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ELK AND BISON REPORT

by

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Volume IV
Annual Project Segment Report
Federal Aid in Wildlife Restoration
Project W-6-R-4, Work Plan D

The subject matter contained within these reports is often fragmentary in nature and the findings may not be conclusive; consequently, permission to publish the contents is withheld pending permission of the Department of Fish and Game.

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FEDERAL AID IN WILDLIFE RESTORATION

STATE: Alaska

PROJECT NO.: W-6-R-4 TITLE: Alaska Wildlife Investigations

WORK PLAN: D TITLE: Elk and Bison Investigations

JOB NOS.: 1-a,b,c

PERIOD COVERED: July 1, 1962 to June 30, 1963

ABSTRACT

Herd Composition, Distribution and Productivity

Composition counts made of three elk herds during 1962 yielded a total of 452 animals that were classified as to sex and age categories. Of these, 255 (56%) were cows, 56 (12%) were spikes, 43 (10%) were branched antlered bulls, and 98 (22%) were calves.

Of 255 cows observed during composition counts 38 per cent produced calves during 1962. This represents a significant gain in production over the figure obtained for the previous year.

The bull/cow ratio varied from a low of 13:100 to a high of 73:100 for the three herds observed, with an average of 39 bulls per 100 cows for all herds.

Periodic aerial surveys were again flown the last two weeks of May and the first ten days of June as a means of assessing the magnitude and progression of calving. Results of these surveys proved inconclusive.

Hunter Harvest

One hundred and eighty-five hunters were afield during the 1962 elk season and harvested 110 animals for a success of 59 per cent. While the number of hunters afield has exhibited a steady decline the past four years, hunter success has shown a marked increase over the same period.

Range Studies

No utilization transects were installed on the Litnik Lake winter range during 1963 due to a lack of elk using this range. Results of an extensive survey of key browse stands in this area revealed that little or no measurable utilization by elk had occurred during the winter-spring period of 1962-63.

RECOMMENDATIONS

Data regarding population levels and trends, productivity, mortality, hunter harvest and range use should be gathered and evaluated on an annual basis.

WORK PLAN SEGMENT REPORT
FEDERAL AID IN WILDLIFE RESTORATION

STATE: Alaska

PROJECT NO.: W-6-R-4 TITLE: Alaska Wildlife Investigations

WORK PLAN: D TITLE: Elk Management Investigations

JOB NOS.: 1-a,b,c

PERIOD COVERED: July 1, 1962 to June 30, 1963

OBJECTIVES

To determine numbers, sex and age structure, mortality, productivity, character of the harvest and population trends of Roosevelt elk on Afognak and adjacent Islands. To assess the relative degree of utilization of key browse species by elk with emphasis on winter-spring browse removal. To evaluate changes in browse vigor and trend as influenced by existing elk herds in the Litnik Lake winter range.

TECHNIQUES

During July and August ground surveys were conducted to determine the location, sex and age structure, and numbers of animals in each of the recognizable herds inhabiting the Afognak Island Group.

In conjunction with Work Plan N-1 (Experimental Elk Introductions) periodic aerial surveys were flown the last two weeks of May and the first ten days of June as a means of locating calves for capture as well as assessing the magnitude and progression of calving.

Hunter harvest data were obtained from in-the-field checks, distributed harvest forms and hunter interviews. Data relating to hunting effort, success and distribution were gathered for evaluation. Elk jaws were collected from hunters and analyzed as a means of obtaining data relevant to the age structure of Afognak elk herds.

Range study methods employed include evaluation of browse vigor, trend and utilization. A modification of the "closet

plant" technique of determining vigor, trend and utilization, developed and implemented in the spring of 1962 as a means of assessing range health, was used in 1963.

FINDINGS

Herd Composition, Distribution and Productivity

Composition data for Afognak elk herds are summarized in Table 1. Four hundred and fifty-two elk were categorized according to sex and age class during 1962. Of these, 152 were recorded in the Malina Lakes area, 190 on Raspberry Island and 110 on Tonki Cape. Counts of the Raspberry Strait (Afognak side) and interior Afognak herds were not obtained during 1962 due to a variety of factors which prohibited the gathering of these data. Sex and age ratio data calculated from 1962 observations are presented in Table 1.

