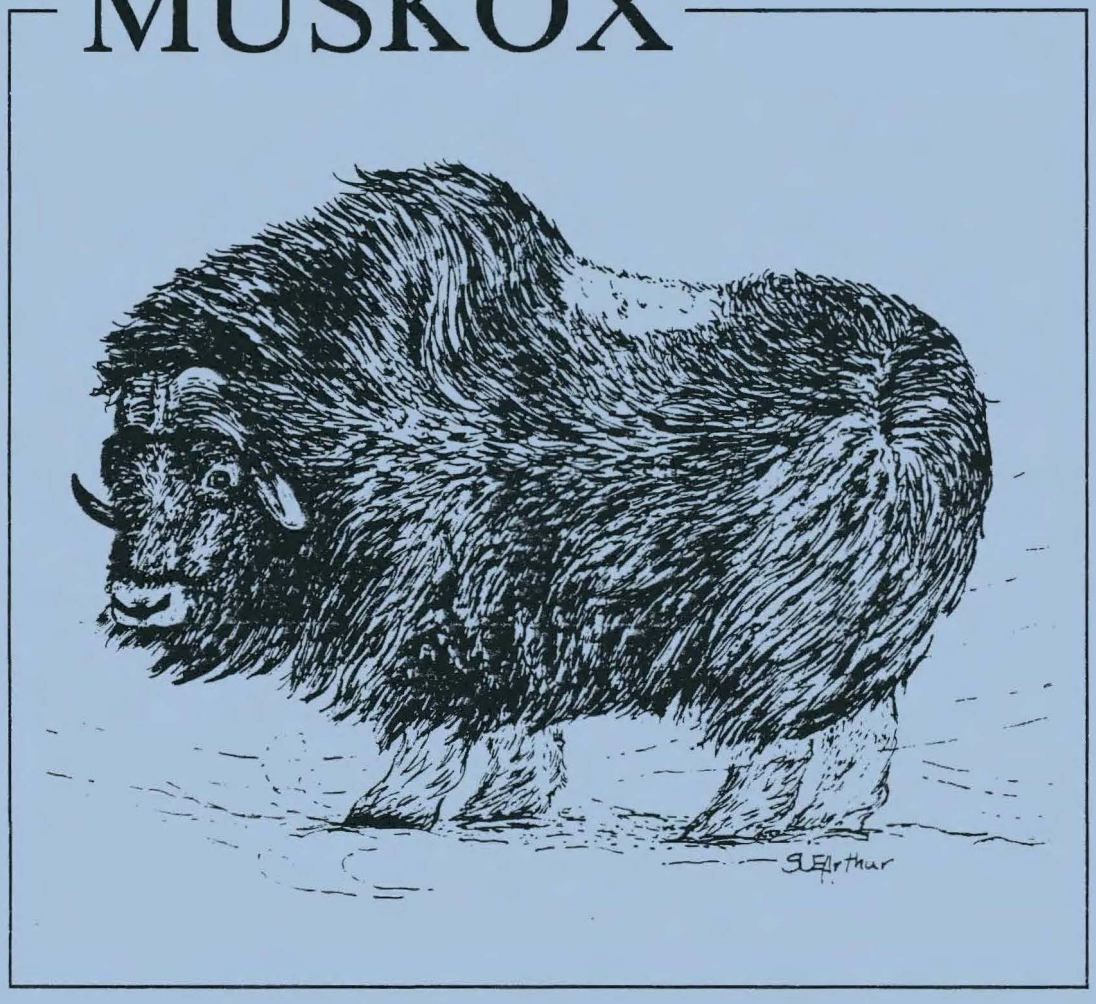
Alaska Department of Fish and Game
Division of Game
Federal Aid in Wildlife Restoration
Annual Report of Survey—Inventory Activities

MUSKOX



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Barbara Townsend, Publications Technician
Vol. XVII, Part X
Project W-22-5, Job 16.0
January 1987

