Didrickson

ALASKA DEPARTMENT OF FISH & GAME

1960-61 Pittman-Robertson Project Report

DIVISION OF GAME

VOLUME II, No. 7

Fur Mammal Investigations
Snowshoe Hare Investigations
Wildlife Reconnaissance

Work Plans G, H, and L-1

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FUR MAMMAL, SNOWSHOE HARE INVESTIGATIONS & WILDLIFE RECONNAISSANCE

Photo # 1

Analysis of fur export permits shows about 19,000 mink shipped out of Alaska. The export permit regulation and the permit form itself are being revised to furnish more accurate information on the total and regional harvest of mink. (Photo by U. S. Fish & Wildlife Service)

Photo # 2

Beaver sealing program, which gives us accurate figures, indicates about 25,000 beaver taken annually. (Photo by David Klein)

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Reports of Investigations

Volume II, Number 7 1960-1961

ANNUAL REPORT OF PROGRESS, 1960-1961

FEDERAL AID IN WILDLIFE RESTORATION PROJECT W-6-R-2

GAME INVESTIGATIONS OF ALASKA

STATE OF ALASKA

William A. Egan, Governor

Alaska Department of Fish and Game

Clarence L. Anderson, Commissioner

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ANNUAL REPORT OF PROGRESS
INVESTIGATIONS PROJECT
COMPLETION OF 1960-61 SEGMENT

State: Alaska

Project No: W-6-R-2 Name: Alaska Wildlife Investigations

Work Plan: G Fur Mammal Investigations

Job No: 1 Title: Pelt Primeness Study

PERIOD COVERED: October 1, 1960 to June 30, 1961

ABSTRACT:

Pelts of 121 mink trapped between the dates of November 22, 1960, and January 25, 1961, were compared with 48 mink pelts collected between November 21, 1959, and January 27, 1960. The comparison shows that mink became prime in Southeast Alaska from two to three weeks later in the fall of 1960 than they did in 1959. A higher proportion of juveniles than adults were unprime.

Carcasses of mink were examined for occurrence of parasites, and the findings appear in W-6-R-2, Job M-1.

Thirty-two marten trapped during the study were all prime. Of 16 otter trapped during the study, only one was graded as "too early."

OBJECTIVES:

To determine by area when fur animals are prime and of maximum market value.

TECHNIQUES:

Contracts were made with four trappers to trap mink, otter, and marten, in order of priority listed, for the period from November 20, 1960, through January 25, 1961. Sampling was done in the vicinity of Petersburg by Fred McGilton, Point Baker by Herbert Zieske, Ketchikan by John O'Brien, and Craig by Greg Johns.

The trapping season was opened by emergency regulation on December 15, 1960, at which time the Craig trapper asked to be released from his contract. Nineteen mink pelts taken after December from the Point Baker area were lost in the mail.

Trappers were instructed to collect five mink, five marten, and three otter each week. The location and date of capture for each specimen were recorded. The skulls, the bacula of males, and the femurs were saved whenever possible and used for age determination. Age was determined for 73 per cent of the samples at Petersburg, 93 per cent at Point Baker, 63 per cent at Ketchikan, and 18 per cent at Craig. Whenever possible carcasses were saved and examined for incidence of parasitism by Kenneth Neiland, Alaska Department of Fish and Game Parasitologist.

Pelts of marten and otter were graded exclusively by the Seattle Fur Exchange.

Mink pelts were graded as "Prime" or as having been taken "Too Early" and "Too Late" by the following parties: the Seattle Fur Exchange; James Leekley, Director of the Alaska Experimental Fur Farm at Petersburg and Ingwald Nore, mink rancher and one time fur buyer from Wrangell; and Loren Croxton and Paul Garceau, Alaska Department of Fish and Game Biologists.

FINDINGS:

With the exception of one otter taken too early, marten and otter were prime throughout the study period.

A difference of opinion between one or more graders existed on 28 or 62 per cent of mink pelts classed as "Too Early." In 11 instances or 24 per cent at least two of the

grading parties were in agreement but in 17 instances or 37 per cent there was no agreement. All other pelts classed as "Too Early" were agreed upon by each of the graders. Figure 1 shows the per cent of mink taken too early in the combined sample by ten day periods as graded by each of the three parties.

Mink pelts taken too late were subject to the most controversy by the graders. Nineteen out of 121 pelts were classified as having been taken too late. In only one instance did two of the three grading parties classify the same animal as having been taken too late.

In this study "Too Late" grades of mink are erratic and their value as a basis for determining the time when pelts are past their prime is questionable. Figure 2 illustrates the inconsistency of the "Too Late" grades.

Disagreement on "Too Early" grades between grading parties indicates a lack of standardization in determining pelt classification. Pelts are graded by two characters: the leather and the fur. Primeness of leather is determined by color. An unprime or "Too Early" pelt has blackish or dark leather. As the pelt becomes prime the leather thickens and looses its pigmentation until it is light or cream colored. The tail is the last portion to become prime since primeness progresses from the head to the tail. Varying degrees of dark coloration persist on tails of pelts graded as "Prime" and "Too Early." In these instances the party grading a pelt decides the grade from the fur quality. Grading techniques are described in W-6-R-1, Job G-1, Part I and Part II. If the grader believes that the fur has reached its peak in quality, the pelt will be classed as "Prime." Otherwise the grade will be "Too Early." It is here that variations between grading parties originate. Professional graders such as those working at the Seattle Fur Exchange undoubtedly use some standard as a basis for grading. These criteria are unknown to this writer.

Studies at Petersburg showed that mink became prime earlier in 1959 than they did in 1960 (W-6-R-1, Job G-1, Part II). Figure 3 shows the percentage of mink taken "Too Early" and "Slightly Early" in 1959 as compared with "Too Early" pelts taken in 1960 at Petersburg. Grades are by the Seattle Fur Exchange. In 1960 no pelts were graded "Slightly Early."

Figure 1. Per cent mink pelts taken too early in Southeastern Alaska, 1960-61.

