Sea Lions, Salmon & Steelhead

Successful sea lion population threatens struggling fish populations in the Columbia and Willamette Rivers

The Issue

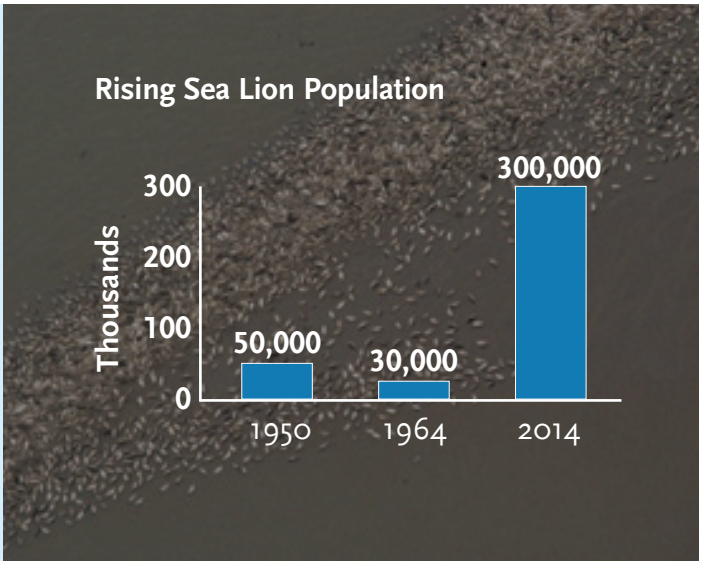
- Significant numbers of Endangered Species Act (ESA)-listed salmon and steelhead are being eaten by increasing numbers of sea lions as they try to get to their spawning grounds in the lower Columbia and Willamette Rivers.
- Millions of dollars in federal, state and local funds have been spent to stabilize these salmon and steelhead populations.
- These efforts will be in vain, if salmon, steelhead and sturgeon predation by sea lions is not addressed.
- The Marine Mammal Protection Act (MMPA) severely limits the ability of the fish and wildlife managers to expeditiously and efficiently address the sea lion issue.

The Solution

- Revise the MMPA to give fishery managers the authority to remove sea lions that are moving into the lower Columbia River tributaries – before they habituate to natural and manmade bottlenecks where salmon and steelhead populations are vulnerable.
- Immediately expand geographic scope of the current permit to include the Willamette River and other lower Columbia River tributaries.

The Marine Mammal Protection Act (MMPA) is a conservation success, as populations of California Sea Lions have increased from 30,000 to 300,000 animals over the last 50 years and are now at or near biological carrying capacity.

However, the Act when written did not account for the potential ramifications of a more than successful marine mammal recovery and protection effort. Revisions to the MMPA are needed to provide fish and wildlife managers the tools to address sea lion predation at key places.



Growing Numbers of Sea Lions

Sea lion populations have increased to healthy numbers – with increasing numbers of males migrating north from California to Oregon and Washington each year in late summer. A very small proportion of these migrating males move into coastal rivers where migrating salmon and steelhead are especially vulnerable.

Since the mid-1980s, increasing numbers of sea lions have been documented feeding on fish along the Oregon and Washington coasts and – more recently – in the Columbia River as far upstream as Bonneville Dam, **145 miles** from the river mouth.

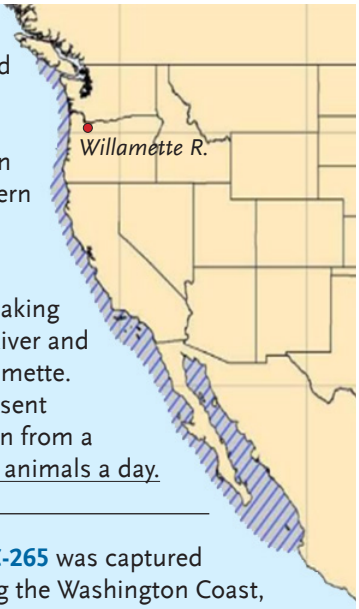
Salmon and Steelhead Face a Tough Future

Most salmon and steelhead populations in the lower Columbia River and its tributaries (the Willamette, Clackamas, Lewis and Cowlitz Rivers) are in such poor condition that they are listed under the Endangered Species Act.

A number of threats have caused the decline of salmon and steelhead populations: over-harvest, poor hatchery practices, loss of habitat, and adult and juvenile mortality associated with the hydropower system. Salmon recovery plans have been developed and are slowly and steadily addressing these factors.

Weak salmon and steelhead populations have recently been affected by drought and poor ocean conditions.

