

A SPECIAL REPORT ON THE
DEPARTMENT OF FISH AND GAME
AND THE
UNIVERSITY OF ALASKA
MANAGEMENT OF STATE MUSKOXEN

February 10, 1988

Audit Control Number

11-4305-88-S

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February 24, 1988

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and Audit Committee:

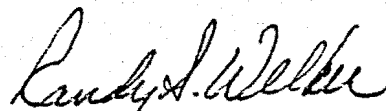
In accordance with the provisions of Title 24 of the Alaska
Statutes, the attached report is submitted for your review.

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Randy S. Welker, CPA
Acting Legislative Auditor
Division of Legislative Audit

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PURPOSE OF THE REPORT

In accordance with a special request of the Legislative Budget and Audit Committee and Title 24 of the Alaska Statutes, this report was prepared to:

1. Review the current status and history of the development of a muskox population by the State. The review will also include a summary of the circumstances surrounding the transfer and use of muskoxen by private sector entities.
2. Present a schedule of estimated expenditures made by the Department of Fish and Game and the University of Alaska to promote the development of muskoxen in Alaska.
3. Present a schedule of State revenues earned from the management of muskoxen.

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ORGANIZATION AND FUNCTION

Department of Fish and Game (DFG)

DFG's Division of Game gathers information on muskoxen through survey and inventory activities (population counts) and recommends harvest levels to the Board of Game. In addition, they conduct research projects and transplants of muskoxen. The division has been the state agency with primary responsibility for the development of the wild muskox population within the state in recent years. The division has coordinated and carried out transplantation of muskoxen from their "home base" of Nunivak Island to other parts of the State.

As discussed further in the report, Alaska laws provide DFG with a unique statutory authority (AS 16.40.010) to transfer ownership of wild muskoxen to private individuals and interests.

Board of Game

The Board of Game is the principal regulatory agency for game resource management. Generally speaking, the board allocates scarce resources among competing user groups and revises and reviews regulations to keep pace with changing conditions that affect resource availability and abundance.

Regulations have been developed that address the granting of muskoxen to private ownership. The commissioner of DFG is required to consult with the Board of Game before making a final decision regarding whether there are surplus muskoxen in a herd. The Board of Game may also recommend that the granting of "surplus" animals to private ownership be given priority over other uses.

University of Alaska

The University of Alaska, Institute of Arctic Biology, maintains a small herd of 23 muskoxen in Fairbanks. The herd originated from Nunivak Island and is currently sheltered at the Large Animal Research Station. The facility is used for research and teaching by the University and for research and field training by DFG and the U.S. Fish and Wildlife Service.

Researchers and visitors from foreign countries also conduct cooperative projects on a regular basis. Approximately 3,000 visitors annually enter the facility to view the animals at close hand and to learn about the research being conducted. Additionally, about 115,000 visitors drive to the station or come in tour buses to view the animals from the roadside viewing platform.

Private Ownership by the Muskox Producers Cooperative

In 1980, DFG transferred ownership of approximately 170 "surplus" muskoxen to Oomingmak, the Muskox Producers' Cooperative. In 1984, the Musk Ox Development Corporation, a non-profit corporation, was formed to raise and breed muskoxen. Currently, this herd, which numbers over one-hundred head, is located in Palmer and is the only privately-owned herd of muskoxen in Alaska. The cooperative was established to develop a textile cottage industry based upon "qiviut", the fine underwool from the muskoxen.

The qiviut is spun into yarn and then knitted by hand into hats, scarves and other garments in designs derived from traditional native artwork. Knitted garments are sold by Oomingmak, headquartered in Anchorage, to generate income for Natives in many coastal villages where jobs are scarce. More than 150 knitters are currently active in villages scattered along Alaska's west coast. This industry provided nearly \$90,000 to the homes of these knitters in 1987.

