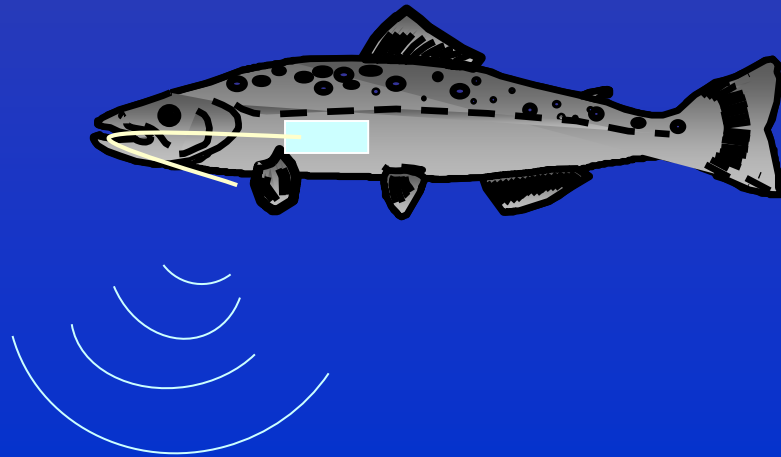


# *2005 Coho Juvenile Migration and Radio Tracking Distribution*

Presented By:

**Todd Newsome**

**Fisheries Biologist for the Yakama Nation**



# *Yakima River Coho Salmon*



*1998 - 2005 Average*

*Returns=3206*

# Acknowledgements

**YN:** Joe Jay Pinkham III  
Linda Lamebull  
Conan Northwind  
Quincy Wallahee  
Andrew Lewis  
Denny Nagle

## **Technical Support and Gear:**

Lotek Wireless Systems: Mike VanDen Tillarrt  
University of Idaho: Travis Dick  
Biomark: Technical Team

## **BPA:**

David Byrnes  
Patty Smith

# Background



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

*Phase I: 1999-2003*



**Feasibility**

*Phase II: 2006-2010*



**Maximize Potential for Success -**

**Smolts**



**Adults**



**Isolating and reducing mortality through life stages**

# 2005 Hatchery Coho Juvenile Acclimation Sites Yakima Basin

Volitional Release, April 5, 2005

Boone: 52,500

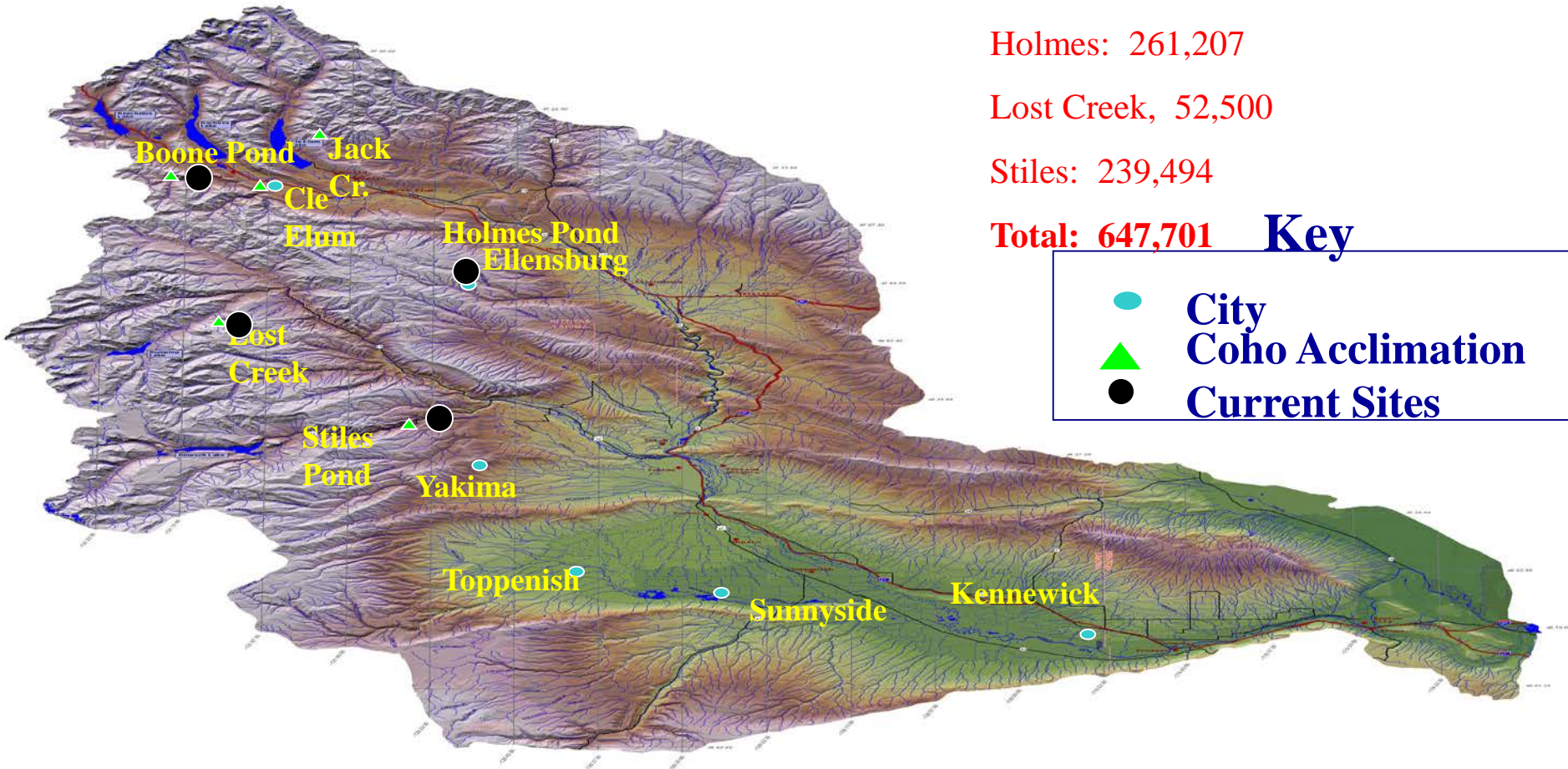
Holmes: 261,207

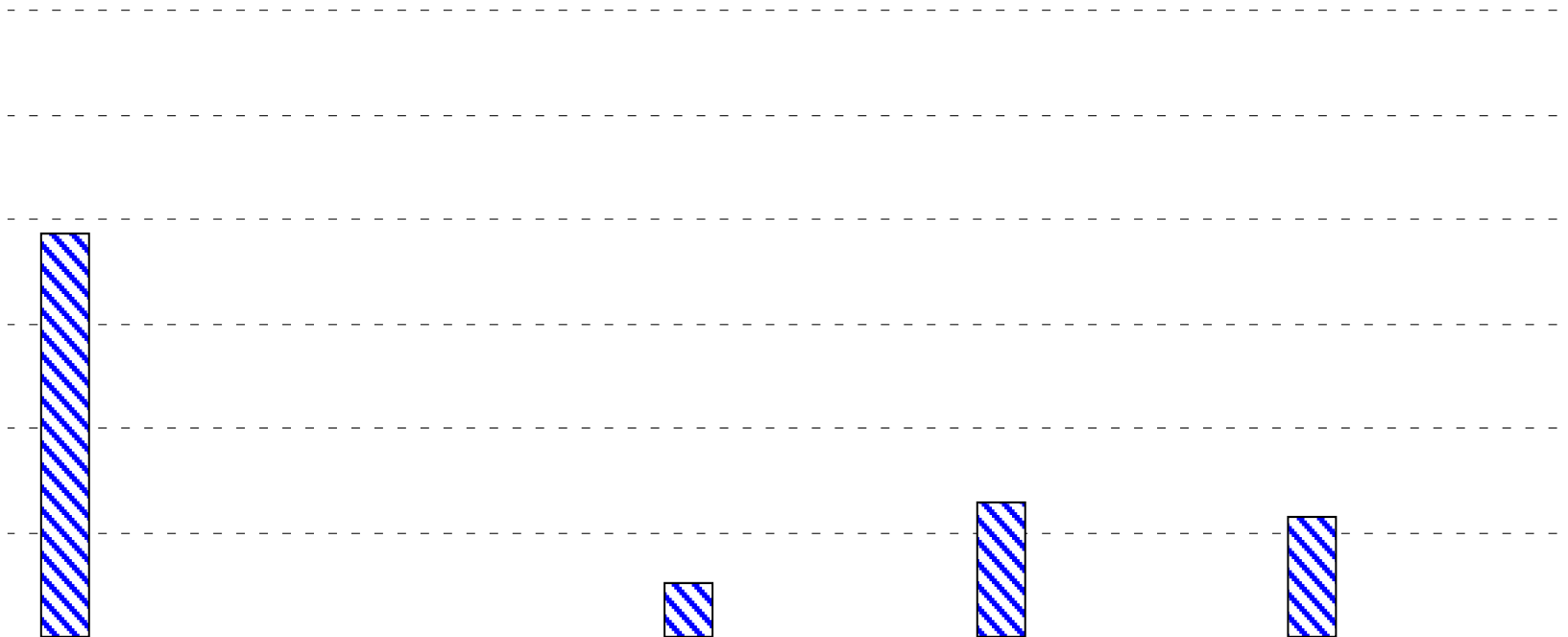
Lost Creek, 52,500

Stiles: 239,494

**Total: 647,701** **Key**

-  City
-  Coho Acclimation
-  Current Sites





*Neeley, 2004*

# 2005, Juvenile Survival Summary

- **Maximize Potential For Success ( one step in reducing mortality) Migration!**

New plan was to give our weaker fish (out of basin) the best chance at survival and ultimately increase our passage out of the Yakima Basin

- (release them from our best sites).
- 80% of the smolts were released from Stiles and Holmes

	Results		
	Total #	McNary	McNary
	Pits	Expansions	Survival
LYA	5232	200	0.04%
BYA	5052	25	0.005%
HEC	4958	1069	22%
SEC	5005	1362	27%

*Neeley,2005*

## *Site Comparisons*

Overall the geographically lower sites (Stiles and Holmes) far exceeded survival of the higher sites (Lost Creek and Boone). Within the Upper Yakima, avian predation on Boone acclimation pond was very high >150 common mergansers. Lost Creek Acclimation site was seined out due to the looming drought that never materialized. However, the adaptive management worked, overall expanded passage of smolts through Prosser went from, an estimated 14,500 smolts in 2003 to 164,500 in 2004 and the final passage for 2005 was 214,694 hatchery smolts.

