

PEBBLE WATCH

FACT SHEET

OCTOBER 2020

Quick Read

- The Cook Inlet beluga is one of five populations of beluga whales in Alaska.
- Turnagain Arm is one of only two places in the world where belugas can be seen from the road system.
- Alaska Native subsistence harvests from 1994 to 1998 and the observed 50% decline of the Cook Inlet beluga population during that time indicated harvest levels were unsustainable. Following changes to subsistence regulations, the Cook Inlet beluga population did not recover, indicating that other factors limited its recovery. The population was listed as an endangered species in 2008.
- While scientists have identified threats to the Cook Inlet beluga, the causes of the continued decline are unclear. Noise pollution, catastrophic events, disease, habitat loss, prey reduction, and predation are all threats to the population's recovery.
- Diamond Point Port would be developed in Cook Inlet beluga whale established critical habitat and could be an additive stressor to this endangered whale.
- A Biological Assessment written for the U.S. Army Corps of Engineers by Owl Ridge Natural Resource Consultants, Inc., along with other information, will be used by NOAA Fisheries to develop a Biological Opinion about Cook Inlet beluga whales in late 2020 or early 2021.



(NOAA Fisheries)

Cook Inlet beluga whale

Pull off the highway along Turnagain Arm while driving from Anchorage towards Portage in mid-summer, and with a little time and patience spent gazing out at the inlet, you may spot the endangered Cook Inlet beluga whale surfacing for air while in pursuit of salmon, their main summer prey.

The Cook Inlet beluga (*Delphinapterus leucas*) is one of five populations of beluga whales in Alaska. The other populations are found in the Beaufort Sea, eastern Chukchi Sea, eastern Bering Sea and Bristol Bay, and are considered healthy and stable. However, the Cook Inlet beluga is an endangered species. Only 279 individuals remain as of the most recent surveys conducted by the National Oceanic Atmospheric Administration Fisheries (NOAA Fisheries).

The Alaska Peninsula forms a natural physical barrier isolating Cook Inlet belugas genetically from the rest of the Alaska populations of beluga whales, and because sightings of belugas in the Gulf of Alaska are rare, scientists believe it is unlikely belugas would migrate to repopulate the Cook Inlet area, were the population to go extinct.

Beluga whales are primarily found in the Arctic Ocean. There are two places in the world you can see them in the wild by the road system. One of those is Alaska's Cook Inlet and the other is in eastern Canada.

Identifying belugas

Belugas are a small toothed whale with a bulbous forehead and muscular robust bodies. Females are slightly smaller than males. They rarely grow over 12 feet in length and weigh about 1,360 kg. While adult belugas are white, females may stay gray well into adulthood. Males are whiter and can grow to be as long as 15 feet and weigh up to 1,500 kg. You can spot calves from the road, because they are darker gray when they are born

and turn whiter with age. Among whales, belugas are unusual in that they have no dorsal fin. Genetically they are in the same family as the narwhal (*Monodontidae*). They are social animals and spend time in pods. Females and juveniles usually travel together, while males travel in separate pods. Belugas often surface together simultaneously to breathe, making them easier to spot.

LIFE HISTORY

Beluga's life history traits limit their ability to recover rapidly following population declines. Belugas have low reproductive rates.

They are heavily invested in their young: they have a gestation period of 14 months, mothers nurse their single calf for 2 years, and they usually produce just one calf every 3 to 4 years. Females become sexually mature at 8 to 10 years of age and males slightly later.

They have a lifespan of about 30 years but can live as long as 80 years. Measuring calf production of the Cook Inlet population would help scientists understand some of the limitations to the whale's recovery, but studies are difficult due to the inlet's shallow murky waters and sweeping tides.

Cook Inlet beluga whales continue to decline at a rate of -2.3% per year.

POPULATION TRENDS

Alaska Natives have coexisted with the Cook Inlet beluga whale for thousands of years prior to contact with Europeans. In the 1920s 151 whales were commercially harvested in a five-year period. Sport (recreational) harvests were legal before passage of the Marine Mammal Protection Act in 1972. Afterward, the Cook Inlet beluga population declined on average by 5% annually from 1979 to 1994.

From 1994 to 1998 the population declined dramatically by more than 50%. This time period coincided with an average annual subsistence take of 77 whales, which was unsustainable given the population declines. NOAA Fisheries worked with Native leaders to develop regulations at that time. However, the population did not recover, and it was clear that other factors were hindering the Cook Inlet beluga whale recovery.

