



1963 - 62 REPORT

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ALASKA DEPARTMENT OF FISH AND GAME

DIVISION OF GAME

JUNEAU, ALASKA

ALASKA DEPARTMENT OF FISH AND GAME  
JUNEAU, ALASKA

STATE OF ALASKA  
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MARINE MAMMAL REPORT

by

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

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

(Printed January 1964)

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WORK PLAN SEGMENT REPORT  
FEDERAL AID IN WILDLIFE RESTORATION

STATE: Alaska

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

WORK PLAN: J TITLE: Marine Mammal Investigations

JOB NO.: 1-b

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

ABSTRACT

The retrieved kill of walrus during this report period was approximately 1,594 to 1,725 animals. Total kill was computed at 3,443 - 3,713 walrus. Utilization of the animals retrieved ranged from a low of eight to ten per cent at King Island, to over 60 per cent at points where few walrus are taken. Utilization at Diomedes was 15 to 18 per cent. At Gambell and Savoonga it was approximately 50 per cent. Potential value of the spring harvest was \$199,892.00. Interest in walrus as a trophy animal continued to increase.

RECOMMENDATIONS

Accurate data concerning the harvest and utilization of walrus should continue to be obtained. The present limit of five cows for residents is more than adequate to supply the subsistence needs of hunters, particularly in the smaller villages like Diomedes and King Island. This limit should remain in effect until adequate information concerning population status is obtained. Consideration should be given to promoting walrus as a trophy animal, and to encouraging the conduction of sportsmanlike hunts.

WORK PLAN SEGMENT REPORT  
FEDERAL IN WILDLIFE RESTORATION

STATE: Alaska

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

WORK PLAN: J TITLE: Marine Mammal Investigations

JOB NO.: 1-b

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

OBJECTIVES

To determine the magnitude, utilization, and value of the walrus harvest in Alaska.

TECHNIQUES

Information concerning the harvest of walruses during this report period was obtained through observation by Department of Fish and Game personnel, and through personal interview, correspondence and village reports.

Two biological aides, Mr. Jude Henzler and Mr. Dzikiewicz were at Gambell during the spring walrus hunting season. Mr. Arthur Gologergen, a resident of Savoonga, obtained specimens and recorded harvest data from that village, and Mr. Alvin Kayouktuk, a resident of Little Diomedede, assisted the writer in obtaining specimens and data from that village. There were no Department representatives on King Island.

Reports of previous investigators supplied the information concerning the value of parts and products of walruses.

FINDINGS

The retrieved kill of walruses during this report period was approximately 1,594 to 1,725 animals. This harvest, larger than the average annual take of approximately 1,300, was the result of good hunting success at Wainwright and Pt. Barrow during July of 1962, and an unusual abundance of walruses north of

St. Lawrence Island during the late fall and early winter months.

### Summer Kill

During July and early August, walruses were available to hunters from the three villages of Point Hope, Wainwright, and Point Barrow. Informants at Point Hope indicated very poor hunting success, with only six walruses being taken. Hunters from Wainwright and Point Barrow were more successful and indicated retrieved kills of 132 and 150 animals respectively. As usual, the greatest majority of animals taken were bulls.

### Fall and Winter Kill

An unusually mild fall and early winter, characterized by large areas of open water and relatively thin ice, permitted large numbers of walruses to remain north of St. Lawrence Island until the last part of January. During this time they were available to hunters from Diomedede, King Island, Gambell and Savoonga.

A telegram from Diomedede on November 26 indicated that large herds of walruses began passing south between the Diomededes on that date. Residents of the island (including the Bureau of Indian Affairs teacher) reported observing a solid mass of animals on the ice, extending from the north side of Big Diomedede to the north side of Little Diomedede (a distance of about 2.7 miles). Rev. James Flynn recorded the winter harvest as 85 animals. He indicated a very high hunting loss as many animals were shot while swimming in the fast current between the islands, or where ice conditions made it impossible to retrieve them.

Information from King Island hunters indicated only that the winter kill by hunters from that village was 20 to 30 animals.

At St. Lawrence Island, walruses were most available to hunters from Savoonga. Records submitted by Mr. Jude Henzler indicate that the residents of Savoonga felt they had experienced the best winter hunting in the past 50 or 60 years. The take of walruses at this village was 180 to 250 animals, mostly bulls. On the western end of St. Lawrence Island, at the village of Gambell, the walruses were not so abundant. The fall and winter take at this village was reported as 40 to 60 animals.

The total fall and winter harvest of walruses at the hunting sites mentioned above was 325 to 425 animals, or approximately 20 to 24 per cent of the harvest for the year.

## Spring Kill

As usual, the spring hunting season was the most successful at the traditional walrus hunting sites. The total spring harvest of walruses as of the middle of June was 953 to 993 animals. These figures indicate a poorer than average spring hunting season which is attributed to an early break-up and rapid passage of the animals northward past the villages.

Diomede hunters were the most successful, taking 294 walruses. Table 1 is a breakdown of the sex composition, with the 1962 data included for comparison. It will be noted that of the total harvest at Diomede, only 85 cows were taken. Cows were available in relatively large numbers on only two days, May 20 and 24. During the period of greatest abundance of cows, most of them were accompanied by calves. The incidence of sighting cows that were not accompanied by calves increased after May 24. Walruses were abundant at Diomede from May 20 to June 12.

The spring harvest of walruses at Gambell commenced on May 2 and ended on May 23. During that time 256 walruses were killed and retrieved, consisting of 117 (46 per cent) adult cows, 54 (21 per cent) adult bulls, 77 (30 per cent) calves of either sex, and 8 (3 per cent) subadults of either sex. Six walruses were taken prior to May 2 but it was not until that date that the migrating herds started past Gambell in any large numbers.

Table 1. Comparison of Known Sex and Age Composition of Walruses Taken During the Spring of 1962 and 1963.