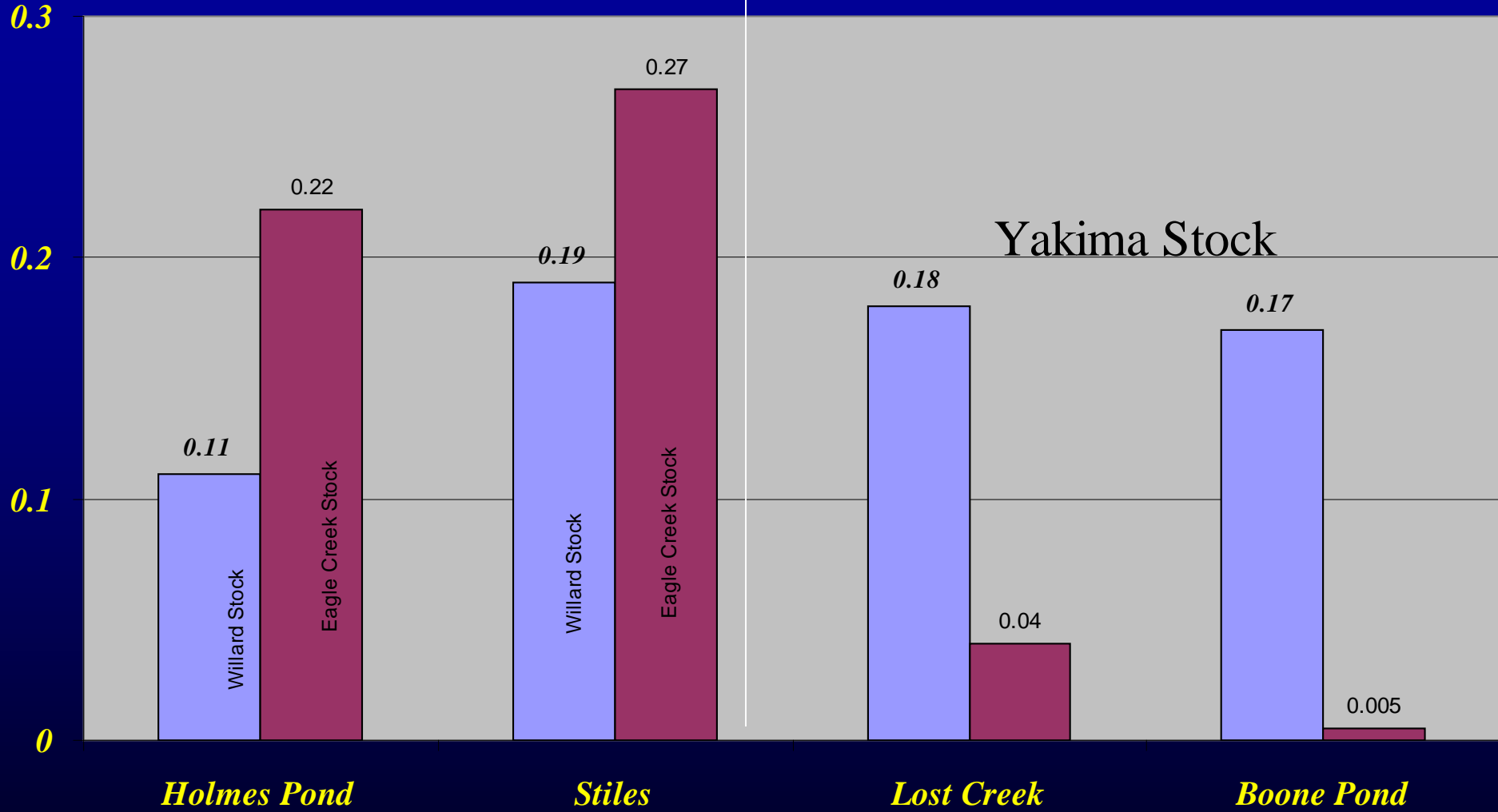
## *Stock Comparisons*

*There was no statistical comparisons made between in basin and out of basin stocks. Stock comparison will resume in 2006 releases.*

# Smolt Survival

2004

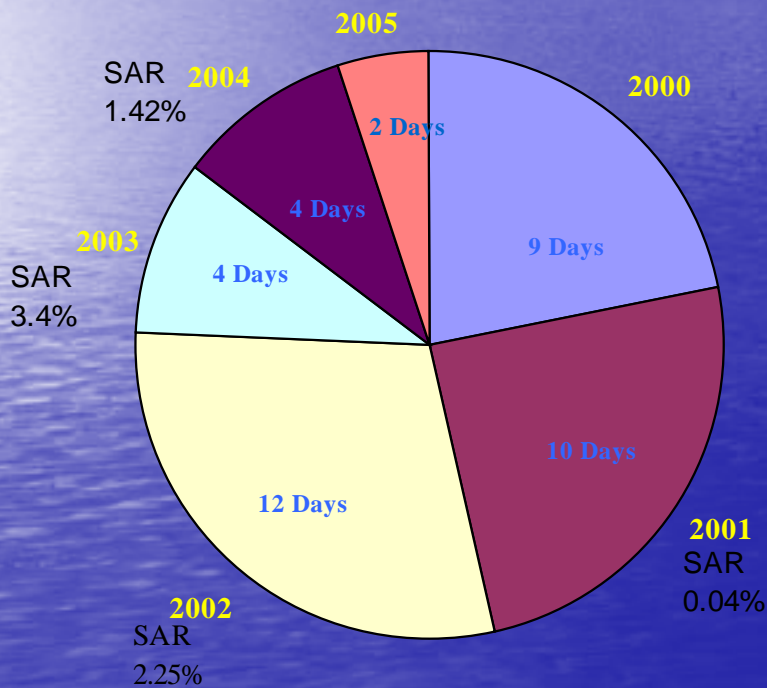
2005





# 50% Passage, Natural vs. Hatchery

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



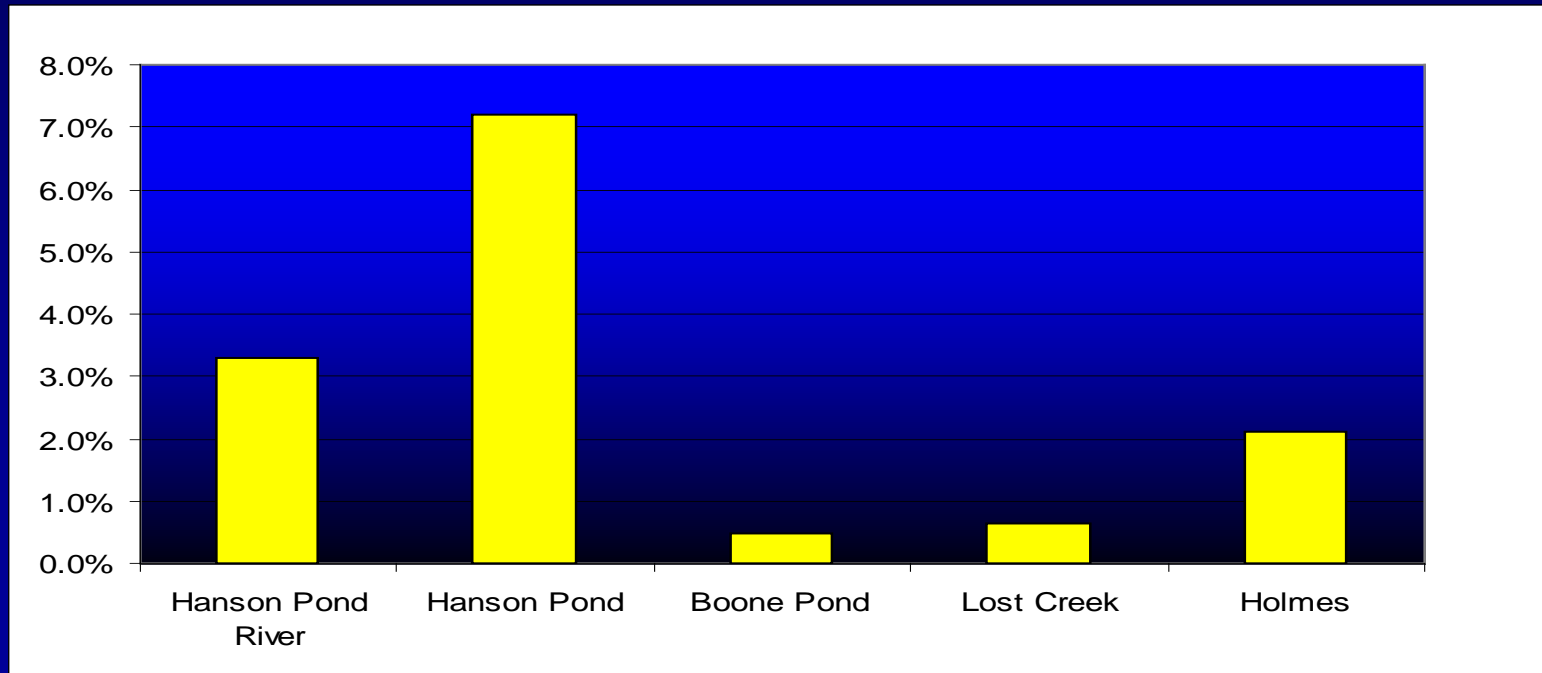
	Wild	Hatchery
2000	05/26/00	06/04/00
2001	05/31/01	06/09/01
2002	05/04/02	05/16/02
2003	05/18/03	05/21/03
2004	05/10/04	05/14/04
2005	4/28/2005	4/30/2005

# *Over-winter Survival Studies*

- Released as 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.