Consequently, NOAA Fisheries listed this Distinct Population Segment (**DPS**) as Endangered in 2008 under the Endangered Species Act (ESA). Cook Inlet beluga whales continue to decline at a rate of -2.3% per year.

THREATS

While scientists have identified major threats to the Cook Inlet beluga population, it is still unclear why it is not recovering. The population resides near Anchorage, Alaska's largest city, which leads to increased threats.

THREAT TYPE	TREND	RELATIVE CONCERN
Catastrophic events (e.g., natural disasters; spills; mass strandings)	Stable	High
Cumulative effects	Increasing	High
Noise Pollution	Increasing	High
Disease agents (e.g., pathogens; parasites; harmful algal blooms)	Unknown	Medium
Habitat loss or degradation	Increasing	Medium
Reduction in prey	Unknown	Medium
Unauthorized take	Unknown	Medium
Pollution	Increasing	Low
Predation	Stable	Low
Subsistence hunting	Stable or Decreasing	Low

Summarized from Table 6, NOAA Fisheries Cook Inlet Beluga Whale Recovery Plan. Page III-3.



(NOAA Fisheries)

Population Sizes

279 Current population size

520 Size required to downlist from endangered to threatened

780 Size needed to delist the population

1,300 Conservative estimate of the carrying capacity of the Cook Inlet

ONGOING RESEARCH – includes examining prey species for toxins, assessing age distribution using teeth and evaluating behavior sensitivity to noise and other disturbances.

RECOVERY PLAN – Based on science and traditional knowledge, NOAA Fisheries developed a recovery plan with the following major actions:

- Protect habitat and designate critical habitat.
- Minimize the effects of noise disturbance.
- Respond to stranded beluga whales.
- Implement oil spill response plans in case of a spill.
- Review projects that could harm beluga whales.
- Manage subsistence harvests.
- Educate the public about belugas and threats they face.

Underwater Acoustics

Known as the canaries of the sea, beluga whales create a symphony of sounds to communicate, hunt and navigate. While belugas have no vocal cords, they instead make noise through nasal sacs near their blowholes.

This capability permits belugas to navigate under ice, find prey in murky waters and communicate with each other across watery distances. They have a larger range of sounds than any other marine mammal, including trumpets, gargles, chirps, and whistles ([listen to a sample](#)).

Beluga hunt for prey and navigate using echolocation, also called sonar. Using echolocation, they send rapid clicks out towards prey. The faster the clicks return to them, the closer the prey. [Listen to this sample](#). The clicks quicken and then you'll hear a crunch indicative of a successful catch.

Castellote et al. 2020

FORAGING ECOLOGY & RANGE

Beluga whales primarily feed on schooling and anadromous fish including herring, capelin, smelt, cod, salmon, flatfish, sculpin and eulachon. They are opportunistic feeders and will also eat octopus, squid, shrimp, crab, clams, mussels, snails and sandworms.

It follows then that their habitat includes nearshore estuaries, river mouths and the continental shelf, where their prey is found. While they can travel hundreds of miles, belugas generally maintain local migrations, and this is true of the Cook Inlet population. In summer, Cook Inlet belugas are found mainly in the upper inlet and thus are more visible at this time of year, when they take advantage of summer salmon runs.

