

Steelhead Kelt Reconditioning Program Update

Presented by:

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Acknowledgements:

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Prosser Hatchery Crew

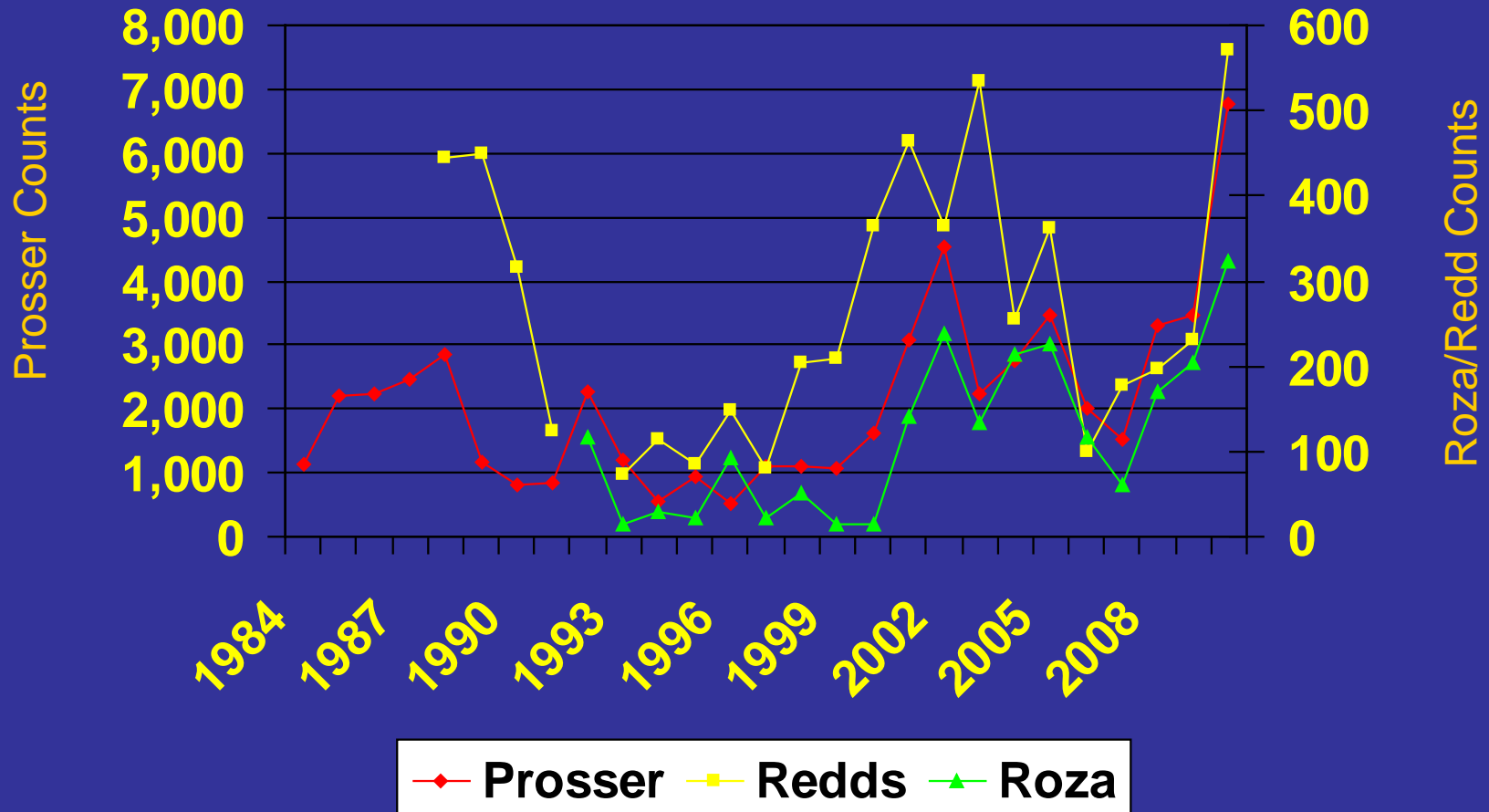
Columbia River Inter-Tribal Fish
Commission