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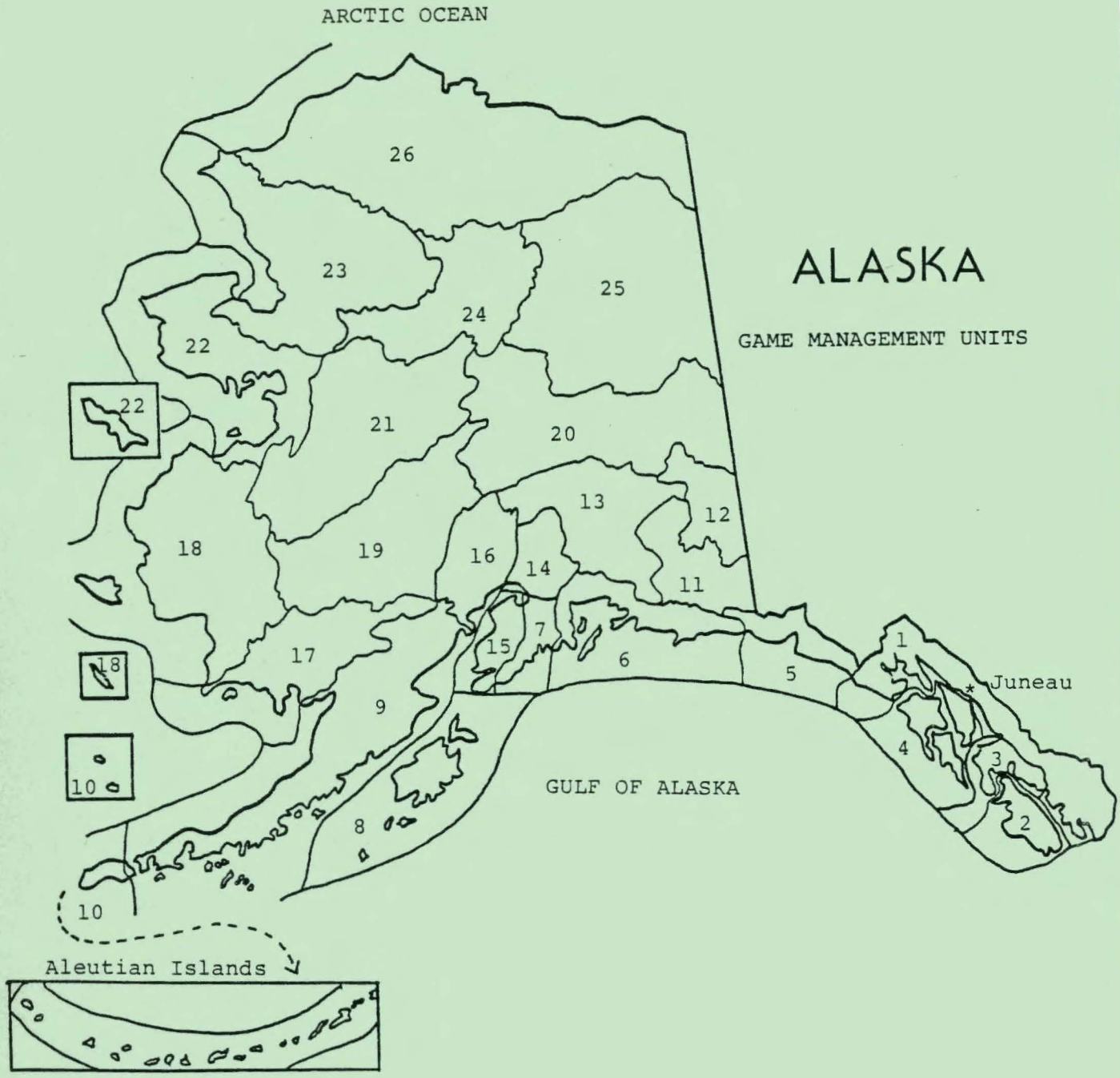
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STATEWIDE HARVEST AND POPULATION STATUS

Muskox populations are found in Alaska on Nunivak and Nelson Islands (Unit 18); on the Seward Peninsula (GMU 22); along the northwest coast near Point Hope (GMU 23); and on the eastern Arctic Slope (Subunits 26B and 26C). All herds (except the one on Nunivak) are the result of transplants between 1967 and 1970 from Nunivak Island. Additional animals are found on the Yukon-Kuskokwim mainland as a result of emigration from Nelson Island.

Herds on Nelson Island, the Seward Peninsula, and the eastern Arctic Slope are flourishing and well established. The herd in Unit 23, although established, is still of questionable viability. The parent herd on Nunivak Island is healthy and near the desired population level.