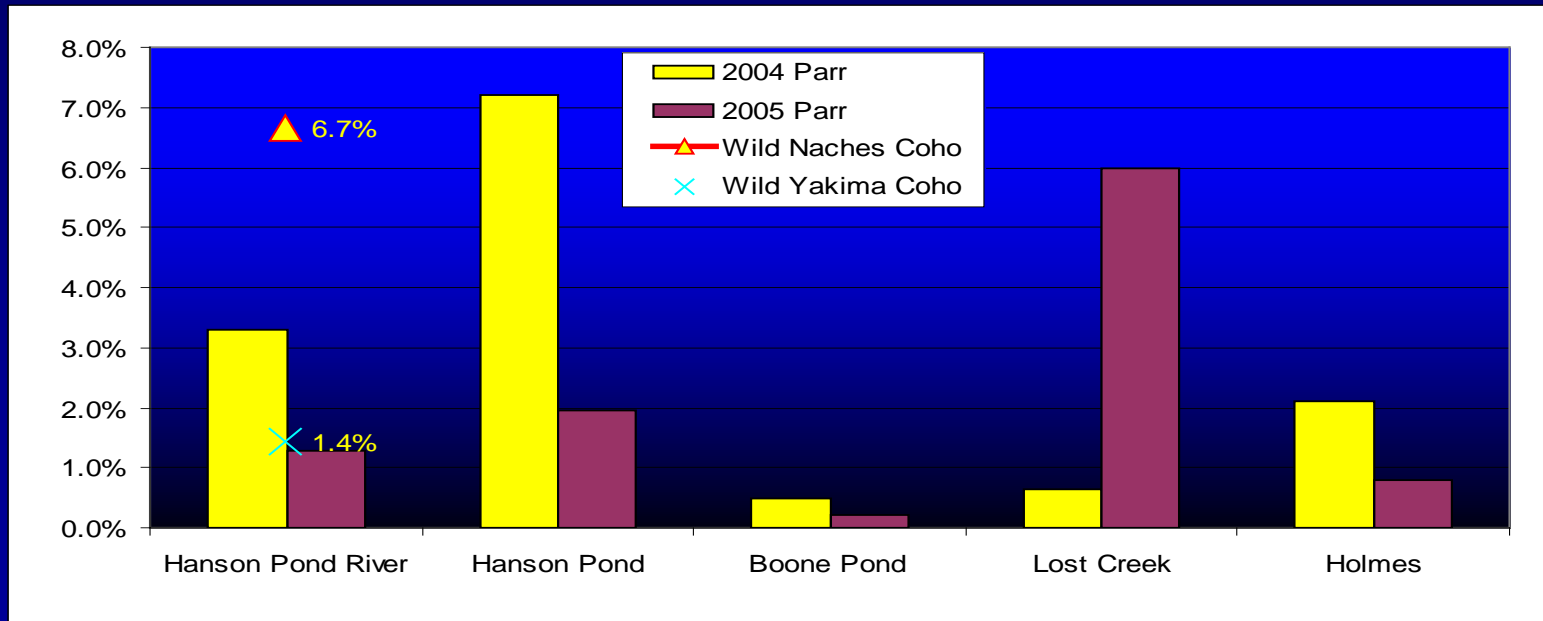
# Over-winter Results Year 1

Location	Pit tagged	Prosser Detected	McNary Detected	Survival Prosser	Adjusted McNary Survival
Hanson Pond River	1000	30	33	3.0%	3.3%
Hanson Pond	1000	54	72	5.4%	7.2%
Boone Pond	2500	13	13	0.5%	0.5%
Lost Creek	2500	16	16	0.6%	0.6%
Holmes	2500	51	53	2.0%	2.1%

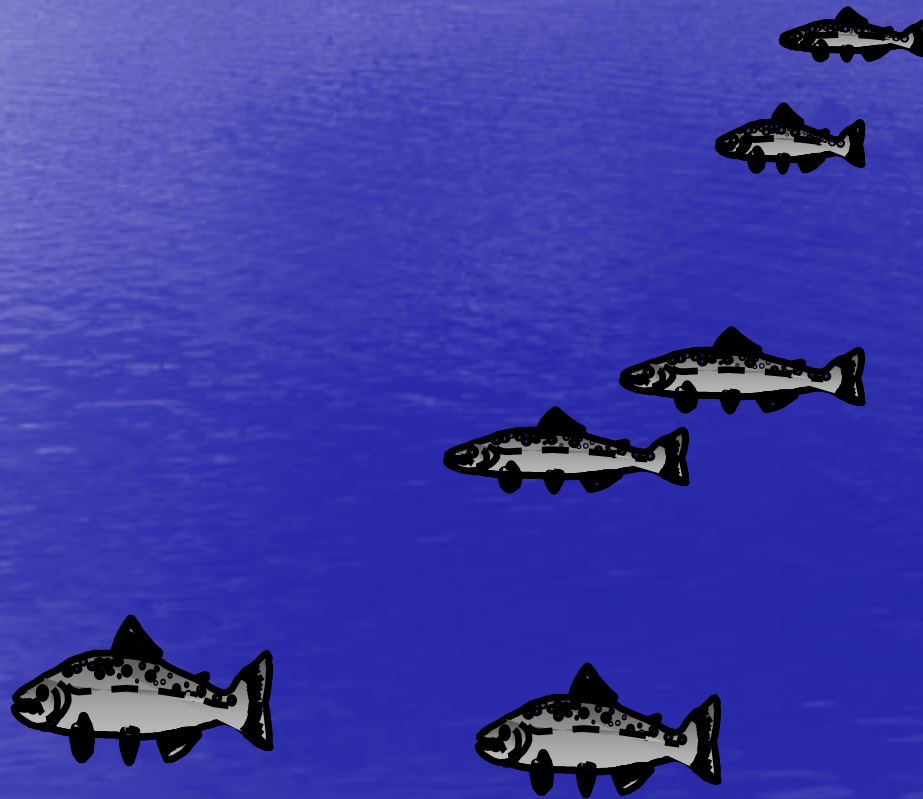


# Preliminary, Over-winter Results Year 2

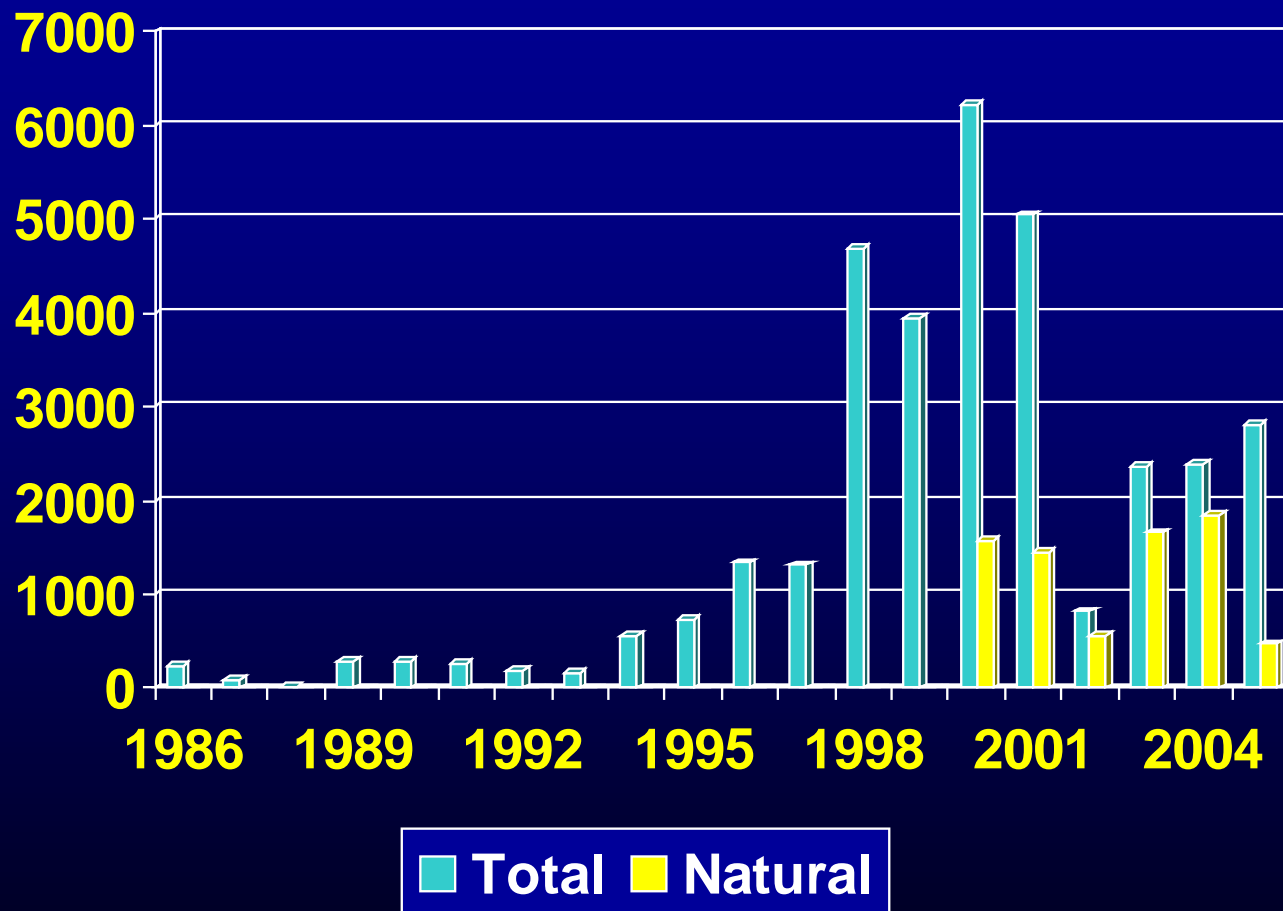
Location	Pit tagged	Pro-McN-BNV	Survival
		Detected	
Hanson Pond River	1022	13	1.3%
Hanson Pond	1022	20	2.0%
Boone Pond	1022	2	0.2%
Lost Creek	1022	61	6.0%
Holmes	1025	8	0.8%
Wild Yakima Coho	70	1	1.4%
Wild Naches Coho	30	2	6.7%