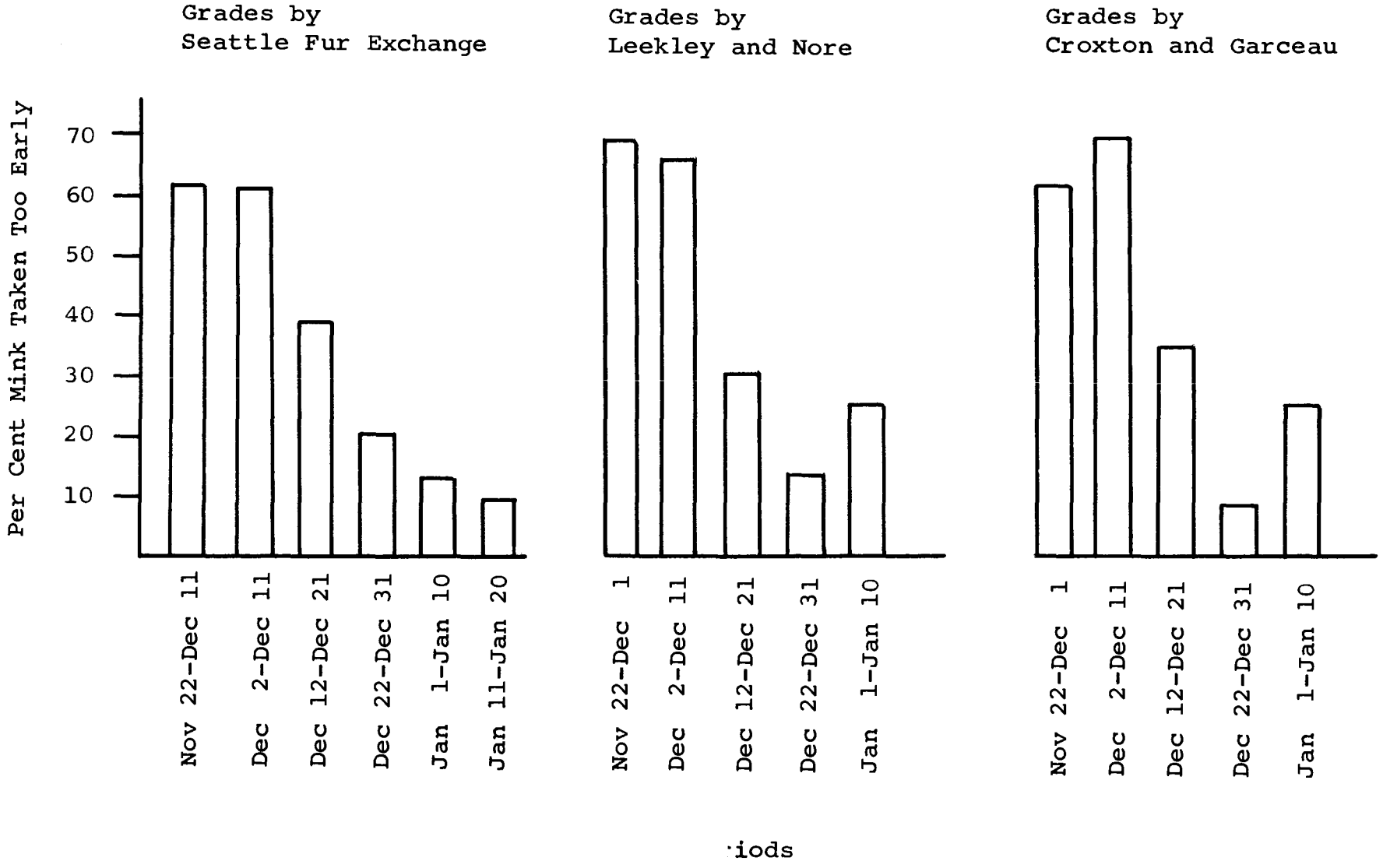


Figure 2. Per cent mink pelts taken too late in Southeastern Alaska, 1960-61.

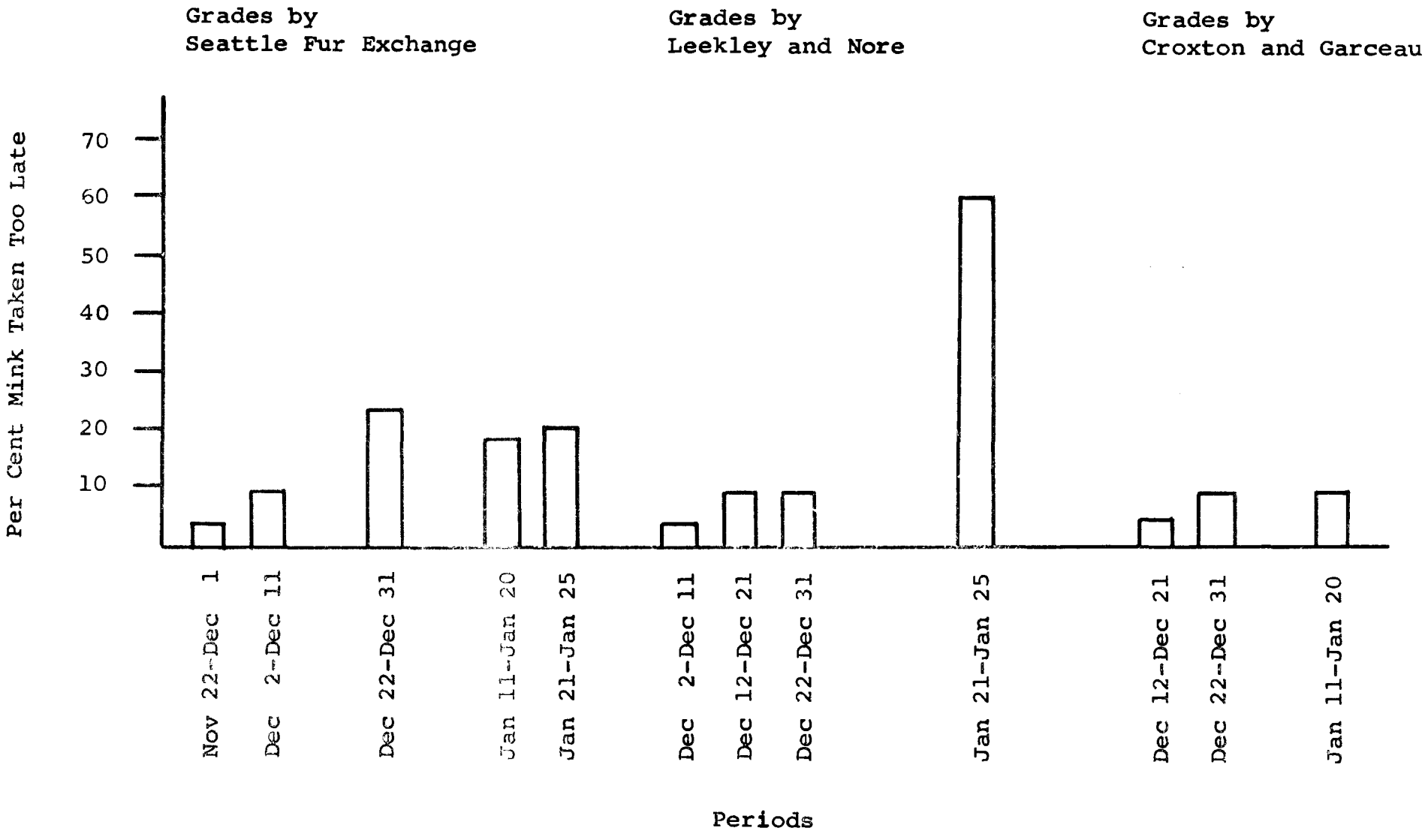


Figure 3. Mink taken too early in the Petersburg area during 1959-60 and 1960-61.