Hunting is authorized on 3 herds: Nunivak Island, Nelson Island, and the eastern Arctic. Harvest quotas on Nunivak and Nelson Islands are designed to stabilize population numbers, while the quota in the eastern Arctic is very conservative to allow continued population expansion. Harvests and estimated populations in 1985-86 were as follows:

GMU/area	Estimated population	Hunting harvest		
		Male	Female	Total
18/Nunivak Island	500-550	28	42	70
18/Nelson Island	287	9	15	24
22/Seward Peninsula	271 plus	--	--	--
23/Kotzebue Sound	?	--	--	--
26B, 26C/Eastern Arctic Slope	476	3	--	3

Robert A. Hinman
Deputy Director

MUSKOX

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 18

GEOGRAPHICAL DESCRIPTION: Yukon-Kuskokwim Delta

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Hunting Regulations No. 26.

Population Status and Trend

Nunivak Island:

Muskoxen were introduced to Nunivak Island in 1935 and 1936, and the population grew at an average rate of 16% per year from 1947 through 1967. Regular hunting seasons were opened in 1975, and the muskox population has since fluctuated between 500 and 750 animals. The population has supported heavy harvests and good recruitment from 1975 through 1986 due to mild winter weather and low natural mortality. Heavy harvesting of cows (up to 50 cows per regulatory year) was instituted in 1984 to decrease the proportion of cows in the population, and to decrease net reproduction on a long-term basis. The current management goal is to keep the population stabilized at 450-550 animals. Many knowledgeable individuals believe that Nunivak Island can only support about 500 muskoxen during a hard winter. Large harvests of cows during 1984-85 and 1985-86 have reduced recruitment and herd size, and altered the sex ratio of the herd.

A post-hunt, pre-calving census conducted in mid-March 1986 enumerated 487 muskoxen on Nunivak Island compared with 547 in 1985. Blowing snow and extreme cold weather hindered observations on the southwest side of the island and some animals were missed. The post-hunt, pre-calving population was estimated to number between 500-550 animals in 1986.

Seventy muskoxen were taken in the fall 1985 and spring 1986 hunting seasons prior to the census; therefore, the pre-hunt, pre-calving population in 1986 numbered at least 557 animals. Simulation models suggest that continued harvest of 25-36 muskoxen of each sex can be sustained annually by a population of 500-550 animals until the year 2000, even given occasional severe winter mortality.

Muskox pregnancy rates increased on Nunivak in 1986 in comparison with the 2 previous years. Examination of reproductive tracts of the 39 cow muskoxen taken during the 1986 spring season indicated a minimum pregnancy rate of 86%, in comparison with 74% in 1985 and 77% in 1984. The 7 3-year-old cows and the 29 4-year-old and older cows taken in 1986 exhibited an identical mean pregnancy rate of 86%. The rise in pregnancy rate since 1984-85 is unexplained, although it may be a random variation. None of the 2-year-old cows harvested during the 1986 spring season were pregnant.

Nelson Island:

The Nelson Island muskox population has remained stable under the current harvest regime. The pre-hunt, pre-calving population was estimated to contain 287 muskoxen in 1986, in comparison with 225 animals in 1985 and 220-230 animals in 1983. Like the Nunivak population, the Nelson Island population exhibits high reproductive rates. However, unlike the Nunivak population, concern about Nelson Island's range quality is alleviated by the potential for emigration. Muskoxen move freely between Nelson Island and the mainland during winter. Approximately 20 or more muskoxen may have emigrated permanently from Nelson Island.

ADF&G staff conducted a thorough aerial post-hunt census of the Nelson Island population on 18 April 1986 under ideal conditions. Mild turbulence was encountered only in the vicinity of Cape Vancouver. Approximately 258 muskoxen were counted and photographed. The largest herd encountered was on Erchaktruk Mountain northeast of Tununak. I believe that this was the most extensive survey ever performed on Nelson Island.

Seven of the 14 cows (50%) harvested from Nelson Island during the spring 1986 hunt were pregnant. This appears to be a low pregnancy rate, but 1 2-year-old cow was harvested, as well as 7 3-year-old cows and 6 4-year-old and older cows. The 2-year-old cow was not pregnant, but 2 of the 3-year-old cows (29%) and 5 of the 4-year-old and older cows (83%) were pregnant.

Mainland Muskoxen:

A small herd of muskoxen has inhabited upland tundra ridges between Bethel and Dall Lake since 1981. ADF&G staff radio-located this herd on 30 October 1985 near Dall Lake 47.5 miles southwest of Bethel. Group size was at least 12 animals, including 3 calves and the radio-collared 5-year-old bull. A U. S. Army helicopter pilot observed the same group 30 miles southwest of Bethel on 20 November 1986. A

private pilot observed the same 12 muskoxen west of Tuntutuliak on 18 December 1986. ADF&G staff again relocated this herd on 16 January 1986 near Dall Lake, counting 8 adults and 3 calves. The radio-collared bull was again seen near Dall Lake on 29 April 1986; however, no other muskoxen were observed in the vicinity. This younger bull may have been displaced from the herd by the larger, dominant bull.

