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ELK & GOAT, BISON & MUSK OX

by

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Volume VIII
Annual Project Segment Report
Federal Aid in Wildlife Restoration
Project W-15-R-1, Work Plan P and W-15-R-2, Work Plan Q

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WORK PLAN SEGMENT REPORT

FEDERAL AID IN WILDLIFE RESTORATION

STATE: Alaska

PROJECT NO: W-15-R-1 and 2 TITLE: Big Game Investigations

WORK PLANS: P (W-15-R-1)

AND Q (W-15-R-2) TITLE: Elk and Goat, Bison and Musk Ox

JOBS: P-5, 6, 7 (last six months of Project Segment)

Q-1, 2, 3 (first six months of Project Segment)

PERIOD COVERED: January 1, 1966 to December 31, 1966

ABSTRACT

Elk and Goat

In 1966, 181 hunters harvested 116 elk during a 153 day either-sex season. Males comprised 39 percent of the harvest as compared to 63 percent in 1965. Raspberry Island elk herds contributed 47 percent of the total elk harvested. Composition counts of 938 elk revealed 18 percent calves, 7 percent branched antlered males, and 75 percent females and yearlings. Range studies in the Afognak Lake area showed no appreciable change in willow utilization and trend since 1962.

Goats introduced on Kodiak in 1952-53, have continued to increase but have not established themselves throughout the mountainous habitat on the island.

Bison

A partial count of the Big Delta bison herd revealed 205 animals; 46 or 22.4% were calves. This represents increased production and survival of calves.

Several aerial counts of a separate component of the Big Delta herd that calves along the Tanana River near Healy Lake showed a minimum population of 58 animals in April 1966 and 10 calves-of-the-year on May 23, 1966.

Unusually deep accumulations of snow plus deteriorated range resulted in some mortality probably related to malnutrition. At least 12 animals died in the Delta Junction area.

Calf production and total population estimates were not obtained for the Copper River Valley population. A maximum count of 79 animals was obtained on August 5, 1966.

Musk Oxen Transplant

A transplant attempt was delayed until mid-March 1967.

RECOMMENDATIONS.

Elk and Goat

Present studies indicate the two-elk bag limit should be reduced to one elk on Raspberry Island.

Bison

Annual permit hunts should be held in the Delta Junction and Copper River herd areas. Current surveys indicate that such hunts could be beneficial to the herds.

Musk Ox

Present populations as revealed by U. S. Bureau of Sport Fisheries and Wildlife indicate selective hunting should be implemented.

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Elk and Goat

OBJECTIVES

To determine population levels and trends of elk and goat.

To assess total annual elk mortality, including hunter harvest.

To determine elk range condition and utilization with emphasis on winter-spring use of browse.

TECHNIQUES

1. Elk harvest data including hunting effort, distribution and success were obtained from in-the-field checks and by hunter interviews. 2. Elk jaws were obtained for age classification. 3. Systematic aerial surveys utilizing Piper PA-18 aircraft were conducted on elk and goat ranges to obtain herd size, distribution and sex and age composition. 4. Aerial flights were made of the Afognak and Raspberry Islands coastline in February, to determine areas of winter utilization by elk. These areas were checked on foot in May and June to determine winter mortality. 5. Elk range studies were conducted in the Afognak Lake area utilizing the closest-plant technique.

FINDINGS

Elk Hunter Harvest

In 1966 there was a 153-day either-sex hunting season from August 1 through December 31 allowing a bag limit of two elk on Raspberry Island and Tonki Cape, and one elk in the remainder of Unit 8. During the season 181 hunters harvested 116 elk for a hunter success ratio of approximately 51 percent. Table 1 shows hunter harvest figures on the Afognak Island group from 1957 through 1966.

Table 1. Elk Kills on the Afognak Island Group, 1957-1966.

Year	Kill	Number of Hunters	Percent Success
1957	70	250	28
1958	110	345	32
1959	120	330	36
1960	127	345	37
1961	120	260	46
1962	110	186	59
1963	100	175	55
1964	60	105	57
1965	142	309	46
1966	116	181	51

Composition of the Elk Harvest

Thirty-nine percent of the elk taken in 1966 were males and sixty-one percent were females. The elk jaw sample from the harvest was too small to be representative of the age composition of the harvest.

