ALASKA DEPARTMENT OF FISH AND GAME
JUNEAU, ALASKA

STATE OF ALASKA
William A. Egan, Governor

DEPARTMENT OF FISH AND GAME
Walter Kirkness, Commissioner

DIVISION OF GAME
James W. Brooks, Director
Don H. Strode, Federal Aid Coordinator

FURBEARER REPORT

By Oliver E. Burris

Volume VII
Annual Project Segment Report
Federal Aid in Wildlife Restoration
Projects W-6-R-6, Work Plans J and K,
and W-13-R-1, Work Plan A

Printed August 1966

WORK PLAN SEGMENT REPORT
FEDERAL AID IN WILDLIFE RESTORATION

STATE:	Alaska		
PROJECTS:	W-6-R-6	TITLE:	Alaska Wildlife Investigations
AND:	W-13-R-1	TITLE:	Small Game and Furbearer Investigations
WORK PLANS:	K(W-6-R-6)	TITLE:	Game Harvest Statistics
AND:	A(W-13-R-1)	TITLE:	Furbearers
JOB:	1(W-13-R-1)	TITLE:	Status of Fur Industry in Alaska

PERIOD COVERED: October 1, 1964 to June 30, 1966

ABSTRACT

The harvest of peltries during the 1964-65 season declined sharply. Purchases of peltries by fur dealers were only 49 percent of the 1963-64 season. Peltry exports in 1964-65 equaled 78 percent of the exports from the previous season.

Harvest estimates were made for all species of furbearers based on the relationship between the number of beaver peltries sealed and the number of peltries exported since 1961.

The estimated numbers of furbearers pelted during the 1964-65 season were:

Beaver - 8,556
Mink - 18,400
Muskrat - 38,800
Marten - 10,400
Otter - 3,270
White Fox - 2,320
Other Fox - 1,200
Weasel - 1,110
Lynx - 4,650
Squirrel - 250

The estimated value of all peltries was $1,013,270. The leading species was mink with the harvest valued at $436,600. The value of the harvest was based

on the sales reports of fur exchanges and auctions. Trappers received less than the value on the exchange. In some situations, possibly only 60 to 75 percent of the value on the Seattle market was received.

RECOMMENDATIONS

1. Enforce the required submission of Fur Dealers' Reports in order to upgrade the quality of the information, so that it will be statistically reliable.

2. Initiate investigations of existing fur dealers' records and export reports made by fur dealers to determine where effort may efficiently be applied to achieve compliance with existing regulations.

3. Examine and code, for machine punching, all fur export reports and fur dealer reports at the Regional offices to provide an understanding at the local level of the seasonal traffic and distribution of peltries. The practices of holding substantial quantities of peltries by fur dealers for the purpose of placing them on a more favorable market or the manipulation of purchasing and marketing to obtain lower tax assessment could be noted and corrected when analyzing the results of the program. Other economic influences which can affect the harvest such as the success of the previous fishing season can also be more easily recognized when the information is being submitted.

WORK PLAN SEGMENT REPORT
FEDERAL AID IN WILDLIFE RESTORATION

STATE: Alaska

PROJECTS: W-6-R-6 TITLE: Alaska Wildlife Investigations
AND: W-13-R-1 TITLE: Small Game and Furbearer Investigations

WORK PLANS: K(W-6-R-6) TITLE: Game Harvest Statistics
AND: A(W-13-R-1) TITLE: Furbearers

JOB: 1(W-13-R-1) TITLE: Status of Fur Industry in Alaska

PERIOD COVERED: October 1, 1965 to June 30, 1966

OBJECTIVES

To estimate the number of animals pelted annually in Alaska, excluding seals and sea otter, by species and area.

To determine the approximate value of these furs and the importance of this income to trappers.

To evaluate trends in the Alaska fur industry, particularly the relative importance of recreational and commercial trapping, and the probable impact of changing social conditions on people now engaged in trapping.

TECHNIQUES

Fur Dealer Reports

Reports from each licensed fur dealer have been required since 1960. A report is required on each purchase made by the fur dealer. The reports list the following information: name of purchaser, name of seller or trapper, address of seller, license number of trapper, species and number of peltries purchased, and date of purchase.

The system was designed to provide information on the harvest of fur animals throughout the state. Unsupported reports of peltry purchases will not accurately indicate the harvest or location of the harvest, because not all pelts of fur animals are sold to licensed fur dealers. Raw peltries are commonly used by the trapper's family to make garments and are traded locally for the same purpose. Only the trapper's residence is known and not the area where the game was harvested and many pelts are shipped by the trapper to buyers outside of Alaska.

The reporting period is from October 1 to September 30. The report period has varied slightly since 1960, but the period has changed only a few days and during the season when there is little fur trading. Purchase documents completed during the report period are coded for machine punching and compilation.

Analysis of these purchases is designed to provide the following information: 1. Number and species of peltries purchased from each trapper. 2. Number and species of peltries purchased from trappers listed by the town of the trapper's residence. 3. Total peltries of each species purchased from all trappers living in each of the 26 Game Management Units. 4. Number and species of peltries purchased from other fur dealers.

Past analysis of fur dealers reports did not separate purchases from trappers from purchases from other fur dealers. This source of error could indicate a total trade of peltries much greater than the harvest. The compilation of the 1964-65 purchasing documents identified purchases made from trappers from purchases made from other dealers.

Fur Export Reports

A permit is required to ship raw peltries from Alaska. The permit presently in use consists of two sections. One portion is entitled "Fur Export Permit" and the other portion is entitled "Fur Export Report". Both sections are completed by the person exporting raw pelts from Alaska. The permit portion is attached to the fur shipment; and the report section, which is serially numbered to coincide with the permit section, is mailed to the Alaska Department of Fish and Game.

Export figures have been tabulated by year, species, game management, unit, by town, and for 1964-65, it has been broken down for all of the above categories by trappers and by fur dealers.

The beaver sealing program, which will be discussed later, has provided a check on the number of beaver taken in comparison to the number of beaver exported and the number purchased by fur dealers.

Value of the Peltries

Peltry values used to determine the Alaska contribution to the fur industry have been determined from auction reports by the Seattle Fur Exchange and from other fur buyers and auctions.

Trends in the Alaskan Fur Industry

No work was accomplished toward this objective. Techniques to establish trends and the economic and recreational importance of trapping have not been established.

FINDINGS

Fur Dealers Reports

Of the ten animals on which purchase records have been maintained since 1960, five species showed a decline. Total purchases of 46,045 peltries were reported for the 1964-65 reporting period. This was a decline of 48,500 pelts from the 94,545 pelts purchased the year before. Separating purchases from trappers from purchases from other dealers revealed that only 3,581 pelts had been purchased two or more times. This is only 7.8 percent of all peltries purchased from both trappers and other fur dealers.

Table 1 lists purchases of peltries by year and species. The 1964-65 data is separated into furs purchased from trappers and furs purchased from other fur dealers (Table 2).

Fur Exports

The number of furs exported from Alaska are listed by year and species in Table 1. The exports for 1964-65 have been broken down into exports made directly by trappers and exports made by fur dealers (Table 3). The flucuation in the number of animals exported and purchased by fur dealers are not consistent. In the 1963-64 season, reported peltry purchases equaled 95 percent of the number exported. In 1964-65, purchases dropped by 48,500 peltries but equaled only 59 percent of peltry exports. The decline in purchases did not result in a corresponding decrease in the number of peltries exported. In 1963-64, 99,717 peltries were exported and 77,584 were exported in the 1964-65 season.

The number of peltries exported from each Game Management Unit for the 1964-65 season are listed by species in Table 4. The percentage of furs exported by fur dealers and by trappers varies greatly for each species. Only 6.4 percent of the muskrat peltries were exported directly by trappers; however, 64.5 percent of the squirrel peltries were exported by trappers. Squirrel is a very minor species and this percentage has no practical meaning. Trappers exported 45.8 percent of white fox peltries.

This is the first year exports have been identified to either trappers or fur dealers. It is not known if these percentages change significantly between years of high and low production for the various species of fur animals.

Table 2 compares the number of peltries purchased by fur dealers with the number of peltries exported by fur dealers. For all species, it can be noted that the number of peltries exported by fur dealers greatly exceeds the reported purchases. Discrepancies between the purchases of peltries reported by fur dealers and the number of peltries exported by fur dealers demonstrates the inefficiency of the program to accurately measure the traffic of peltries. To establish an accurate measure of the fur harvest for specific regions in Alaska, more must be known about local marketing of peltries.

Table 1. Comparison of purchases and exports of peltries:

Season from Oct. 1 to Sept. 30.	Beaver		Mink		Muskrat		Marten		Otter	
	Number Purchased	Number Exported	Number Purchased	Number Exported	Number Purchased	Number Exported	Number Purchased	Number Exported	Number Purchased	Number Exported
1960 - 1961	18650	15504	10143	19622	64582	58634	1875	3280	1297	2220
1961 - 1962	14560	10431	8937	8813	35683	27206	4104	4531	1028	1140
1962 - 1963	11047	20071	11148	20930	52347	81419	3855	7526	1232	2944
1963 - 1964	7057	11030	16750	22484	64395	48822	2140	6172	774	2282
1964 - 1965	5174	9200	8194	15623	5697	33005	3047	8869	1691	2781
T O T A L S	56488	66236	55172	87472	222704	249086	15021	30378	6022	11367

Table 1 (Cont.). Comparison of purchases and exports of peltries.

Season from Oct. 1 to Sept. 30.	White Fox		Other Fox		Weasel		Lynx		Squirrel	
	Number Purchased	Number Exported	Number Purchased	Number Exported	Number Purchased	Number Exported	Number Purchased	Number Exported	Number Purchased	Number Exported
1960 - 1961	922	2073	306	673	523	1701	127	864	200	667
1961 - 1962	296	776	392	730	764	1319	108	1107	375	346
1962 - 1963	400	1395	408	910	561	968	1526	2312	215	415
1963 - 1964	279	1134	260	999	435	1441	1852	4700	603	653
1964 - 1965	321	1973	284	1020.	498	945	1109	3957	30	211
T O T A L S	2218	7351	1650	4332	2781	6374	4722	12940	1423	2292

Table 2. Comparison of Fur Dealer purchases with Fur Dealer exports 1964-65.

	Beaver	Mink	Muskrat	Marten	Otter	White Fox	Other Fox	Weasel	Lynx
Peltries purchased from trappers.	4459	7418	24541	2403	1618	321	262	440	972
Peltries purchased from other fur dealers.	715	776	1156	644	73	0	22	58	137
Peltries exported by fur dealers.	5174	11998	30881	7309	2021	1070	692	672	2487

Table 3. Peltries exported from October 1, 1964 to September 30, 1965 by trappers and fur dealers.

	Beaver		Mink		Muskrat		Marten		Otter	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Exports by trappers.	1352	14.7	3625	23.2	2124	6.4	1560	17.6	760	27.3
Exports by fur dealers.	7848	85.3	11998	76.8	30881	93.6	7309	82.4	2021	72.7
T O T A L	9200		15623		33005		8869		2781	

Table 3 (Continued). Peltries exported from October 1, 1964 to September 30, 1965 by trappers and fur dealers.

	White Fox		Other Fox		Weasel		Lynx		Squirrel	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Exports by trappers.	903	45.8	328	32.2	273	28.9	1470	37.1	115	54.5
Exports by fur dealers.	1070	54.2	692	67.8	672	71.1	2487	62.9	96	45.5
T O T A L	1937		1020		945		3957		211	

Table 4. Peltries exported from Alaska, October 1, 1964 to September 30, 1965.

Game Mgmt. Unit Number	Beaver			Mink			Muskrat		
	Exported by Trappers	Exported by Fur Dealers	Total Exported	Exported by Trappers	Exported by Fur Dealers	Total Exported	Exported by Trappers	Exported by Fur Dealers	Total Exported
1	91	16	107	361	817	1178			
2	31		31	326	589	915			
3	13		13	505	2058	2563	8		8
4	3		3	583	223	806	7		7
5	26		26	22	2	24			
6	59	65	124	96	255	351	30	48	78
7	4	2	6	19		19			
8	25	3	28						
9	224	6	230	236	34	270	14	38	52
10				2		2			
11									
12		65	65	4	80	84	234	2680	2914
13	16	2	18	129	6	135	72	1	73
14	144	1344	1488	90	389	479	130	787	917
15	10	1	11	75		75			
16	20		20	29		29	8		8
17	7	491	498	67	150	217	17	67	84
18		1166	1166	178	3997	4175	161	5537	5698
19	3	1893	1896	13	795	808	51	1192	1243
20	523	508	1031	174	582	756	278	3147	3425
21	49	1386	1435	405	773	1178	1	1607	1608
22		400	400	26	564	590		187	187
23	1	3	4	19	368	387	465	10509	10974
24	80		80	107	9	116	225	357	582
25	3	497	500	74	307	381	292	4724	5016
26	20		20	85		85	131		131
TOTALS	1352	7848	9200	3625	11998	15623	2124	30881	33005

Table 4 (Continued). Peltries exported from Alaska, October 1, 1964 to September 30, 1965.