A resident of Newtok reported seeing 4 muskoxen (1 bull and 3 cows) in early fall 1985 north of Aropuk Lake near the old village site of Chakwaktolik. This places muskoxen in the immediate vicinity of the Mud Volcanoes. We expect additional reports of muskoxen from this vicinity and anticipate 1 or more herds will form.

A local resident observed 2 muskoxen west of Napakiak on the lower Kuskokwim River during the winter of 1985-86. A private pilot reported 4 muskoxen (1 bull and 3 cows) on the mainland 10 miles southeast of Nightmute (between Nelson Island and Dall Lake) on 11 May 1986. Passengers on a flight between Toksook Bay and Bethel observed several muskoxen in this immediate vicinity on 29 April 1986.

Population Composition

Nunivak Island:

No fall aerial surveys were conducted during the reporting period. The winter ground census and composition survey was conducted on 11-14 March 1986 by ADF&G and U. S. Fish and Wildlife Service (USFWS) staff. Low clouds, blowing snow, strong winds, much snow-free terrain, and extreme cold (to -40 F) hindered census efforts on southwestern Nunivak Island. Trail conditions were the roughest of any of the previous completed surveys. We classified 487 muskoxen in 45 groups, ranging in size from 1-31 animals. Composition of the groups was similar to that observed last year. Two groups on the eastern side of the island were not observed during the survey, but were reported to us by local residents who saw the animals on the same day we surveyed the area.

The 1986 ground census enumerated 125 3-year-old and older cows, a decline from the 1985 figure of 140 such cows. The 52 3-year-old cows are expected to produce 45 calves in spring 1986. The 73 4-year-old and older cows are expected to produce 63 calves. Assuming 29% of the 58 unclassified animals were cows with a similar pregnancy rate, another 14 calves may be added to the population. The maximum 1986 post-hunt, post-calving population is thus calculated to be 609 individuals, not including missed individuals. These

extrapolations assume that the harvest sample accurately reflects the proportion of pregnant females in the population, and that all fetuses are brought to full term. I anticipate, however, that neonatal and subsequent calf mortality will reduce the population closer to the desired level of 500 animals.

Since the number of muskoxen sighted during the ground survey was less than expected, ADF&G staff attempted 2 aerial surveys of Nunivak Island during April. The first was aborted due to bad weather. The 2nd attempted survey was conducted on 29 April 1986 and approximately 75% of the island was surveyed. Weather conditions prevented completion of the survey, however. Observers counted 389 muskoxen during the aerial survey; however, much of the best habitat on the southeastern portion of the island remained unsurveyed.

Mortality

Nunivak Island:

Five bull drawing permits and 10 cow registration permits were available to hunters during fall 1985. The 5 drawing permittees were notified in mid-July of their eligibility to hunt bull muskoxen in fall 1985; only 1 permittee elected to hunt. The hunter, an Anchorage resident, was successful in taking a 4-year-old or older bull near Cape Manning in early September.

Ten cow registration permits were available on a first-come, first-served basis in Mekoryuk on 30 August 1985. The permits were issued to 8 Mekoryuk residents and 1 Bethel resident. Only 3 of the 9 cow permit holders were successful in taking muskoxen during the September season.

The successful hunters indicated they had good to excellent hunts near Cape Manning east of Mekoryuk, near the dunes on the south side of Nunivak and at Nash Harbor. Two 4-year-old or older cows and 1 3-year-old cow were taken. All 3 hunters spent 1-8 days afield before taking their muskoxen. Poor weather and rough seas confined the 6 remaining permittees to Mekoryuk for the duration of the 20-day September season.

Twenty-nine persons were successful in the drawing to hunt bull muskoxen on Nunivak Island in spring 1986. A waiting list of 170 alternate permittees is indicative of the popularity of the spring Nunivak bull hunt. In an effort to fill all unused permits, over 40 individuals from the alternate list were contacted. All 26 individuals who eventually hunted were successful. The $500 bull tag fee for

residents remains a considerable obstacle to some potential muskox hunters, however.

Twenty-one registration permits for the spring cow hunt were available on a first-come, first-served basis in Mekoryuk; 12 were available in Bethel, 4 in Anchorage, and 2 in Fairbanks on 31 January. All 21 cow permits were issued at Mekoryuk with 5 people remaining on a waiting list. Four people on the waiting list later received permits because of cancellations by other hunters. All Mekoryuk permit holders were successful in bagging a muskox in spring 1986.

