

Puget Sound's whales face intertwined obstacles

By The Seattle Times, adapted by Newsela staff on 07.15.14

Word Count **892**



A sheet of water cascades off the back of an Orca that surfaced in Haro Strait near a whale watching charter boat. Photo: Dean J. Koepfler/Tacoma News Tribune/MCT

The killer whales in Puget Sound face a lot of dangers.

The whales became protected a decade ago. Since then, scientists have figured out where they go in winter and they've documented how these majestic mammals change their behavior in response to noise from passing boats.

They've learned that these whales can tell a Chinook salmon from a Sockeye salmon by using sonar to detect small differences in the swim bladders.

Yet despite the vast rise in knowledge since killer whales were listed under the Endangered Species Act, [the killer whale population still is not growing \(https://www.newsela.com/?tag=endangered-species\)](https://www.newsela.com/?tag=endangered-species), according to a new research on the whales. The research was carried out by the National Oceanic and Atmospheric Administration (NOAA).

Scientists are “trying to understand ... why the whales haven’t increased more than they have,” said Mike Ford, with the conservation biology program at NOAA’s Northwest Fisheries Science Center.

Orcas Deal With Many Issues

In one sense, they already know: An explosion in whale science reveals that orcas face complex and overlapping threats that tend to make each other worse.

“Part of what I hoped at the beginning was that it would be mostly one thing that was wrong,” said Brad Hanson, a whale expert with the fisheries center. “But they all appear to be intertwined.”

In the early 1960s, Puget Sound’s killer whales numbered 140 — and some scientists suspect that a century before there might have been 200 or more. By the early 1970s, after companies began capturing orcas for sale to marine parks, the population had dropped to just 71.

Capture was outlawed a few years later, and the orca population climbed to 99 in the mid-1990s, but as of last year, only 82 remain.

Three main factors appear to contribute to the declining numbers. These include a lack of food, the buildup of pollutants in their bodies and disturbance by boats. Still, understanding the subtle ways these and other marine-world changes interact only makes the issue more complicated.

Look Out For Boats!

These whales, it turns out, mostly prefer Chinook salmon, which face severe shortages of their own. The region has spent tens of millions of dollars to try and increase the numbers of this other protected species, but an extremely critical 2011 report suggested too little progress was being made.

In addition, noise from boats causes orcas to speed up, work harder, slap their tails more and hunt less. This may mean they burn more calories just as they’re getting less food.

New rules require boaters and whale-watching ships to stay 200 yards from whales. But the captains haven't always followed the new rules, said Lynne Barre, head of protected resources for NOAA's Seattle office.

Pollution Is A Big Factor

Meanwhile, these long-lived mammals already are among the most polluted animals on Earth. Chemicals from pollution accumulate in their fat over decades, which potentially affects their health and reproduction.

Efforts to clean up Puget Sound are underway. But the whales' position at the top of the food chain means they still ingest old pesticides like DDT and banned chemicals like PCBs from the fish and mammals they eat.

All these issues are more complex than they first appear.

For example, some orca pods are more heavily affected by DDT than others, most likely because they rely on fish from rivers in California. The rivers get runoff water from farms where DDT once was used to kill insects.

Whales feeding on fish from the north, in cities like Seattle and Vancouver, carry a bigger load of PCBs.

"They pick up contaminants from where they're going," Ford said.

The numbers of orcas are decreasing just as other Northwest marine mammals that eat fish actually are on the rise. These sea mammals include seals, sea lions, even other killer whales.

Diet Plays A Role As Well

The northern killer whale population has tripled to nearly 300 since the 1960s. Northern and southern whales share similar diets. But Puget Sound's southern whales range from California to Alaska, while the northern whales travel mostly between northern Washington and Alaska.

The growth of the northern population may even be helping keep the southern resident populations down.

"It's possible that some of those increases influence the rate at which southern resident populations grow," Ford said.

For starters, northern whales may have a food advantage.

"One thing we're considering is that the northern-resident population may have first crack at the best salmon stocks," Hanson said. "A lot of the West Coast fish, they come out of the rivers, they turn right and head north."

Other problems make life hard for southern residents.

Two of the three southern pods have a shortage of young females. This population already gives birth to fewer young less often than northern residents. "It doesn't take much to tip the balance the wrong way," Hanson said.

Whales also tend to be born to parents within their pod. This could reduce genetic diversity and make whales more vulnerable to disease or genetic problems.

And there's no shortage of other mysteries.

When killer whales die, they rarely wash up on the beach for researchers to find and study, Barre said. Instead, they just disappear and scientists never know why they died.

Much of their behavior remains unpredictable.

“Why do they sometimes decide to turn out toward the ocean and stay there for two weeks?” he asked.

Quiz

- 1 The article introduces the killer whales by:
- (A) making comparisons between southern and northern population
 - (B) providing a detailed description of the effect boats have on them
 - (C) sharing details about orca's abilities to spot their prey
 - (D) stating facts for their decreasing numbers
- 2 Select the paragraph from "Orcas Deal With Many Issues" that describes the many complex threats faced by orcas.
- 3 Which sentence provides evidence to the author's claim that orcas face a threat from pollutants?
- (A) The region has spent tens of millions of dollars to try and increase the numbers of this other protected species, but an extremely critical 2011 report suggested too little progress was being made.
 - (B) In addition, noise from boats causes orcas to speed up, work harder, slap their tails more and hunt less.
 - (C) But the whales' position at the top of the food chain means they still ingest old pesticides like DDT and banned chemicals like PCBs from the fish and mammals they eat.
 - (D) The numbers of orcas are decreasing just as other Northwest marine mammals that eat fish actually are on the rise.
- 4 Read the sentence from the article.

"One thing we're considering is that the northern-resident population may have first crack at the best salmon stocks," Hanson said.

How does this sentence contribute to the article?

- (A) It emphasizes that salmons and other fish mostly travel north.
- (B) It helps to focus on the advantage northern whales have in terms of food.
- (C) It helps to focus on the disadvantage northern whales have in terms of food.
- (D) It shows how the growth of northern population helps the southern population.