Village	Ad. Males		Ad. Females		Calves	
	1962	1963	1962	1963	1962	1963
Gambell	72	54	153	117	155	77
Savoonga	241	94	33	55	19	53
Little Diomede	136	183	104	85	15	26

At Savoonga, the spring hunting season was very short, starting on May 11 and ending on May 26. During that period 202 walruses were killed and retrieved. Of this total, 55 (27 per cent) were adult females, 94 (47 per cent) were adult males, and 53 (26 per cent) were calves of either sex.

In the Kuskokwim area the harvest was reported as very poor. The estimated harvest for the villages of that area including Mekoryuk, Kipnuk and Tununak was 20 to 25 animals.

As of June 14, there was no remaining ice in the vicinity of Cape Prince of Wales. At that time, eight walrus had been taken by Wales hunters, and the hunters were turning their attention to other activities.

Information concerning the harvest at King Island was obtained from conversations with boat captains and hunters. The harvest reported ranged from 102 to 210. The most reliable informant placed the take at somewhere between 175 and 210 animals of which 65 per cent were bulls. The conditions at King Island were apparently similar to those at Diomedede, in that cows were available for a relatively short period of time. As occurred at Diomedede, hunting ended abruptly when unfavorable winds drove the ice and walrus far to the northwest.

Hunting loss has been commented upon by various investigators including Brooks (1954), Fay (1958), Kenyon (1958), Harbo (1961) and myself (Burns, 1962). In general, hunting loss is increased when animals are killed in the water, and when bulls are hunted. The bulls are much harder to kill instantly and many mortally wounded animals escape from ice floes, and are lost to the hunters.

One commonly occurring situation, cause for undue loss, is the practice of shooting walrus milling in the water after they have been routed from an ice floe. This practice results in many wounded and dead walrus, very few of which are recovered. This practice should be discouraged by Department personnel (and other persons) whenever the opportunity arises.

Table 2 shows the retrieved and total kill of walrus during the report period. The values for per cent hunting loss were derived by a combination of methods including direct observation by Department personnel, consideration of the sex composition and size of the harvest (when few walrus are available hunters expend more effort to retrieve them), and through records of previous investigators.

The total kill of walrus in Alaskan waters during the period July 1, 1962 to June 30, 1963 is calculated to be 3,443 to 3,713 animals.



Table 2. Retrieved and Total Kill of Walruses From July 1962 to June 1963.

Location	Walruses Retrieved.	% Hunting Loss	Total Kill
Kuskokwim Area	20 - 25	40	33 - 41
Gambell	294 - 314	45	535 - 571
Savoonga	382 - 452	55	849 - 1,004
King Island	230 - 240	55*	511 - 533
Little Diomedede Island	379 - 379	60*	947 - 947
Wales	8 - 8	20	10 - 10
Point Hope	6 - 10	20	8 - 13
Wainwright	125 - 132	50	250 - 264
Point Barrow	150 - 165	50	300 - 330
Totals	1594 - 1725		3443 - 3713

\*Includes orphaned calves which apparently do not survive.

## Hunting Effort

Accurate records concerning hunting effort and success have been accumulated during the past several years. The economy of northwestern Alaska is slowly changing from one of subsistence hunting to one of wage earning. The walrus presents a unique situation in that it fits into both types of economies. Unfortunately, after the subsistence needs of a village are met by walrus hunting (the subsistence needs of the smaller villages like Diomedes and King Island are small), the hunters can turn their efforts to the task of killing walruses solely for their ivory, a commodity readily exchanged for money. The result is head hunting, a practice that permits larger kills as the hunters are not slowed down by having to butcher walruses, load the boats (a large umiak will carry only four walruses), return to the village, haul meat, etc. The success of the practice of head hunting is reflected in the figures for boat hours per walrus (Table 3) for Diomedes, as compared with Gambell.

During the 1963 spring hunting season there were 16 boats with 78 crew members operating at Savoonga. At Gambell there were also 16 boats actively hunting walrus (17 on rare occasions), with about 75 regular crew members. At King Island there were four boats operating (one large and three small) with a total of 20 crew members. The situation was similar at Diomedes where there were three large boats operating, with 25 crew members.

## Utilization

Utilization at points other than Gambell, Savoonga, King Island and Little Diomedes Island was apparently very good, with 60 per cent or more of the total utilizable harvest being returned to the villages.

As in the past, Department observers at Gambell and Savoonga reported utilization of adult walruses to be about 50 per cent of the usable portions. At Gambell, the 77 calves taken were brought to the village, and at Savoonga 53 calves were brought in.

As in the past, King Island and Diomedes Island had the least utilization for the simple reason that there is no possible way for the people from these villages to handle, much less eat, the quantities of walrus they kill. In the 1962 Research Project Segment Report (Burns, 1962), Table 2 illustrates the correlation between village size and the

degree of utilization.

At Diomede, utilization was slightly higher than last year and was recorded as 15 to 18 per cent. Five female walrusés were brought to Wales, almost entire. The residents of Diomede saved more female skins and meat than in the past. About 21 female skins were saved (85 females were killed and retrieved). As usual, nothing more than an occasional flipper or stomach was saved from the 183 adult bulls taken. Twenty-six calves were taken, a significant increase over the 15 taken last year, considering that during both years they could have taken at least 80.

Utilization was lowest at King Island. This could probably be attributed to the uncertainty of some of the residents as to whether they were going to return, and to the small population (44 individuals during the winter and spring). Information indicates that utilization amounted to 8 - 10 per cent of the harvest.

#### Value

Potential value of the spring harvest is listed in Table 4, and is based on the following values set forth by Fay (1958), and Harbo (1961):

Tusks of adult females valued at \$10.00 per pair  
Tusks of adult males valued at \$24.00 per pair  
Tusks, carved, either sex valued at \$125.00 per pair  
Bacula valued at \$7.00 each  
Walrus meat valued at \$.10 per pound  
Skins of female walrusés valued at \$20.00 each.

Potential value of the total harvest from July 1, 1962 to June 30, 1963 has not been calculated as information concerning sex and age composition of animals taken during this period is fragmentary.