Bonneville Power Administration

Pacific States Marine Fisheries
Commission

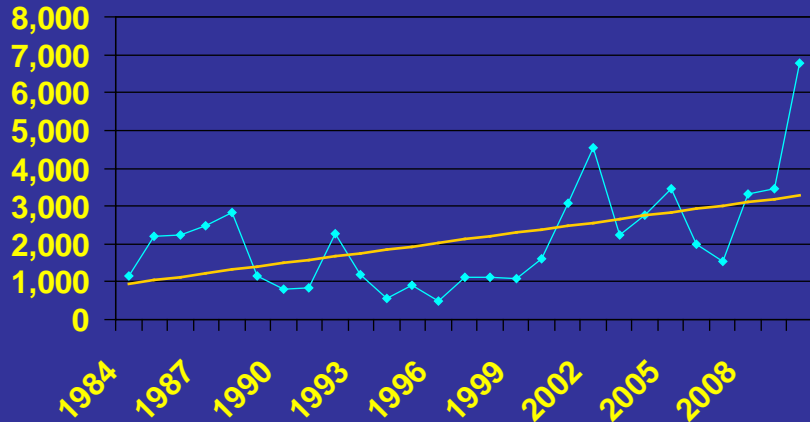


Yakima Steelhead Escapement Trends, 1984 – Present

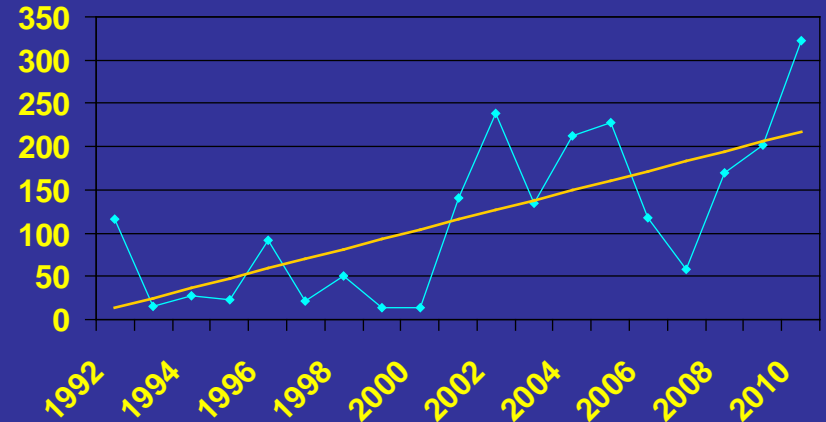


Yakima Steelhead Abundance Trends

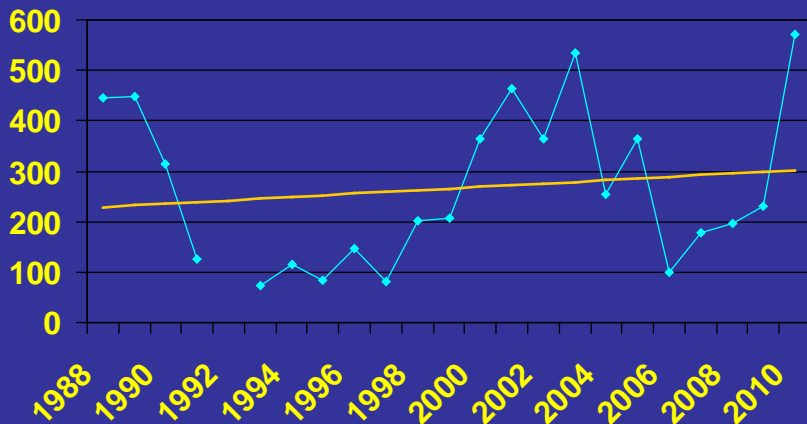
Prosser Adult Abundance



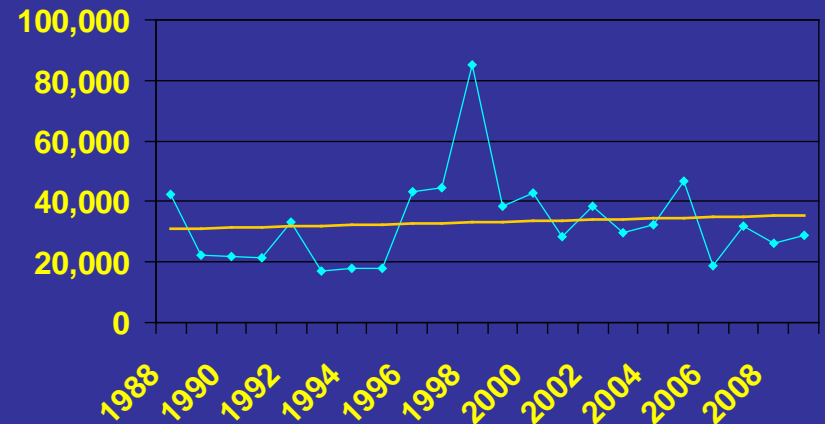
Roza Adult Abundance



Redd Abundance

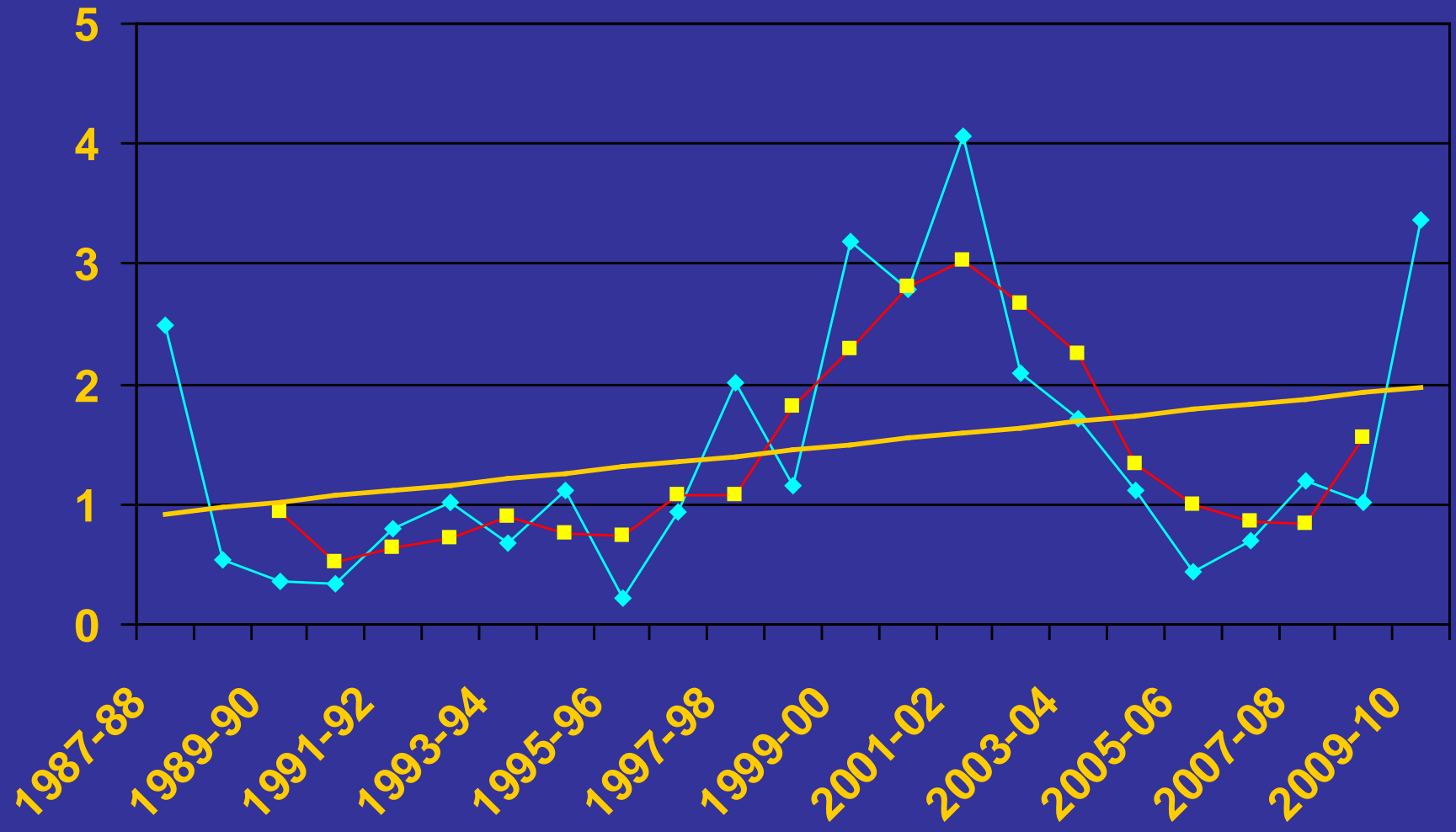


Natural Smolt Abundance Estimates



Yakima Steelhead Adult-Adult Productivity Trend

('gross' estimate of age-4 recruits per age-4 spawner)

