

Tule Greater White-fronted Goose

Class: Aves
Order: Anseriformes

Anser albifrons elgasi

Note: This assessment refers to this subspecies only.

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: S1S2B USFWS: BLM:

Final Rank		
Conservation category: I. Red		
high status, biological vulnerability, and action need		
<u>Category</u>	<u>Range</u>	<u>Score</u>
Status	-20 to 20	0
Biological	-50 to 50	-2
Action	-40 to 40	4
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)

-6

Unknown, but suspected stable (Warnock 2017b). Loss of wetland habitat on its wintering grounds in California may have led to population declines compared to historic levels, but this has not been confirmed (Deuel and Takekawa 2008).

Distribution Trend in Alaska (-10 to 10)

6

Surveys indicate changes in the use of nesting and molting sites over the last several decades (Timm et al. 1982; Ely et al. 2006). For example, Redoubt Bay was once an important nesting area, but Tule geese no longer seem to use this area. The eruption of Redoubt Volcano in 1989 likely changed habitat conditions in that area (Densmore et al. 2006; Ely et al. 2006).

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)

-2

One of the rarest waterfowl in North America (Densmore et al. 2006). Population size is likely >4000 (Timm et al. 1982) and may be as high as 12,000 (Yparraguirre and Weaver n.d.), though there is very high uncertainty surrounding these estimates. Ely et al. (2006) believes the population consists of fewer than 10,000 individuals. We rank this question as D- between 3,001-10,000

individuals.

Range Size in Alaska (-10 to 10) 4

Summer resident in Alaska. Nesting and molting sites are largely restricted to the upper Cook Inlet basin (i.e. north of Anchor Point), and specifically the upper Susitna Valley between the Yentna and Susitna Rivers (Timm et al. 1982; Ely et al. 2006; Ely et al. 2007; Yparraguirre and Weaver n.d.). Historically, Tule geese nested near Redoubt Bay, Trading Bay, and on the Susitna Flats (Timm et al. 1982; Ely et al. 2006; Yparraguirre and Weaver n.d.), but these areas no longer appear to be important for nesting (Ely et al. 2006). Molting areas are more widely distributed and include the Cook Inlet region as well as sites in western Alaska e.g. Pilot Station, Innoko, and Iditarod (Ely et al. 2006). During spring migration, a few individuals have been noted stopping over in Cordova (Ely et al. 2006). Overwinters in California. Estimated breeding range is ~9,150 sq. km., based on range map from ACCS (2017a).

Population Concentration in Alaska (-10 to 10) 2

Tend not to aggregate in large flocks (Deuel and Takekawa 2008), but concentrations > 300 individuals have been observed during molting (Ely et al. 2006). Ely et al. (2006) found that most individuals used key sites in the upper Cook Inlet basin (e.g. Kahlitna River valley), and in western Alaska near the Innoko and Iditarod Rivers. Given population and range size, number of sites is likely between 1-25.

Reproductive Potential in Alaska

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

First breed at 3 years of age (Ely and Dzubin 1994).

Number of Young (-5 to 5) 1

Average clutch size in Cook Inlet was 5.6 eggs (Ely and Dzubin 1994).

Ecological Specialization in Alaska

Dietary (-5 to 5) -5

Herbivorous. Eats terrestrial and aquatic plants including sedges, grasses, horsetails, berries, and occasionally willows (Ely and Dzubin 1994).

Habitat (-5 to 5) 1

Uses a variety of coastal and freshwater wetland habitats within Alaska's boreal forest, though breeding is largely restricted to the Upper Cook Inlet basin (Densmore et al. 2006; Ely et al. 2006; Ely et al. 2007). Nests are often located either in open, grassy areas with few trees and tall shrubs, or at the edge of forested areas, and are often near open water such as ponds and lakes (Densmore et al. 2006). Densmore et al. (2006) found no use of upland sites, deciduous or mixedwood forests, and agriculture sites, even though some of these habitat types were common on the landscape.

Biological Total: -2

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 Act (MBTA 1918). Subsistence harvest and hunting allowed at the species level (ADFG 2018e; AMBCC 2018). A management plan exists for this subspecies and was last updated in 1991 (PFC 1991).