As usual, the demand for the 12 permits issued at Bethel was remarkably high. The line formed outside the ADFG office at 9:30 pm the evening before, and a sign-up sheet was circulated. The sign-up list contained 12 names by 10:30 pm. It was agreed that in order to save their place in line, potential applicants could not leave the immediate area. Thus, 12 people spent the night waiting inside the office building. Six late-comers remained on the waiting list. Eventually, 3 of these people received permits. All 14 Bethel permit holders were successful in taking cow muskoxen on Nunivak in 1986.

All 4 cow registration permits were issued in Anchorage, but there was no demand for 2 permits available in Fairbanks. After 2 weeks, these 2 permits were transferred to Bethel where the waiting list was longest.

The majority of the muskoxen were harvested in spring 1986 on the dunes northeast and northwest of Cape Mendenhall and near buttes and river mouths on western Nunivak Island. The total spring harvest was composed of 27 bulls and 39 cows. Hunters primarily harvested adult animals 4 years old and older. The majority of permittees (71%) spent 1 day hunting. Most cow hunters (90%) were residents of GMU 18. Most bull hunters were residents of southcentral Alaska (86%), and utilized the services of guides or transporters (90%). Since nonresident hunting was precluded by regulation this year, all muskoxen were taken by Alaska residents.

One 3-year-old bull was misidentified and harvested on a cow permit in February 1986 by a Mekoryuk resident. One bull was found dead on the Bangookbit Dunes on the south side of the island in February 1986. The head had been salvaged, but not the carcass or the hide. Cause of death was unknown. We speculate that this may have been a hunter-induced mortality, perhaps a wounded animal that had run off.

In March, a bow hunter wounded a bull high in the shoulder and the animal ran off. The hunter eventually took another

animal, and reported the incident to ADF&G during the check-out procedure. A field investigation conducted soon thereafter revealed no dead or moribund muskoxen, however.

There were no other reported cases of muskox mortality during 1985-86. Observed winter mortality of muskoxen on Nunivak Island was minimal in 1985-86 due to light snow accumulation and mild winter conditions. Most animals taken by hunters reportedly were in excellent condition with extensive fat deposits.

The "silent mortality factor" on Nunivak has been of continuing concern to agency biologists. The herd is closely monitored and the age structure is well known, and yet each year a small percentage of the population is missing in the census. Few carcasses are found in the field even though the island is dominated by open tundra and is relatively well-traveled. We believe the tendency for muskoxen to wander in late winter to the edge of the shore-fast ice, perhaps in search of salt or following a disperal urge, causes them to become "lost at sea" as ice floes break off into the Bering Sea. A small herd of muskoxen was reported on Triangle Island, 3 miles northeast of Nunivak, before the sea ice broke up in spring 1986. These animals were driven back to the mainland by local residents at our request. Other small groups of muskoxen were observed at the edge of the ice northwest of Mekoryuk and on Etolin Strait. The 3 animals seen moving to the edge of the ice near Mekoryuk apparently did not return. If the loss of these animals is an example, then stranding of muskoxen on drift ice may be a part of the "silent mortality factor."

Nelson Island:

Thirty registration hunting permits (15 bulls and 15 cows) were available for Nelson Island muskoxen in spring 1986. The permits were issued at the Toksook Bay Community Center on 25 January, beginning at 9:00 am, on a first-come, first-served basis. Demand for these permits was intense and a line formed at 12:30 am outside the door of the Community Center in -50 F windchill. The line contained over 30 people by 4:50 am, and eventually over 20 additional prospective applicants were turned away. All applicants were residents of Unit 18. Some individuals spent over 6 hours waiting in line. With this degree of competition, tempers flared, and by 1 February, local residents voted to allow only shareholders to hunt on private corporation lands, where most of the muskoxen are located. Eventually, some nonshareholders were given permission to enter private property in order to hunt muskoxen. Twenty-four of the 30 permits were filled by the end of the hunting season. I believe that at least another 5 muskoxen were harvested by local residents without permits.

Of those who did legally hunt in 1986, 7 were from Newtok, 6 from Toksook Bay, 5 from Tununak, 4 from Kasigluk, and 2 from Bethel. The 5 persons who had permits but did not hunt because of denied access were from Tuntutuliak, Toksook Bay, and Kasigluk.

