

Multi-Year Comparison of “Wild” and “Hatchery” Smolts at Roza Dam 2002 – 2006

Olympia Fish Health Center

In Cooperation With

Yakima-Klickitat Fisheries Project

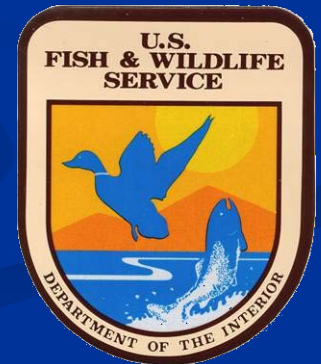
To

Expand the National Wild Fish Health Survey



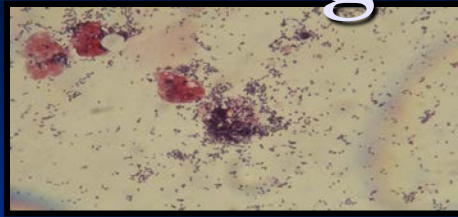
The National Wild Fish Survey (NWFHS) Goals

- 🐟 To determine the distribution of certain pathogens in wild fish
- 🐟 Use standardized approach to allow for comparisons between species, areas, and watersheds
- 🐟 Provide scientific information needed for management decisions regarding stocking and fish transport activities



<http://wildfishsurvey.fws.gov>

Target Pathogens of National Interest

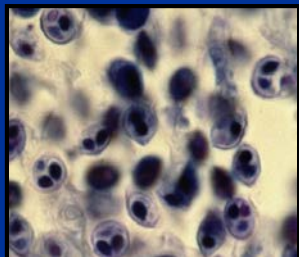


Bacteria

- *Aeromonas salmonicida*
- *Yersinia ruckeri*
- *Renibacterium salmoninarum*
- *Edwardsiella ictaluri*

Parasites

- *Myxobolus cerebralis*
- *Ceratomyxa shasta*
- *Bothriocephalus acheilognathi*



Viruses



- Infectious Pancreatic Necrosis Virus
- Infectious Hematopoietic Necrosis Virus
- Viral Hemorrhagic Septicemia Virus
- Channel Catfish Virus
- *Oncorhynchus masou* Virus
- Largemouth Bass Virus
- Infectious Salmon Anemia Virus
- White Sturgeon Iridovirus
- Spring Viremia of Carp Virus
- White Sturgeon Herpes Virus

Examples of Laboratory Methods for Pathogen Detection

🐟 Screening Methods

- Bacterial Culture on Growth Media
- Tissue Culture for Viral Agents
- Enzyme Linked Immunosorbent Assay (ELISA)

for *R. salmoninarum*



🐟 Confirmation Methods

- FAT
- Polymerase Chain Reaction (PCR)

🐟 Detailed Laboratory Protocols are Posted at the Website

<http://wildfishsurvey.fws.gov>

Reporting of Data

Results are first reported to the partner aiding in collection

Then posted on website

The screenshot shows the homepage of the National Wild Fish Health Survey. At the top left is the U.S. Fish & Wildlife Service logo. To its right is the text "U.S. Fish & Wildlife Service" and "National Wild Fish Health Survey". Below this are links for "National Wild Fish Health Database", "National Fish Health Mission", "Map of Fish Health Centers", and "Contact Fish Health Centers". The main content area features a central image of two people in a boat on a lake, with a large fish being pulled out. Surrounding this image are several purple buttons with white text: "Fish Health Mission", "Database", "What's New", "Background", "Why a National Fish Survey?", "Purpose", "Why Develop Partnerships?", "Who Benefits from NWFHS?", "Fish of Interest", "National Pathogens", "Regional Pathogens", "Criteria for Areas of Focus", "Fish Collection Protocols", "Lab Protocols & Procedures", "Fish Health Centers", and "USFWS Search".

