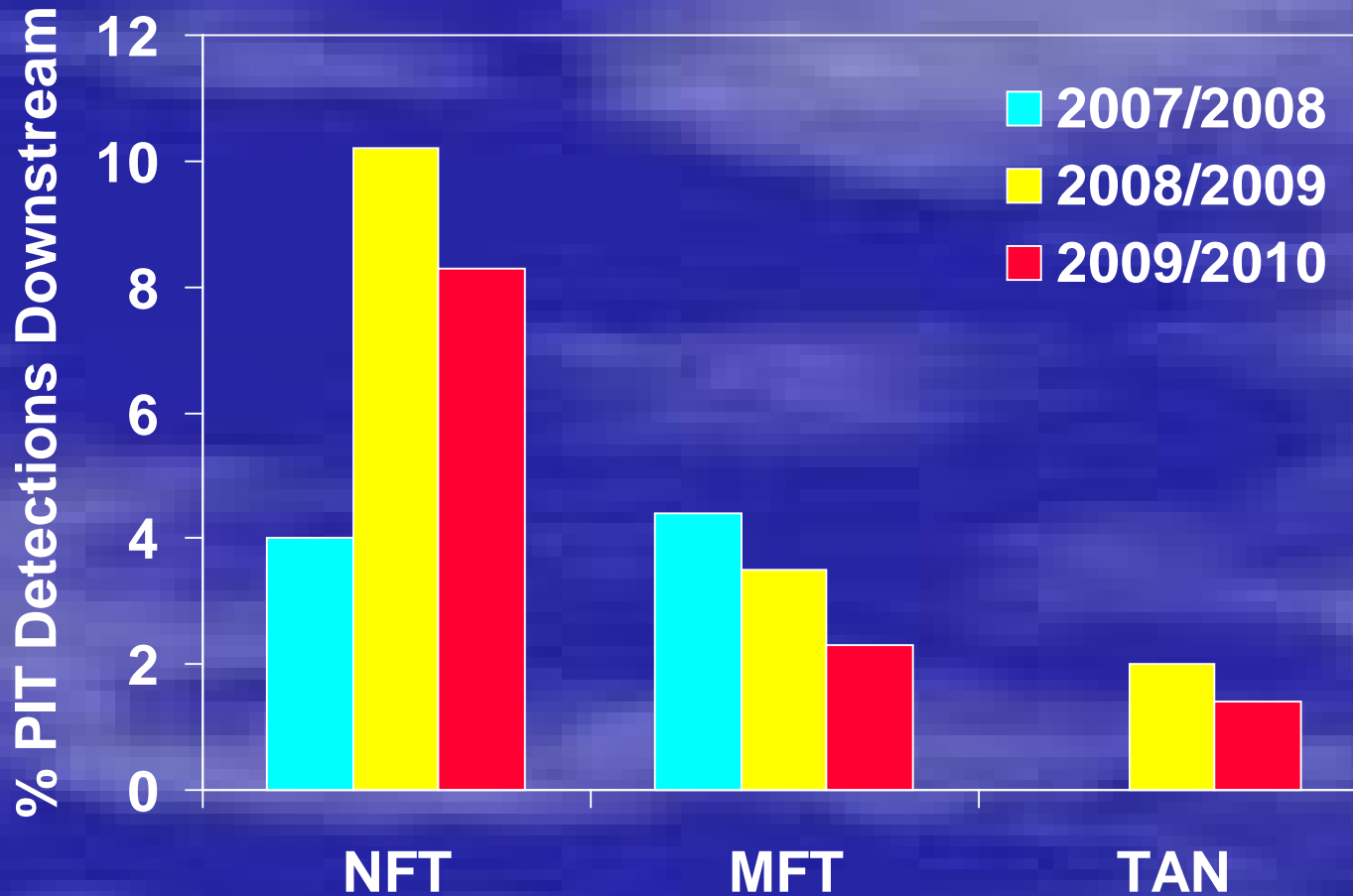


PIT Tags

- PIT tag growth studies
- North and Middle Fork Teanaway River
- Taneum Creek
- Tags were detected at Mainstem Dams and bird colonies

