

PUGET SOUND VITAL SIGNS

VITAL SIGN ORCAS

Orcas, or killer whales, are among Puget Sound's most distinctive and charismatic creatures. They are icons in Pacific Northwest culture and top predators of the marine ecosystem. The Orcas Vital Sign tells us about the population status of the endangered Southern Resident killer whales and the occurrence of all orcas in Puget Sound. The combination of a precarious food supply and threats from pollution, vessel traffic, and noise continues to jeopardize the survival of Southern Resident killer whales.



Photo credit: Center for Whale Research

Related Strategies

- Awareness of Effects of Climate Change
- Climate Adaptation & Resilience
- Education Partnerships
- Funding
- Oil Spills
- Research & Monitoring
- Responsible Boating
- Stewardship & Motivating Action
- Strategic Leadership & Collaboration

Vital Sign Reporter

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VITAL SIGN > INDICATOR	PROGRESS	STATUS
Orcas		
Number of Southern Resident killer whales	GETTING WORSE	BELOW TARGET
Occupancy/residency of orcas in Puget Sound	INSUFFICIENT OR NO DATA	NO TARGET

Key Vital Sign Messages

- Southern Resident killer whales once numbered around 200 whales but were down to 73 wild individuals during the 2022 census.
- Over the past several years the Southern resident killer whale population has continued to decline, although three calves were recently born. In contrast, the transient killer whale population continues to steadily increase at what is likely a near maximum rate.
- Year-round, Southern Resident killer whales depend heavily on Chinook salmon for food, thus linking orca recovery with the [Chinook salmon](#), a threatened species whose numbers reported in the Puget Sound Vital Signs are dangerously low and showing few signs of recovery.
- Southern Resident killer whales spend a considerable portion of the year outside the Salish Sea, where they eat Chinook salmon from Puget Sound and other regions of Washington and Oregon — including the Columbia Basin — as well other areas, like the Fraser River in British Columbia and the Klamath River in California. Therefore, improving prey availability outside Puget Sound is also fundamental to resident orca recovery.
- Southern Resident killer whale's use of the Salish Sea, particularly in summer, has steadily declined over the past several years. Conversely, Bigg's killer whale's use of the Salish Sea has dramatically increased.
- When Southern Resident killer whales can't find enough to eat, they must burn their own fat, thereby increasing circulation of harmful pollutants picked up from the Salish Sea and elsewhere. Science suggests that poorer body condition increases the orcas' vulnerability to disease and hinders reproduction. The [Toxics in Fish Vital Sign](#) raises concern over the presence of human-made contaminants throughout the food web.
- In the Salish Sea, underwater noise and disturbance from commercial and recreational vessels cause Southern Resident killer whales to forage less efficiently for salmon that are now more scarce and smaller than in decades past. Boats at ranges less than 400 yards are associated with fewer

TO LEARN MORE ABOUT THE VITAL SIGNS VISIT: vitalsigns.pugetsoundinfo.wa.gov OR CONTACT: vitalsigns@psp.wa.gov

- Because disease can cause increased morbidity and mortality in orcas, reducing pathogens in their environment through improved marine water quality should complement reduction of the key threats to Southern Resident recovery: contaminants, decreased prey, and vessel disturbance.

Background Documents

Indicator Targets

- 2030 and 2050 Recovery Target
 - [Number of Southern Resident killer whales target fact sheet](#)
 - [Memo to Science Panel with rationale](#)
- 2020 Recovery Target
 - [Leadership Council Resolution 2011-17: Adopting a 2020 ecosystem recovery target for orcas](#)
 - [Orca 2020 Target Briefsheet](#)

Other Resources

- [2021 Southern Resident Killer Whales \(Orcinus orca\) 5-Year Review: Summary and Evaluation | NOAA Fisheries](#)
- [Southern Resident Orca Task Force website](#)
 - [Orca Task Force Final Report and Recommendations](#)
 - [Orca Task Force Year 1 Comprehensive Report and Recommendations](#)
- Articles related to [killer whales](#) in the [Encyclopedia Of Puget Sound](#)
- [Economic Impact of Killer Whales in the Salish Sea](#), by Earth Economics, supported by the Seadoc Society

Contributing Partners

The following organizations monitor killer whales in Puget Sound:

- [NOAA Fisheries](#)
- [The Center for Whale Research](#)
- [Orca Network](#)
- [Orca Behavior Institute](#)
- [SR3](#)
- [Orcasound](#)