<http://wildfishsurvey.fws.gov>

Examples of Expanding the Species Range of *R. salmoninarum*

- | | | | |
|--------------------|--------------------|----------------------------|--------------------|
| Alabama hog sucker | Flathead catfish | Northern pike | Spotted bass |
| American shad | Freshwater drum | Northern pikeminnow | Spotted sucker |
| Black bullhead | Gila trout | Paiute sculpin | Tahoe sucker |
| Black crappie | Gizzard shad | PeamouthPikeminnow X | Tilapia |
| Blacknose dace | Goldfish | Chiselmouth | Utah chub |
| Bloater | Guppy | Redside shiner | White bass |
| Bluegill | Lake sturgeon | Rio Grande cutthroat trout | White crappie |
| Bowfin | Lake whitefish | River carpsucker | White sucker |
| Bridgelip sucker | Largemouth bass | River redhorse | Wood River sculpin |
| Channel catfish | Largescale sucker | Rock bass | Yellow bullhead |
| Chinook salmon | Longnose dace | Shorthead redhorse | Yellow perch |
| Chiselmouth | Longnose Sucker | Smallmouth bass | |
| Common carp | Mooneye | Smallmouth buffalo | |
| | Mottled sculpin | Speckled dace | |
| | Mountain whitefish | | |



