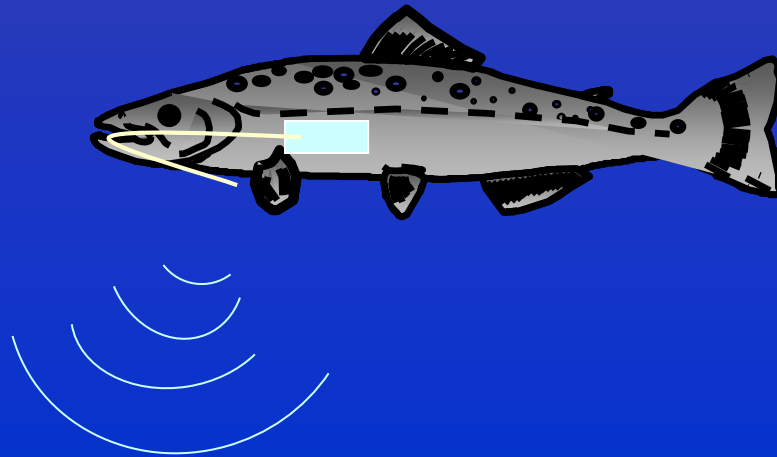


# *2006 Coho Juvenile Migration and Radio Tracking Distribution*

Presented By:

**Todd Newsome**

**Fisheries Biologist for the Yakama Nation**



# Acknowledgements



**YN:** Joe Jay Pinkham III  
Conan Northwind  
Quincy Wallahee  
Andrew Lewis  
Denny Nagle  
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Marlin Colfax  
Nate Pinkham

## **Technical Support and Gear:**

Lotek Wireless Systems: Mike VanDen Tillart  
Biomark: Technical Team

# Background



**Program Goal** - Re-establish self-sustaining naturally spawning population of coho salmon in Yakima River

*Phase I: 1999-2003*



**Feasibility**      **Interim Work: 2004-2006**



*Phase II: 2007-2011*

**Maximize Potential for Success -**

**Smolts**



**Adults**

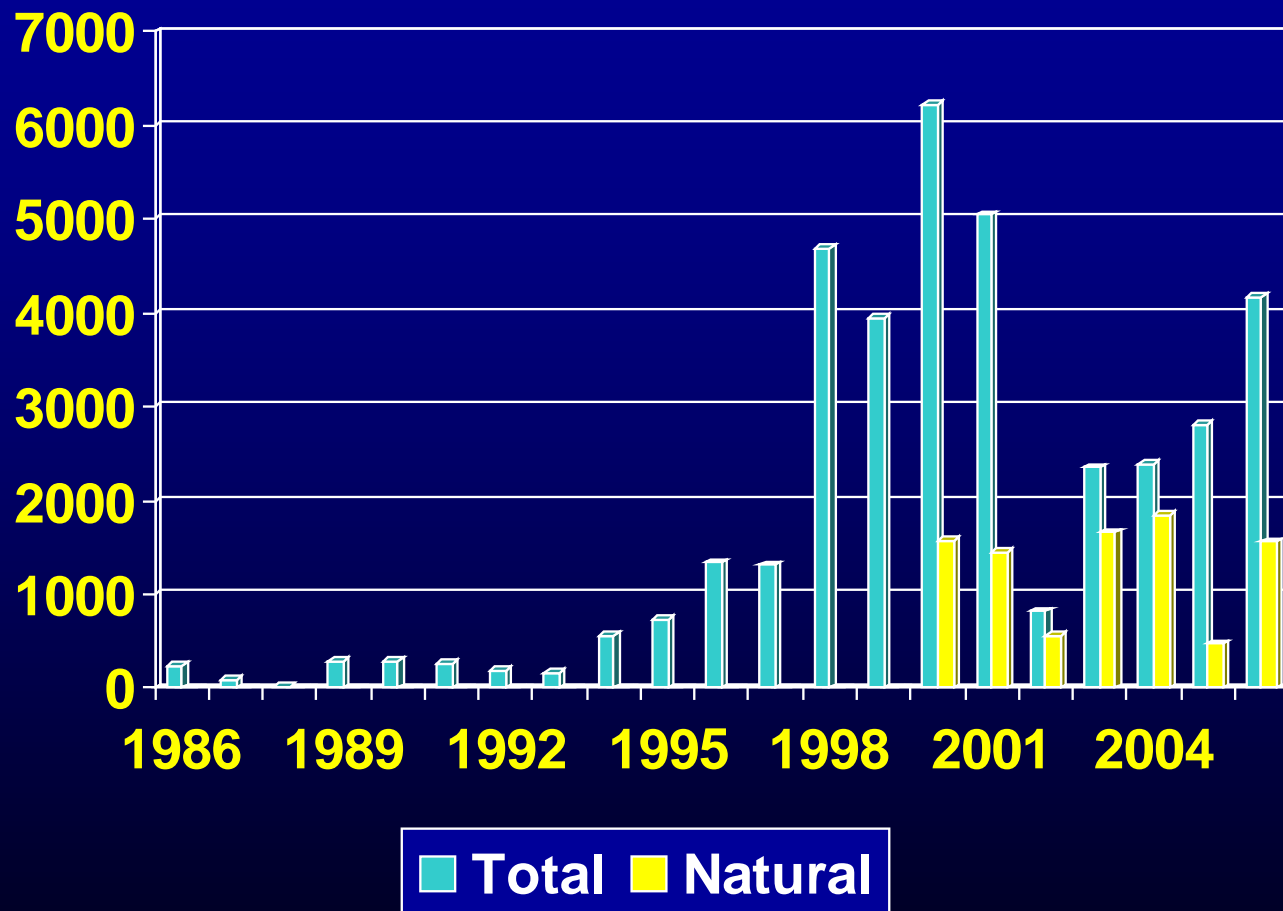


**Isolating and reducing mortality through life stages**

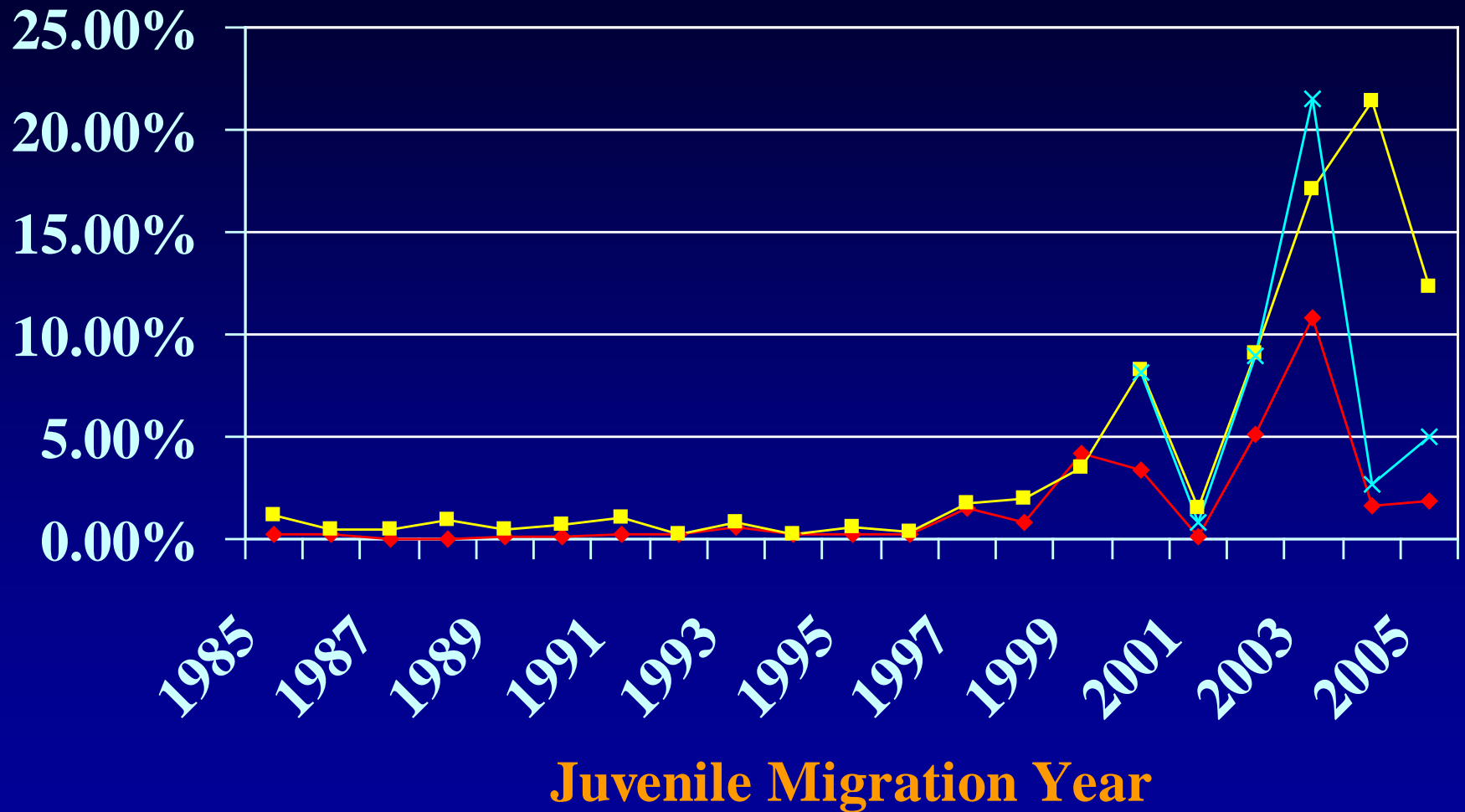
# Phase I Conclusions

- Successful Reestablishment of a Natural Coho Population using donor stocks
- Successful Monitoring and Evaluation to assess:
  - Impacts to other species
  - Survival of smolts and returning adults
- Spawning distribution
- Identified appropriate out of basin founding stocks

# Upper Yakima Coho Returns, 1986 – 2006



# Upriver Coho SAR Indices



—◆— Yak. Agg. —■— McN. Agg. —×— Yak. Nat.

