



Dall's Sheep

Background

The National Park Service (NPS) conducted a minimum count aerial survey for Dall's sheep July 18th-20th, 2023. The Preserve was last surveyed in July of 2018. The current survey examined the same 7 core mountain units as the previous surveys and the Ogilvie Mountains. Accurate Dall's sheep abundance and demographic data are critical for sustainable management of Dall's sheep populations and their harvest.



Figure 1. A picture of a Dall's sheep (NPS / JARED HUGHEY).

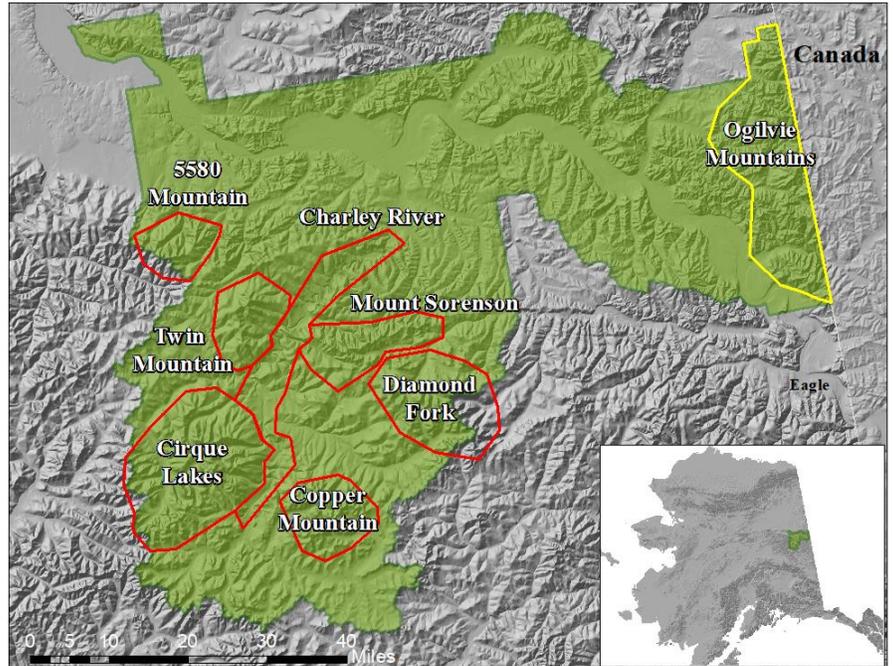


Figure 2. A map of Yukon-Charley Rivers National Preserve (green) and core sheep survey unit boundaries (red polygons). The yellow polygon represents the Ogilvie Mountains survey area.

Population Estimates

In the core area (the 7 units most often surveyed), 70 sheep (32 ewes, 13 lambs, 6 yearlings and 19 rams) were detected. This constitutes a 68% decrease from the last survey (221 sheep, 2018) and 78% decrease from the long-term average (313 sheep, 1997-2009) prior to the 2010s population decline. The survey areas (5580, Copper Mountain, Diamond Fork, Twin Mountain) with smaller populations experienced the largest declines (93%) compared to the long-term average. No sheep were observed in two of the survey areas (Diamond Fork and Copper Mountain) for the first time. The Charley River, Cirque Lakes, and Sorenson survey areas recorded 69% declines from long-term average. In the Ogilvie Mountains, 26 sheep were detected (18 ewes, 4 lambs, 0 yearlings, and 4 rams) resulting in a 28% decline since the 2018 survey.

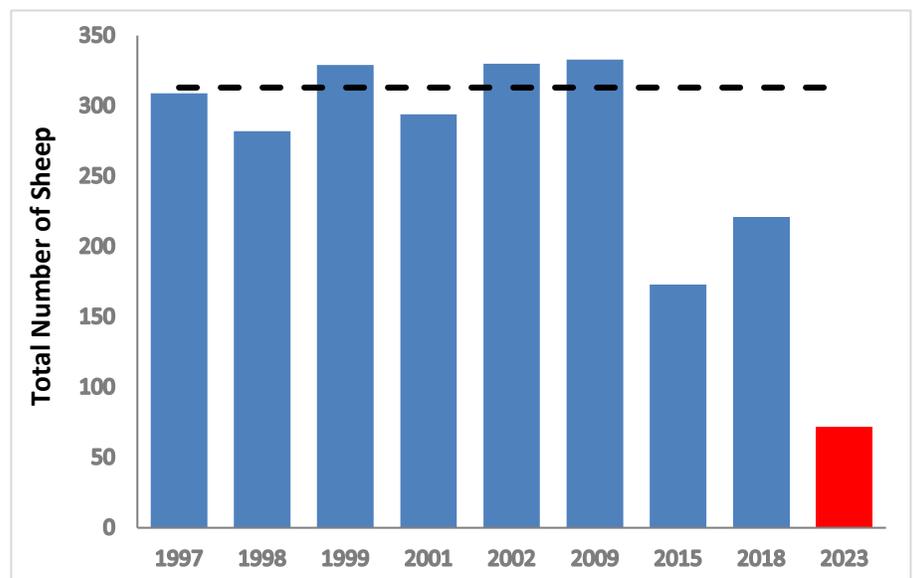


Figure 3. A bar graph depicting Dall's sheep population trends in the core 7-unit area of Yukon-Charley Rivers National Preserve, 1997-2018. Black dash line is the average for years prior to the 2015 population decline (i.e., 1997-2009) and the red bar is the current (2023) survey. Total number of sheep on y-axis and year on x-axis.