#### Sport Hunting

Interest in walrus as a trophy animal is rising and the next few years will probably see an increase in the number of nonresident hunters trying to take them. One of the main objectives in the management of walrus is to realize the maximum sustained yield with a corresponding maximum utilization of meat and ivory. Trophy hunting, if properly conducted may be one of the answers. Native guides are paid well for the one bull walrus legally killed by the trophy hunter, and ideally the guides do not participate in active hunting. Thus, the total

Table 3. Spring Walrus Hunting Effort and Success During 1961, 1962 and 1963.\*

Village	No. Hunting Days			Boat Hours			Boat Hrs. per Walrus		
	1961	1962	1963	1961	1962	1963	1961	1962	1963
Gambell	13 of 35	19 of 33	14 of 20	910	947	810	5.10	4.62	4.74
Diomede	18 of 26	8 of 16	11 of 23	399	140	320	.75	.58	1.20
Savoonga	--	11 of 28	--	--	537	--	--	1.96	--

\* Data include only those hours expended and adult animals taken while an observer was at the respective village.

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Table 4. Potential Value of the 1963 Spring Harvest.

Village	Harvest			Ivory		Bacula	Meat*	Skins	Greatest Pot. Value
	Males	Females	Calves	Raw	Carved				
Gambell	54	117	77	\$ 2,466	\$ 21,375	\$ 378	\$12,920.50	\$2,340.00	\$ 39,479.50
Savoonga	94	55	53	\$ 2,806	\$ 18,625	\$ 658	\$13,044.50	\$1,100.00	\$ 36,233.50
King Island	137	73	?	\$ 4,018	\$ 26,250	\$ 959	\$18,080.00	\$1,460.00	\$ 50,767.00
L. Diomede Is.	183	85	26	\$ 5,242	\$ 33,500	\$1,281	\$23,569.00	\$1,700.00	\$ 65,292.00
Other Areas	25	8	?	\$ 680	\$ 4,125	\$ 175	\$ 2,980.00	\$ 160.00	\$ 8,120.00
Totals	493	338	156	\$15,212	\$103,875	\$3,451	\$70,594.00	\$6,760.00	\$199,892.00

\* Utilizable weight is calculated on the basis of 1,000 pounds for adult males, 600 pounds for adult females and 65 pounds for calves.

kill (and particularly the kill of cows) is decreased.

In practice, the situation is much different. This writer accompanied a white guide and resident trophy hunter on two different occasions. The Eskimo guides were from Diomedea, and hunted from a large skin boat (eight men in the crew). On the first day out, the trophy hunter killed and sank two large bulls.

The morning of the second day was one of apprehension for the hunter. He said he would be satisfied if he got one more chance at a walrus. As it developed he got a bull (with the help of nine other guns: this made him unhappy), and on successive herds satisfied his desire to shoot as many bullets as possible, at as many walruses as possible.

This hunt pointed out many factors which should be evaluated in conducting satisfactory guided hunts. A few of these points are: 1) hunts should be conducted with smaller boats, with a minimum of crew members; 2) crew members should not compete with the hunter or shoot at animals while conducting a hunt; 3) the hunt should end when the trophy hunter gets his game. This is important both for the prevention of a violation on the part of the hunter (shooting more than the legal limit) and to avoid introducing him to the indiscriminate hunting practices employed in subsistence hunting (degrading his animal as a trophy).

At present there are no restrictions on native guides. However, if they engage in guiding, they should have the responsibility of conducting high quality trophy hunts. This is especially true if the walrus is to be promoted as a trophy animal of high esteem.

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## LITERATURE CITED

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WORK PLAN SEGMENT REPORT  
FEDERAL AID IN WILDLIFE RESTORATION

STATE: Alaska  
PROJECT NO.: W-6-R-4 TITLE: Alaska Wildlife Investigations  
WORK PLAN: J TITLE: Marine Mammal Investigations  
JOB NO.: 2-a  
PERIOD COVERED: July 1, 1962 to June 30, 1963

OBJECTIVES

To determine the period when embryo implantation occurs and develop tables showing fetal development.

TECHNIQUES

This project was largely inactive during the reporting period. During June 1963 graduate student Richard Bishop conducted a literature search to determine the extent of knowledge on the productivity and breeding biology of the ring seal and other northern seals. Since conception of the project, when the need for basic knowledge of ring seal productivity was apparent, studies conducted in conjunction with Project Chariot have provided a suitable basis for estimating ring seal productivity (Murray L. Johnson, 1963 in press). In view of the present availability of knowledge of ring seal productivity future emphasis of this project will be directed toward obtaining similar information on the harbor seal in the south coastal region of Alaska.

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WORK PLAN SEGMENT REPORT  
FEDERAL AID IN WILDLIFE RESTORATION

STATE: Alaska

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

WORK PLAN: J TITLE: Marine Mammal Investigations

JOB NO.: 2-b

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

ABSTRACT

The collecting phase of this project continued throughout the report period. Increased effort was devoted toward obtaining specimen material from bearded seals. Analysis and evaluation of this material will be reported in the 1963-1964 segment report.

Records of seals bountied from the Second and Fourth Judicial Districts (villages from Platinum north) indicate a harvest of 10,920 hair seals (including bearded, ringed, ribbon and spotted seals). For a variety of reasons, many hunters did not claim a bounty on seals they harvested. The actual harvest of hair seals in the area indicated is approximately 16,500 to 18,000.

Ringed seals are presently worth an average of \$8.00 and spotted seals of corresponding size, \$10.00. Spotted seal skins of good size and color are worth up to \$20.00. Exclusive of the intangible but high value of seal meat and blubber, the harvest is worth an estimated \$181,500 to \$198,000 (based on \$3.00 bounty and an average value of \$8.00 per skin).

RECOMMENDATIONS

The present regulations of no closed season and no limit should be continued. The bounty system on seals, as a welfare program, should be re-evaluated in light of the commercial value of these animals.