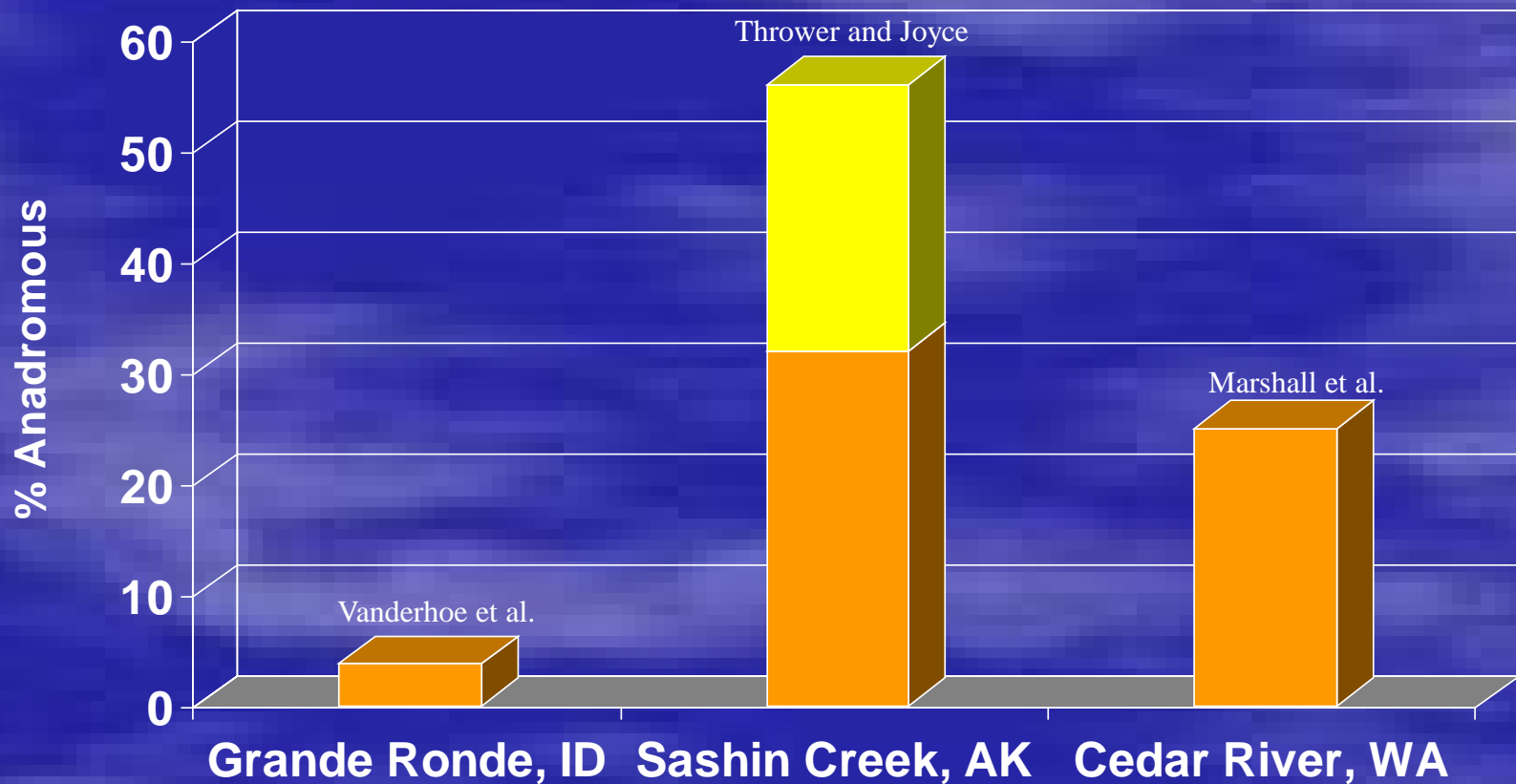


Anadromous Production



* Does not account for detection efficiency

Studies of Anadromous Production from Resident Parents



Why is this Important?