Malina Lakes Area: A total of 13 bulls per 100 cows was recorded for the Malina herd during 1962. This figure continues to represent the lowest such ratio recorded for any single herd observed. Of 152 animals classified, cows accounted for 70 per cent, branched antlered bulls for a 2 per cent, spikes for 7 per cent, and calves for 21 per cent. A calf/cow ratio of 23:100 recorded in 1961 increased to 30:100 during 1962.

Raspberry Island: The 190 animals classified on this island during 1962 consisted of 51 per cent cows, 12 per cent branched antlered bulls, 13 per cent spikes, and 24 per cent calves. A bull/cow ratio of 48:100 and a calf/cow ratio of 47:100 were recorded for this herd. Productivity, expressed as the number of calves per 100 cows, increased from 29:100 in 1961 to 47:100 in 1962. This represents a gain of 38 per cent over the 1961 figure.

Tonki Cape: Initial composition counts of a portion of the Tonki Cape herd were obtained during the summer of 1962. These counts revealed a bull/cow ratio of 73:100, the highest recorded for any herd assessed during the year, and a calf/cow ratio of 38:100.

Of the 110 animals classified in this region, 47 per cent were cows, 16 per cent were bulls, 19 per cent were spikes and 18 per cent were calves.

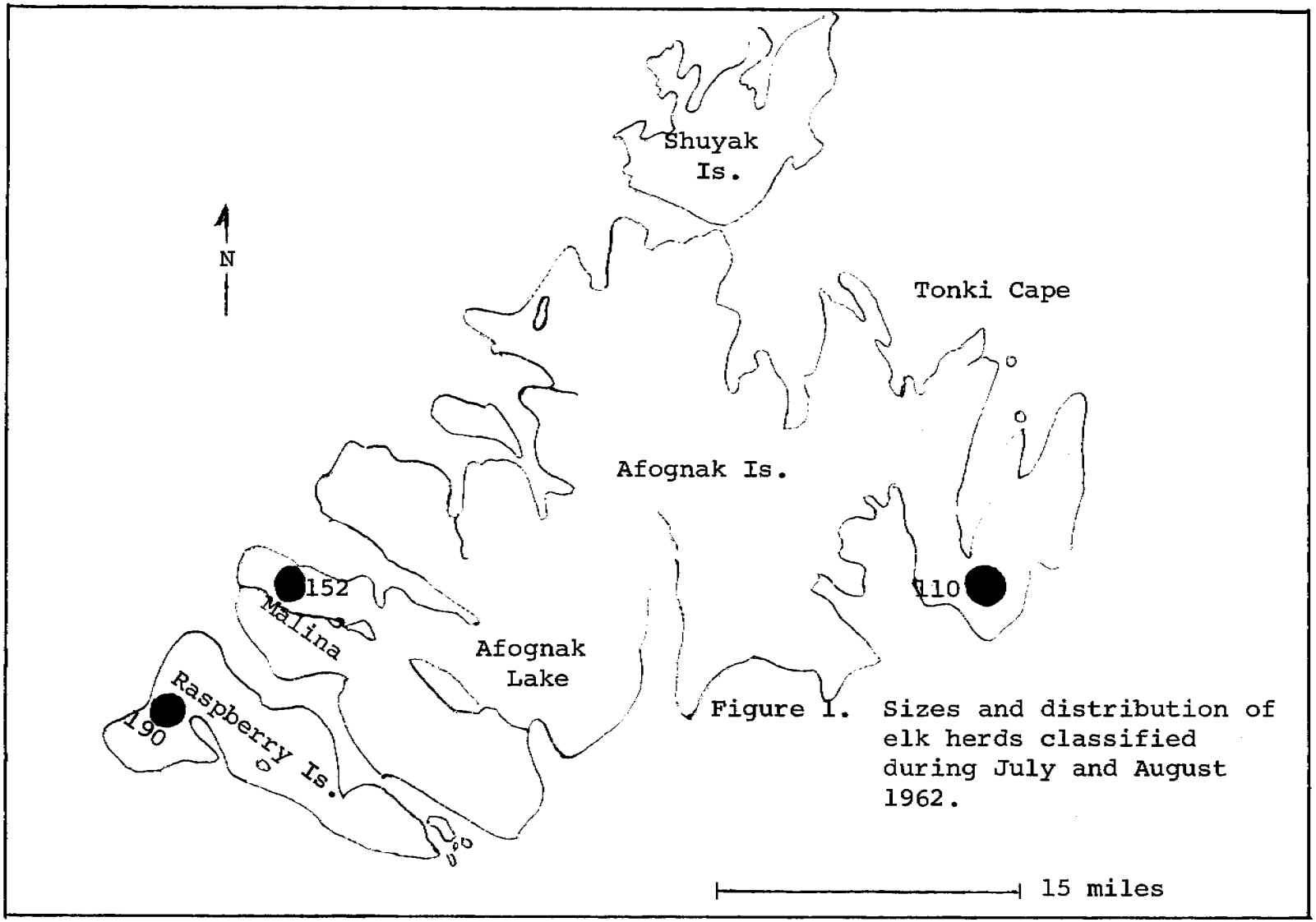


Figure 1. Sizes and distribution of elk herds classified during July and August 1962.

Table 1. Summary of elk population composition counts, July - August 1962.

Area	Total Elk Classified	Spikes No.	Spikes %	Branched Antlered Bulls No.	Branched Antlered Bulls %	Total Bulls No.	Total Bulls %	Cows No.	Cows %	Calves No.	Calves %	Bulls / 100 Cows	Calves / 100 Cows
Malina	152	11	7	3	2	14	9	106	70	32	21	13	30
Raspberry Island	190	24	13	23	12	47	25	97	51	46	24	48	47
Tonki Cape	110	21	19	17	16	38	35	52	47	20	18	73	38
Totals	452	56	12	43	10	99	22	255	56	98	22	39	38

Summation of All Areas: On three ranges examined for animal composition purposes in the summer of 1962, 452 animals were classified. They consisted of 56 per cent cows, 12 per cent spikes, 10 per cent branched antlered bulls and 22 per cent calves.

The yearling segment for both sexes is derived by doubling that given for spikes. This would assign 24 per cent as the yearling population and would subsequently reduce the mature cow population by half this figure to 44 per cent. Assessment of all cows and calves observed during the summer yielded a total of 255 cows and 98 calves. These figures indicate that 38 per cent of all cows (including yearlings) produced calves during 1962. Allowing for a reasonable degree of postnatal mortality among the calf crop prior to composition counts, it would seem safe to suggest this percentage might even be higher. The ratio of 38 calves per 100 cows obtained during 1962 represents an increase of 32 per cent over figures for 1961.

