

**Wildlife Restoration OPERATING GRANT
FINAL PERFORMANCE REPORT**

ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF WILDLIFE CONSERVATION
PO Box 115526
Juneau, AK 99811-5526

**Alaska Department of Fish and Game
Wildlife Restoration Grant**

GRANT NUMBER: AKW-23-R5-2020 Amendment #1

PROJECT NUMBER : P16.0

PROJECT TITLE: The Status of Muskox and Factors Influencing Their Populations

PERIOD OF PERFORMANCE: July 1, 2019 to June 30, 2021

REPORT DUE DATE: Submit to FAC August 27, 2021

PRINCIPAL INVESTIGATOR: Phillip Perry, Region V Management Coordinator

Authorities: 2 CFR 200.328
2 CFR 200.301
50 CFR 80.90

II. SUMMARY OF WORK COMPLETED ON PROJECT TO DATE.

**The Status of Alaska Muskox and Factors Influencing Their Populations In
Region V**

Unit 18:

Conduct annual aerial censuses of the Nunivak and Nelson Island populations to estimate population size and determine age-sex composition.

No Muskox surveys occurred during the reporting period due to weather and pilot availability. A survey was completed in July 2021 that will be reported in the next report.

Capture muskox to attach radio collars. (All animal capture activities will follow the protocols established in the ADF&G Division of Wildlife Conservation "Animal Welfare Policy" and its wildlife capture and restraint manual.)

No animals were captured during this reporting period.

Monitor the population size, distribution, and dispersal of musk ox onto the mainland through location of radio-collared animals, harvest reporting, contacts with the public, and field observations.

We talked with residents, local pilots, local Advisory Committees (AC), federal Regional Advisory Councils (RAC), Board of Game (BOG) members, USFWS personnel, and media about sightings of muskox on the mainland for this reporting period. A log of these sighting including group size and locations is being maintained in the Bethel office. The population on the Y-K Delta was last survey in June of 2019, 274 muskoxen were observed.

Monitor hunting and other mortality factors through harvest reporting, contacts with the public, and field observations.

One hundred and six (106) muskox were harvested on Nunivak Island during the RY20 hunting season; 61 bulls and 45 cows. Twenty-seven (17) muskox were harvested on Nelson Island during the RY20 hunting season; 12 were cows, and 15 were bulls.

Work with local Advisory Committees, village representatives, and other agencies to promote the establishment of a huntable muskox population on the mainland.

The department discussed possible changes to hunt seasons, allocations, and bag limits for Nunivak Island, Nelson Island, and mainland muskox population. Most AC members want to see the mainland population grows before considering the establishment of a hunting season.

Work with local residents to rescue stranded muskoxen as needed and reduce kills of nuisance animals.

One muskox yearling was harvested on an offshore ice flow during this reporting period. No nuisance animals had to be dispatched, during this reporting time.

Continue to develop and utilize the ongoing cooperative muskox management plans (such as the *Nelson Island Musk ox Herd Cooperative Management Plan*) in cooperation with the public and other agencies.

The Nelson Island Muskox Herd Cooperative Management Plan was talked about at AC meetings, but there was no attempt to change or update the document in this reporting period.

Units 22 and 23SW (the portion of Unit 23 west of and including the Buckland River drainage):

Census muskox during March and April to estimate population size on a projected schedule: 2017, 2019, etc.

Area management staff completed a distance sampling survey throughout the known range of the Seward Peninsula Muskox population in February of 2021. Survey conditions during this timeframe provided the opportunity to complete the survey earlier than outlined in the grant. Survey conditions, the distribution of muskox and their

movement patterns are generally similar throughout late winter and early spring. Completing the project in February was advantageous because it allowed for the project to be completed earlier than anticipated and avoided conflicts with other survey and inventory activities in the months of March and April. The estimated abundance of the Seward Peninsula muskox population at that time was 2,071 muskox (95% CI: 1,686-2,562).

Conduct on-ground age/sex composition surveys during March and April to determine population structure and yearling recruitment.

Range wide composition surveys were completed in April 2021. A proportionate sample of 1048 muskox from 73 groups were classified into age and sex classes during the survey. The results of this survey included estimates of the proportion of mature bulls (\hat{p}_{MB}) and recruitment from throughout the known range of the Seward Peninsula muskox population which were 17% (95% CI: 15%-19%) and 19% (95% CI: 17%-21%) respectively.

Capture muskox to attach radio collars. (All animal capture activities will follow the protocols established in the ADF&G Division of Wildlife Conservation “Animal Welfare Policy” and its wildlife capture and restraint manual.)

In November of 2020 department staff ground darted and captured 5 known age adult female muskox, and deployed VHF radio collars. These captures were completed to maintain a sample of 20-30 adult female muskox on the Seward Peninsula for the purposes of monitoring adult female muskox.

Monitor distribution, and movements of musk ox through location of radio-collared animals, aerial surveys, harvest reporting, contacts with the public, and field observations.

Seasonal movements of collared muskoxen were monitored using monthly fixed-wing aircraft telemetry flights. After snow-melt and during calving, muskoxen were observed at down-slope locations in proximity to lush, and more fertile, river bottoms where browse included grasses and willows exposed from melting snow and ice. Telemetry flights found that radiocollared muskoxen increased their movements throughout the summer as collared muskoxen moved seasonally between GMU 22DSW, 22C, 22B, 22D Remainder, and 22E. These movements support census results that suggest muskoxen groups make annual movements between subunits and managers should consider a broader based geographical approach to hunt management if human harvest patterns allow.