WORK PLAN SEGMENT REPORT  
FEDERAL AID IN WILDLIFE RESTORATION

STATE: Alaska

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

WORK PLAN: J TITLE: Marine Mammal Investigations

JOB NO.: 2-b

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

OBJECTIVES

To determine the magnitude, characteristics, and value of the harvest of various species of hair seals in Alaska and to determine seasonal movements, abundance, food habits and other life history characteristics of seals.

TECHNIQUES

The collecting phase of this project continued throughout the report period. Specimen material collected included body measurements, jaws and claws from the ringed seal; and measurements, claws and reproductive tracts from bearded and ribbon seals. Analysis of material collected during previous years, as well as that accumulated during the report period, will be made during the coming winter. Results will be included in the 1963-1964 segment report.

During 1962, the Alaska State Legislature amended the bounty regulations, placing a bounty of \$3.00 on all hair seals inhabiting inland and coastal waters of Alaska (Sec. 16.35.140, 2ch. 35, SLA 1962). This amendment enabled hunters on the off-shore islands, and areas north of the Arctic Circle to bounty seals. A favorable aspect of this legislation was to provide the Department of Fish and Game with more accurate data concerning the harvest of hair seals. Information concerning the harvest of these seals in western and Arctic Alaska was obtained from bounty reports, correspondence, hunter interviews and personal observation.

## FINDINGS

The recorded harvest of hair seals from the coastal areas of Alaska's Second and Fourth Judicial Districts was 10,920. Table 1 is a breakdown of the recorded total harvest, by villages.

Due to an apparent lack of information, many hunters from some of the more productive seal hunting areas were not aware of the fact that they could again bounty seals. For instance, during 1962 no seals were bountied from the villages of Mekoryuk (on Nunivak Island), King Island or Little Diomed Island. These three villages take an estimated 950 to 1,100 seals annually. For one reason or another, hunters from other areas of high seal production did not bounty all their seals. Thus, the take at Gambell was recorded as 115 seals when in actuality it was closer to 400 to 450 animals. The harvest at Savoonga was recorded as 52 seals. It more closely approximates 350 to 400. Kivalina, with a recorded take of 275 seals, produces about 1,000. I feel that the figures recorded for Point Hope are the most incorrect. They indicate a take of 124 seals, when the actual harvest is probably between 1,500 and 2,000 animals. Other villages for which an extremely low harvest was recorded include Point Lay, Wainwright and Point Barrow.

In addition to the hunters not being aware that they could again bounty seals many did not think that the bearded seal (ugruk) or ribbon seal, came under the classification of hair seal, and did not bounty them.

According to the bounty information and the estimated take of hair seals, the total harvest in the Second and Fourth Judicial Districts of Alaska (all the coastal villages from Platinum north, during the hunting year (July 1, 1962 through June 30, 1963), is approximately 16,500 to 18,000 animals.

## VALUE

The ringed and spotted seals are a renewable natural resource of this area with a promising commercial potential. During recent years, and particularly during the last eight months, there has been an increasing demand for the skins of these animals. The increased demand is attributable to several factors, the most important of which are the development of satisfactory tanning methods, and the use of these skins for the manufacture of hats, coats, purses and shoes. The most important markets for these items are in Europe (notably Germany and the Scandinavian Countries).

Table 1.--Harvest of Hair Seals in Western and Northern Alaska According to 1962  
Bounty Payments, and Estimates of Harvest.

Village	Number of Seals		Village	Number of Seals	
	Indicated	Estimated*		Indicated	Estimated
Platinum	43	43	Koyuk	165	165
Goodnews Bay	213	213	Elim	136	136
Quinhagak	-	-	Golovin	100	100
Eek	104	104	White Mtn.	6	6
Tuntaluliag	-	50	Nome	386	386
Kwigillingok	-	50	Gambell	115	450
Kipnuk	-	-	Savoonga	52	400
Chefornak	-	-	King Island	-	400
Nightmute	-	-	Teller	449	449
Mekoryuk	-	300	Wales	632	632
Tununak	-	200	Little Diomedes	7	400
Hooper Bay	1,114	1,114	Shishmaref	3,956	3,956
Chevak	465	465	Deering	154	154
Scammon Bay	-	234	Buckland	61	61
Alakanuk	-	-	Kotzebue	1,085	1,085
Kwiguk	-	-	Noatak	56	150
Stebbins	331	331	Pt. Hope	124	2,000
St. Michael	57	57	Kivalina	275	1,000
Unalakleet	-	250	Pt. Lay	67	300
Shaktolik	132	132	Wainwright	328	328
			Pt. Barrow	80	450
<b>Totals</b>				<b>10,920</b>	<b>16,550</b>

\*For villages where no information is available on which to base an estimate, the indicated harvest is used.

According to Mr. Victor von Reventlow, Vice President of the Pacific Seal Co., Ltd., Vancouver, B. C., average ring seal skins are worth \$8.00 and spotted seals of corresponding size, \$10.00. Good quality spotted seal skins are worth up to \$20.00.

On the basis of three dollars for each seal scalp, and an average value of \$8.00 per skin, the potential cash value which could be realized from the seal harvest is \$181,500 to \$198,000. The advantage of a resource such as seals is that they are widely distributed throughout the area and are available to anyone with the inclination to take them.

Seals (particularly the ringed seal) are the most important source of human and dog food to the people inhabiting the coastal villages. To place a value on the meat and blubber of these animals would be unjustified as there is no reasonable monetary value that would reflect their importance to the Eskimo economy.

#### CONCLUSIONS

In view of the abundance, distribution and factors affecting the distribution of hair seals in western and Arctic Alaska, the present regulations of no closed season and no limit, are justified.

In the event that the potential income from seal skins is realized, the present bounty laws regarding them should be re-evaluated. The bounty on seals in this area is biologically unjustified and is recognized as a welfare program. The need for a program of this nature would be greatly reduced as a result of the increased value of skins.

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WORK PLAN SEGMENT REPORT  
FEDERAL AID IN WILDLIFE RESTORATION

STATE: Alaska

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

WORK PLAN: J TITLE: Marine Mammal Investigations

JOB NO.: 3

PERIOD COVERED: January 5, 1962 to June 30, 1963

ABSTRACT

During the period covered by this report two sea otter harvests were conducted on Amchitka Island. Between the dates of October 23 - November 3, 1962, 24 otters were collected to provide information on pelt primeness: 303 animals were collected between March 5 and April 12, 1963; sex, age classes, weights, measurements and areas of collection were recorded.