Game Mgmt. Unit Number	Marten			Otter			White Fox		
	Exported by Trappers	Exported by Fur Dealers	Total Exported	Exported by Trappers	Exported by Fur Dealers	Total Exported	Exported by Trappers	Exported by Fur Dealers	Total Exported
1	201	305	506	110	113	223	1		1
2	95	184	279	45	148	193			
3	24	89	113	58	167	225			
4	168	89	257	125	48	173			
5	16	1	17	3		3			
6	19	2	21	13	145	158			
7					1	1			
8				28	26	54	4		4
9	9		9	188	9	197	2		2
10				4		4	6		6
11									
12	6	16	22		21	21	1		1
13	7	3	10	13	1	14			
14	7	303	310	4	135	139	16	65	81
15				10		10		1	1
16	26		26	1		1			
17				24	40	64	1	1	2
18	3	22	25	11	612	623	4	298	302
19	18	4174	4192	13	110	123		6	6
20	265	395	660	37	18	55	93	46	139
21	489	1274	1763	21	142	163	2	4	6
22	6		6	2	23	25	708	413	1121
23	11	1	12	12	255	267	3		3
24	109	16	125	22	3	25			
25	16	435	451		4	4			
26	65		65	16		16	62	236	298
TOTALS	1560	7309	8869	760	2021	2781	903	1070	1973

Table 4 (Continued). Peltries exported from Alaska, October 1, 1964 to September 30, 1965.

Game Mgmt. Unit Number	Other Fox			Weasel			Lynx			Squirrel		
	Exported by Trappers	Exported by Fur Dealers	Total Exported	Exported by Trappers	Exported by Fur Dealers	Total Exported	Exported by Trappers	Exported by Fur Dealers	Total Exported	Exported by Trappers	Exported by Fur Dealers	Total Exported
1	6		6	5		5	20		20	4		4
2		4	4									
3				1		1	1		1			
4				1	3	4						
5				10		10	5		5			
6		2	2	15	33	48	2	12	14			
7					2	2	3		3		2	2
8	10	1	11	2		2	2		2			
9	78	2	80	28		28	24	9	33			
10	25		25									
11												
12	11	31	42		18	18	67	243	310		2	2
13	15	6	21	10	1	11	346	19	365	100	1	101
14	16	188	204	9	46	55	135	572	707	2	38	40
15	4		4	6		6	3	1	4			
16	12		12	40		40						
17	7	13	20	4	22	26	4	7	11			
18	1	118	119	7	149	156		36	36			
19	3	90	93	4	94	98		260	260		3	3
20	90	142	232	32	73	105	680	698	1378			
21	4	20	24	63	70	133	38	134	172			
22	8	17	25	3	1	4	18	15	33			
23	4	4	8	2	9	11	17	12	29			
24	5		5	2		2	9	5	14			
25	11	53	64	11	151	162	57	464	521	1	50	51
26	18	1	19	18		18	39		39	8		8
TOTALS	328	692	1020	273	672	945	1470	2487	3957	115	96	211

An examination of Table 1 will reveal that for many species of animals, there were more peltries purchased by fur dealers than were exported for the corresponding year.

The purpose of the fur purchase reports and fur export reports is to provide a basis for estimating the harvest of fur animals. As previously mentioned in this report, these systems do not provide an absolute accounting of the harvest of fur animals. By comparing the harvest figures obtained from the beaver sealing program with the results from the fur export reports and fur buyers reports, an index can be established to estimate the harvest of the various fur animals from the corresponding purchase and export information. Figure 1, Job A-2 illustrates the relationship between these sources of information for beaver.

The advisability of using the relationship between the number of beaver sealed and the number of beaver exported to estimate the harvest of other furbearers is questionable. Since 1961 this system cannot account for approximately fifteen thousand sealed beaver peltries plus an unknown number of unsealed beaver peltries which are used in the local fur industry (mittens, mukluks, and parka trim).

The total number of beaver declared on the fur export permits compares in number more accurately with the actual harvest of beaver, particularly if the comparison is made on a long ranged (five year) basis. The number of beaver pelts reported on the export reports has varied from 64.9 percent of the number sealed in 1961 to 111.1 percent of the number sealed in 1965. The cause or causes of the inconsistencies between the number of beaver peltries harvested and the number of beaver peltries exported are not known.

The estimated harvest of other furbearers is based on the relationship between the number of beaver sealed and the number exported. With such wide variations between the number sealed and the number exported, and without accurate knowledge of the causes of the differences, it can only be assumed that any harvest estimate based on the export data may vary from the actual harvest as they have for beaver where the actual harvest was known.

Over a five year period, beaver exports have equaled 85.1 percent of the number of beaver sealed. To obtain the estimates used in Table 5, the number of other fur animals exported are assumed to be 85.1 percent of the actual harvest. It may be more reasonable to use the variations noted between the number of beaver sealed and the number of beaver exported for the same comparable season, but to avoid the possibility of any large errors the five year average is used.

More evidence is needed to determine if fall-caught animals are handled in a similar manner to beaver, which are normally taken in the spring. Estimates of the harvest in specific Game Management Units should not be used until such evidence is available.

Table 4, which lists the number of peltries exported from each Game Management Unit by trappers and by fur dealers, cannot be used to estimate the harvest from the Game Management Unit. The number exported from the Game Management Unit has little bearing on the number of furbearers which were harvested in that Unit. For example, exports of beaver peltries from Unit 14 by fur dealers equaled 17 percent of the total harvest. The beaver harvest in Unit 14 for the same period amounted to only 4 percent of the total harvest in the state.

Export report forms are compiled by the location from which the peltries were exported. Furs are purchased by fur buyers traveling throughout the State and are often brought to a major shipping terminus before the furs are readied for shipment outside of the State.

The fur dealers reports are compiled by the residence of the trapper and could provide a better estimate of the harvest from specific areas or Game Management Units; however, only 4,459 of the 8,556 or 52 percent of the beaver peltries were reported by fur dealers. A sample of 52 percent of the harvest might provide a suitable estimate of the harvest in specific locations, if there was a large harvest of peltries of that particular species and the sample was taken randomly.

Purchases of furs by fur dealers could not be considered a random sample of the furs harvested in Alaska and in only a few cases, such as muskrat where the harvest for some years may exceed 130,000 peltries, would the sample be large enough to compensate for sampling errors. If the numbers of furs reported by the fur dealers as purchased from trappers were to approach or exceed the number of furs exported by fur dealers and the percentage of furs exported from Alaska by fur dealers were to remain at about the 84 percent level as in 64-65, a fairly accurate system of determining the harvest in specific areas could be established.

The 16 percent of the furs which are exported directly by trappers can be fairly accurately identified to the area from which they are harvested by the location from which the trapper exported the furs.

Value of the Fur Harvest

Beaver

Beaver peltries from different parts of the state vary greatly in value. They are commonly categorized according to regions by the fur buyers and fur auction houses and different prices are quoted for the various size beaver from each area. Beaver from Game Management Units 1 through 5 were considered as beaver in the Northwest category. Beaver from Game Management Units 11 through 14, 16 and 20 through 25 were considered as the Upper River category. Beaver from Units 9 and 17 were considered in the Bristol Bay category and beaver taken from Units 6, 7, 8, 15, and 18 were considered in the Lower River-Southwest Alaska category.

Table 5. Estimated harvest of fur animals.

1. Basis of the estimate:

$$\frac{\text{No. of beaver harvested since 1961}}{\text{No. of beaver exported since 1961}} = \frac{\text{No. of a given species of fur animals harvested.}}{\text{No. of the given species exported}}$$

2. Number of beaver exported since 1961 is calculated to be 85 percent of the number harvested.

SPECIES	ESTIMATED HARVEST
Beaver	8,556*
Mink	18,400
Muskrat	38,800
Marten	10,400
Otter	3,270
White Fox	2,320
Other Fox	1,200
Weasel	1,110
Lynx	4,650
Squirrel	250

* Number sealed 1965 season.

Within each category, average values were established for beaver less than 54", beaver in the 54 to 59" size, and for beaver 59" or larger. For beaver from Game Management Units 1 through 5, which fall into the Northwest category these values were $7.00, $16.00, and $25.00 respectively. For the Upper River category, they were $8.00, $17.00, and $28.00. For the Lower River and South Alaska category, they were $8.00, $15.00, and $25.00. The Bristol Bay category was $8.00, $16.00, and $27.00. Table No. 6 lists the value of the beaver peltries for each Game Management Unit.

The total beaver harvest was valued at $165,621 based on the 8,556 beaver which were sealed during the 1965 season. The average price per pelt was $20,00, regardless of size. Assuming that the 9,200 beaver exported during the last export period were of the same relative size and value as the beaver harvested in the last season, the value of the beaver which were exported was $184,000.

Mink

Mink peltries from various portions of Alaska also vary greatly in value as do beaver peltries.

Units 1 through 6 are placed in the category termed "Coastal" and are assigned the average value of $12.00 per pelt. Mink in Units 7, 9, 10, 14, 15, and 17 are considered in the "Kenai" category and are valued at $15.00 each. Mink from Game Management Units 12, 13, 19, 20, and 21 are considered "Upper Yukon Mink" and valued at $28.00 each. Mink from Units 18, 22, and 23 are the most highly prized wild mink on the North American continent. They are considered in the "Yukon-Kuskokwim Delta and MacKenzie River Delta" category, and averaged $36.00 each during the 1964-65 season. The total value of the mink exported from Alaska was $370,654. The average value per mink, regardless of area taken was $23.70. Using an estimated harvest of 18,400 mink (Table 5) and the average value of $23.70 per mink, the estimated harvest was valued at approximately $435,600.

Muskrat

Muskrat prices improved from $.90 to $1.10 per pelt from November until April. The preponderance of the muskrat harvest comes from a more limited area than either beaver or mink. Therefore, an average value was assigned to all muskrat peltries. One dollar and five cents was used as the average value.

Thirty-three thousand, five muskrats were exported from Alaska. The total value of the exported pelts was $34,655. The estimated harvest was 38,000 muskrats with a value of $40,740.

Otter

Otter peltries have been a stable item on the market for many years. The average price of all sections was determined to be $26.00. At $26.00 each, the export of 2,781 peltries was valued at $72,306. The estimated harvest of 3,270 was valued at $85,020.

Table 6. Value of the beaver harvest by Game Management Units.

Game Mgmt. Unit	Value of the Harvest	Average Value Per Pelt Regardless of Size
NORTHWEST (UNITED STATES) CATEGORY		
1	$ 1,090	$ 17.60
2	1,171	16.00
3	117	19.50
4	23	23.00
LOWER RIVER AND SOUTHWEST CATEGORY		
6	2,609	19.50
7	723	17.60
8	1,792	17.60
15	370	17.60
18	5,297	20.10
BRISTOL BAY CATEGORY		
9	10,937	22.10
17	20,345	21.40
UPPER RIVER CATEGORY		
11	$ 285	$ 23.80
12	2,390	24.10
13	3,106	22.70
14	7,753	21.20
16	8,346	21.90
20	41,571	21.10
21	36,960	23.40
22	1,157	26.30
23	140	28.00
24	10,988	25.20
25	8,451	22.10

Table 7. Value of the fur harvest.

Species	Average Value All Sizes and Areas	Number Exported	Value of Exported Peltries	Estimated Harvest	Value of Estimated Harvest
Beaver	$ 20.00	9,200	$ 184,000	8,556*	$ 165,600
Mink	23.70	15,623	370,654	18,400	435,600
Muskrat	1.05	33,005	34,655	38,800	40,740
Marten	12.25	8,869	108,633	10,400	127,650
Otter	26.00	2,781	72,306	3,270	85,020
White Fox	18.00	1,973	35,514	2,320	41,740
Other Fox	11.00	1,020	11,220	1,200	13,190
Weasel	1.20	945	1,134	1,110	1,330
Lynx	22.00	3,957	87,054	4,650	102,300
Squirrel	.40	211	84	250	100
T O T A L S			$ 905,254		$ 1,013,270

* Number of beaver sealed

Otter is expected to remain fairly stable on the market. The major changes in fur values have been with the long-haired furs.

White Fox

White fox peltries entered the market in November, 1964 at an average price of all sections of $17.00. Two major improvements were reported in the market; one in February, and the other about June. An average price of $18.00 was assigned to all sections and areas.

