

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

GRANT NUMBER: AKW-20 Wildlife Restoration FY2017

PROJECT NUMBER: 16.0

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

REPORT PERIOD: July 1, 2016 – June 30, 2017

PROJECT LOCATION: Region V

REPORT DESCRIPTION: This performance report describes muskox survey and inventory activities. Activities are listed by game management unit.

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

Region wide Activities:

Prepare biennial regional musk ox management reports.

A musk ox management report was not due to be prepared during this reporting period.

Provide information to state and federal regulatory processes on muskox management.

Area management staff reviewed State and Federal regulatory proposals, attended regulatory process meetings, and presented muskox information to the State Board of Game, State Fish and Game Advisory Committees, Federal Subsistence Board, and Federal Subsistence Regional Advisory Councils.

Activities by Unit:

Unit 18:

Conduct annual aerial censuses of the Nunivak and Nelson Island populations to estimate population size and determine age-sex composition. Conduct a minimum count survey of muskox mainland population in Game Management Unit (GMU) 18, 19A, and 21E.

On June 14 and 17, 2017 the department conducted a survey of Nelson Island and 755 muskox were observed. This survey was flown using a fixed-winged aircraft; animals were documented with digital cameras shooting out of the side windows. Animals were classified as mature bulls, mature cows, 2-yr olds, long yearlings, calves, or unknown.

AKW-20 16.0 Muskox S&I FY2017

Annual Performance Report

On May 30 through June 1, 2017 ADF&G staff conducted a minimum count survey for muskox in GMU 18, 19A, and 21E. This was the first systematic and comprehensive survey of muskox on the mainland of Yukon-Kuskokwim Delta. This survey was flown using a fixed-winged aircraft; animals were documented with digital cameras shooting out of the side windows. Animals were classified as mature bulls, mature cows, 2-yr olds, long yearlings, calves, or unknown a total of 252 animals were observed.

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.

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

Eighty three (83) muskox were harvested on Nunivak Island during the RY16 hunting season; 38 bulls and 45 cows. Two hundred and thirty one (231) muskox were harvested on Nelson Island during the RY16 hunting season; 92 were cows, and 38 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. No proposal was officially prepared for muskox during the call for proposals.

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

1 animal were reported stranded on sea ice, and one bull was reported stranded on a small island during this reporting period. The department did put out a PSA advising people on how to handle nuisance animals near Bethel and conducted several interviews with media. 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.

Staff completed a muskox population survey during February and March 2017. Estimated muskox abundance throughout the known range of the Seward Peninsula muskox population was 2353 muskox (95% CI: 1908-2936).

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

Staff completed composition surveys during March and April 2017. 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 18% (95% CI: 17%-19%) and 15% (95% CI: 14%-16%) 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 the fall of 2016, 9 female muskox ≥ 3 years of age were captured and outfitted with VHF radio collars in Units 22B West, 22C and 22D. We recaptured 2 cows during late winter/ early spring of 2017 to remove and replace poor fitting collars. Ground based capture techniques were used. Muskox groups were accessed via the Nome Road System and by R-44 helicopter.

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 Units 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.

2 collared female muskox died during the 2016 calendar year yielding an estimated 6% annual mortality rate (95% CI: 1% to 28% n=33). 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 <1% 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

Annual Performance Report

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 Units 22B, 22C, 22D, and 23SW, and by Tier I subsistence permit in Unit 22E. Federal Subsistence permits were also issued in Units 22B, 22D, 22E and 23SW.

The 2016-2017 harvest quota for Seward Peninsula muskox hunts was 37 muskox and hunters harvested 26 muskox, 70% of the quota.

Muskox in close proximity to the community of Nome presents many unique management challenges. Conflicts between local residents and muskox are common. During RY2016 1 mature bull was killed in defense of life and property (DLP) and another was killed by department staff in the interests of public safety.

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 distributed a previously completed hard copy muskox identification booklet for use by hunters and

Annual Performance Report

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: 2015, 2018, etc.

The Cape Thompson population traditional count area was surveyed by ADF&G and National Park Service (NPS) using modified distance sampling techniques. The preliminary estimate for the traditional count area is 150 – 270 muskoxen.

No population counts or composition counts were attempted in other portions of Unit 26A.

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 not needed from Unit 26A staff.

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 observations were recorded 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. 10 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 RY14.

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.

AKW-20 16.0 Muskox S&I FY2017

Annual Performance Report

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 composition surveys in Unit 23 in April 2017 finding 59 bulls (4 year and older):100 cows (3 year and older).

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.

Submitted by: Phillip Perry, Region V Management Coordinator

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REPORT PERIOD: July 1, 2016 – June 30, 2017

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**The Status of Alaska Muskox and Factors Influencing Their Populations in
Region III**

Region III (Units 12, 19, 20, 21, 24, 25, 26B and 26C)

1. Prepare 5-year musk ox management report and operational plan.

Compiled information and data for one 5-year Muskoxen Management Report and Operational Plan for Units 26B and 26C.

2. Monitor and analyze mortality data.

Monitored natural mortality opportunistically.

3. Provide muskox management information to state and federal regulatory processes.

Communicated and coordinated with and attended meetings of 1 Fish and Game Advisory Committee, the Alaska Board of Game, 1 Federal Regional Advisory Councils, the Federal Subsistence Board, and local village councils about muskoxen management and to review and analyze regulation proposals for the Alaska Board of Game and the Federal Subsistence Board.

4. Deploy and maintain radio collars, as needed, to maintain an adequate sample size to conduct surveys.

No radio collars were deployed as an adequate sample size existed from previous captures.

AKW-20 16.0 Muskox S&I FY2017

Annual Performance Report

5. Conduct surveys to assess population trends, distribution, productivity, and sex and age composition.

Radiotracked and counted groups of muskoxen in October 2016 and April 2017 (for population estimate). Counted minimum number of calves born in early and late June 2017. Unable to conduct composition survey in April 2017 because of helicopter mechanical issues.