Distribution of the Elk Harvest by Area

In 1966, the Raspberry Island herd contributed nearly one half of the total harvest of elk. Table 2 shows the harvest by area for the 1963-66 elk seasons. The two-elk bag limit in the Tonki and Raspberry Island areas allowed a total of twenty-two hunters to bag their second elk during 1966. Eighteen of these were from Raspberry Island, and four were from Tonki Cape.

Table 2. Number and Percent of Elk Harvested by Area from 1963 through 1966.

Area	1963		1964		1965		1966	
	No.	%	No.	%	No.	%	No.	%
Raspberry Island	11	13	28	47	64	45	54	47
Malina	29	34	16	27	32	23	9	8
Raspberry Straits Afognak Lake	11	13	12	20	24	17	29	25
Interior	15	18	4	6	6	4	--	--
Tonki Cape	19	22	--	--	16	11	24	21

Chronological Distribution of the Elk Harvest

In 1966, 38 percent of the elk harvest occurred in December. During November and December 63 percent of the harvest took place. Poor weather during September and October prevented early hunting and during August elk remained on alpine range and were unavailable to the hunters. Figure 1 shows the distribution of the kill by month.

Elk Mortality Studies

On April 1, two female elk calves were located that apparently died of diseases associated with malnutrition; one near the beach at Left Cape, and the second at Upper Malina Lake. A third elk still alive but obviously in poor condition was observed and photographed at Lower Malina Lake. On April 3 this mature bull elk was reported dead at Lower Malina Lake by an airplane pilot. Examination of bone marrow indicated the animal died in a condition of stress. On May 4, 1966, an elk carcass was located at A. B. Swartz Lake where a bear had covered it with vegetation and soil, but the head was not present to determine sex and age.

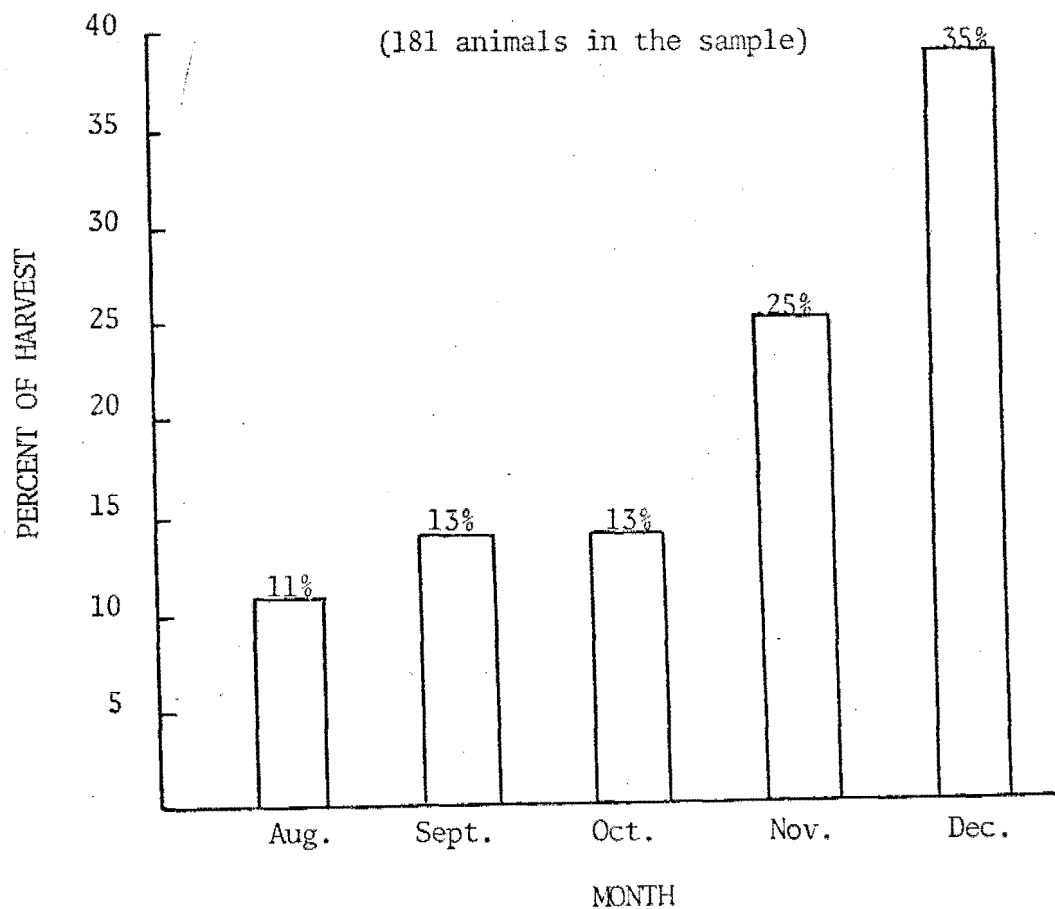
A commercial fisherman reported four elk dead on the beach at Tonki Cape but Department personnel could not locate the carcasses.