Their summer range has contracted in recent years as

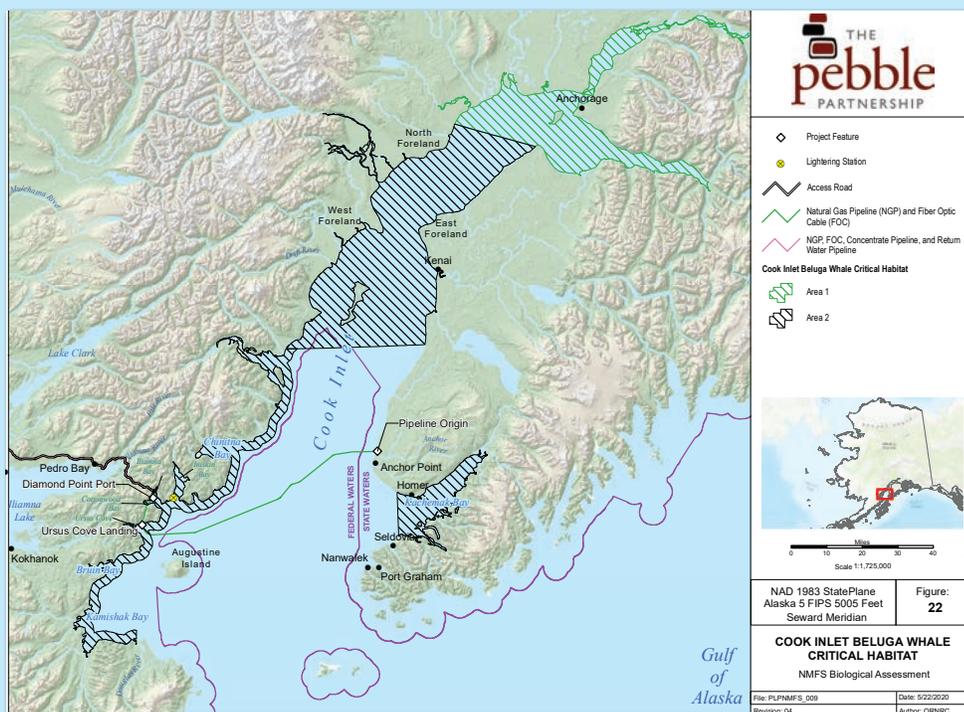
their numbers have declined. They also seek shallow waters of the upper inlet for calving. Shallow waters are warmer and more suitable for calves that have less blubber for insulation. In winter they disperse more into the inlet.

Recently scientists have learned more about beluga movements in Cook Inlet using passive acoustic monitoring, a relatively new technique.

As the species has declined, their winter range has contracted, but whales are regularly detected in the Kenai River and Kachemak Bay. A shore-based marine mammal monitoring program observed 41 groups of belugas in the Kenai River between March and April in 2018. V. Gill, the Cook Inlet beluga whale recovery coordinator, states, "Beluga whales have been documented in and around Kachemak Bay in both summer and winter in the past several years."

CRITICAL HABITAT

In 2011 NOAA Fisheries designated two critical habitat areas for Cook Inlet belugas comprising 7,800 square kilometers of marine habitat. The Diamond Point Port for the Pebble Project would be constructed within critical habitat of the Cook Inlet beluga (area 2).



Critical habitat for beluga whales, USACE FEIS, Appendix H, Figure 22.

What does it mean if habitat is designated as critical?

Critical Habitat has a legal definition from the Endangered Species Act and includes areas the species occupies with physical and biological features that are essential to the conservation of the species and require special management protections.

NOAA Fisheries determined that several physical and biological features are essential to the Cook Inlet beluga, including:

- intertidal and subtidal waters
- primary prey
- no toxins
- passage between critical habitat areas
- in-water noise below levels resulting in the abandonment of critical habitat

