Lake Washington Sockeye Salmon Program – Opportunities and Challenges

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Sockeye Program Partners

National Marine Fisheries Service
US Fish & Wildlife Service
Washington Dept. of Fish and Wildlife
Muckleshoot Indian Tribe
King County
Public – Wild Fish Conservancy
Public – Puget Sound Anglers
Public – At Large
Mitigation for Landsburg Diversion Dam, Seattle Public Utilities

- Landsburg Mitigation Agreement (LMA)
- 50 year term
- Funding capped in 1996 dollars
- Hatchery program
- Adaptive Management
- Monitoring and Evaluation
Integrating Science

- The public challenged the EIS
- Via SEPA a public, agency and independent scientific review strategy was developed to reduce risk & eliminate litigation.
- An Adaptive Management Plan was developed & is now followed.
- Goals
  - Operate hatchery program to assist in developing a well-adapted, genetically diverse, healthy & harvestable population.
LMA - oversight

- Mayor of Seattle
- SPU Board of Directors
- Policy and co-signers committee
- AMWG
- TWG
Adaptive Management

• Focus on limiting impacts of the hatchery
• Use of local stock, limit numbers, limit hatchery rearing time, timing matches
• Fund and implement monitoring and evaluation projects
Why a sockeye hatchery?
Interim Sockeye Hatchery
Hatchery Controversies

- Competition
- Predation
- Domestication
- Reduced fitness
- Disease
- Natural selection
- Hatchery footprint and impacts
Hatchery survival is higher than what occurs naturally

- 2 sockeye 3,000 eggs
- River
  - 5%
- Fry
  - 150
- Hatchery
  - 97%
  - 2,910
Hatchery Releases

![Bar Chart](chart.png)

- Bars represent Hatchery Sockeye Fry (in millions) by Brood Year.
- The highest release occurred in 2012.
- There was a notable increase in 2001 and 2002.
Cedar River Sockeye Percent HORs in Brood stock (By Brood Year)
Cedar River sockeye run timing & weir operational dates
(Unpublished data PhD dissertation, Mike Tillotson, UW)
Lake Washington Basin

- Habitat loss
- High temperatures
- Altered food web
- Disease
- Ocean conditions
Sockeye Program Costs

- **HCP Commitment**
  - Construction of Replacement Hatchery: $15,000,000
  - Interim Sockeye Mitigation: $5,000,000
  - Replacement Hatchery Operations: $5,000,000
  - Sockeye Monitoring: $3,000,000

- **2017 LTD Expenditure**
  - Construction of Replacement Hatchery: $25,000,000
  - Interim Sockeye Mitigation: $10,000,000
  - Replacement Hatchery Operations: $10,000,000
  - Sockeye Monitoring: $5,000,000
What’s next?

• Continue to operate the hatchery – different standards?
• Continued research into freshwater production issues
• Continued stakeholder and co-manager involvement
For More Information - contact

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