

Like no other fish in the world:

## The Unique Biology of Lake Ozette Sockeye

Ozette sockeye is comprised of a single genetic population. This is unlike other salmon species with broader geographic ranges that enhance their diversity and protect them from environmental changes and catastrophic events.

This is one reason why it is so important to recover Lake Ozette sockeye—if we lose these fish we lose the genetic legacy that makes this population so unique to the region and the world.

## Learn More About Lake Ozette Sockeye

### Washington Coast Sustainable Salmon Partnership:

[www.wcssp.org/index.php/about/lake-ozette](http://www.wcssp.org/index.php/about/lake-ozette)

### Olympic National Park:

[www.nps.gov/olym/naturescience/sockeye-salmon.htm](http://www.nps.gov/olym/naturescience/sockeye-salmon.htm)

### Clallam County:

[www.clallam.net/environment/losrp.html](http://www.clallam.net/environment/losrp.html)

### NOAA Fisheries:

[www.westcoast.fisheries.noaa.gov/protected\\_species/salmon\\_steelhead/recovery\\_planning\\_and\\_implementation/lake\\_ozette/lake\\_ozette\\_salmon\\_recovery\\_sub\\_domain.html](http://www.westcoast.fisheries.noaa.gov/protected_species/salmon_steelhead/recovery_planning_and_implementation/lake_ozette/lake_ozette_salmon_recovery_sub_domain.html)

### Lake Ozette Sockeye Recovery Plan:

[www.westcoast.fisheries.noaa.gov/protected\\_species/salmon\\_steelhead/recovery\\_planning\\_and\\_implementation/lake\\_ozette/lake\\_ozette\\_sockeye\\_salmon\\_recovery\\_plan.html](http://www.westcoast.fisheries.noaa.gov/protected_species/salmon_steelhead/recovery_planning_and_implementation/lake_ozette/lake_ozette_sockeye_salmon_recovery_plan.html)

Be part of the change!

## Protecting & Recovering Lake Ozette Sockeye

### Get involved

Sockeye recovery is a long-term effort that requires cooperation, contributions, and ongoing support. Engagement is the key to restoring Lake Ozette sockeye. The Lake Ozette Sockeye Steering Committee is the body guiding recovery efforts. It includes several partners:

- Olympic National Park
- Washington Coast Sustainable Salmon Partnership
- Makah Tribe
- Quileute Tribe
- NOAA Fisheries
- Green Crow, Merrill & Ring, and Rayonier timber companies
- Ozette landowners
- Interested citizens
- Clallam County
- Washington Department of Fish & Wildlife
- Washington Department of Natural Resources
- Olympic Coast National Marine Sanctuary
- Pacific Coast Salmon Coalition

