



## Subsistence Resource Commission

### Background

The Gates of the Arctic National Park Subsistence Resource Commission (SRC) provides local subsistence users an opportunity to inform the management of subsistence resources in Gates of the Arctic and the surrounding area (Game Management Units 23 - Northwest Arctic, 24A, 24B, 24C - Western Interior, 26A, 26B - North Slope). Since the establishment of the Federal Subsistence Program in 1990, the SRC has made recommendations on fish and wildlife proposals directly to Regional Advisory Councils and the Federal Subsistence Board.

### Membership

In total there are 9 members on the SRC. Regional Advisory Councils appoint three members to the SRC. These members provide an important link between the SRC and the Federal Subsistence Program. The Regional Advisory Councils that address issues in Gates of the Arctic include the Western Interior RAC, the Northwest Arctic RAC, and the North Slope RAC. In addition to the RAC appointments, three members of the SRC are appointed by the Governor of Alaska and three members are appointed by the Secretary of the Interior.

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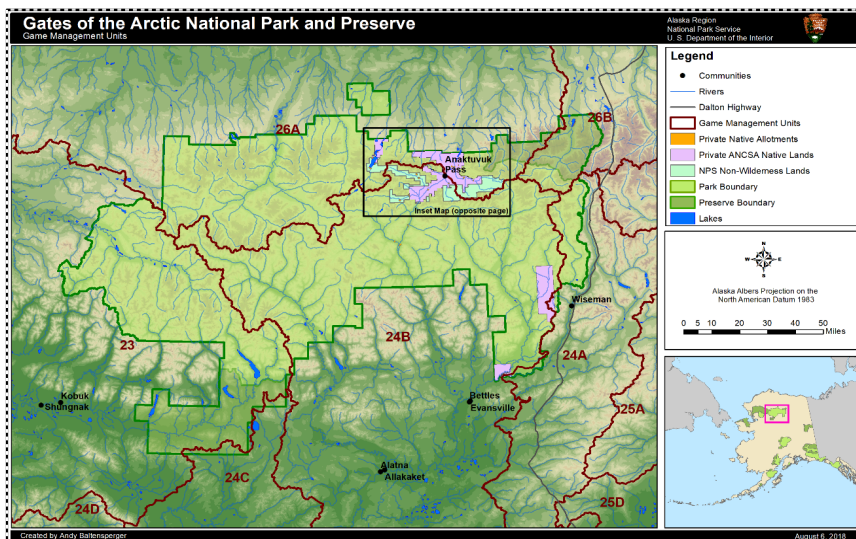


Figure 1. A map of Gates of the Arctic National Park and Preserve (green outline) and game management units (outlined in red). The black dots represent resident zone communities.

### Latest Meeting

The Gates of the Arctic National Park Subsistence Resource Commission met in-person and via teleconference on November 13-14, 2024 in Fairbanks. There were a variety of presentations shared with the SRC including a Carnivore Local Knowledge project and Brooks Range Fish Research projects by the Wildlife Conservation Society, a Rusting Rivers project by the National Park Service and U.S. Geological Survey, and a Dall's Sheep Ecology and Heath Assessment project by the Alaska Department of Fish and Game. In addition, there were National Park Service staff updates on the Western Arctic Caribou Herd, the Dall's sheep survey, and commercial use operators. The next SRC meeting is scheduled for April 16-17 in the Upper Kobuk River community of Ambler. At this upcoming meeting, there will be a discussion on Dall's sheep management in the Park and Preserve as well as an opportunity to hear general local concerns from Ambler residents.



## Western Arctic Caribou

### Memory Influences Where They Winter

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Western Arctic Herd caribou have some of the longest terrestrial migrations on the planet, moving across an immense area of northwestern Alaska throughout their annual journey. While their summer habits have some consistency, such as returning to the same general calving area each year, where they spend the winter can be very different from year to year. How caribou choose their winter range was the focus of recent research by National Park Service biologists and researchers from State University of New York and the University of Maryland. The team looked at mortality events from 2009 to 2020, the likelihood a caribou would die each year, and the seasonal patterns of when caribou died within the year.