RECOMMENDATIONS

Moderate collections of pelts should be made from Amchitka Island at different times of the year to more accurately evaluate the pelt primeness data collected thus far.

Moderate collections of animals should be made from populations of animals other than those on Amchitka Island for the purposes of comparing reproduction, size, pelt primeness, and the incidence of natural mortality.

Aerial surveys should be conducted in Prince William Sound, on Kodiak Island, and on the Alaska Peninsula to determine the present status of the sea otter populations in those areas.

When the sea otter pelts gain acceptance on the fur market at a price which makes their harvest an economical possibility the populations in the Rat Islands should be cropped on an annual sustained yield basis.

WORK PLAN SEGMENT REPORT  
FEDERAL AID IN WILDLIFE RESTORATION

STATE: Alaska  
PROJECT NO.: W-6-R-4 TITLE: Alaska Wildlife Investigations  
WORK PLAN: J TITLE: Marine Mammal Investigations  
JOB NO.: 3  
PERIOD COVERED: January 5, 1962 to June 30, 1963

OBJECTIVES

To make collections of sea otters to determine the most favorable time of harvest, methods of handling the pelts and condition of pelts.

To investigate sea otter populations in addition to those on Amchitka Island to compare winter mortality in areas of differing population levels.

To examine critically the physiological condition of sufficient animals representing both sexes and all age groups to evaluate parasitological and nutritional factors.

TECHNIQUES

The methods utilized for collecting, processing and handling of the pelts were those developed and presented in report W-6-R-3, Job J-3, with the exception that an "off-the-road" type vehicle (Trail-Mate) was used to provide transportation to distant hunting areas.

FINDINGS

Harvest

During the period covered by this report two sea otter harvests were conducted on Amchitka Island. Between the dates of October 23-November 3, 1962, 24 otters were collected to provide information on pelt primeness: 303 animals were collected

between March 5, and April 12, 1963. Tables 1 and 2 present in tabular form the sex, age classes (as determined by gross examination) weights, measurements and areas of collection of the two harvests.

#### Specimen Collection

Reproductive tracts, skulls, stomach contents and pelt and skeletal samples were collected from each animal. Analysis of these specimens is being done by the U. S. Fish and Wildlife Service, Bureau of Sport Fish and Wildlife, and will be reported on at a later date. Parasitological specimens were collected as they were found. They will be analyzed by the department parasitologist.

#### Pelt Collection

The collection of pelts was done in a manner similar to that reported in Job J-3 of the W-6-R-3 report. The pelts are at the present time being held in cold storage. They will subsequently be fleshed and dried; all pertinent data will be extracted from them before they are placed on the fur market.

No work was done on sea otter populations other than those on Amchitka Island during the period of this report.

Table 1. The sex, age, weight, and measurements of sea otter collected at eight locations on Amchitka Island, March - April 1963.

Date Collected	Seal #	Sex	Age*	Weight in lbs.	Body Length in cm.	Pelt Length in cm.	Tail Length in cm.	Location of Collection
3/14/63	201	M	Juv.	25	106	150	26	Grandpa's Beach
"	202	M	Juv.	26	105	150	24	" "
"	203	M	Juv.	34	112	160	28	" "
"	204	M	Ad.	62	133	188	29	" "
"	205	M	Juv.	28	107	152	26	" "
3/15/63	206	M	Juv.	30	109	147	11	" "
"	207	F	Ad.	49	124	177	13	" "
"	208	M	Ad.	62	132	183	13	" "
"	209	M	Ad.	67	134	180	13	" "
"	210	M	S.Ad.	52	127	175	12	" "
"	211	M	Ad.	60	134	183	13	" "
"	212	M	S.Ad.	46	124	170	12	" "
"	213	M	Juv.	27	101	142	11	" "
"	214	M	Ad.	61	134	175	12	" "
"	215	M	S.Ad.	40	119	160	12	" "
"	216	M	S.Ad.	39	115	155	12	" "
"	217	M	S.Ad.	50	124	163	13	" "
"	218	M	Ad.	67	133	183	13	" "
"	219	M	Ad.	59	129	175	13	" "
"	220	M	S.Ad.	52	129	170	13	" "
"	221	M	Ad.	56	129	173	13	" "
"	222	M	Ad.	60	136	183	13	" "
"	223	M	Juv.	28	106	147	11	" "
"	224	M	S.Ad.	37	113	160	12	" "
"	225	M	Juv.	30	110	147	11	" "
"	226	M	S.Ad.	48	126	163	13	" "
3/16/63	227	F	Ad.	50	113	188	13	Aleut Beach
"	228	M	Pup	10	73	102	8	" "
3/17/63	229	F	Juv.	19	101	130	10	St. Markarius Point
"	230	F	Juv.	21	101	137	10	" "
"	231	F	Juv.	26	109	147	11	" "
"	232	F	Juv.	30	110	145	12	" "
"	233	F	Juv.	30	110	150	12	" "
"	234	F	Ad.	62	130	160	12	" "

\*AGE

Male

Female

Juvenile - To 35 lbs.  
 Sub Adult- 35-55 lbs.  
 Adult - 55 lbs. +

Juvenile - To 35 lbs.  
 Adult - 35 lbs. +



Table 1. (cont.)