Moose

Background

The National Park Service conducted a moose survey in and around the Preserve from November 6-19, 2022. The goal is to conduct surveys every 3 years to monitor the population of this important subsistence species. The last survey was completed in 2019. NPS is also conducting a GPS collar study of adult female moose in the Preserve to understand adult survival, productivity, and movements. This year was the 4th season of monitoring calving and the 3rd full year of monitoring adult survival and calf recruitment.

Population Estimate

Observers counted a total of 183 moose during the survey, resulting in an estimate of 738 moose (90% confidence interval: 548-928; $\pm 26\%$) and a density of 0.24 moose/mi². The 2022 moose population estimate represents 35% and 15% decreases from the most recent 2015 and 2019 survey estimates, respectively, although the 2022 estimate is only significantly different from the 2015 estimate. The estimated composition was 19 calves: 100 cows, 60 bulls: 100 cows, and 7 yearling bulls: 100 cows. The YUCH moose population trend over the last 20 years of GSPE surveys is suggestive of a generally stable but low-density population exhibiting fluctuations between survey periods. However, the recent downward trend in population adds importance to conducting future surveys. See report for further details.

Collar Project Updates

NPS has 27 active collars on adult female moose in and around the Preserve and 4 of those were new deployments put out in March. From May 1, 2022 – April 30, 2023, we had an adult survival rate of 79%; of the 7 mortalities, 3 occurred from June – Sept. and 4 from Feb. – May. The calving rate based on GPS data in 2023 was 75% and our long-term average from 2020 – 2023 is 77%. Our twinning rate of calves counted from aerial surveys was 63% and our long-term average is 44%. The timing of calving is spring has remained consistent in the 4 years of monitoring and this year's average (and the long-term average) was May 21. Survival of calves that we observed at calving through their first year of life was 29% for 2022 – 2023, which is between the first year we measured (42% from 2020 – 2021) and the previous year (24% from 2021 – 2022). NPS will continue monitoring in the upcoming year and do not plan to deploy additional collars next spring. Data from this project was part of a collaborative presentation at the North American Caribou Workshop and Arctic Ungulate Conference in May, presented by a UAF graduate student researching diet patterns in relation to space use.

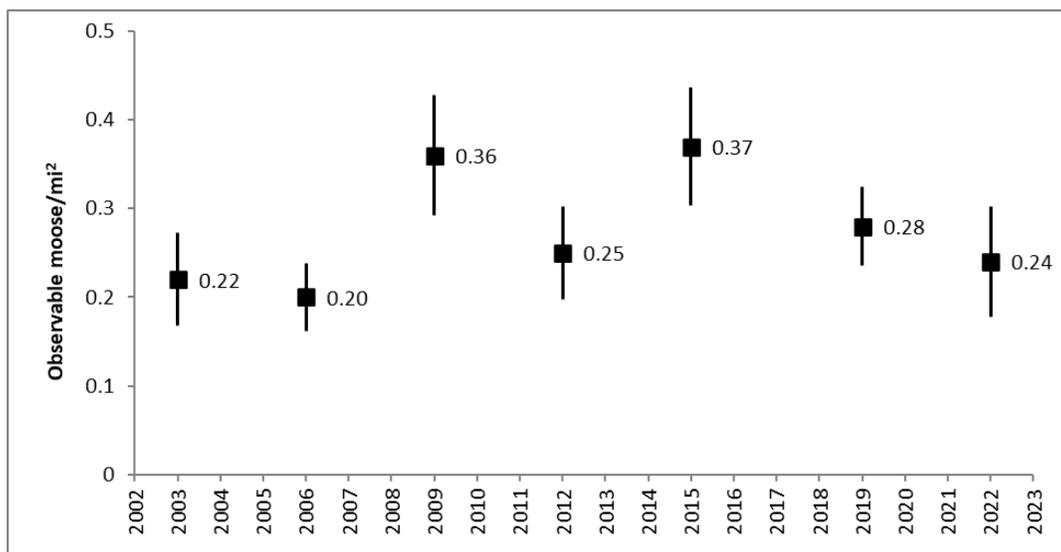


Figure 4. A graph of moose population density estimates from GSPE surveys from 2003 – 2022, Yukon-Charley National Preserve, Alaska. Observable moose/mi² on y-axis and years on x-axis.



