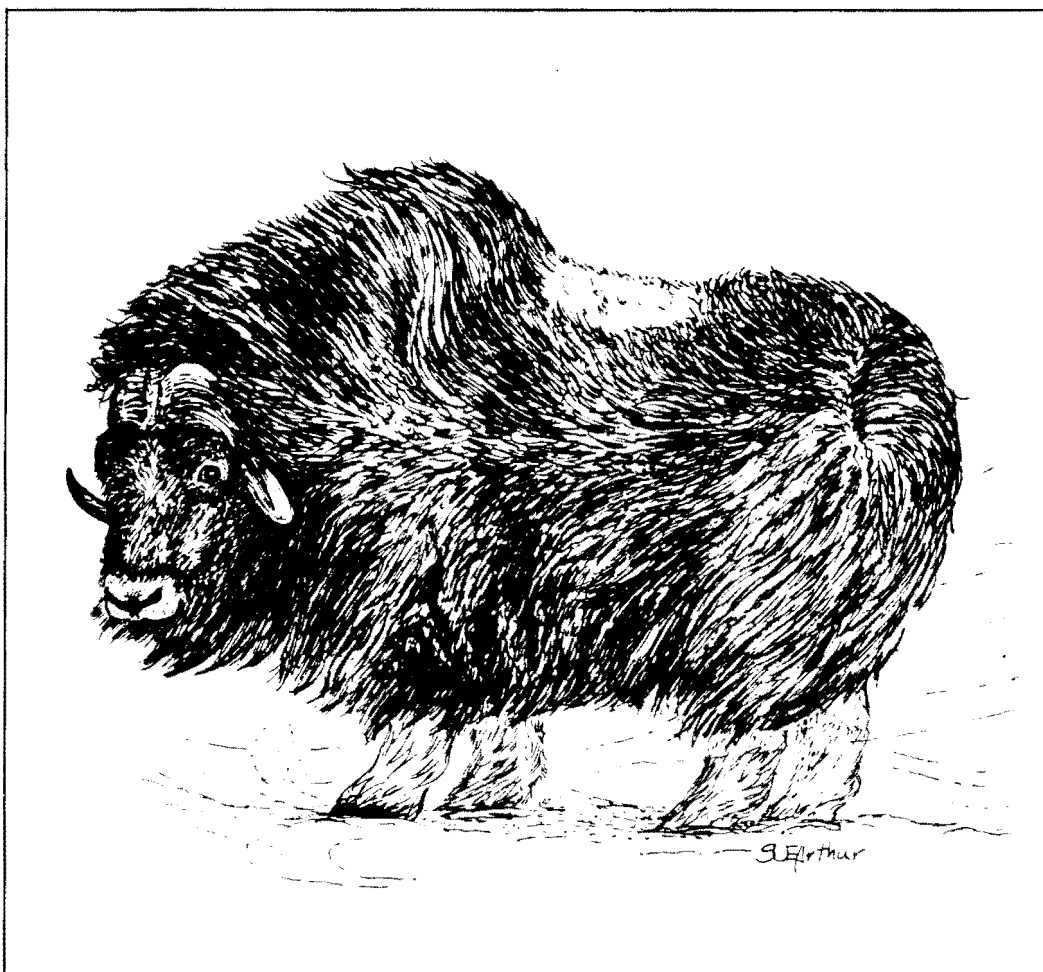


**Alaska Department of Fish and Game
Division of Wildlife Conservation
Federal Aid in Wildlife Restoration
Annual Performance Report of
Survey-Inventory Activities
1 July 1990 - 30 June 1991**

MUSKOX



**Susan M. Abbott, Editor
Volume XXII, Part X
Project W-23-4, Study 16.0
December 1991**

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DEPARTMENT OF FISH AND GAME
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Project Title: **Region III Muskoxen Population and Habitat Management**

Project Location: Subunits 26B and 26C

Project Objectives and Activities:

1. Manage harvest so that it does not appreciably restrict population growth or dispersal of muskoxen.
 - a. Review information obtained by the U.S. Fish and Wildlife Service (USFWS) on population size, sex-age composition, and movements of radio-collared animals.
2. Maintain a bull:cow ratio of at least 50:100 and an adult bull:cow ratio of 35:100.
 - a. Monitor results of the registration permit hunt.
 - b. Conduct aerial surveys to determine distribution of muskoxen in Subunit 26B.
3. Maintain direct communication with local residents of Nuiqsut, Kaktovik, and Barrow about management decisions concerning the reintroduction, conservation, and hunting of muskoxen.

Work Accomplished During the Project Segment Period: Information collected by the USFWS on population size, composition, and dispersal was reviewed by the area biologist.