They found that while the herd has been in a general decline over the last decade, caribou have had lower survival rates since 2016 as compared to before that (so caribou aren't living as long in recent years). The season in which caribou mortality is greatest has also changed. Before 2016, caribou had the greatest chance of dying in early summer (calving and insect harassment seasons) but since 2016, caribou had the greatest chance of dying in winter and early spring. 2016 also marks a major change in where Western Arctic Herd caribou were spending the winter. Before 2016, 75% of collared animals crossed the Kobuk River (a major river dividing the annual range from east to west) to spend the winter south of the river. After 2016, only 38% of the animals crossed the Kobuk River and remained to the north. The researchers were surprised to find that the choice of whether to winter north or south of the Kobuk River in a given year was related to how animals fared that migrated south the previous winter. If animals that went south had higher survival the previous winter, then animals were more likely to go south the following winter, and in contrast, if animals that went south had higher mortality the previous winter, then animals were less likely to go south the next winter.

These results reveal that the large change in wintering areas since 2016 has been adaptive (i.e., beneficial) for the herd. Even though the herd continues to decline, these results suggest that caribou adjust where they spend the winter based on memories of conditions the herd experiences, potentially making the best of a bad situation. The Arctic is warming faster than anywhere else on the planet and these findings reveal some of the ways these remarkable animals are coping with these changes.

Gurarie, E., C. Beaupré, O. Couriot, [M. D. Cameron](#), W. F. Fagan, and [K. Joly](#). 2024. [Evidence for an adaptive, large-scale range shift in a long-distance terrestrial migrant](#). *Global Change Biology* 30 (11): e17589.



Figure 2. A video camera collar picture of caribou foraging (NPS photo)

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## Western Arctic Caribou

### Same Herd, Different Strategies for Winter

Migration is one way animals survive seasons of scarcity. For caribou in the Arctic, this means animals travel long distances as part of their southward migration to winter ranges. Then they reverse direction and travel northward in the spring. You may be surprised to know, though, that not all caribou within a herd will migrate every year. This is true for the Western Arctic Herd, one of the largest herds in North America. Obviously, migratory caribou have to travel far longer distances in fall to reach their winter grounds than non-migratory caribou, and this difference can be up to 200 miles. However, less is known about why some caribou migrate when others don't and if these two groups behave differently when winter sets in.

To help improve our understanding of these questions, a team of National Park Service and University of Alaska – Fairbanks researchers studied the movements of female Western Arctic Herd caribou during the winter months. They found that during winter, migrants found more than 2.5 times more lichen than those caribou that did not migrate. Caribou eat lichen almost exclusively in winter, and this pattern suggests that greater access to lichen in the south is a big reason why caribou make the long migration. Caribou that migrated also moved about twice as much as those that didn't during winter. The researchers think this means the migrant animals were trying to search out and eat as much lichens as possible, while the caribou that didn't migrate appeared to be reducing the energy they had to use by moving less throughout the winter. One thing both types of caribou had in common was that they moved less when they found patches of lichen, likely spending time to crater (dig) through snow to reach them. The energy savings for the caribou that skipped migration were modest in absolute terms, but every calorie counts when winter is the longest season of the year.

[Joly, K., M. D. Cameron,](#) and R. G. White. In press. [Behavioral adaptation to seasonal resource scarcity by Caribou \(\*Rangifer tarandus\*\) and its role in partial migration.](#) Journal of Mammalogy.



Figure 3. A picture of not all caribou migrate, even within the same herd. Some stay put in the winter and save their energy while others travel long distances to search out and feed on lichens. (NPS/Matt Cameron)

### Migratory Tundra Caribou Study

- Arctic migratory tundra caribou populations have declined by 65% overall over the last 2-3 decades. More recently, the relatively smaller coastal herds in the western Arctic are showing signs of recovery while the larger inland herds are either stable or continuing to decline.
- Warmer summer and fall temperatures, changes in winter snowfall, and an increasing human footprint collectively stress Arctic caribou, altering their distribution, movements, survival, and productivity.
- The extent of recent herd declines and onsets of recoveries varies regionally, consistent with regional climate trends. Arctic regions of greatest projected summer warming are projected to see the largest continued population declines.
- Sharing knowledge is essential, as those charged with managing caribou endeavor to more fully understand climate impacts on herd health and implement strategies that encourage herd growth, while accommodating the cultural, nutritional, and spiritual relationships northern people have with caribou.