- Resident/anadromous interactions is a critical uncertainty identified in several recovery documents that could either facilitate or hinder steelhead recovery in the Yakima (e.g. Mid-C and Yakima Basin steelhead recovery plans, WDFW steelhead management plan, etc.)
- Facilitate- If resident fish parents contribute substantially to steelhead production
- Hinder- If resident/anadromous interaction reduces the proportion of migrants
- Bottom line-We just do not know

R/A component-VSP Project

- Determine how the interplay of life history forms will affect steelhead recovery efforts
- ISAB (2005) recommends the interaction between life history forms should certainly be considered in Population Viability Analysis
- Address this critical uncertainty

Ground Work

- Install Fixed PIT Tag Interrogation Sites
 - (adults in-juveniles out)
- Expand PIT tagging (10,000 *O. mykiss* in upper Yakima Tributaries and Main stem)
- Collecting bio-data on tagged juveniles
- Monitor migrants; sample the residents

R X R Production

- Install PIT tag interrogation system upstream from anadromous barriers
- PIT tag 1000 “landlocked steelhead”
- Monitor the Migrants
- Determine the rate of smolt production from RXR crosses in main stem and tributary areas
 - *Do it now somewhere like Manastash to facilitate habitat effectiveness monitoring of future actions (e.g. recolonization and increased anadromous production from increasing steelhead spawners)
 - *appears to have met funding resistance