Kill locations were mostly on the ridges north of Toksook Bay and northwest of Tununak. Other kill sites were scattered over central Nelson Island. Although muskoxen are found in the Cape Vancouver area, hunters did not take any muskoxen there because of difficult access.

Nine of the 10 bulls reported taken on Nelson Island were 4 years old or older; 1 2-year-old bull was taken. Most hunters spent 1-2 days afield hunting muskoxen.

The 2 hunters from Bethel were charged with wanton waste in spring 1986. Both hunters failed to completely salvage meat from 2 muskoxen killed in late March northeast of Tununak.

A 2-year-old cow was found dead in a creek near Toksook Bay in July 1985 by a local resident. Cause of death was unknown, but the animal was believed to have died during spring 1985 when it may have fallen through the ice. The only other reported case of muskox mortality on Nelson Island involved an old bull, which fell off a cliff at Cape Vancouver during midsummer 1985.

Management Summary and Recommendations

Nunivak Island:

A large harvest of cows (up to 50 per regulatory year) was instituted on Nunivak Island in 1984 in order to decrease net reproduction on a long-term basis. The management goal has been to hold the pre-calving population to approximately 450-550 muskoxen. Increased cow harvests during 1984-85 and 1985-86 have reduced herd size, altered the sex ratio of the herd, and slowed the reproductive rate. The post-hunt, pre-calving population was estimated to be between 500-550 animals in 1986, indicating achievement of population management goals. Simulation models of this population suggest that harvests of 25-35 muskoxen of each sex can be sustained annually, given occasional severe winters. The cow harvest quota was reduced by the Board of Game from 50 to 35, and increased for bulls from 30 to 35 for the 1986-87 season.

Mekoryuk residents suggest that the entire month of September is the appropriate season for the fall hunt. They correctly note that weather conditions are usually poor, seas are rough, and boats are the only feasible way to hunt

muskoxen in September. Thus, they desire an additional 10 days to hunt in the fall season. There is no reason to oppose this request from a biological standpoint.

A cooperative agreement was proposed in spring 1986 to develop a range management plan for Nunivak Island involving the Soil Conservation Service, USFWS, Bureau of Indian Affairs, Nima Corporation of Mekoryuk, Bering Sea Reindeer Products Corp. of Mekoryuk, and ADF&G. The goal of the plan will be long-term range improvement. Two public meetings, held in February and April in Mekoryuk, were attended by agency personnel to assist in formulation of the agreement.

Nelson Island:

The Nelson Island population remains stable under the current management regime. The pre-hunt, pre-calving population contained at least 287 muskoxen in 1986, in comparison with the 1985 estimate of 225 animals and the 1983 estimate of 220-230 animals. The current harvest of 30 animals per year could be increased to 40 animals per year if the population continues to increase in number. Questions regarding access to a public resource now located on private lands remain unresolved and should be addressed as soon as possible. If plans for reindeer herding on Nelson Island are realized, perceived competition between muskoxen and reindeer may fuel the public's desire to reduce muskox numbers.

Mainland Muskoxen:

Fewer reports of mainland muskoxen were received during 1985-86. I believe a lack of snow and poor backcountry travel conditions are the cause rather than an actual decrease in muskox numbers. Muskoxen were reported in fall 1985 near the Mud Volcanoes between Bethel and Chevak, a large expanse of apparently prime muskox habitat. A herd of muskoxen continues to inhabit tundra ridges between Bethel and Dall Lake. The season on the mainland of Unit 18 should remain closed until the population increases to harvestable levels.

PREPARED BY:

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MUSKOX

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 22

GEOGRAPHICAL DESCRIPTION: Seward Peninsula

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Hunting Regulations No. 26.

Population Status and Trend

Although muskoxen once were common on the Seward Peninsula, their presence was not reported by explorers in the early 19th century. Beechey (1831) believed that muskoxen had only recently become extinct from the northern Seward Peninsula prior to his visit in 1825-28. Near the mouth of the Buckland River, he discovered skeletons with flesh adhering, and found that Buckland River natives recognized the species.

Muskoxen were reintroduced to the Seward Peninsula in 1970 and an additional transplant was made in 1981. Both transplants were from the Nunivak Island herd which is descended from Greenland stock.

