

A Healthy, Sustainable Salmon Fishery off California and Oregon: Ideas for Bringing It Back

Pacific Fishery Management Council

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Presentation to NOAA





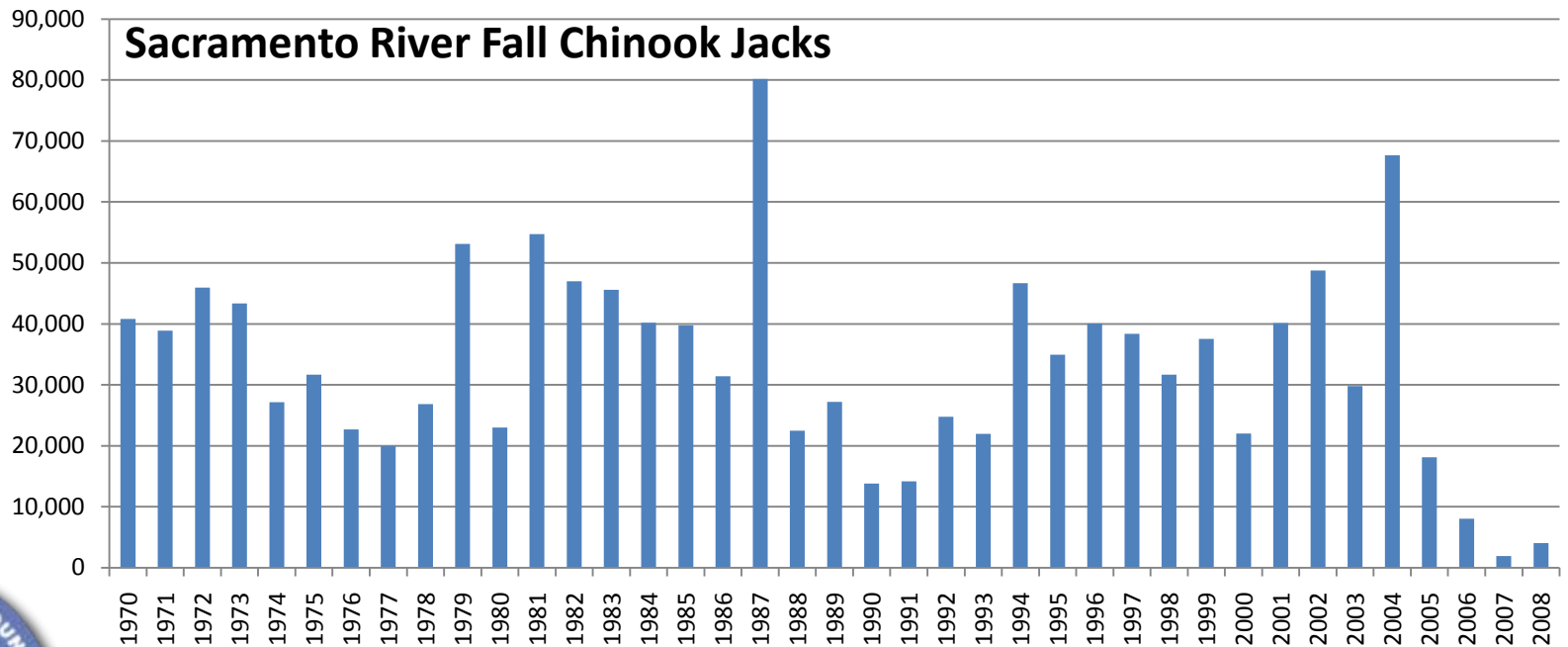
Boat for sale

Background:

- Symptoms of the problems
- Roots of the problems
- Ideas for solving the problems