# Interim Work

## Phase II Set Up Work

- Brood Stock Development
- Continued Evaluation of In basin vs. out of basin Coho stocks
- Over winter Survival Assessment
- Base Line Monitoring for Naches Tributaries
- On going interactions monitoring
- Continued Monitoring and Assessment of Adult Coho Escapement and Redd Distribution

# Local In Basin Brood Development

- 270 Females Spawned 50% Wild
- 130 Males 100% Wild
- Estimated egg take of ~800,000
- Estimated 450,000 In Basin Coho for 2008 release.



# 2006 Hatchery Coho Juvenile Acclimation Sites Yakima Basin

Volitional Release, April 3, 2006

Boone: 166,180

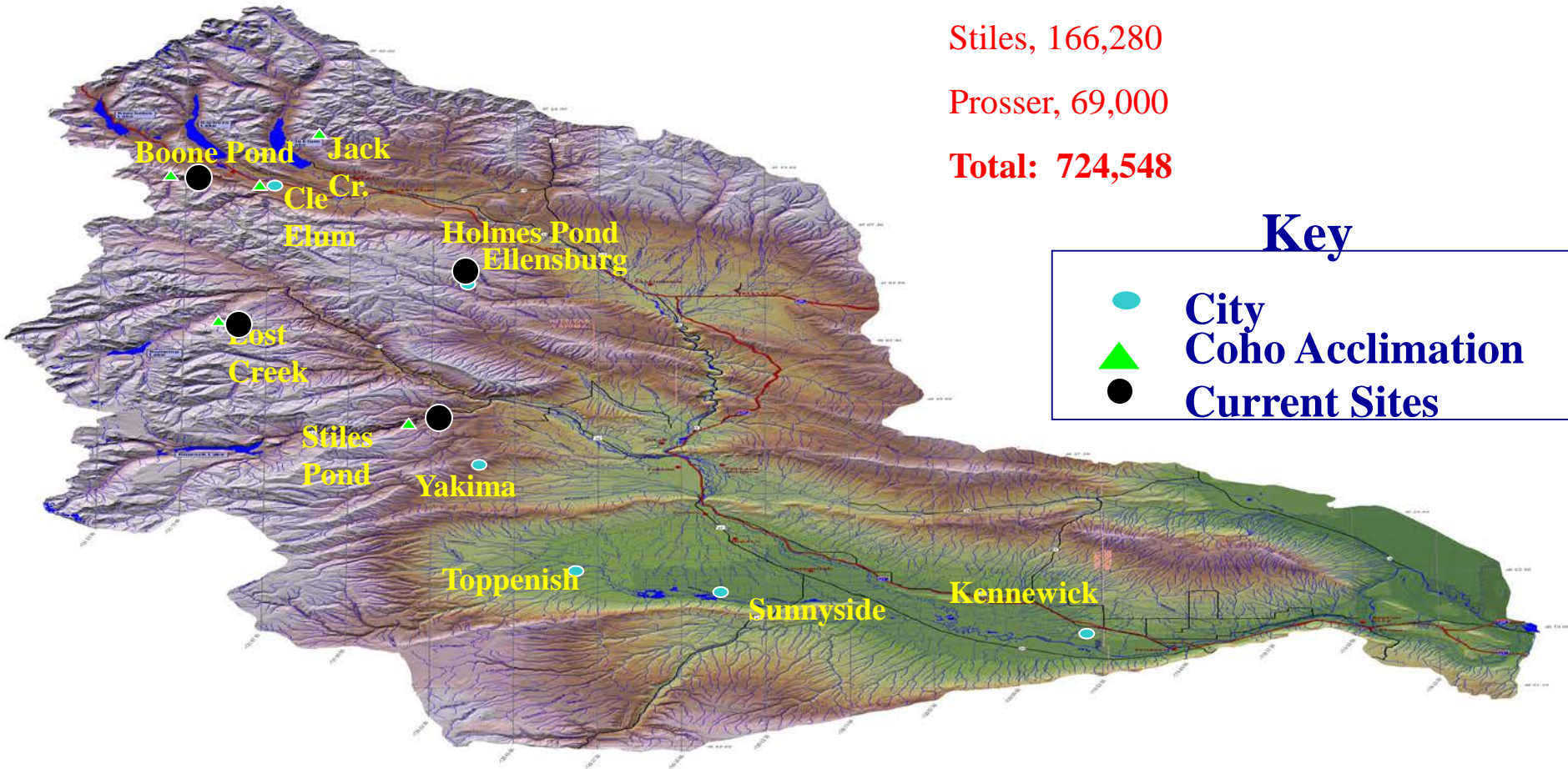
Holmes: 156,237

Lost Creek, 166,221

Stiles, 166,280

Prosser, 69,000

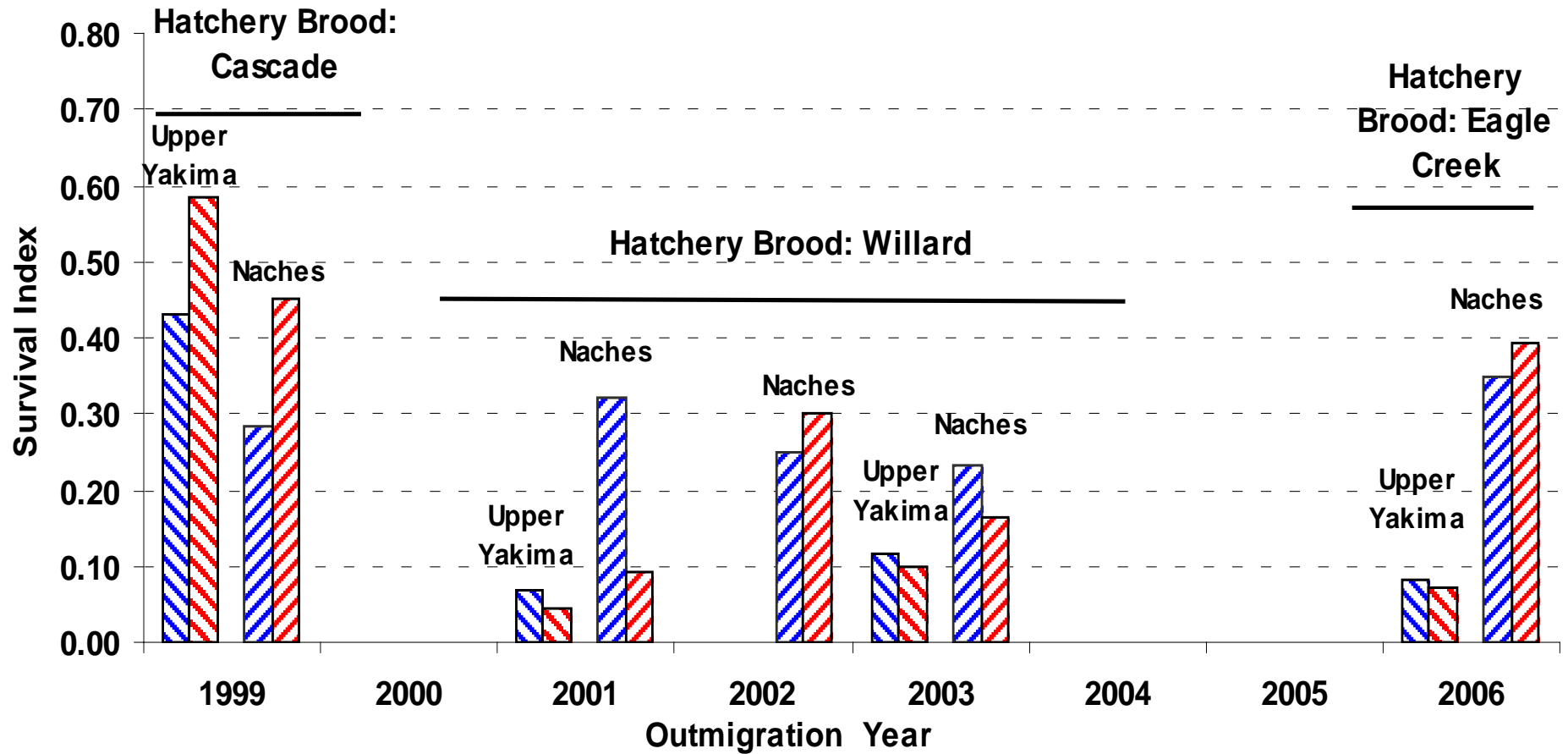
**Total: 724,548**



## Key

- City
- ▲ Coho Acclimation
- Current Sites

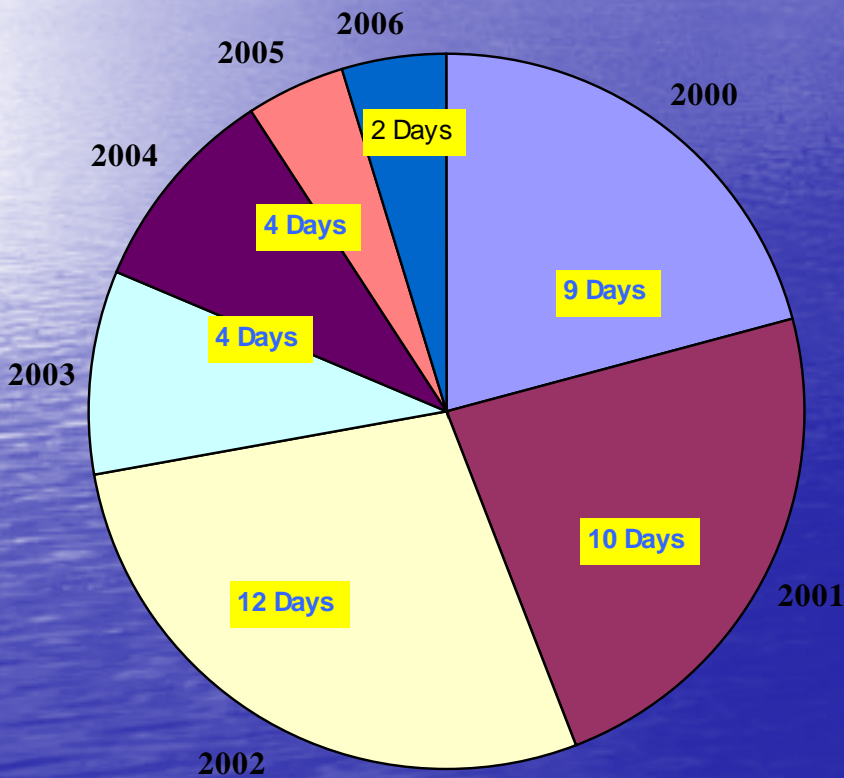
# Coho Early-Release Tagging-to-McNary Smolt Survival