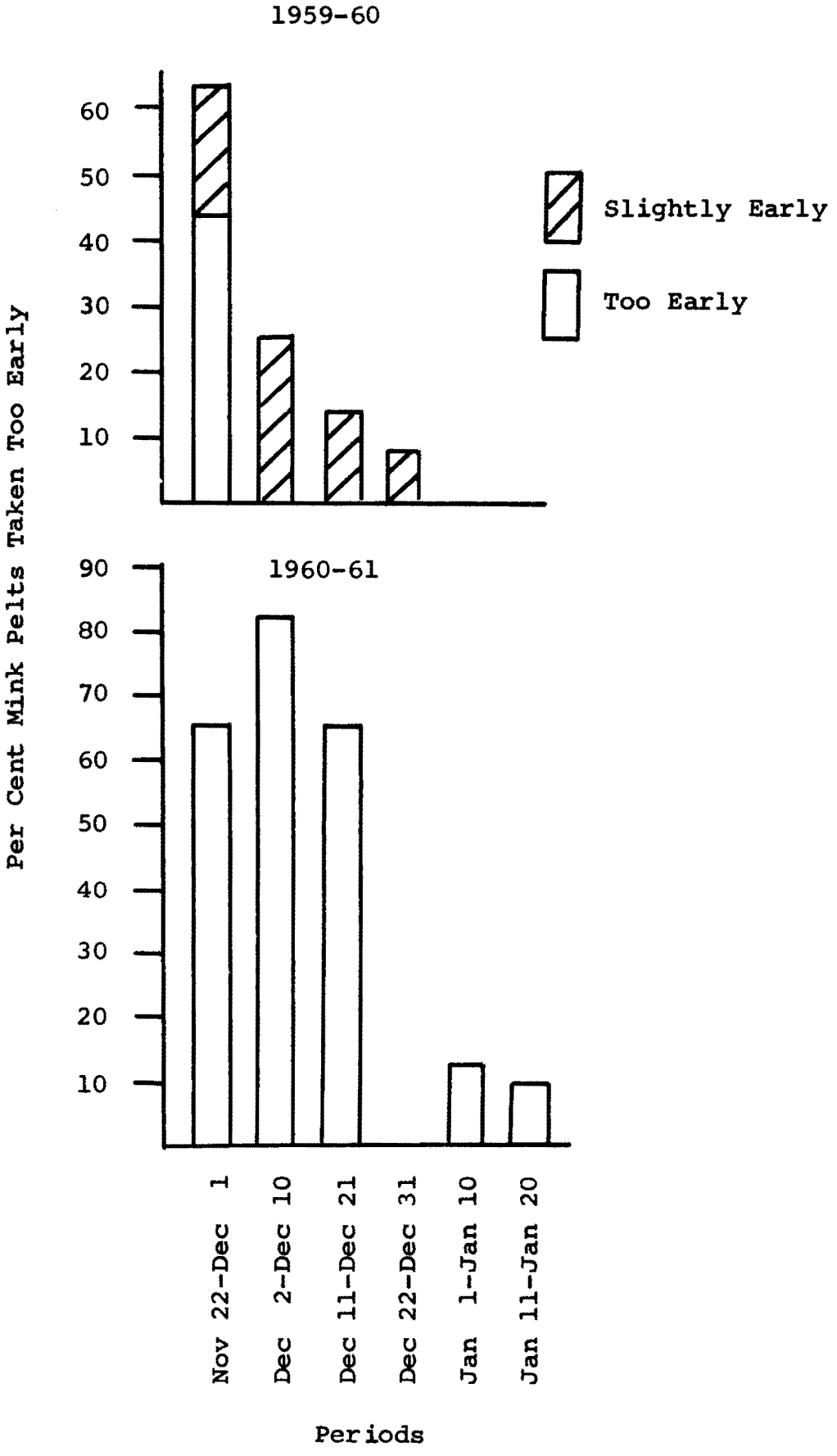


Figure 4 shows a comparison of the combined Point Baker and Petersburg samples together comprising the northernmost segment of the area sampled with the combined Craig and Ketchikan sample, which make up the southern portion of the sampled area. Grades are by the Seattle Fur Exchange. Slight differences that show in timing of primeness between areas are probably due in part to the small size of the sample and the varying proportions of juveniles to adults.

The proportions of juveniles to adults in the sample has significance because juveniles become prime at a later date than do adults. Figure 5 illustrates the large proportion of adults that were unprime in the combined aged samples as graded by each of the three grading parties.

CONCLUSIONS:

Marten and otter were prime throughout the sampling period according to the grades by the Seattle Fur Exchange.

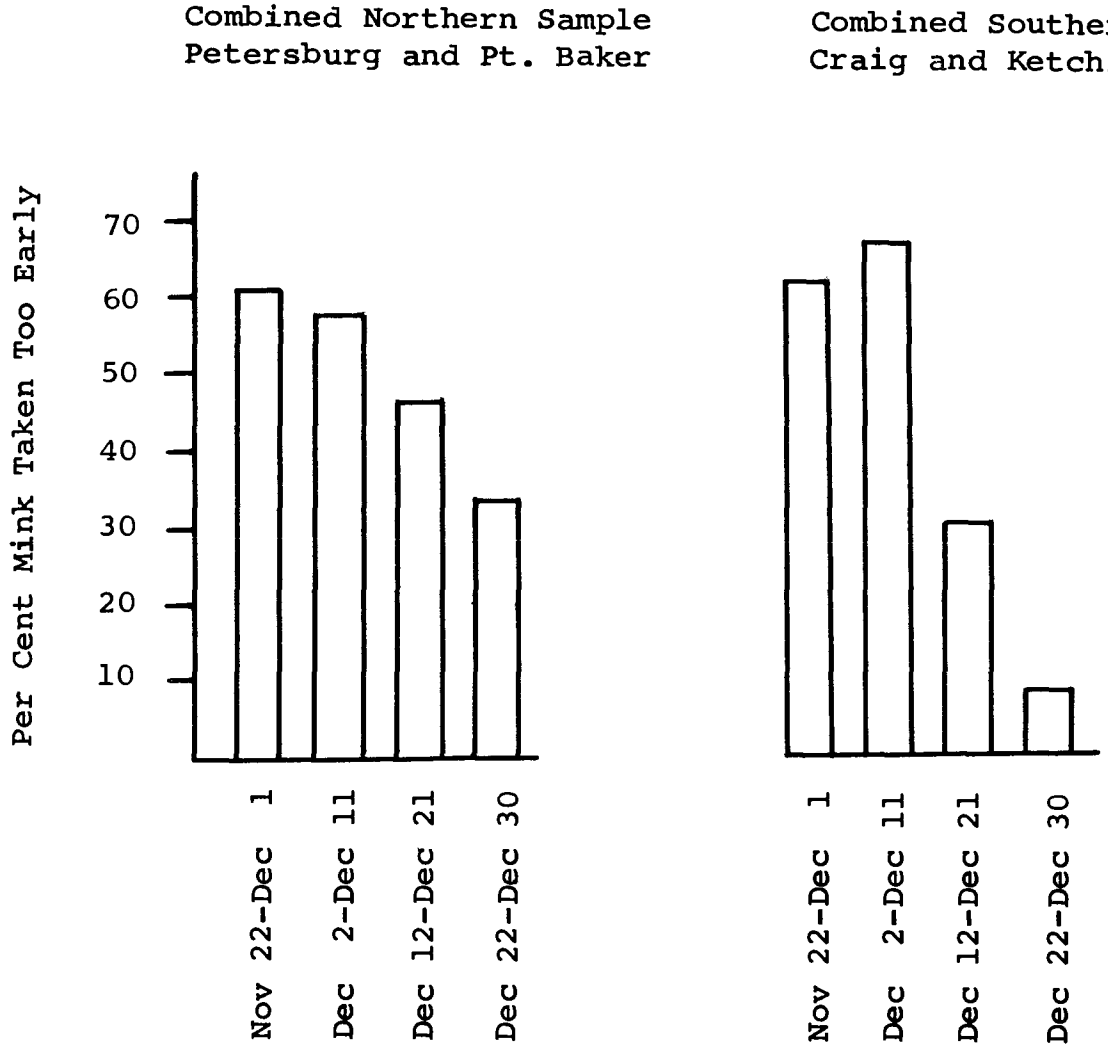
Prior to December 21, 1960, over 60 per cent of the mink sampled were unprime. Generally less than 25 per cent were unprime after December 21.