# Adult Returns



# Upper Yakima Coho Returns, 1986 – 2005

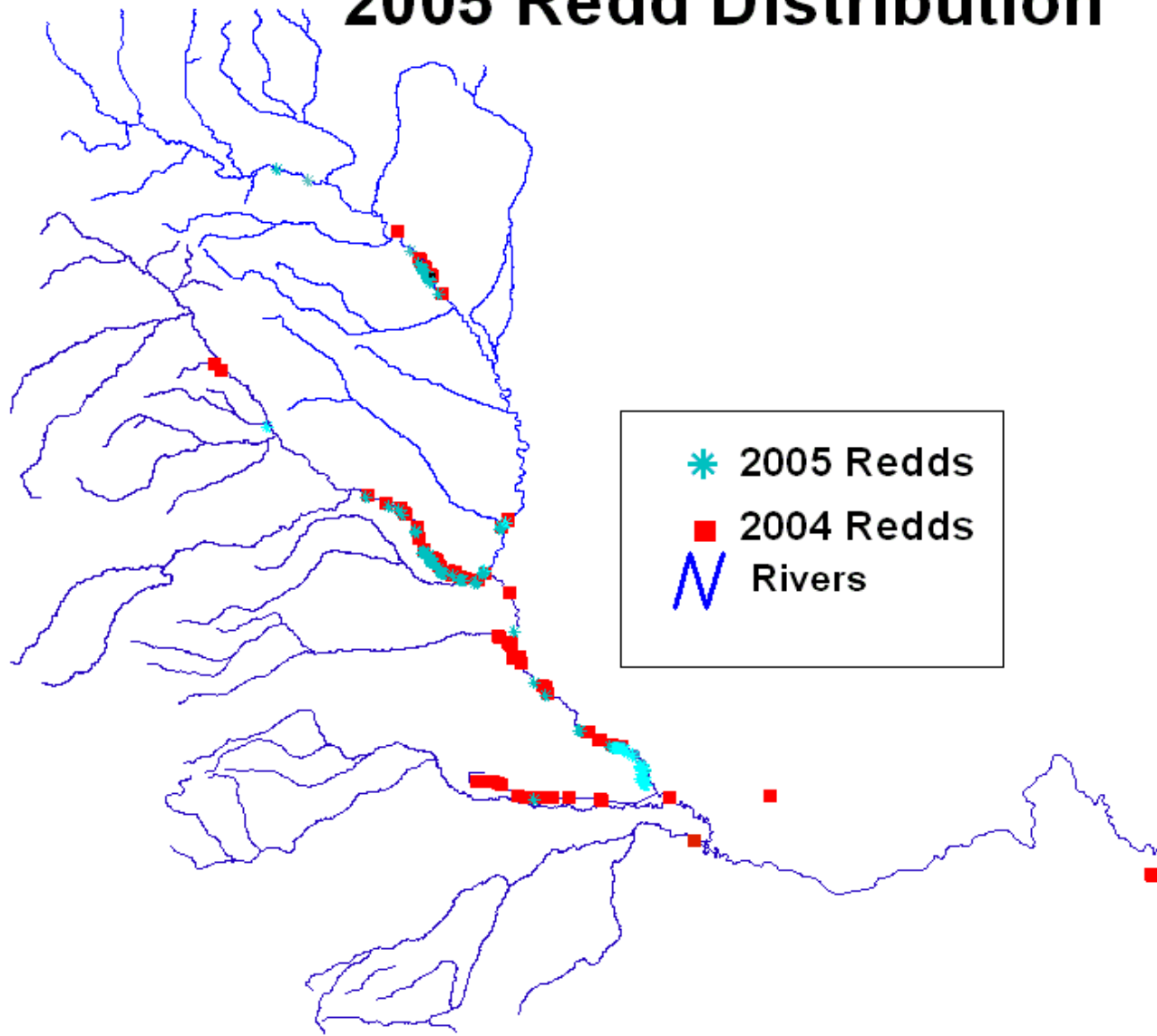


# *Redd Distribution*

Naches River	72
Yakima River Below Roza Dam	53
Upper Yakima River Above Roza Dam	57
Buckskin Slough	67
Marion Drain	1
Ahtanum Creek	11
Other Tributaries	8