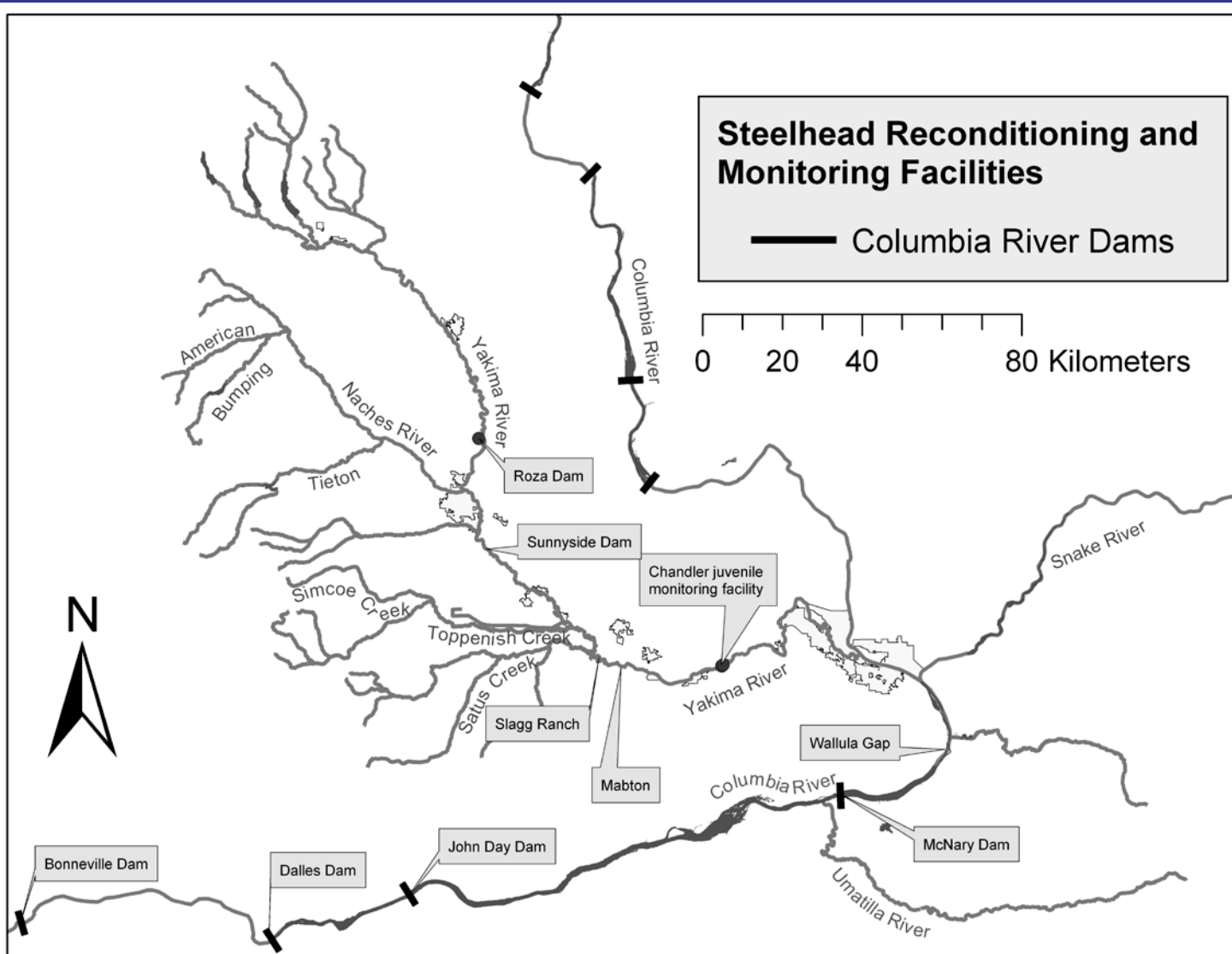


◆ Point ■ Smoothed — Linear (Point)

Can Kelt Reconditioning be used to increase abundance and productivity?

