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## GAME HARVESTS IN ALASKA

by

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#### A Federal Aid in Wildlife Restoration Report

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Cover by R.T. Wallen Eskimo sealing harpoon and fl Juneau, Alaska 1968

#### GAME HARVESTS IN ALASKA

#### ABSTRACT

In prehistoric times, the availability of game for clothing and food in Alaska made possible the peopling of the Americas. More recently, the search for furs was the prime cause of the "discovery" of Alaska, and fur and food animals supported the settlement of the area by traders, trappers, and prospectors. Today, Alaska's game animals are still an important factor in the economy, both for subsistence and for recreation.

The first useful records of Alaska game harvests date from the middle of the eighteenth century when Russian officials began recording the furs taken out of the new land. These early records, however, provide a very incomplete picture; since that time, records have gradually encompassed more species and become more reliable. As transportation and communications have improved, even harvest estimates have probably come closer to being accurate.

A variety of methods now provide data on the harvests of those species whose proper management require such information. Such information has made possible the seasons and bag limits which today allow much larger harvests on many species than ever took place in the past, while still providing for sustained production of harvestable surpluses.

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#### A BRIEF HISTORY OF HARVEST RECORDS

When Europeans "discovered" America they might have found a land without a trace of human habitation had there been no wildlife in Alaska. The first harvest of wildlife here probably took place no more than a few hours after the first man arrived on the North American continent across the Bering Land Bridge some 100 to 400 centuries before the "discovery" by Europeans; and had there been no wildlife to harvest, he would have been able to go no farther.

More recently, the quest for furs was the prime factor in the early settlement of Alaska by the white man. As Bancroft (1886) put it,

> . . . there is this to be said about the first Russian discoveries in America--little would have been heard of them for some time to come, if ever, had it not been for the beautiful furs brought back from Bering Island and elsewhere.

Furthermore, without such large food animals as caribou, deer, moose, and black bear, the harvesting of furs might well have been economically impossible. And the third great influx of people--this time in search of gold--would, without a doubt, have been much harder to sustain if there hadn't been an abundance of wild animals here. Even today, in the Northland, native animals are a mainstay in the diets of many people, and indispensable to some.

Wildlife harvests are a constant, crucial thread in the fabric of Alaskan history. As the trend to more leisure time for man accelerates, wildlife in "The Great Land" will quite likely remain just as important as it has always been, though in a much different way.

Archeological studies, much as they can disclose nowadays, provide no record of the <u>quantity</u> of animals that were taken by man in ancient times, except occasionally in a minimal and highly local fashion. For the first written records of the magnitude of man's utilization of wildlife in Alaska, we have to wait until 1747. That year, the survivors of the wreck of the Russian ship <u>Yevdokia</u>, after many tribulations, arrived at Nishekamchatsk with the remnants of their cargo--a little over 300 sea otter skins, probably taken on Attu where the <u>Yevdokia</u> had spent the previous winter (Bancroft, op. cit.). (Earlier harvests of sea otters, including those taken by the survivors of the wreck of Vitus Bering's ship <u>St. Peter</u> in 1741, almost certainly were taken on the Commander Islands, which remained Russian when Alaska was sold.)

Following that first record, there are many, of varying usefulness. The first sizeable cargo landed intact from the Aleutians included the pelts of 1772 sea otters, 750 blue foxes, and 840 fur seals in 1752; another vessel returned from the Near Islands in the same year with 700 sea otter and 700 blue fox pelts. In 1762 a vessel returned to Bolsheretsk with 1465 sea otter furs, 1002 black fox, 100 cross fox (the first such from North America), 400 red fox, 58 blue fox, and 22 walrus tusks (these last probably traded from the Alaska Peninsula area by the Aleuts) (Ibid.) The harvest was expanding in both numbers and kind.

The increases in fur harvests shown by these records undoubtedly signalled similar increases in the taking of game for food. No record was kept of such harvests, however, nor of the many furs taken by natives for personal use.

Even the recording of exports of furs left something to be desired. As Dall (1870) said,

. . the statistics of the fur trade given, from the most trustworthy sources . . . are beyond question, far below the truth. The number of furs obtained in the colonies, according to the annual reports published at Sitka, is always greater than the number stated in the annual report published for the stockholders of the Russian American Company in St. Petersburg. The discrepancies cannot be reconciled, and show a great carelessness in the manner of keeping the accounts. There was a leak somewhere, and the Russian officials alone could tell where. It is probable that strict probity did not always characterize the colonial officials. Besides the amount of furs thus disposed of, the traders and the Hudson Bay Company doubtless obtained a large annual supply, which is nowhere recorded.