The Tier II registration permit hunt was monitored. Nine of 11 permits issued went to Kaktovik residents and 1 each went to a resident of Umiat and Nuiqsut. Three bull muskoxen were killed in the October 1990 season, and 7 were killed in the March 1991 season.

Although scheduled, no muskoxen surveys were flown by either USFWS or the Alaska Department of Fish and Game (ADF&G). Lack of a suitable pilot prevented the USFWS surveys, and bad weather prevented ADF&G from completing surveys. One unsuccessful attempt to survey the Subunit 26B portion of the range was made.

Progress Toward Meeting Project Objectives: The harvest of less than 15 bull muskoxen per year ensures that dispersal and population growth are not being affected by hunting. The small number of permits and the fact that virtually all are issued in Kaktovik ensures nearly total compliance and further provides an opportunity to communicate directly with local users about muskoxen management.

Segment Period Project Costs:

	<u>Personnel</u>	<u>Operating</u>	<u>Total</u>
Planned	5.1	3.0	8.1
Actual	5.1	0.1	5.2
Difference	0.0	+2.9	+2.9

Explanation: Sex and age composition counts were cancelled because of poor weather conditions in spring 1991. Funds were reprogrammed to Central Arctic Caribou Herd radio-monitoring flights.

Submitted by:

Kenton P. Taylor
Management Coordinator

Project Title: **Region V Muskox Survey and Inventory**

Project Location: Unit 18 (42,000 mi²)
 Yukon-Kuskokwim Delta

Project Objectives: Maintain a post-hunt, pre-calving population size of 200-250 muskoxen on Nelson Island, and a post-hunt, pre-calving population size of 500-550 muskoxen on Nunivak Island.

Conduct aerial and ground surveys on Nunivak and Nelson Island to estimate the population size, and sex and age composition of the 2 muskox populations. Monitor the population size, distribution, and dispersal of muskoxen onto the mainland of Unit 18. Finalize development of a muskox management plan for the Nunivak Island population.

Work Accomplished During the Project Segment Period: Aerial and ground surveys were completed on Nunivak Island during March 1991 in cooperation with staff from the Yukon Delta National Wildlife Refuge. Four-hundred-and-thirty-nine muskoxen were counted and the sex and age composition was as follows: 146 4-year-and-older males, 86 4-year-and-older females, 43 three-year-old males, 37 three-year-old females, 24 two-year-old males, 15 two-year-old females, 64 yearlings, and 24 unclassified animals.

An aerial survey was completed on Nelson Island during January 1991. The pre-hunt population was determined as 232 muskoxen, and the post-hunt, pre-calving population was 207 muskoxen. Twenty-four animals were taken by hunters and 1 died of natural causes. We continued monitoring the dispersal of muskoxen from Nelson Island to the mainland through periodic aerial reconnaissance flights and observations reported by members of the public.

Drawing and registration permits for hunting muskoxen on Nelson and Nunivak islands were issued in fall 1990 and spring 1991. The fall harvest on Nunivak Island was 5 cows taken by registration permit and 5 bulls taken by drawing permit. The spring harvest on Nunivak Island was 26 cows taken by registration permit and 35 bulls taken by drawing permit. Only 24 of the 30 individuals issued registration permits for Nelson Island were successful in harvesting a muskoxen. Seventy-one percent of the hunters waited until the last week of the season to hunt on Nelson Island and inability to find legal animals and poor travel conditions may have caused the lower than normal success rate during the 1991 season.

Progress Toward Meeting Project Objectives: Minimum post-hunt, pre-calving populations of 500-550 muskoxen on Nunivak Island and 200-250 muskoxen on Nelson Island are being maintained for both populations. Ground surveys for sex and age composition have not been completed on Nelson in recent years, but will be attempted

in 1992. Aerial surveys for sex and age composition have not been feasible on Nelson Island.

The mainland population was estimated at 100-150 animals ranging over approximately 38,000 mi². This estimate is based on groups of muskoxen seen during periodic reconnaissance flights, and from sightings reported by the members of the public and aircraft pilots. Muskoxen were sighted near Dall Lake, Kusilvak Mountain, the Andreafsky Mountains, and the "tundra" villages west of Bethel during the segment period.

In March 1989, 5 muskoxen were radio-collared on the mainland of Unit 18 and were monitored through June 1990. Tracking flights were attempted at 2-month intervals and some unique movements were documented. However, all of the 5 radio-collared muskoxen either dropped their collars or died. Information from the radio-tracking flights indicated that long range movements apparently are more common than originally believed. The use of satellite telemetry or more frequent tracking flights when conventional radio collars are used is recommended in the future.