Date Collected	Seal #	Sex	Age	Weight in lbs.	Body Length in cm.	Pelt Length in cm.	Tail Length in cm.	Location of Collection	
3/17/63	235	F	Ad.	50	130	170	14	St. Markarius Point	
"	236	F	Ad.	50	123	163	12	" "	
"	237	F	Ad.	40	118	155	13	" "	
"	238	F	Ad.	48	128	178	14	" "	
"	239	F	Ad.	49	130	170	13	" "	
3/18/63	240	F	Ad.	57	134	188	13	Constantine Harbor	
"	241	F	Pup	10	70	97	7	" "	
"	242	M	Ad.	65	136	178	15	St. Markarius Point	
"	243	F	Ad.	55	124	170	12	" "	
"	244	F	Ad.	46	126	168	12	" "	
"	245	M	Juv.	28	111	140	10	" "	
"	246	F	Juv.	26	103	142	11	" "	
"	247	F	Juv.	26	104	150	11	" "	
"	248	F	Ad.	52	123	165	11	" "	
"	249	F	Juv.	29	105	147	12	" "	
"	250	F	Ad.	35	121	163	13	" "	
"	251	F	Juv.	33	116	155	14	" "	
"	252	F	Juv.	22	95	132	10	Rifle	Range
"	253	F	Juv.	24	107	145	11	" "	
"	254	F	Ad.	38	124	165	13	" "	
"	255	F	Juv.	24	98	135	10	" "	
"	256	F	Ad.	48	125	180	13	" "	
"	257	F	Ad.	42	123	165	13	" "	
"	258	M	Juv.	22	102	140	11	" "	
"	259	F	Juv.	19	96	135	10	" "	
"	260	F	Ad.	45	127	165	13	" "	
"	261	F	Ad.	40	121	157	12	" "	
"	262	M	Juv.	24	107	147	11	" "	
3/19/63	263	F	Ad.	44	116	155	13	" "	
"	264	F	Ad.	45	115	160	13	" "	
"	265	F	Ad.	47	126	163	13	" "	
"	266	F	Ad.	40	121	157	12	" "	
"	267	F	Ad.	47	126	175	14	" "	
"	268	F	Ad.	40	124	165	13	" "	
"	269	F	Ad.	52	127	170	13	" "	
"	270	F	Ad.	49	125	165	13	" "	
"	271	F	Ad.	60	124	168	12	" "	
"	272	F	Ad.	62	126	183	13	" "	
"	273	F	Ad.	49	129	165	13	" "	
"	274	F	Ad.	47	123	170	13	" "	
"	275	F	Pup	5	51	69	5	" "	

Table 1. (cont.)

Date Collected	Seal #	Sex	Age	Weight in lbs.	Body Length in cm.	Pelt Length in cm.	Tail Length in cm.	Location of Collection
3/20/63	276	F	Ad.	39	133	185	14	Aleut Beach
"	277	F	Ad.	51	126	173	12	St. Markarius Point
"	278	F	Ad.	35	115	163	12	" "
"	279	F	Ad.	58	127	170	13	" "
"	280	F	Ad.	46	127	170	13	" "
"	281	F	Ad.	55	124	173	12	" "
"	282	F	Ad.	45	118	160	11	" "
"	283	F	Ad.	53	127	180	13	" "
"	284	F	Ad.	49	123	163	12	" "
"	285	F	Ad.	61	127	180	12	" "
"	286	F	Ad.	47	127	173	13	" "
"	287	F	Ad.	43	127	175	12	" "
"	288	F	Ad.	52	128	170	12	" "
"	289	F	Ad.	36	119	155	12	" "
"	290	F	Ad.	54	134	183	13	" "
"	291	F	Ad.	52	131	185	13	" "
"	292	F	Ad.	47	124	163	13	" "
"	293	M	S.Ad.	49	124	163	12	" "
"	294	M	Juv.	44	117	157	11	" "
"	295	F	Pup	26	106	147	11	" "
"	296	F	Pup	22	96	137	10	" "
"	297	F	Pup	14	83	109	9	" "
"	298	F	Pup	10	69	97	8	" "
3/21/63	299	M	Juv.	35	107	142	11	" "
"	300	F	Ad.	50	124	170	13	" "
"	301	F	Pup	21	93	122	9	" "
"	302	F	Ad.	44	128	170	13	" "
"	303	M	Juv.	30	103	145	10	" "
"	304	F	Ad.	46	127	175	12	" "
"	305	F	Ad.	50	127	170	13	" "
3/22/63	306	M	Juv.	29	105	145	11	Constantine Point
"	307	M	Ad.	60	132	175	13	" "
"	308	F	Ad.	56	131	180	12	" "
"	309	F	Juv.	35	107	150	11	" "
"	310	F	Ad.	52	127	173	12	" "
"	311	F	Ad.	42	121	165	12	" "
"	312	F	Juv.	28	106	145	11	" "
"	313	F	Ad.	52	132	173	--	" "
"	314	F	Juv.	21	95	130	--	" "
"	315	F	Juv.	28	99	140	11	" "

Table 1. (cont.)

Date Collected	Seal #	Sex	Age	Weight in lbs.	Body Length in cm.	Pelt Length in cm.	Tail Length in cm.	Location of Collection
3/22/63	316	F	Ad.	36	115	150	11	Constantine Point
"	317	M	Juv.	24	97	127	10	" "
"	318	F	Juv.	26	104	145	11	Constantine Harbor
3/23/63	319	M	Juv.	32	111	145	11	Grandpa's Beach
"	320	M	S.Ad.	52	125	163	12	" "
"	321	F	Ad.	36	115	175	12	Rifle Range Point
"	322	F	Ad.	43	128	180	12	St.Markarius Point
"	323	F	Ad.	49	122	168	13	" "
"	324	F	Ad.	42	129	168	13	" "
"	325	F	Juv.	30	105	142	11	" "
"	326	F	Ad.	40	121	170	13	" "
3/24/63	327	F	Ad.	55	129	178	13	Constantine Point
"	328	F	Ad.	40	123	160	--	" "
"	329	F	Juv.	22	94	137	10	" "
"	330	F	Juv.	21	96	130	10	" "
"	331	F	Ad.	40	126	173	13	" "
"	332	F	Ad.	52	127	165	13	" "
"	333	F	Juv.	22	108	132	11	" "
"	334	F	Ad.	35	117	155	12	" "
"	335	F	Ad.	50	127	170	13	" "
"	336	F	Ad.	48	127	175	13	" "
"	337	F	Juv.	25	104	147	11	" "
"	338	F	Juv.	20	88	122	10	" "
"	339	F	Juv.	30	105	150	11	" "
3/25/63	340	F	Pup	17	89	122	10	" "
"	341	F	Ad.	43	125	170	13	" "
"	342	F	Ad.	41	123	165	11	" "
"	343	F	Ad.	70	123	168	12	" "
"	344	F	Ad.	54	129	188	13	" "
"	345	F	Ad.	58	119	165	12	" "
"	346	F	Ad.	52	128	175	13	" "
"	347	F	Ad.	43	123	160	12	" "
"	348	F	Ad.	52	128	168	13	" "
"	349	F	Juv.	31	103	140	11	" "
"	350	F	Ad.	36	123	168	12	" "
"	351	F	Ad.	44	121	168	12	" "
"	352	F	Ad.	63	132	180	13	" "
"	353	F	Ad.	49	129	163	13	" "
"	354	F	Ad.	47	124	170	12	" "
"	355	F	Ad.	42	123	170	13	" "
"	356	F	Ad.	47	130	173	12	" "
"	357	F	Ad.	53	123	163	12	" "
"	358	F	Ad.	40	129	170	13	" "