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In addition to fragmentary records and conservative--perhaps deliberately falsified--ones, there are those which are recorded in the terms of commerce, as when Dall (op. cit.) speaks of barrels of whale oil or Bruce (1895) records only the value, and not the number of skins shipped. There are even instances of deliberate destruction of skins taken for export, thus causing them to be unrecorded in export records; for example Bruce (op. cit.) reports that "more than half of the (fur seal) skins were destroyed, in order that the market might not be overstocked."

That action reported by Bruce took place after Alaska became American territory, during a period when freebooting took the place of the more-or-less controlled exploitation which had reportedly prevailed under the later years of royal Russian charter. Falsified records or not, the Russians did prohibit the taking of fur seals from 1807 to 1812, and imposed restrictions at other times on the numbers to be taken. As Bruce (op. cit.) said,

> The fact that it was possible to continue the slaughter, at the rate of one hundred thousand per annum, for twenty years after our purchase (which took place 81 years after the Pribilofs were discovered) seems to prove that when the United States acquired these valuable islands, the industry was in as prosperous condition as when discovered by Pribilof in 1786.

Some further idea of the danger of placing too much weight on the early records is conveyed by a statement of Marsh and Cobb (1908) that "Most of the muskrat skins obtained by the trappers are used by the traders in barter with the natives for more valuable furs, hence but few are exported . . . " A glimpse of the magnitude, if not the numbers, of the take of species whose harvests were unrecorded because they weren't fur animals is conveyed by a report of Special Treasury Agent Jos. Murray in Volume 2 of the "Seal and Salmon Fisheries and General Resources of Alaska" (Anon., 1898) that "I saw bales of the dried deerskins at many of the trading posts awaiting shipment, and when I asked what use had been made of the carcasses, I was told the deer were shot for their hides only." He also mentions ". . . wholesale poisonings by which whole islands are stripped of their foxes in one winter . . . " but those at least were probably recorded when their pelts were exported, whatever one might think of those who would employ such methods.

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Some of the sources listed under "Literature Cited," contain information on the dollar value of furs, meat, ivory, or other components of the harvest. Because such records are for the most part fragmentary and unreliable and because there has been so much variation in the value of the dollar, I have not included such monetary information in this report.

A number of sources in addition to those listed in the "Literature Cited," provided data on Alaskan game harvests. Unpublished material in the files of the U. S. Fish and Wildlife Service in Juneau includes both estimates and figures based on export permits and data provided by hunters on their previous year's take at the time of buying a new license each year. There is much unpublished material in the files of the Alaska Department of Fish and Game in Juneau. Recent hunting and trapping license sales data were provided by the Alaska Department of Revenue.

Some of the sources from which I obtained figures give much more detail about the harvest than there is room for here: for example, Riley (1961) gives data on both pelagic and Pribilof harvests of fur seals for considerable periods, and in "Seal and Salmon Fisheries and General Resources of Alaska" (Anon., 1898) there are records of fur purchases from each major Alaskan town for the years 1842-1860. There are also a number of other sources of harvest information which provide data on specific locales, which I have not listed here: some data of this kind, and reference to some early sources, will be found in various Alaska Department of Fish and Game Federal Aid segment reports and comprehensive reports on the various species, compiled by Department biologists.

After casting aspersions on the reliability and comprehensiveness of early harvest data, it's only fair to point out that much of the more recent (post-World War II) data leaves something to be desired in that respect also. For example, there are conflicting figures on fur exports in 1945, 1946 and 1947: one set of figures shows almost twice as many black-silver fox exports as the other. And it is known that some furs are even today being exported without being reported. Gradually, however, the loopholes are being closed; checks are being instituted and new methods are being employed to obtain harvest data. Today we have "harvest tickets" on moose and sheep, "sealing" programs for beaver pelt and brown-grizzly-polar bear hides, standardized deer hunter interviews, fur export permits and reports, fur dealer

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reports, and occasionally permit hunts, as well as the means to monitor closely some harvest activities, such as walrus hunting. Mailed questionnaires will probably be employed again as they were in 1962, and hunter "bag checks" will continue to provide data on waterfowl and other species. Forms currently being used to obtain or record harvest data are reproduced in the Appendix.

The more critical management of a species becomes, or the more sophisticated in order to produce maximum yield, the more important is reliable and detailed harvest data. Conversely, there are still some species in Alaska which, for one reason or another, we are not ready or not yet able to manage in a way that makes a detailed knowledge of harvests necessary. The qoat is one example: obtaining harvest data on this species is not considered necessary at present because most goat stocks are inaccessible and few hunters are willing to expend the energy needed to hunt them. Therefore estimates will continue to be used for some time. That such estimates may be highly reliable is shown by the close agreement between estimates made just before a more complex recording method went into effect, and data subsequently gathered through harvest tickets and other means.