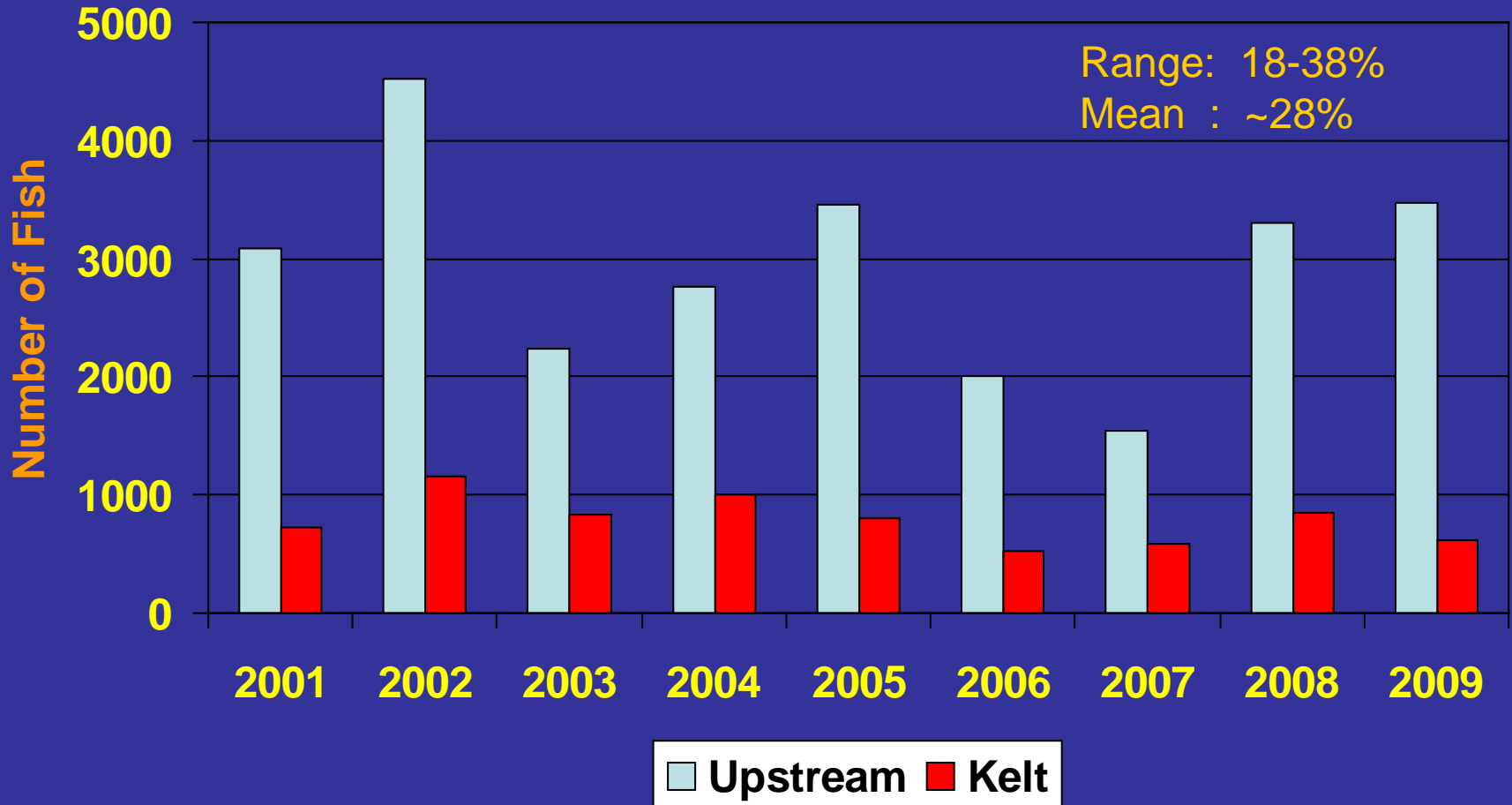


Management Scenarios

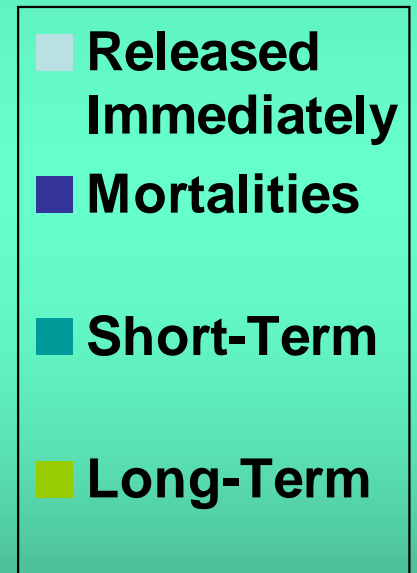
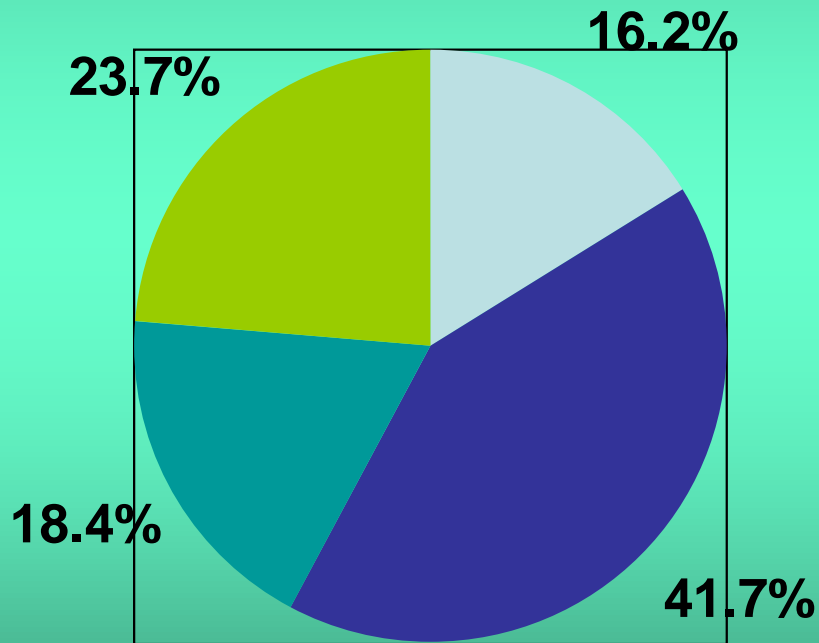