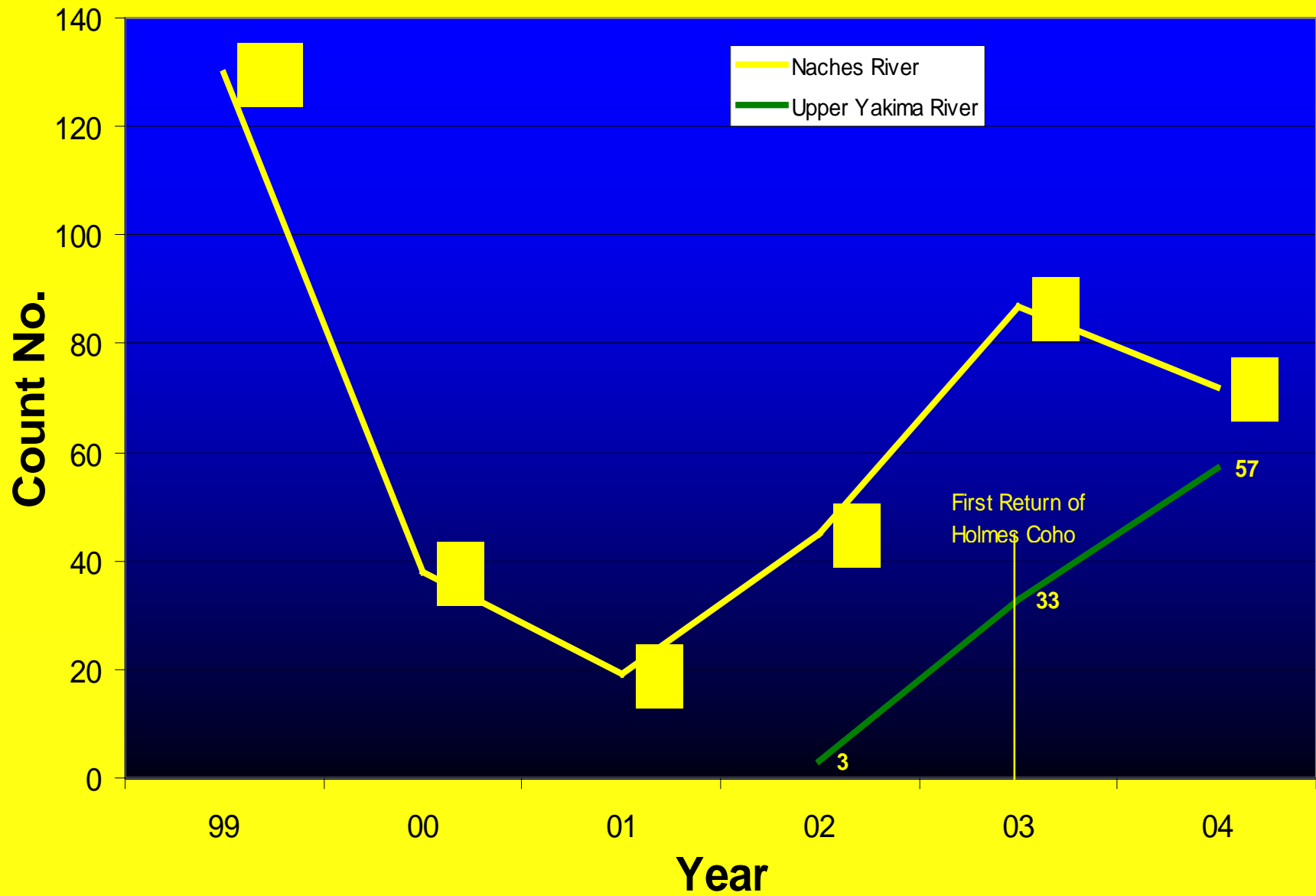
269 Total Redds

# 2005 Redd Distribution

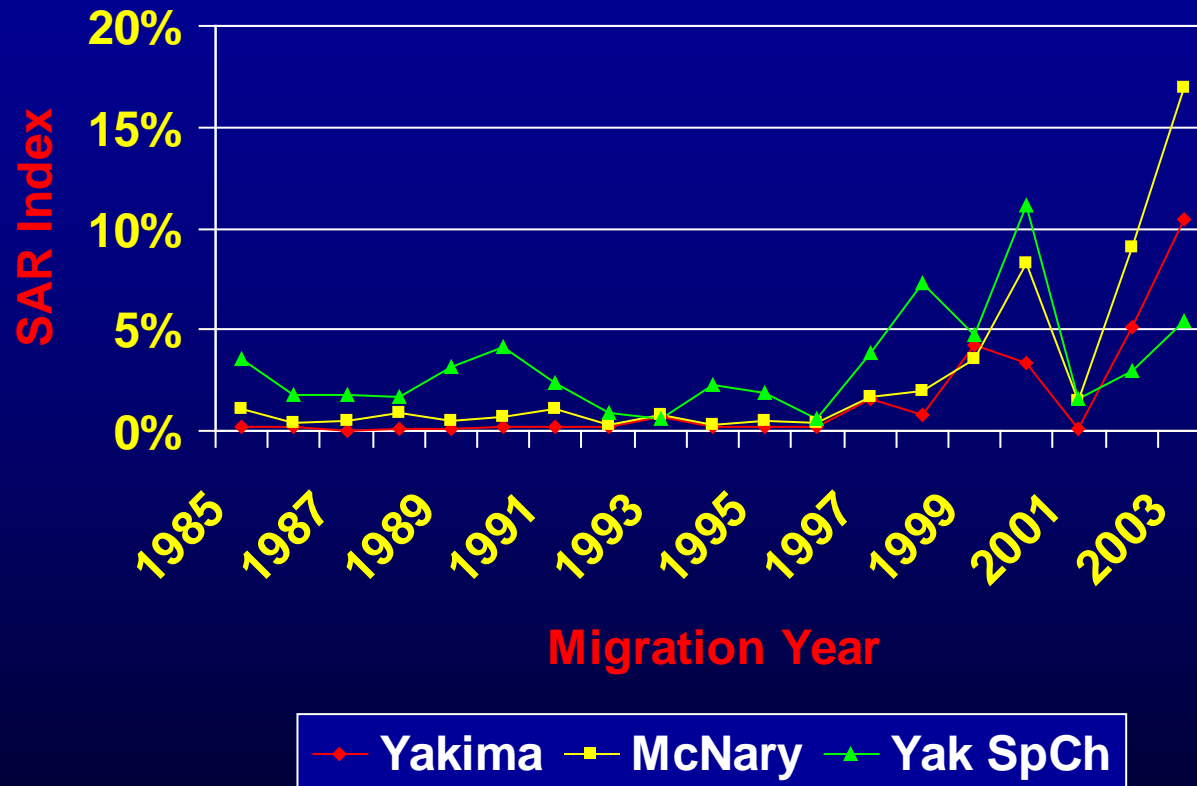




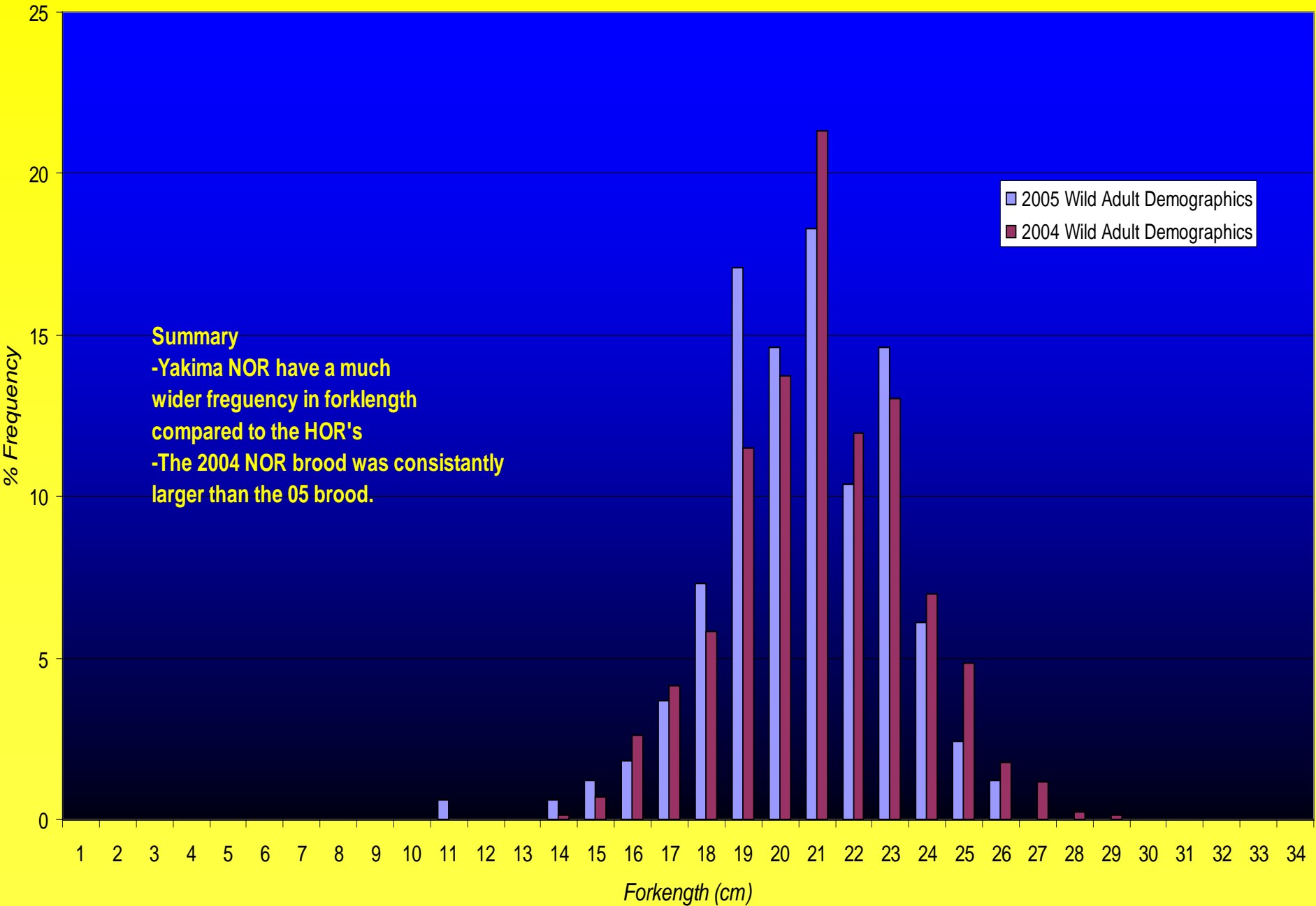
# Redd Count Trends



# Coho Reintroduction Smolt-to-Adult Survival Indices for Migration Years 1985 – 2003



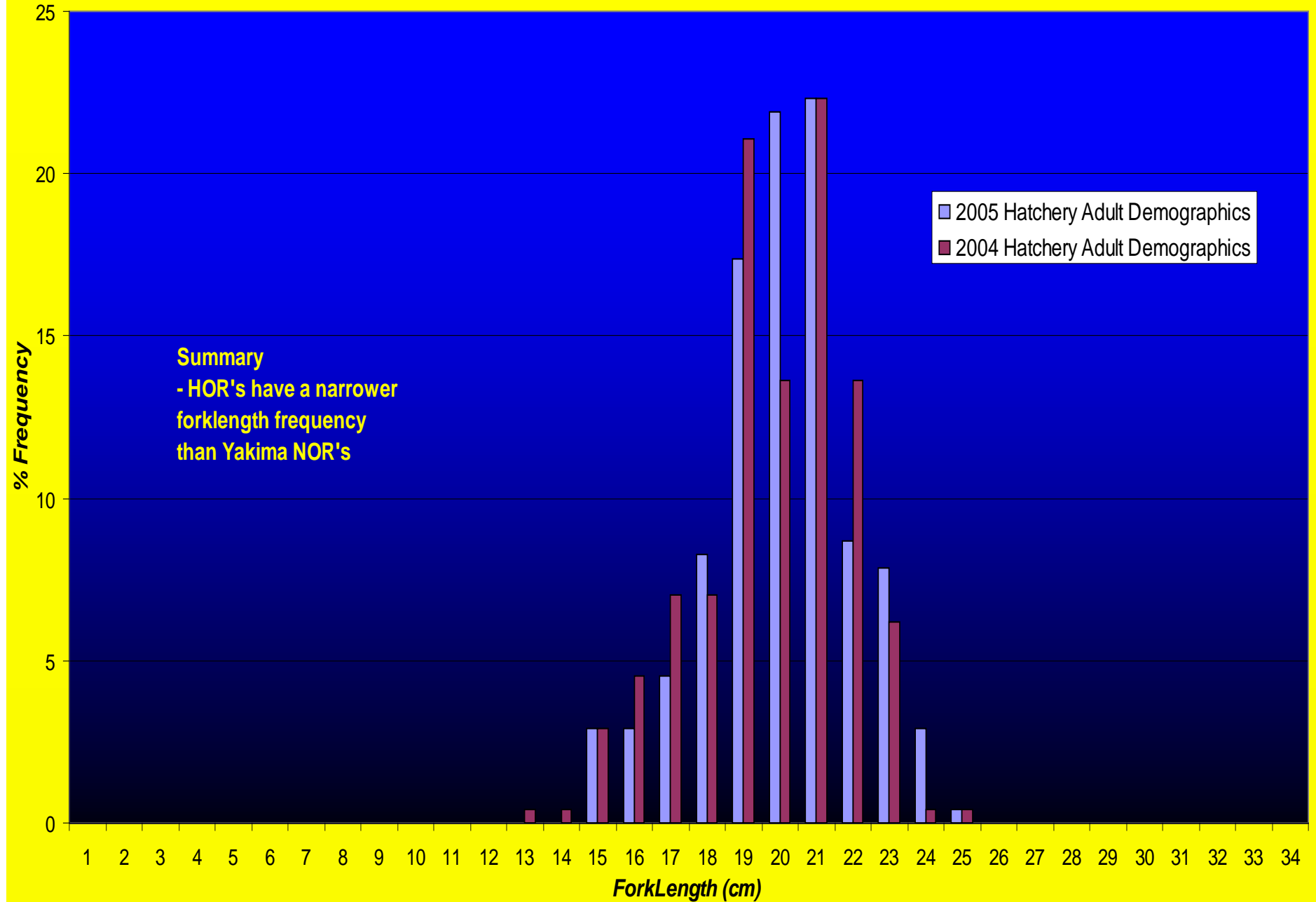
# Comparisons of 2004 and 2005 Wild Adult Demographics



## Summary

-Yakima NOR have a much wider frequency in forklength compared to the HOR's  
-The 2004 NOR brood was consistently larger than the 05 brood.