7 collared female muskox died during the 2020 calendar year yielding an estimated 79% annual survival rate (95% CI: 62% to 91% n=34). Mortality estimates of adults are likely conservative from the perspective of the population because the collared cohort, adult females, is likely to have higher survival rate than any other age-sex grouping.

This small sample of collared muskoxen represents <2% of the Seward Peninsula population as of 2017, and is not randomly distributed throughout the population, so localized events such as icing, or different predator regimes may preclude the use of this

mortality rate as representative of the entire population. Lastly, the selection of animals for capture is not truly random, as obviously injured or diseased animals were intentionally not selected

Examine dead muskoxen to look for causes of death, disease, mineral deficiencies, and contaminants.

Staff visited mortality sites of both radiocollared and non-collared muskox and collected samples to look for causes of death. Muskox carcasses are quickly scavenged on the Seward Peninsula so samples are not always possible to collect.

Participate in the Seward Peninsula Musk ox Cooperators Group meetings and facilitate exchange of information and ideas between agencies and user groups.

The Seward Peninsula Muskox Cooperators Group has not met since January 2008. Information related to on-going hunt management has been made available to the Cooperators Group (through the Chair) and another meeting will likely occur in the future.

Monitor hunting and other mortality factors through harvest reporting, contacts with the public, and field observations.

Hunting was by Tier II subsistence permits in GMU 22B, 22C, 22D, 23SW, and 22E. Federal Subsistence permits were also issued in GMU 22B, 22D, 22E and 23SW.

The 2020-2021 harvest quota for Seward Peninsula muskox hunts was 33 muskox and hunters harvested 27 muskox, 81% of the quota.

Work with local reindeer herders to identify and minimize conflicts between reindeer and muskoxen in an effort to conserve muskoxen and allow for population growth and expansion.

Activities related to reindeer herding occurred in Units 22 and 23SW. Nome staff provided information for the annual Reindeer Herders Association meeting.

Encourage cooperation and sharing of information among agencies and users of the resource in developing and executing management and research programs.

Nome staff worked closely with BLM and NPS staff to coordinate management activities. Staff attended Seward Peninsula Regional Advisory Council meetings and reported on muskox population status and hunt administration.

Provide orientation for registration and drawing permit muskox hunters in Units 22 and 23.

Department staff used in-person and telephone interviews and web-based orientation information on the ADF&G website to provide hunters and the public with muskox identification, sex and age classification and hunting information. Staff updated and printed a hard copy muskox identification booklet for use by hunters and wildlife viewers during the reporting period; it is available to the public at ADF&G offices.

Continue to develop and utilize the ongoing cooperative muskox management plans (such as the *Seward Peninsula Musk ox Cooperative Management Plan*) in cooperation with the public and other agencies.

The cooperative muskox management plan is in the process of being updated and is being reviewed by cooperating agencies.

Units 23NW, and 26A:

Survey muskox and evaluate population sex/age composition in Unit 23NW and southwestern Unit 26A (Cape Thompson population) at least once every 3 years on a projected schedule: 2020, 2023, etc.

The Cape Thompson population extended count area was surveyed by ADF&G and National Park Service (NPS) in 2020. No new count or composition count completed during this reporting period.

Assist with census projects and conduct muskox composition surveys in eastern Unit 26A (ANWR population).

The ANWR muskox population is low and assistance with counting and composition work was used to extend the survey area in Unit 26A. No new count or composition count completed during this reporting period.

Record muskox observations during surveys of other types of wildlife in Units 23 and 26A to document range expansion of the population.

Moose surveys in Unit 23 revealed muskox continue to expand their range eastward in the unit. Muskox were not seen during caribou surveys in southwestern Unit 26A.

Monitor hunting and other mortality factors through harvest reporting, contacts with the public, and field observations.

Hunting in Unit 23 NW was split between Federal drawing and Tier II subsistence permit TX107 with a bag limit of 1 bull muskox. Six permits were issued and 6 muskox were reported taken.

All muskox hunts in Units 26A and 26B were closed in 2006 due to declining numbers and remained closed during RY20. Some interest was expressed by hunters in Wainwright to open a musk ox season.

Examine dead muskoxen to look for causes of death, disease, mineral deficiencies, and contaminants.

No work completed; dead muskox were not encountered.

Use public education to improve understanding of the conservation value of hunting regulations and obtain better harvest data through increased harvest reporting.

We talked to students, hunters and other individuals regarding hunting, wildlife management, and conservation of muskoxen in Units 23 and 26A.

Encourage cooperation and information exchange among agencies and musk ox user groups to develop and implement management objectives.

ADF&G and NPS conducted cooperative abundance surveys in Unit 23 in June 2020. NO new work was completed during this reporting period.

We worked with the North Slope Borough Fish and Game Management Committee to make recommendations for management decisions in Unit 26A.

Evaluate whether musk ox population growth will adversely affect resident reindeer and caribou populations.

Reindeer are no longer present in Unit 26A, although reports from villages indicate people believe muskox displace caribou. Seasonal movements of caribou indicate frequent overlap with locations where muskox occur.

All muskox hunts in Units 26A and 26B were closed in 2006 due to declining numbers and remained closed during RY20. There was one nuisance musk ox permit issued in the fall of 2019 but no muskox were harvested on this permit. Hunters in Point Lay, Wainwright, Barrow, Atkasuk and Nuiqsut all have expressed interest in having a musk ox season.

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III. SIGNIFICANT DEVELOPMENT REPORTS AND/OR AMENDMENTS.

None.

IV. PUBLICATIONS

None

V. RECOMMENDATIONS FOR THIS PROJECT

Ongoing project will continue.

Prepared by: Phillip Perry

Date: August 27, 2021