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Southern Resident orca population dwindles to a 30-year low

Zosha Millman Updated July 10, 2018 7:45 a.m.

The Southern Resident orca pods are in a tough spot -- literally. Their primary food source is dying off; the Trans Mountain Pipeline is expanding, which will increase the number of tankers trucking through the orcas' habitat by seven times, among other exposure risks like noise and spills. And now comes the latest spot of bad news: For the last three years not one calf has been born to the shrinking pods of the black-and-white killer whales in the Pacific Northwest, resulting in a 30-year low in orca population. The annual census of Puget Sound's resident orcas found that just 75 killer whales.

Southern Resident facts

--Southern Residents were listed as an endangered species in 2005, thanks to too many deaths and too few births.

--In the late 1990s, after orca capture became illegal in 1989, there were almost 100 whales in the population. But that trend has not continued.

--They migrate in the Salish Sea to the northern coast of British Columbia, surfacing in the south at Puget Sound (when we're lucky).

--Their route follows the migration pattern of king salmon, their primary prey, and has grown more unpredictable as their food supply has gotten more erratic.

--Males weigh up to 22,000 pounds, and live up to 30 years. Females have gone as high as 16,000 pounds, and can anywhere up to 60 years old. (Although there was one member of the J-pod who lived to 105.)

The cause of the dwindling supply? More of the same, according to many researchers who study the orca pod. Pollution, both old and new, accumulates in their primary prey, and gets stored in the fat on the orca, surpressing the immune system and making the whales more susceptible to disease.

Plus that prey, Chinook salmon (also known as king salmon), are not as big or plentiful as they once were.

"In 2017 -- a very poor year for Chinook -- and we're in the core area here where they used to feed almost daily," Ken Balcomb, a founder and senior scientist at the Center for Whale Research, said in video a last year. "We've seen the twice, three times this year.

"And the salmon (they do find) are smaller, much less numerous, and they are virtually all hatchery fish."

Additionally, the region they inhabit -- Haro Strait, between the San Juans and Vancouver Island -- is getting noisier.

Orcas (killer whales): Four babies were born this winter to the southern resident population of orcas (killer whales). But the great marine mammals remain listed as endangered due to the decline of the orcas' major food source -- chinook salmon. Chemical contamination poses a threat.

A much greater danger looms. Expansion of a pipeline from Alberta to Burnaby, a suburb of Vancouver, could bring hundreds more oil tankers into inland waters. Canada is unprepared for a major (or minor) oil spill off southern Vancouver Island and in the Gulf Islands. B.C. and Canadian governments are panting to bring the carbon economy to the West Coast.

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Since orca bodies aren't generally recovered -- frequently sinking and becoming part of the ecosystem, or washing up on remote beaches -- researchers can't be sure what's behind the increase in deaths of the population. It could be a disease outbreak that the stress of their environment has made them more susceptible to, or it could be representative of a greater problem with the ecosystem, which has been warmed as much as six degrees above normal in some areas along the Pacific coast.

Revealing new data shows killer whales' affinity for the Columbia River mouth

Exerpt from the desk of Howard Garrett, co-director of Orcanetwork

Seeing orcas cruising by seems to bring out the best in people, and many residents around Puget Sound and beyond are often thrilled to see members of an extended family known as the Southern resident orcas (J, K, and L pods) foraging and playing in the waters of the Puget Sound. This particular clan of orcas is precariously close to extinction, however, largely due to the scarcity of chinook salmon, their primary, traditional food source. Chinook comprise about 80% of their diet, along with a side dish of chum salmon during fall months. These orcas refuse to deviate from that menu even when faced with starvation, as was shown by the drastically ramped up mortalities between 1995 and 2001 that correlated closely with region-wide declines in chinook numbers. The resulting 20 percent drop in the population to only 78 individuals in 2001 prompted the listing of this distinct population as endangered under the ESA in November, 2005. The most recent official count shows only 84 individuals.

Most of the dietary studies have been done in summer months around the San Juan Islands, where these orcas are easily found chomping on Fraser River chinook from late spring to early fall. They tend to spend winter and spring at sea, however, and until recently there was very little clear data on where they go or what they are eating in the open ocean waters.

It is known that the famed upper Columbia/Snake River chinook - the ones that began life far, far upriver and must climb the highest mountains in order to return as adults to spawn themselves - were generally the biggest and most plentiful fish. Many of those famous populations - like the fabled "June hogs" have disappeared as a consequence of the construction of dams like Grand Coulee, but a few still remain. They start their journey home early, gathering first in the salt water at the mouth of the river in the winter and spring, to be able reach their far-flung streambed destinations before winter returns. Historically, these were the most bountiful runs of chinook found anywhere in teh world, but are now at just a few percentage points of their former numbers largely as the result of dams and other forms of habitat destruction.

Since 2006, winter data has trickled in indicating Southern Resident orcas eating upper Columbia and Snake River chinook. But the best evidence is just in from a young adult male orca from K pod, K25, (Scoter). On December 29, 2012 NOAA researchers tagged him with a satellite transmitter off Vashon Island. K25 always travels with his K pod family, and as of February 22 the tag was still broadcasting location data. A look at NOAA's maps of his travels show that at least five of the maps, between January 21 and February 8 (to date) show that they consistently milled around, presumably foraging, near the mouth of the Columbia.

They are seen off the coast of Washington State, northern California, and everyone in between - but with a clear preference for the waters just off the mouth of the Columbia River, and just to the north along the Washington State Coast.

These initial tagging data strongly reinforce previous data and logical assumptions that upper Columbia and Snake River chinook are vital for the survival of Southern Resident orcas, and that restoration of abundant runs of those chinook represents an essential opportunity to help this struggling orca clan get through the lean winter months.

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Souther Resident Killer Whales

1. What are three facts that you think are important to know about our local orca population?

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2. What are some of the reasons the orca population has dwindled?

3. What do you think are the biggest threats to the orca population now?

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4. What do you think might happen if the Southern Resident Killer Whale population were to die off?

5. What do you think the best actions are that people could take to help the orca population?

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