1. Direct Release
2. No-Term
3. Short-Term
4. Long-Term

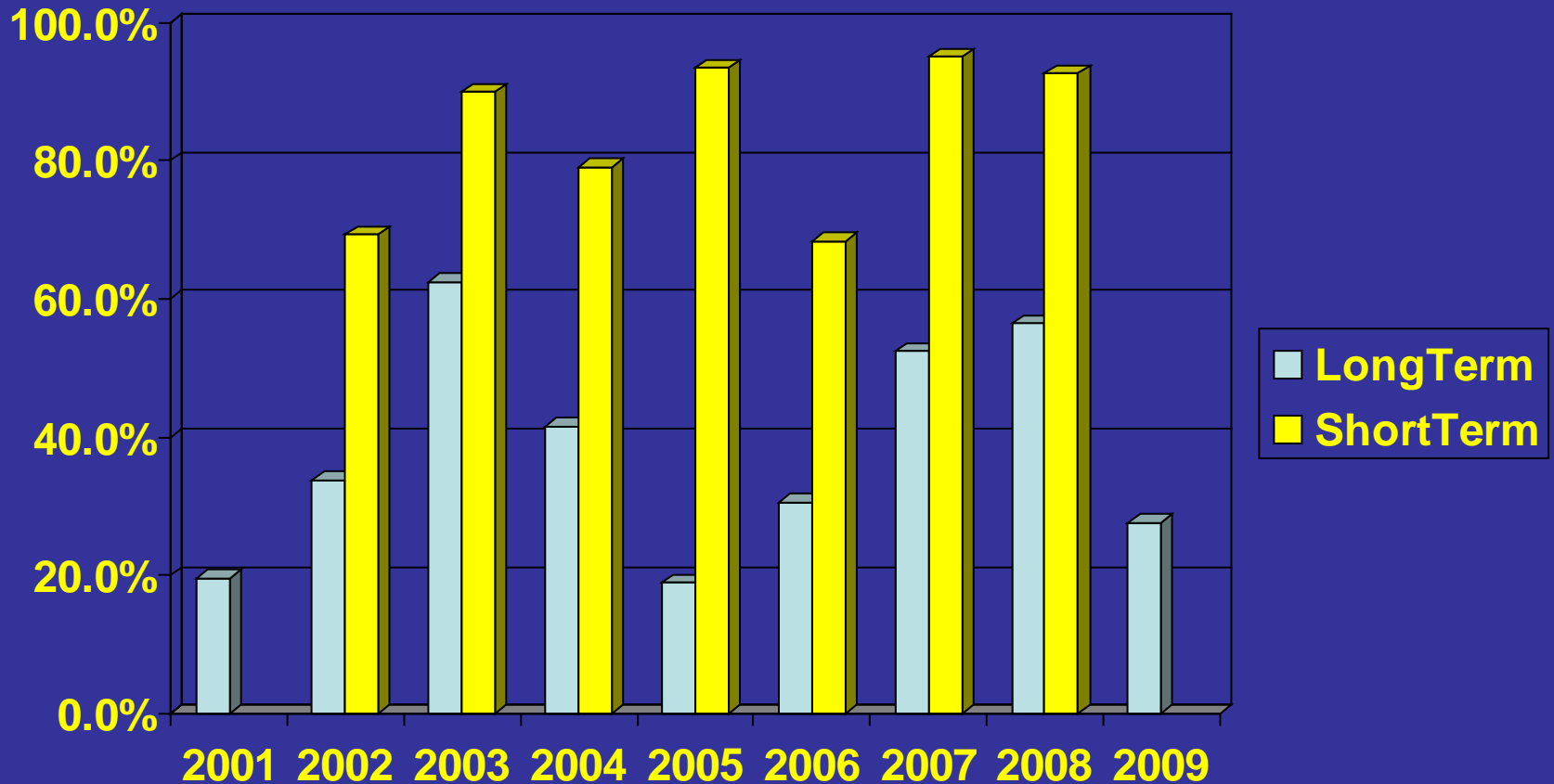
Chandler Kelt Collection, 2001-09



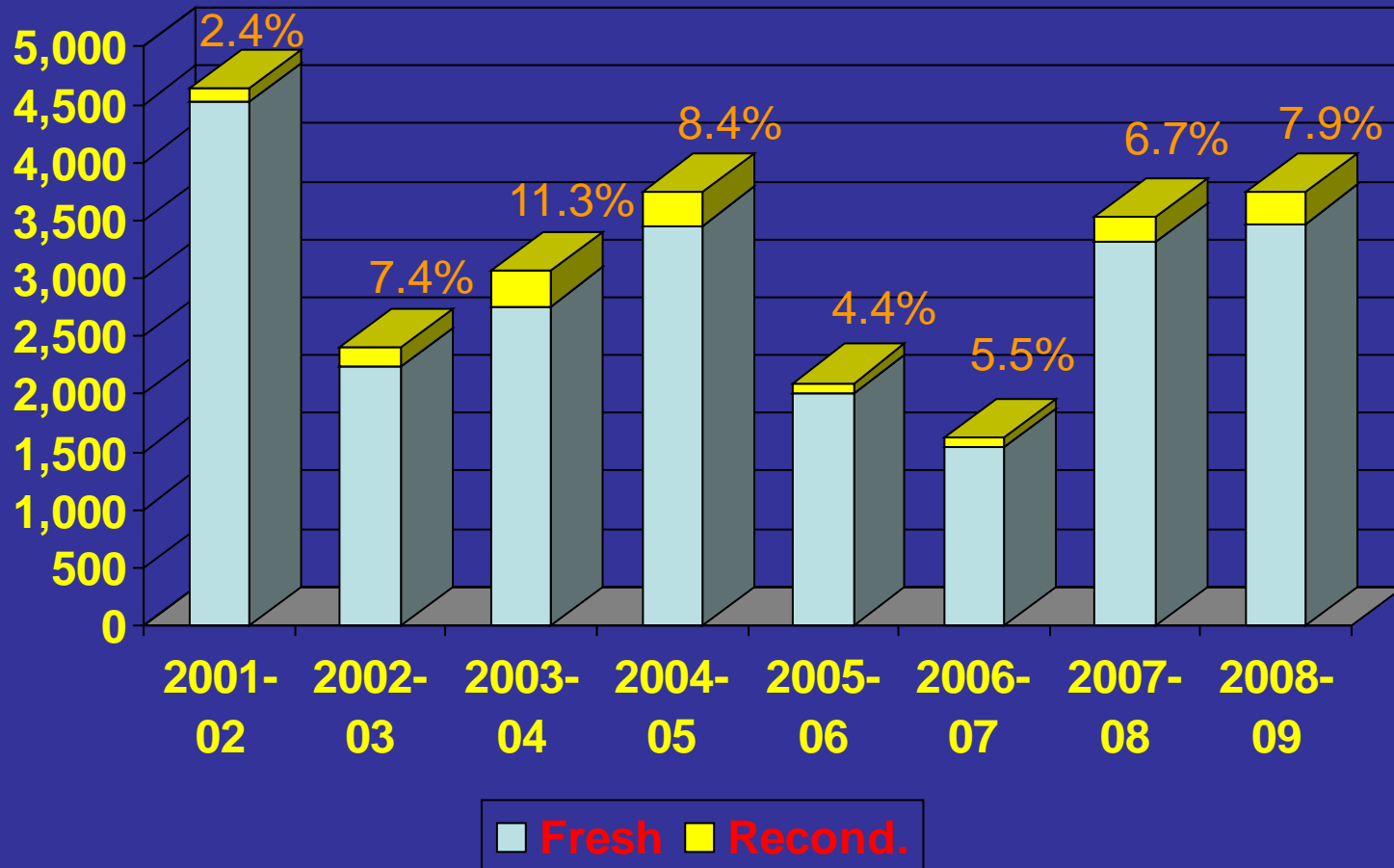
Kelt Disposition, 2001-09