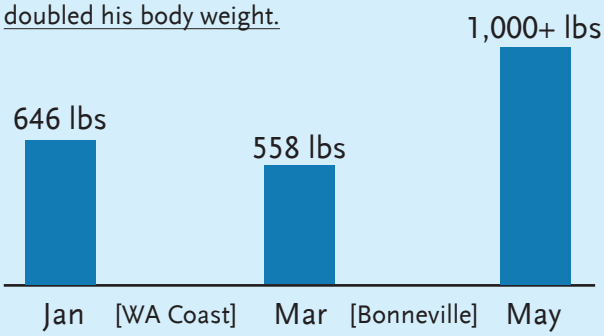
The recent record low numbers of returning fish ran into an increasing population of sea lions in the final stretches of their spawning migrations. Willamette River winter steelhead are our immediate concern.

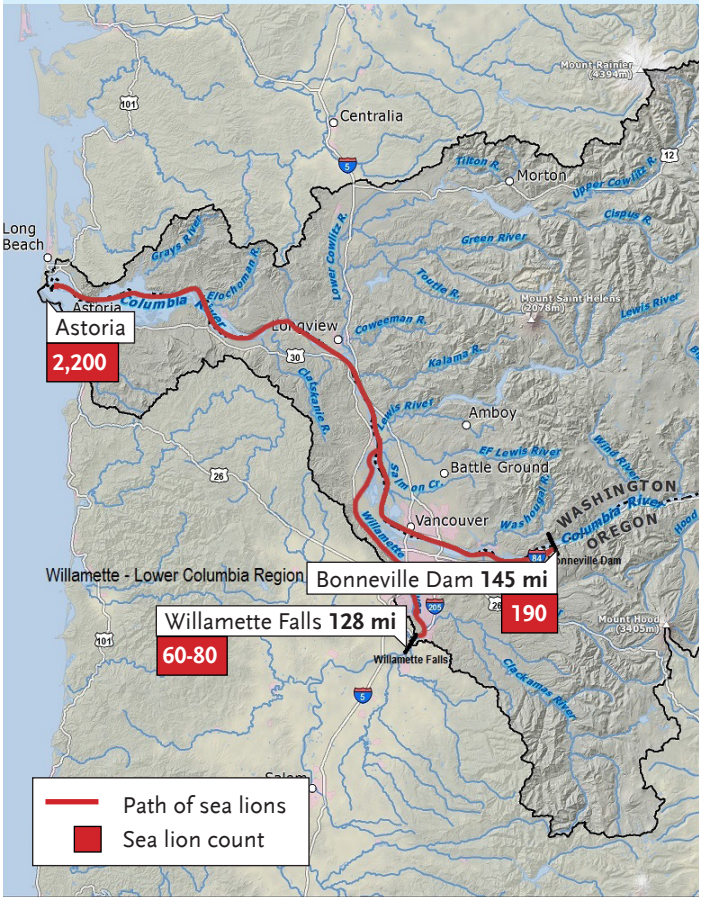


California sea lions are found from the southern tip of Baja California to southeast Alaska. They breed mainly on offshore islands from southern California's Channel Islands south to Mexico.

More sea lions have been making their way up the Columbia River and into tributaries like the Willamette. The number of sea lions present at Willamette Falls has grown from a handful in mid-1990's to 40 animals a day.

Case Study. When sea lion **C-265** was captured in Astoria after feeding along the Washington Coast, he had lost weight. After two months feeding on Chinook at Bonneville Dam he had nearly doubled his body weight.





Sea Lions at Willamette Falls

Willamette Falls is on the Willamette River, a tributary of the Columbia River. The Falls are **128 miles** upstream from the ocean.

Sea lion presence at the Falls is seasonal as males migrate north from California breeding grounds. Over time the number of animals and the duration of time that they are present has expanded.

The number of sea lions present at Willamette Falls has grown from a handful in mid-1990's (single day maximum of 1-2 animals) to where currently there are 40 animals a day seen at Willamette Falls – and a total of 60-80 different animals cycling through over the season.

Sea lions are now present continuously from late August through June; the exact time that ESA-listed steelhead and Chinook are returning.

Oregon Department of Fish and Wildlife (ODFW) has initiated hazing which has not shown any effect in deterring sea lions from consuming threatened winter steelhead in the Willamette.

Willamette Winter Steelhead

The record low return of wild steelhead in 2017 ran – literally – into the mouths of sea lions hunting at Willamette Falls, **leaving only 512 wild winter steelhead** to move up river to their spawning grounds.