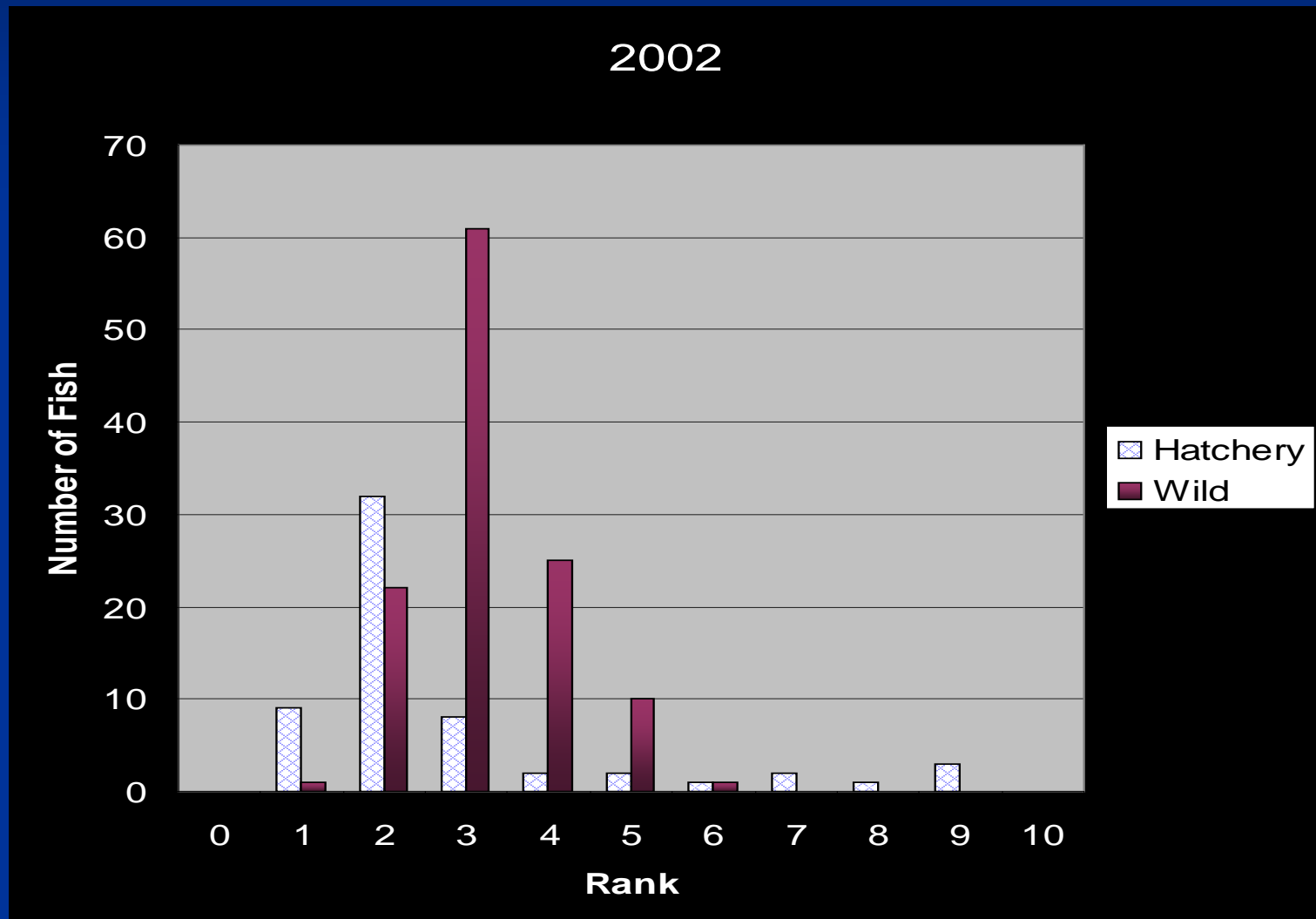
Lake Sturgeon



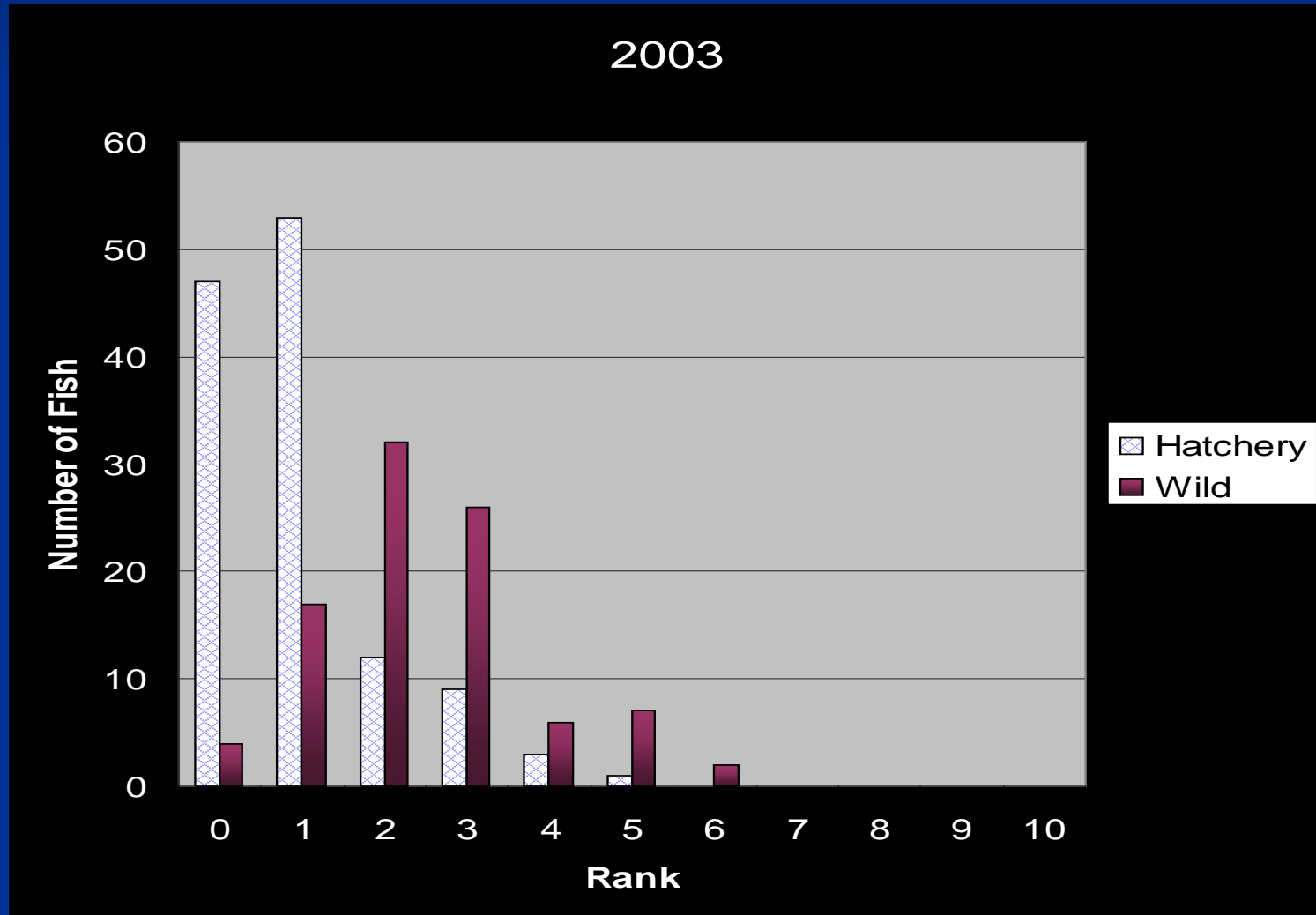
Largemouth
bass

Specific Results at Roza – 2002