Short- and Long-Term Survival of Reconditioned Kelts to Release

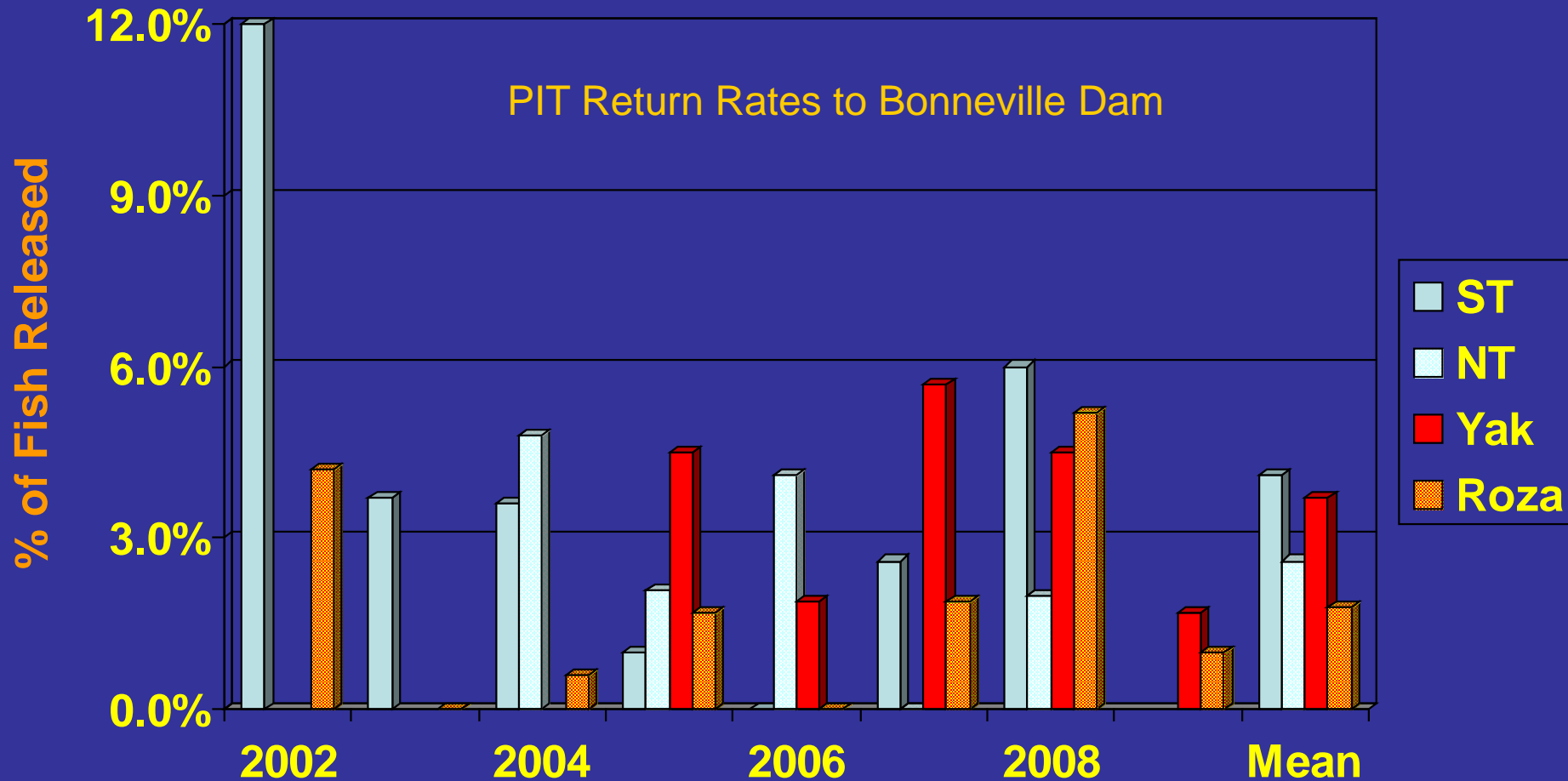


Yakima R. Steelhead Escapement with Reconditioning

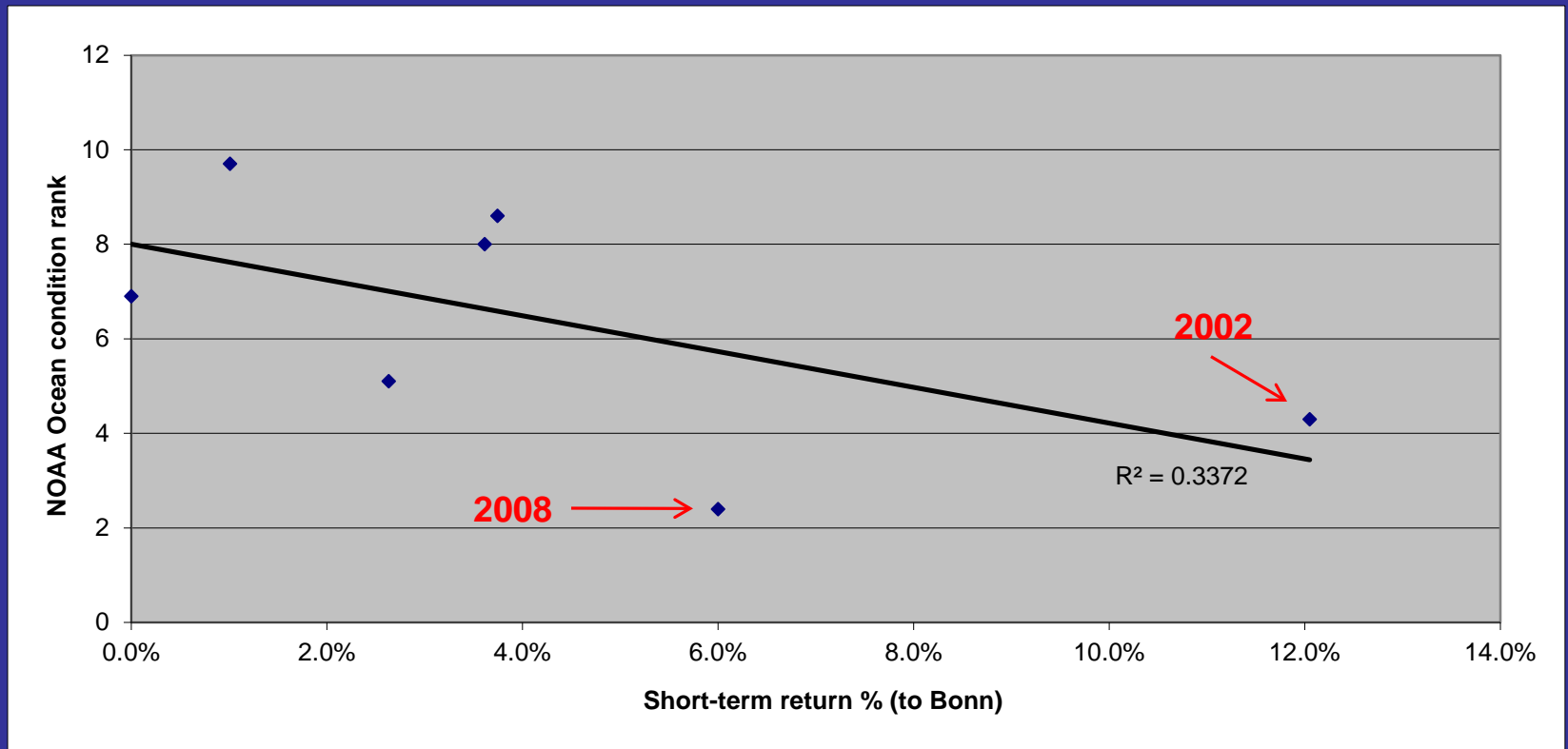


Percentage increase in escapement due to reconditioning.