- Upper Yakima Subbasin, Yakima Brood
- Upper Yakima Subbasin, Hatchery Brood
- Naches Subbasin, Yakima Brood
- Naches Subbasin, Hatchery Brood

# *50% Passage, Natural vs. Hatchery*

*2<sup>nd</sup> Step in Isolating and reducing possible mortality (Timing)*

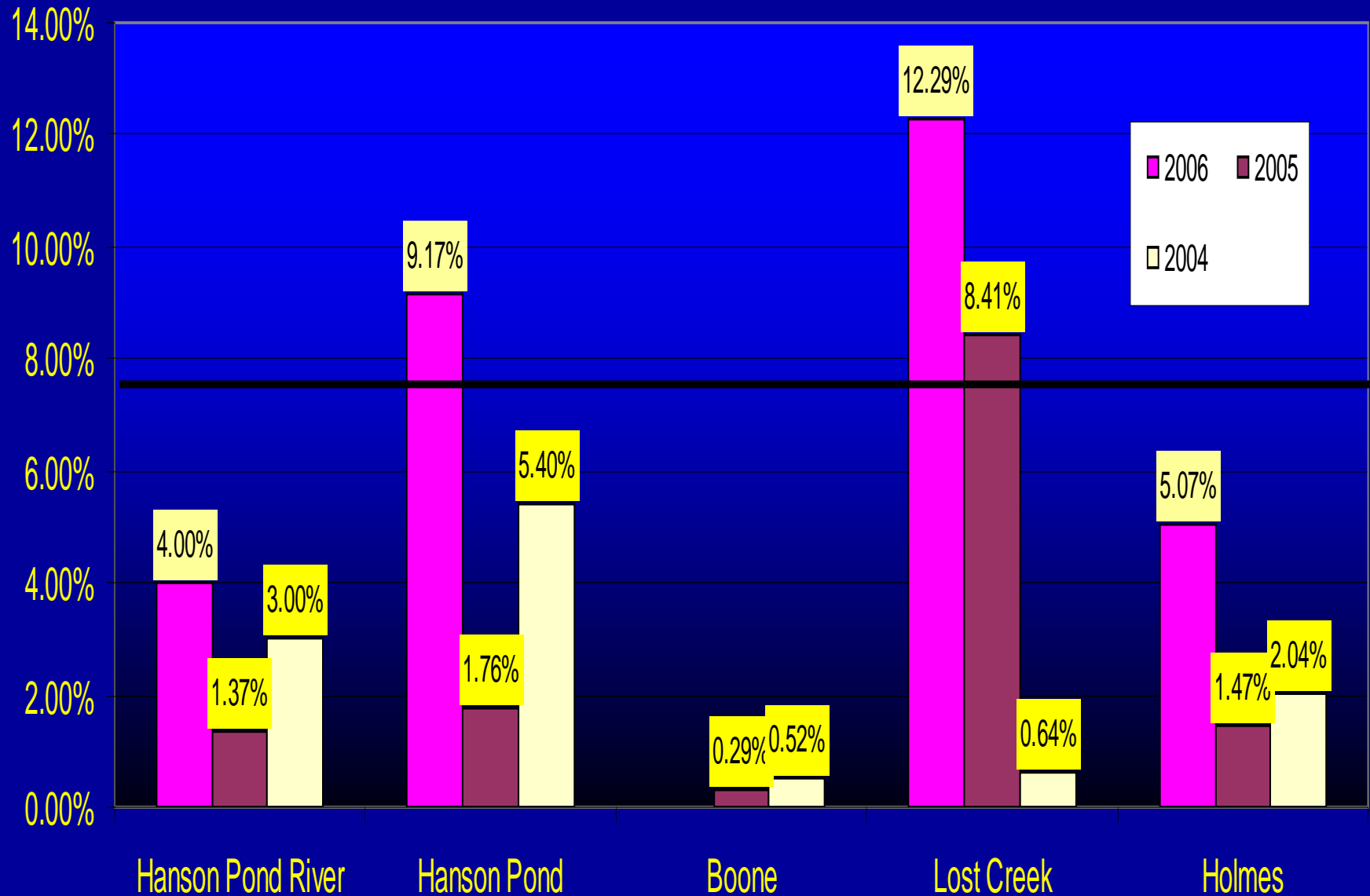


	Wild	Hatchery
2000	05/26/00	06/04/00
2001	05/31/01	06/09/01
2002	05/04/02	05/16/02
2003	05/18/03	05/21/03
2004	05/10/04	05/14/04
2005	4/28/05	4/30/2005
2006	5/11/06	5/13/06

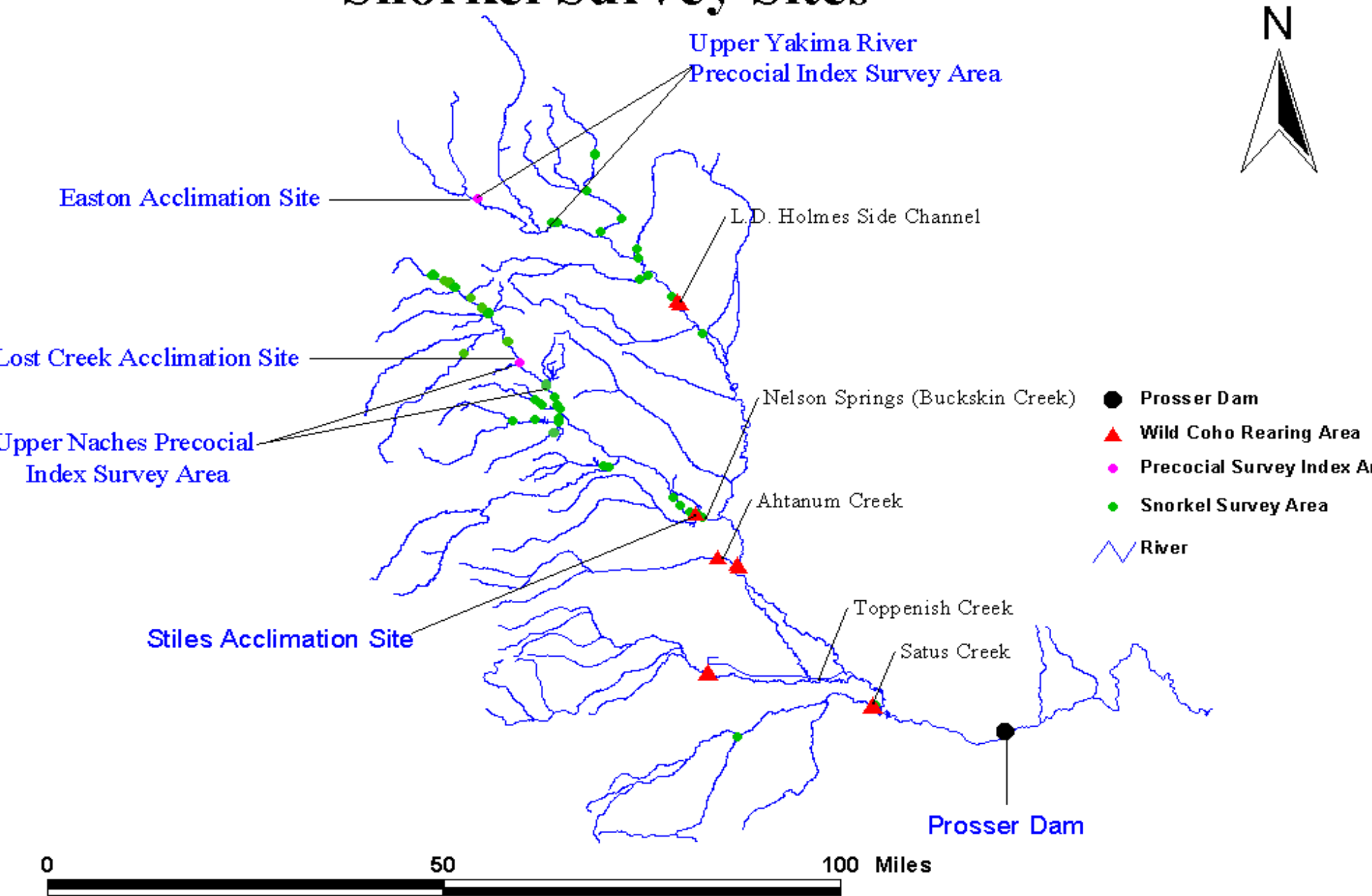
# *Over-winter Survival Studies*

- Released as 65-80mm late summer Parr; 3 year evaluation.
- Is it cost effective? Saves hatchery money and space.
- Is there an element of wildness introduced into the surviving spring migrants? Example: will the over-winter parr exhibit SAR rates similar to our NOR coho or our HOR coho??
- Which ponds/side channels offer the highest survival?
- Results of this may ultimately lead to some over-winter acclimation.

