Researchers want to know why beluga whales haven't recovered

September 26 2017, by Dan Joling

Beluga whale. Credit: Wikipedia

New research aims to find out why highly endangered beluga whales in Alaska's Cook Inlet have failed to recover despite protective measures.

The National Oceanic and Atmospheric Administration has awarded more than $1.3 million to the state for three years of research involving the white whales.

"While we know what we believe caused the initial decline, we're not sure what's causing the population to remain suppressed," said Mandy Keogh, a wildlife physiologist with the Alaska Department of Fish and Game.

A population of 1,300 belugas dwindled steadily through the 1980s and early '90s.

The decline accelerated when Alaska Natives harvested nearly half the remaining 650 whales between 1994 and 1998. Subsistence hunting ended in 1999 but the population remains at only about 340 animals.

Cook Inlet belugas are one of five beluga populations in U.S. waters. Cook Inlet, named for British explorer Capt. James Cook, stretches 180 miles (290 kilometers) from Anchorage to the Gulf of Alaska.

Belugas feed on salmon, smaller fish, crab, shrimp, squid and clams.

Dubbed "sea canaries," the whales make a wide range of whistles, grunts and clicks, and use echolocation to navigate under ice and find prey in murky water.

Federal officials declared Cook Inlet belugas endangered in 2008.

The new research will supplement ongoing NOAA Fisheries research and review feeding patterns, social structure of whale pods and the

effects of noise.

One new study will focus on beluga prey and habitat. Researcher will analyze teeth collected over the years from hunted or stranded belugas and measure stable isotopes to determine how feeding patterns may have changed during their lives.

"Like tree rings, teeth have annual growth layers," Mat Wooller, chemical oceanography professor at the University of Alaska Fairbanks, said in a statement. "Measuring isotopes in these growth layers can reveal how whales' feeding habits have changed over the life of an animal."

Chemical signatures in teeth, Keogh said, can reveal whether belugas ate fish in the water column or prey along the ocean floor.

Streams within Cook Inlet have unique strontium signatures that carry over to the fish that hatch in them, such as salmon and eulachon, a kind of smelt also known as hooligan.

NOAA researchers last week deployed acoustic equipment to record belugas feeding. The whales emit a specific buzz sound after successfully foraging.

"Right now we don't know what they're feeding on in winter," Keogh said.

Researchers also will listen for sounds of transient killer whales, a possible predator, along with industrial noises that could displace belugas from feeding areas.

Researchers also will study pod social structures and compare it to a growing population of belugas in Alaska's Bristol Bay, which has been

studied for the past decade by researchers from Chicago's Shedd Aquarium and Atlanta's Georgia Aquarium in partnership with state, federal and university scientists.

Segments needed for a growing population may be missing in Cook Inlet, Keogh said.

"For example, we don't know if belugas need one male for every female, or whether they're more similar to something like a wolf pack, where not all individuals in the group are reproducing," she said.

NOAA Fisheries manages the animals, but the state has a strong interest in their recovery. Belugas are a tourist draw as they swim in waters along Alaska highways.

Cook Inlet petroleum helps keep the lights on in Anchorage, Alaska's largest city, and the state wants to lift development restrictions if the measures are not helping belugas.

"If you don't know the factors that are preventing them from recovering, it's really hard to appropriately manage them, or to know what factors to try to alleviate," Keogh said.