# Comparison of 2004 & 2005 Hatchery Adult Demographics



# Coho Highlights

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



*The coho above dug this redd!*



*Holmes Cottonwood Gallery Redd*



*Spawned out Male Coho (Holmes)*







# Redd Caps





# *Radio Tracking Objectives*



**Radio tag approximately 100 randomly collected adult Coho at Prosser Dam. Only 72 were radio tagged.**



**Determine spawning distribution of returning Coho to the Yakima River.**

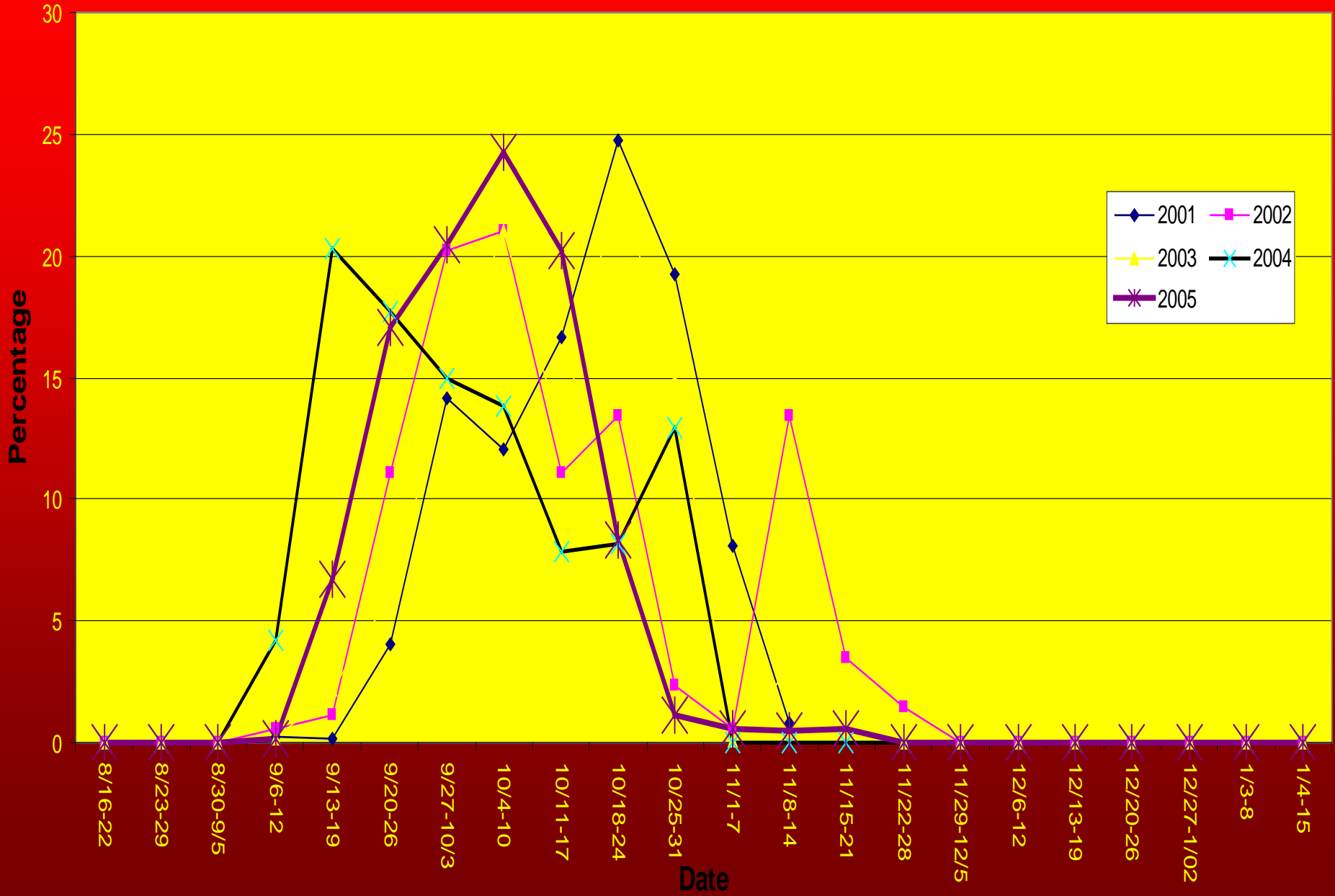


**Test trapping and radio tagging adult Coho at Cowiche and Roza Dams.**



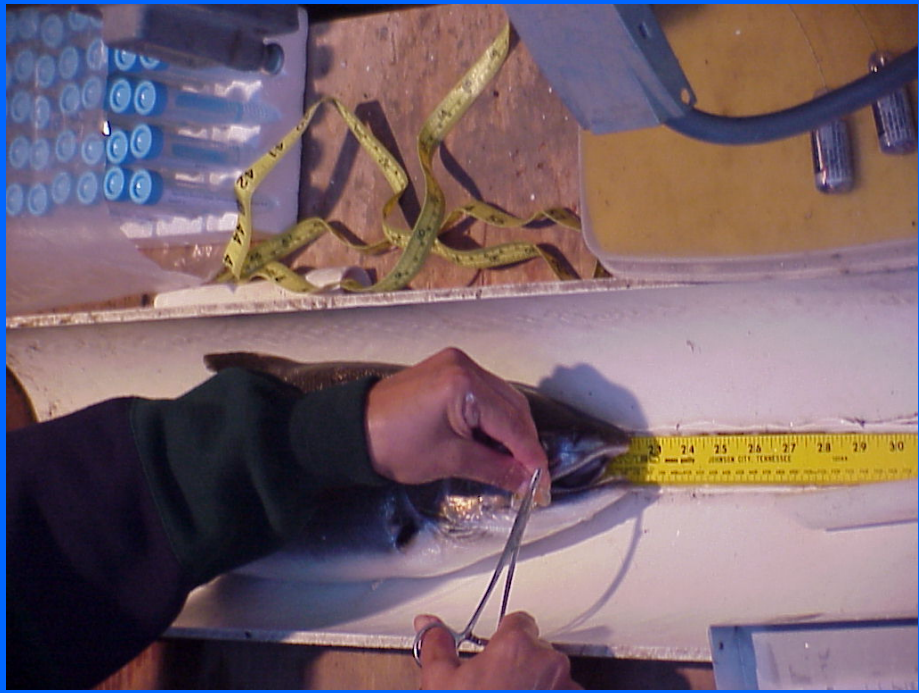
**From radio tracking, use redd distribution to locate areas of wild rearing, perform summer snorkeling survey to assess abundance and distribution.**

