

Spectacled Eider

Somateria fischeri

Class: Aves
Order: Anseriformes

Review Status: Peer-reviewed

Version Date: 30 March 2018

Conservation Status

NatureServe:

Agency:

G Rank: G3

ADF&G: Species of Greatest Conservation Need

IUCN: Near Threatened

Audubon AK: Red

S Rank: S2B

USFWS: Listed Threatened

BLM: Sensitive

Final Rank		
Conservation category: VII. Yellow		
low status and either high biological vulnerability or high action need		
Category	Range	Score
Status	-20 to 20	4
Biological	-50 to 50	10
Action	-40 to 40	-20
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)

2

Experienced drastic population declines from the 1970s to the 1990s (USFWS 2010e). More recent surveys suggest that the population has been stable or increasing for the last three decades (USFWS 2010e; Stehn et al. 2013).

Distribution Trend in Alaska (-10 to 10)

2

Breeding is restricted to the Yukon-Kuskokwim Delta and the Arctic Coastal Plain. Historical records suggest that Spectacled Eiders nested almost as far east as the Canadian border, and were patchily distributed from the Nushagak Peninsula near Dillingham north to the Arctic Coastal Plain (USFWS 2010e). Current distribution on the Arctic Coastal Plain appears stable (based on data from 1992-2006; Larned et al. 2006).

Status Total: 4

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)

-6

Between 10,001 and 25,000. Recent estimates suggest ~13,400 birds breed on the Yukon-Kuskokwim Delta (Lewis and Schmutz 2017; see Fig. 6 in Lewis et al. 2019), while ~8,600 birds breed on the Arctic Coastal Plain (Wilson et al. 2017). Both of these estimates were obtained by correcting for detection rates.

<i>Range Size in Alaska (-10 to 10)</i>	-2
Breeds on the Arctic Coastal Plain and the Yukon-Kuskokwim Delta (Petersen et al. 2000). Overwinters in a relatively small area in the Bering Sea south of St. Lawrence Island (Petersen et al. 1999). Winter range is most restricted and is estimated at <100,00 sq. km.	
<i>Population Concentration in Alaska (-10 to 10)</i>	10
Between 1-25 sites during fall molt, when the population concentrates at Ledyard Bay and eastern Norton Sound (Petersen et al. 1999). Most of the population overwinters in a relatively small area south of St. Lawrence Island (Petersen et al. 1999).	
<i>Reproductive Potential in Alaska</i>	
<u>Age of First Reproduction (-5 to 5)</u>	-3
2-3 years (Petersen et al. 2000).	
<u>Number of Young (-5 to 5)</u>	1
Produces one clutch per year. Average clutch size ranges from 4 to 6 eggs (Grand and Flint 1997; Petersen et al. 2000; Bart and Earnst 2005).	
<i>Ecological Specialization in Alaska</i>	
<u>Dietary (-5 to 5)</u>	5
During breeding, eats a variety of invertebrates (e.g. flies, crustaceans, beetles, bivalves), as well as seeds, berries, and graminoids (Petersen et al. 2000). Diet on wintering grounds consists of benthic invertebrates (e.g. bivalves, crustaceans, gastropods) and appears highly specialized (Petersen et al. 1998; Lovvorn et al. 2014). Clams, typically of a single species, often comprise >80% of their diet; studies found that when clams are unavailable or less abundant, Spectacled Eiders did not switch to alternative food sources even when fat reserves declined (Lovvorn et al. 2003; Lovvorn et al. 2014).	
<u>Habitat (-5 to 5)</u>	5
Breeds in coastal areas on wetlands, salt marshes, and sedge meadows; habitat is often associated with freshwater such as ponds, lakes, and rivers (Petersen et al. 2000). Wintering habitat is highly specialized and subject to natural disturbances. Winters in open water on ice leads in the northern Bering Sea in areas with a high abundance of clams (Cooper et al. 2013; Lovvorn et al. 2014). Availability of sea ice for roosting may be particularly important for reducing energetic costs (Lovvorn et al. 2009). Wintering habitats are dynamic and highly variable, changing both seasonally and inter-annually (Lovvorn et al. 2014).	
Biological Total:	
	10

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>	-10
Protected under the Migratory Bird Treaty Act (MBTA 1918) and listed as Threatened under the U.S. Endangered Species Act. A recovery plan is in place for this species (USFWS 2010e). Hunting is prohibited (AMBCC 2020; USFWS 2010e), though surveys show that some harvest does occur (Naves 2015).	
<i>Knowledge of Distribution and Habitat in Alaska (-10 to 10)</i>	-10
Distribution and habitat associations during breeding, migration, and over winter are well-known in Alaska through annual ground and aerial surveys (e.g. Stehn et al. 2013; Lewis et al. 2019), satellite telemetry studies (e.g. Petersen et al. 1999; Petersen and Douglas 2004; Lovvorn et al. 2014; Sexson	

et al. 2014), and habitat modelling (e.g. Lovvorn et al. 2009; Sexson et al. 2016; Saalfeld et al. 2017).

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

-2

Monitoring surveys are conducted annually on the two breeding regions in Alaska. Detection rates have been estimated for both Yukon-Kuskokwim and Arctic Coastal Plain breeding populations (Wilson et al. 2017; Lewis et al. 2019).

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

2

While a lot of research has been conducted to understand the factors that affect population parameters, there still isn't a consensus as to which ones are most limiting to the species. In particular, it is unknown whether population growth is limited by conditions on breeding grounds, wintering grounds, or both.

On breeding grounds, lead poisoning and predation appear to be the main causes of adult female mortality, though the importance of these effects vary spatially (Flint et al. 1997; Grand et al. 1998; Flint et al. 2000a; 2016b). Lead poisoning, predation, and forage availability are thought to be important drivers of duckling mortality (Flint et al. 2000a; 2006). Other environmental pollutants are not thought to affect populations in Alaska (Grand et al. 2002; Stout et al. 2002; Wilson et al. 2004).

On wintering grounds, the availability of sea ice and food resources affect eiders' behavior, distribution, energetics, and population parameters (Petersen and Douglas 2004; Lovvorn et al. 2009; 2014; Cooper et al. 2013; Sexson et al. 2016). Several authors have proposed that spectacled eiders will be affected by climate-related changes to their habitats and prey resources (Lovvorn et al. 2009; reviewed in USFWS 2010e; Christie et al. 2018).

Action Total: -20

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

Harvest:	None or Prohibited
Seasonal Occurrence:	Year-round
Taxonomic Significance:	Monotypic species
% Global Range in Alaska:	>10%
% Global Population in Alaska:	<25%
Peripheral:	No

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