<i>Knowledge of Distribution and Habitat in Alaska (-10 to 10)</i>	2
Some studies have considered the distribution of Tule geese in Alaska, but our knowledge of nesting and molting sites remains incomplete (Timm et al. 1982; Ely et al. 2006; Ely et al. 2007; Yparraguirre and Weaver n.d.). Changes in the use of sites has been documented since at least the 1990s and new sites are still being discovered (Ely et al. 2006). Habitat associations during nesting were described by Densmore et al. (2006).	
<i>Knowledge of Population Trends in Alaska (-10 to 10)</i>	2
ADF&G biologists have been monitoring Tule geese in some capacity since the 1960s using visual observations, aerial surveys, or radio-transmitters. While estimates exist for population size, the uncertainty surrounding these estimates is high, and current monitoring efforts are inadequate for detecting population trends (Yparraguirre and Weaver n.d.).	
<i>Knowledge of Factors Limiting Populations in Alaska (-10 to 10)</i>	10
Little is known about the factors that limit the Tule goose population in Alaska. For example, the influence of human development on habitat use and availability is unknown (Densmore et al. 2006). The impact of harvesting on population dynamics is unknown, but is thought to be low (PFC 1991). From 1999 to 2006, estimated harvest rates ranged from 25 to 120 individuals per year (Yparraguirre and Weaver n.d.). Most of the hunting mortality is assumed to occur on their wintering grounds in California (PFC 1991).	
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.

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

References

- Alaska Center for Conservation Science (ACCS). 2017a. Wildlife Data Portal. University of Alaska Anchorage. Available online: <http://aknhp.uaa.alaska.edu/apps/wildlife>
- Alaska Department of Fish and Game (ADF&G). 2020c. 2020-2021 Migratory game bird hunting regulations summary. Anchorage, AK, USA.
- Densmore, R.V., C. R. Ely, K. S. Bollinger, S. Kratzer, M. S. Udevitz, ..., and T. C. Rothe. 2006. Nesting habitat of the Tule Greater White-fronted Goose *Anser albifrons elgasi*. *Wildfowl* 56:37-51.
- Deuel, B. E., and J. Y. Takekawa. 2008. Tule Greater White-fronted Goose (*Anser albifrons elgasi*). *Studies of Western Birds* 1:74-78.
- Ely, C. R., K. S. Bollinger, J. W. Hupp, D. V. Derksen, J. Terenzi, J. Y. Takekawa, ..., D. R. Yparraguirre. 2006. Traversing a boreal forest landscape: Summer movements of Tule Greater White-fronted Geese. *Waterbirds* 29(1):43-55.
- Ely, C. R., K. S. Bollinger, R. V. Densmore, T. C. Rothe, M. J. Petrula, J. Y. Takekawa, and D. L. Orthmeyer. 2007. Reproductive strategies of northern geese: Why wait? *The Auk* 124(2):594-605.
- Ely, C. R., A. X. Dzubin, C. Carboneras, G. M. Kirwan, and E. F. J. Garcia. 2020. Greater White-fronted Goose (*Anser albifrons*), version 1.0. In Billerman, S. M., ed. *Birds of the World*. Cornell Lab of Ornithology, Ithaca, NY, USA. DOI:

10.2173/bow.gwfgoo.01

Ely, C. R., A. D. Fox, R. T. Alisauskas, A. Andreev, R. G. Bromley, A. G. Degtyarev, ..., A. Walsh. Circumpolar variation in morphological characteristics of Greater White-fronted Geese *Anser albifrons*. *Bird Study* 52(2):104-119. DOI: 10.1080/00063650509461380

Migratory Bird Treaty Act (MBTA). 1918. U.S. Code Title 16 §§ 703-712 Migratory Bird Treaty Act.

Naves, L. C. 2015. Alaska subsistence bird harvest, 2004-2014 data book. Special Publication No. 2015-05, Alaska Department of Fish and Game, Division of Subsistence, Anchorage, AK, USA.

Pacific Flyway Council (PFC). 1991. Pacific Flyway management plan for the Tule Greater White-fronted Goose. Pacific Flyway Study Committee, Portland, OR, USA.

Timm, D. E., M. L. Wege, and D. S. Gilmer. 1982. Current status and management challenges for Tule White-Fronted Geese. Pages 453-463 in Sabol, K., ed. Transactions of the 47th North American Wildlife and Natural Resources Conference. Wildlife Management Institute, Washington, D.C., USA.

Warnock, N. 2017b. The Alaska WatchList 2017, Yellow List. Audubon Alaska, Anchorage, AK, USA.

Yparraguirre, D., and M. Weaver. (No Date). Population status of the Tule Greater White-fronted Goose. Unpublished presentation, California Department of Fish and Game, CA, USA. Available online: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=82681> Accessed 01-Feb-2018.

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