

Movements and Habitat Use of White-fronted Geese During the Wing Molt in Arctic Alaska

Numerous Greater White-fronted geese undergo their annual wing molt within the National Petroleum Reserve, Alaska (NPR-A). During the molt, geese are unable to fly and proposed energy development in the NPR-A raises questions about possible impacts to flightless geese and their habitats.

Waterfowl can be sensitive to disturbance during the flightless wing molt. In particular, several studies have documented substantial shifts in distribution and behavior of molting geese due to aircraft noise, which is a regular occurrence in areas of Arctic oil and gas development.

Understanding how locally abundant species select habitats and move about the landscape is the basis for prioritizing site selections for future energy developments and defining appropriate operating procedures to reduce possible impacts.

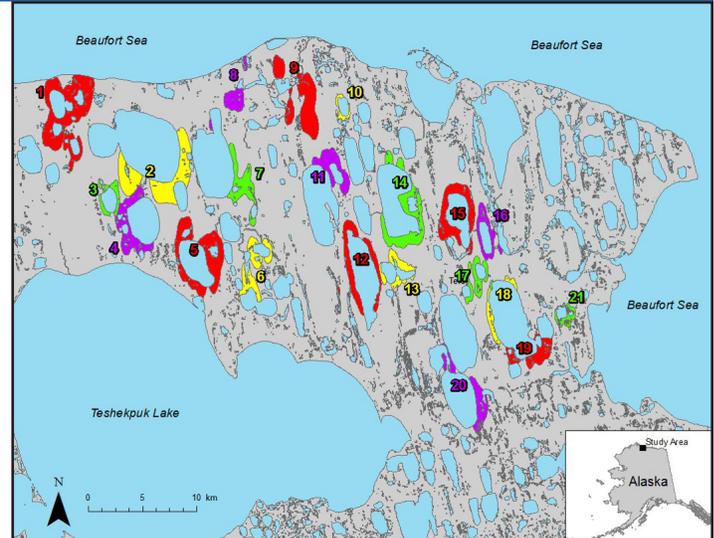
To measure patterns of movement and habitat use by molting Greater White-fronted geese in the Teshekpuk Lake Special Area of the NPR-A, the U.S. Geological Survey (USGS) used GPS transmitters to record fine-scale location data of molting geese both during the flightless molt period and just after the molt when birds could fly.

Home range size for flightless birds differed between years, but did not vary among habitat types. Upon regaining flight, individuals tended to remain in the same general area, and the center of their home range only moved an average a few miles. In contrast, earlier USGS work found that molting Black Brant in the Teshekpuk Lake Special Area showed a clear shift from freshwater to coastal estuaries upon regaining flight.

Given the apparent widespread availability of suitable habitat in the NPR-A together with the total potential area available to molting Greater White-fronted geese, the effect of disturbance from localized infrastructure would not likely be measurable at the population level.



Greater White-fronted Goose on a lake in northern Alaska. USGS photo (public domain).



Molting Greater White-fronted Goose home ranges within the Teshekpuk Lake Special Area, Alaska, based on GPS transmitter data from 2012 and 2013. USGS graphic (public domain).

MANAGEMENT IMPLICATIONS

- Greater White-fronted geese did not select for specific vegetation types during molt and there was no shift in habitat use after geese regained flight.
- Flightless geese were located within close proximity (100 m) to lake shorelines during molt.
- Flightless geese maintained small home ranges across multiple habitat types, suggesting that suitable habitat for this species is widely distributed in the Teshekpuk Lake Special Area.
- This and other USGS research indicate that Greater White-fronted geese are habitat generalists and that their preferred molting habitat is abundant in the NPR-A.

THIS BRIEF REFERS TO:

Flint, P. L., and Meixell, B. W., 2017, Movements and Habitat Use of White-fronted Geese During the Remigial Molt in Arctic Alaska, USA: Waterbirds, In Press.

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