HISTORICAL BACKGROUND

The last of Alaska's original indigenous muskoxen were eradicated late in the eighteenth century. In 1930, in an effort to reestablish muskoxen in Alaska, the U.S. Congress appropriated \$40,000 for the procurement, shipment, and extended care of muskoxen in Alaska. Under terms of the appropriation, the muskoxen could be subject to domestication or husbandry experiments at various locations throughout the State. A total of 34 muskoxen were transported from Greenland with various losses reducing the herd to 31 prior to their release on Nunivak Island in 1935 and 1936.

In 1962, representatives of the U.S. Fish and Wildlife Service and the Alaska Department of Fish and Game (DFG) signed a cooperative agreement to manage the herd. The agreement recognized the desirability of reestablishing muskoxen on Alaska's mainland and the need to regulate the heard on Nunivak to maintain a healthy, productive nucleus. The established goal was to maintain a herd of approximately 500 head for restocking muskoxen to their traditional ranges in Alaska. Animals in excess of the target number were to be used for: 1) scientific studies, 2) public display and education, 3) public hunting, and 4) domestication by private individuals.

Over the years, DFG along with various federal agencies have performed muskox research, herd surveys, and inventories (population counts). In order to expand the wild muskox herd DFG transplanted animals from Nunivak Island to other locations in Alaska. The following table summarizes current estimated herd sizes and the original transplanted populations made to each area:

<u>Year of Introduction - Area</u>	<u>Total Transplanted</u>	<u>Current Estimated Population</u>
1935 - Nunivak Island	4	
1936 - Nunivak Island	<u>27</u>	
<u>Nunivak Island Totals</u>	<u>31</u>	500-550 ^a
1967 - Nelson Island	8	
1968 - Nelson Island	<u>15</u>	
<u>Nelson Island Totals</u>	<u>23</u>	287 ^a
1969 - Northeast Alaska	52	
1970 - Northeast Alaska	<u>13</u>	
<u>Northeast Alaska Totals</u>	<u>65</u>	476 ^a

1970 - Northwest Alaska	36	
1977 - Northwest Alaska	<u>34</u>	
<u>Northwest Alaska Totals</u>	<u>70</u>	96 ^b
1970 - Seward Peninsula	36	
1981 - Seward Peninsula	<u>36</u>	
<u>Seward Peninsula Totals</u>	<u>72</u>	<u>271^a</u>
<u>Total State Herd Estimate, circa 1986</u>		<u>1600 - 1650</u>

^a Population estimated in 1985-1986

^b Population estimated in summer of 1985

In addition to these wild herds, the University of Alaska maintains 23 muskoxen at its Large Animal Research Station (LARS) near its Fairbanks campus. The LARS facility is used for research and teaching by the University and for research and field training by both DFG and the U.S. Fish and Wildlife Service.

Private Herds and Husbandry

The Musk Ox Development Corporation owns the only privately held herd in the State. The herd, consisting of more than 100 animals is what remains from a 1980 transfer of state muskoxen to Mr. John Teal, a researcher and promoter of muskoxen domestication. This has been the only transfer of muskoxen to private interests made to date within the State. (See Private Ownership of Muskoxen section of this report for further discussion of the circumstances surrounding, and the ramifications of, this transfer.) Since the time of the transfer, the herd has been moved from Unalakleet, to Talkeetna, and on to a farm in Palmer.

These muskoxen support a textile cottage industry which uses qiviut, the animals' fleece or underwool. The Musk Ox Development Corporation provides qiviut to the Oomingmak Musk Ox Producers' Cooperative. Each spring from April to June, the muskoxen shed three to six pounds of qiviut each, which can be removed by hand. The qiviut fleece is shipped to Rhode Island where it is spun into yarn and then shipped back to the cooperative.

The yarn is then distributed to more than 150 knitters living in various villages scattered along the State's west coast. The yarn is then knitted by hand into hats, scarves, and other garments. According to a recent article in the Christian Science Monitor, there is greater demand from knitters for more yarn than presently available. The article also states that major department stores have expressed an interest in the garments but are discouraged by the lack of inventory presently available.