Calving

For the second year periodic aerial surveys were flown the last two weeks of May and the first ten days of June in an attempt to assess the magnitude and progression of calving. Results of these aerial surveys again proved inconclusive, for no calves were observed prior to June 8; however, other data indicate that the calving period extends from about May 15 to June 10 with a peak occurring between May 20-25.

Mortality

No case of elk mortality, other than hunter harvest, has been recorded for herds inhabiting Raspberry and Afognak Islands during the period covered by this report. Observations made since 1960 continue to lead the writer to believe that any mortality occurring at this time or in the recent past is of little significance to the well-being of the Afognak elk.

Estimation of Current Populations

No significant changes in the population of approximately 1,100 animals have occurred within the past year. A discussion regarding the status of the current population can be found in last year's segment report.

Characteristics of the Hunter Harvest

Sex Breakdown of the Kill: The total harvest for 1962 was 110 animals of which 53 (48%) were bulls, 40 (37%) were cows, 9 (8%) were calves and 8 (7%) were unidentified animals.

Age Distribution of the Kill: The distribution by age of a segment of the 1962 harvest is presented in Table 2. This distribution is based on a sample of 57 jaws collected throughout the season which represents 52 per cent of the total harvest. Twenty-nine of the jaws were collected from bull kills and 28 from cows.

Female Age Distribution: Twenty-eight jaws collected from females harvested during the season represent 70 per cent of the total legal cow kill for 1962. The age ratio for this sample is presented in Table 2.

The rather high occurrence of old-aged females (64 per cent of the female jaws collected were from animals 3.5 years and older) in the harvest continues to point to a differential age ratio existing between male and female segments of the population as a whole. However, since the inception of either-sex seasons this differential appears to be lessening as evidenced by the continued decrease of females 4.5 years or older. This figure dropped to 47 per cent in 1960, 35 per cent in 1961 and to 28 per cent in 1962.

Male Age Distribution: The distribution by age class of bull elk harvested during 1962 as determined through jaw analysis is presented in Table 2.

