

# Lake Ozette Sockeye Recovery Plan



**NOAA  
FISHERIES**

- Olympic Coast National Marine Sanctuary Advisory Council
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# Topics

- **Overview of Lake Ozette Sockeye**
- **Endangered Species Act**
- **Recovery Plan and Lake Ozette Sockeye Steering Committee**
- **Current sockeye recovery actions**
- **Links to OCNMS in Recovery Plan**
- **Potential next steps**



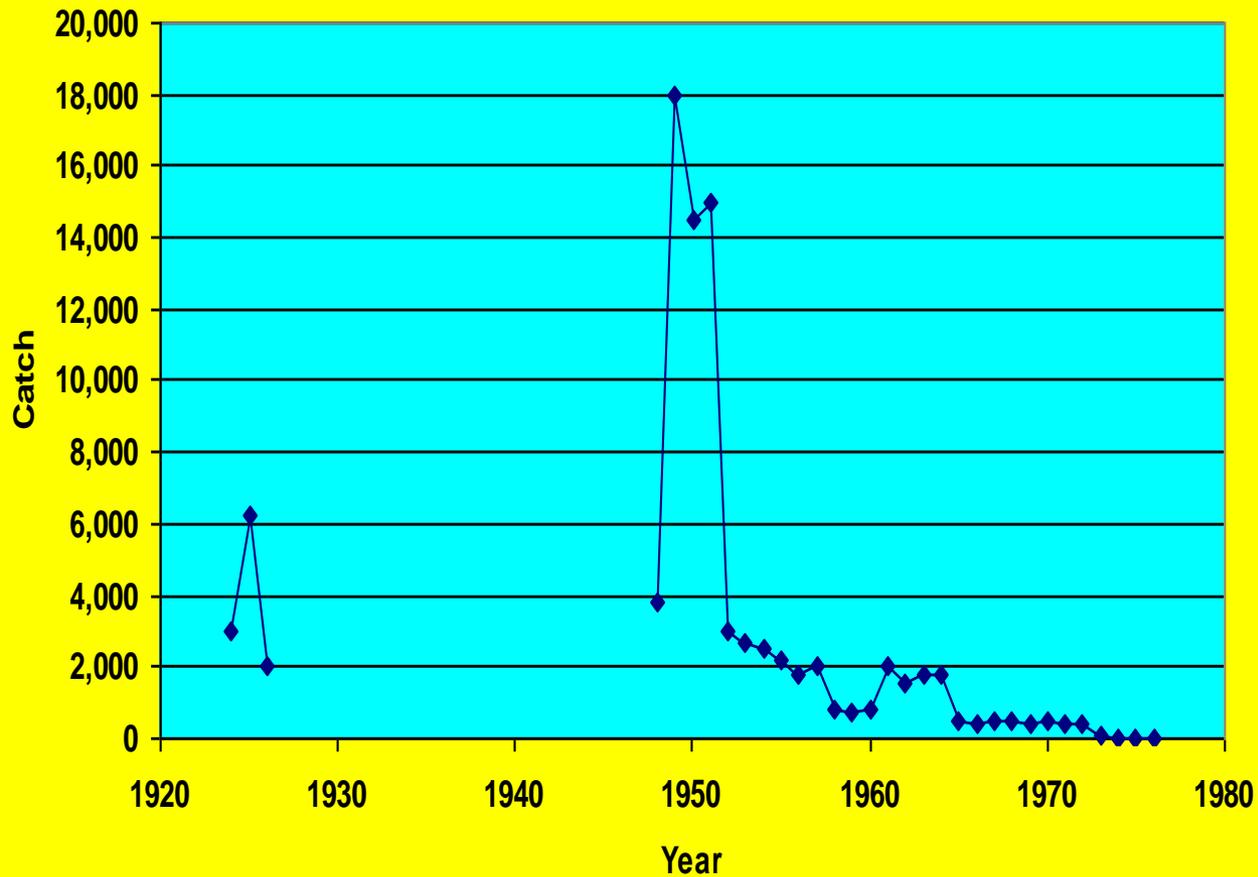
- **Third largest natural lake in WA (3,056 ha)**
- **Average depth 40m**
- **Watershed area ~ 200 km<sup>2</sup>**
- **Annual precipitation > 250 cm/yr**
- **Landscape prone to accelerated erosion based on glacial deposits, high precipitation**