The age composition of the mink population has a bearing on the per cent of mink that are unprime at specific times. More than twice as many juveniles as adults were unprime during the early portion of the season. Ideally, the opening of the trapping season should be governed by a knowledge of the age structure of the mink population since this is an important factor in the primeness of the catch. In 1959 the trapping season should have started on December 1, and in 1960 it should have begun on December 20.

The sample of 121 pelts is too small to reliably show differences, if there exist, in timing of primeness between sexes. In future studies a larger sample of mink should be taken. A more widely distributed sample is needed to define differences between locations. Mink should be trapped from areas north of Petersburg, as well as south of Petersburg in future studies.

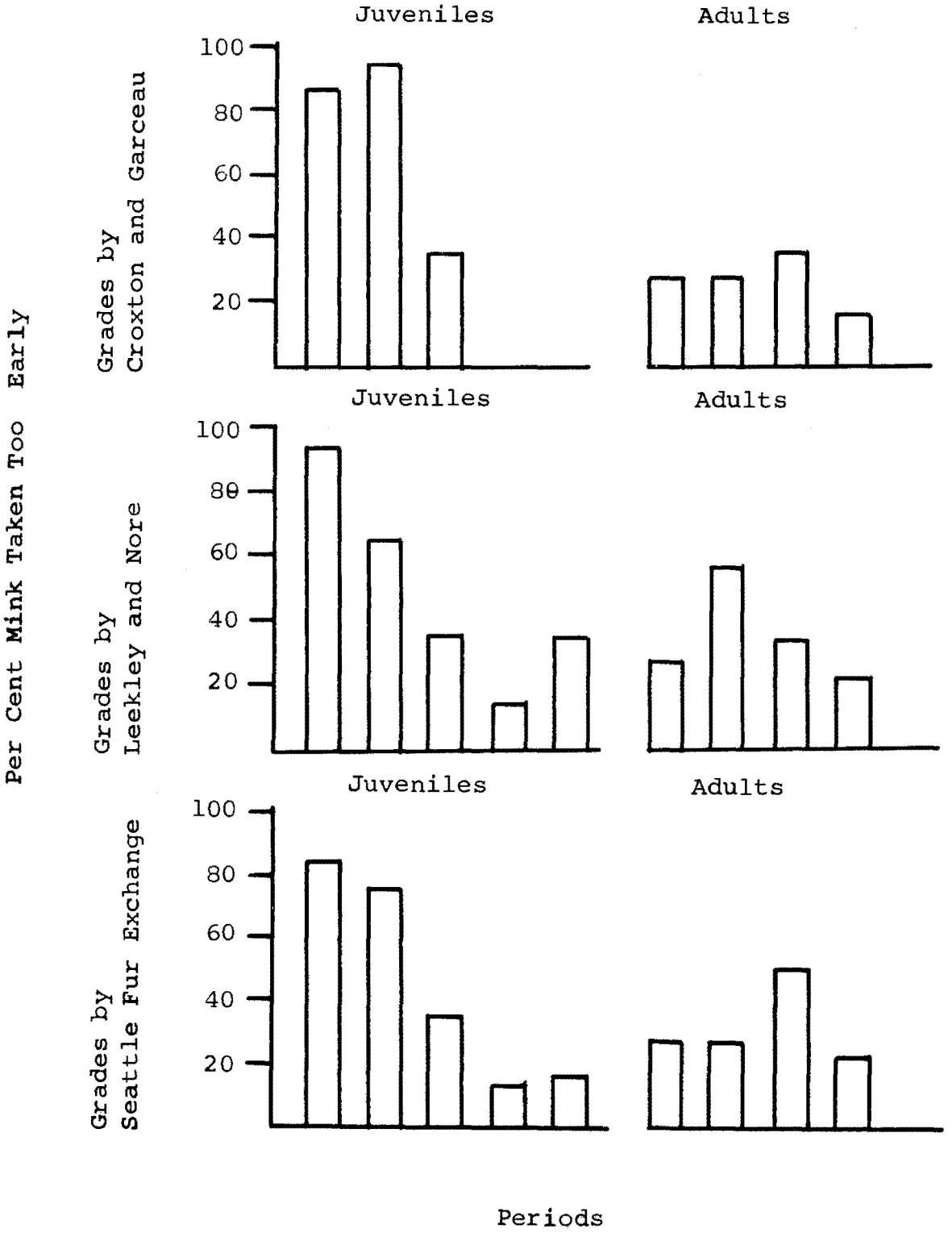
Temperature may influence the timing of mink primeness. In the Petersburg area temperatures below freezing were more

Figure 4. A comparison of percents of mink taken too early in the northern and southern areas sampled.*



* Grades by the Seattle Fur Exchange

Figure 5. Per cent of juvenile and adult mink taken too early in Southeastern Alaska, 1960-61



common before the 1959-60 season than prior to the 1960-61 season. In Southeastern Alaska temperatures below freezing usually accompany clear sunny weather. Light intensities are greatest during the cold periods. The suggested influence of temperatures may be the direct result of the role certain units of light play in the timing of pelt primeness. A comprehensive investigation of these environmental influences is needed in future studies.

Grades on many pelts vary among graders. Grading done by professionals who work at places like the Seattle Fur Exchange are probably the most reliable.

RECOMMENDATIONS:

Persons engaged in pelt primeness investigations should study methods of grading under the guidance of professionals to better evaluate data and specimen material. The pelt primeness study should be continued to gather sufficient data to clarify relationships existing between the environment and priming of fur.

SUBMITTED BY:

Paul Garceau
Game Biologist
June 30, 1961

APPROVED BY:

David R. Klein
P-R Coordinator

James W. Brooks, Director
Division of Game

Volume 2 Report No. G-2

ANNUAL REPORT OF PROGRESS
INVESTIGATIONS PROJECT
COMPLETION OF 1959-1960 SEGMENT

State: Alaska

Project No: W-6-R-2 Name: Alaska Wildlife Investigations

Work Plan: G Fur Mammal Investigations

Job No: 2 Title: Beaver Management Investigations

PERIOD COVERED: September 15 to October 31, 1960

ABSTRACT:

Two methods were employed in order to evaluate beaver population levels and trends. One was aerial counts of winter food caches and the other was an analysis of harvest affidavits. The aerial counts were made in Game Management Unit 24; the Koyukuk River drainage, and harvest affidavits were analyzed for the entire State. The type of aircraft used appears to have a direct relation to the number of caches counted as indicated when comparing years 1957 and 1959 as against 1958 and 1960. Most management units are being cropped in a satisfactory manner with two exceptions; Units 3 and 14 where relative abundance is poor. Aerial counts should be conducted in the other major producing Units to supplement the affidavit analysis.

OBJECTIVES:

1. To establish beaver population levels and trends.

2. To establish additional new transects and check areas where previous investigations have indicated the need.

PROCEDURE:

Two methods were employed to provide a basis for estimating beaver populations and trends. One method utilizes an aircraft to make counts of food caches on established check areas and transects, and the other is the analysis of beaver harvest affidavits submitted by the trappers.