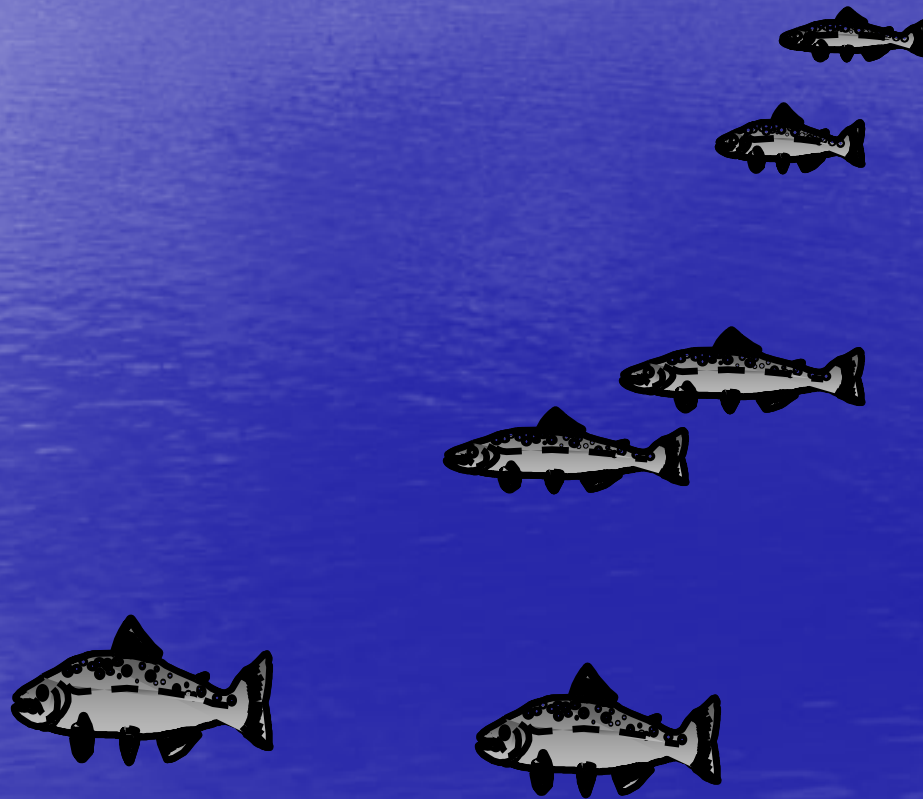
# *Final Over-winter Results, Year 3*



# Snorkel Survey Sites



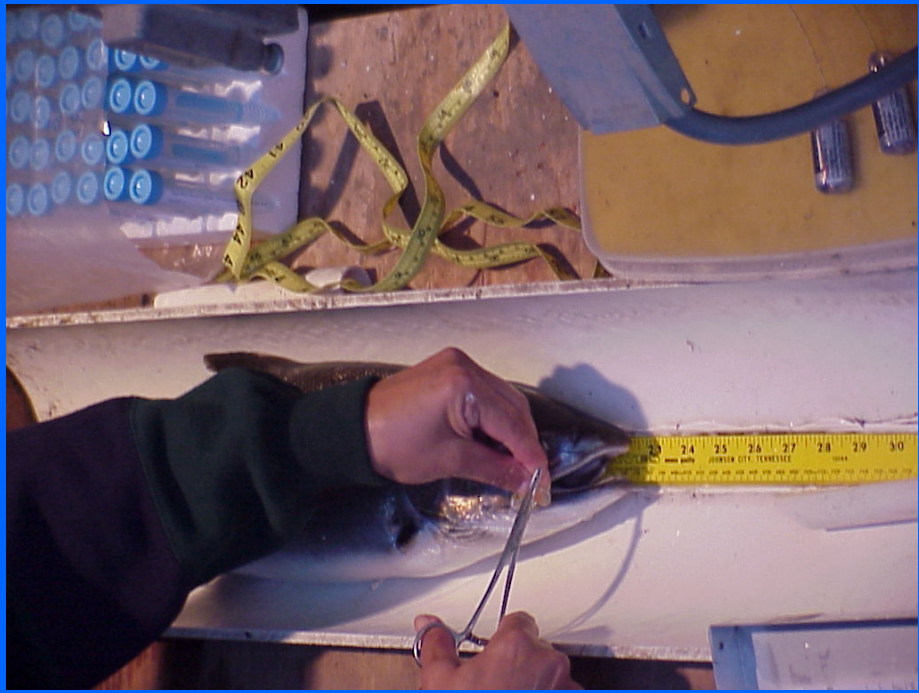
# Adult Returns





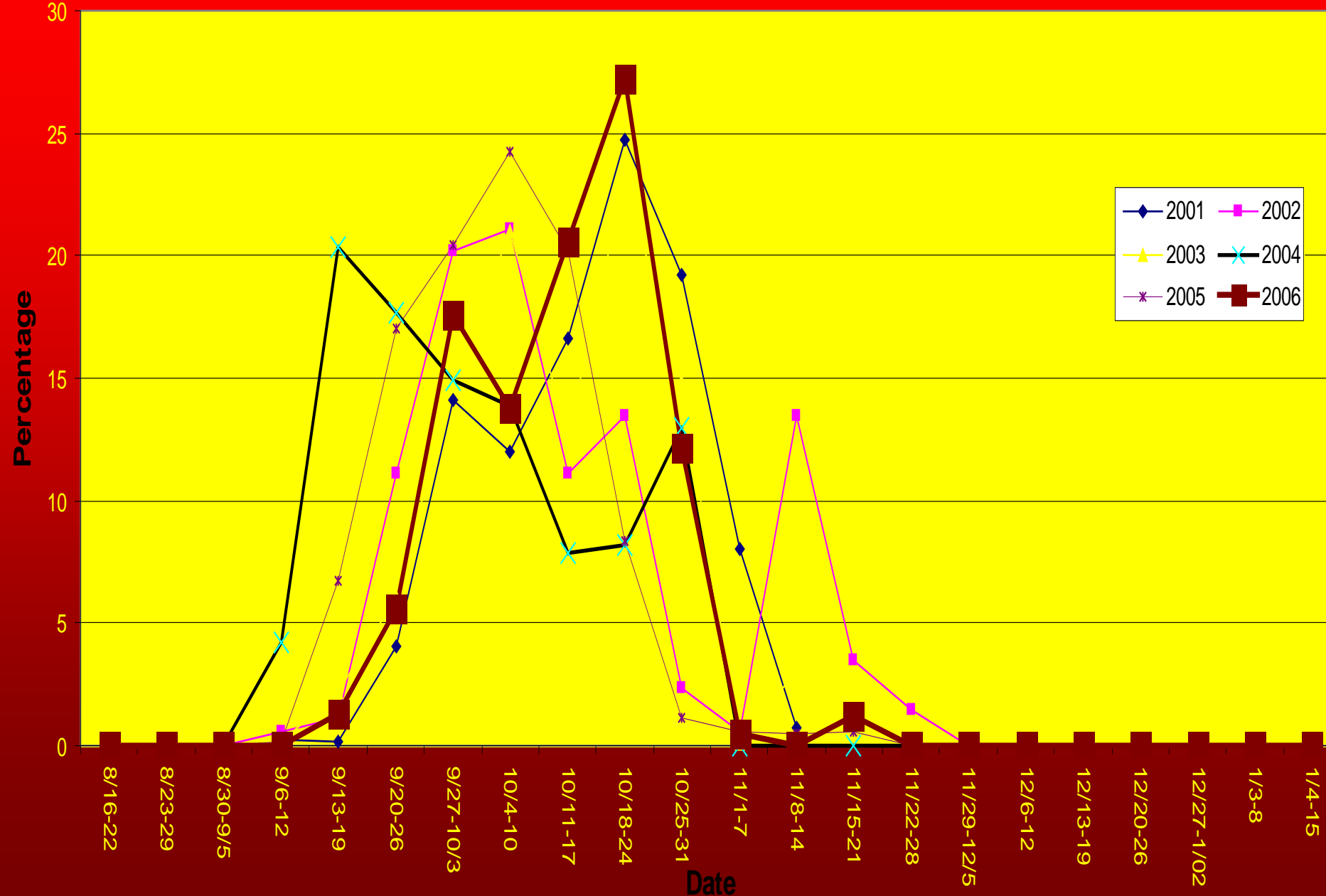




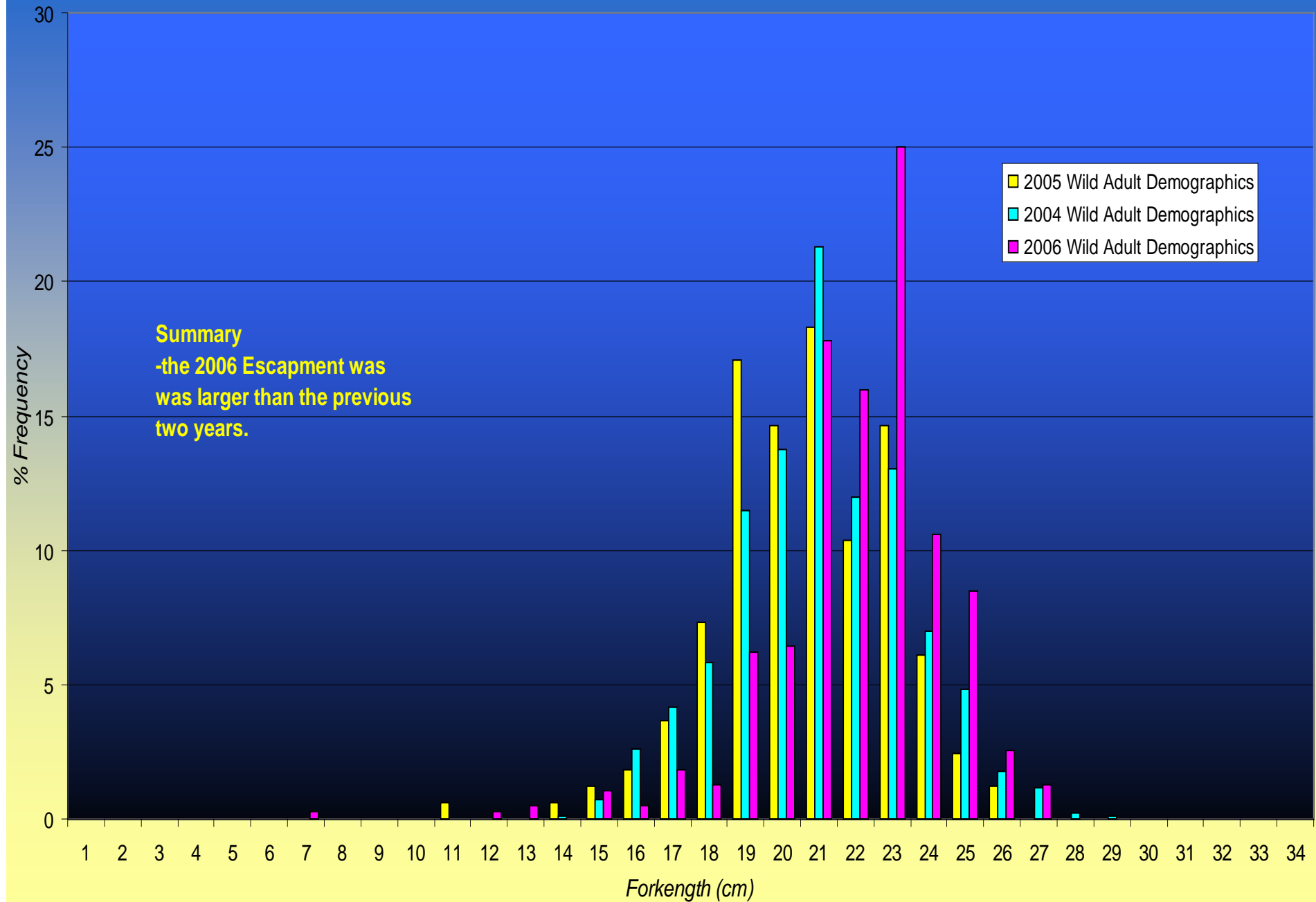