NOAA Technical Report OAR ARC; 24-10, Arctic Report Card 2024



## Dall's Sheep

### 2024 Survey Summary

#### Background

The National Park Service in collaboration with Alaska Department of Fish and Game conducted an aerial survey for Dall's sheep from June 29<sup>th</sup> – July 14<sup>th</sup>, 2024. Three aircraft based out of Galbraith Lake and Coldfoot surveyed three different survey areas in Gates of the Arctic Park and Preserve: Itkillik, Anaktuvuk, and Southeast Gates of the Arctic Park (Figure 5). The survey used a standardized distance sampling protocol. Accurate Dall's sheep abundance and demographic data are critical for management of Dall's sheep populations and their harvest



Figure 4. A Dall's sheep (NPS / JARED HUGHEY).

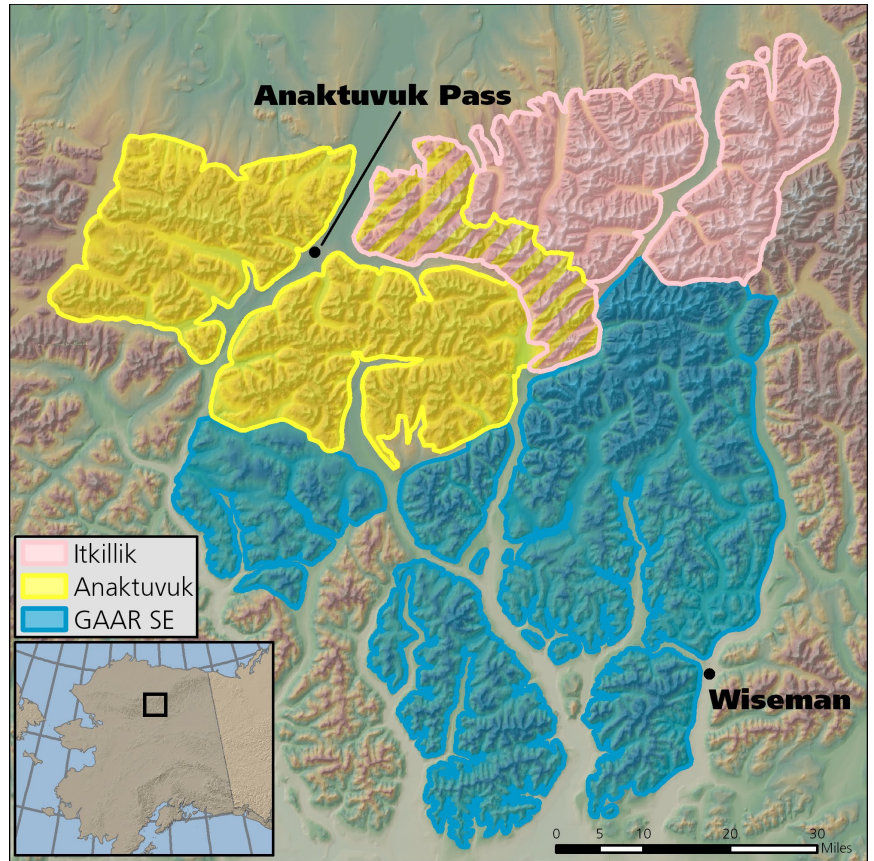


Figure 5. Map of Gates of the Arctic Park and Preserve Dall's sheep survey areas.