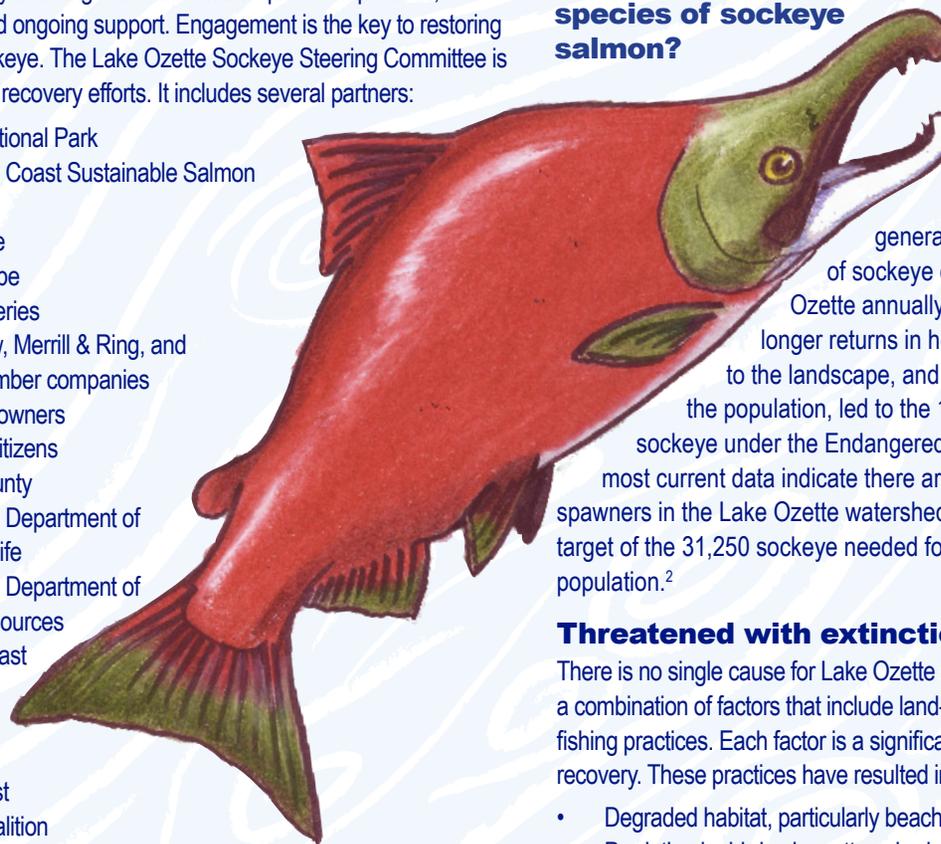
### Bring Your Ideas & Solutions

The Lake Ozette Sockeye Steering Committee meets quarterly at the Community Center in Sekiu and welcomes new participants. Please bring your ideas to the committee! Meeting dates are announced in local papers and can also be found at: <http://www.wcssp.org>.

The Big Fish Story

## Saving Lake Ozette Sockeye from Extinction

### Did you know that the Olympic Peninsula's remote western rim is home to a unique species of sockeye salmon?



Lake Ozette sockeye sustained the local ecosystem and the cultural identity of the people living here for generations. Tens of thousands of sockeye once returned to Lake Ozette annually,<sup>1</sup> but the population no longer returns in healthy numbers. Changes to the landscape, and the subsequent decline of the population, led to the 1999 listing of Lake Ozette sockeye under the Endangered Species Act. Today, the most current data indicate there are 2,679 wild sockeye spawners in the Lake Ozette watershed. This is well below the target of the 31,250 sockeye needed for a healthy, recovered population.<sup>2</sup>

### Threatened with extinction

There is no single cause for Lake Ozette sockeye's decline, but rather a combination of factors that include land-use activities and historical fishing practices. Each factor is a significant challenge to sockeye recovery. These practices have resulted in the following impacts:

- Degraded habitat, particularly beach spawning habitat;
- Predation by birds, river otters, harbor seals, sea lions, and non-native fish; and
- Poor water quality, elevated water temperatures, and an increase in fine sediment.

<sup>1</sup> Blum, J.P. 1988. Assessment of factors affecting sockeye salmon (*Oncorhynchus nerka*) production in Ozette Lake, WA. University of Washington M.S. Thesis, 107 pp, Seattle, WA.

NOAA Fisheries Service. 2011. 5-Year Review: Ozette Lake Sockeye Salmon (*Oncorhynchus nerka*). NOAA Fisheries Service. Northwest Regional Office. Portland, OR.

<sup>2</sup> Rawson, K. et al. 2009. Viability criteria for the Lake Ozette sockeye salmon evolutionarily significant unit. NOAA Tech. Memo. NMFS-NWFSC-99. 53 pp.