Wolves

Background

The National Park Service has monitored the wolf population within Yukon-Charley for over 30 years making it the third longest study of wolves in North America. Wolves are an apex predator and viewed as an important vital sign used to assess the health of the Preserve. The goal of the Wolf Monitoring Program is to assess population dynamics, monitor reproduction and survival, and track disease and genetic health.



Figure 5. A picture of NPS biologist collecting measurements and biological samples on a sedated wolf (NPS / Matt Cameron).

Population Dynamics and Survival

Over the 2022 biological year (May 1, 2022 – April 30, 2023), we tracked 22 GPS collared wolves across 9 packs. Eight of the 9 packs denned, but only 5 of the packs maintained pups into the fall. Of the 22 wolves, 4 died (3 natural mortality, 1 hunter mortality) and one dispersed outside the Preserve and was trapped resulting in a 77% survival of collared wolves. Three packs disbanded during the summer after the deaths of breeding adults. The fall pack count averaged 9.2 wolves, higher than the long-term average of 7.3. The spring pack count averaged 6.5, higher than the long-term average of 4.9 wolves.

Other Studies

Over the last two springs we have deployed 4 video GPS collars on wolves in the Preserve. The cameras were set to collect 30-second video clips every daylight hour in March and again in June. The goal of the project is to collect data on spring and summer diets, behaviors, and record social behaviors during the early pup-rearing season. We have retrieved the video from the cameras and are processing the results.

A recent publication involving 5 national parks including YUCH found that mortality of pack members, especially breeders, decreased both pack persistence and reproduction. Found here:

<https://doi.org/10.1002/fee.2597>

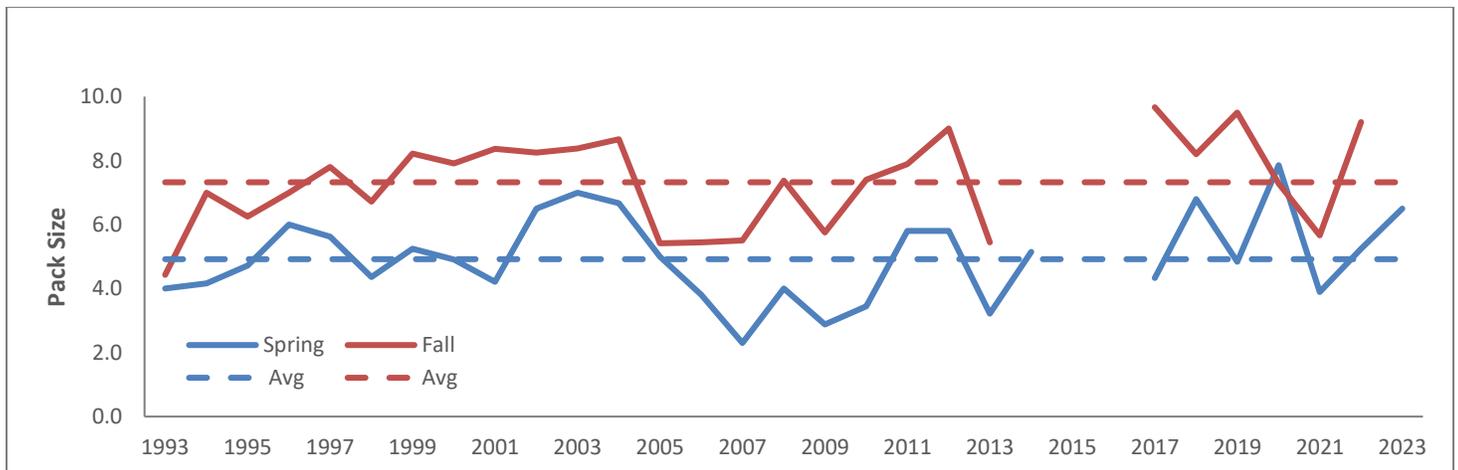


Figure 6. A line graph of the average pack size of wolves during the fall (red) and spring (blue) in Yukon-Charley Rivers National Preserve. Dash lines are the average packs sizes across all years prior to the 2022-23 biological year. Pack size on the y-axis and year on the x-axis.

More Information

Mathew Sorum, Yukon-Charley Rivers National Preserve wildlife biologist

Email: mathew_sorum@nps.gov

Matt Cameron, Yukon-Charley Rivers National Preserve wildlife biologist

Email: matthew_cameron@nps.gov

Kyle Joly, Yukon-Charley Rivers National Preserve wildlife biologist

Email: kyle_joly@nps.gov

Marcy Okada, Yukon-Charley Rivers National Preserve subsistence coordinator

Email: marcy_okada@nps.gov