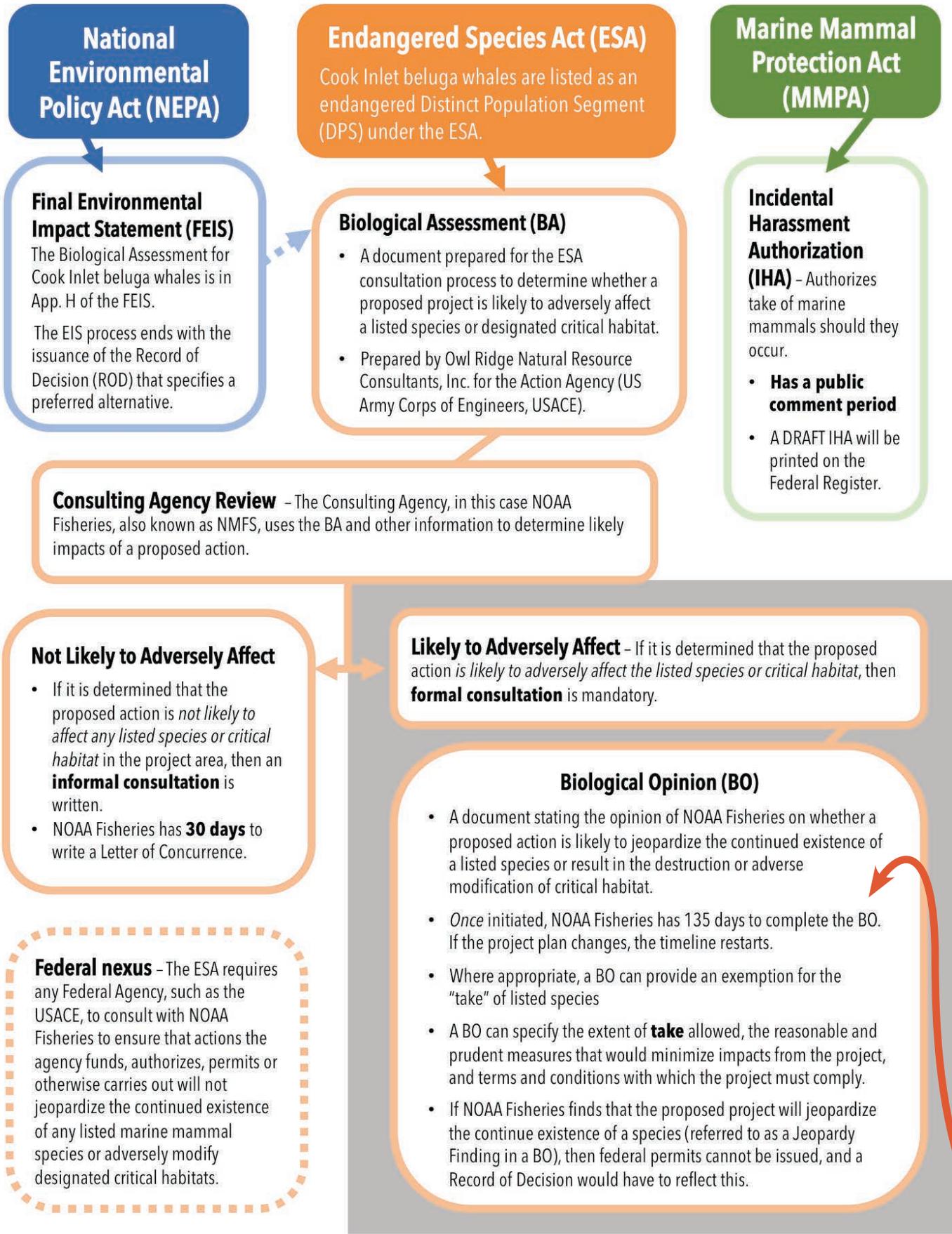
Endangered Species Act: The Path Forward for NOAA Fisheries

Under the Endangered Species Act (ESA), a **Biological Assessment** (BA) is prepared for the Action Agency (in this case USACE) and is used by the Consulting Agency (in this case NMFS, also known as NOAA Fisheries) to develop a **Biological Opinion** (BO) to determine whether a proposed action will jeopardize the recovery of beluga whales.

An **informal consultation** is selected if the proposed action is not likely to affect any listed species or critical habitat in the project area. In the case of a **formal consultation**, NOAA Fisheries prepares a BO. Its conclusion states whether the USACE has insured that the project's action is *not likely to jeopardize the continued existence of a listed species and/or result in the destruction or adverse modification of critical habitat*.

By exploring alternatives with the USACE, NOAA Fisheries may provide an *incidental take statement* with the BO. This essentially allows for incidental take of an endangered species during the project, as long as the mitigated terms and conditions were met by the Project and the Action Agency. **Take** is the legal term from the Endangered Species Act that means **"to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."**

NOAA Fisheries has decided that formal consultation is needed related to the Pebble project. Under the ESA, it has 135 days to write a Biological Opinion.
(See p. 5)



Protected Marine Mammals: Pebble Permit Process

WHERE WE ARE NOW

This is a simplistic chart of a very complicated process. NOAA Fisheries began its formal consultation with the USACE on September 3, 2020. It has 135 days to complete the Biological Opinion. USACE has said it will not complete the Record of Decision for the Pebble project until the BO is complete.

Summary of the Cook Inlet beluga whale Biological Assessment

USACE Final Environmental Impact Statement, Appendix H

Owl Ridge Natural Resource Consultants, Inc. (Owl Ridge) prepared a Biological Assessment (BA) on the status of Cook Inlet beluga whales for inclusion within the Final EIS (Appendix H) of the Pebble Project.

It addresses beluga whale status and project consequences, project effects, mitigation measures and determination of effects of the Pebble Project on the whale.

Species use of the Action Area

The BA notes that the Action Area is south of Cook Inlet Forelands, but also includes a proposed travel corridor from Nikiski passing near the mouth of the Kenai River. Project vessel activity to and from Nikiski could realistically encounter beluga whales during winter. Excluding the Nikiski travel corridor, the BA states that no substantial beluga whale use of the Action Area

is expected. The BA also notes that the Action Area falls within designated Critical Habitat Area 2 (Figure 22, Figure 14) and that in general, Critical Habitat Area 1 correlates to the beluga summer range, while Area 2 correlates to their winter range.