Public meetings have been held biannually in Bethel and Mekoryuk to finalize development of a muskox/reindeer management plan for Nunivak Island. This management planning effort is being conducted cooperatively with the local public, and with staff from the Yukon Delta National Wildlife Refuge, U. S. Soil Conservation Service, Bureau of Indian Affairs, Bering Sea Reindeer Products, Alaska Soil and Water Commission, and the local Mekoryuk (NIMA) corporation. As part of the management plan agreement, increased reduction of the reindeer herd began during the report period. More than 2,000 reindeer were slaughtered and processed at a privately owned (State inspected) slaughterhouse near Mekoryuk. Also, increased harvest levels of muskoxen began during the 1989-90 regulatory year and continued during 1990-91 in order to reduce the herd size to 500-550 animals after hunting and before calving. Proper management of both the reindeer and muskoxen will hopefully improve the range carrying capacity of Nunivak Island. However, the possibility that reindeer are overgrazing available habitat is a concern to all parties.

Project Location: Unit 22 (23,000 mi²)
Seward Peninsula and that portion of the Nulato Hills draining west into Norton Sound.

Project Objectives: Re-introduce muskoxen onto suitable Unit 22 ranges and provide for their use and enjoyment by members of the public. Monitor population size, herd growth, and range expansion. Maintain a pool of radio-collared animals. Monitor movements of radio-collared animals. Conduct aerial photocensuses at 5-year intervals. Develop a Unit 22 muskox management plan in consultation with the public, interested local organizations, and other agencies.

Work Accomplished During the Project Segment Period: Several flights were conducted to ascertain the number of active radio collars on muskoxen within Unit 22. Tabulated results from these flights indicated that, at a minimum, 32 radio collars remain active. Members of the public continued to provide information on muskoxen they periodically observed.

Meetings were held with reindeer herders and others to discuss ways of dealing with perceived conflicts between muskoxen and reindeer, the need for a muskoxen management plan, and the steps which need to be taken before developing and implementing a plan.

Progress Toward Meeting Project Objectives: Since their re-introduction in the early 1970s, muskox numbers on the Seward Peninsula have increased significantly and the herd is now estimated as one of the largest in Alaska.

Much of the previous operating funds for survey-inventory activities and research on Seward Peninsula muskoxen were provided by the National Park Service (NPS). During the report period, NPS monies were not made available which resulted in a significant decrease in efforts to monitor population size, herd growth, and range expansion. In keeping with our objective of conducting a photocensus at 5-year intervals, additional funds will hopefully be available to conduct a census in spring 1992.

As muskoxen numbers increase on the Seward Peninsula, so does the interest by local residents and others in hunting them. Proposals from the public and interested local organizations requesting hunting seasons in all or parts of the Seward Peninsula will almost certainly be submitted to the Board of Game during their spring 1992 meeting when changes in muskox seasons and bag limits will be considered. Concern about range competition between muskoxen and reindeer continues to be voiced by reindeer herders. In addition, subsistence berry pickers occasionally complain of harassment or intimidation by muskoxen. All these concerns need to be dealt with. Development of a muskoxen management plan along with long-term population management goals are essential in Unit 22 before implementing any hunting season. Efforts to develop such a plan are underway.

Project Location: Unit 23 (43,000 mi²)
Kotzebue Sound and Western Brooks Range

Project Objectives: Allow for continued population growth and dispersal of muskoxen into vacant, unoccupied habitat. Conduct a population census of the Cape Thompson muskox herd. Monitor the relocations of radio-collared muskoxen at periodic intervals to assess population distribution and dispersal. Improve communication with the public to reduce the magnitude of illegal and unreported harvests. Develop updated population objectives in cooperation with the public and other agencies.

Work Accomplished During the Project Segment Period: Five muskoxen from the Cape Thompson herd were radio-collared in the northern portion of Unit 23 during the report period. The work was conducted by our staff at Kotzebue in cooperation with National Park Service staff. Several survey flights to assess population size, composition, and distribution were conducted in northern Unit 23. Discussions with local residents about muskox management were conducted opportunistically. However, we have not begun the formal management planning process.

Progress Toward Meeting Project Objectives: We believe that the Cape Thompson herd numbers approximately 130-140 muskoxen. A census conducted in May 1988 yielded a population estimate of 123 muskoxen indicating that the herd is probably stable in size at this time.

Additional investigations concerning why the herd is not growing are recommended. We believe that excessive illegal harvests and inadequate habitat availability during winter may be preventing herd growth. Discussions with local residents about the importance of allowing muskox numbers to increase should remain a priority. Scheduling special public meetings in villages near resident muskox herds may be needed to address this problem. Range assessment work may be necessary to verify whether range availability during winter is also preventing herd growth.