Animals in the 2.5 year class continue to lead all other age groups in the harvest, accounting for 34 per cent of the sample. The harvest of yearling males closely follows that of the 2.5 year class with 32 per cent of the sample. Unlike the female segment, males comprising age classes 3.5 years or older accounted for only 14 per cent of the sample.

Distribution of the Kill by Area: The 1962 harvest by area is shown in Table 3. The Malina Lakes and Raspberry Strait-Afognak Lake herds continue to sustain the heaviest kill of any herds, accounting for 66 per cent of the total harvest. Raspberry Island, presently supporting the largest single herd, experienced a harvest of 28 animals for 25 per cent of the kill. Tonki Cape and interior Afognak continue to be under-harvested with only 9 per cent of the harvest

Table 2. Comparison of the age distribution of a sample of male and female elk harvested in 1962.

Age	Males		Females	
	Per cent	No. of Jaws Represented	Per cent	No. of Jaws Represented
0.5 Year	20		14	
1.5 Year	32		11	
2.5 Year	34		11	
3.5 Year	7		36	
4.5 Year and over	7		28	
	100	29	100	28

Table 3. Distribution of the 1962 elk harvest by area.

Area	No. Harvested	Per Cent
Raspberry Island	28	25
Afognak Island		
Malina	38	35
Raspberry Strait-Afognak Lake	33	31
Interior	5	4
Tonki Cape	6	5
	110	100

occurring in these areas during 1962.

Chronological Distribution of the Harvest: Distribution of the harvest by 15 day periods is presented graphically in Figure 2. As can be noted from this figure, a peak in the harvest occurred during the month of October when 43 per cent of the kill was attained. A thirty day extension of the regular season (November 16 through December 15) accounted for a kill of 18 per cent of the 1962 harvest. This marks the first occasion a significant number of animals has been removed during either an extended or special season.

Hunter Harvest: The elk season in the Afognak Island Group for 1962 occurred from August 1 to November 15 with a thirty day extension through December 15. The bag limit for all areas was one animal of either sex.

One hundred and eighty-five hunters were afield during the 1962 season and harvested 110 elk for a success of 59 per cent, the highest success yet attained. The annual harvest the past five years has remained relatively constant, between 110 and 127 animals; however, while the number of hunters afield has exhibited a steady decline, the hunter success has shown a marked increase over the same period.

Weather throughout the season continues to be a major factor governing the success of the Afognak elk harvest.