The 1,973 exported white fox peltries were valued at $35,514 and the estimated harvest of 2,320 was valued at $41,740.

Other Fox

All other fox, other than white fox, are placed in one category on the export report forms. Red fox, cross fox, blue fox, and a few black fox comprise the bulk of this category. It is very difficult to assign an average value to all types of foxes. The red fox is used as a standard for this section.

Red foxes entered the market in November at about $10.00 per pelt. The market made several improvements before June, 1965. An average value of $11.00 per peltry was assigned to all fox in the category. This value is probably quite conservative. A few local reports indicated that some trappers had averaged as much as $14.00 per peltry for red fox.

At $11.00 each, the 1,020 foxes which were exported were valued at $11,220. The estimated harvest of 1,199 foxes was valued at $13,190.

Weasel

Weasel has remained a very minor item on the fur market. As a result, quotations are difficult to obtain. The opening quotation on weasel in November, 1964 was $1.20. This value has been used for all weasel peltries.

The value of the 945 weasel peltries, which were exported from Alaska, was $1,134. The estimated harvest of 1,111 weasel was valued at $1,330.

Lynx

Lynx have shown the strongest improvement of any Alaskan furs on the market for both the 1964-65 and 1965-66 seasons. Average value of lynx entering the market in November, 1964 was $20.00. By April, 1965 the average was $22.00 and prices continued to improve through the next season. Due to transportation difficulties, it is normal that a large percentage of the Alaskan furs reach the market after February. In consideration of this and that the lynx season extends through March 31, the average price for lynx of all sections was estimated to be $22.00. The estimate is probably conservative. At $22.00 each, the 3,957 lynx peltries exported from Alaska were valued at $87,054. The estimated harvest of 4,650 lynx was valued at $102,300.

Squirrel

Squirrels are probably the most neglected animals on the fur market. The average price for all sections was $.40. Only 211 squirrels were reported on the fur export forms. These were valued at $84.40. The estimated harvest was 248 squirrels with an approximate value of $100.

Total Value of the Fur Harvest

The peltries exported from October 1, 1964 until September 31, 1965 were valued at $905,254.65. Using the same values placed on the pelts, only expanding the value to the estimated harvest, the total value amounts to $1,013,270. These figures represent only the value of the peltries at the Seattle or Vancouver markets. A trapper or a local dealer shipping directly to one of the major auctions or exchanges must pay a 5 percent commission on all sales. This is in addition to postage or freight charges. Many furs are sold to specialty markets such as the tourist trade and probably bring a substantial amount over the commercial value. An unsupported estimate of the percentage of the commercial value which the average trappers receive would be about 75 percent. In many areas, the writer suspects that the amount received by the trapper may be only 60 percent or less of the Seattle market price. It would take considerable field work to determine the actual prices received in the various areas by the trappers.

WORK PLAN SEGMENT REPORT
FEDERAL AID IN WILDLIFE RESTORATION

STATE: Alaska

PROJECTS: W-6-R-6 TITLE: Alaska Wildlife Investigations
AND: W-13-R-1 TITLE: Small Game and Furbearers Investigations

WORK PLANS: J(W-6-R-6) TITLE: Fur Bearer Studies
AND: A(W-13-R-1) TITLE: Furbearers

JOBS: 1(W-6-R-6) TITLE: Beaver Management Studies
AND: 2(W-13-R-1) TITLE: Beaver

PERIOD COVERED: January 1, 1965 to June 30, 1966

ABSTRACT

A program to measure all beaver skins was established in 1955. The level of population exploitation is determined by the percentage of kits (young of the year) in the populations. Libby (1954) established that a harvest consisting of 20 percent kits was a properly utilized population. If the harvest consisted of more than 30 percent kits, the harvest was excessive. In 1965, the harvest in Game Management Units 7, 8, and 19 exceeded 30 percent kits. Units 7 and 8 were not considered serious. More investigation is needed in Unit 19 to isolate the specific areas of overharvest.

Production declined in all major beaver producing areas. Total production was down 41 percent from 1964. The 1965 harvest was 8,556 peltries.

RECOMMENDATIONS

No recommendations are made relative to management.

WORK PLAN SEGMENT REPORT
FEDERAL AID IN WILDLIFE RESTORATION

STATE: Alaska

PROJECTS:	W-6-R-6	TITLE:	Alaska Wildlife Investigations
AND:	W-13-A-1	TITLE:	Small Game and Furbearers Investigations
WORK PLANS:	J(W-6-R-6)	TITLE:	Fur Bearer Studies
AND:	A(W-13-R-1)	TITLE:	Furbearers
JOBS:	1(W-6-R-6)	TITLE:	Beaver Management Studies
AND:	2 (W-13-R-1)	TITLE:	Beaver

PERIOD COVERED: January 1, 1965 to June 30, 1966

OBJECTIVES

To estimate the annual harvest.

To summarize available data on beaver population levels of utilization in Alaska.

TECHNIQUES

Beaver peltries must be sealed by an authorized representative of the Alaska Department of Fish and Game before they can be transported or exported from the State of Alaska.

This system was initiated in 1923 and since 1955, the pelts have been measured to determine the age composition of the harvest. An example of the form which is completed when sealing is performed is presented in the appendix.

The harvest figures since 1957 have been analyzed and presented by Game Management Units. Changes in the size of the units have necessitated some interpolations of the harvest figures.

FINDINGS

Beaver production in 1965 decreased 41 percent from 1964. This is the second consecutive year the production has decreased since 1963 when there was an increase of 29 percent over the 1962 harvest (Figure 1). The harvest of 8,556 beaver is as low as the harvest has fallen since 1944 when only 8,516 beaver were sealed. All of the major beaver producing areas show substantial decreases over the last two years (Table 1).

Beaver production for the 1965 season was markedly down in all but one minor Game Management Unit. Information was not available to identify the specific causes. Despite the lower harvest, Units 2, 6, 7, 8, 14, 15, 17, 19, and 25 show a harvest of kits in excess of the 20 percent level established by Libby (1955) as the proper level of harvest. In Units 7, 8, and 19 the kits

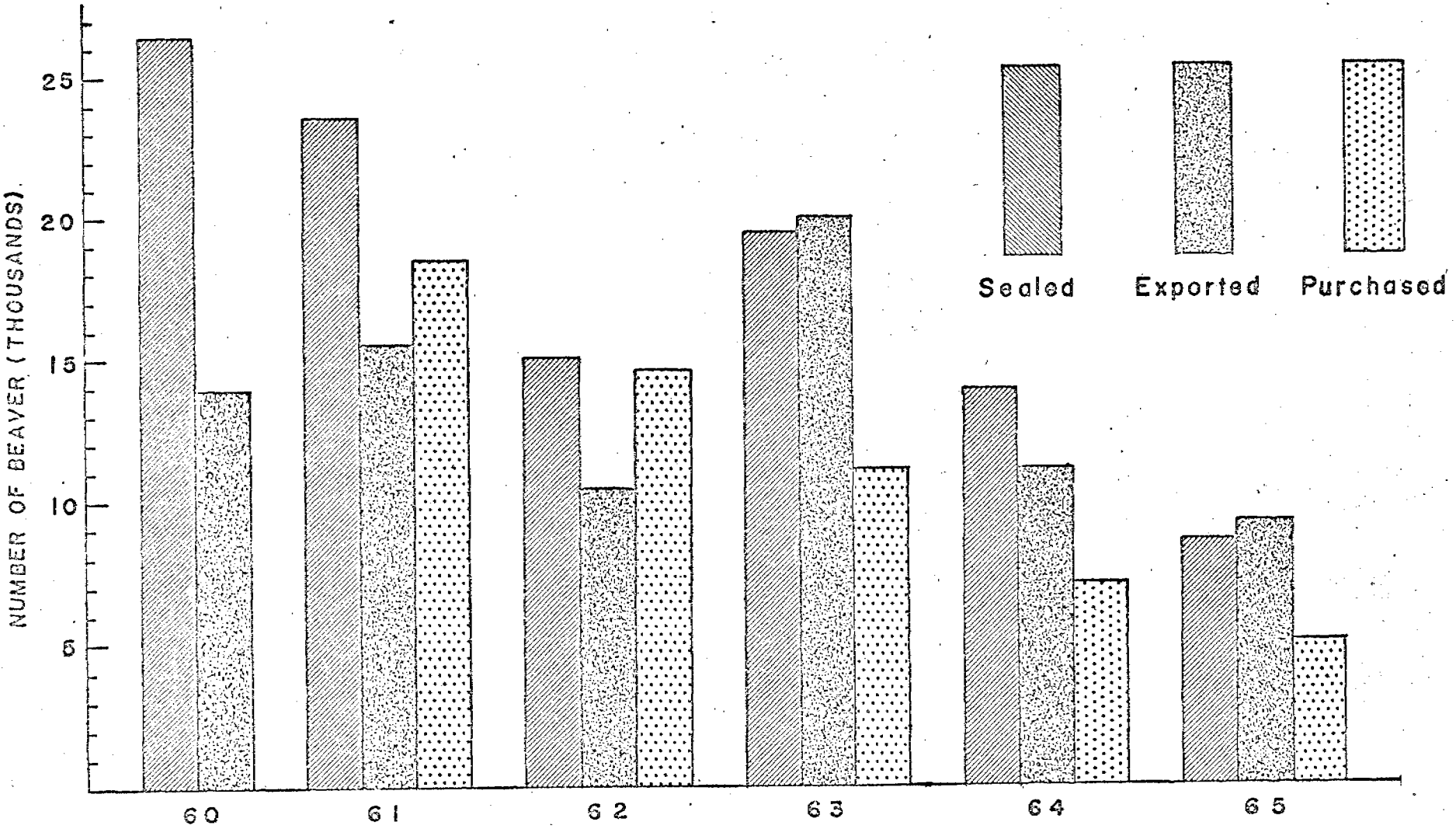


Fig. 1. Comparison of beaver sealed, beaver exported, and beaver purchased.

Table 1. Beaver Affidavit Analysis - 1957-1965.

Game Mgmt. Unit	Year	Limit	Percent Kits (Under 54")	Percent Kits and Yearlings (Under 59")	Percent Adults (Over 59")	Total No. of Beaver	No. of Trappers	Avg. No. Beaver/ Trapper
1	1957	No open season						
	1958	15	24.8	35.7	64.3	330	38	8.7
	1959	15	24.6	37.7	62.3	69	8	8.6
	1960	15	6.9	31.0	69.0	115	14	8.2
	1961	15	28.5	45.9	54.0	99	12	8.2
	1962	15	21.9	34.2	65.8	42	5	8.4
	1963	15	12.4	31.3	68.6	180	20	9.0
	1964	50	16.1	32.7	67.1	204	17	12.0
	1965	50	17.7	43.5	56.5	62	5	12.4
2	1957	No open season						
	1958	15	22.7	36.4	63.7	22	10	2.2
	1959	15	22.2	37.0	63.0	27	2	13.5
	1960	15				75	13	5.8
	1961	15	25.0	39.2	58.9	56	8	7.0
	1962	Season Open - No animals taken						
	1963	15	21.1	53.7	46.1	52	5	10.4
	1964	50	21.6	49.7	50.3	157	12	13.1
	1965	50	24.7	54.8	45.2	73	8	9.1
3	1957	No open season						
	1958	15			100.0	115	13	8.35
	1959	15	6.3	6.2	93.8	16	3	5.3
	1960	15				47	17	2.8
	1961	15						
	1962	Season open - No animals taken						
	1963	15	31.6	57.9	42.1	21	5	4.2
	1964	50	22.5	42.5	57.5	40	3	13.3
	1965	50		33.3	66.6	6	1	6.0

Table 1 (Cont.). Beaver Affidavit Analysis - 1957-1965.

Game Mgmt. Unit	Year	Limit	Percent Kits (Under 54")	Percent Kits and Yearlings (Under 59")	Percent Adults (Over 59")	Total No. of Beaver	No. of Trappers	Avg. No. Beaver/ Trapper
4[1/]	1962	15	30.5	56.8	33.2	36	3	12.0
	1963					16	1	16.0
	1964	50						
	1965	50			100.0	1	1	1.0
6	1957	20	24.1	40.0	60.0	245	16	15.3
	1958	20	12.9	28.0	72.0	264	15	17.6
	1959	20	14.3	20.2	79.8	168	11	15.3
	1960	40	14.3	35.7	64.3	304	15	20.3
	1961	40	13.2	31.0	68.9	264	15	17.6
	1962	40	13.5	27.1	72.9	155	10	15.5
	1963	50	13.7	24.4	75.6	305	11	27.7
	1964	50	12.3	29.0	71.0	155	8	19.4
	1965	50	20.7	41.5	57.8	135	13	10.4
7	1957	20	22.7	48.0	52.0	75	18	5.4
	1958	20	15.7	34.8	65.2	89	8	5.0
	1959	20	34.0	52.3	47.7	44	67	5.5
	1960	15	17.2	35.4	64.6	393	39	5.9
	1961	15	15.8	22.4	66.0	236	57	6.0
	1962	15	17.3	36.0	64.+	259	15	4.5
	1963	20	24.5	45.2	54.7	106	4	7.1
	1964	20	30.8	61.5	38.5	13	9	3.3
	1965	20	31.7	51.2	48.8	41		4.5
8	1957	15	23.6	32.9	67.1	140	15	9.3
	1958	20	21.3	35.7	64.3	235	24	9.8
	1959	20	22.7	40.9	59.1	154	12	12.9
	1960	40	28.4	47.7	52.3	369	25	14.8

Table 1. (Cont.). Beaver Affidavit Analysis - 1957-1965.