The Seward Peninsula muskox population was not censused during 1985-86. As discussed in last year's report, (Smith et al. 1986), the most efficient means of censusing muskoxen is to photograph groups located by radiotelemetry during March or April. This method requires continuous snow cover and radio collars on a significant proportion of the population. For example, the 1985 census was conducted with approximately 6% of the population ($\bar{n}$ = 271) radio-collared. If only the groups associated with these animals were censused, we could predict with 95% confidence that no more than 55 animals were missed (Smith 1986). By visual aerial search, we located several other groups that did not include a radio-collared animal, and further reduced the number missed. The 271 animals counted in the 1985 census were thought to closely approximate the actual population size. By March 1986, the percentage of muskoxen with operating radios had declined to 3%. Although 6 additional animals were radio-collared during March and April 1986, they did not have sufficient time to become distributed in the population and a meaningful photo-census was not possible.

Calf production during spring 1985 apparently was good. Surveys conducted on 18 and 19 July 1985 reported 21 calves among 96 muskoxen (22%). Calf production during spring 1986 was lower, however, probably as a result of severe winter conditions in 1985-86. Two surveys conducted on 15-29 May and 30 June 1986 recorded 16 calves in a sample of 84 animals (19%) and 17 calves among 119 muskoxen (14%), respectively. The proportion of calves observed at the end of June 1986 was significantly lower than in July 1985 ($x^2 = 3.98$, 1 df, $P < 0.05$). The change in calf percentage between the May 1986 and June 1986 survey was not statistically significant, but may indicate that some calves were lost in the period immediately following birth. All muskoxen captured in spring 1986 were in poor condition. Very hard snow and extended periods of subzero weather in 1986 severely stressed pregnant females during late winter and neonatal mortality was probably high.

Six muskoxen, 5 males and 1 female, were captured and radio-collared during March and April 1986. Three bulls and a cow were captured near Serpentine Hot Springs, 100 miles north of Nome, and 2 bulls were captured at Cape Rodney, 22 miles west of Nome. All 6 muskoxen were captured using a herding dog to hold the herd in a defense formation; individual animals were approached and immobilized using tranquilizer darts (Smith et al. 1985). A ski-equipped aircraft and snowmachines were used for transportation. The cost savings of this method, compared with conventional helicopter darting, was substantial. In addition, the reduced stress to the animals and the ability to select and accurately dart a specific animal make this the preferred technique for capturing muskoxen.

Distribution records of muskoxen seen on the outskirts of their range were also obtained through reports from the public. We solicit this information locally through posters, personal contact, and the news media. This program has been ongoing since the initial transplant but increased effort has been made in recent years to increase public awareness of our need for sightings. Only sightings of muskoxen away from regularly used areas are tabulated. During 1985, 46 sightings of 158 muskoxen were recorded. Typically, the most distant sightings are of adult bulls during the rut (August-October) and 34 of the 46 sightings were made during that period. These sightings and movements of radio-collared animals indicate continued expansion eastward on the Seward Peninsula. The trend appears to be toward more widespread distribution of muskoxen and increased occupation of winter range away from traditional wintering areas.

Mortality

Although winter conditions were severe during 1985-86, only 1 mortality was documented, an adult radio-collared bull. The

relatively low proportion of calves observed in May and June 1986 indicated that mortality among newborn calves may have been higher than normal.

Management Summary and Recommendations

The Seward Peninsula muskox population is apparently increasing. Although a census was not conducted during this reporting period, the observed productivity and apparent low natural mortality indicate that the population may have increased to at least 300 animals. Funding from the National Park Service will permit increasing the number of radio-collared animals to a level required for a spring 1987 photo-census.

Public sighting records and movements of radio-collared animals indicate a slow but significant expansion of areas used for winter range.

Concern has been expressed by Seward Peninsula reindeer herders that an increasing muskox population will compete with reindeer for forage and will damage lichen stands by trampling. Studies in the Canadian Archipelago have failed to show significant forage competition between muskoxen and Peary caribou, and my observations on Nunivak Island indicate substantial niche separation between muskoxen and reindeer. Habitat conditions in these areas are not directly comparable to those on the Seward Peninsula, however. Data are currently not available for a confident response to the questions raised by the reindeer industry. The Department should initiate studies measuring the degree of habitat overlap between the 2 species.

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MUSKOX

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 23

GEOGRAPHICAL DESCRIPTION: Kotzebue Sound

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Hunting Regulations No. 26.

Population Status and Trend

Insufficient data were obtained during this reporting period to accurately evaluate the status of muskoxen in Unit 23. The results of a survey completed 19 July 1985 were included in last year's report.

Population Composition

A hunter reported seeing 16-17 muskoxen including 4 calves in the Rabbit Creek drainage on 20 April 1986. Sightings of muskoxen are regularly reported from the Rabbit Creek area.