- Primarily beach spawning population
- Both tributary and beach spawning populations listed

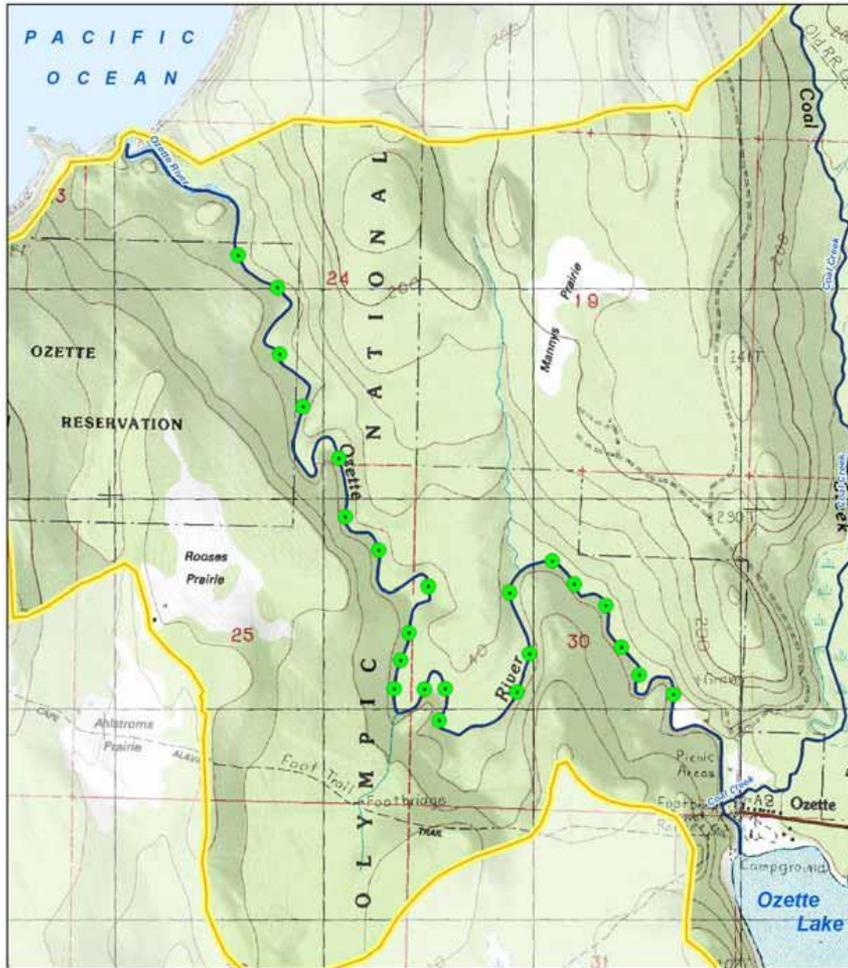


# Presumed Factors for Decline

## Ozette Sockeye Harvest

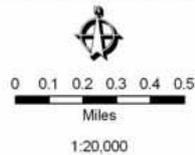