Harvest affidavits were submitted to Juneau, the data was placed on IBM cards and the following information extracted: the total take of beaver, total number of trappers, and the number taken per size group (kits, yearlings, and adults).

Aerial counts were made in late fall along the Chatanika River and in Game Management Unit 24. These surveys were flown, as nearly as was possible, in a similar manner. The speed of the aircraft was kept as low as was possible within safety limits (from 80 to 90 mph in a Cessna 180, and 60 to 70 mph in a Super Cub) and at an altitude of approximately 500 feet above the terrain. Fresh winter food caches within one fourth mile of each side of the airplane were counted and recorded.

FINDINGS:

The technique utilized of counting fresh winter food caches as an index to active beaver colonies is one that must be accomplished during a short period in the fall. Counts made too early will miss some of the smaller unfinished caches and later, after freezeup and snow coverage, many will be unobserved. Therefore, the most suitable period is the last few days of September and the first week of October.

Our plans this year to increase the scope of this project to other areas was precluded by three factors: the lack of equipment, personnel, and time.

The Chatanika River check area was flown by Wallace Bentley and Peter E. K. Shepherd in a Department Super Cub. A Cessna 180 was chartered for the flying in Management Unit 24 and was flown by Joseph D. Lanni and Robert A. Rausch. The work in Unit 24 could not be completed due to inclement weather.

The results of the flying accomplished is presented in Table 1. As can be seen from the results, all areas of Unit 24 flown show a decrease in numbers of active colonies as compared to 1959. This decrease I feel is due to the equipment used rather than an actual decline of beaver. Referring to Table 1 we find that in years 1958 and again in 1960 when faster, less maneuverable aircraft were utilized the caches observed dropped as compared to years 1957 and 1959 when slower, more maneuverable equipment was used (Super Cubs as to Cessna 180's). In addition, referring to Table 2, we find that the catch per trapper has remained high in Game Management Unit 24 which does not indicate a decline in numbers.

The Chatanika River area indicates an increase in colonies for the first time since 1954. This area had been on a steady decline for the past five years.

The 1960 beaver affidavits were tabulated and the results are presented in Table 2 in comparison with the past three years. The average number of beaver taken per trapper in relation to the bag limit is used as an index to relative abundance of beaver in a given Management Unit. This method is described by Libby (Libby, Wilber L. 1954. A Basis for Beaver Management in Alaska. Thesis, University of Alaska.) and sets up arbitrary standards which are as follows: the trappers in an area average 1/3 or less of the allowable limit = poor, better than 1/3 but not over 2/3 = fair, and better than 2/3 = good.

We find that the total number of beaver taken in the State for 1960 was 26,504 by 2,028 trappers for an average take per trapper of 13.07 beaver. This figure of 2,028 trappers perhaps is not precise as many trappers sell their catch as procured and affidavits are completed as they are tagged. In handling this number of affidavits some trappers are perhaps counted more than once. In any case this average indicates pretty fair production of beaver for the State as a whole.

The increase in bag limits over the past three years, and the opening of seasons since 1958 in five Management Units has increased the catch for the State but does not

Table 1. Beaver Colonies on Check Areas and Transects Flown Since 1952.

		Number of Active Colonies								
Transects	Check Area	1952	1953	1954	1955	1956	1957	1958	1959	1960
Hogatza R.		26	21	34	29	18	36	34	55	48
Huslia R.		21	15	37	14	19	16	not flown	3	not flown
	Hogatza R.		39	23	19	35	38	32	41	35
	Huslia R.		47	33	44	55	62	not flown	43	not flown
	Indian R.		10	16	24	26	36	20	28	11
	Kanuti R.		14	21	41	39	44	31	49	32
	Chatanika R.		56	56	42	not flown	not flown	39	36	49

Table 2. Beaver Affidavit Analysis, 1957-1960.

Game Magmt. Unit	Year	Limit	Per cent Kits (under 54")	Per cent Kits and Yearlings (54-59")	Per cent Adults (over 59")	No of Beaver Measured	Total No. of Beaver	No. of Trappers	Avg. No. Beaver/ Trapper	Relative Beaver Abundance
1	1957*									
	1958	15	24.84	35.75	64.25		330	38	8.68	
	1959	15	24.63	37.67	62.33		69	8	8.62	
	1960	15	6.89	31.03	68.97	29	115	14	8.21	Fair
2	1957*									
	1958	15	22.73	36.36	63.74		22	10	2.20	
	1959	15	22.22	37.03	62.97		27	2	13.50	
	1960	15				0	75	13	5.77	Fair
3	1957*									
	1958	15	0.00	0.00	100.00		115	13	8.85	
	1959	15	6.25	6.25	93.75		16	3	5.33	
	1960	15				6	47	17	2.77	Poor
**										
6	1957	20	24.08	40.00	60.00		245	16	15.31	
	1958	20	12.88	28.03	71.97		264	15	17.60	
	1959	20	14.28	20.23	79.76		168	11	15.27	
	1960	40	14.28	35.71	64.29	28	304	15	20.26	Fair

Table 2. Continued

Game Mgmt. Unit	Year	Limit	Per cent Kits (under 54")	Per cent Kits and Yearlings (54-59")	Per cent Adults (over 59")	No. of Beaver Measured	Total No. of Beaver	No. of Trappers	Avg. No. Beaver/ Trapper	Relative Beaver Abundance
7	1957	20	22.66	47.99	52.01		75	14	5.36	
	1958	20	15.74	34.84	65.16		89	18	4.94	
	1959	20	34.09	52.27	47.73		44	8	5.50	
	1960	20	28.84	46.15	53.85	52	73	9	8.11	Fair
8	1957	15	23.57	32.86	67.14		140	15	9.33	
	1958	20	21.28	35.74	64.26		235	24	9.79	
	1959	20	22.72	40.90	59.10		154	12	12.85	
	1960	40	28.41	47.72	52.28	88	369	25	14.76	Fair
9	1957	15	16.95	25.94	74.06		1469	138	10.64	
	1958	15	22.44	34.17	65.83		1515	141	11.00	
	1959	15	23.94	34.72	65.28		1975	170	11.61	
	1960	20	21.90	32.25	67.75	1767	1768	115	15.37	Good
**										
11	1957	20	12.82	15.38	84.62		39	5	7.80	
	1958	20	0.00	0.00	100.00		20	4	5.00	
	1959	20	8.47	16.94	83.06		59	5	11.80	
	1960	20	35.00	50.00	50.00	20	20	2	10.00	Fair