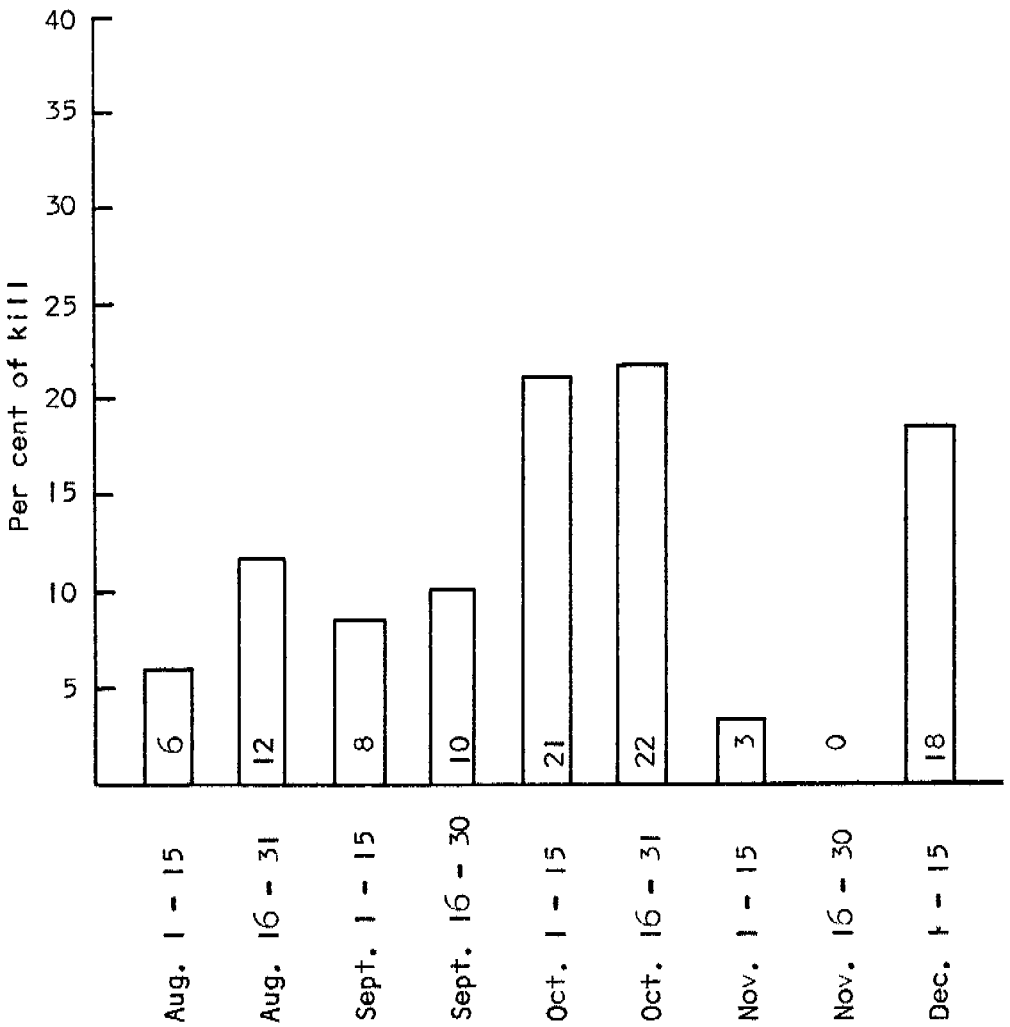
Litnik Lake Range Studies - 1963

During the winter-spring months of 1963 Afognak elk herds were observed to use a variety of wintering grounds widely scattered throughout their range. Light snowfall and mild temperatures during this period provided little restriction to their movements.

Malina and Raspberry Strait elk herds which normally spend all or a portion of the winter and spring months on the Litnik Lake range were never observed to move onto this range during the 1962-63 winter. This marks the first occasion in several years that neither herd moved onto the Litnik Lake wintering grounds.

The lack of elk wintering in the Litnik Lake range was reflected by no measurable utilization of key browse species during the past winter-spring months. Results of an extensive

Figure 2. Chronological distribution of the 1962 elk harvest by 15 day periods.



survey of key Sambucus and Salix stands conducted by personnel of the Forest Service and Game Division in May failed to reveal any signs of browse removal by elk during the past winter. As a result of this apparent lack of browse removal in the Litnik Lake area no utilization transects were installed during 1963 as previously planned.

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WORK PLAN SEGMENT REPORT
FEDERAL AID IN WILDLIFE RESTORATION

STATE: Alaska

PROJECT NO.: W-6-R-4 TITLE: Alaska Wildlife Investigations

WORK PLAN: D TITLE: Elk and Bison Investigations

JOB NO.: 2

PERIOD COVERED: July 1, 1962 to June 30, 1963

ABSTRACT

The main portion of the Big Delta herd remained on the Delta River during July and moved into the Fort Greely area in August.

No observations were made of the movements and distribution of the Nabesna herd.

The segments of the project to determine size of the bison herds and to implement management were inactive during this period.

RECOMMENDATIONS

No recommendations pertaining to management can be made at this time.

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FEDERAL AID IN WILDLIFE RESTORATION

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JOB NO.: 2

PERIOD COVERED: July 1, 1962 to June 30, 1963

OBJECTIVES

To determine the current size and population structure of the Big Delta and Nabesna herds.

To determine herd distribution and movements during the year.

To implement management of the bison herds.

TECHNIQUES

No surveys were performed to determine the size of the bison herds. The necessary surveys will be performed after the 1963 calving season and reported in Project W-6-R-5.

Air and ground surveys were conducted in July and August to determine distribution and movements of the Big Delta herd. No surveys were made of the Nabesna herd.

Management was not implemented.

FINDINGS

Movement and Distribution

The main portion of the Big Delta herd remained on the Delta River above Donnelly Dome from May until the first few days of August, at which time they moved down the river to the area around Fort Greely. Approximately 75 were captured one mile north of the Sawmill Range on August 10.

Very few animals frequented the Clearwater agricultural area. Miscellaneous reports and observations indicated that the fall, winter, and spring movements did not vary significantly from the movements reported in W-6-R-2, Volume II, No. 4:12.

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