# Altered Hydrology



## Legend

- Removed Log Jam
- Road
- ~ Stream
- ⬡ Ozette Watershed



# Predation



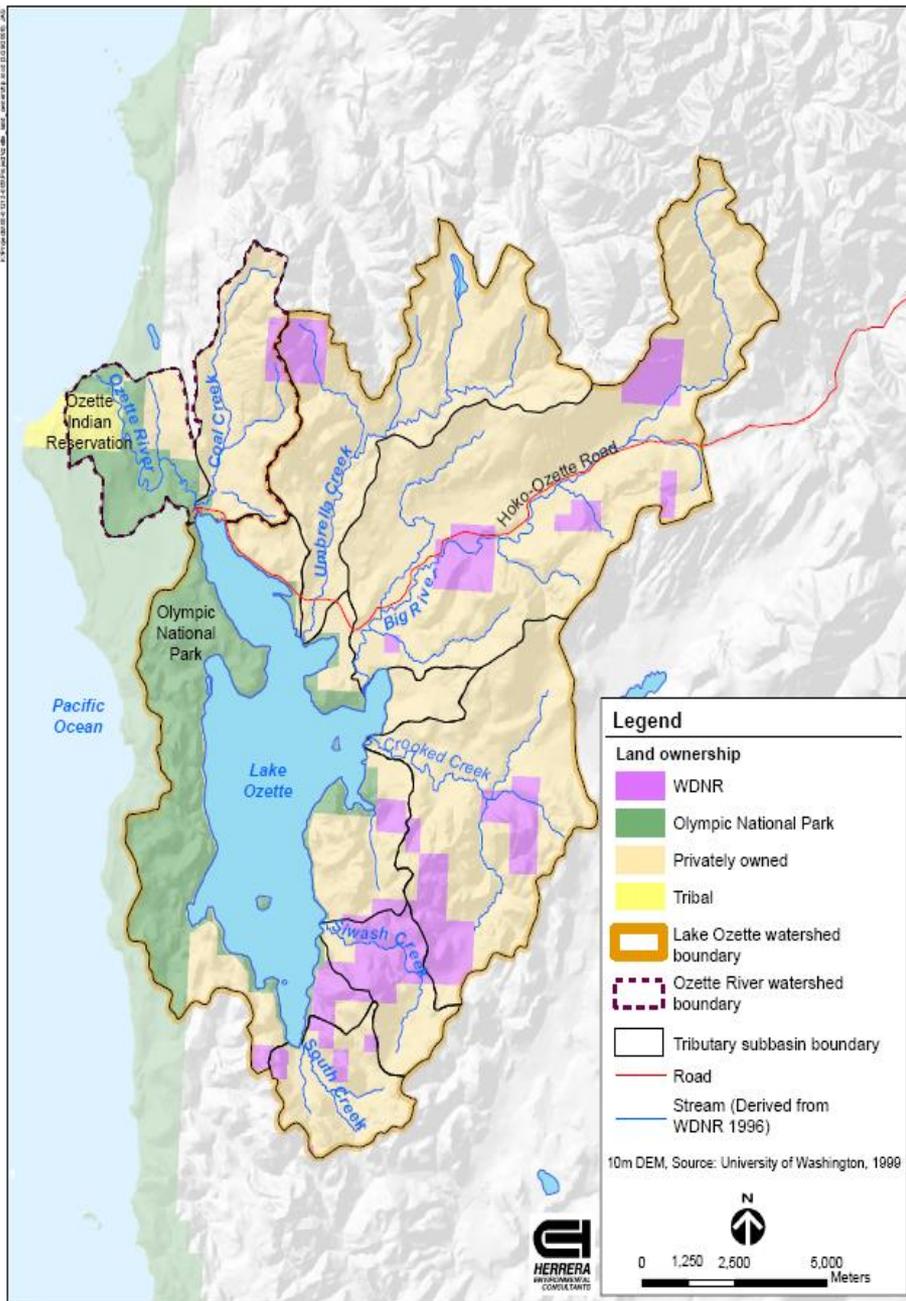


Figure 6. Land ownership within the Ozette watershed.