On 10 July 1986, 2 radio-collared muskoxen were located incidental to a caribou radio-tracking flight. Both animals were in a group of at least 45 muskoxen which included a minimum of 5 calves. This group was near the lower Kukpuk River, east of Point Hope, where it had been reported 2 weeks earlier by a party of biologists conducting a raptor survey.

Management Summary and Recommendations

The need for additional radio-collared animals remains a high priority for Unit 23 muskoxen. Additional collared animals should enable us to more easily monitor muskox distribution, productivity, and herd dispersal. Until it can be demonstrated that the population is large enough to support a harvest and continue to increase in number, hunting seasons should not be established.

PREPARED BY:

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Survey-Inventory Coordinator

MUSKOX

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNITS: 26B and 26C

GEOGRAPHICAL DESCRIPTION: Central and eastern Arctic Slope

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Hunting Regulations No. 26.

Population Status and Trend

U.S. Fish and Wildlife Service biologists estimated the post-calving muskox population within and adjacent to the Arctic National Wildlife Refuge to be 257 in 1982, 311 in 1983, 384 in 1984, and 476 in 1985. This population has been steadily increasing at a rate exceeding 20% per year.

Population Composition

U.S. Fish and Wildlife Service biologists collected composition data from 408 muskoxen in June 1986. Short yearlings made up only 11% of the sample, indicating that current year population growth will be considerably lower than in previous years.

Mortality

Hunters killed 3 bull muskoxen in March 1986, all from the Sadlerochit River area. Additional known mortalities included 4 adult females, 1 adult male, and 2 yearlings. One of these may have been illegally shot. The others were all either killed or scavenged by brown bears.

Management Summary and Recommendations

Wild muskoxen were eliminated from Alaska during the 19th century. In 1969 and 1970 muskoxen were reintroduced to northeastern Alaska to reestablish viable populations on historic ranges and to provide for a high-quality recreational hunt. Muskoxen are now well established within and adjacent to the Arctic National Wildlife Refuge, and they are slowly dispersing to surrounding regions. Encouragement of the trend toward continued dispersal, and protection of suitable habitat during petroleum exploration and development are currently the primary management objectives for muskoxen in Subunits 26B and 26C.

Continued dispersal and range expansion would be most rapidly achieved through additional transplants of muskoxen from the Wildlife Refuge to Subunits 26A and 26B. Without such transplants, range expansion will probably continue to be very slow. Muskoxen, especially adult males, have been sighted annually for nearly 10 years along the Dalton Highway, yet no resident groups are known west of the Canning River. At least 1 muskox was sighted near Anaktuvuk Pass during the past winter, and 1-3 were reportedly shot near Nuiqsut.

Under current regulations, 5 registration permits are available for taking bull muskoxen in Subunit 26C during March. Permits must be obtained in person in Kaktovik; in 1986, 4 out of 5 permits went to Kaktovik residents. It is likely that Kaktovik residents will continue to receive most permits.

Fourteen of 17 muskoxen shot since hunting of this population began in 1982 have come from the Sadlerochit River area. Other bands of muskoxen in the Okerokovik and Tamayariak River areas have received little or no hunting pressure.

Slower growth of the muskox population during the past year correlated with harsh winter conditions and an extremely late spring green-up. Caribou productivity and survival were also down in the eastern Arctic Slope area. There is no evidence that reduced recruitment in either species is due to range deterioration. Assuming the muskox population resumes its previous high growth rate, there will be over 1,000 muskoxen in the eastern Arctic within 5 years. Maintaining the current harvest quota of 5 bulls would obviously be very conservative. The management objective of reestablishing a viable muskox population has been achieved in Subunit 26C, but dispersal into 26B has been slow, and may be dependent on maintaining high densities of muskoxen in 26C as the nucleus for dispersal.

As long as expanding muskox range remains a primary population objective, harvest must remain conservative. Even adult males are not really "surplus," because they appear to be the 1st muskoxen to explore new areas, ultimately leading to dispersal. Nevertheless, as the population grows the absolute number of muskoxen harvested can be increased while still maintaining a minimal harvest on a percentage basis.

If harvest quotas are increased in the future, it may be necessary to direct some of the harvest away from the readily accessible Sadlerochit River area, or to spread the harvest over time to avoid intense harassment of the Sadlerochit group. For the next year, however, no changes in regulations will be necessary.

To ensure that dispersal into new areas does result in viable new populations, increased education and enforcement efforts will be necessary, particularly for Nuiqsut residents.

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