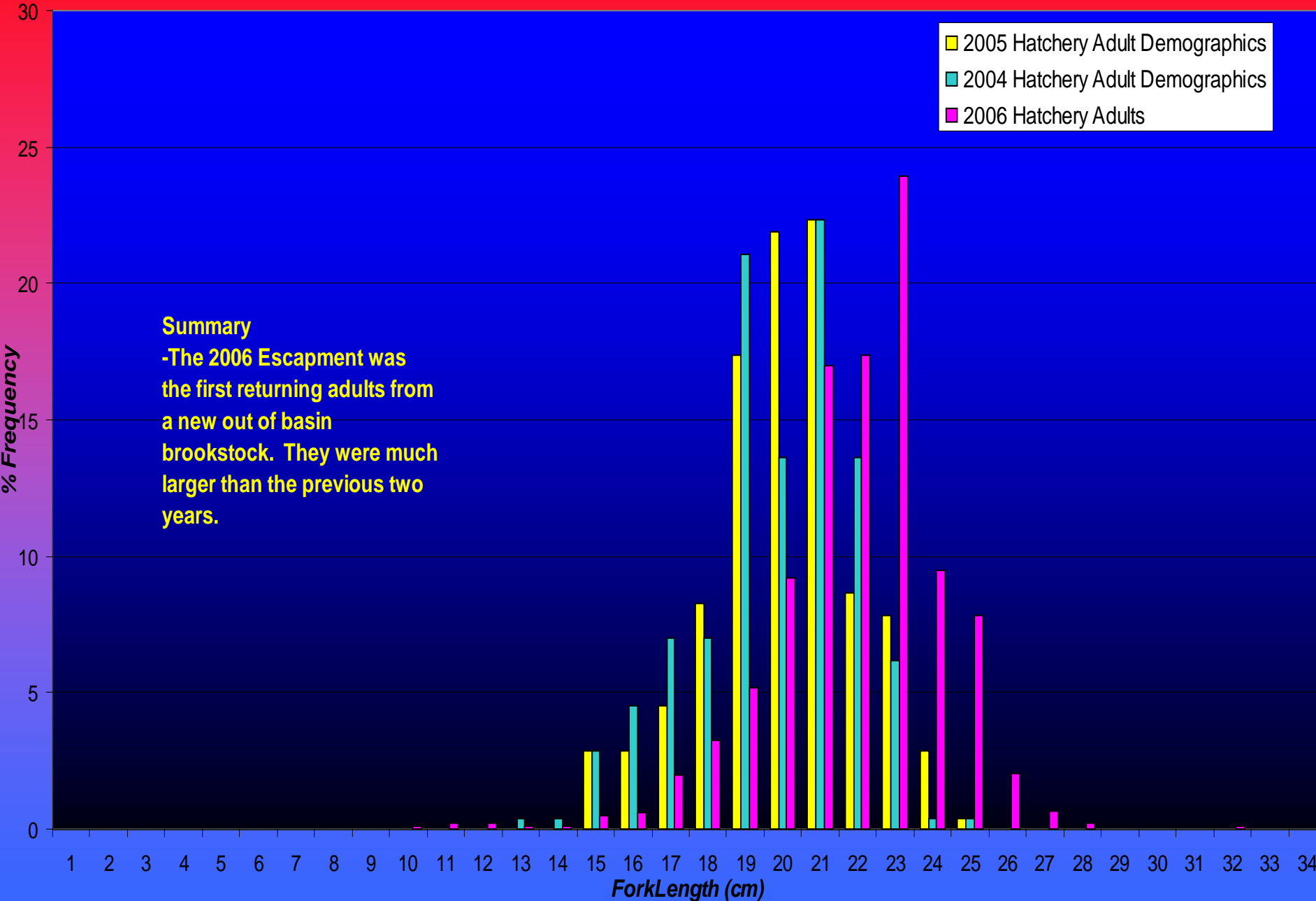
# Adult Coho Denil Passage 2001-2006



# Comparisons of 2004 - 2006 Wild Adult Demographics



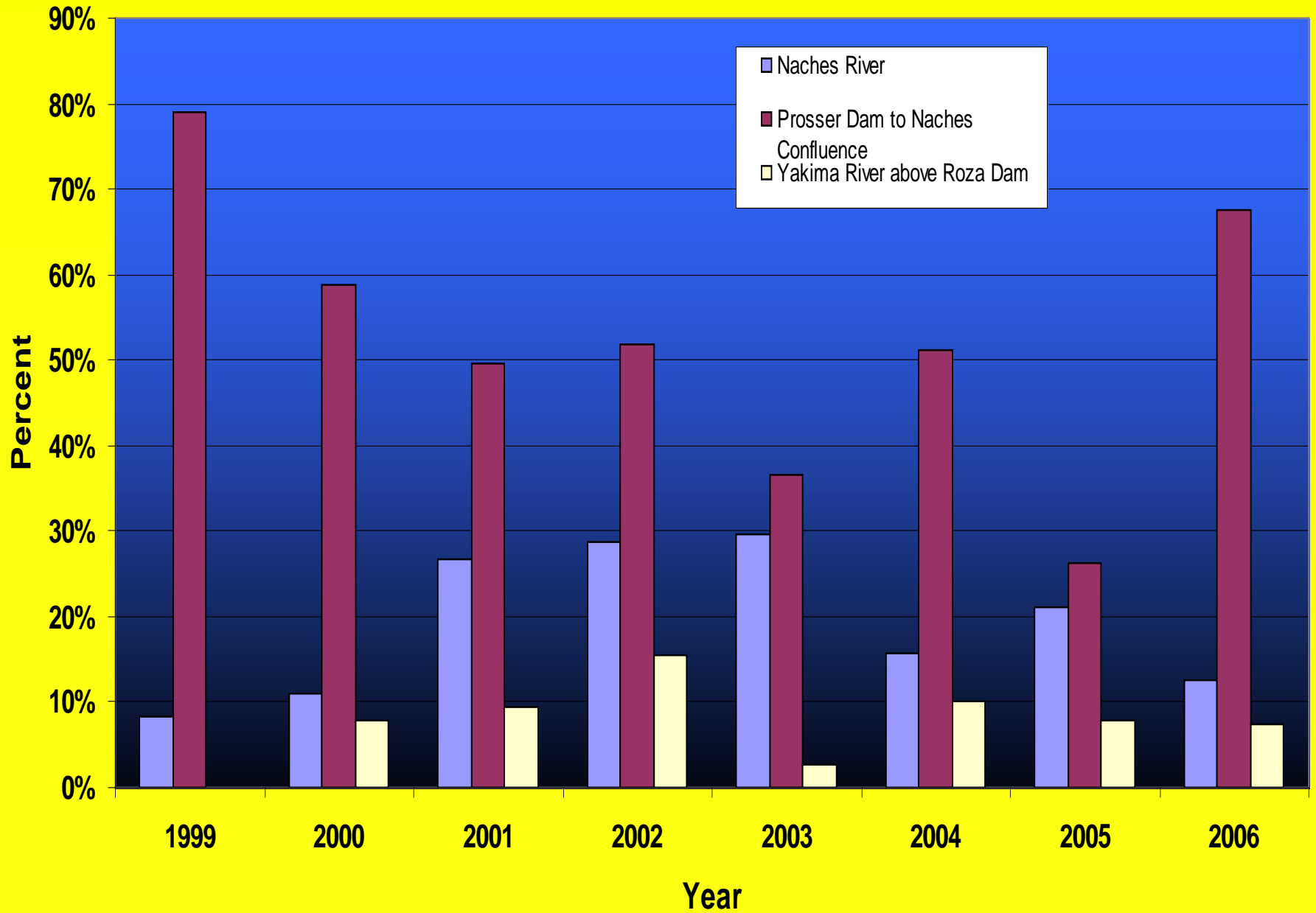
# Comparison of 2004 -2006 Hatchery Adult Demographics