Game Mgmt. Unit	Year	Limit	Percent Kits (Under 54")	Percent Kits and Yearlings (Under 59")	Percent Adults (Over 59")	Total No. of Beaver	No. of Trappers	Avg. No. Beaver/ Trapper
8	1961	No limit	20.1	34.4	64.9	154	10	15.4
	1962	No limit	18.3	33.3	56.7	185	13	14.2
	1963	No limit	22.7	42.4	55.6	268	22	12.2
	1964	No limit	23.3	48.6	51.4	210	18	11.7
	1965	No limit	33.3	51.0	49.0	102	11	9.3
9	1957	15	17.0	25.9	74.1	138	1469	10.6
	1958	15	22.4	34.2	65.8	141	1515	11.0
	1959	15	23.9	34.7	65.3	170	1975	11.6
	1960	20	21.9	32.3	67.8	115	1768	15.4
	1961	20	19.8	32.0	67.3	161	2319	14.4
	1962	15	28.3	38.0	62.0	82	933	11.3
	1963	15	19.9	34.9	65.1	161	2080	12.9
	1964	15	26.3	37.9	62.0	91	951	10.5
	1965	15	17.6	13.8	68.6	47	494	10.6
11	1957	20	12.8	15.4	84.6	39	5	7.8
	1958	20			100.0	20	4	5.0
	1959	20	8.5	16.9	83.1	59	5	11.8
	1960	20	35.0	50.0	50.0	20	2	10.0
	1961	20	5.0	30.0	70.0	20	2	10.0
	1962	20				2	1	2.0
	1963	20				16	3	5.3
	1964	20	5.1	30.8	69.2	39	6	6.5
	1965	20	16.7	25.0	75.0	12	2	6.0
12	1957	5	2.8	13.2	86.8	106	40	2.6
	1958	15	10.5	13.9	86.1	409	85	4.8
	1959	15	11.6	15.1	84.9	423	80	5.3
	1960	15	17.2	35.4	64.6	393	67	5.9

Table 1 (Cont.). Beaver Affidavit Analysis - 1957-1965.

Game Mgmt. Unit	Year	Limit	Percent Kits (Under 54")	Percent Kits and Yearlings (Under 59")	Percent Adults (Over 59")	Total No. of Beaver	No. of Trappers	Avg. No. Beaver/ Trapper
12	1961	15	15.8	22.4	66.0	236	39	6.0
	1962	15	17.3	36.0	64.+	259	57	4.5
	1963	15	22.7	32.5	67.5	255	67	3.8
	1964	15	16.0	33.2	66.3	205	63	3.2
	1965	15	6.1	28.3	70.7	99	45	2.2
13	1957	20	20.0	23.5	71.5	165	24	6.9
	1958	20	12.9	22.5	71.5	473	59	8.0
	1959	20	16.4	28.3	71.7	385	37	10.4
	1960	20	23.2	36.9	63.1	507	59	8.6
	1961	20	23.9	44.3	55.0	206	21	9.8
	1962	20	27.5	34.0	66.0	98	13	7.5
	1963	20	19.1	40.6	59.4	335	51	6.6
	1964	20	20.7	34.8	64.1	376	43	8.7
	1965	20	14.6	36.5	63.5	137	28	4.9
14	1957	20	17.7	36.2	63.8	923	84	11.0
	1958	40	16.4	30.6	69.4	1204	96	12.6
	1959	40	27.2	50.7	49.3	647	49	13.2
	1960	40	24.1	43.4	56.7	844	68	12.4
	1961	40	23.9	44.3	55.0	877	69	9.8
	1962	40	22.3	45.9	54.1	493	38	12.9
	1963	40	24.9	48.1	51.9	789	83	9.5
	1964	40	21.2	46.0	54.0	655	60	10.9
	1965	40	22.2	43.3	56.7	365	41	8.9
15	1957	20	17.2	37.9	62.1	303	26	11.7
	1958	40	16.4	27.5	72.5	360	30	12.0
	1959	40	29.8	46.4	53.6	168	15	11.2
	1960	40	17.5	35.3	64.7	379	20	18.9
	1961	40	15.1	33.9	66.1	438	20	21.9
	1962	40	17.7	33.9	66.1	180	14	12.8
	1963	40	18.1	33.2	66.8	254	25	10.1
	1964	40	19.4	36.3	63.7	237	24	9.9
	1965	40	23.8	52.4	42.8	21	4	5.2

Table 1 (Cont.). Beaver Affidavit Analysis - 1957-1965.

Game Mgmt. Unit	Year	Limit	Percent Kits (Under 54")	Percent Kits and Yearlings (Under 59")	Percent Adults (Over 59")	Total No. of Beaver	No. of Trappers	Avg. No. Beaver/ Trapper
16	1957	20	19.4	41.9	58.1	62	5	12.4
	1958	40	13.7	25.7	74.3	1148	45	25.5
	1959	40	22.1	39.7	60.3	1715	72	23.8
	1960	40	15.1	35.3	64.7	2200	95	23.2
	1961	40	20.9	37.9	62.3	1309	63	20.7
	1962	40	34.3	43.3	56.7	524	34	15.4
	1963	40	18.1	38.3	61.7	1305	66	19.7
	1964	40	19.5	38.7	62.3	798	39	20.5
	1965	40	15.7	42.5	57.5	381	17	22.4
17[2/]	1957	10	22.9	36.8	63.2	367	46	8.0
	1958	15	19.1	33.0	67.0	3165	263	12.0
	1959	10	19.6	29.4	70.6	3245	369	8.8
	1960	15	24.3	34.2	65.8	3721	279	13.3
	1961	15	23.1	24.7	65.2	2849	230	12.3
	1962	15	29.5	41.5	58.5	1903	175	10.8
	1963	15	23.3	36.8	63.2	2172	189	11.5
	1964	15	28.4	38.4	61.6	1766	180	9.8
	1965	15	22.1	34.9	65.1	957	97	9.9
18	1957	No open season						
	1958	No open season						
	1959	10	31.2	45.1	54.9	2766	357	7.7
	1960	10	25.7	38.7	61.3	2013	260	7.7
	1961	10	28.9	44.6	55.3	1428	187	7.6
	1962	10	34.9	45.1	54.8	817	116	7.0
	1963	10	33.3	50.1	49.9	1503	202	7.4
	1964	10	30.3	44.7	54.9	666	116	5.7
	1965	10	18.6	36.4	63.6	264	41	6.4

Table 1 (Cont.). Beaver Affidavit Analysis - 1957-1965.

Game Mgmt. Unit	Year	Limit	Percent Kits (Under 54")	Percent Kits and Yearlings (Under 59")	Percent Adults (Over 59")	Total No. of Beaver	No. of Trappers	Avg. No. Beaver/ Trapper
19	1957	15	12.5	24.8	75.2	2200	200	11.1
	1958	20	15.5	24.0	76.0	3852	256	15.1
	1959	20	16.3	29.3	70.7	4034	284	14.2
	1960	20	16.7	30.0	70.0	3128	210	14.9
	1961	20	17.5	30.8	69.1	4576	307	14.9
	1962	20	19.7	35.2	65.8	3035	219	13.9
	1963	15	20.0	34.9	65.1	2250	196	11.4
	1964	15*	20.0	32.6	67.3	2148	176	12.2
	1965	15*	30.7	42.5	57.5	1290	128	10.1
20	1957	15	8.9	16.6	83.4	641	74	8.8
	1958	20	8.7	19.7	80.3	1869	152	12.3
	1959	20	4.1	17.7	82.3	1242	119	10.4
	1960	20	9.1	23.3	76.7	1540	145	10.6
	1961	20	11.4	24.5	75.5	1435	129	11.1
	1962	20	15.8	25.7	74.1	1139	96	10.2
	1963	20	9.6	21.7	78.3	1514	133	13.3
	1964	25	12.2	23.0	76.0	2176	194	11.2
	1965	25	9.6	24.4	76.7	1671	163	10.2
21	1957	15	12.3	23.4	76.6	5460	490	11.1
	1958	20	11.0	22.6	77.4	6871	499	13.8
	1959	20	12.7	26.2	73.8	5771	425	13.6
	1960	20	12.0	25.8	74.2	5945	381	15.6
	1961	20	12.8	28.7	71.1	5488	356	15.4
	1962	20	13.6	32.4	67.6	3833	288	13.3
	1963	20	14.5	29.1	70.9	4638	343	13.5
	1964	20	16.0	31.3	68.6	2067	212	9.7
	1965	15	13.7	30.4	69.6	1578	182	8.7

* Portion of Unit 19 (above Medfra) had limit of 25 in 1964 and 1965.

Table 1 (Cont.). Beaver Affidavit Analysis - 1957-1965.

Game Mgmt. Unit	Year	Limit	Percent Kits (Under 54")	Percent Kits and Yearlings (Under 59")	Percent Adults (Over 59")	Total No. of Beaver	No. of Trappers	Avg. No. Beaver/ Trapper
22	1957	No open season						
	1958	10	45.2	54.8	45.2	42	10	4.2
	1959	10	18.8	35.4	64.6	48	14	3.4
	1960	10	25.8	41.9	58.1	62	12	5.2
	1961	10	4.7	14.2	85.7	21	3	7.0
	1962	10	26.1	38.2	61.8	42	7	6.0
	1963	20						
	1964	50	19.4	27.6	72.4	98	14	7.0
	1965	50	2.3	13.6	86.4	44	4	11.0
23	1957	15			100.0	5	1	5.0
	1958	No open season						
	1959							
	1960	15						
	1961	15	12.5	50.0	50.0	8	1	8.0
	1962	15		30.0	70.0	7	2	3.5
	1963	15				3	1	3.0
	1964	15						
	1965	15			100.0	5	1	5.0
24	1957	20	8.2	22.0	78.0	1486	96	15.5
	1958	25	6.2	23.2	76.8	1841	105	17.5
	1959	25	6.8	17.6	82.4	1434	97	14.8
	1960	25	13.0	30.2	69.8	1375	79	17.4
	1961	25	11.1	30.9	68.5	1333	88	15.1
	1962	25	8.2	27.8	72.2	1066	71	15.0

Table 1 (Cont.). Beaver Affidavit Analysis - 1957-1965.

Game Mgmt. Unit	Year	Limit	Percent Kits (Under 54")	Percent Kits and Yearlings (Under 59")	Percent Adults (Over 59")	Total No. of Beaver	No. of Trappers	Avg. No. Beaver/ Trapper
24	1963	25	9.5	27.9	72.1	965	70	13.7
	1964	15	6.9	19.0	80.6	578	64	9.0
	1965	15	3.9	22.2	77.7	436	55	7.9
25	1957	15	21.7	31.6	68.4	630	77	8.2
	1958	15	25.9	37.1	62.9	625	77	8.1
	1959	15	21.1	38.3	61.7	725	86	8.4
	1960	15	17.3	33.3	66.7	788	61	12.9
	1961	15	13.4	30.2	69.9	644	70	9.2
	1962	15	15.8	29.1	70.9	430	44	9.8
	1963	20	14.6	27.9	72.1	464	63	7.4
	1964	20	18.4	30.9	69.1	488	63	7.7
	1965	20	21.5	35.9	64.1	382	47	8.1
Total	1957		13.8	25.8	74.2	14,344	1351	10.6
	1958		14.1	26.2	73.8	24,484	1940	12.6
	1959		17.9	31.0	69.0	25,115	2223	11.3
	1960		16.4	29.4	70.6	26,504	2028	13.1
	1961	1	17.6	32.2	67.4	23,859	1800	13.2
	1962		19.1	33.4	66.6	15,187	1289	11.7
	1963		18.5	34.0	66.0	19,619	1739	11.3
	1964	19.5	19.5	33.6	66.3	14,046	1589	8.8
	1965		17.4	33.4	66.6	8,556	949	9.0

1 Either no open season or no beaver taken during 1957-1961 in Units 4, 5, 10 and 26.
2 Part of Unit 17 closed in 1957 and 1958.