Table 1. (cont.)

Date Collected	Seal #	Sex	Age	Weight in lbs.	Body Length in cm.	Pelt Length in cm.	Tail Length in cm.	Location of Collection	
3/25/63	359	F	Ad.	45	122	165	--	Constantine	Point
"	360	F	Ad.	53	130	175	13	"	"
3/27/63	361	F	Ad.	58	125	175	13	Aleut	Beach
"	362	F	Ad.	54	128	168	13	"	"
"	363	M	Ad.	68	135	185	13	"	"
"	364	F	Ad.	37	123	163	13	"	"
"	365	F	Ad.	43	124	168	12	"	"
"	366	F	Ad.	52	128	175	13	"	"
"	367	M	Ad.	62	134	178	13	Grandpa's	Beach
"	368	M	Ad.	59	138	188	13	"	"
"	369	M	Ad.	55	129	170	13	"	"
"	370	M	Ad.	50	134	185	14	"	"
"	371	M	Juv.	34	111	160	12	"	"
"	372	F	Juv.	35	117	155	12	"	"
"	373	F	Juv.	24	111	137	11	"	"
"	374	F	Juv.	24	100	132	--	"	"
"	375	M	Juv.	26	109	155	12	"	"
3/28/63	376	M	S.Ad.	50	125	173	12	East	Cape
"	377	M	S.Ad.	42	119	155	11	"	"
"	378	M	Juv.	38	111	163	12	"	"
"	379	M	S.Ad.	45	118	163	12	"	"
"	380	F	Juv.	22	96	124	10	"	"
"	381	M	S.Ad.	56	131	185	13	"	"
"	382	M	Ad.	65	130	180	13	"	"
"	383	M	Ad.	69	140	191	14	"	"
"	384	M	Ad.	60	131	183	15	"	"
"	385	M	Ad.	59	128	178	13	"	"
"	386	M	S.Ad.	40	118	150	12	"	"
"	387	M	Ad.	62	137	178	15	"	"
"	388	M	S.Ad.	53	130	168	13	"	"
"	389	M	S.Ad.	46	129	168	13	"	"
"	390	M	S.Ad.	55	131	178	13	"	"
"	391	F	Ad.	61	125	178	13	Constantine	Point
"	392	F	Ad.	50	126	165	12	"	"
"	393	F	Ad.	45	127	170	13	"	"
"	394	F	Ad.	42	127	168	13	"	"
"	395	M	Juv.	33	106	142	11	"	"
"	396	M	Ad.	67	137	188	13	East	Cape
"	397	M	Ad.	60	133	173	13	"	"
"	398	M	Ad.	62	131	170	13	"	"
3/29/63	399	F	Juv.	19	101	137	--	Crown	Reefer
"	400	F	Ad.	42	117	163	12	East	Cape

Table 1. (Cont.)

Date Collected	Seal #	Sex	Age	Weight in lbs.	Body Length in cm.	Pelt Length in cm.	Tail Length in cm.	Location of Collection
3/29/63	401	F	Juv.	34	111	172	12	East Cape
"	402	M	S.Ad.	54	130	173	13	" "
"	403	M	S.Ad.	44	124	170	13	" "
"	404	M	Ad.	58	118	163	12	" "
"	405	M	Juv.	33	109	147	11	" "
"	406	M	Juv.	36	115	157	12	" "
"	407	M	S.Ad.	44	113	160	11	" "
"	408	M	S.Ad.	51	124	170	12	" "
"	409	M	Ad.	64	139	196	13	" "
"	410	M	Ad.	48	134	175	13	" "
"	411	M	Ad.	67	132	175	13	" "
"	412	M	Ad.	57	127	170	12	" "
"	413	M	S.Ad.	48	128	170	13	" "
"	414	M	Ad.	60	131	178	13	" "
"	415	M	Ad.	62	132	178	12	" "
3/30/63	416	M	S.Ad.	40	114	160	11	" "
"	417	M	S.Ad.	40	122	168	12	" "
"	418	M	S.Ad.	40	121	163	13	" "
"	419	M	S.Ad.	51	127	173	13	" "
"	420	M	S.Ad.	46	120	163	12	" "
"	421	M	Juv.	35	111	157	11	" "
"	422	M	S.Ad.	45	120	170	12	" "
"	423	M	Ad.	60	137	188	13	" "
"	424	M	S.Ad.	42	127	170	13	" "
"	425	M	S.Ad.	52	126	170	13	" "
"	426	M	S.Ad.	46	127	170	13	" "
"	427	M	Ad.	60	134	183	--	" "
"	428	M	Ad.	44	140	191	14	" "
"	429	M	S.Ad.	50	124	165	12	" "
"	430	M	Juv.	37	116	157	12	" "
"	431	M	Ad.	60	131	183	13	" "
"	432	M	S.Ad.	47	128	170	13	" "
"	433	M	Juv.	29	109	147	11	" "
"	434	M	Ad.	62	136	183	13	" "
"	435	M	Ad.	56	133	180	13	" "
"	436	M	Juv.	37	121	160	12	" "
3/31/63	437	M	Ad.	84	142	191	14	Kirilof Bay
"	438	F	Ad.	34	107	147	12	" "
"	439	F	Ad.	40	120	163	12	" "
"	440	F	Juv.	25	97	137	12	" "
"	441	F	Ad.	47	122	168	12	" "

Table 1. (Cont.)