Table 2. Continued

Game Mgmt. Unit	Year	Limit	Per cent Kits (under 54")	Per cent Kits and Yearlings (54-59")	Per cent Adults (over 59")	No. of Beaver Measured	Total No. of Beaver	No. of Trappers	Avg. No. Beaver/ Trapper	Relative Beaver Abundance
12	1957	5	2.83	13.21	86.79		106	40	2.65	
	1958	15	10.51	13.94	86.06		409	85	4.81	
	1959	15	11.58	15.12	84.86		423	80	5.28	
	1960	15	17.18	35.38	64.62	390	393	67	5.86	Fair
13	1957	20	20.00	28.48	71.52		165	24	6.88	
	1958	20	12.93	22.46	71.54		473	59	8.00	
	1959	20	16.36	28.30	71.70		385	37	10.40	
	1960	20	23.18	36.94	63.06	483	507	59	8.59	Fair
14	1957	20	17.65	36.17	63.83		923	84	10.99	
	1958	40	16.36	30.65	69.35		1204***	96	12.58	
	1959	40	27.20	50.69	49.31		647	49	13.20	
	1960	40	24.14	43.31	56.69	787	844	68	12.41	Poor
15	1957	20	17.16	37.95	62.05		303	26	11.65	
	1958	40	16.39	27.50	72.50		360	30	12.00	
	1959	40	29.76	46.42	53.58		168	15	11.20	
	1960	40	17.50	35.28	64.72	360	379	20	18.95	Fair
16***	1957	20	19.35	41.93	58.07		62	5	12.40	
	1958	40	13.68	25.70	74.30		1148***	45	25.51	
	1959	40	22.09	39.69	60.29		1715	72	23.81	
	1960	40	15.08	35.29	64.71	2054	2200	95	23.16	Fair

Table 2. Continued

Game Mgmt. Unit	Year	Limit	Per cent Kits (under 54")	Per cent Kits and Yearlings (54-59")	Per cent Adults (over 59")	No. of Beaver Measured	Total No. of Beaver	No. of Trappers	Avg. No. Beaver/ Trapper	Relative Beaver Abundance
17****	1957	10	22.89	36.79	63.21		367****	46	7.98	
	1958	15	19.12	33.02	66.98		3165****	263	12.02	
	1959	10	19.63	29.42	70.58		3245	369	8.79	
	1960	15	24.29	34.19	65.81	3718	3721	279	13.34	Good
18	1957*									
	1958*									
	1959	10	31.20	45.08	54.92		2766	357	7.74	
	1960	10	25.73	38.67	61.33	1994	2013	260	7.74	Good
19	1957	15	24.84	75.16			2218	200	11.09	
	1958	20	14.52	23.96	76.04		3852	256	15.05	
	1959	20	16.31	29.32	70.68		4034	284	14.20	
	1960	20	16.67	29.96	70.04	2813	3128	210	14.89	Good
20	1957	15	8.91	16.59	83.41		651	74	8.80	
	1958	20	8.67	19.74	80.26		1869	152	12.30	
	1959	20	4.10	17.70	82.30		1242	119	10.43	
	1960	20	9.13	23.34	76.66	1457	1540	145	10.62	Fair
21	1957	15	12.33	23.41	76.59		5460	490	11.14	
	1958	20	11.03	22.61	77.39		6871	499	13.77	
	1959	20	12.68	26.23	73.77		5771	425	13.57	
	1960	20	11.97	25.85	74.15	5687	5945	381	15.60	Good

Table 2. Continued

Game Mgmt. Unit	Year	Limit	Per cent Kits (under 54")	Per cent Kits and Yearlings (54-59")	Per cent Adults (over 59")	No. of Beaver Measured	Total No. of Beaver	No. of Trappers	Avg. No. Beaver/ Trapper	Relative Beaver Abundance
22	1957*									
	1958	10	45.24	54.76	45.24		42	10	4.20	
	1959	10	18.75	35.41	64.59		48	14	3.42	
	1960	10	25.81	41.93	58.07	62	62	12	5.17	Fair
23	1957	15	0.00	0.00	100.0		5	1	5.00	
	1958*									
	1959	15					0	0		
	1960						0	0		
24	1957	20	8.21	22.01	77.99		1486	96	15.48	
	1958	25	6.17	23.19	76.81		1841	105	17.53	
	1959	25	6.76	17.63	82.37		1434	97	14.78	
	1960	25	12.96	30.16	69.84	1366	1375	79	17.41	Good
25	1957	15	21.74	31.58	68.42		630	77	8.18	
	1958	15	25.92	37.12	62.88		625	77	8.12	
	1959	15	21.10	38.34	61.66		725	86	8.43	
	1960	15	17.26	33.25	66.75	788	788	61	12.92	Good

Table 2. Continued

Game Mgmt. Unit	Year	Limit	Per cent Kits (under 54")	Per cent Kits and Yearlings (54-59")	Per cent Adults (over 59")	No. of Beaver Measured	Total No. of Beaver	No. of Trappers	Avg. No. Beaver/ Trapper	Relative Beaver Abundance
**										
Totals	1957		13.79	25.80	74.20		14344	1351	10.62	
	1958		14.15	26.15	73.85		24484	1940	12.62	
	1959		17.88	30.96	69.04		25115	2223	11.29	
	1960		16.42	29.37	70.63	24584	26504	2028	13.07	

* No open season.
** Either no open season or no beaver taken during 1957-1960 in Units 4,5,10 and 26.
*** Some Anchorage and Kenai trappers trapped in Unit 16. These were recorded under Unit 14 in 1957.
**** Part of Unit 17 closed in 1957 and 1958.

appear to have had any harmful effect on the beaver population. Units 3 and 14 are poor producers and Unit 3 appears to be over harvested. Units 9, 17, 18, 19, 21 and 24 are in the good category and are the major producing Units of the State. The rest of the Units are in the fair category and have not changed materially in the past three years. All Units, with the exception of 3, are being adequately harvested under the present limits and seasons.

RECOMMENDATIONS:

Because of the economic importance of our annual fur harvest (over $300,000 from beaver) a biologist on full time basis should be assigned to study our fur resources.

Additional transects and check areas should be established in Units 9, 17, 18, 19, 21 and 23. A reduction of bag limit or the complete closure of Unit 3 might be advisable.

Submitted by:

Franklin F. Jones
Game Biologist
December 7, 1961

Approved by:

David R. Klein
P-R Coordinator

James W. Brooks, Director
Division of Game

Volume 2 Report No. G-3

ANNUAL REPORT OF PROGRESS
INVESTIGATIONS PROJECT
COMPLETION OF 1960-1961 SEGMENT

State: Alaska

Project No: W-6-R-2 Name: Alaska Wildlife Investigations

Work Plan: G Fur Mammal Investigations

Job No: 3 Title: Evaluation of Factors Affecting Production of Beaver in the Upper Tanana Valley

PERIOD COVERED: July 1, 1960 to June 30, 1961

OBJECTIVES:

To identify and evaluate the ecologic, economic and social factors affecting beaver production in the upper Tanana Valley, with special reference to the Tetlin area.

TECHNIQUES:

Characteristics of the beaver harvest currently and in previous years were determined by examination of trappers' affidavits and other available records.

The ecology of beaver in the area was examined in detail, with primary emphasis on environmental factors affecting distribution and abundance. Methods of rating habitat suitability were developed, and comparisons made between the Tetlin-Tanacross-Northway area and an area of greater abundance north of the Tanana River.

Local trappers were interviewed to determine patterns and intensity of trapping.

Aerial transects and reconnaissance surveys were used to supplement ground studies in proper season.

ABSTRACT OF FINDINGS:

This project was initiated to determine the factors affecting the production and harvest of beaver in the upper Tanana River Valley, Alaska. The village council of the Indian Community of Tetlin had expressed concern about an alleged decline in the number of beaver in the upper Tanana Valley and this in part promoted investigation at this time. Investigations were made on two basic aspects: 1) the distribution and abundance of beaver in the area, and 2) the size and composition of the beaver harvest.