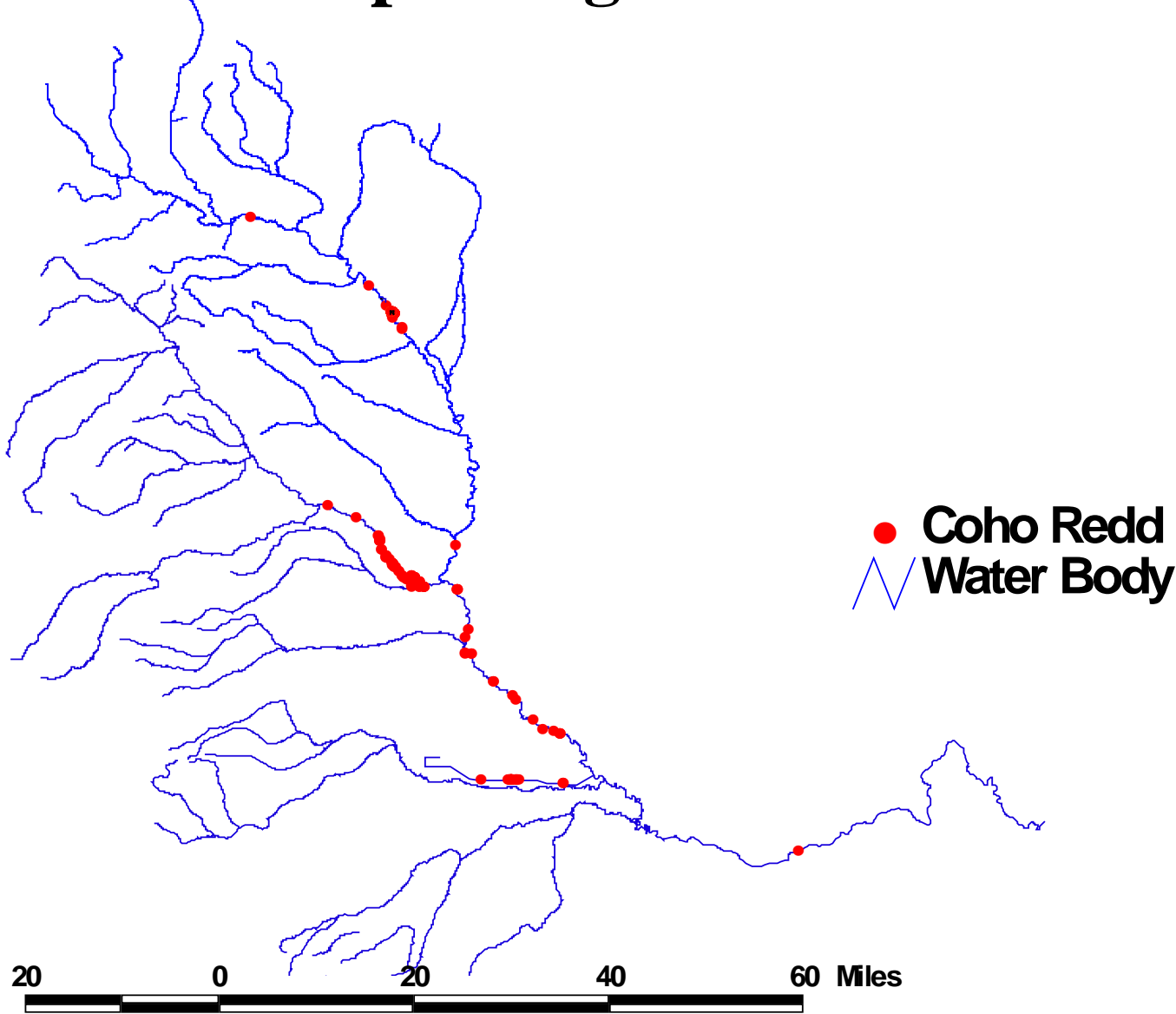
**Summary**  
-The 2006 Escapment was the first returning adults from a new out of basin brookstock. They were much larger than the previous two years.