Project Segment Period Costs:

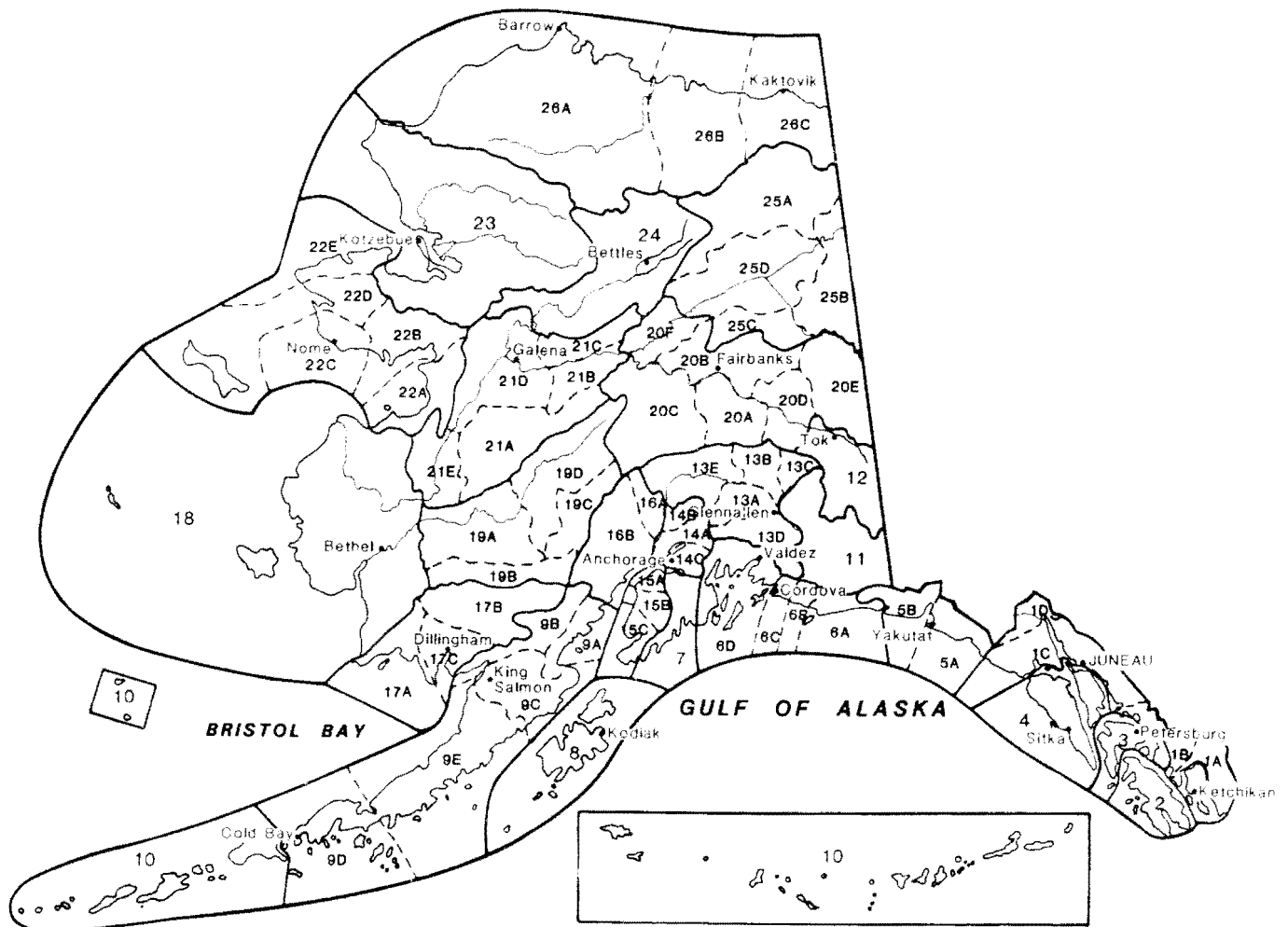
	<u>Personnel</u>	<u>Operating</u>	<u>Total</u>
Planned	41.1	14.0	55.1
Actual	37.8	7.8	45.6
Difference	-3.3	-6.2	-9.5

Explanation: A staff vacancy at Kotzebue resulted in less expenditures for this project. Because costs associated with a bear census in Unit 22 were higher than expected, Unit 22 muskox funds were redirected for use in the census. All of the muskox survey work conducted in Unit 22 utilized state-owned aircraft which resulted in reduced expenditures.

Submitted by:

Steve Machida
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Alaska Game Management Units



Funded by Federal Aid in Wildlife Restoration