ODFW determined that sea lions consumed a minimum of **25% of the winter steelhead run at Willamette Falls in 2017.**

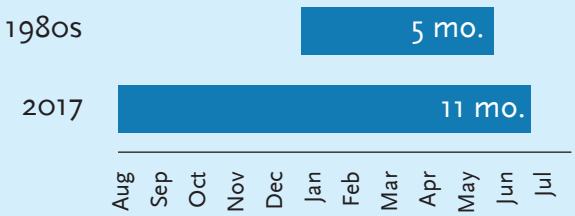
At the current predation rate, ODFW concluded that there is a **90% chance that at least one of the three major Willamette winter steelhead populations will go extinct as a direct result of sea lion predation.**

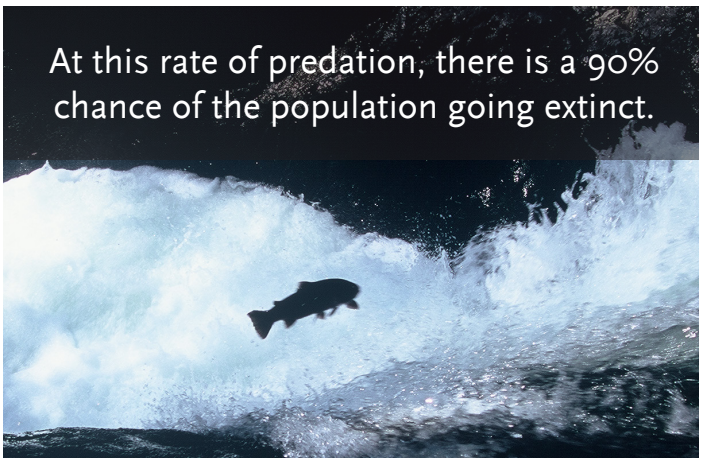
Rogue males making their way to the Willamette Falls are eating wild steelhead at a rate that will push them to extinction.

History of Sea Lions in the Columbia River System

Based on evidence at historical sites on the Columbia, sea lions did not travel upriver and affect tribal fisheries. In the 1980's, sea lions started appearing in the Columbia River seasonally from January to late May (now August through June). By 2006, some 2,200 sea lions resided in and around the mouth of the Columbia. A smaller subgroup made their way 145 miles up to Bonneville Dam, a choke point for salmon, in recent years.

Duration of Seal Lions Appearing in Columbia River





Marine Mammal Protection Act (MMPA)

Section 120 of the MMPA specifies processes and steps that must be conducted before managers can address predation from sea lions. The process to obtain the Columbia River authorization to lethally remove sea lions took 2-4 years, after spending multiple years collecting data to document the problem.

ODFW is in the process of applying for a permit to address sea lion predation at Willamette Falls. It is estimated that it will take an additional two cycles of steelhead under the current requirements for the process to be completed.

Experience over the last 20 years and recent science demonstrates that decade-long delays place fish in danger of extinction.

Managers believe that if they could respond as animal's first show up in tributaries, before they establish themselves and grow to large numbers, it will result in far fewer sea lions needing to be removed and far less harm to listed fish.

Solutions

- **Revise Section 120 of the MMPA** to strike an appropriate balance between the recovery of ESA-listed salmon and steelhead populations and the ongoing conservation of sea lions.
- Specifically, these revisions should allow for **proactive management,** before crisis situations develop.
- Remember that **sea lions are not the only problem** facing salmon and steelhead populations. Ongoing efforts must continue to address:
  - Impacts from the hydropower system;
  - Protective harvest strategies;
  - Hatchery reform;
  - Meeting court-ordered increased spill to improve juvenile survival as they try to migrate out through the dams;
  - Restoring critical habitat.

Required Steps to Remove a Sea Lion

In March 2012, NOAA Marine Fisheries issued a letter authorizing the states to remove specific California sea lions eating threatened salmon and steelhead at Bonneville Dam on the Columbia River. That authorization expired in June 2016 but was renewed for another five years until June 30, 2021. The authorization allows the ODFW and WDFW to remove up to 93 California sea lions a year.

The authorization requires:

1. Each sea lion must be individually identifiable – this usually requires first trapping, marking, and releasing the animal.
2. Individual sea lions must be observed at Bonneville Dam for 5 days.
3. Individual sea lions must be observed eating a salmon at Bonneville Dam.
4. Individual sea lions must be subjected to hazing while at Bonneville Dam.
5. Once an individual sea lion meets these criteria, that data and a request to include the animal on the removal list is made to NOAA Fisheries.
6. NOAA Fisheries reviews the data and decides if an animal should be included on the removal list.
7. The specific animal on the removal list must be re-trapped and only then can it be removed from the system.

The required steps are fraught with challenges, requiring the trapping of an individual animal multiple times.

Second, sea lion diets are diverse near the ocean, but become more salmon–centric upstream. Sea lions near Bonneville Dam and Willamette Falls are primarily eating salmon and steelhead.

If we act now, far fewer sea lions will need to be removed to benefit fish populations.