

**SAN JOAQUIN RIVER  
RESTORATION PROGRAM**



**Captive Rearing Study Update  
for  
Restoration Goal Technical Feedback Group Meeting**

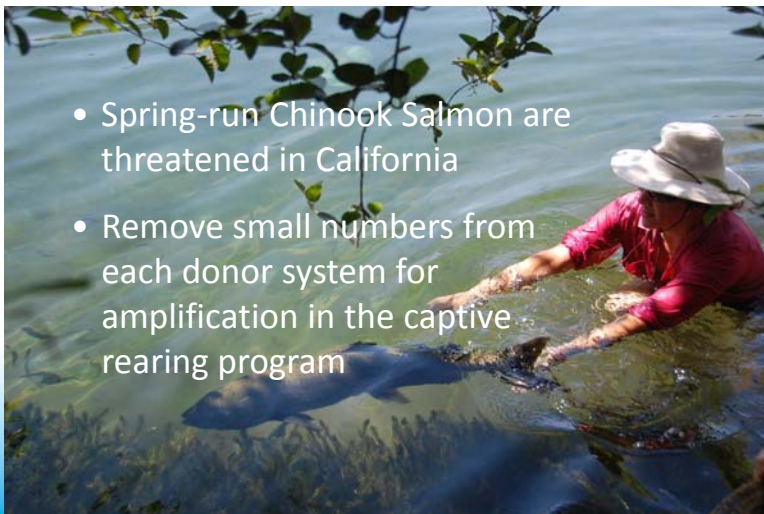
**Paul Adelizi**  
California Department of Fish and Game

March 15, 2012



## Need for Captive Rearing

- Spring-run Chinook Salmon are threatened in California
- Remove small numbers from each donor system for amplification in the captive rearing program



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## Need for Captive Rearing Research

- Practice Hatchery Techniques
- Develop protocols
  - Rearing
  - Feeding
  - Genetic Management
  - Spawning
  - Fish Health Monitoring
  - Marking and Tagging
  - Holding and Transportation

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## Facility Investigations – Hatchery Tours

Feather River Hatchery

Bonneville Hatchery Oregon DFW

Oregon Hatchery Research Facility

Warm Springs Hatchery

Livingston Stone



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### Egg Collection – Merced River Hatchery



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### Egg Collection – Merced River Hatchery



- 55 crosses
- 10 eggs per cross
- 550 eggs
- 30 day quarantine

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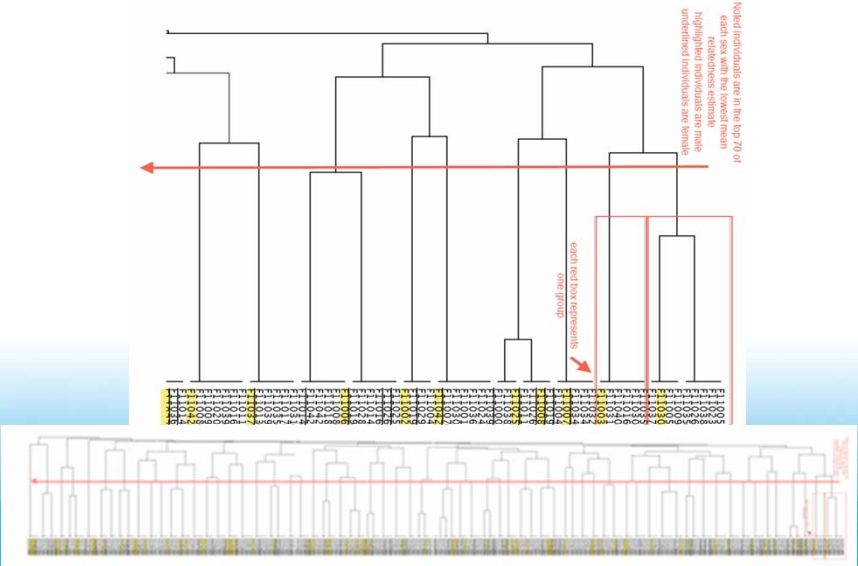
## PIT Tagging