Pebble Effects on CI beluga whales

The BA addressed five effects that Cook Inlet beluga whales may experience due to the Pebble Project: acoustic disturbance, vessel strikes, entanglement, incidental spills and accidental spills. The Owl Ridge BA determined that all potential project effects to Cook Inlet beluga whales would either be negligible (acoustical disturbance, vessel strike, entanglement) or improbable (incidental spill, small accidental spill and large accidental spill). The determination of the Owl Ridge BA, therefore, is **May affect, not likely to adversely affect**.

Pebble Effects on CI beluga whale Critical Habitat

In addition to direct effects on the whales, the BA examined effects on the five aspects of critical habitat: intertidal zones, primary prey, absence of toxins, unrestricted passage, and in-water noise. The project would result in the temporary loss of 229.2 ac (928 ha) during construction, and a permanent loss of 26.6 ac (10.8 ha) of critical habitat. Owl Ridge states that the magnitude of the project on Cook Inlet beluga whale critical habitat is very small relative to the amount of critical habitat available. The Overall impacts to beluga whale critical habitat, therefore, was considered negligible. The determination of the Owl Ridge BA for Cook Inlet beluga whale critical habitat is **May affect, not likely to adversely affect**.

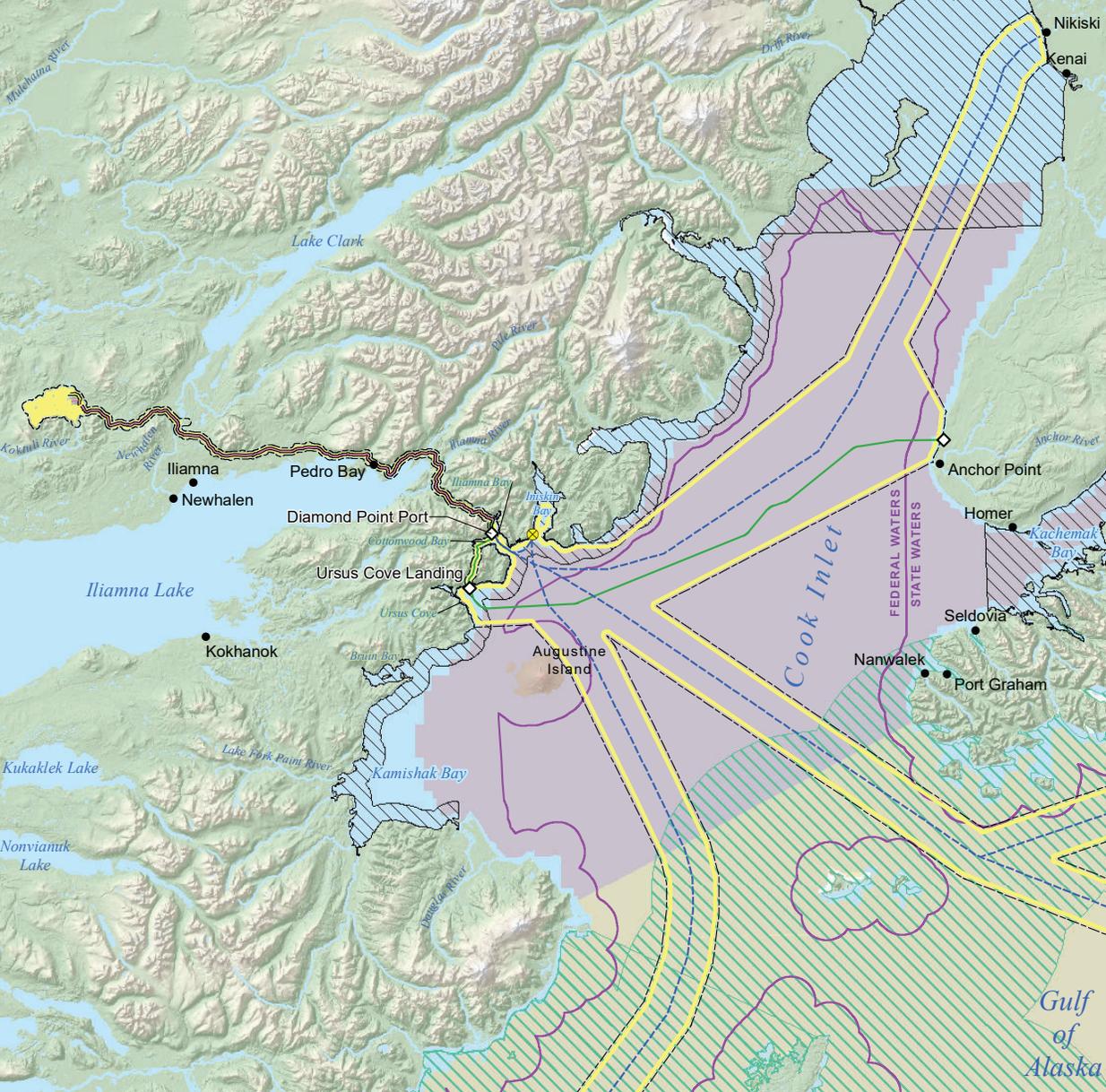
Jabba the Hut, BandAid, & ApplePie

These are all nicknames for Cook Inlet beluga whales that have been identified in the Cook Inlet Photo-ID project. By reviewing photos submitted, scientists can identify and track specific Cook Inlet beluga whales by their unique markings.

[Google map of recent Cook Inlet beluga whale sightings](#)



Photo courtesy of the Cook Inlet Beluga Whale Photo-ID Project, taken under research permit #2222. Cookinletbelugas.org



Legend

- ◇ Project Feature
- ⊗ Lightening Station
- Maritime Traffic
- Access Road
- Natural Gas Pipeline (NGP) and Fiber Optic Cable (FOC)
- NGP, FOC, Concentrate Pipeline, and Return Water Pipeline
- State Seaward Boundary
- ⊕ Action Area

Critical Habitat Area

- ⊕ Steller Sea Lion
- ⊕ Cook Inlet Beluga Whale Area 2
- ⊕ Humpback Whale - Unit 5 (Proposed)
- ⊕ Humpback Whale - Unit 6 (Proposed)

Map Metadata