Date Collected	Seal #	Sex	Age	Weight in lbs.	Body Length in cm.	Pelt Length in cm.	Tail Length in cm.	Location of Collection
3/31/63	442	F	Juv.	27	107	140	12	Kirilof Bay
"	443	F	Juv.	32	109	147	11	" "
"	444	F	Juv.	23	98	130	10	" "
"	445	F	Juv.	35	117	157	13	" "
"	446	F	Ad.	45	126	168	14	" "
"	447	F	Ad.	60	136	185	13	" "
"	448	F	Ad.	45	124	157	13	" "
"	449	F	Ad.	56	120	160	13	" "
"	450	F	Ad.	41	120	165	13	" "
"	451	F	Ad.	47	121	168	13	" "
"	452	F	Juv.	24	97	124	10	" "
"	453	M	S.Ad.	50	115	168	12	" "
"	454	F	Ad.	49	126	168	13	" "
"	455	F	Ad.	51	129	178	14	" "
"	456	F	Ad.	52	123	165	13	" "
"	457	M	Ad.	67	139	180	13	" "
"	458	F	Juv.	38	119	155	13	" "
"	459	M	Juv.	37	113	150	12	St. Markarius Point
"	460	F	Juv.	30	106	142	12	" "
"	461	F	Ad.	46	129	170	14	Aleut Beach
"	462	F	Juv.	23	102	142	11	" "
"	463	F	Ad.	40	113	157	13	" "
"	464	F	Ad.	37	120	157	13	" "
4/1/63	465	F	Ad.	45	127	165	12	Constantine Point
"	466	F	Ad.	41	123	168	13	" "
"	467	F	Ad.	43	124	168	13	" "
"	468	F	Pup	10	73	97	7	" "
"	469	F	Juv.	30	104	137	11	Kirilof Bay
"	470	F	Juv.	26	102	137	11	" "
"	471	F	Ad.	50	123	168	13	" "
"	472	F	Ad.	48	122	170	13	" "
"	473	F	Ad.	50	131	170	13	" "
"	474	F	Juv.	35	116	155	13	" "
"	475	F	Juv.	35	107	130	12	" "
"	476	F	Ad.	40	127	175	13	" "
"	477	F	Ad.	39	122	170	13	" "
"	478	F	Juv.	37	114	152	12	" "
"	479	F	Ad.	44	129	173	12	" "
4/2/63	480	F	Juv.	21	97	132	10	" "
"	481	F	Ad.	43	120	193	13	" "
"	482	F	Ad.	46	126	160	13	" "
"	483	M	Juv.	28	107	142	11	" "
"	484	F	Ad.	41	124	165	14	" "
"	485	F	Ad.	45	121	175	13	" "

Table 1. (Cont.)

Date Collected	Seal #	Sex	Age	Weight in lbs.	Body Length in cm.	Pelt Length in cm.	Tail Length in cm.	Location of Collection
4/2/63	486	F	Juv.	23	100	135	11	Kirilof Bay
"	487	F	Juv.	31	107	140	12	" "
"	488	F	Ad.	54	131	183	14	" "
"	489	F	Ad.	40	123	163	13	" "
"	490	M	Juv.	35	119	157	13	" "
"	491	F	Juv.	26	104	135	11	" "
"	492	F	Pup	18	85	112	9	" "
"	493	F	Ad.	40	125	163	13	" "
"	494	F	Juv.	35	108	142	12	" "
"	495	F	Ad.	55	127	175	15	" "
"	496	F	Ad.	42	121	163	13	" "
"	497	F	Ad.	56	128	178	13	" "
"	498	M	Ad.	74	135	185	15	" "
"	499	F	Ad.	47	127	175	14	" "
"	500	F	Ad.	58	129	180	13	" "
"	501	F	Ad.	55	129	178	14	" "
"	502	F	Juv.	39	119	157	12	" "
4/3/63	503	M	S.Ad.	52	130	173	--	East Cape

Table 2. The sex, age, weight, and measurements of sea otter collected at locations on Amchitka Island, October 1962.

Date Collected	Seal #	Sex	Age*	Weight in lbs.	Body Length in cm.	Tail Length in cm.	Location of Collection
10/26/62	156	F	Ad.	50	122	32	St. Markarius
"	157	F	Ad.	47	125.8	32.5	" "
"	158	F	Ad.	51	130.7	32.5	" "
"	159	F	Ad.	52	125.8	33	" "
"	160	M	Pup	--	99.5	--	" "
"	161	M	Pup	19	89	23	" "
"	162	F	Ad.	46	124	32	" "
"	163	M	Pup	--	90.8	21	" "
10/27/62	164	F	Ad.	48	129	34	" "
"	165	F	Ad.	46	122.5	26	" "
"	166	F	Ad.	45	124	30	" "
"	167	F	Ad.	46	118	27	" "
"	168	F	Ad.	59	131	33	" "
"	169	F	Pup	25	93	23	" "
"	170	F	Ad.	48	122	30	" "
10/29/62	171	F	Ad.	35	109	28	Grandpa's Beach
"	172	M	Ad.	72	145	35	" "
"	173	M	Ad.	60	136	34	" "
"	174	F	Ad.	55	129	32	St. Markarius
"	175	F	Ad.	46	124	30	" "
"	176	F	Pup	9	69	17	" "
10/30/62	177	F	Ad.	50	132.5	28	" "
"	178	M	Ad.	58	132	30	" "
"	179	F	Ad.	47	124	28	" "

\*Age determinations made as explained in footnote to Table 1.



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