TRANSFER OF MUSKOXEN TO PRIVATE OWNERSHIP

Unlike other big game animals, the Legislature has made provision for the transfer of title for bison and muskoxen to private ownership for purposes of domestication. AS 16.40.010 allows the Department of Fish and Game (DFG) to grant "surplus" muskoxen to private ownership when it has determined that a surplus of animals exist. As of the date of this report, only one such transfer of muskoxen has been made, and the circumstances surrounding that transfer were unique.

The Teal Transfer - An Unusual Case

In the 1960s, the State issued permits to Mr. John Teal, of Vermont's Institute of Northern Agricultural Research, and to representatives of the University of Alaska to capture muskoxen on Nunivak Island. The permit allowed transport of the captured animals to the University of Alaska, Fairbanks, for research purposes. The muskox research and domestication project was supported by W. K. Kellogg Foundation grants, a rural economic development organization. Between 1975 and 1977 Teal moved the herd from Fairbanks to Unalakleet. According to DFG, the move violated the terms and conditions of Teal's transplant permit.

The questionable transport of muskoxen out of Fairbanks set off a great deal of debate and controversy. According to departmental memorandums, between 1977 and 1979 DFG alternately ignored and entreated Mr. Teal to be more cooperative. In October 1979 Mr. Teal was offered a contractual agreement to legalize his holding of the muskoxen. Teal refused this agreement on the grounds that he had possession of the herd and did not need to accept any restrictions on how he would deal with the animals. Finally, apparently out frustration with the stalemated situation, the Board of Game passed a resolution declaring that Teal's Unalakleet herd was surplus and eligible for transfer to private ownership.

In response to the resolution, DFG solicited applications for ownership of the herd. Three other interested parties along with Teal filed applications for ownership of the herd. After review of the applications by then DFG Commissioner Skoog, ownership was transferred to Teal. Terms of the transfer were as follows:

1. The animals and their progeny must be maintained under positive control in humane facilities.
2. No transplants of animals for release into the

wild may be made without express, written, prior consent of the DFG commissioner.

3. The animals are the sole responsibility of the recipient organization and the state is relieved of any and all liability for their care and maintenance.
4. The animals are subject to any applicable laws relating to domestic animals.

There was no provision for the State to receive any royalties or other proceeds from the sale of qiviut items.

After the muskoxen were transferred there were significant criticisms of how DFG handled the situation. The former executive director of the Boards of Fisheries and Game criticized DFG for an "egregious lack of control" over the animals from the time they were originally transferred to Fairbanks. He felt this lack of control allowed the herd to be seized without permission, and in effect, forced the board to declare the animals surplus in order to resolve the dispute with Teal.

Current Prospects for Transfer

In recent years, there has been an increased interest and demand for more private ownership of muskoxen. There have been several requests to the Board of Game and DFG to grant surplus muskoxen to private ownership. Since the 1980 transfer, the Department of Law has advised the Board of Game and DFG that the statutory authority to grant muskoxen to private entities is directed specifically at DFG, and not the board.

As stated above, a transfer can occur once DFG determines that a surplus of wild muskoxen exists. Currently, "surplus" is defined as the number of animals that may be removed from a herd in a year while still:

1. allowing for maintenance of the herd on a sustained yield basis;
2. accomplishing population objectives for the herd;
3. ensuring that demands are met for other, higher priority uses of the animals as established by Board of Game regulations.

Current Board of Game regulations provide for five higher priority uses than transfer of muskoxen to private ownership

for domestication and husbandry: (1) subsistence uses; (2) recreational hunting; (3) natural dispersal; (4) transplanting animals to new, vacant habitat; and (5) scientific or educational uses. By giving domestication such a low priority, the board appears to be discouraging any further transfers of muskoxen to private ownership.