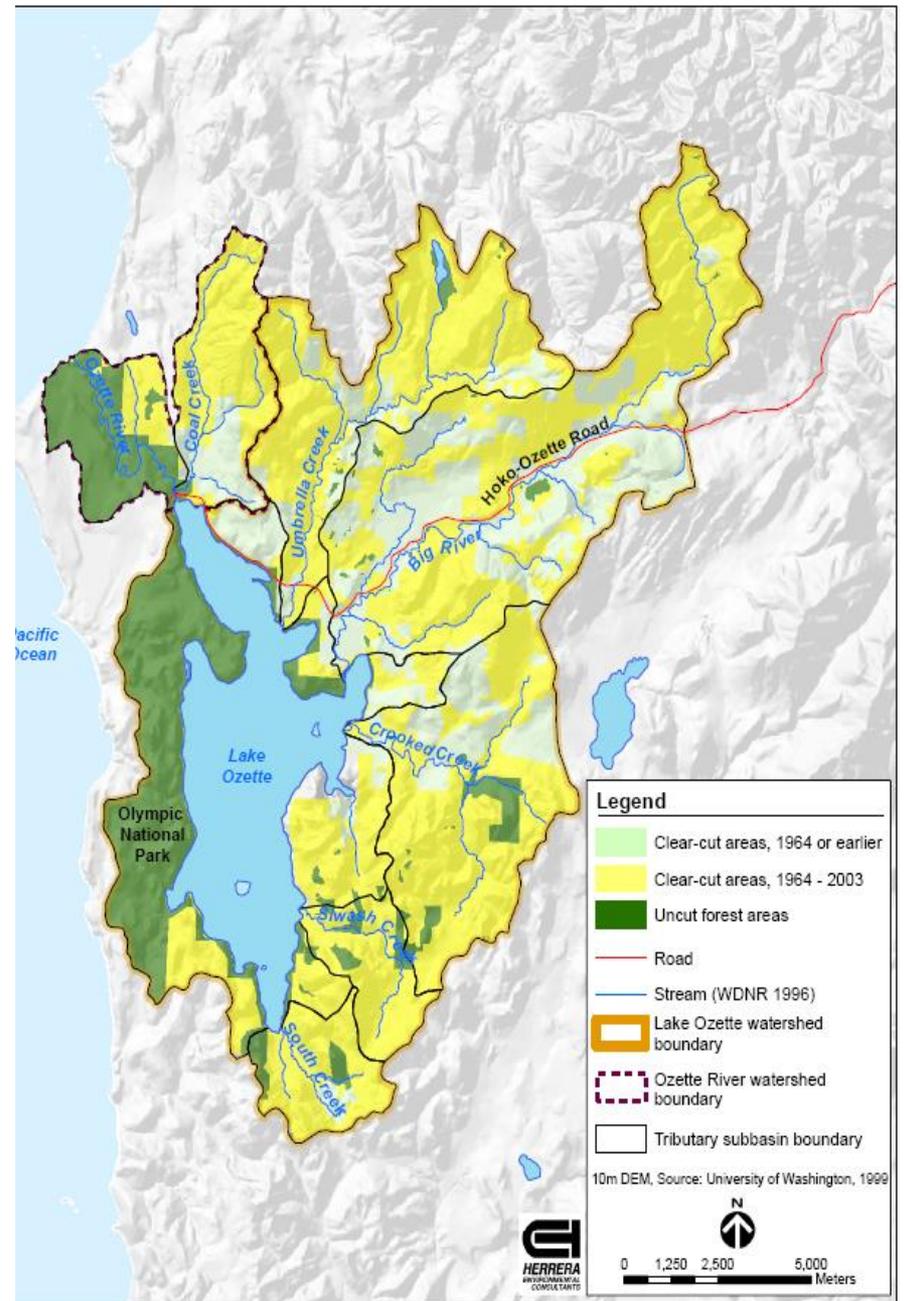


Figure 7. Timing and extent of forest clearing in the Lake Ozette watershed.

# Endangered Species Act

## Purpose

- Conserve the ecosystems upon which endangered & threatened species depend
- Provide a program to conserve endangered & threatened species
- Take steps to achieve treaties & conventions identified in the Act



# Endangered Species Recovery

## Goals

- Reduce or eliminate threats to listed animals & plants
- Restore self-sustaining wild populations
- Remove species from the list
- These goals can be met by developing & implementing a recovery plan