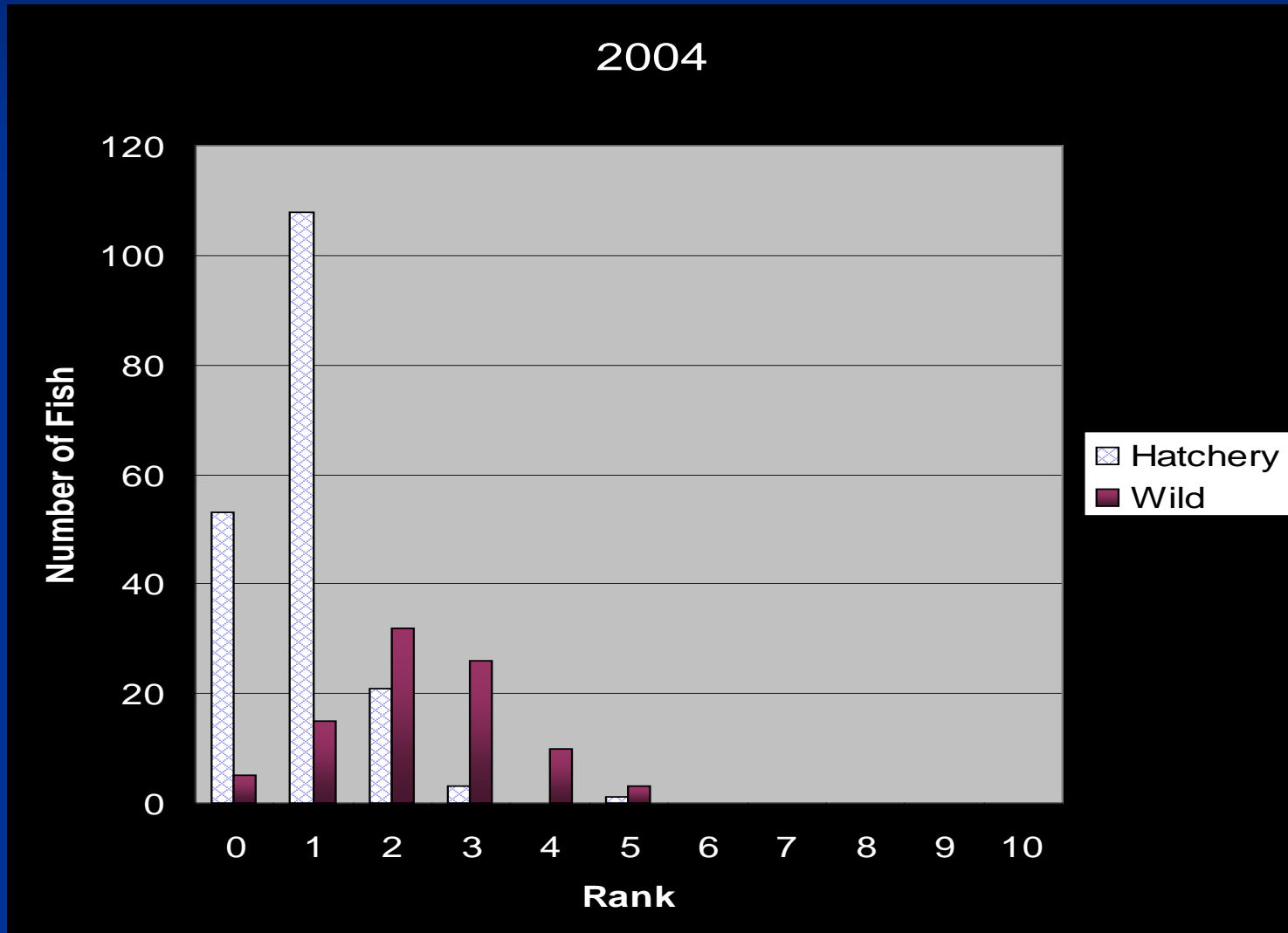
BKD-ELISA



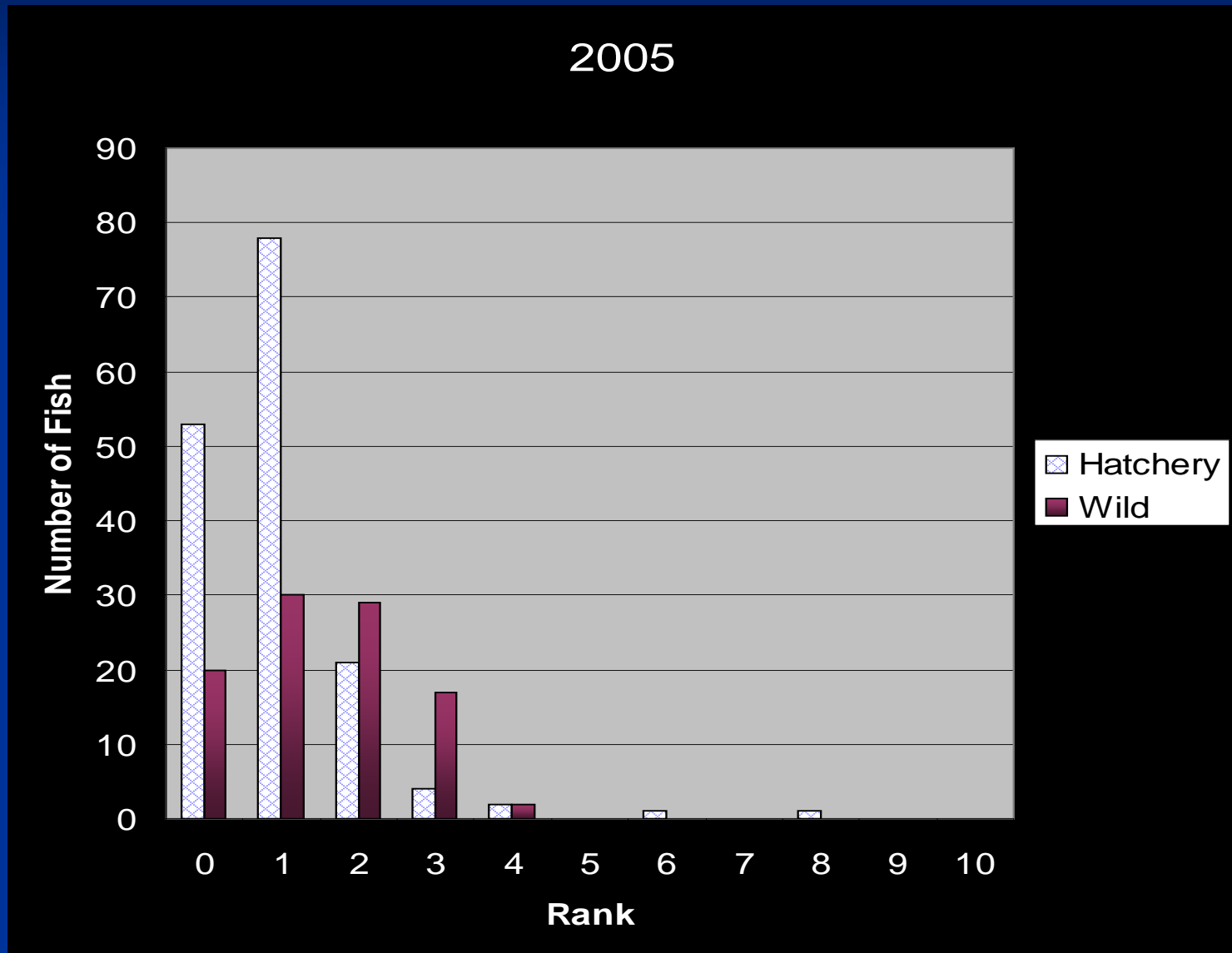
Specific Results at Roza - 2003



