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Dolphins in the Salish Sea: Are warmer water species expanding into our region?

Laurie Shuster
Cascadia Research Collective

David Anderson
Cascadia Research Collective

Jessica L. Huggins
Cascadia Research Collective

Annie B. Douglas
Cascadia Research Collective

Nathan Harrison
Cascadia Research Collective

See next page for additional authors

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Speaker

Laurie Shuster, David Anderson, Jessica L. Huggins, Annie B. Douglas, Nathan Harrison, John Calambokidis, and Susan Berta

Dolphins in the Salish Sea: Are warmer water species expanding into our region?

Authors: Laurie Shuster¹, David Anderson¹, Jessica L Huggins¹, Annie B. Douglas¹, Nathan Harrison¹, John Calambokidis¹, and Susan Berta².

Author contact and affiliations: Laurie.Shuster@gmail.com ¹Cascadia Research, ²OrcaNetwork

Historically, the only dolphin species commonly sighted in the marine inland waters of Washington State were Pacific white-sided dolphins (*Lagenorhynchus obliquidens*) and sightings of other dolphin species were considered sporadic and rare. However, sightings of off-shore and warm water species have become more common and some animals have remained in Puget Sound for longer periods of time, while others have stranded and not survived.

Risso's dolphins (*Grampus griseus*) are normally found in deeper offshore waters. Regular sightings of a pair of Risso's occurred in South and Central Puget Sound from 2011-13. Strandings of these animals were not reported, however, in March 2015, a different animal was sighted in Ganges Harbor, BC for a short period of time and later stranded.

Long-beaked common dolphins (*Delphinus capensis*) and bottlenose dolphins (*Tursiops truncatus*) typically inhabit warmer temperate and tropical waters and are not usually present north of California; however, sightings of live dolphins and dead stranded individuals have been increasing in the Salish Sea since the early 2000s. Common dolphins were sighted in 2003, 2011-12, and 2016–17, with strandings occurring in inland waters in 2012 and 2017 (Figure 1). These sighting and stranding events are proximal to El Niño periods. Since June 2016, several common dolphins have remained in Puget Sound and group sizes of 5-20 individuals are often reported.

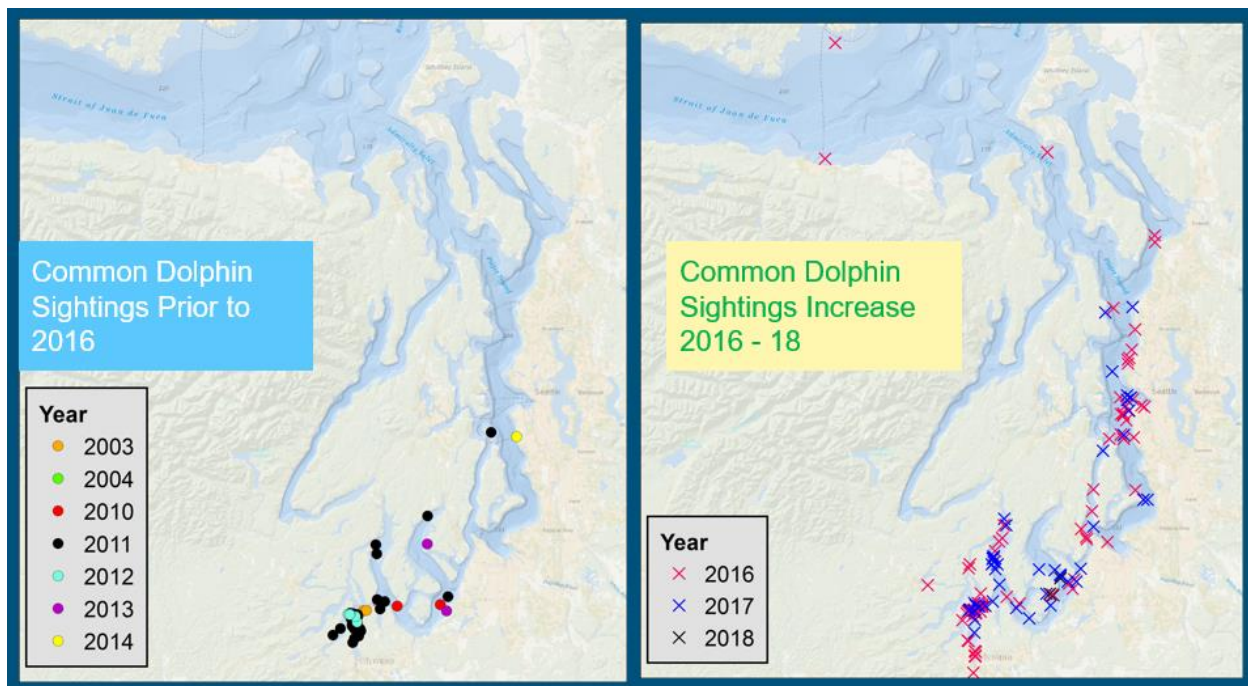


Figure 1. Maps comparing common dolphin sightings in the Salish Sea.

