

Harbor porpoise, Gulf of Alaska stock

Class: Mammalia

Order: Cetacea

Phocoena phocoena pop. 2

Note: Three stocks of harbor porpoises are recognized in Alaska for management purposes: Southeast Alaska, Gulf of Alaska, and Bering Sea.

Review Status: Peer-reviewed

Version Date: 05 April 2018

Conservation Status

NatureServe: Agency:

G Rank: G4G5 ADF&G: Species of Greatest Conservation Need IUCN: Least Concern Audubon AK:

S Rank: S4 USFWS: Strategic Stock BLM:

Final Rank		
Conservation category: IV. Orange		
unknown status and high biological vulnerability and action need		
<u>Category</u>	<u>Range</u>	<u>Score</u>
Status	-20 to 20	0
Biological	-50 to 50	-12
Action	-40 to 40	24
Higher numerical scores denote greater concern		

Status - variables measure the trend in a taxon's population status or distribution. Higher status scores denote taxa with known declining trends. Status scores range from -20 (increasing) to 20 (decreasing).

Score

Population Trend in Alaska (-10 to 10)

0

Unknown. Estimates of population size cannot be compared since they rely on different survey methods (Muto et al. 2019).

Distribution Trend in Alaska (-10 to 10)

0

Unknown. The range of this question covers 50 years; information is lacking on their distribution prior to the 1990s.

Status Total: 0

Biological - variables measure aspects of a taxon's distribution, abundance and life history. Higher biological scores suggest greater vulnerability to extirpation. Biological scores range from -50 (least vulnerable) to 50 (most vulnerable).

Score

Population Size in Alaska (-10 to 10)

0

Unknown. The most recent estimate of population size that accounts for detection probability and covers most of this stock's range dates back to 1998. At that time, corrected population size was estimated at 31,046 porpoise, 95% CI [20,520-46,972] (Hobbs and Waite 2010). The NOAA Stock Assessment no longer uses this estimate to calculate minimum population size since survey data are more than 8 years old (Muto et al. 2019).

<i>Range Size in Alaska (-10 to 10)</i>	-8
Occurs in the Gulf of Alaska from Cape Suckling to Unimak Pass (Muto et al. 2019). Primarily found in waters less than 100 meters deep (Hobbs and Waite 2010). Estimated range size is ~220,000 sq. km, calculated in GIS.	
<i>Population Concentration in Alaska (-10 to 10)</i>	-10
Concentration areas have not been documented for this stock. Harbor porpoises are usually seen alone or in small groups, though areas of high density have been noted for some stocks (COSEWIC 2006; Dahlheim et al. 2009).	
<i>Reproductive Potential in Alaska</i>	
<u>Age of First Reproduction (-5 to 5)</u>	1
Unknown for Alaska. Age at sexual maturity averaged 3-4 years for females in eastern Canada (Fisher and Harrison 1970; reviewed in COSEWIC 2006), and 5 years in northwestern Europe (Kesselring et al. 2017).	
<u>Number of Young (-5 to 5)</u>	3
Females give birth to one calf per year (Read 1990).	
<i>Ecological Specialization in Alaska</i>	
<u>Dietary (-5 to 5)</u>	1
Feeds on small, schooling fish e.g. cod, sand lance, smelt, and herring (Castellote et al. 2015). May also feed on invertebrates such as cephalopods and crustaceans (Castellote et al. 2015; COSEWIC 2006). Within this niche, regional and individual differences in prey items suggest that harbor porpoises have a flexible diet (COSEWIC 2006; Andreasen et al. 2017). Because the availability of these prey items are sensitive to changes in oceanographic conditions, with repercussions for the harbor porpoise's ecology (COSEWIC 2006), we rank this question as B- Moderately adaptable.	
<u>Habitat (-5 to 5)</u>	1
Little information about habitat requirements in Alaska. Distribution is likely influenced by water depth, prey availability, and water temperatures (Gaskin 1992; Hobbs and Waite 2010). Harbor porpoises are most often seen in coastal waters; in Alaska, they are usually found in waters less than 100 meters deep (Hobbs and Waite 2010). Because harbor porpoises must feed often, they are usually found near prey patches and can undergo long-distance movements to and from these patches (COSEWIC 2006). Prey availability may also explain why harbor porpoises are more abundant in upwellings or coastal fronts (Gaskin 1992).	
Biological Total:	
	-12

Action - variables measure current state of knowledge or extent of conservation efforts directed toward a given taxon. Higher action scores denote greater information needs due of lack of knowledge or conservation action. Action scores range from -40 (lower needs) to 40 (greater needs).

Score

<i>Management Plans and Regulations in Alaska (-10 to 10)</i>	2
Protected under the U.S. Marine Mammal Protection Act of 1972 (16 U.S.C. §§ 1361 et seq.). Subsistence harvest is allowed, but is likely non-existent or very low (Muto et al. 2019). Incidental take from commercial fisheries occurs and is potentially substantial (Muto et al. 2019).	
<i>Knowledge of Distribution and Habitat in Alaska (-10 to 10)</i>	2
Distribution is known from aerial and ship-based surveys, and opportunistic sightings (e.g. Hobbs and Waite 2010; Sheldon et al. 2014; Rone et al. 2016). To our knowledge, fine-scale habitat associations have not been studied in Alaska. Harbor porpoises can be difficult to detect and identify (Hobbs and Waite 2010; Rone et al. 2016).	

<i>Knowledge of Population Trends in Alaska (-10 to 10)</i>	10
Not currently monitored. The last comprehensive estimate of population size dates back to 1998 and more recent data are not available (Muto et al. 2019).	
<i>Knowledge of Factors Limiting Populations in Alaska (-10 to 10)</i>	10
Factors that limit this population remain speculative. Potential factors include incidental take from commercial fisheries, habitat degradation, changes in prey availability, and toxicity from harmful algal blooms (COSEWIC 2006; Lefebvre et al. 2016; Muto et al. 2019).	
Action Total:	24

Supplemental Information - variables do not receive numerical scores. Instead, they are used to sort taxa to answer specific biological or management questions.

Harvest:	Substantial, regulations
Seasonal Occurrence:	Year-round
Taxonomic Significance:	Population
% Global Range in Alaska:	<10%
% Global Population in Alaska:	<25%
Peripheral:	No

References

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Alaska Center for Conservation Science
Alaska Natural Heritage Program
University of Alaska Anchorage
Anchorage, AK