# Adult Coho Denil Passage 2001-2005



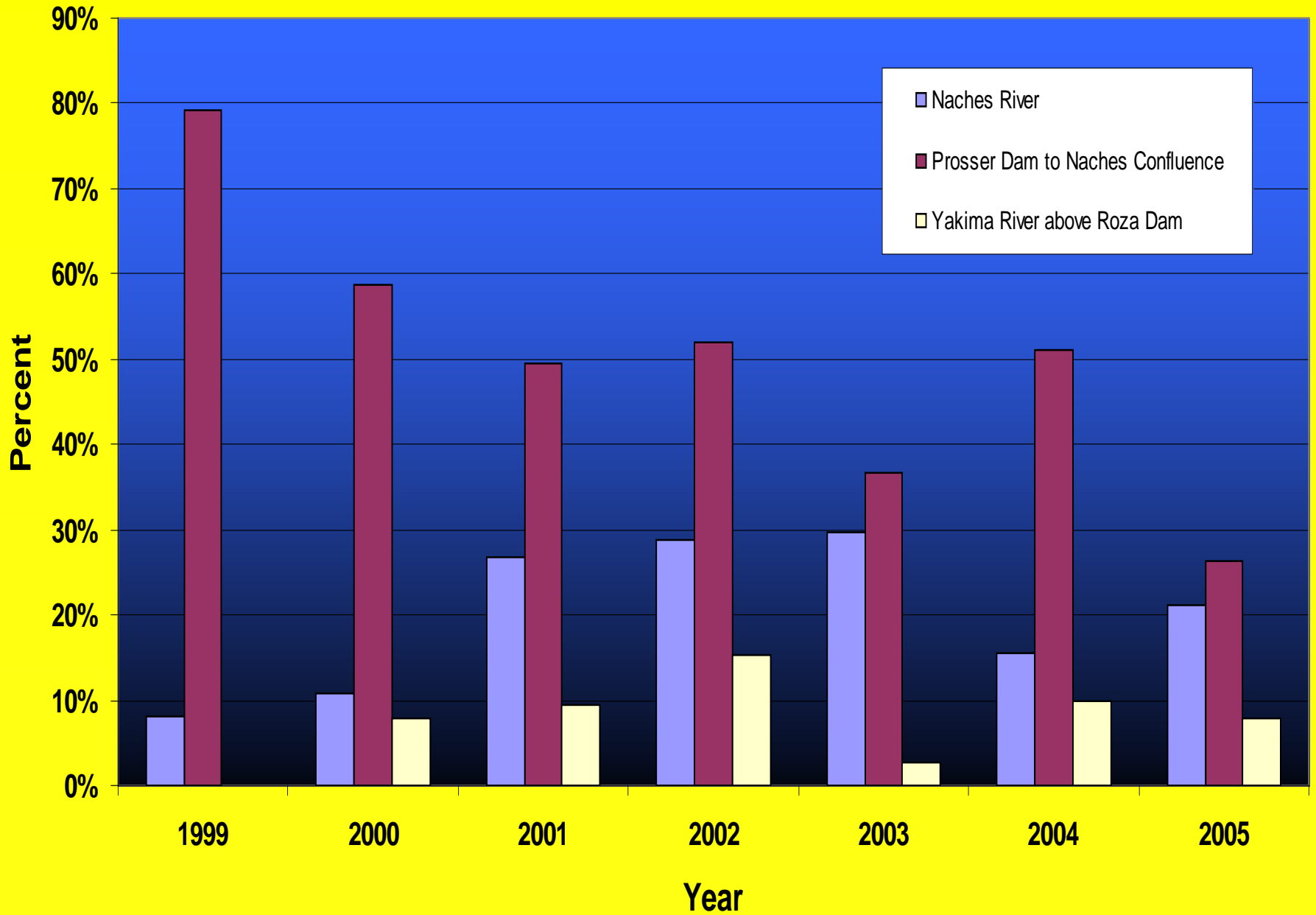








# Radio Tracking Trends

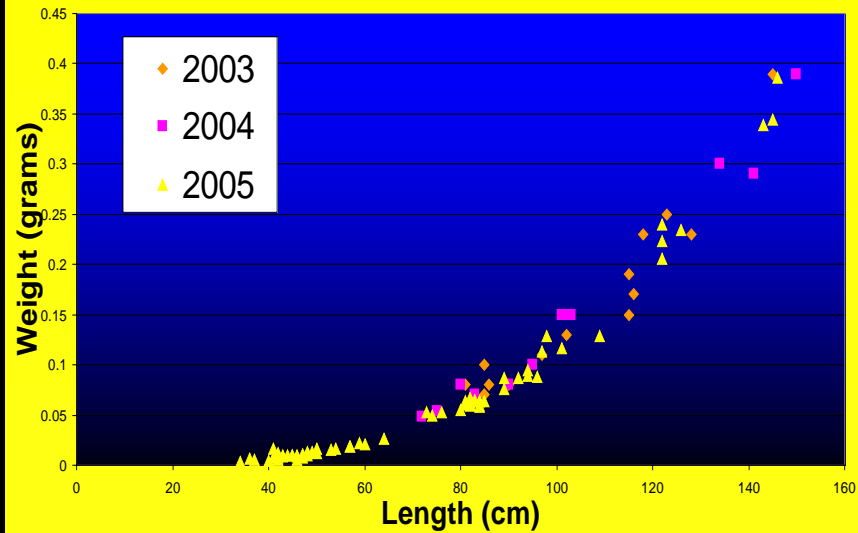


# Baseline Data Monitoring

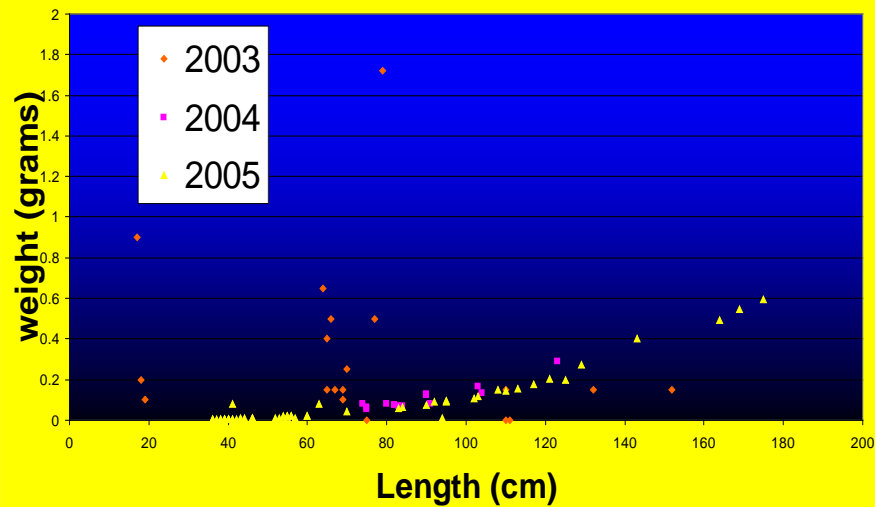




**Quartz**

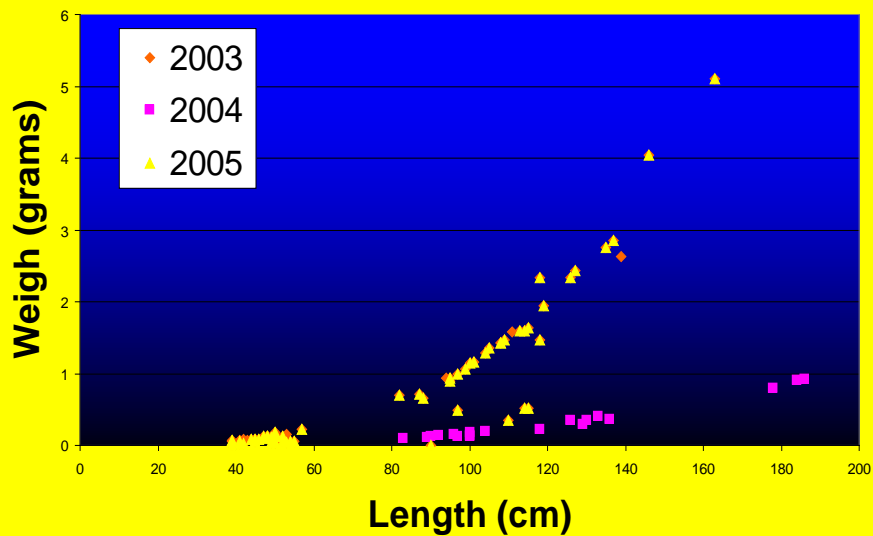


