

# Tufted Puffin

*Fratercula cirrhata*

Class: Aves  
Order: Charadriiformes

**Review Status:** Peer-reviewed

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## Conservation Status

NatureServe: Agency:

G Rank: G5      ADF&G: Species of Greatest Conservation Need      IUCN: Least Concern      Audubon AK: Red  
S Rank: S5      USFWS:      BLM:

Final Rank		
Conservation category: <b>VIII. Blue</b>		
unknown status and low biological vulnerability and action need		
<u>Category</u>	<u>Range</u>	<u>Score</u>
Status	-20 to 20	0
Biological	-50 to 50	-22
Action	-40 to 40	-4
<b>Higher numerical scores denote greater concern</b>		

**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

Monitored at only eight sites, which represents <10% of their population in Alaska (Goyert et al. 2017). Data for these sites suggest a stable trend from 1990 to 2013 for Alaska as a whole (Goyert et al. 2017). However, some populations within the Gulf of Alaska may have declined over the same time period (Slater and Byrd 2009; Goyert et al. 2017; Cushing et al. 2018). Given the limited data that are available, we rank this question as "Unknown".

*Distribution Trend in Alaska (-10 to 10)*

0

Unknown.

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)*

-10

>25,000. Population estimates range from 2.3 to >3.5 million (Denlinger 2006; Goyert et al. 2017).

*Range Size in Alaska (-10 to 10)*

-2

During breeding, inhabits coastal regions and oceanic islands from Cape Lisburne west to the Aleutian Islands and south to southeast Alaska (Piatt and Kitaysky 2002b). Overwinters at sea in the southern Bering Sea and the North Pacific Ocean (Kessel 1989; Denlinger 2006). Estimated breeding

range is ~96,000 sq. km, calculated in GIS and based on range map from ACCS (2017a).

*Population Concentration in Alaska (-10 to 10)* -10

>250 breeding colonies in Alaska (Denlinger 2006; USFWS 2013d).

*Reproductive Potential in Alaska*

Age of First Reproduction (-5 to 5) 1

Unknown, but likely >2 year (Piatt and Kitaysky 2002b; Gibson and Byrd 2007). Most individuals probably do not breed until at least their fourth or fifth year (Piatt and Kitaysky 2002b).

Number of Young (-5 to 5) 3

Females lay a single egg per year (Piatt and Kitaysky 2002b).

*Ecological Specialization in Alaska*

Dietary (-5 to 5) -5

Diver and generalist predator (Sydeman et al. 2017b; Schoen et al. 2018). Consumes a variety of forage fishes and marine invertebrates (Wehle 1982; Baird 1991; Springer et al. 1996; Piatt and Kitaysky 2002b; Williams and Buck 2010; Sydeman et al. 2017b; Schoen et al. 2018). Diet reflects spatial and temporal differences in prey availability (Baird 1991; Hatch and Sanger 1992; Williams and Buck 2010; Sydeman et al. 2017b; Schoen et al. 2018; Piatt et al. 2018).

Habitat (-5 to 5) 1

Inhabits marine islands and headlands. Mostly nests in excavated burrows, though nests in crevices at some locations (Kessel 1989; Piatt et al. 1997; Denlinger 2006; Gibson and Byrd 2007). Breeding habitat must be free from introduced predators, disturbance by humans, and nesting substrate must be protected from trampling and erosion. Forages primarily offshore, but also utilizes nearshore waters during breeding (Kessel 1989; Piatt and Kitaysky 2002b; Gibson and Byrd 2007; Hunt et al. 2014). Overwinters at sea.

Biological Total: -22

**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**

*Management Plans and Regulations in Alaska (-10 to 10)* -10

Protected under the Migratory Bird Treaty (MBTA 1918). Open to subsistence harvest, but subject to regulations (AMBCC 2018).

*Knowledge of Distribution and Habitat in Alaska (-10 to 10)* 2

Distribution of colonies is documented and available through the North Pacific Seabird Data Portal (USFWS 2013d), with knowledge of nesting and foraging habitats (Kessel 1989; Piatt et al. 1997; Piatt and Kitaysky 2002b; Byrd et al. 2005; Gibson and Byrd 2007; Hunt et al. 2014; Schoen et al. 2018). Some information about at-sea distribution from shipboard surveys (Piatt and Drew 2015; also see summary table in Jahncke et al. 2008) and specific research studies (Ostrand et al. 1998; Wong et al. 2014; Cushing et al. 2018; Schoen et al. 2018). Non-breeding distribution is poorly studied.

*Knowledge of Population Trends in Alaska (-10 to 10)* 2

Population size and trend estimates are unreliable. First, tufted puffins are monitored at only eight sites, which represents <10% of the Alaskan population (Goyert et al. 2017). Second, trend estimates for these sites are derived from count data, which represent attendance at the breeding colony rather than actual population size. Last, breeding birds are difficult to count because they nest in burrows

and burrows themselves are difficult to detect because they are often hidden by vegetation (Denlinger 2006).

*Knowledge of Factors Limiting Populations in Alaska (-10 to 10)*

2

Some information available. In Alaska, changes in population growth rates and reproductive success have been correlated with climate variables, but the ultimate mechanisms are thought to be prey availability and quality (Agler et al. 1999; Kitaysky and Golubova 2000; Goyert et al. 2018). Colonies on the Aleutian Islands were severely impacted by introduced predators, but have recovered following predator eradication programs (Byrd et al. 2005; Croll et al. 2016). Nevertheless, mammalian predators remain an issue for some colonies; predation can lead to colony failure or abandonment (Williams and Buck 2010; Schoen et al. 2018). Additional data are needed to assess the impacts of gillnet fisheries (Denlinger 2006) and the availability of nest sites, which may be limiting at some colonies (Piatt et al. 1997). Subsistence harvest rates are not a current concern (Naves 2018).

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Action Total: -4

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

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<b>Harvest:</b>	Not substantial
<b>Seasonal Occurrence:</b>	Year-round
<b>Taxonomic Significance:</b>	Monotypic species
<b>% Global Range in Alaska:</b>	>10%
<b>% Global Population in Alaska:</b>	≥75%
<b>Peripheral:</b>	No

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