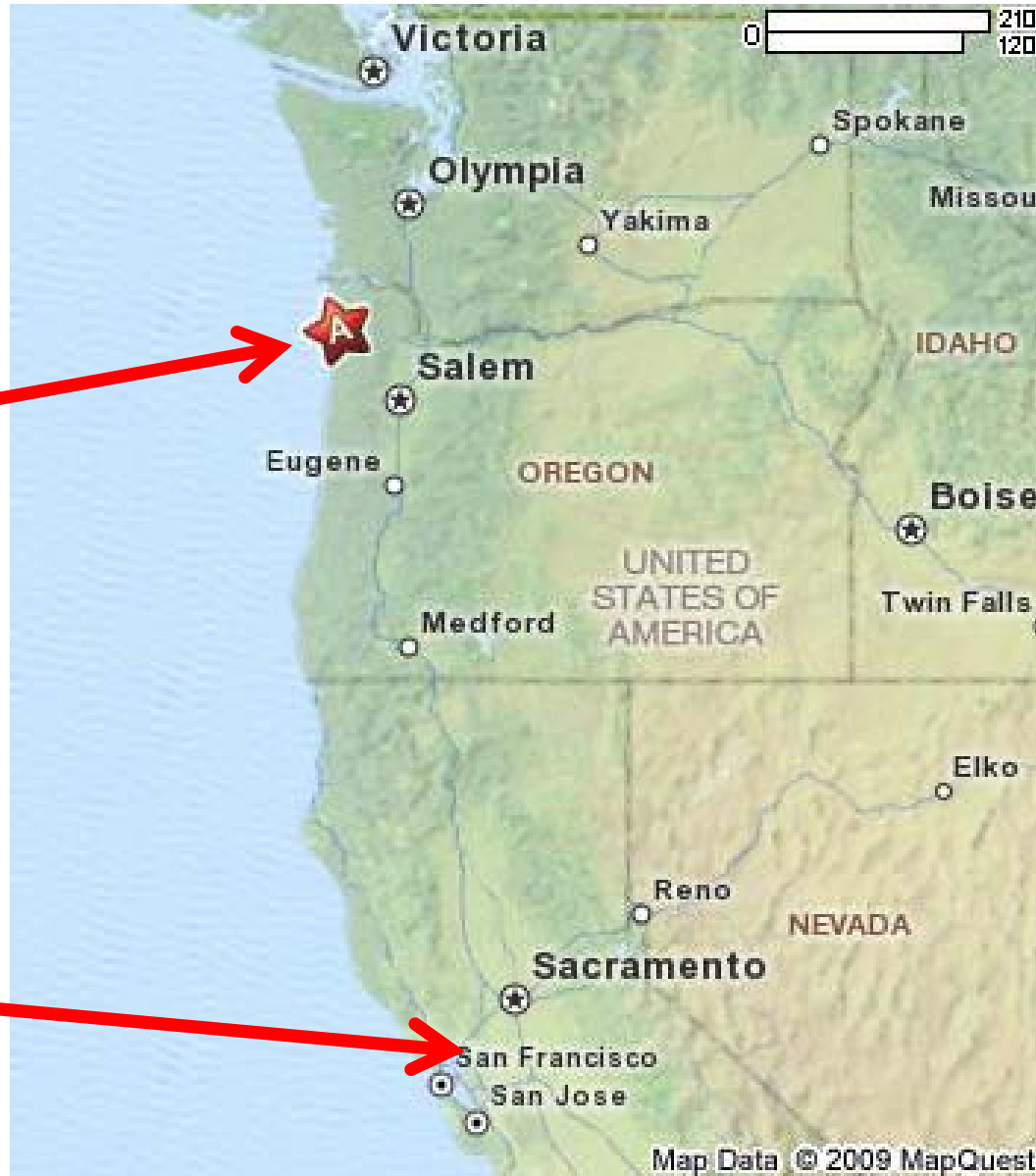
The Biological Symptom: Sacramento River Fall Chinook Stocks Suddenly Collapsed to 15% of the Previous Record Low Abundance



The Fishery Symptom: Unprecedented Closures and Socio-Economic Loss in 2008 and 2009

- Total closure of target ocean sport and commercial and freshwater recreational fisheries south of Cape Falcon, Oregon in 2008
- Near total closure again in 2009
- California, Oregon, and Washington Governors estimated loss of \$290 M and 4,300 jobs to fishery dependent communities
- Congress provided Federal disaster aid of \$170 M
- Salmon fishing is woven into the social fabric of coastal communities
- Restaurants and sellers are losing their markets for wild king salmon, recently carved out from pen-reared imports
- Other fisheries are affected by effort transfer from displaced salmon fishermen
- The public wants something done to get things back to how they were

Map of U.S. West Coast



Cape Falcon

**Sacramento
R. Delta**

What Problems Caused the Collapse of the 2005 and 2006 Broods?