A photo-identification catalog of four individuals with distinctive dorsal fin notches demonstrates repeated sightings of these animals in South Puget Sound. Heavy diatom growth was present on the skin of common dolphins sighted in 2003 and 2011-12; animals sighted in 2016-18 show a slight diatom growth in the winter which decreases in the summer (Figure 2).



Figure 2. Images from 2011 and 2017 comparing diatom growth on common dolphins.

Bottlenose dolphins have been sighted in 1998, 2008, 2009, 2010 and 2011, and strandings occurred in 1988, 2010, 2011. Beginning in September 2017, bottlenose dolphins were sighted regularly in inland waters of WA and BC, with timing and locations suggesting 5-6 animals. Sightings of one or two animals have been reported in central Puget Sound, especially near Seattle, through the winter and spring of 2018 (Figure 3).

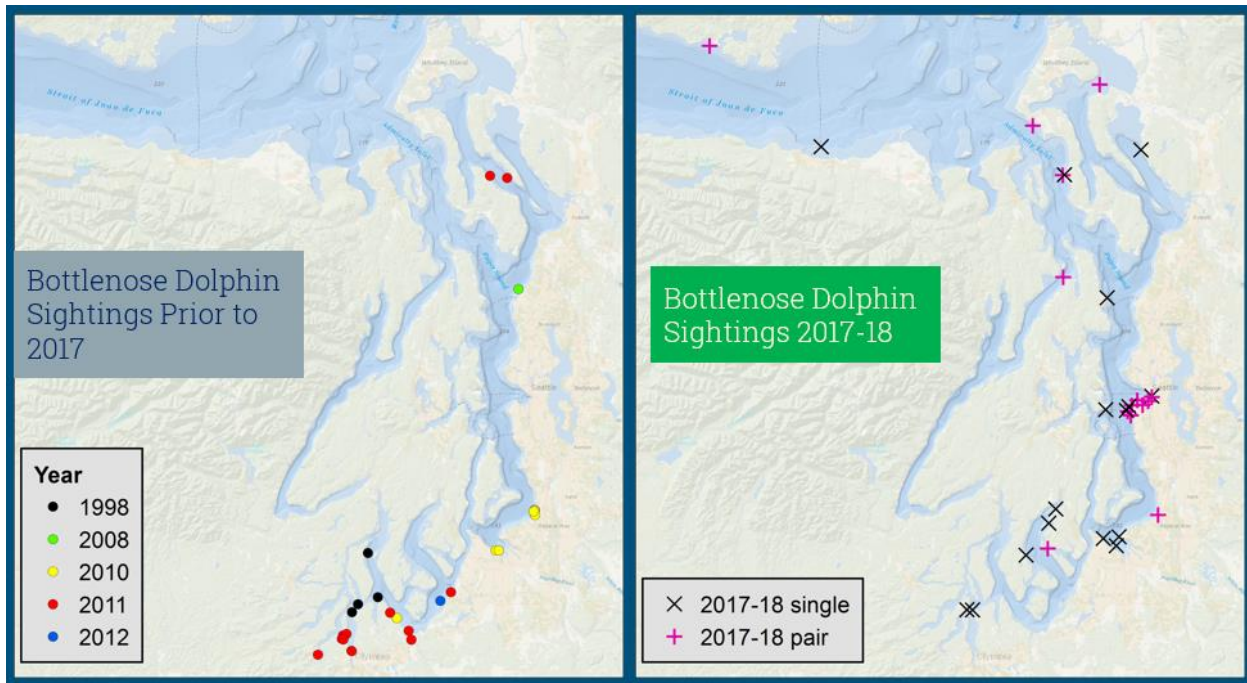


Figure 3. Maps comparing bottlenose dolphin sightings in the Salish Sea.

One bottlenose dolphin was identified as “Miss”, a well-known female coastal bottlenose dolphin previously seen in March 2017 in Sonoma County, California. This animal has been part of the northern expansion of the bottlenose dolphin range occurring since the El Niño event of 1982 and was sighted in Southern California in the 1980s, Monterey Bay in the 1990s, and then in the San Francisco Bay Area in 2012. A second animal in Puget Sound has been identified as “Stump”, a known associate of Miss in California, that has also been photographed since the 1980s and has been part of the northern range expansion.

It’s unclear why these dolphin species are straying from their home range, entering Puget Sound waters, and occasionally remaining for extended periods of time. Continued patterns of long term warming trends may increase the occurrence of these and other warm water species in the future. Changes in native species, such as the return of harbor porpoise and humpback whales to Central and South Puget Sound, have also occurred in recent years. This may signal changes in the Salish Sea ecosystem, shifts in home ranges, and potential competition for prey and habitat resources.

Citizen reported sightings via Cascadia Research and Orca Network have been invaluable in documenting the presence of these species. Since most sighting reports occur at popular land-based locations, data clusters occur in these spots and can skew the true picture of the animals’ presence and habitat use. Funding is needed for continuing data analysis, expansion of systematic small boat survey effort, and monitoring of forage fish abundance in order to monitor and document this changing ecosystem.

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