9 year average (1957-65) 19,049
9 year range (1957-65) 8,556-26,504

exceed 30 percent of the harvest. According to Libby, a harvest consisting of 30 percent kits is an overharvest. In Unit 7, nine trappers reported a harvest of only 41 beaver. This indicates that the area may be trapped on a recreational basis and the trappers are not very selective in harvesting beaver. Unit 8 is Kodiak Island. Beaver are numerous; the pelt value is low; there is no bag limit; therefore, the harvest is not considered excessive.

Game Management Unit 19 still shows signs of overutilization despite a reduction in the limit in 1963. The unit was split into two portions with different bag limits in 1964. Through an oversight the IBM compilations were not modified to consider the data separately from both portions of Unit 19; therefore, it is still unknown if the problem was even isolated by dividing the area. The information on hand indicates the overutilization was not corrected.

The present system used to determine the degree of population exploitation has several apparent inaccuracies. Aerial surveys have not been conducted for several years to check on beaver densities in areas showing high utilization. Many areas have had a drastic reduction in the number of beaver trappers with little change in success or composition of the harvest but with a corresponding reduction in the harvest.

In Game Management Unit 19, a similar change has occurred; however, the percentage of kits in the harvest has increased alarmingly. There is a possibility that a reduction in trapping effort has changed the techniques of trapping and the total beaver population is not being heavily utilized, but the remaining traplines are being overutilized. Properly conducted aerial and river surveys compared with previous surveys will determine major changes in beaver densities.

Reproductive success varies a great deal each year for many species of game in Alaska. Any variations in the reproductive success of beaver would alter the percentage of kits in the population and would cause an erroneous interpretation of the effects of the harvest on the beaver population. No measurement of the reproductive success of beaver is employed in the State.

The management system as it was originally established, recognized the need to evaluate the harvest information in light of local and general economic conditions, i.e. the current fur prices and incentives to trap such as the past fishing and mink seasons. Fur prices have changed very little in the last five years--not enough to account for the large decrease in harvest. More information is needed to evaluate the many economic conditions which influence beaver trapping.

LITERATURE CITED

Libby, Wilber L. 1955. Beaver management studies.

Alaska Cooperative Wildlife Research Unit Quarterly Report. 6 (4); 7-28.

Beaver Sealing Certificate
Front Side

37701 FG-8a

ALASKA DEPARTMENT OF FISH AND GAME

Beaver Certificate

Trapper's License Number_____

Number of Beaver Skins_____

Drainage Taken_____

Game Management Unit Number_____

Trapper's Name_____

Trapper's Address_____

Total Beaver Taken to Date_____

String Tagging Officer's Signature_____

String Tagging Officer's Address_____

Sealing Officer_____

Seal Numbers_____ to _____

Trapper's Signature_____

Date_____

Beaver Sealing Certificate
Back Side

	0-52	53-59	60-64	65+
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				

Instructions: Write actual measurement (total of length plus width) for each skin in proper column. Begin with number 1 in each size-column.

WORK PLAN SEGMENT REPORT
FEDERAL AID IN WILDLIFE RESTORATION

STATE: Alaska

PROJECTS: W-6-R-6 TITLE: Alaska Wildlife Investigations
AND: W-13-R-1 TITLE: Small Game and Furbearer Investigations

WORK PLANS: J(W-6-R-6) TITLE: Fur Bearer Studies
AND: A(W-13-R-1) TITLE: Furbearers

JOBS: 3(W-6-R-6) TITLE: Wolverine & Lynx Productivity
AND: 3(W-13-R-1) TITLE: Lynx, Productivity & Breeding

PERIOD COVERED: January 1, 1965 to June 30, 1966

ABSTRACT

Lynx specimens were collected during two periods: November 1, 1964 through October 31, 1965 and November 1, 1965 through March 31, 1966. The collections were primarily females, some males were collected incidentally.

1105 lynx (934 females, 164 males and 7 of sex unknown) were collected during the first period and 1233 lynx (1130 females, 86 males and 17 sex unknown) were collected during the second period.

The specimens from the first collection have been processed and the information is presently being analyzed at the computer section of the University of Alaska. Specimens from the second collection are in various stages of processing.

After the 1964-65 trapping season, a questionnaire was sent to trappers in areas where lynx had been collected. The purpose was to obtain information on population trends of lynx and some prey species. Ninety one trappers responded. A similar questionnaire was sent out after the 65-66 trapping season. Questionnaires are still being returned.

RECOMMENDATIONS

No recommendations are made relative to management.

WORK PLAN SEGMENT REPORT
FEDERAL AID IN WILDLIFE RESTORATION

STATE:	Alaska		
PROJECTS:	W-6-R-6	TITLE:	Alaska Wildlife Investigations
AND:	W-13-R-1	TITLE:	Small Game and Furbearer Investigations
WORK PLANS:	J(W-6-R-6)	TITLE:	Fur Bearer Studies
AND:	A(W-13-R-1)	TITLE:	Furbearers
JOBS:	3(W-6-R-6)	TITLE:	Wolverine & Lynx Productivity
AND:	3(W-13-R-1)	TITLE:	Lynx, Productivity & Breeding

PERIOD COVERED: January 1, 1965 to June 30, 1966

OBJECTIVES

To obtain data on the breeding cycle of lynx in Alaska.

To determine annual productivity and to relate production of young to population trends of lynx and their main prey species.

TECHNIQUES

Specimen Collection

After obtaining the large collection of over 1800 carcasses from the 1964 collection, it was decided that male lynx carcasses were no longer needed. Cooperators were notified and the payment was increased on the female carcasses. Trappers had difficulty distinguishing the sex of immature lynx and a number of males were received. It is difficult to verify the sex of frozen lynx carcasses. Payments for male lynx were readjusted on future shipments. From the period November 1, 1964 to October 31, 1965, 1105 lynx were received and processed (934 females, 164 males, 7 unknown).

The trapping season for lynx is from November 1 through March 31. Carcasses received during this period were obtained from cooperating trappers. After April 1, 1965, the collection was continued in order to obtain information after the female lynx had been bred. Trappers willing to aid the project were delegated collecting authority by the Department of Fish and Game and collecting was continued through July 1965.

Success was much lower than anticipated. Probably causes were a reduced lynx population in some areas and the normal habits of the female lynx

as they approached the denning period. Approximately 94 lynx were obtained during this period. Several live lynx were taken and held at the Aero Medical Laboratories on Fort Wainwright. Two of these female lynx were subsequently shipped to Dr. Robert L. Rausch, of the Arctic Health Institute at Anchorage.

1233 lynx were collected during the second collecting period from November 1, 1965 to March 31, 1966. The collection included 1130 females, 86 males, and 17 on which the sex has not been verified. Problems associated with the change of responsibility for the job made it impossible to continue the collection through the breeding period as in 1965. This phase of the project will probably be resumed in the summer of 1967. One live male lynx was sent to Dr. Rausch in order to breed the females obtained the previous year.

Specimen Processing

Specimen processing has been conducted as follows:

1. All carcasses are weighed and gross anatomical measurements are taken.

2. The skull, leg bones (ulna and radius), reproductive tract, eyeball, and the digestive tract from animals from the Fairbanks area are retained for further processing.

3. The skulls and leg bones are cleaned by boiling.

4. Eyeballs are preserved in 10% Formalin. Lenses are removed, desiccated, and weighed.

5. Reproductive tracts are hardened in Formalin before the ovaries are sectioned and examined for evidence of past pregnancies. The uteri are examined for placental scars.

6. A canine tooth is removed from the skulls and stored in 1% Formalin for future examination.

The processing of specimens collected from the first period was completed during the summer of 1965. It was not until February 1966 that the information was assembled on suitable forms to allow the information to be punched on IBM cards and computer analyzed.

The information from the first collection is presently being tabulated and analyzed by the computer section of the University of Alaska.

Techniques to determine the age of the lynx by analysis of the teeth have not yet been developed; therefore, the canine teeth from both the first and second collections have not been processed to determine ages.

Prior to the preliminary analysis of the information collected in the years preceeding the collection period November 1, 1964 to October 31, 1965, it was thought that very little had been gained from the eye lenses weights. Therefore, eye lenses were not collected from the lynx taken from November 1, 1964 to March 31, 1965. Eye lenses were taken from the lynx collected from April 1, 1965 through October 31, 1965, as no previous collections had been made from this period.

The preliminary analysis has indicated that the information from the eye lenses may be more valuable than anticipated and the collection of eye lenses was resumed the last collecting period.

The status of the specimen processing from the second collecting period is as follows:

1. Skulls and leg bones have been cleaned but not sorted into age classes.

2. Canine teeth have been separated from the skull and preserved but not processed for age determination.

3. Eye lenses are currently being dryed and weighed.

4. Analysis of the reproductive specimens has not been made.

To correlate the production of young with the population trends of lynx and their prey species, a questionnaire was mailed to trappers in areas where lynx specimens had been collected. An example of the questionnaires used in both 1965 and 1966 are included in the appendix. In order to maintain the interest of the cooperators, a digest of the information obtained from the 1965 questionnaire was sent to the trappers from which information was solicited in 1966. A copy of the digest is also included in the appendix.

Due to the poor construction of the questionnaire used in 1965, the information was incomplete. Space was not provided on the questionnaire for the trapper to place his name and the area where he trapped. As a result 30 of the 91 questionnaires returned did not contain the name of the trapper and could not be related to even the general area where the cooperators lived or trapped. Three questions were asked concerning the population levels of lynx, rabbits, and grouse. For each species the trapper was asked if the population was higher, lower, or no different than the year before. As the result of this type of questioning, only the change in population could be determined and not the relative level of the population. The deficiencies were corrected on the 1966 questionnaire.

FINDINGS

Because of the difficulties encounted with analyzing the information from the two collecting periods covered by this report, an insignificant amount of findings can be reported at this time.

The chronology of the female harvest is contained in Table 1. It is interesting to note that the proportion of kits increases throughout the season. This seems to follow the same pattern noted in the collection obtained in previous years. It can be concluded that the percentage of young contained in the harvest cannot be used to determine survival of kits or percentage of kits in the population. Furthermore, it would appear that the annual production will have to be obtained from the analysis of the female reproductive tracts. The potential production figures obtained by the analysis of the reproductive tracts can then be compared with percentages of kits and yearlings in the harvest and possibly the survival of kits and yearlings can be derived.

The tabulation of placental scars is presented in Table 2. The significance of this information cannot be fully appreciated without comparing it with previous collections.

The results of the questionnaire are of doubtful value because of difficulties encountered in relating specific questionnaires to the area where the trapper had trapped. It was necessary to recognize only 3 general areas, the Upper Yukon, the Tanana Valley, and the Upper Copper River. By giving the 3 possible answers to each question a numerical equivalent the opinions of the trappers in each general area were averaged. The results are as follows:

1. Upper Yukon--lynx population higher, hare population no different, grouse population lower.

2. Tanana Valley--lynx population lower, hare population lower, grouse population lower.

3. Upper Copper River--lynx population higher, hare population lower, grouse population lower.

Ninety one trappers returned the questionnaire. They averaged 18.6 lynx per trapper, and the highest number of lynx taken was 170. Trapping success will be compared for various years to provide a check on the reported trends.

Table 1. Chronology of the female lynx harvest during the lynx trapping season.

Area	November			December			January			February			March		
	No. of Kits	No. of Yr.	No. of Adults	No. of Kits	No. of Yr.	No. of Adults	No. of Kits	No. of Yr.	No. of Adults	No. of Kits	No. of Yr.	No. of Adults	No. of Kits	No. of Yr.	No. of Adults
Murphy Dome	1	16	2	2	8		2	10		1	6	2		1	
Nenana Highway		1						2	1		6				
Tok	3	11	4		3	3		13	9	4	10	1	3	9	3
Delta		28	8		11	3	2	20	1	6	17	1		5	3
Eielson AFB		6			11			1	1		4				1
Glennallen	2	19	3	5	15	8	10	23	9	13	26	13	21	19	23
Fort Yukon-Birch Cr.	1	4	3	1	15	10		15	6		14	6	1	8	13
Fairbanks		7	2		6	1	1	13		1	8	4	2	4	3
Healy		4	1		6			6			3		1		
McGrath					3	1		1							
GMU 11					5	2				1		1			
Tanana Flats								5	2		1	1			
Eagle			2			1						3			
Unknown								3							
Rampart					1		1	13	1	2	13	5		2	1
TOTALS	7	96	25	8	84	29	16	125	30	26	108	37	28	48	47
Percent	5.5	75.0	19.5	6.6	69.4	24.0	9.4	73.1	17.5	15.2	63.2	21.6	22.8	39.0	38.2
Monthly Total & Percent of Sample	128 (17.9)			121 (16.9)			171 (24.0)			171 (24.0)			123 (17.2)		

Table 2. Female lynx placental scars.