NAD 1983 StatePlane Alaska 5 FIPS 5005 Feet Seward Meridian

Figure: 14

ACTION AREA AND CRITICAL HABITATS - COOK INLET

NMFS Biological Assessment

File: PLPNMFS_003 Date: 5/22/2020
Revision: 04 Author: ORNRC

Pebble Action Area and critical habitat for beluga whales, Steller sea lions, and humpback whales, USACE FEIS, Appendix H.

Including the Cook Inlet beluga whale, nine species of marine mammals, currently listed under the ESA and under the jurisdiction of NOAA Fisheries, occur seasonally or year-round within the Action Area. The Biological Opinion will include all nine of these species. Marine Mammals with ranges within the Cook Inlet overlapping the Action Area are listed in this table, which has been modified from Table 8 of the USACE FEIS, Appendix H.

PROTECTED MARINE MAMMALS

IN THE PEBBLE PROJECT ACTION AREA

Common Name	Latin Name	ESA Status	Population	Critical Habitat
Beluga Whale	<i>Delphinapterus leucas</i>	Endangered	Cook Inlet DPS	Yes
Humpback Whale	<i>Megaptera novaeangliae</i>	Threatened	Mexico DPS	Proposed Yes
Humpback Whale	<i>Megaptera novaeangliae</i>	Endangered	Western North Pacific DPS	Proposed Yes
Fin Whale	<i>Balaenoptera physalus</i>	Endangered	North Pacific	N/A
Steller Sea Lion	<i>Eumetopias jubatus</i>	Endangered	Western DPS	Yes

Five other whale species occur outside the Cook Inlet but within the Action Area travel corridor: North Pacific right whales (*Eubalaena japonica*), blue whales (*Balaenoptera musculus*), sei whales (*Balaenoptera borealis*), Western North Pacific DPS of gray whales (*Eschrichtius robustus*), and sperm whales (*Physeter catodon*).

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A Cook Inlet beluga whale mother and neonatal calf swim together. Credit: Hollis Europe & Jacob Barbaro/NOAA Fisheries.

based marine mammal monitoring effort and mixed-methods anthropological research study. Prepared by K. Ovitz for National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Protected Resources Division. November 2019.

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About Pebble Watch

Pebble Watch is an impartial, educational and fact-based resource for sharing information about the proposed Pebble project. It is a program of the Bristol Bay Native Corporation Land Department. Questions? Write info@pebblewatch.com.