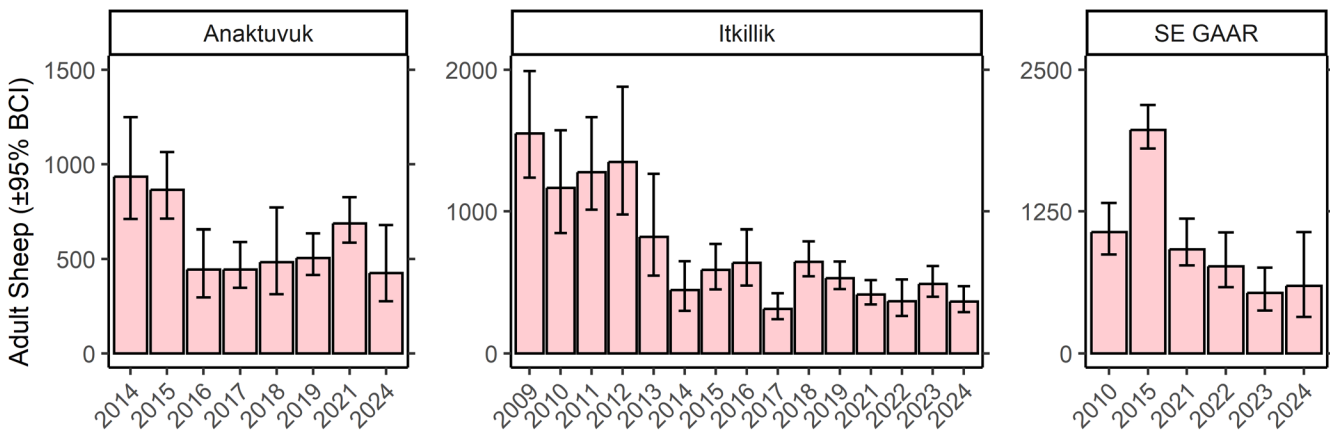


Figure 6. Estimated number of adult sheep in each survey area. Error bars indicate 95% Bayesian Credible Intervals (BCI).



Figure 7. A group of Dall's sheep running through rocky terrain (NPS / DYLAN SCHERTZ).

## Population Estimates

The estimated number of sheep in the Itkillik, Anaktuvuk, and SE Gates continues to be low in comparison to pre-2013 years (Figure 6). The population size appears stable in comparison the last 4 years in the Itkillik. The estimated number of sheep in Anaktuvuk in 2024 is apparently slightly less than the estimates from 2021 (Figure 6). The estimated ratio of lambs to ewe-like sheep is high in all three survey areas when compared to previous years (Figure 9).



Figure 8. A Piper SuperCub, the survey aircraft typically used for Dall's sheep surveys (NPS / BRAD SHULTS).

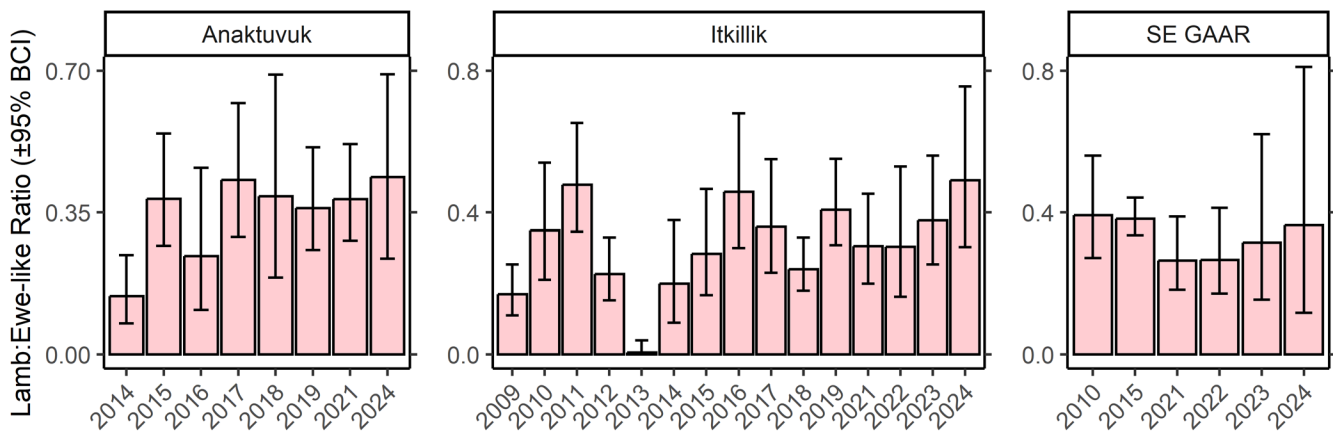


Figure 9. Estimated ratio of lambs to ewe-like sheep, an indicator of reproductive success. Error bars indicate 95% Bayesian Credible Intervals (BCI).

## More Information

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