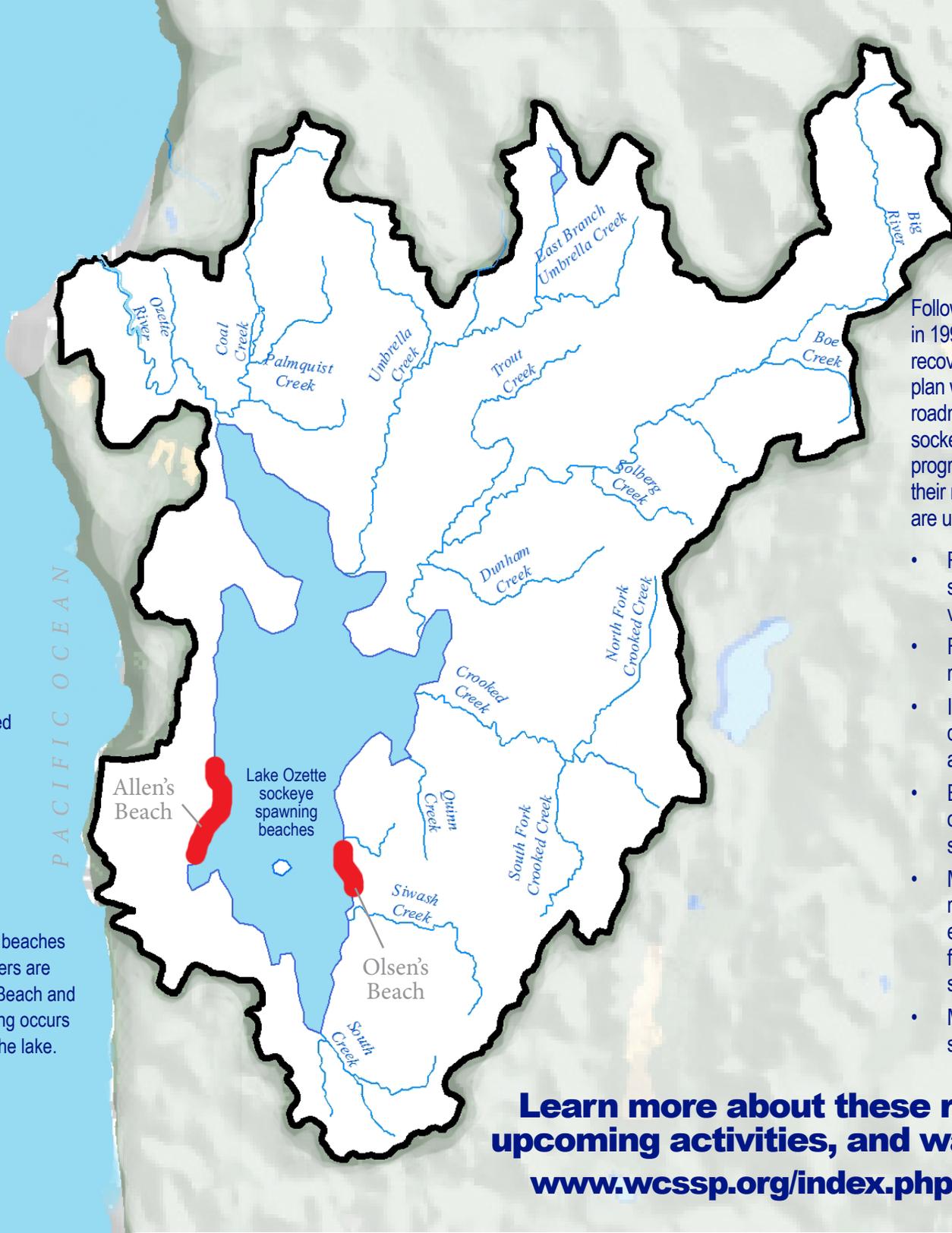
The Olympic Peninsula

### Lake Ozette & the Ozette Basin

Ozette Lake is uniquely suited to support sockeye salmon. It is the third largest natural lake in Washington State and its shoreline is within the 922,000-acre Olympic National Park. The lake and river are part of the larger Ozette Basin. Olympic National Park, private landowners, timber companies, and tribes manage the watershed collectively.

### Sockeye Spawning Locations

Lake Ozette sockeye spawn on beaches and in tributaries. Beach spawners are known to reproduce at Olsen's Beach and Allen's Beach. Tributary spawning occurs in some streams that feed into the lake.



# Actions to Recover Lake Ozette Sockeye

Following the listing of Lake Ozette sockeye in 1999, partners developed a plan to guide recovery efforts. The Lake Ozette recovery plan was adopted in 2009 and contains a roadmap of voluntary actions to recover sockeye. At this time, several actions are in progress to jump-start their recovery and track their return to healthy, fishable levels. Partners are undertaking several actions, including:

- Removing invasive weeds along streams, such as knotweed, to restore native vegetation and improve habitat;
- Fixing culverts, bridges, ditches, and roads to reduce sediment in the streams;
- Implementing stream protection rules designed to protect Lake Ozette sockeye and meet Clean Water Act standards;
- Estimating population size and distribution of beach spawners using sonar to count spawning sockeye;
- Managing the lake fisheries to reduce the risk of accidentally catching sockeye and encouraging the removal of non-native fish that prey on and compete with young sockeye; and
- Monitoring water quality in tributary streams and collecting survival data.

**Learn more about these recovery projects, upcoming activities, and ways to get involved!**  
[www.wcssp.org/index.php/about/lake-ozette](http://www.wcssp.org/index.php/about/lake-ozette)