Survival Comparison of Short- and No-Term Reconditioned Kelts to 'natural' Iteroparity

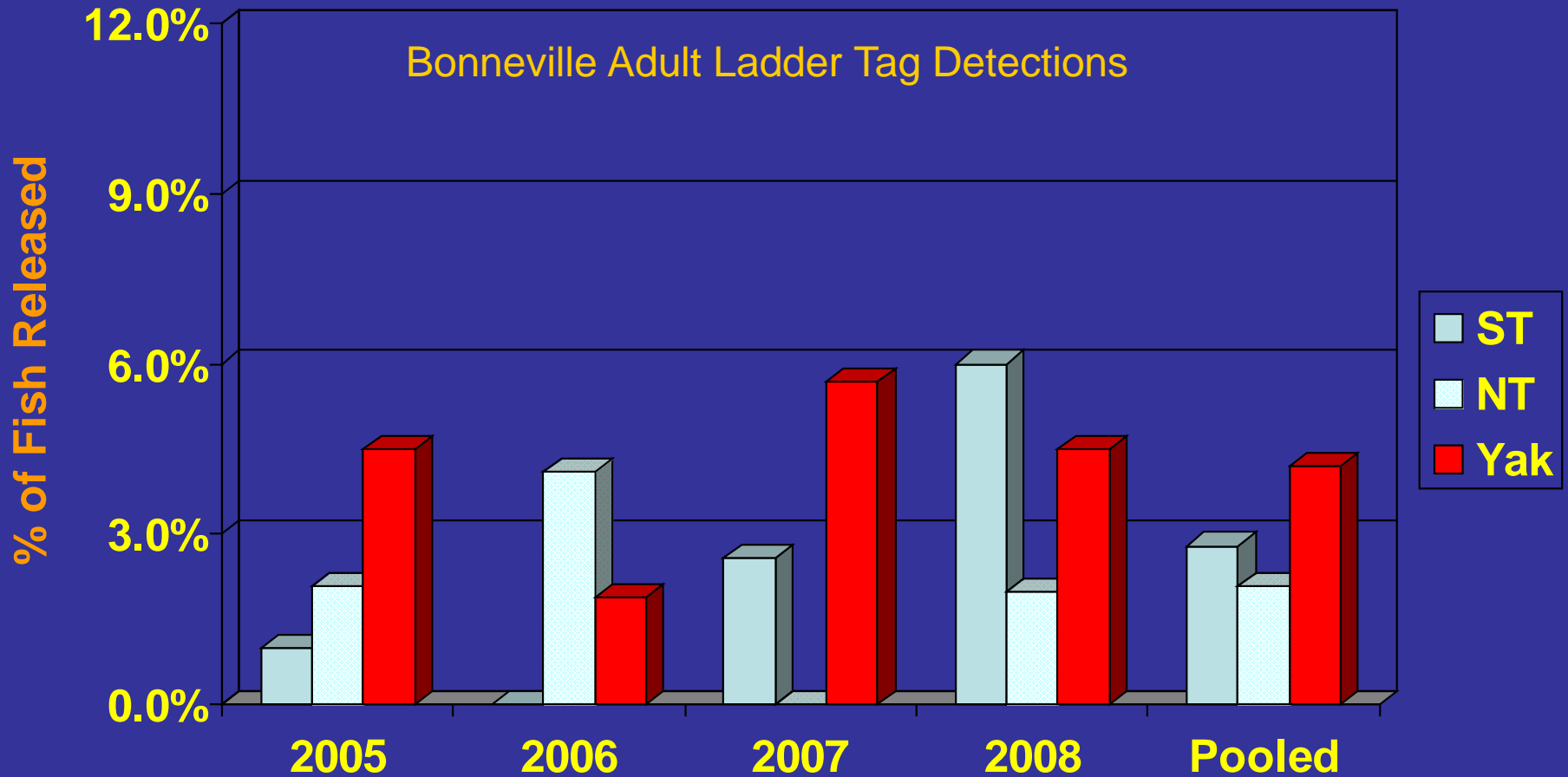


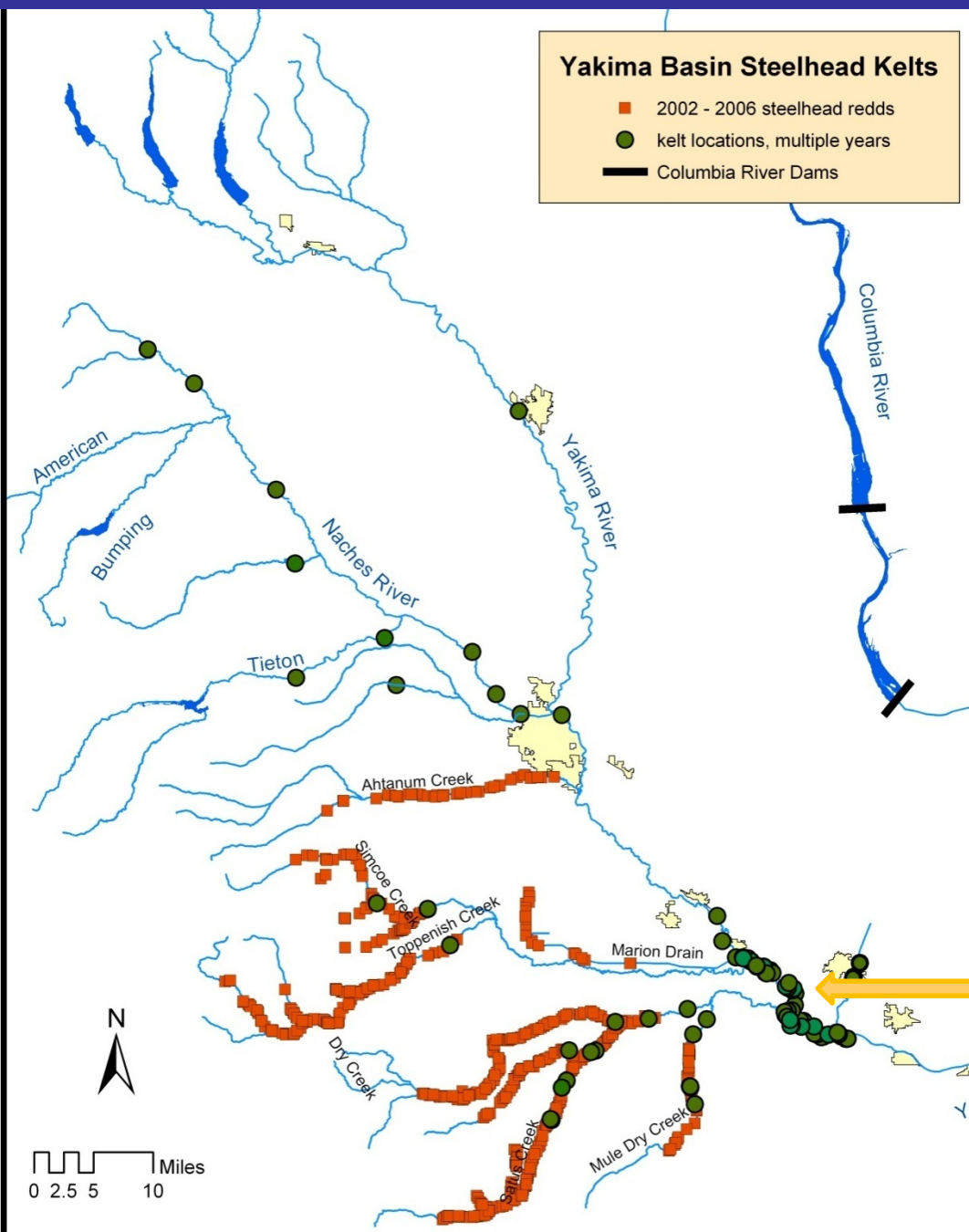
Relationship of Short-Term Kelt Survival to Ocean Conditions



Problem: Don't know ocean conditions in advance

Survival Comparison of Short- and No-Term Reconditioned Kelts to 'natural' Iteroparity





What happens to long-term kelts after release?