Elk Range Studies

The cooperative U. S. Forest Service and Department of Fish and Game winter range evaluation showed seven percent of the willow plants in the Muskomee elk winter range were heavily browsed.

Plant trend was 81 percent progressive and the vigor factor ranged from fair to good.

Figure 1. Chronological Distribution of the 1966 Elk Harvest.



Elderberry plants could not be evaluated because new growth masked the effects of the past winters utilization. Previous elk range studies were conducted in late May. Prior commitments delayed this field trip until June 13.

Elk Composition Counts

The results of August elk composition counts are shown in Table 3. Since it is difficult for observers to distinguish between yearling and adult elk, both male and female yearlings were included with the females during the count.

Table 3. 1966 Elk Composition Counts.

	Total	Branch Antlered Males		Calves		Females (Including Yearling Elk)	
		No.	%	No.	%	No.	%
Raspberry Island	115	1	1	28	24	86	75
Raspberry Straits Afognak Lake	180	21	12	36	20	123	68
Melina	158	9	6	31	20	118	74
Interior	170	26	15	42	25	102	60
Tonki Cape	<u>284</u>	<u>8</u>	<u>3</u>	<u>29</u>	<u>10</u>	<u>247</u>	<u>87</u>
TOTAL	907	65	7	166	18	676	75

Goat Abundance and Distribution

Mountain goats were introduced to Hidden Basin on Kodiak Island from Seward, Anchorage, and the Kenai Peninsula. Nine goats including four adult males, three juvenile males and two adult females were introduced in 1952. One female adult is known to have died at time of release. The following year ten more goats were released including nine adult females and one adult male. One more female goat mortality was found near Larsen Bay in 1953. Table 4 shows the sex, age, date released and tag numbers of each animal.

According to U. S. Fish and Wildlife records, the winter of 1953-54 was quite severe and biologists felt the goats failed to increase. Little effort was made to assess goat populations during the following years until 1962. Table 5 shows the results of population trend surveys from 1956-66. These results indicate the Kodiak goat population has been increasing since 1962.

Goat distribution flights indicate the goats have remained in the mountainous area near the original transplant site, however, reliable residents have reported goats in other areas including the Kaguyak Bay, Red River, Kalsin Bay and Sharatin Mountain.

Goats have been observed in the winter months near Hidden Basin at elevations between 1,200 and 2,500 feet in 1966. The first kids were observed on April 23, 1966 and two sets of twins were tabulated.

Table 4. Sex, Age, Tag Number and Date of Release of Kodiak Goat Transplant.

Date	Number	Age	Sex	Tag Number	Place of Capture
3/2/52	1	Adult	♂	None	Union Bay
3/2/52	1	Juv.	♂	None	Union Bay
4/3/52	1	Adult	♂	104	Union Bay
4/29/52	1	Juv.	♂	204	Union Bay
4/28/52	1	Adult	♀ (died)	205	Union Bay
5/20/52	1	Adult	♂	None	- -
8/15/52	1	Adult	♂	1	Copper Lake
11/10/52	1	Juv.	♂	207	Eagle River
12/9/52	1	Adult	♀	208	Eagle River
3/19/53	1	Adult	♀	101	
3/30/53	1	Adult	♀	209 (pregnant)	
4/4/53	1	Adult	♀	210	
4/14/53	1	Adult	♀	211	
4/14/53	1	Adult	♀	212	
4/7/53	1	Adult	♀	213	
4/7/53	1	Adult	♂	214	
4/11/53	1	Adult	♀	215	
4/11/53	1	Adult	♀	216 (pregnant)	
4/11/53	1	Adult	♀	217	

Table 5. Results of Goat Population Trend Surveys on Kodiak Island, 1965-66.