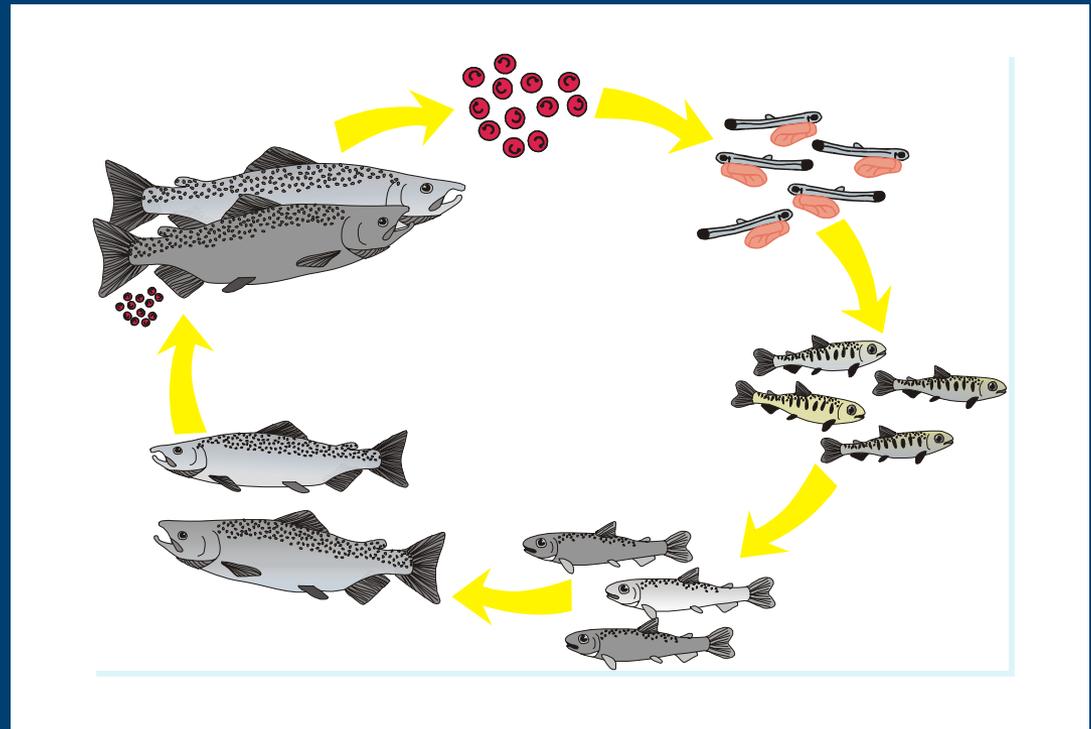
# Recovery Plan Basics

- Are required by the Endangered Species Act
- Are a road map to recovery:
  - Sets goals and priorities
  - Targets actions
  - Provides guidance for recovery of listed species
- Help secure the economic and cultural benefits of healthy watersheds
- Are based on best available science



# Recovery Plans are Developed...

- Collaboratively
- Based on existing work & best available science
- Considering the complete life cycle
- Supported by broad base of stakeholders





## What is in a Recovery Plan?



- Description of sockeye biology and current status
- Recovery goals & criteria (biological viability & threats)
- Assessment of limiting factors, threats and gaps
- Recovery strategies & actions
- Estimates of time & costs to implement actions
- Research, monitoring & evaluation to track progress

# Lake Ozette Sockeye Salmon



- Historical abundance estimated at over 50,000 fish prior to the 1940s
- In 1990s declined to 580 fish (5-yr mean)
- Listed as threatened under Endangered Species Act in 1999
- NMFS's 2011 Five-year status review: remain listed as threatened

# Recovery Plan was Developed...



- Collaboratively
  - Based on existing scientific information
  - Developed with broad base of stakeholders through the ***Lake Ozette Sockeye Steering Committee***
  - Considered the full life cycle of Sockeye
- Based on science developed by NMFS's Technical Recovery Team
- Recovery Plan adopted by NMFS in 2009
- Realistic roadmap to recovery
- Seeks broad support for implementation

# Lake Ozette Sockeye Steering Committee



- Olympic National Park
- Quileute Tribe
- Makah Tribe
- Washington Coast Sustainable Salmon Partnership
- Green Crow
- Merrill and Ring
- Washington Department of Fish and Wildlife
- Clallam County
- North Pacific Coast Lead Entity
- Citizens and landowners
- National Marine Fisheries Service
- Washington Governor's Salmon Recovery Office

# Linkage to OCNMS in Recovery Plan



- Implement OCNMS Management Plan
  - Identify nearshore habitat data and research needs for sockeye recovery that may be addressed cooperatively with Sanctuary research programs
  - Seek researchers and funding through NWFSC and other interested parties
  - Share information collected by OCNMS
  - Cooperate and seek funding for public education

# Current Recovery Actions



- Habitat restoration actions
- Improved fish counting technology: DIDSON
- Education and outreach activities
- Predation sub-committee
- Land acquisition
- On-going tributary hatchery program
- Beach spawning surveys using DIDSON
- Quarterly Lake Ozette Sockeye Steering Committee meetings
- Coordinate on-going priority projects

# Potential Next Steps



- Lake Ozette Sockeye Steering Committee identifies recovery needs related to nearshore habitat
- Identify researcher and seek funding
- Coordinate with OCNMS to identify mutual needs and ways to cooperate
- Build on current partnerships

# Questions?