Area	Yearlings			Adults			Total		
	Number of Animal	Number of Placental Scars	Average Number Placental Scars Per Animal	Number of Animals	Number of Placental Scars	Average Number Placental Scars Per Animal	Number of Animals	Number of Placental Scars	Average Number Placental Scars Per Animal
Murphy Dome	27	125	4.6	4	26	6.5	31	151	4.9
Nenana Highway	6	21	3.5	1	5	5.0	8	28	3.5
Tok	24	99	4.1	19	84	4.4	43	183	4.3
Delta	36	157	4.4	17	101	5.9	53	258	4.9
Eielson AFB	11	53	4.8	5	19	3.8	16	72	4.5
Glennallen	89	331	3.7	58	317	5.5	148	649	4.4
Fort Yukon-Birch Cr.	27	124	4.6	36	163	4.5	63	287	4.6
Fairbanks	28	126	4.5	15	71	4.7	43	197	4.6
Healy	10	46	4.6	1	5	5.0	11	51	4.6
McGrath	1	3	3.0	2	7	3.5	3	10	3.3
GMU 11				2	13	6.5	2	13	4.5
Tanana Flats	9	41	4.6	6	27	4.5	15	68	4.5
Eagle				4	18	4.5	4	18	4.5
Unknown	4	18	4.5				4	18	4.5
Rampart	1	1	1.0	22	122	5.5	52	242	4.7
TOTALS	301	1263	4.2	192	978	5.1	496	2245	4.5

Please fill in the following blanks to help us make our information on lynx more complete.

I took _____ lynx during the '64-'65 trapping season.

Of these, _____ were males and _____ were females.

The year before this I took _____ lynx.

This year lynx populations were higher_____ than the year before.
lower_____
no different_____

This year rabbit populations were higher_____ than the year before.
lower_____
no different_____

This year grouse populations were higher_____ than the year before.
lower_____
no different_____

I do_____ plan to trap lynx next year.
do not_____

OTHER COMMENTS:

Please return this form to us in the enclosed envelope.

Thank you for your cooperation.

SINCERELY,

ALASKA DEPARTMENT OF FISH AND GAME

Game Biologist

STATE OF ALASKA
DEPARTMENT OF FISH AND GAME
604 Barnette St. Room - 116
Fairbanks, Alaska

June 3, 1966

Dear Trapper:

Last spring the Department of Fish and Game conducted a survey of trappers to learn more about lynx. I was extremely pleased with the results we got and I hope we can do as well this year.

Trappers spend more time in the field than most people who only hunt or fish and I believe their observations are about the best.

Here are some of the things we learned from last year's survey about the 1964 - 65 trapping season.

TRAPPER'S LUCK

1. 91 trappers who returned the survey forms took 1690 lynx.
2. They averaged 18.6 lynx each.
3. The highest number of lynx reported by any trapper was 170.
4. One trapper out of ten did not plan to trap during the 1965 - 1966 season.

LYNX ABUNDANCE

1. Upper Yukon --- Trappers believed the lynx had increased in the Yukon Valley above Tanana.
2. Tanana Valley --- Lynx have decreased slightly in the Tanana Valley from the Yukon to the Tok area.
3. Upper Copper River --- Lynx were up in the Copper River Valley.

SNOWSHOE HARE ABUNDANCE

1. Upper Yukon --- Hares were about the same number.
2. Tanana Valley --- Hares were scarce throughout the Tanana Valley from the Yukon to the Tok area.
3. Upper Copper River --- Most trappers reported the hare population was slightly reduced.

GROUSE ABUNDANCE

1. Upper Yukon River -- Trappers thought the Grouse population was down.
2. Tanana Valley -- Reports throughout the area from Manley Hot Springs to Tok indicate grouse were scarce.
3. Upper Copper River -- Grouse were also down in this area.

I would like to continue this survey and would appreciate it very much if you will fill out the enclosed form and return it in the self-addressed envelope. The comments and letters returned with the forms are very valuable and interesting and I hope you will continue to make them. This year, if you will return the questionnaire promptly, I will have the information back to those who mail in forms as soon as possible.

I would like to have more infomation from all areas. If you know of any trappers who would possibly like to help me with this project please write their names in the space for comments or send them in on a separate slip of paper.

Last year we did not ask where the trapper was trapping and when the trappers said the population was high or low we did not know what area they were referring to. We have enclosed a map this year so that you could show us the area where you trap. You don't need to be exact, the general area is all we want to know. If the map is not of the right area, then tell us as best you can where you trap.

Sincerely yours,

ALASKA DEPARTMENT OF FISH AND GAME

Oliver E. Burris

Oliver E. Burris, Game Biologist

OEB:elp
Enclosures

NAME: _____ ADDRESS: _____

Where did you trap? _____
(Please also mark area on enclosed map)

How many lynx did you take in the 1965-1966 trapping season?

From your observations during the 1965-1966 trapping season, please place an "X" in the best boxes for the following:

Numbers of lynx were { high ☐ / medium ☐ / low ☐ }. There were { more lynx than ☐ / the same number of lynx as ☐ / fewer lynx than ☐ } in the 1964-1965 trapping season.

Numbers of rabbits were { high ☐ / medium ☐ / low ☐ }. There were { more rabbits than ☐ / the same number of rabbits as ☐ / fewer rabbits than ☐ } in the 1964-1965 trapping season.

Numbers of grouse were { high ☐ / medium ☐ / low ☐ }. There were { more grouse than ☐ / the same number of grouse as ☐ / fewer grouse than ☐ } in the 1964-1965 trapping season.

Comments:

WORK PLAN SEGMENT REPORT
FEDERAL AID IN WILDLIFE RESTORATION

STATE:	Alaska		
PROJECTS:	W-6-R-6	TITLE:	Alaska Wildlife Investigations
AND:	W-13-R-1	TITLE:	Small Game and Furbearer Investigations
WORK PLANS:	J(W-6-R-6)	TITLE:	Fur Bearer Studies
AND:	A(W-13-R-1)	TITLE:	Furbearers
JOBS:	5(W-6-R-6)	TITLE:	Southeastern Mink Management Studies
AND:	4(W-13-R-1)	TITLE:	Mink, Southeastern

PERIOD COVERED: January 1, 1965 to June 30, 1966

ABSTRACT

This project was activated from January through April 1966. Procedures were restricted to harvest questionnaires and analysis, only. Questionnaires were designed to measure trends in effort, trapper distribution, and catch.

The 1965-66 season reflected an increased take due to improved weather conditions and better fur prices. With a maximum of only 220 active commercial trappers in southeastern Alaska, an obvious trend in the decline of effort exists. If this trend continues, it is clear that successive year seasons can be maintained with no harmful biological or economic impacts on the resource.

RECOMMENDATIONS

A refined sample should be developed from the large trapping license holder segment polled for this report. This smaller sample group should be mailed a questionnaire every other year in order to continue following trends in effort, trapper distribution, and catch.

WORK PLAN SEGMENT REPORT
FEDERAL AID IN WILDLIFE RESTORATION

STATE: Alaska

PROJECTS:	W-6-R-6	TITLE:	Alaska Wildlife Investigations
AND:	W-13-R-1	TITLE:	Small Game and Furbearer Investigations
WORK PLANS:	J(W-6-R-6)	TITLE:	Fur Bearer Studies
AND:	A(W-13-R-1)	TITLE:	Furbearers
JOBS:	5(W-6-R-6)	TITLE:	Southeastern Mink Management Studies
AND:	4(W-13-R-1)	TITLE:	Mink, Southeastern

PERIOD COVERED: January 1, 1965 to June 30, 1966

OBJECTIVES

To evaluate and formulate procedures for the management of mink in southeastern Alaska to keep abreast of changing economic conditions influencing the rate of harvest.

TECHNIQUES

A master list of all 1964 trapping license holders in southeastern Alaska was compiled. At the close of the regular trapping season (for most of the area), January 22, questionnaires were mailed to 773 license holders. The master lists of trappers have been placed on file at the Ketchikan and Fairbanks offices.

Questionnaires requested the following information: did they trap; area trapped; total catch by species; miles of beach trapped; would their areas produce with successive seasons; primeness rating; trapping pressure rating; fur abundance rating; seal abundance rating; and trapping season success rating. License holders were also broken down by place of residence and class of license.

The questionnaire and covering letter may be seen in the appendix. Trappers were segregated into two classes--commercial and recreational. Trappers using twenty or less traps were classified recreational and those using more than twenty traps were classified commercial.

Fig. 1. The range and mean measurements of zygomatic breadth (left) and basilar length (right) of minks from seven locations. Females are indicated by shaded areas and males by unshaded areas.

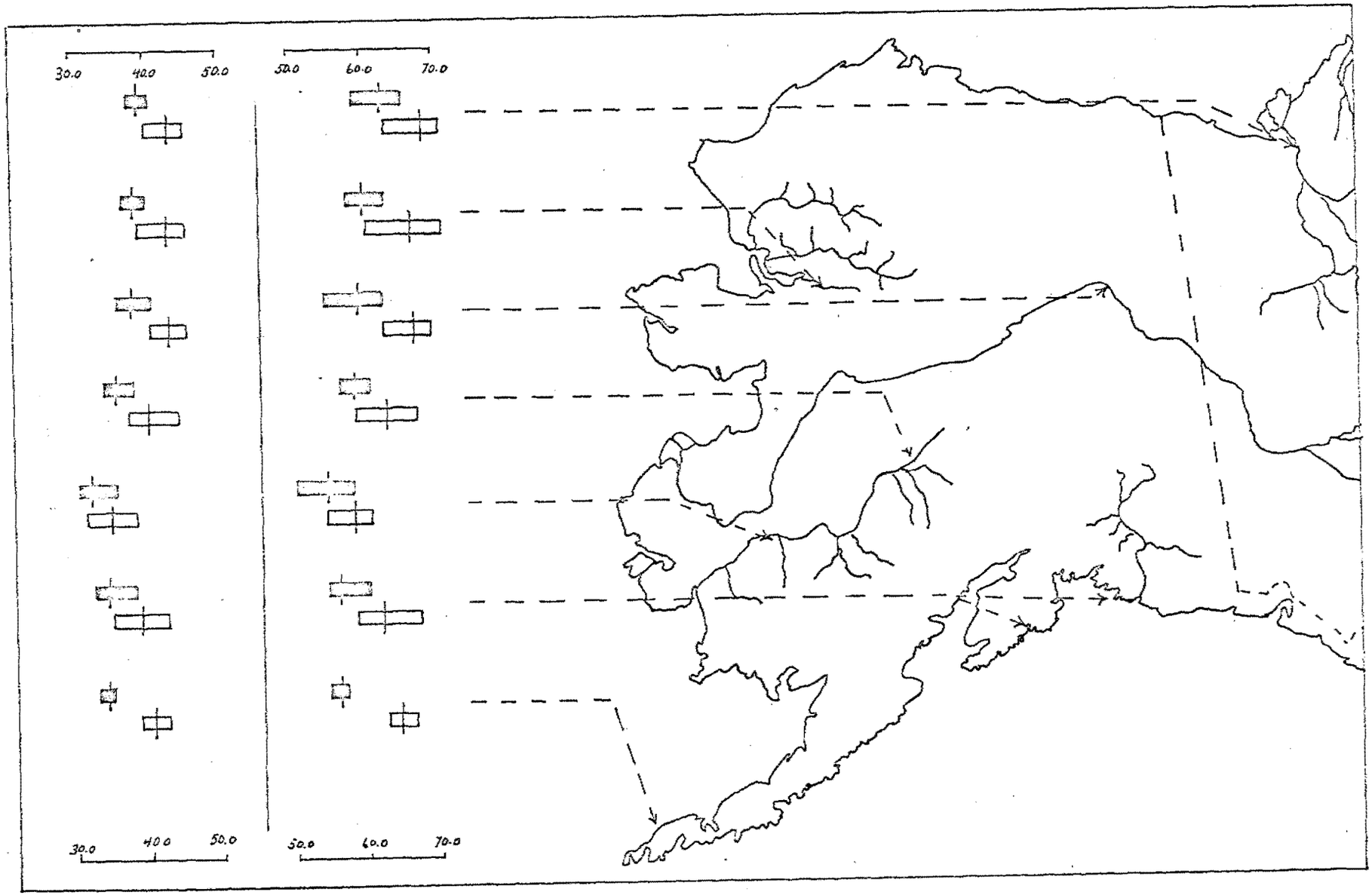


Fig. 2. The range and mean measurements of breadth of rostrum (left) and cranium width (right). Symbols as in Fig. 1.