Year	Total	Adults Percent	Kids Percent
1956	5	---	--
1957	4	2 (50)	2 (50)
1958	6	4 (66)	2 (33)
1959	7	--	--
1960	--	--	--
1961	--	--	--
1962	22	14 (64)	8 (36)
1963	26	18 (68)	8 (32)
1964	26	13 (50)	13 (50)
1965	35	22 (63)	13 (37)
1966	54	38 (71)	16 (29)

Bison

OBJECTIVES

To determine population structure and production, and to implement management of the Big Delta and Copper River bison herds.

TECHNIQUES

Aerial surveys of the three separate herds of bison were made as follows:

Big Delta herd	April 5, July 19, August 2
Healy Lake herd	April 5, May 23
Copper River herd	April 6 and 7, August 5 and 31.

FINDINGS

On April 5 a total of 93 bison were counted in the Big Delta herd. Fifteen of these animals were calves from the previous year. On July 19 another aerial census yielded 103 yearlings or older animals and 35 young calves. On August 2 the herd was censused again by air and 119 yearlings and older animals were counted with 36 young calves. Also on August 2 a census by helicopter revealed an additional 50 animals of which approximately 10 were calves.

On April 5 an aerial census of the Healy Lake herd showed a total of 58 animals of which 15 were calves from the previous year. On May 23 an aerial census revealed approximately 50 animals including approximately 10 young calves.

On April 5 and 6 the Copper River herd including a few animals on the Chitina River were counted by air. The count showed a total of 27 animals on the Copper River, seven of which were calves from the previous year. A total of nine adults were found on the upper Chitina.

On August 5 a State employee doing other work along the Copper River observed approximately 79 bison in the area, approximately seven were calves-of-the-year. Another aerial census on August 31 showed only 15 animals of which five were calves-of-the-year.

Table 1. 1966 Calf Production Counts.

Area and Herd	Method of Count	Date 1966	Total Number Bison Observed	Yearlings or Older	Calves	Percent Calves In the Total Number Observed
Big Delta Herd - Delta River	Aircraft	April 5	93	78	15*	
"	"	July 19	138	103	35	
"	"	August 2	205	159	46	22.4
Healy Lake Herd	"	April 5	58	43	15*	
"	"	May 23	50	40	10	20
Copper River Herd	"	April 6 & 7	27	20	7*	
"	"	August 5	79	72	7	
"	"	August 31	15	10	5	
Chitina River	"	April 6 & 7	9	9	0	

* Calves born in 1965.

Table 2. 1965 Calf Production Counts.

Area and Herd	Method of Count	Date 1965	Total Number Bison Observed	Yearlings or Older	Calves	Percent Calves In the Total Number Observed
Big Delta Herd - Delta River	Aircraft	June 29	185	152	33	17.8
"	"	July 26	180	142	38	21.1
"	Ground	July 29	14	10	4	28.6
"	"	August 3	42	28	12	28.6
"	"	August 9	10	8	2	20.0
Copper River Herd - Dadina River	Aircraft	July 2	84	65	19	22.6
Copper River Herd - Copper River	"	September 24	71	58	13	18.3
"	Ground	July 22	6	5	1	16.7

Table 3. 1964 Calf Production Counts.

Area and Herd	Date 1964	Total Number Bison Observed	Adults	Calves	Percent Calves In the Total Number Observed
Healy Lake Herd - Tanana River	June 2	63	48	15	24
Big Delta Herd - Delta River	June 3	149	121	28	19
Big Delta Herd - Delta River and Jarvis Creek	July 28 and August	265	221	44	17
Copper River Herd - Dadina River	July 29	97	80	17	17.5
Chitina River Herd - Chitina River	July 30	12	7	5	42

Musk Ox

OBJECTIVES

To make an experimental release of up to 30 musk oxen on Nelson Island.

PROCEDURES

One trip was made to Nunivak Island in November 1966 to determine the feasibility of capturing and transporting musk oxen to Nelson Island. Cost analysis and capture technique studies are being completed.

FINDINGS

(Incomplete)

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