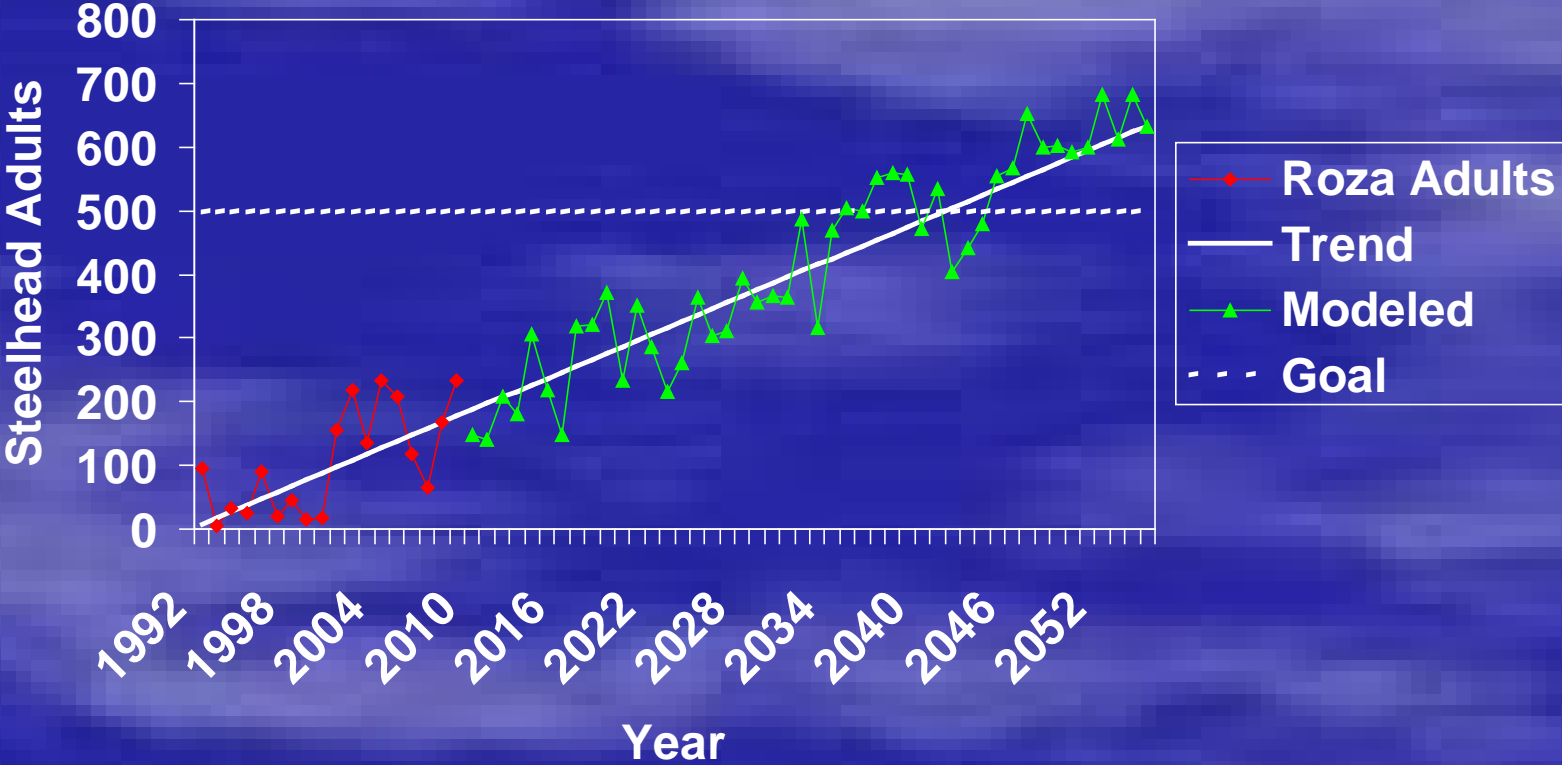
Today's Objective

- Get feed back on our Resident / Anadromous Work Plan

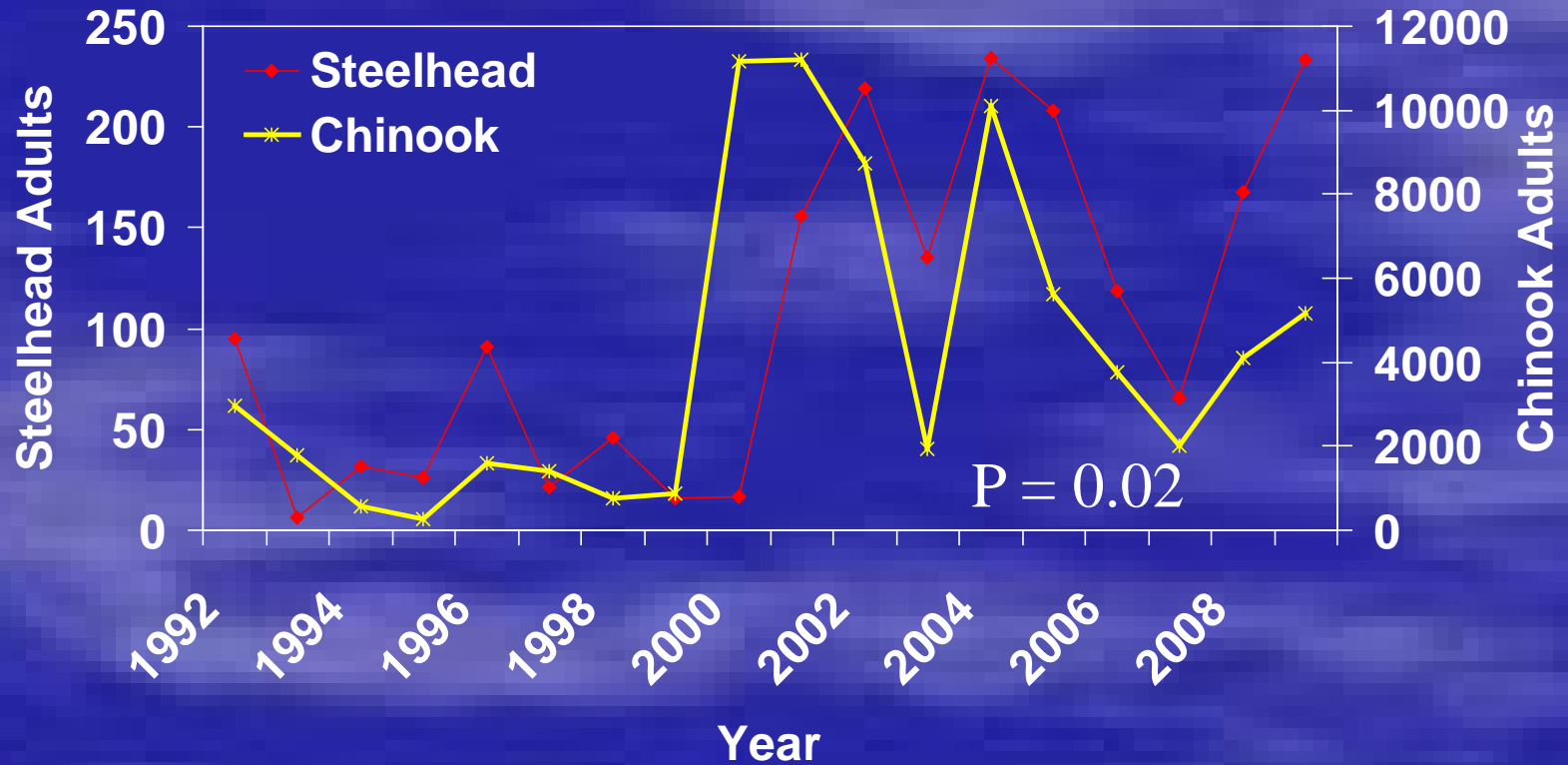
Study Objective

- Identify survival bottlenecks
- Identify steelhead strongholds
- Prioritize future actions