This area has long been known as a poor beaver producing region and was not opened to beaver trapping from 1925 to 1947. Analysis of the beaver affidavits have suggested that the harvest is governed by trapping interest. The latter is depressed by catch limits and poor fur prices and stimulated by large limits with good prices. The catch per unit effort is of primary concern to the Indian trapper.

Analysis of the aerial counts showed that the distribution of the beaver is dependent upon the quality of the habitat, and that the concentrated trapping around the villages has not had detrimental effects upon the beaver population. With the present beaver population the harvest could be increased but not to the point where all of the trappers could fill their catch limit.

RECOMMENDATIONS:

It is recommended that the catch limit be increased to 20 beaver per trapper and the season be further extended into the spring. Trappers would benefit from an education program relating to more efficient trapping techniques and pelt care.

A final report in thesis form is currently being prepared.

SUBMITTED BY:

David F. Murray
Graduate Student
June 30, 1961

SUPERVISED BY:

Robert F. Scott
Unit Leader

A project of the Alaska Cooperative Wildlife Research Unit, College, Alaska, under contract to the Alaska Department of Fish and Game.

APPROVED BY:

David R. Klein
P-R Coordinator

James W. Brooks, Director
Division of Game

Volume 2 Report No. G-4

ANNUAL REPORT OF PROGRESS
INVESTIGATIONS PROJECT
COMPLETION OF 1960-1961 SEGMENT

State: Alaska

Project No: W-6-R-2 Name: Alaska Wildlife Investigations

Work Plan: G Fur Mammal Investigations

Job No: 4 Title: Mink Management Studies in the Yukon-Kuskokwim Delta

PERIOD COVERED: July 1, 1960 to June 30, 1961

OBJECTIVES:

To study the ecology of mink in the Delta region; to identify and evaluate the factors affecting production and harvest of mink in the region; to attempt an explanation of the reported marked fluctuations in abundance characteristic of the region; and to determine management measures that may stabilize or enhance yield to local trappers.

TECHNIQUES:

Live-trapping, extensive habitat analysis, and surveys were conducted to gain information on the ecology of mink. In particular, den site preferences and habitat conditions at dens were recorded. Small mammal trap lines were established to measure availability of small rodents as a food item, and scats were collected to identify food items eaten.

Pre-season caught mink were used in a pelt primeness study to establish the earliest date which mink could be harvested and still exhibit primeness characteristics assuring full market value. During December 1960, pelts in the hands of local traders were graded for relative

condition and sex. As far as possible the area of capture was also recorded. During this period 78 carcasses were collected and are being used for parasite study, stomach analysis and skull measurements.

Information on the use of "taluyaks", mink traps widely used in the Delta region, was at first difficult to obtain but later contacts with local traders and trappers proved successful. Questionnaires sent to selected individuals in Delta villages were important in determining the number of men engaged in mink trapping as well as establishing the economic importance of the mink to the people of the area.

ABSTRACT OF FINDINGS:

In the low swampy areas suitable locations are scarce and consequently pingos are preferred locations for den sites. Here the plant cover type represents the intermediate stage in the normal plant succession. The co-dominant species in this community type are Spiraea beauverdiana and Calamagrostis canadensis. Subterranean conditions under this cover type are favorable for denning because the ground is thawed to an appreciable depth and soil conditions are thus suitable for den construction.

Operation of small mammal traps showed only that microtines were not abundant during the months of August, 1960 and June, 1961. According to the natives, flooding conditions which occur during spring break-up are a limiting factor on the rodent population.

The pelt primeness study indicated that during the 1960-61 trapping season, November 10 was a satisfactory date for opening the season. Pelts taken on or after this date were sufficiently prime for top market value.

Data gathered during the early part of the 1960-61 season showed a predominance of males. Of 1,349 skins examined, 799 (59%) were males and 550 (41%) were females.

Taluyaks have proved to be successful and efficient as a technique for capturing mink where other methods are less productive. Lost and neglected taluyaks continue to capture mink even though untended. Typical of reports

from the area is the comment of one of the important village traders. He indicated that 75-85 per cent of the mink he buys is caught in these traps and to enforce a regulation against their use would further decrease the harvest of mink. He considers that mink are currently being under-harvested in the area even with the operation of taluyaks.

A post card survey and personal contacts indicated that 808 trappers from 33 villages trapped mink during the 1960-61 season. This information will be used with data concerning mink take, value of the pelts, and population dynamics to calculate the economic importance of the mink to these people.

RECOMMENDATIONS:

Work should be done to determine the importance of climatic factors on the environment as they affect survival of kits. Also, a clearer understanding is needed of the socio-economic effects of the local native way of life which is presently passing out of existance. It is recommended that work be continued to complete that planned under the objectives.

A final report in thesis form is currently being prepared.

SUBMITTED BY:

SUPERVISED BY:

John J. Burns
Graduate Student
June 30, 1961

Robert F. Scott
Unit Leader

A project of the Alaska Cooperative Wildlife Research Unit, College, Alaska, under contract to the Alaska Department of Fish and Game.

APPROVED BY:

David R. Klein
P-R Coordinator

James W. Brooks, Director
Division of Game

Volume 2 Report No. H-1

ANNUAL REPORT OF PROGRESS
INVESTIGATIONS PROJECT
COMPLETION OF 1960-1961 SEGMENT

State: Alaska

Project No: W-6-R-2 Name: Alaska Wildlife Investigations

Work Plan: H Snowshoe Hare Investigations

Job No: 1 Title: Methods of Determining Relative Abundance of Snowshoe Hares

PERIOD COVERED: July 1, 1960 to June 30, 1961

OBJECTIVES:

The objectives of this project are: 1) to continue study of the Alaska snowshoe hare population on the Ballaine Road study area; 2) to experiment with methods of determining relative abundance of hares; and 3) to continue accumulation of biological data characteristic of a hare population at varying levels of abundance.

TECHNIQUES:

This study was continued on the 160-acre Ballaine Road study area which Tom O'Farrell studied in 1958-59. The study area consists of a grid of 25 National live-traps placed at 500 foot intervals. Several techniques for determining relative abundance of hares were used: 1) the Schnabel (Krumholz) formula, 2) the Lincoln Index, 3) the toe-clip ratio, 4) the Webb strip census, 5) a pellet plot index method, and 6) a "runways-per-transect" method. In addition, road censuses were conducted outside the study area.

Observation provided much data on behavior, pelage change, and food habits. Collecting outside the study area with snares, live-traps, and shotgun provided data for reproductive biology, pelage change, age determination, and parasites.

ABSTRACT OF FINDINGS:

A Schnabel (Krumholz) census was conducted on the study area from August 16 to September 16, 1960, (24 effective days) and yielded an estimate of 246 hares for the 160-acre plot (1.5 per acre). This census was repeated again from December 24, 1960, to January 6, 1961, (14 days) yielding an estimate of 127 hares (0.8 per acre). A third census from May 11 to May 24, 1961, (13 days) yielded an estimate of 114 hares (0.7 per acre). The winter and spring estimates show a decrease of 48% and 54%, respectively, from the fall figures.

The Lincoln Index was applied to the August-September and December-January census periods. The first trapping period is referred to as the "pre-census" period; 70 hares were tagged during this time. In the second or "census" period 67 hares were captured, 14 of which were recaptures. Applying the Lincoln Index to this data an estimate of 335 hares on 160 acres (2.0 per acre) was obtained.