- Tag Retention – (428/444) 96.4%
- Equipment Conflicts
- Need for VI Tags



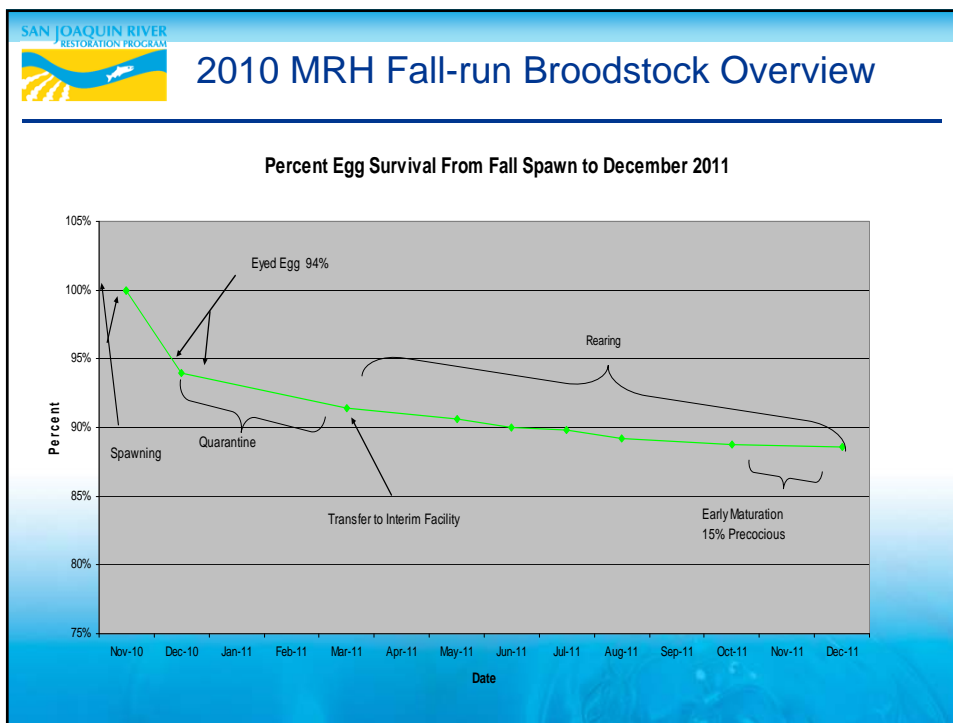
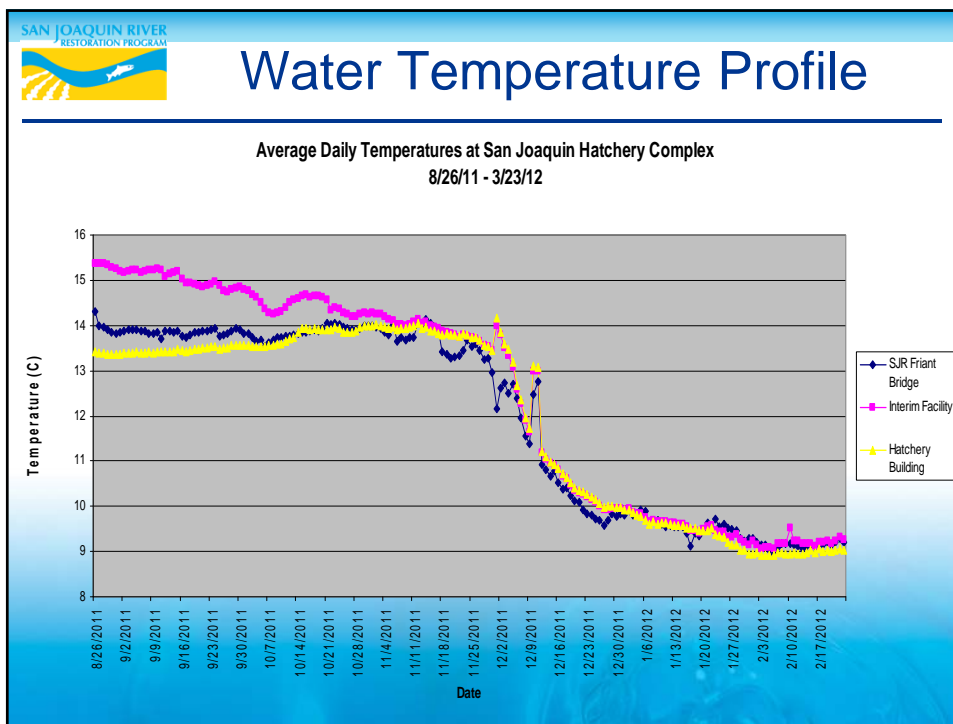
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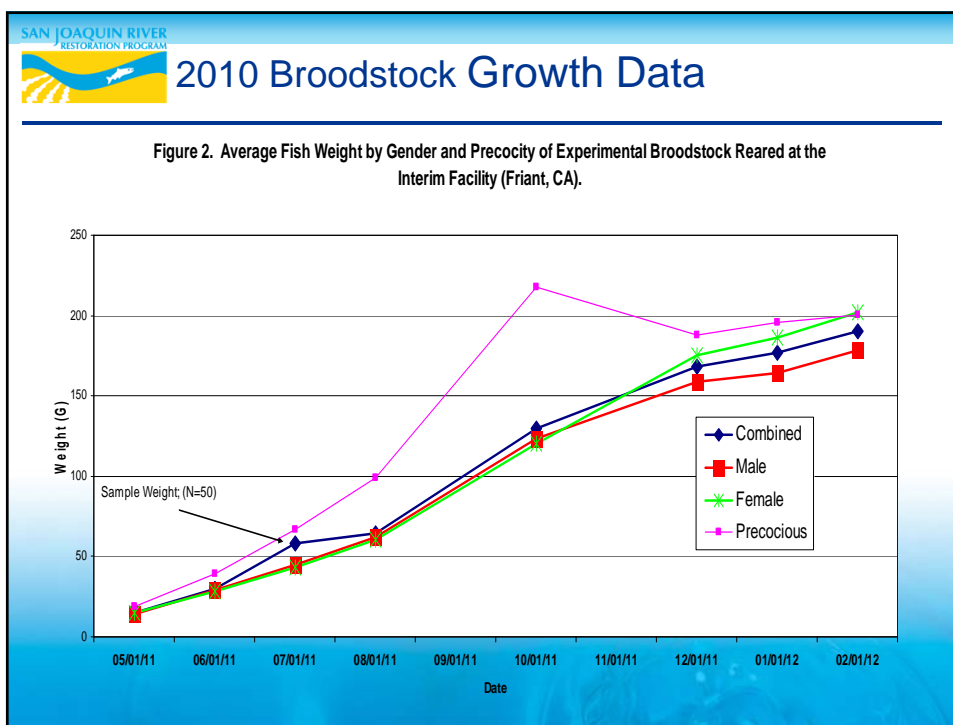
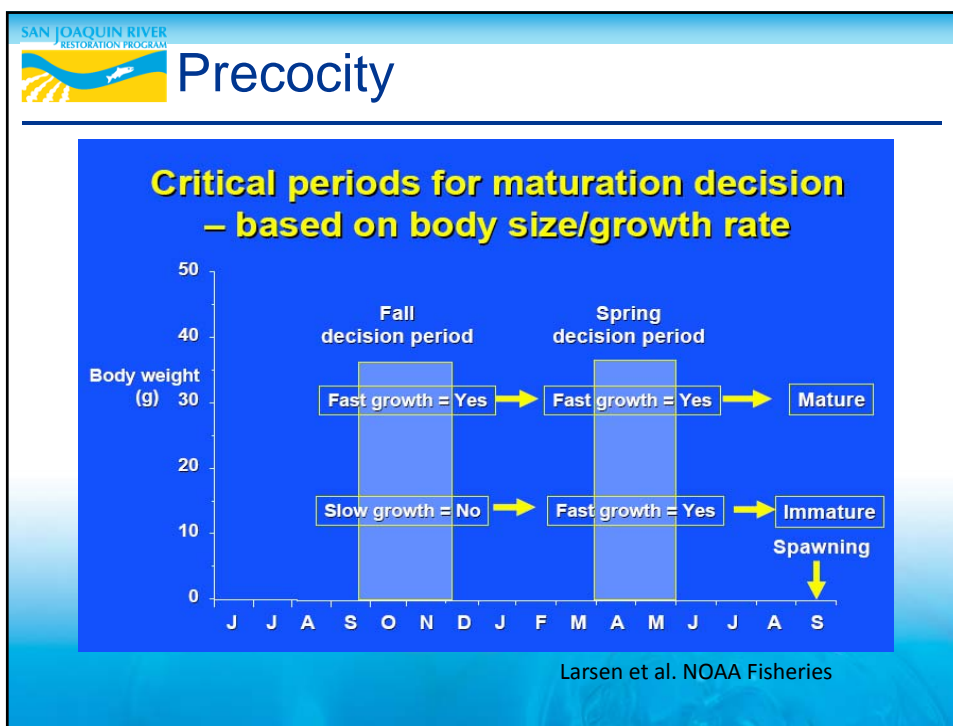
## Genetic and Sex Chromosome Analysis



Noted individuals are in the top 7% of each sex with the lowest mean likelihood scores estimate. Underlined individuals are female.

each red box represents one group





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## Cryopreservation

- Sperm Motility
- Freezing Methods
- Protocols




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## Other Research Support

- Telemetry Study
- Egg Survival Study
- Streamside Incubation






 **Conclusions and Recommendations**

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- Continue captive rearing study.
- Introduce a second group of eggs this fall.
- Use results from study to help guide conservation hatchery construction.
- Continue to investigate growth rate modulation.
- Investigate methods to reduce hatchery induced selection.

 **Acknowledgements**

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- USFWS, NOAA Fisheries & USBR
- UC Davis Genomic Variation Lab
- Margarita Gordus – DFG
- Doug Aubushon – DFG
- Jamie McGrath-Castro – DFG