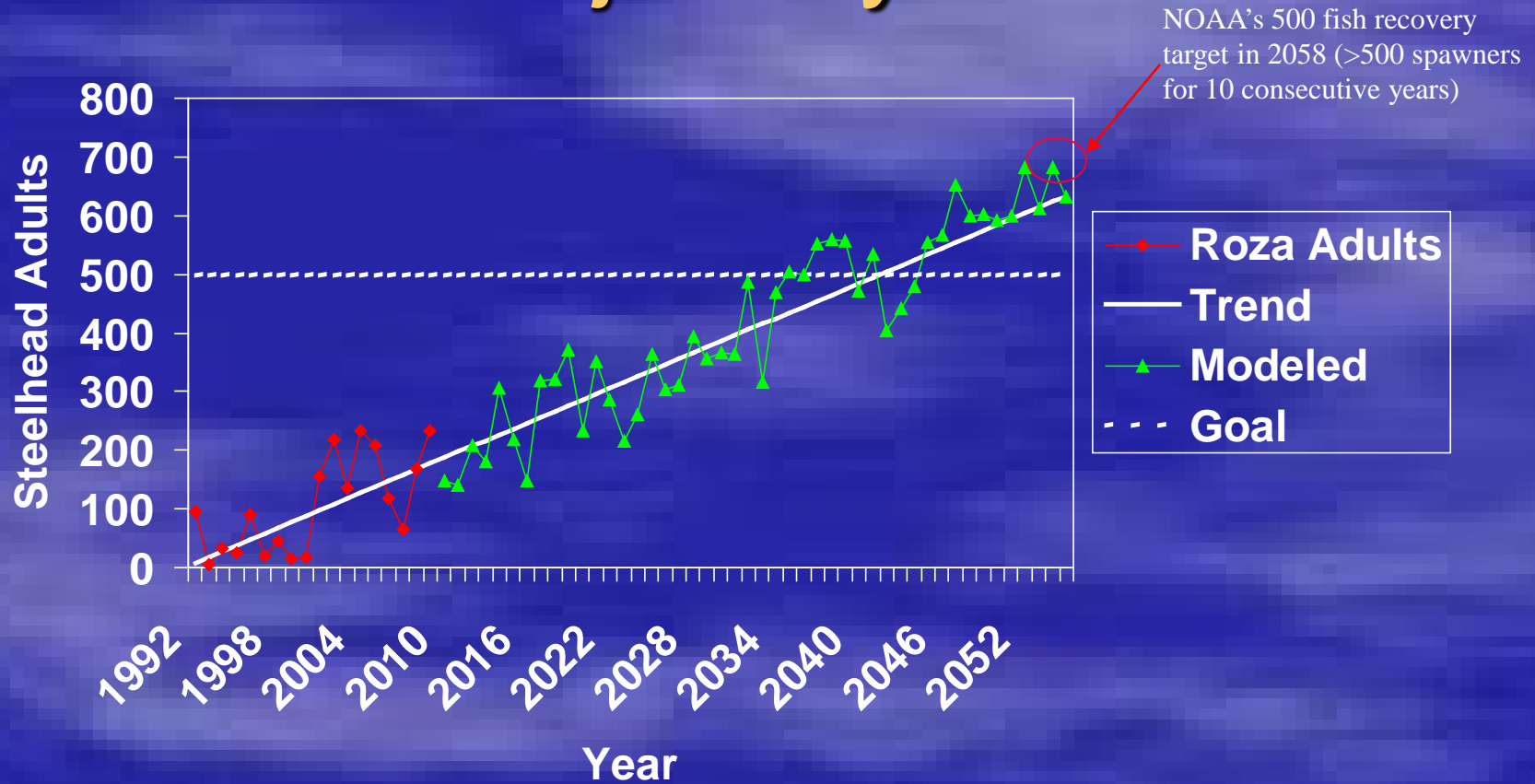
Hypothetical Recovery Trajectory



Hypothetical Recovery Trajectory



Hypothetical Recovery Trajectory



People Love Steelhead

Well, at least Washingtonians do because:



- **RCW 1.20.045 State fish. Adopted by the Legislature on March 18, 1969**

“The species of trout commonly called ‘steelhead trout’ (*Salmo gairdnerii*) is hereby designated as the official fish of the state of Washington.”

- [1969 c 36 § 1.]