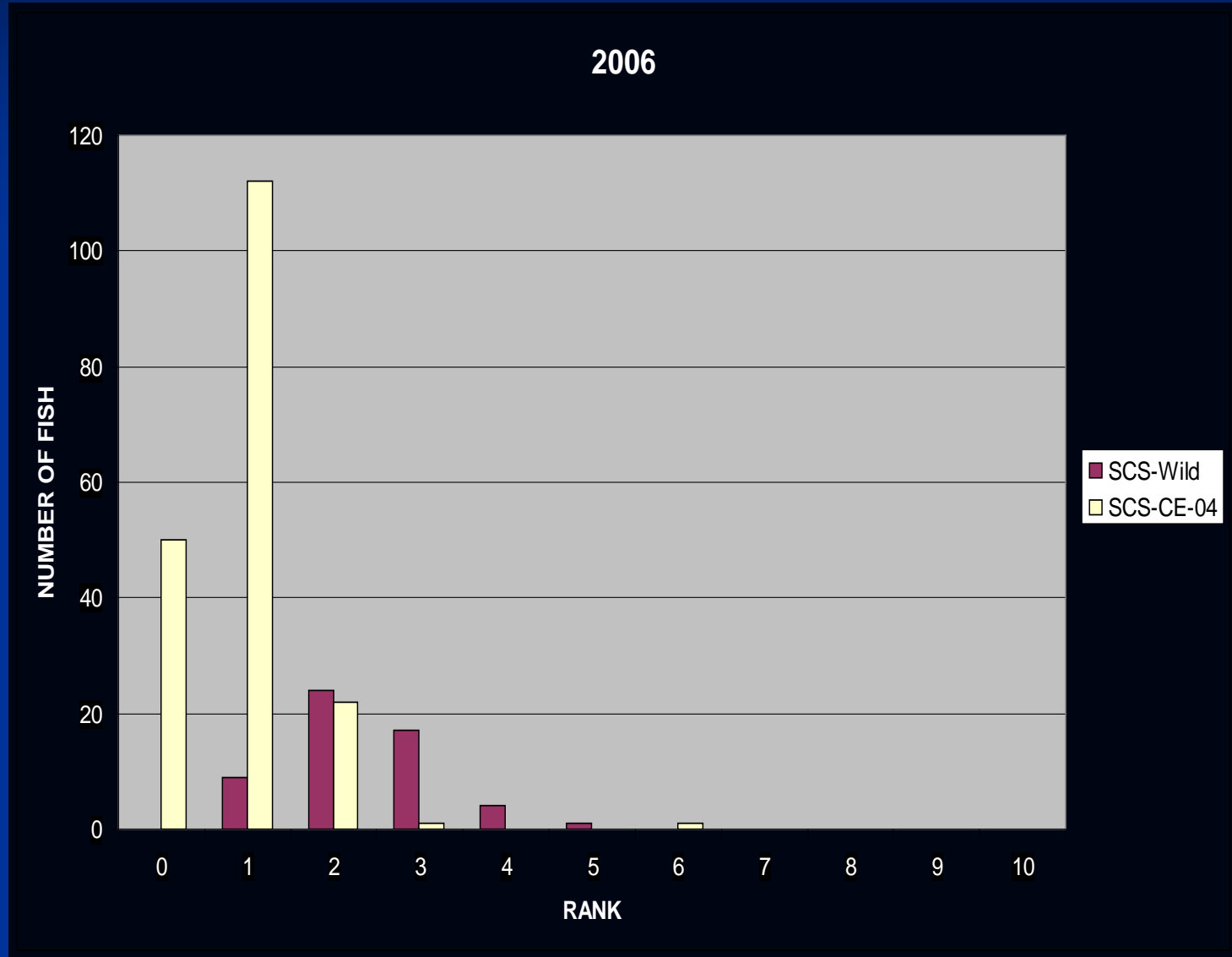
Specific Results at Roza - 2004



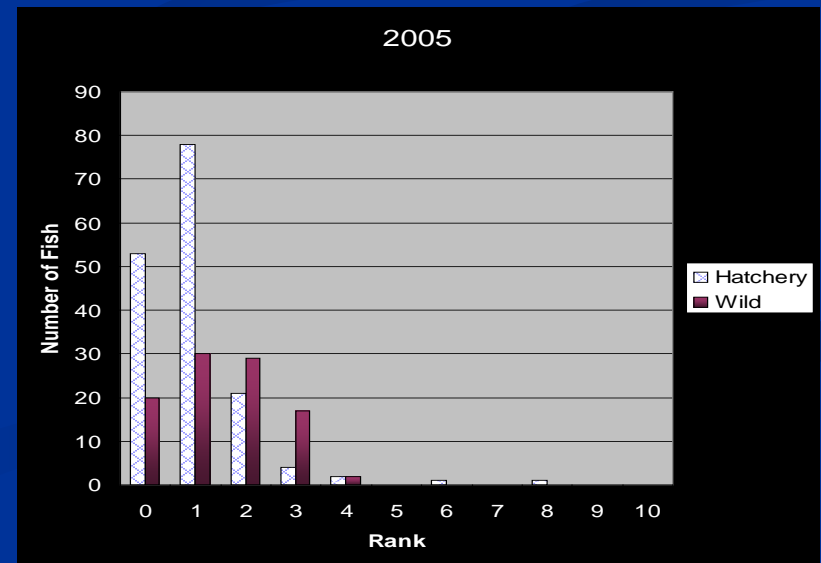
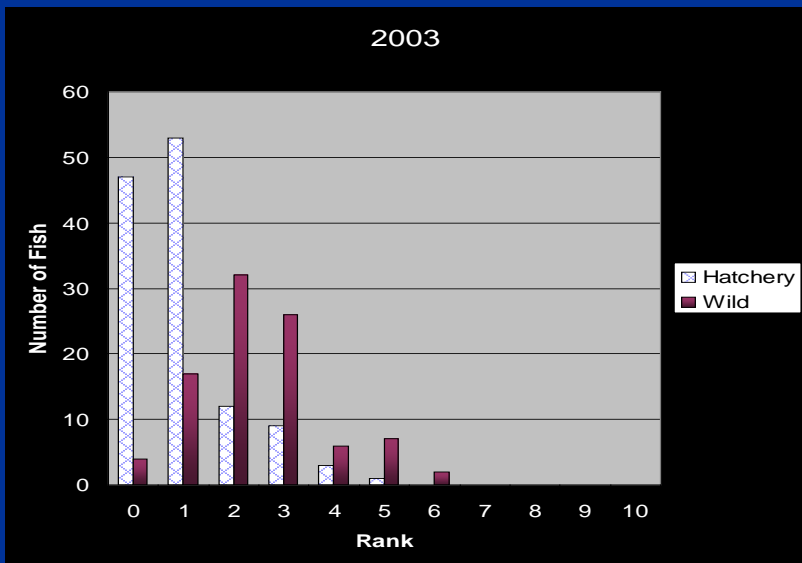