The toe-clip ratio was used by Hartman (1960) in Ontario. In this method a toe is clipped from one hind foot of hares. After a snowfall the proportion of "clipped" tracks is determined. I tried this method twice during the winter, but could not distinguish "clipped" tracks from "unclipped" tracks. The snow in the area was too often dry and fluffy, yielding very indistinct tracks.

Webb strip censuses were conducted on the study area, but in most cases no hares were seen. Hares were abundant as indicated by tracks and trapping, but their camouflage and habit of "freezing" made them difficult to see. When a few hares were seen and an estimate of number calculated, the result was at variance with other estimates. Results were inconsistent with each other as well.

A short-term pellet plot study was carried out

for seven days during the December-January census period by Rex Thomas, an undergraduate student in Wildlife Management. He set up 20 1/10,000 acre circular plots in the 160 acre study area so that each plot was located halfway between 2 live traps. Three pellets were found in one plot the first day and no more were added. Falling snow limited the usefulness of this index method.

During the winter there were 13 counts made on the number of runways that crossed 2 half-mile lines on the study area. The number of runways per half-mile transect varied from 34 to 88. Variables such as local edaphic factors and weather undoubtedly influence the location of runways and should be further investigated.

Road censuses proved to be inadequate for determining relative abundance of hares on the roads in the Fairbanks area. During the period July 16 to September 16, 1960, approximately 560 miles were driven on roads in this area. Most censuses were made in the evening hours. In 560 miles driven only 27 hares were observed (0.04 hares per mile). Nineteen of the 27 observed were seen in a very small area near Central, Alaska. Heavy traffic on most of the roads in the area may in part account for the few hares seen.

At this time home range data have not been analyzed, but 103 hares have been captured 3 or more times. This data will be used to calculate home ranges for male, female and juvenile hares during the winter of 1961-62.

Data were collected on hare behavior during this period. Agonistic, escape, ingestive, investigative, and displacement activities were observed. Several times I have heard hares emit a low, bird-like clicking noise, which written phonetically might resemble, "chk-chk-chk." I have not found this sound described in the literature. It is made when the hare is being taken from a trap, released, or when being watched.

A complete discussion of pelage change, food habits, age determination, reproductive biology, population structure, and various aspects of ecology will be provided in my final report for the fiscal year 1961-1962.

RECOMMENDATIONS:

1) Continue trapping for home range data on the Ballaine Road study area.

2) Complete a lens-weight growth curve for snowshoe hares.

3) Conduct a final census in October on the study area.

4) Carry out a vegetation survey of the study area.

5) Write final report (thesis).

SUBMITTED BY:

Eugene R. Trapp
Graduate Student
June 30, 1961

SUPERVISED BY:

Robert F. Scott
Unit Leader

A project of the Alaska Cooperative Wildlife Research Unit, College, Alaska, under contract to the Alaska Department of Fish and Game.

APPROVED BY:

David R. Klein
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James W. Brooks, Director
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Volume 2 Report No. H-2

ANNUAL REPORT OF PROGRESS
INVESTIGATIONS PROJECT
COMPLETION OF 1960-1961 SEGMENT

State: Alaska

Project No: W-6-R-2 Name: Alaska Wildlife Investigations

Work Plan: H Snowshoe Hare Investigations

Job No: 2 Title: Experimental Studies of Kodiak Snowshoe Hare Populations

PERIOD COVERED: July 1, 1960 to June 30, 1961

OBJECTIVES:

To utilize artifically established insular hare populations and to determine phase and amplitude of cycles in populations of varying densities.

TECHNIQUES:

Limited surveys were conducted of previously established hare populations in the Kodiak area in order to maintain a continuing record of relative abundance. Hares from Kodiak were introduced to additional islands in the Kodiak Island area.

ABSTRACT OF FINDINGS:

A comparison of vegetation and soil types was made between Deranof Island and Woody Island, where hares were successfully established in 1952. A total of 139 hares were live-trapped on Woody Island, and 23 hares were trapped on Deranof Island; a 1:1 sex ratio prevailed. Pregnant females were collected and autopsied. The Schnabel-Schumacher and Lincoln Index methods gave an estimate of 75 (adult)

ares and 36 hares on Woody and Deranof Islands, respectively. The calendar graph method indicated a minimum estimate of 84 juvenile hares on Woody Island. The reproductive season extended from mid-March to the end of August. Females averaged 2.3 litters with an average litter size of 5.5; hares born in May had the most influence on population size. All trapped females were lactating from June through mid-August. The boundary-exclusive method showed an average home range estimate of 7.8 and 9.7 acres for adult males and females, respectively. Juvenile ranges were estimated at 4.8 acres for males and 6.6 acres for females. Goshawks and weasels were the most important predators.

As a part of this study snowshoe hares were introduced on four additional islands in the Kodiak Island area, Alaska, in 1958.

A final report in thesis form is currently being prepared.

SUBMITTED BY:

Richard Hensel
Graduate Student
June 30, 1961

SUPERVISED BY:

Robert F. Scott
Unit Leader

A project of the Alaska Cooperative Wildlife Research Unit, College, Alaska, under contract to the Alaska Department of Fish and Game.

APPROVED BY:

David R. Klein
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Volume 2 Report No. L-1

ANNUAL REPORT OF PROGRESS
INVESTIGATIONS PROJECT
COMPLETION OF 1960-1961 SEGMENT

State: Alaska

Project No: W-6-R-2 Name: Alaska Wildlife Investigations

Work Plan: L Wildlife Data Collections

Job No: 1 Title: Wildlife Reconnaissance, Northwest Coastal Alaska

PERIOD COVERED: July 1, 1960 to June 30, 1961

ABSTRACT:

Data concerning the abundance, distribution and utilization of the wildlife in Northwestern Alaska were collected during the year.

A harvest report program for the native villages in Northwestern Alaska was abandoned due to the inaccuracy of the reports.

OBJECTIVES:

To determine the distribution and abundance of fur and game mammals and birds. To determine the magnitude and characteristics of the harvest of fur and game mammals and birds. To identify specific wildlife management problems, if such exist, in the previously little studied west and northwest coastal regions of Alaska.

TECHNIQUES:

Data concerning the abundance, distribution, welfare and utilization of wildlife in Northwestern Alaska were

obtained by field observations, interviews with people possessing local knowledge, and a harvest report program.

FINDINGS:

Data on the abundance, distribution and utilization of wildlife were collected during the year. The information is on file in the Nome office of the Alaska Department of Fish and Game. Various phases of the data collection will be analyzed and reported as soon as sufficient material accumulates.

One aspect of the data collection program, the systematic collection of harvest data by selected individuals in certain villages, has been discontinued. The system, utilizing printed Wildlife Harvest Report forms on which the daily catch of seals, walruses, whales, polar bears, moose, caribou and sheep were recorded by a designated villager, functioned satisfactorily during the first year of operation, but waning interest during the second year contributed to tardy, inaccurate reports, or to a complete abandonment of the program by the village data collectors. In one instance, the taking of two polar bears in one village, a very noteworthy event for that village, was not recorded. I have concluded that the benefits derived from the program do not justify expanding the time and effort needed to administer the program.

RECOMMENDATIONS:

The collection of wildlife data should continue in Northwestern Alaska.

SUBMITTED BY:

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Game Biologist

APPROVED BY:

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