The board's position is also demonstrated in a letter written to the DFG commissioner following its 1986 fall meeting. The Department of Law advised that the board could act as a forum to hear public testimony on various proposals regarding transfers of muskoxen. In this capacity, after listening to public testimony, the board strongly recommended that DFG not find that a surplus of muskoxen existed for private transfer.

In a letter to the commissioner of DFG, the board summarized its position as follows:

The testimony before the board demonstrated that domestication [of muskoxen] is still in an experimental phase, and there are many problems associated with efforts to domesticate and commercially use this and other species of game. In addition, there are many interests in Alaska competing for use of muskoxen. For example, at Nunivak Island the muskoxen have become an important source of cash income through guided hunting. Given these considerations, the board does not believe the Department of Fish and Game could declare there to be a surplus of wild muskoxen at the present time.

Besides the stance of the board, DFG points out in a December 1986 report several problems and concerns that the department has regarding possible transfers. Perhaps the most compelling difficulty raised by DFG, involves the problem in making a determination that a "surplus" exists, in view of ongoing interest in the animal by game hunters. Currently, and for the foreseeable future, the demand for muskoxen exceeds supply. The main source of this demand being from those individuals who wish to hunt the animals.

As long as Board of Game regulations place a higher priority on the hunting of the animals, hunters would take up and be entitled to all of any "surplus" that would exist. As DFG points out, it would "seem that a formal finding that domestication was a priority use of the species would be necessary to be able to declare that a 'surplus exists.'" DFG also questions "whether the general Alaskan public would agree that private ownership for domestication purposes is the most important use of bison and muskoxen, particularly if sources for the animals were available in the private sector."

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FINANCIAL INFORMATION

Reestablishment of the muskox in Alaska has been funded by both the state and federal governments. The federal government became involved in 1930 when Congress appropriated \$40,000 to secure a herd of animals from Greenland and ultimately transport them to Nunivak Island, a national wildlife refuge. Federal funds continue to fund muskox activities through the U.S. Fish and Wildlife Service and the U.S. Park Service. The State also receives some federal funds to support muskox management and research.

State funding of muskox activities is through the Department of Fish and Game and the University of Alaska. Between FY 84 and FY 88 an estimated \$440,500 has been spent by the Department of Fish and Game (DFG) on muskoxen activities. The University of Alaska has spent an estimated \$224,550 on muskoxen activities between FY 79 and FY 88.

Estimated DFG Muskox Expenditures

<u>Fiscal Year</u>	<u>Survey and Inventory Activities</u>	<u>Division of Game Research Projects</u>	<u>Student Research/ Training Grants</u>	<u>Total</u>
1984	\$ 53,900	\$15,300	\$24,000	\$ 93,200
1985	66,800	17,800	9,800	94,400
1986	61,500	14,800	-0-	76,300
1987	99,700	-0-	5,100	104,800
1988	<u>71,800</u>	<u>-0-</u>	<u>N/A</u>	<u>71,800</u>
Total	<u>\$353,700</u>	<u>\$47,900</u>	<u>\$38,900</u>	<u>\$440,500</u>

N/A - Information Not Available

Muskox research, survey and inventory costs (population counts) are funded under the Division of Game's operating budget. Amounts presented were provided by the Division of Game, except for research/training grant expenditures which were provided by the University of Alaska, and represent costs associated with muskox activities. Seventy-five percent of all costs are reimbursable by the federal government through the Pittman-Robertson program. DFG was unable to provide reliable expenditure information prior to FY 84.

Estimated Expenditures of the University of Alaska

The University of Alaska, Institute of Arctic Biology maintains a small muskox herd located at the Large Animal Research Station in Fairbanks. The following expenditure

information related to this herd was provided by Institute personnel.