- No single smoking gun identified for the sudden drop
- Many potential specific problems were dismissed
 - Overfishing
 - Hatchery production
 - Environmental catastrophes
 - Sea lion or striped bass predation
 - Bridge construction
 - Change in Delta pumping
- Some specific problems affected the 2005 and 2006 broods
- Chronic problems affected both the 2005 and 2006 broods

What Problems Caused the Collapse of the 2005 and 2006 broods? *(continued)*

Specific Problems

- Flooding during hatch and emergence of 2005 brood
- Drought affected the 2006 brood during the freshwater phase
- Eliminating 2005 brood and near elimination of the 2006 brood estuary net-pen acclimation program for State hatchery releases
- Poor ocean conditions when 2005 brood fish entered the ocean
- No screening of flood overflows during the 2005 brood outmigration

Chronic Problems

- Decades of habitat alterations
 - Channeling and diking
 - Water withdrawals
 - Deleterious flow management
- Loss of genetic diversity in hatchery populations
- Loss of genetic and life history diversity in natural and hatchery populations
- Lack of full mitigation for populations lost above impassable dams
- Climate change ?

Contributing “Bureaucratic” Problems

- **Lack of coordination/consideration of water management effects on fish migration and survival**
 - **Flows/Withdrawals**
 - **Temperature**
 - **Screening**
- **Inadequate habitat restoration and enhancement coordination**
- **Lack of hatchery genetic maintenance and management plans**
- **Lack of a comprehensive strategy to minimize interactions of hatchery and natural fish in juvenile and adult phases**
- **Lack of comprehensive net pen acclimation strategy**
- **Failure to ensure full mitigation for habitat and population losses above impassable dams, and for water management effects on populations existing below dams**



Contributing “Bureaucratic” Problems

- Insufficient monitoring and analysis of juvenile and early ocean survival rates
- Lack of freshwater monitoring programs to acquire age- specific data for run reconstruction analysis
- Insufficient data collection and evaluation of existing CWT studies relevant to survival, straying, and other parameters necessary to optimize production to the fishery in the short and long term
- Lack of consistency between northern and southern treatment of salmon ESA issues
- Lack of analysis of benefits of mass marking hatchery fish
- Lack of analysis of mark-selective fisheries south of Cape Falcon



Problem Punch-line

Anthropogenic effects over several decades have incrementally weakened the resilience of the aggregate natural and hatchery stock to natural environmental stresses to the point that when the 2005 and 2006 broods experienced high stress from unusually bad combination of poor freshwater and marine environmental conditions, survival plummeted to record low levels. Further, the large hatchery component of the stock may have been substantially lost from these two broods by a dramatic change in release practices.

While favorable environmental conditions will likely provide for some level of fishery to be re-instituted soon, the fishery remains vulnerable to a repeat collapse or chronic decline unless existing bureaucratic problems are addressed.



Council Recommendations

1. Conduct a comprehensive review of hatchery programs and practices
 - Genetic resources maintenance, net pen acclimation program, interactions with naturally produced fish, achievement of full mitigation obligations
2. Conduct a comprehensive review of habitat degradation impacts, including current water management practices
 - Delta pumping, flow strategies, outflow screening, etc.
3. Ensure ESA BiOps are consistent with optimizing fall Chinook productivity



Council Recommendations *(con't)*

4. Improve and stabilize monitoring and evaluation programs
5. Investigate fishery management alternatives

How to do these things?

- Convene a public regional process with appropriate representation to coordinate doing it right
- Consider similarities to the initial establishment of the NWPPC FWP on the Columbia River
- Include chinook salmon in all California River systems in a full ecosystem approach



Specific Recommendations

(see attached sheet)

- Establish a small planning/implementation team with a high profile leader
- Provide fresh \$\$
- Invite proper participants to participate in the process
- Goals and Responsibilities
- Timelines



West Coast salmon fishing faces closure

by Michael Milstein, The Oregonian

Friday March 14, 2008, 7:17 PM



FILE/THE OREGONIAN

Prized chinook salmon would be off-limits to fishing this year under a unprecedented proposal to halt all salmon fishing from Point Falcon in Oregon south to the Mexican border.

Don't expect to find much local salmon on store shelves this season: Fish managers, aghast at plummeting salmon numbers, proposed Friday to halt