	2008	2009
LT Release	246	140
PRO Detect	91	45
Detect Proportion	37.0%	32.1%

2001-2005 radio telemetry studies found 70% of recaptured tags at mouths of Satus and Toppenish Creeks



Issues with RRS

Challenges

- Blown out weirs
- Spawning below weirs
- Resident trout
- Bears
- Winter
- Low returns of maiden fish
- Small population sizes
- Generation time
- Complicated life history

Successes / Redesign

- Results for Omak Creek
 - 3 of 15 Omak origin reconditioned kelts produced offspring to date.
 - These kelts were released in the Okanogan River in the fall.
 - Juveniles ranged from age 0 to age 2.
- Controlled stream
- Gamete and Progeny studies

Reproductive Success

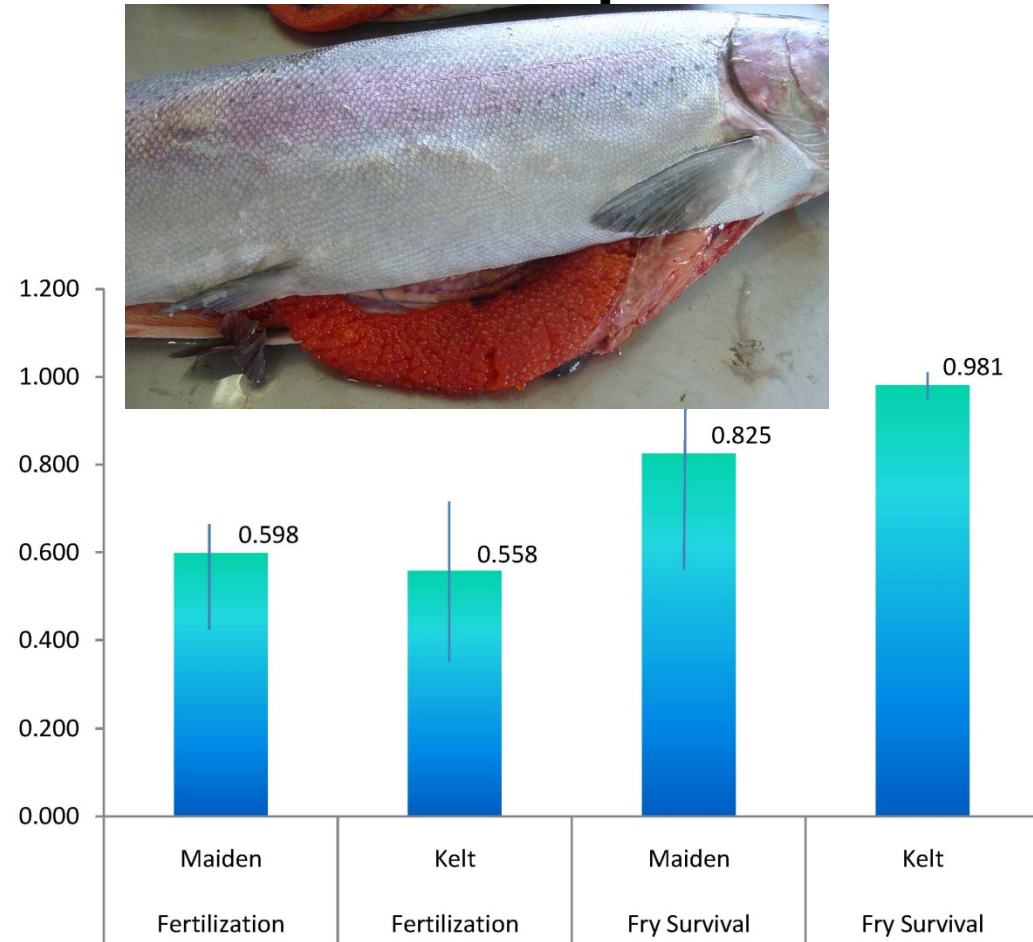
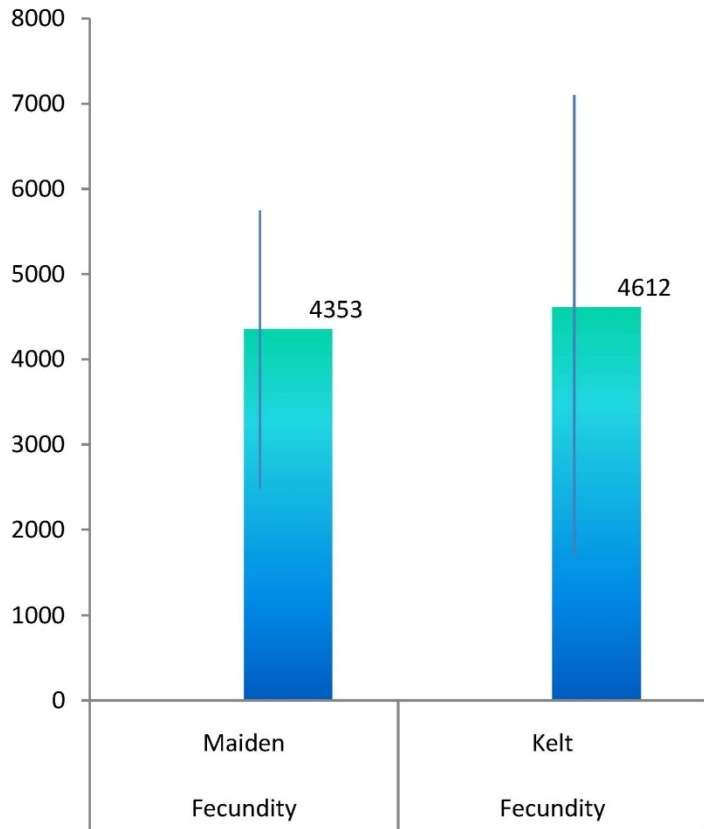
Knowns:

- Grow substantially and remature their gonads
- Produce viable gametes
- Find mates
- Locate appropriate spawning habitat
- Construct and guard redds
- Recaptures show evidence of spawning
- Successful reproduction has been recorded in Omak Creek





Progeny & Gamete comparison





Questions??