2005 Hatchery Adult Demographics  
2004 Hatchery Adult Demographics  
2006 Hatchery Adults

# Radio Tracking Trends

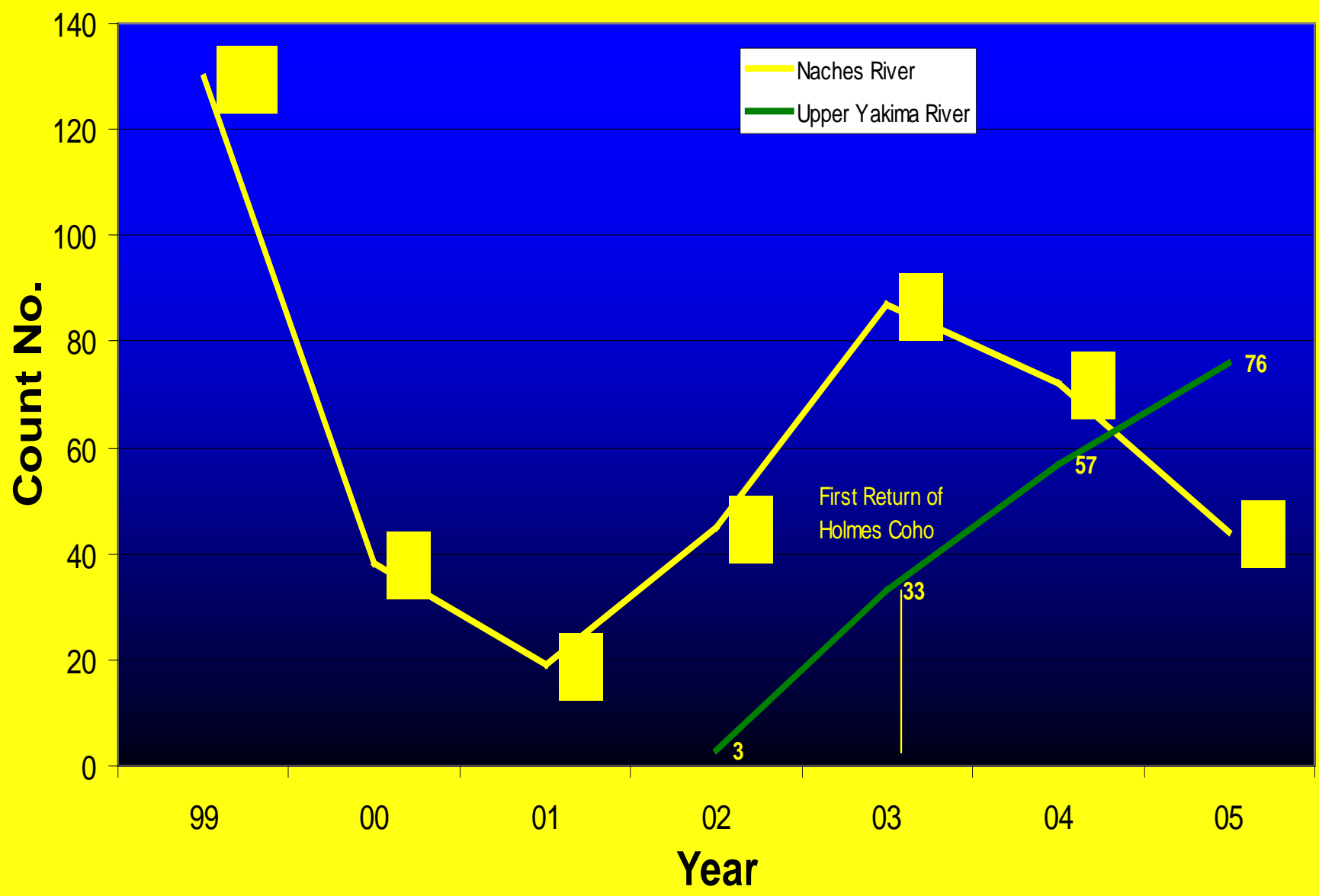


# 2006 Coho Spawning Distribution





# Redd Count Trends



# Habitat Work



# Coho Highlights

*1<sup>st</sup> Acclimated Holmes Coho Return 2004*



*The coho above dug this redd!*



*56 Redds in the  
Holmes Cottonwood Gallery*



*8 males fighting for  
females*

*Spawned out Male Coho (Holmes)*





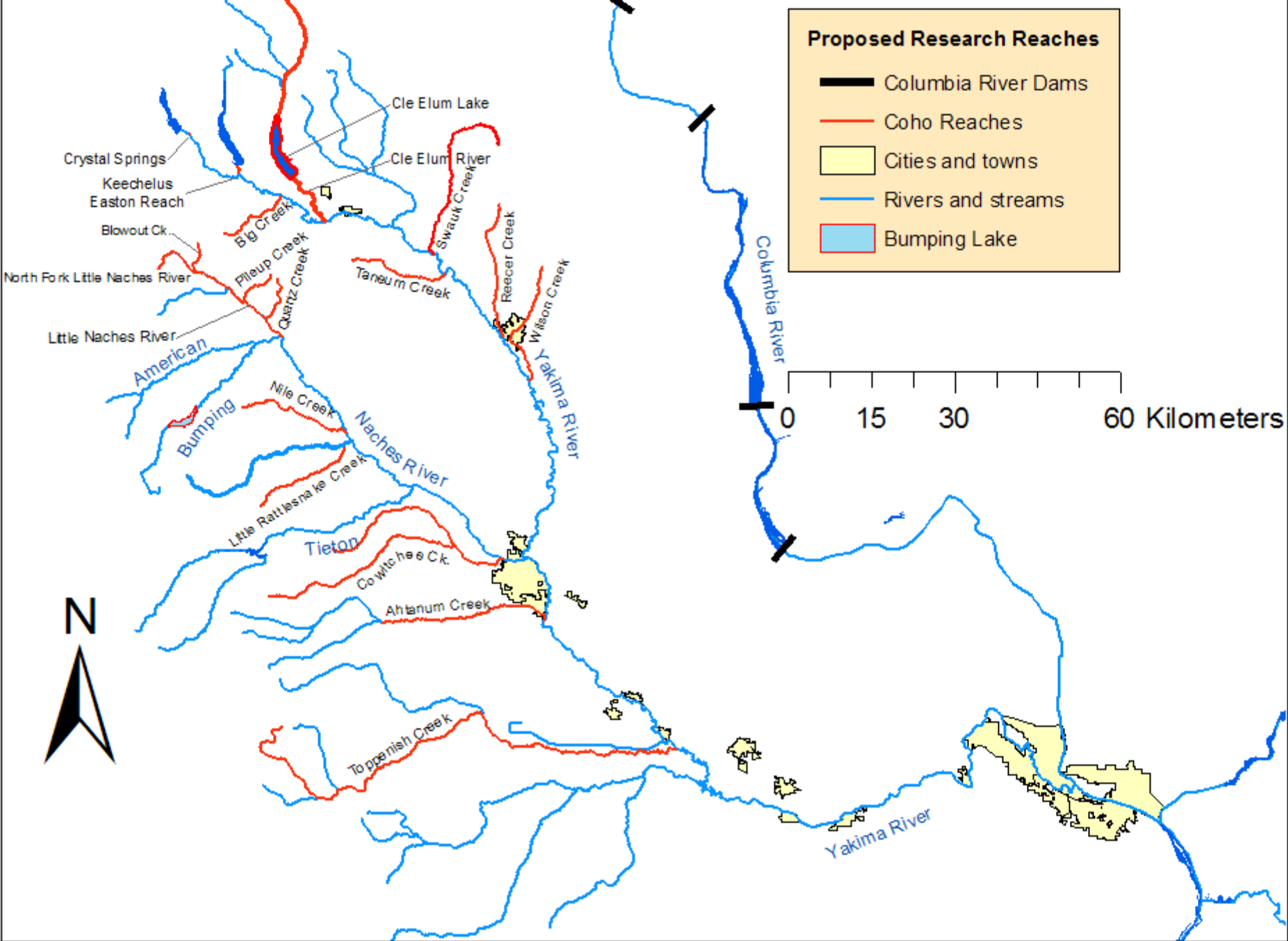


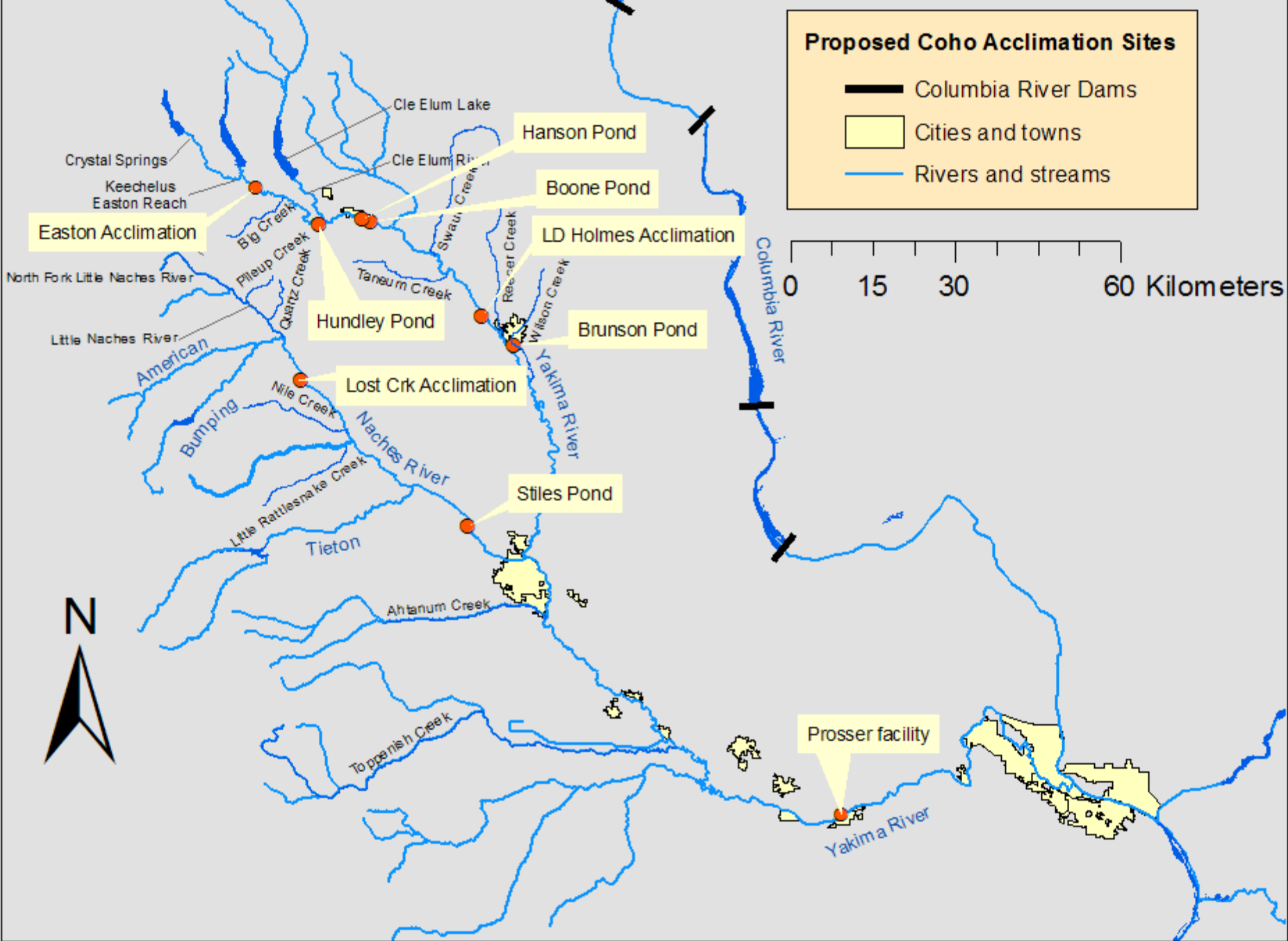
# Phase II (2007-2011)

- Objectives
  - Identify Key Tributaries offering the highest potential for Coho Reestablishment
  - Evaluate interactions with resident and anadromous fish already residing in tributaries
  - Increase the resiliency, and robustness of the Coho population in the Yakima Basin

## **ACTION**

- Monitor Tributary Parr Releases
- Monitor Tributary Adults Releases
- Continue In Basin Brood Stock Development
- New Smolt Acclimation Areas (spread out the risk and increase survival)







# Tributaries

```
graph TD; A[Tributaries] --> B[Summer Parr Releases into Tributaries]; A --> C[Adult Coho out plants]; A --> D[Stream Seeding]; B --> E[Identify quality habitat for Reintroduction, & ID, Poor habitat for possible restoration]; C --> F[Monitor effects of reintroduction of adult coho into stream on Resident Fish Spp.]; D --> G[Test and perfect mobile Acclimation site];
```

## Summer Parr Releases into Tributaries

Identify quality habitat for Reintroduction, & ID, Poor habitat for possible restoration

## Adult Coho out plants

Monitor effects of reintroduction of adult coho into stream on Resident Fish Spp.

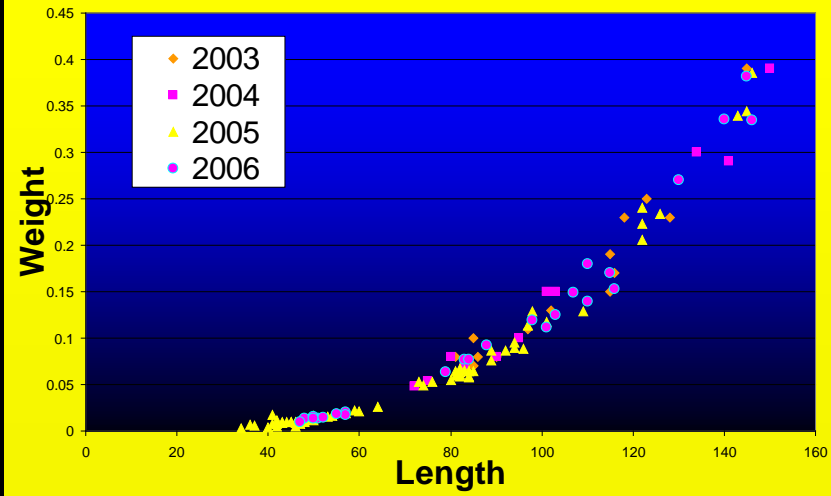
## Stream Seeding

Test and perfect mobile Acclimation site

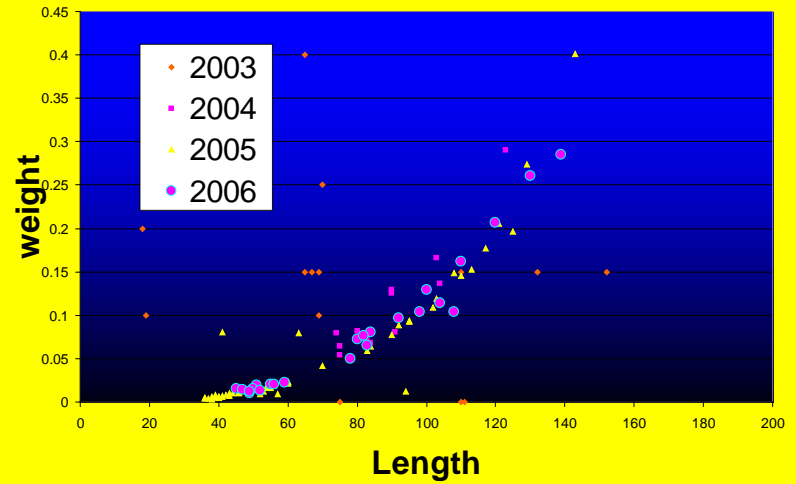
# Baseline Data Monitoring and Evaluation For Phase II



