

Dusky Canada Goose

Class: Aves
Order: Anseriformes

Branta canadensis occidentalis

Note: This assessment refers to this subspecies only. A species level report, which refers to all associated subspecies, is also available.

Review Status: Peer-reviewed

Version Date: 16 March 2018

Conservation Status

NatureServe: Agency:

G Rank: G5T3 ADF&G: Species of Greatest Conservation Need IUCN: Audubon AK: Yellow

S Rank: S3B USFWS: BLM: Sensitive

Final Rank		
Conservation category: II. Red		
high status and either high biological vulnerability or high action need		
<u>Category</u>	<u>Range</u>	<u>Score</u>
Status	-20 to 20	8
Biological	-50 to 50	-6
Action	-40 to 40	-8
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

The Copper River Delta population experienced a significant, long-term decline that reached its lowest point in 2009 (PFC 2015). Recent surveys suggest that the population is rebounding (Marks and Wilson 2019). The small population on Middleton Island appears to be increasing (PFC 2015). There are no trend data available for the Prince William Sound population (PFC 2015). Given the size of the Copper River Delta population, we rank this question as C- Past declines, now stable.

Distribution Trend in Alaska (-10 to 10)

6

Habitat is prone to disturbance and changes in quality (Bromley and Rothe 2003). On the Copper River Delta, habitat has been reduced and still declining through loss of wetlands due to uplift from the 1964 earthquake. Middleton Island was colonized for the first time in 1981; the population may be reaching carrying capacity due to limited availability of brood-rearing habitats (PFC 2015; M. Petrula, ADF&G, pers. comm.).

Status Total: 8

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

Unknown, but likely between 10,000 and 25,000. A recent population index estimates that there ~14,000 individuals breeding on the Copper River Delta (n=12,390) and Middleton Island (n=1,780; PFC 2015). The number of individuals breeding in Prince William Sound is unknown, but we assume it is <10,000.

Range Size in Alaska (-10 to 10) 4

Breeds on the Copper River Delta, on Middleton Island, and in Prince William Sound (PFC 2015). Most of the population overwinters outside of Alaska in Oregon and Washington (Bromley and Rothe 2003; PFC 2015). Breeding range is estimated to cover 4,015 sq. km, calculated in GIS and based on range map from ACCS (2017a).

Population Concentration in Alaska (-10 to 10) 2

Nests at moderate to low densities (Bromley and Rothe 2003). During low gosling production years on the Copper River Delta, molting adults concentrate in large flocks on the mud flats along slough mouths. Large molting flocks of several hundred to >1,000 individuals have been observed (PFC 2015), representing a large proportion of the total population. Although the exact number of sites is unknown, we assume that it is between 1 to 25.

Reproductive Potential in Alaska

Age of First Reproduction (-5 to 5) -3

Most individuals begin breeding at two years old (Mowbray et al. 2002a).

Number of Young (-5 to 5) 1

Females lay a single clutch per year, though they can reneest if the first one fails (Bromley and Rothe 2003). Clutch size ranges from 2 to 8 eggs, with annual means ranging from 3.6 to 5.8 eggs (Bromley and Rothe 2003).

Ecological Specialization in Alaska

Dietary (-5 to 5) -5

Herbivorous with a broad diet. Feeds predominantly on graminoids and horsetails, but also consumes willows and forbs (Hawkings 1982). Work on the eastern Copper River Delta revealed that Dusky geese ate 26 species from 13 plant families (Hawkings 1982). Seeds and roots become increasingly important as the season advances.

Habitat (-5 to 5) 1

Restricted to coastlines in southcoastal Alaska. Breeds in tidal and freshwater wetlands (Bromley and Rothe 2003; PFC 2015). Within these broad habitat types, preferences vary over time and space (Campbell 1990). Some researchers have noted that geese prefer to nest in open habitats, while others found that they readily nest in tall shrub cover or under conifers (reviewed in Bromley and Rothe 2003; PFC 2015). Habitat is prone to disturbances and changes in quality e.g. due to earthquakes or spring snowmelt (Bromley and Rothe 2003; PFC 2015).

Biological Total: -6

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 by the Migratory Bird Treaty Act (MBTA 1918). The Pacific Flyway Council management plan manages the Dusky Canada Goose population across its entire range (PFC 2015). The plan includes criteria that, if met, would trigger harvest closure. In Alaska, subsistence and recreational harvests are allowed and is subject to closed seasons and bag limits (ADFG 2020c; AMBCC 2020).

An artificial nest island program has been ongoing since 1983, and harvest rates on mammalian predators have been relaxed in relevant management units (Crowley 2011; Maggiulli and Dugger 2011).

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

Broad distribution and habitat associations are known, but few studies have considered fine-scale habitat use, and information regarding the importance of habitat variables (e.g. shrub cover) is often inconsistent (see Bromley and Rothe 2003 for a review). In addition, little is known about distribution and habitat use during migration (Bromley and Rothe 2003; PFC 2015). Few studies have been conducted on individuals breeding in PWS (PFC 2015).

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

Aerial surveys have been conducted annually on three transects on the Copper River Delta since the 1980s (Marks and Wilson 2019). The resulting index includes a correction factor for detection probability and assumes that all single geese represent a breeding pair (Marks and Wilson 2019). The current population index used by the Pacific Flyway Council includes results from these aerial surveys, plus ground counts of adults on Middleton Island (PFC 2015). The index does not include birds that breed in Prince William Sound, which are hard to survey because they breed in forested habitat (PFC 2015). Nevertheless, available data are sufficient to obtain 10-year and longer-term population trends.

Knowledge of Factors Limiting Populations in Alaska (-10 to 10) 2

Some knowledge of factors that limit nest success. Predation, especially by bald eagles, brown bears, and mink, is thought to be a major factor, responsible for up to 96% of gosling mortality (Bromley and Rothe 2003; Anthony et al. 2004; Fondell et al. 2008a; Crowley 2011). Inclement weather including flooding, heavy rain, and persistent spring snow cover can also affect nest success and limit the availability of nesting habitat (Bromley and Rothe 2003; Fondell et al. 2008b). Habitat is prone to disturbance and changes in quality (Bromley and Rothe 2003). For example, the 1964 earthquake led to a loss of wetlands and reduced breeding habitat on the Copper River Delta. Additional research is needed to determine causes of population declines and factors affecting adult survival.

Action Total: -8

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

Harvest:	Not substantial
Seasonal Occurrence:	Breeding
Taxonomic Significance:	Subspecies
% Global Range in Alaska:	>10%
% Global Population in Alaska:	≥75%
Peripheral:	No

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