**Pileup**

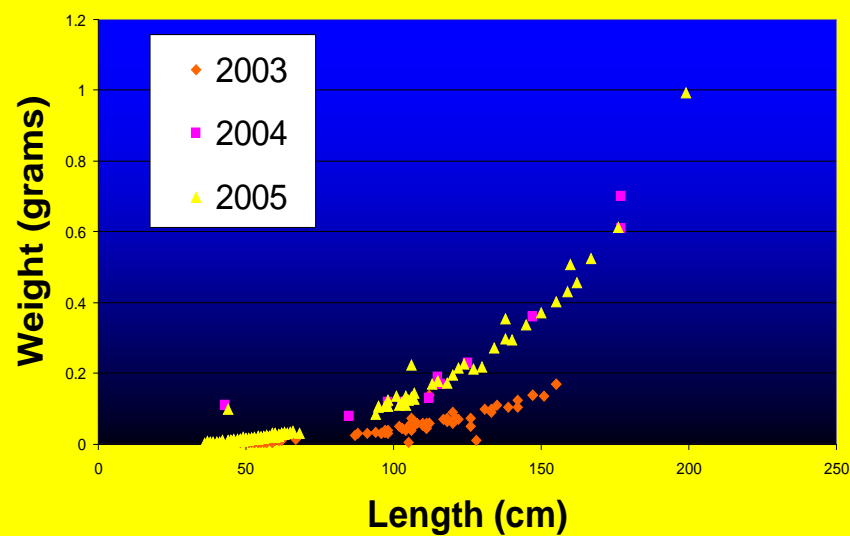


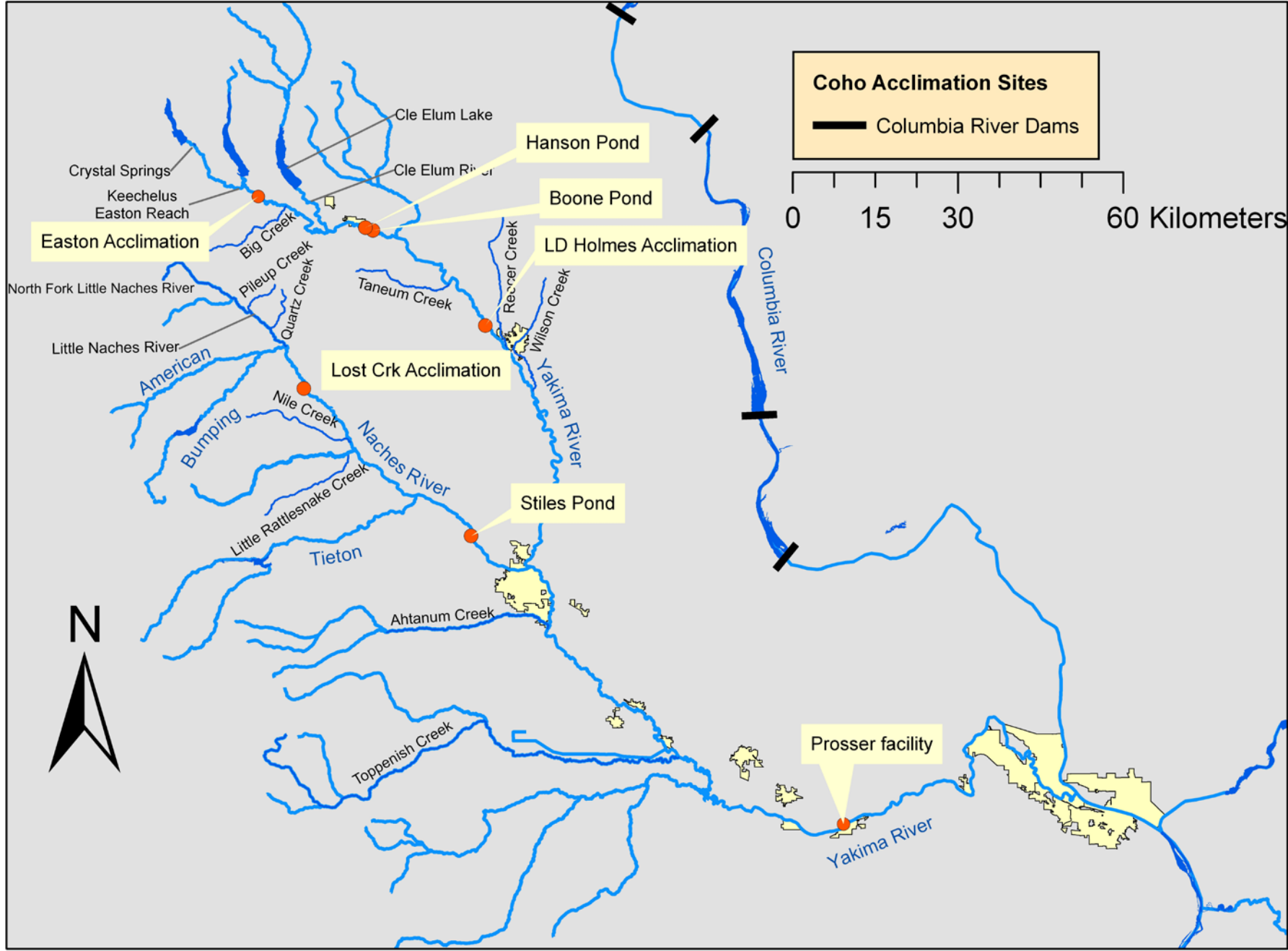
**O. Mykiss**

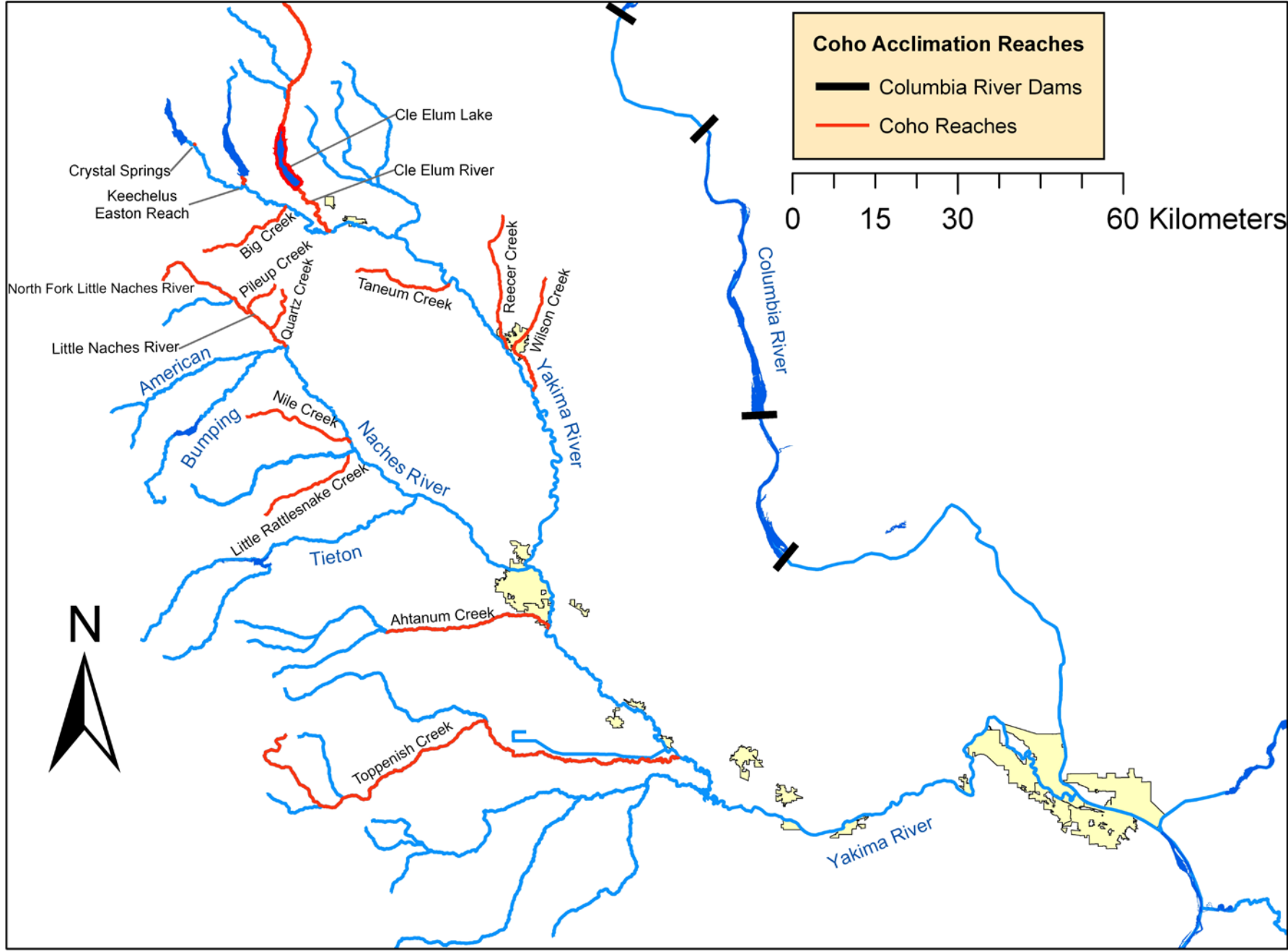
**Little Rattlesnake**



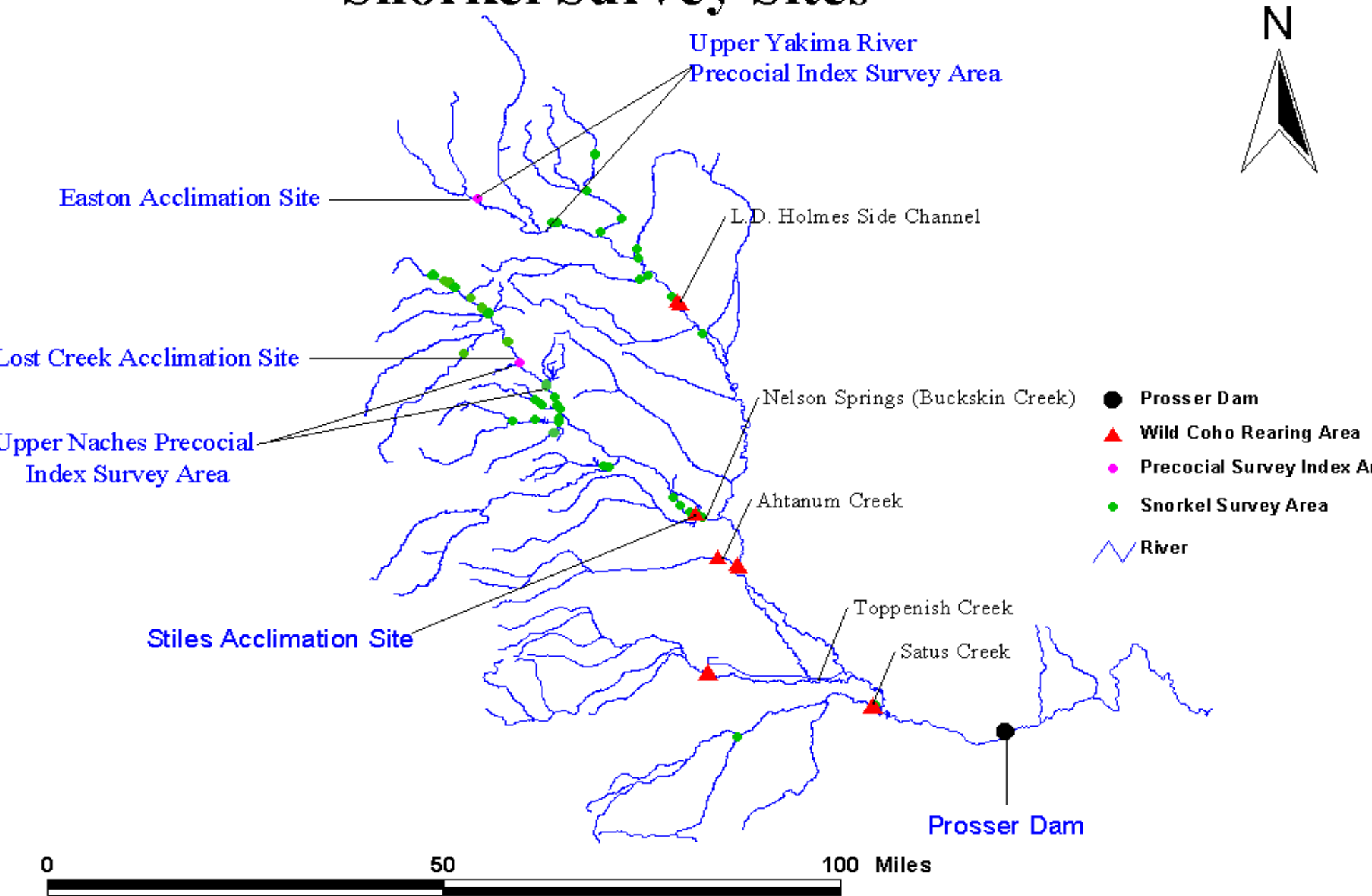
**Nile Creek**







# Snorkel Survey Sites



*The End*