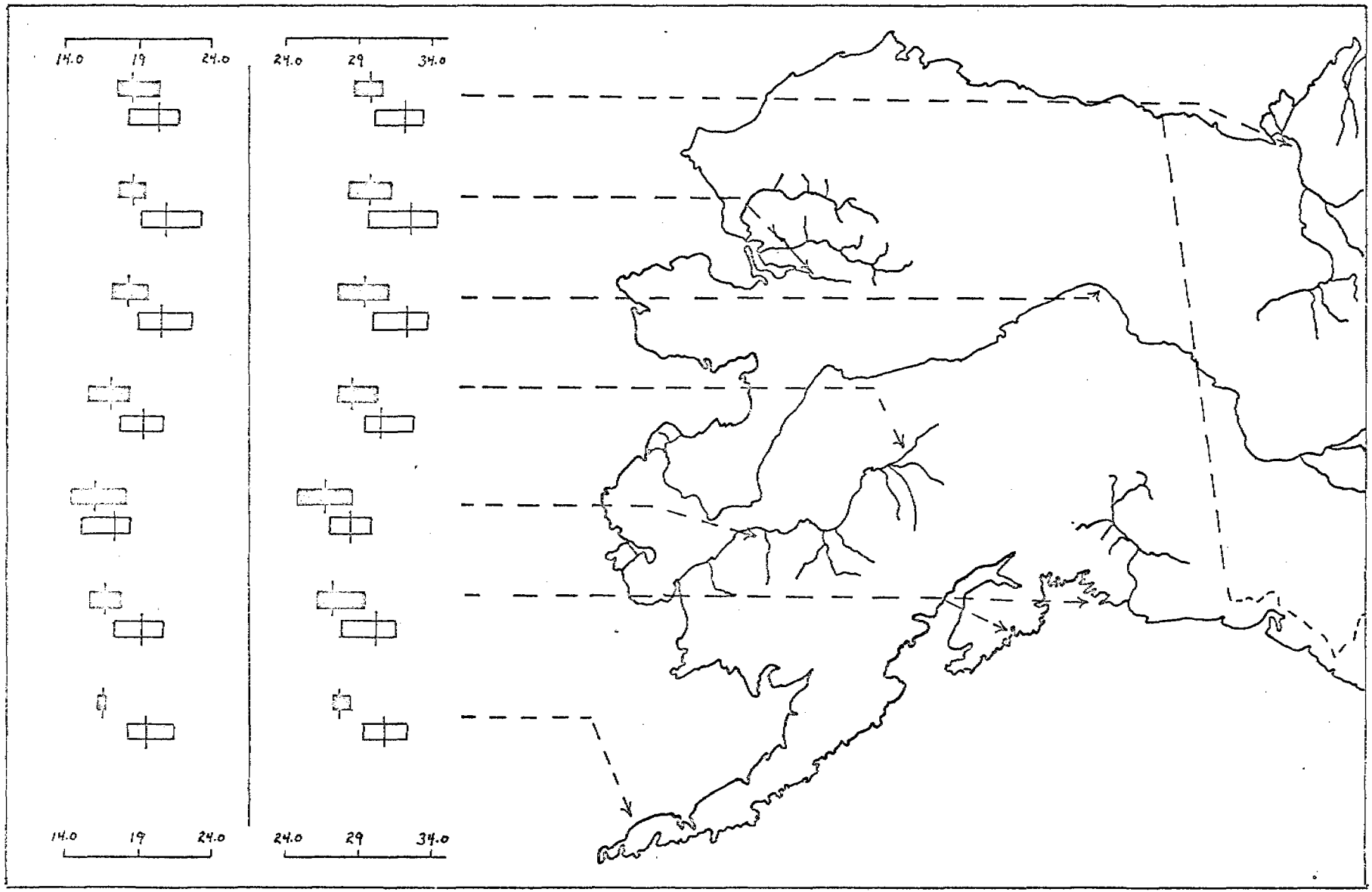
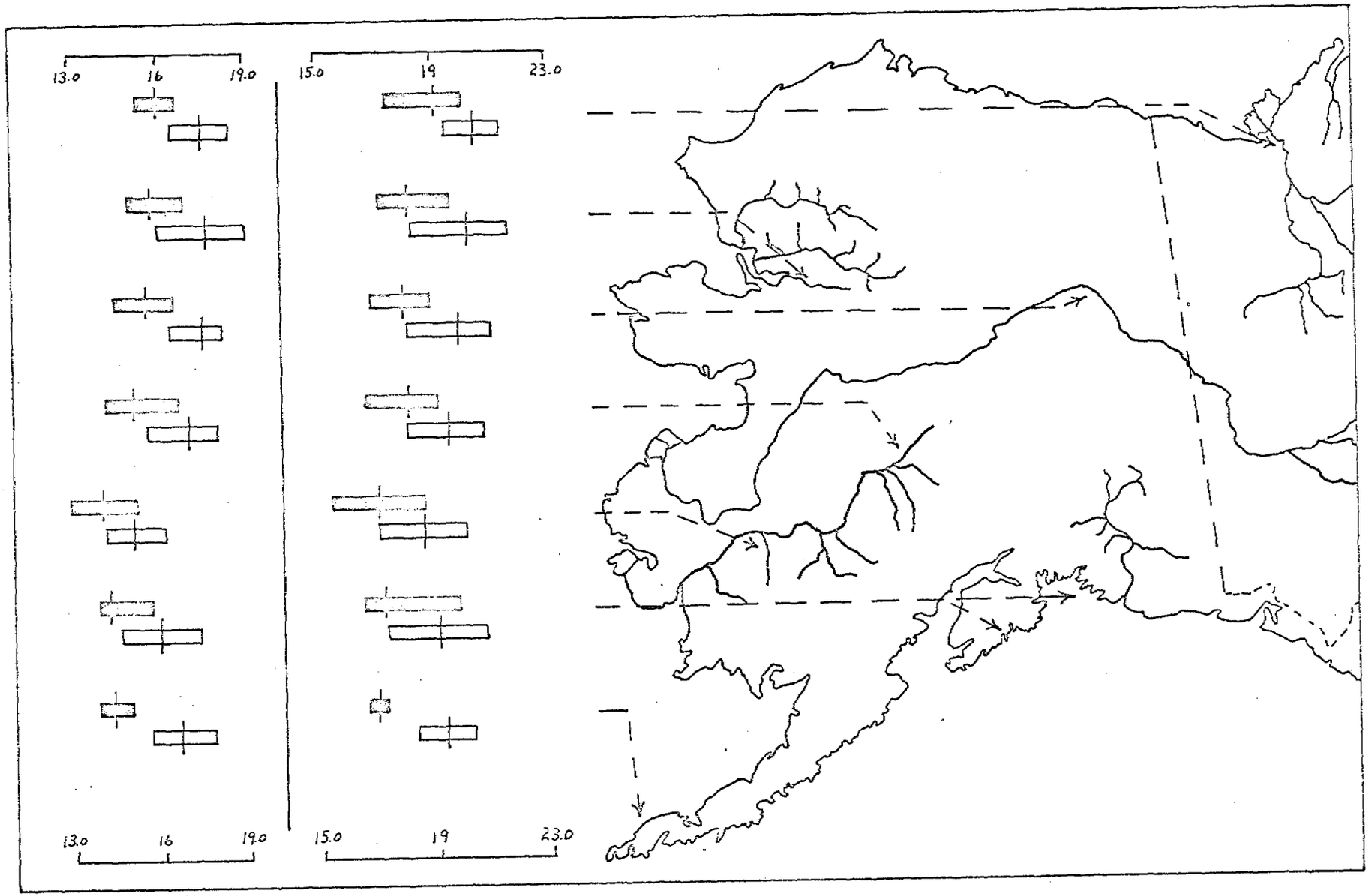


Fig. 3. The range and mean measurements of depth of skull at posterior borders of M1 (left) and orbitonasal length (right). Symbols as in Fig. 1.



FINDINGS

Effort

Replies from the 773 trapping license holders polled totaled 248 or 31 percent. Replies further showed that only 36 percent of the respondents trapped during the 1965-66 trapping season. Applying this percentage to the 773 trapping license holders, a total maximal number of 278 active trappers is noted for the past season. This is an exaggerated number as the percentage of inactive trappers among the nonrespondents is much higher than among the respondents. Among other factors, the lack of interest in replying points to a much higher inactive trapping role.

Improved weather and slightly improved prices resulted in increased effort and catch over the 1964-65 season. Although weather conditions were still severe in some areas, 53 percent of the trappers rated their season successful as compared to only 10 percent success rating for the previous season. Improved prices were due to increased demand on marten and otter.

Twenty-one percent or 58 of the trappers were classified as recreational and the remaining 220 or 79 percent were classed commercial. Recreational trappers averaged 6.4 animals and commercial trappers--45.2 animals. Table 1 shows the respective takes and averages for both classes of trappers along with the projected harvest take for the season.

Table 1. Projected fur harvest totals and averages for SE Alaska, 1965-66.

Class of Trapper	No. of Trappers	Average No. Mink	Total Mink	Average No. Marten	Total Marten	Average No. Otter	Total Otter
Recreational	58	4.2	244	1.2	70	0.8	46
Commercial	220	29.7	6475	8.9	1940	5.6	1220
T O T A L S	278		6719		2010		1266

Trappers indivifually rated overall pressure for their respective areas as either unchanged, decreasing, or increasing. Forty-three percent indicated no change in pressure, 13 percent as increasing, and 43 per cent as decreasing.

Average trapline length was 7.7 miles of beach and traps used averaged 68.2 per trapper. A minimal approximation of coastline for Game Management Units 1 through 4, exclusive of bays and inlets, is 9,000 miles. This would provide a minimum of 32 miles of beach per trapper.

Harvest

The projected fur harvest for 1965-66 is seen in Table 2 in comparison with fur export summaries for the previous three seasons. The mink harvest compares favorably with the 1962-63 export records when the last normal season (due to weather and area open) occurred. Increased take on marten and otter can be attributed to improved prices.

Table 2. Fur export summaries for 1962-65 with comparison of 1965-66 estimated harvest for SE Alaska.

Year	Mink	Marten	Otter
1962-1963	6,025	1,334	814
1963-1964[1]	3,848	705	535
1964-1965	5,486	1,172	817
1965-1966[2]	6,719	2,010	1,266

[1] Season open in GMU #1, only, north of Cape Fanshaw.

[2] Harvest questionnaire estimates.

Trapper Distribution

Twenty-nine percent of the trapping pressure was reported in GMU #1. This is to be expected because GMU #1 is the largest Unit with the greatest population. Unit #1 submits breakdown by total trapping effort percentage are: 1A - 20 percent, and 1B - 7 percent, and 1C - 3 percent. Unit #2 reported 26 percent, and Unit 5 - only 1 percent.

The residence of respondents is seen in Table 3 along with an area breakdown of total effort. Almost half (44 percent) of the total trapping effort comes from the outlying villages and communities.

Table 3. Residences of respondents with percentage breakdown of trapping pressure.

Residence	No. Active Trappers	Percent of Effort	No. Non-Active Trapping License Holders
Juneau area	7	8	23
Petersburg	8	9	12
Ketchikan	15	17	20
Sitka area	11	12	17
Wrangell	7	8	10
Haines	2	2	8
Communities	19	22	22
Villages	19	22	31
Non-Resident	-	-	1
	88		144

Type of Seasons

Of particular importance was the individual trapper's rating of his season preference--alternate year openings as opposed to successive season. The 1965-66 season was a trial effort directed at experimenting with successive season.

Seventy-six percent of the trappers replying stated that their areas would produce with successive year seasons while 24 percent stated their areas could not produce on a successive basis. Eighty-seven percent further stated that they would trap during successive seasons.

Primeness

Trappers were queried on fur primeness during the last season. They were asked to rate their fur as either prime, subprime, or past prime. Eighty-eight percent of the furs taken were rated prime, 11 percent as subprime, and one percent as past prime. This certainly reflects that harvest periods are close to maximum primeness periods for most of the area.

Hair Seals

Trappers were additionally requested to rate the number of hair seal in their area as either abundant, average, or scarce in number. Undoubtedly, considerable bias existed in some of the ratings based on the raters overall outlook on the seal. Ten percent of the trappers rated seal as abundant, 42 percent as average, and 48 percent as scarce. This certainly reflects an impact on the SE hair seal resources during the recent years of good prices and heavy take.

This Report Prepared By: John Crawford, Game Biologist

ALASKA DEPARTMENT OF FISH AND GAME
Game Division
1829 Tongass Avenue
Ketchikan, Alaska

Dear Trapper:

Enclosed is a form requesting information on your 1965-66 trapping activities. It will be greatly appreciated if you will fill out all or even part of this form and return it to this office.