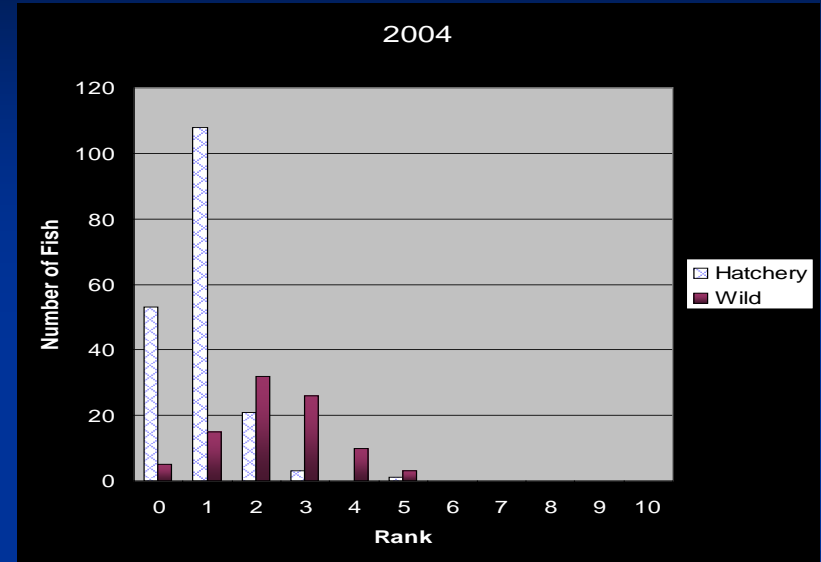
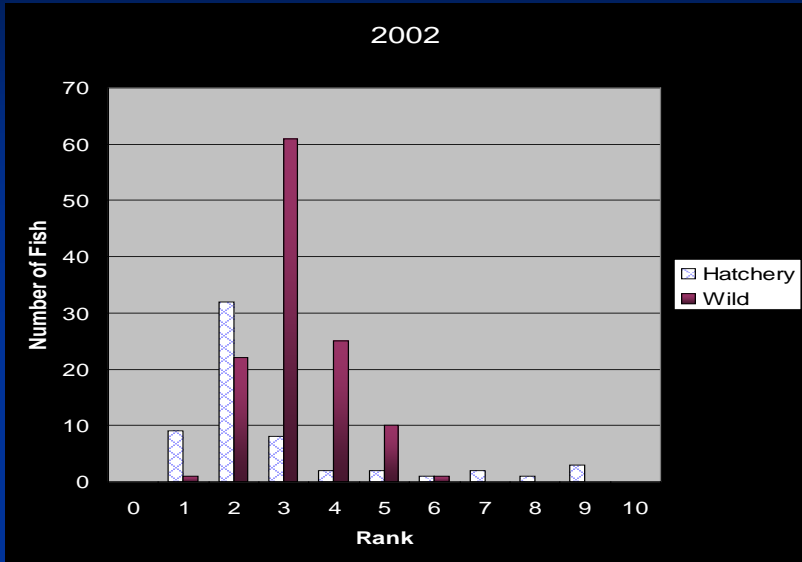
Specific Results at Roza - 2005



Specific Results at Roza - 2006



ELISA Results for *R. salmoninarum* in “Hatchery” Fish and “Wild” Fish at Roza Dam



Conclusions?

Suggestive, but we haven't tortured the data yet!

Acknowledgements

- Sonia Mumford
- Joy Evered
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- YKFP – Roza Crew