**Quartz**

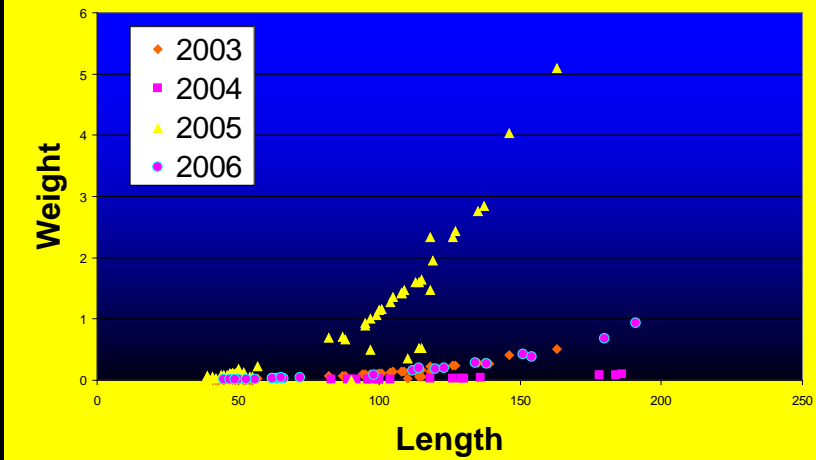


**Pileup**

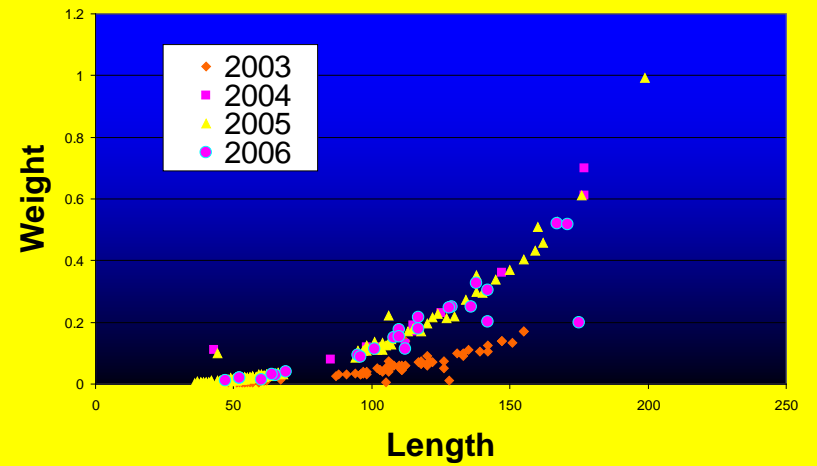


# O. Mykiss

**Little Rattlesnake**



**Nile Creek**



# Adult Out Planting

Capture



Stream Placement



Redd Cap and Monitoring



Redd Building



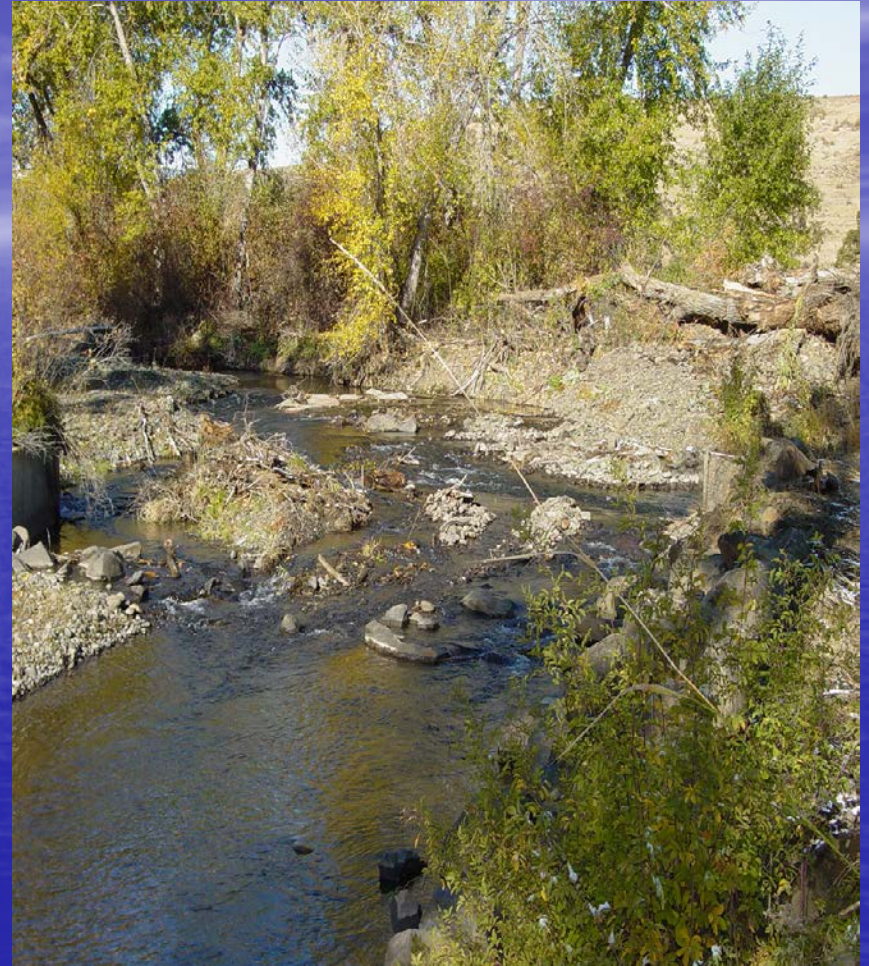
7-85394

## Tanuem Creek



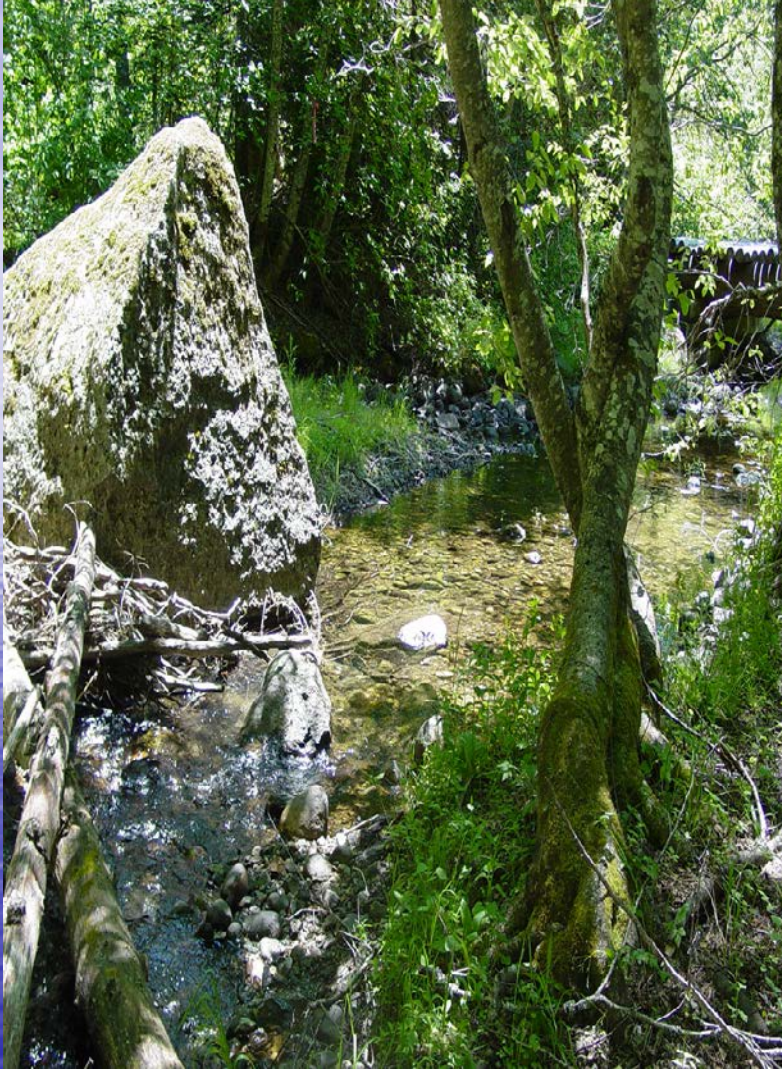
-Adult Outplants

## Ahtanum Creek



-Over winter Parr Plants  
-Adult Out-plants  
-Stream Seeding

## *Crystal Springs*



**-Over winter Parr  
Plants**

## *Beaver Dam Complexes*



**-Over winter Parr Plants**

## *Development of a Final Coho Master Plan*

- *Using the results of Phase I and II, the final plan will guide future reintroduction efforts.*
- *The Coho Master Plan will identify key infrastructures (e.g. broodstock collection facility, hatchery and acclimation sites).*
- *The Coho Master Plan will outline monitoring and evaluation objectives.*

*The End*