<u>Fiscal Year</u>	<u>Research</u>	<u>Maintenance</u>	<u>Total</u>
1979	\$ 2,925	\$ 7,925	\$ 10,850
1980	2,625	7,625	10,250
1981	2,250	7,250	9,500
1982	7,925	9,325	17,250
1983	43,200	16,500	59,700
1984	8,150	16,150	24,300
1985	9,150	15,150	24,300
1986	9,300	11,300	20,600
1987	9,450	13,450	22,900
1988	11,450	13,450	24,900
Total	<u>\$106,425</u>	<u>\$118,125</u>	<u>\$224,550</u>

Funding Sources

The State's funding source for muskox research, survey, and inventory, maintenance and transplants has been the General Fund, federal funds, and the Fish and Game Fund. The State does not receive money from the sale of qiviut (wool) produced by Oomingmak Musk Ox Producers' Cooperative. The wool comes from muskox owned by the Musk Ox Development Corporation, the State's only privately-owned herd.

Hunting of muskoxen has been permitted on Nunivak Island, Nelson Island, and the Arctic National Wildlife Refuges. Monies collected from the sale of hunting permits are deposited in the Fish and Game Fund and may be used to fund Department of Fish and Game operations. Muskox resident tag fees and nonresident tag fees currently cost \$500 and \$1,100, respectively. The following shows monies received from the sale of muskox hunting permits.

<u>Calendar Year</u>	<u>Resident Tag Fees</u>	<u>Nonresident Tag Fees</u>	<u>Total Tag Fees</u>
1975	\$ -0-	\$ 6,500	\$ 6,500
1976	-0-	53,500	53,500
1977	17,000	28,000	45,000
1978	9,000	20,000	29,000
1979	2,500	15,000	17,500
1980	2,500	11,000	13,500
1981	5,025	6,000	11,025
1982	3,223	7,000	10,223
1983	13,125	5,500	18,625
1984	13,125	5,500	18,625
1985	11,950	3,300	15,250
1986	15,350	-0-	15,350
Totals	<u>\$92,798</u>	<u>\$161,300</u>	<u>\$254,098</u>

STATE OF ALASKA

DEPARTMENT OF FISH AND GAME

OFFICE OF THE COMMISSIONER

STEVE COWPER, GOVERNOR

P.O. BOX 3-2000
JUNEAU, ALASKA 99802-2000
PHONE: (907) 465-4100

March 7, 1988

MAR - 9 1988

LEGISLATIVE
AUDIT

Mr. Randy S. Welker
Acting Legislative Auditor
Division of Legislative Audit
P.O. Box W
Juneau, AK 99811-3300


Dear Mr. Welker:

Thank you for providing us a copy of your preliminary audit report entitled: "A special Report on the Department of Fish and Game; and the University of Alaska, Management of State Muskoxen, February 10, 1988."

Because this report contains no recommendations we can offer no comments regarding recommendations. It appears that the text of this report is accurate and objective, and that financial information presented is also accurate. I commend you and your staff for this audit report which is concise, accurate and informative.

Thank you again for providing this report for our review.

Sincerely,


Don W. Collinsworth
Commissioner

cc: L. Pamplin
B. Stewart



Brian Rogers
Vice President for Finance
(907) 474-7348

University of Alaska
Fairbanks, Alaska 99775-5260

MAR 23 1988

March 23, 1988

Randy S. Welker
Acting Legislative Auditor
Division of Legislative Audit
P.O. Box W
Juneau, Alaska 99811-3300

Dear Mr. Welker,

Due to his absence from campus, Dr. O'Dowd has asked that I respond on his behalf regarding the copy of your preliminary audit report on:

"A Special Report on the Department of Fish and Game and the University of Alaska, Management of State Muskoxen, February 10, 1988."

The report section dealing with the university fairly presents information provided by the university.

Sincerely,

A handwritten signature in dark ink, appearing to read "B. Rogers".
Brian Rogers

cc: Dr. Williamson, Institute of Arctic Biology