PUGET SOUND
VITAL SIGNS

VITAL Sign
SALMON

Salmon are a cultural icon of the Pacific Northwest. They are highly prized by anglers and commercial fisherman, are guaranteed to be available to Indian Tribes by treaties signed with the federal government and are a favorite food of Southern Resident orcas. The Salmon Vital Sign tells us about the health of salmon populations and whether efforts to improve habitat and coordinate management of harvest and hatcheries are having the desired effect of improving salmon populations. Throughout their lifecycle, salmon depend on a wide variety of freshwater, estuary, nearshore, and marine habitats. This leaves salmon vulnerable to many forms of human activities and habitat loss as well as changing ocean and climate conditions.

Chinook salmon. Photo credit: John McMillan.

VITAL SIGN > INDICATOR	PROGRESS	STATUS
Salmon		
Number of natural-origin Chinook salmon on spawning grounds	MIXED RESULTS	BELOW TARGET
Number of natural-origin summer chum salmon on spawning grounds	GETTING BETTER	NO TARGET
Number of natural-origin Puget Sound steelhead on spawning grounds	NO TREND	NO TARGET
Number of natural-origin coho salmon on spawning grounds	NO TREND	NO TARGET

Related Strategies

- Awareness of Effects of Climate Change
- Climate Adaptation & Resilience
- Education Partnerships
- Fish Passage Barriers
- Floodplains & Estuaries
- Freshwater Availability
- Funding
- Healthy Shorelines
- Invasive Species
- Research & Monitoring
- Riparian Areas
- Salmon Recovery
- Smart Growth
- Stewardship & Motivating Action
- Stormwater Runoff & Legacy Contamination
- Strategic Leadership & Collaboration

Vital Sign Reporter

PSEMP Salmonid Work Group (coordinator is Dawn Spilsbury Pucci)
d.pucci@co.island.wa.us

Last Updated

10/04/2023

KEY VITAL SIGN MESSAGES

- On average, spawner abundance across Puget Sound, has changed very little since the baseline period for three of the indicator species: Chinook, coho, and Puget Sound steelhead. For Chinook and steelhead, which are federally listed as Threatened, this means we see little to no sign of recovery. On the other hand, most populations have not decreased significantly in abundance since the time of listing, with some exceptions.
  - Most Chinook populations and all Puget Sound steelhead populations remain well below their recovery planning targets adopted by NOAA Fisheries.
  - Hood Canal summer chum salmon abundance has increased in both populations since they were listed as threatened under the ESA in 1999.
- While the Vital Sign indicator reflects natural-origin spawner populations only, **both listed and non-listed salmonids, natural and hatchery-origin, play a critical role** in supporting Tribal treaty rights in Puget Sound, as well as commercial and recreational harvest. It is important to work toward healthy populations of all Puget Sound salmonids.
- We are challenged to provide enough suitable habitat, preserve sufficient prey, and decrease contaminant exposure while also balancing the needs of the more than 4.3 million people living in the Puget Sound region. If salmon are going to survive, **bold leadership and innovative changes**

in how people live on the landscape, for example, reducing contaminated stormwater and land use-related impacts, need to be implemented at a rate that outpaces human population growth impacts.

- Addressing **emerging challenges** requires the urgent addition of new resources – more funding from new sources and human capacity with expertise in these emerging disciplines. The cumulative effects of emerging challenges, such as climate change, toxins from stormwater runoff and declines in early marine survival occurring in Puget Sound salmonids, must be addressed in addition to the traditional recovery efforts of habitat restoration and protection, hatchery, harvest management and hydropower considerations.

- Recent monitoring studies confirm **individual restoration and protection projects are effective**: they improve fish habitat; fish quickly colonize newly restored habitat where young salmon rear, feed, and rest; and they improve water quality. Larger-scale and more restoration, when coupled with effective protection strategies, improves ecosystems and the long-term outlook for salmonids.

- **Restoration is increasing, fishing is decreasing, but most populations are not recovering**. There are several potential reasons:
  - Productivity (how many offspring can be produced by each salmon) isn't improving,
  - Land use impacts are outpacing habitat protection and restoration,
  - Climate change effects, such as heat domes and flood and drought cycles, are impacting populations faster than they can adapt,
  - The food web is changing. Predation on salmon is increasing, and salmon prey are no longer available at the densities, timing, size and caloric content required for adequate growth and survival.
- We need predictable, continuous funding for monitoring and understanding these changes (e.g., smolt traps, offshore marine juvenile salmon and zooplankton monitoring, and habitat status and trends monitoring and assessments). It takes a long time to affect a population. Even then, populations are difficult to count, and vary naturally, so consistent tracking over a very long term (decades) is necessary.

- Factors over which we have little control, such as changing ocean conditions and climate change, heat domes and atmospheric rivers, put more pressure on factors we can control. Understanding the relationships between global factors and local factors enables us to determine which local factors we can address directly and what actions we can take to **increase salmon and ecosystem resilience**. For example, nearshore habitat restoration promotes healthy forage fish and invertebrate populations which, in turn, provide more prey for bigger fish, marine birds, and marine mammals. While we don't yet fully understand all of the trophic connections, supporting resiliency of individual components will buffer for impacts we cannot yet predict.

BACKGROUND DOCUMENTS

- Chinook Salmon Implementation Strategy
- Technical Recovery Criteria and Goals for Puget Sound Chinook Salmon (Puget Sound Salmon Recovery Plan)

Indicator Targets

- Chinook Salmon 2050 Recovery Target Fact Sheet
- 2020 Ecosystem Recovery Target
  - Leadership Council Resolution 2011-14: Adopting a 2020 ecosystem recovery target for Chinook salmon
  - Chinook Salmon 2020 Target Briefsheet

OTHER RESOURCES

- Salmon Recovery in Puget Sound
- State of our Watersheds Report by the Northwest Indian Fisheries Commission
- State of Salmon in Watersheds - Puget Sound
- SalmonScape, Washington Department of Fish and Wildlife

CONTRIBUTING PARTNERS

Washington Department of FISH & WILDLIFE