Your cooperation in this survey will enable us to continue to add to our knowledge and provide the best possible management of Southeastern fur resources.

A self addressed, stamped envelope is enclosed for your convenience in replying.

Sincerely yours,

John E. Crawford

John E. Crawford
Regional Game Supervisor

JEC/md

FUR HARVEST QUESTIONNAIRE

Name and address:_____

Did you trap during the 1965-66 season?_____

Area trapped:_____

Miles of beach trapped:_____No. traps used:_____

No. Mink trapped:_____Sex:Male_____Female_____

Other animals taken: Marten:_____Otter:_____

Wolf:_____Wolverine:_____

Beaver:_____Seal:_____

Can your trapline continue to produce with successive seasons?_____

Will you continue to trap on successive seasons?_____

Was your trapping season a success?_____

_____

_____

What was your evaluation of fur primeness for this season?Prime:_____

Subprime:_____Past Prime:_____

What is your estimate of trapping effort by other trappers in your area for the past season(1965-66)?

No change:_____Decreasing:_____Increasing:_____

What is your estimate of fur numbers in your trapping area during the past season (1965-66)?

Abundant:_____Average:_____Scarce:_____

What is your estimate of current seal numbers in your area?

Abundant:_____Average:_____Scarce:_____

Please use the reverse side for any comments that you might have on how we can improve fur management in SE Alaska.

WORK PLAN SEGMENT REPORT
FEDERAL AID IN WILDLIFE RESTORATION

STATE: Alaska

PROJECTS: W-6-R-6 TITLE: Alaska Wildlife Investigations
AND: W-13-R-1 TITLE: Small Game and Furbearer Investigations

WORK PLANS: J(W-6-R-6) TITLE: Fur Bearer Studies
AND: A(W-13-R-1) TITLE: Furbearers

JOBS: 4(W-6-R-6) TITLE: Selected Mink Population Studies
AND: 5(W-13-R-1) TITLE: Mink, Geographic Variation

PERIOD COVERED: January 1, 1965 to June 30, 1966

ABSTRACT

Examination of four groups of mink was completed. These groups were composed of animals from the following areas: Mackenzie River Delta, Kenai Peninsula--Prince William Sound, Alaska Peninsula, upper Kuskokwim River. Samples from other areas were also examined.

Preliminary examinations show little similarity between Mustela vison aniakensis and M. v. melampeplus. Comparisons between M. v. ingens and M. v. aniakensis have been discussed previously (Burns, 1964b).

RECOMMENDATIONS

No recommendations are made relative to management.

WORK PLAN SEGMENT REPORT
FEDERAL AID IN WILDLIFE RESTORATION

STATE: Alaska

PROJECT: W-6-R-6 TITLE: Alaska Wildlife Investigations
AND W-13-R-1 TITLE: Small Game and Furbearer Investigations

WORK PLAN: J(W-6-R-6) TITLE: Fur Bearer Studies
AND: A(W-13-R-1) TITLE: Furbearers

JOB: 4(W-6-R-6) TITLE: Selected Mink Population Studies
AND: 5(W-13-R-1) TITLE: Mink, Geographic Variation

PERIOD COVERED: January 1, 1965 to June 30, 1966

OBJECTIVES

To continue cataloging the various populations of minks in Alaska with the ultimate objectives of discovering factors responsible for differences in productivity, and characteristics affecting value. Also, to determine the relationships among the various morphological forms of Mustela vison found throughout Alaska.

TECHNIQUES

Efforts during the period covered by this segment report were devoted primarily to morphometric examination of mink that had previously been acquired by the Department, or submitted by interested cooperators. Examination of four groups of minks was completed. These four groups included animals from the Mackenzie Delta, N. W. Canada, supplied by Mr. Vernon Hawley of the Canadian Wildlife Service; from the Kenai Peninsula and Prince William Sound area, supplied by Mr. Rae Baxter, Alaska Department of Fish & Game; from the Alaska Peninsula, in the biological collections of the University of Alaska; and from the upper Kuskokwim River area, supplied by the late Mr. Leroy Bohuslov, formerly with the Alaska Department of Fish & Game.

In addition to the samples mentioned above, suitable samples from the following areas have also been examined: Yukon-Kuskokwim Delta; the Kotzebue Sound area; the middle Kuskokwim River area (Aniak), the Upper Yukon River area (Yukon flats); the Lake Minchumina area; the Fairbanks area; the Seward Peninsula; and the Petersburg area of southeastern Alaska.

Two samples remain to be processed before the final statistical analysis will be made, and the project concluded. These samples are from Ketchikan (presently in the possession of the Alaska Department of Fish & Game), and the Mulchatna-Nushagak-Kvichak River areas. I am presently in the process of acquiring the latter sample.

Standard body measurements were recorded for all carcasses acquired, and for donated material for which they were available. Stomachs of carcasses received were preserved for analysis at a later date. Skulls were measured using dial calipers, and data were recorded to the nearest hundredth mm. Measurements recorded were those outlined by Hall (1951), with the addition of cranium width (used by Bahrens, 1961). Procedure generally followed that previously used (Burns, 1964a,b).

FINDINGS

The final statistical comparison for this study will be made during the next project segment, when all the desired samples have been examined.

Some general comparisons of skull measurements are shown in Figs. 1, 2 and 3. In a vertical plane the top four samples in these figures are of Mustela vison ingens, the fifth is M. v. aniakensis, and the bottom two are M. v. melampeplus.

Although these comparisons do not show the proportional differences, covariation, and allometric differences between the three subspecies) they do show the size differences in the measurements included.

In the four samples representing M. v. ingens (from the Upper Kuskokwim, Fort Yukon, Selawik and Mackenzie River Delta areas) there is evidence of a clinal increase in size from south to north, and from interior to coastal areas. The differences in size are more obvious when total body measurements, rather than skull size, are considered.

My previous work (Burns, 1964b) discussed comparisons between M. v. aniakensis and M. v. ingens, but mentioned nothing of the relationships of the former with M. v. melampeplus overlap, at least near the base of the Alaska Peninsula (the Alaska Range may be an effective barrier further east).

The sample of M. v. melampeplus, consisting of 25 mink from the Kenai Peninsula, 21 from the Copper River Delta, and a few from other areas on Prince William Sound, shows little similiarity when compared with M. v. aniakensis. Skulls of the former are more elongate, but are similiar in depth; they possess a well developed sagittal crest (whereas M. v. aniakensis does not), and the occupital crests show greater development, and extend over the posterior portion of the skull to a greater extent than in M. v. aniakensis.

The possibility of M. v. aniakensis being a clinal varient of either M. v. ingens, or M. v. melampeplus was eliminated in view of the proportional differences in measurements, and the fact that M. v. aniakensis is a smaller form whose range lies between the distributional ranges of two larger forms.

At the present time little is known about the effects (if any) of the major glacial periods on the zoogeography of minks in western Alaska, but the question may have an important bearing on the distribution of the three subspecies mentioned.

This project will be completed during the next project segment when the complete statistical comparison will be reported.

LITERATURE CITED

Bahrens, Von D. 1961. (The significance of allometrical research in the study of the constructional variability of the mink). Ztschr. Saugetierkd., 26, 154-157.

Burns, J. J. 1964a. Studies of characteristics of selected mink populations. In Fur Mammal and Snowshoe Hare Report. Alaska Department of Fish and Game, Fed. Aid Project Segment Rpt. v. 4, p. 1-11.

_____. 1964b. Comparison of two populations of mink from Alaska. Can. J. Zool., 42:1071-1079.

Hall, E. R. 1951. American weasels. Univ. Kans. Mus. Nat. Hist. v. 4, p. 415-417.

_____, and K. R. Kelson, 1959. The mammals of North America, Ronald Press Co., N. Y., v. 2, p. 917-918.

This Report Prepared By: John Burns, Game Biologist.

WORK PLAN SEGMENT REPORT
FEDERAL AID IN WILDLIFE RESTORATION

STATE: Alaska

PROJECT: W-13-R-1 TITLE: Small Game and Furbearers Investigations

WORK PLAN: A TITLE: Furbearers

JOB: 6 TITLE: Beaver Pelt Primeness

PERIOD COVERED: July 1, 1965 to June 30, 1966

ABSTRACT

Beaver were trapped from October 29 to December 15 to determine if beaver can be harvested earlier than the present season which commences February 1. Beaver were found to be marketable at the beginning of the trapping period; however, a conservative opening would be November 15.

RECOMMENDATIONS

Advance the season to December 1 in those units where the beaver harvest is less than the maximum allowable harvest.

Select certain units in which to initiate the early season to measure the effects on the resource, economy, and harvest.

WORK PLAN SEGMENT REPORT
FEDERAL AID IN WILDLIFE RESTORATION

STATE: Alaska

PROJECT: W-13-R-1 TITLE: Small Game and Furbearers Investigations

WORK PLAN: A TITLE: Furbearers

JOB: 6 TITLE: Beaver Pelt Primeness

PERIOD COVERED: July 1, 1965 to June 30, 1966

OBJECTIVES

To determine the feasibility of harvesting beaver from interior Alaska in November and December.

TECHNIQUES

Beaver were trapped along the Chatanika from October 29 to December 15, 1965. The intended style of trapping was to locate "plunge holes" and place snares or Conibear traps in the path of the beaver entering or leaving the house. A selection of beaver of various ages and both sexes was desired to determine the period of primeness for an average population.

FINDINGS

Eleven beaver were caught and the results of the grading by the Seattle Fur Exchange are included in Table 1.

Michael Dederer, president of the Seattle Fur Exchange reported: "We would say that these beaver are taken very close to the proper timing, as a few showing very little unprimeness is not undesirable just so it does not exceed the skins you shipped out."

Harvest dates were not indicated on the beaver sent to the exchange. Slightly unprime indicates the peltry is more prime than near prime. Color has little bearing on the determination of primeness; however, the hair will change color late in the season causing a reduction in the value of the pelt. The designation of color used in Table 1 seemed to indicate the darkness of the pelt which is probably controlled by age and genetics. Mr. Dederer indicated the skins were well handled but it appeared to the writer that their

Table 1. Quality of the beaver peltries.

Date Caught	Color	Fur Primeness	Leather Primeness	Age	Sex	Pelt Size in Inches
Oct. 29-Nov. 4	Good	Fair to Good	Slightly Unprime	Adult	♂	66
Nov. 5-7	Fair	Good	Near Prime	Adult	♂	66
Nov. 10	Very Good	Good	Slightly Unprime But Satisfactory	Adult	♂	68
Nov. 15	Fair	Fair	Near Prime	Kit	♀	44
Nov. 17	Fair	Good	Near Prime	Kit	♂	44
Nov. 20-22	Fair	Good	Near Prime	Yr	♀	58
Nov. 24-27	Good	Good	Slightly Unprime But Satisfactory	Adult	♂	66
Nov. 24-27	Good	Good	Slightly Unprime	Adult	♂	70
Nov. 24-27	Very Good	Fair to Good	Slightly Unprime But Satisfactory	Adult	♀	72
Dec. 1-8	Good	Fair	Near Prime	Adult	♂	62
Dec. 8-15	Fair	Good	Prime	Yr	♂	56

criteria of leather primeness was somewhat influenced by the stretching and fleshing of the skin.

Primeness improved through the trapping period. It would appear that by November 15 beaver would be acceptable to the market with little or no loss in value. A conservative opening date for the beaver season would be November 15. Opening the season on November 1 would probably not cause a depreciation in the value of the harvest.

Informing trappers that they may expect a reduction in value for some pelts taken in November would serve to limit the harvest from that period but still allow beaver to be harvested from some areas where they can not be caught after February 1.

The thickness of the ice and accumulation of snow on the ice had obscured the plunge holes by October 29. For best results, plunge holes should be marked before ice forms or before snow accumulates on the ice. Only one set could be correctly made in the plunge hole and it was successful. All other sets were "bait sets." Bait sets are constructed by placing limbs or pieces of limbs from palatable trees (birch Betula papyrifera or cottonwood Populus balsamifera) through a hole in the ice and placing snares or traps around the bait in a manner to catch the beaver as he attempts to eat the bait.

Conibear traps were successfully used but appeared to be more readily avoided after one beaver had been taken at a set. They also seemed to be less effective in the clear water of the river.

Few conclusions can be made about beaver trapping techniques for a fall season. Placing traps and snares in the plunge holes is not recommended as a means of harvesting beaver. It is not selective and would result in a high percentage of kits in the harvest. The beaver did not seem as attracted to the bait during the experimental trapping period as they normally are during the spring season; therefore, trapping success in terms of beaver per unit of effort may prove to be lower in the fall.

SUBMITTED BY:

Oliver E. Burris
Study Leader

APPROVED BY:

Don N. Strode
Federal Aid Coordinator

James H. Brooks
Director, Division of Game