Harvests of game animals are, of course, influenced by many factors. The most prominent influences in Alaska include hunting (or trapping) pressure, season lengths and bag limits and other restrictions imposed by law or regulation, availability of animals, fur market factors, and weather. Of these only hunting pressure can be easily summarized for the state as a whole; a summary of the other factors would be an unwieldy mass of figures. License and tag sales are not precise indicators of hunting pressure, of course, for they indicate only an <u>intent</u> to hunt. They do, nevertheless, indicate trends.

Hunting licenses, trapping licenses, and non-resident big game tags sold are shown in Tables 1, 2, and 3. Alaska natives were not required to purchase licenses prior to 1959; residents less than 16 years old have never been required to have licenses to hunt or trap; and non-resident big game tags have only been required since 1959; these factors should be taken into account when drawing inferences from the figures listed.

Harvest tickets issued to moose and sheep hunters are shown on the figures listing harvests of those two species.

#### CURRENT SOURCES OF HARVEST INFORMATION

#### Bounty Payment Records

Currently, the state pays bounties on wolves (\$50), coyotes (\$35), wolverines, (\$15) and seals in some areas (\$3). The affidavits which must be filled out by bounty claimants (Figs. A9 and Al0) have provided a good deal of information on the harvest of these species. However, compilation of harvest data from bounty records has a drawback: the method of processing affidavits, which in part has depended on the manner in which money has been appropriated, has made it difficult to determine with any exactness the period during which the animals were taken. Each year the legislature appropriates money for bounties, and each year, without fail, the claims exceed the amount appropriated to pay them. Affidavits then accumulate, unprocessed, until the legislature meets and passes a deficiency appropriation to take care of them. Often this money, too, is soon exhausted, and so when the new "regular" appropriation becomes available on July 1, varying proportions of it go to pay for animals that were taken during the fiscal year just ended. The fact that claimants are supposed to fill in the dates of taking on the affidavit only partially clears up the resulting confusion, since only the beginning and ending dates of harvest by an individual are ordinarily listed.

The errors introduced by this process may not be of sufficient magnitude to make their enumeration worthwhile, but there is need, at least, for caution in interpreting the resultant harvest figures. Two or three year averages would perhaps be more reliable indicators of harvest trends than the yearly figures.

In 1959 a "bounty information form" was made a part of the certifying procedure for wolf, coyote and wolverine bounty claims (Fig. A8). The resulting information is much more comprehensive than that obtained from the affidavits alone, and since about 1963, when a Commissioner's directive was issued, has probably been more complete also (R. A. Rausch, <u>viva voce</u>). Thus, the harvest figures on these species subsequent to 1963 or 1964 need not be interpreted as cautiously as figures from previous years.

Bills to eliminate the seal bounty, or to reduce the area to which it would apply, have appeared regularly in the Legislature. Indeed, in the past a number of changes in area of

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application and amount of bounty have become law. The "bounty information form" system, which is now working so well on the other bountied species, has therefore not been put into effect on seals because it appeared that it would become wasted effort when such a change was passed by the Legislature. And since in recent years a substantial number of seals (mainly pups, taken for the hides) have been taken just before and after the beginning of the fiscal year, the year-to-year changes in numbers bountied, as determined by examination of bounty affidavits, should not be thought of as a fully reliable indicator of changes in harvest levels.

There has never, to my knowledge, been any attempt to determine how many of any bountiable species of animals were taken, but not bountied. When the bounty is large, as on wolves, the error thus introduced is probably small; where the bounty is small, as on seals, the error may be more substantial. In any case, we can be certain that more animals are taken than are bountied. In addition, some seals sink immediately when shot and are never recovered, so the number of seals actually killed in Alaska each year is significantly larger than the figures given in Table 15.

#### Harvest Tickets

"Harvest tickets" (Figs. Al and A2) have been required accouterments of Alaskan sheep hunters since 1962 and of moose hunters since 1963. The resultant figures have provided what is believed to be highly accurate data on the harvests of these two species, except possibly during the first year when some hunters undoubtedly had not heard of the new requirement.

The reported large increase in the sheep harvest from 1962 to 1963 may have been due simply to this lack of knowledge, stemming from insufficient publicity. By the time the moose harvest ticket requirement went into effect the next year, there had been time for "the word" to spread (and much more effort was made to spread it), which may explain the lack of a similar jump in the reported moose harvest from 1963 to 1964.

It is interesting to note the close agreement between the sheep and moose harvests as determined by analysis of harvest tickets, and the estimates of the harvests made just before the tickets were required (with the exception of the aforementioned 1962 sheep harvest and an unexplainably optimistic estimate of the 1961 moose harvest). This may indicate the accuracy of estimates of the harvest of species for which no tallying procedure has been instituted.

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#### Sealing Programs

Regulations requiring that beaver pelts be "sealed" before export, or within a specified number of days after taking, have been in effect since 1927. The form currently used to record data at the time of sealing is shown in Fig. A3. (A similar requirement applied to marten but was later removed, without any recorded evidence that accurate harvest data were obtained by taking advantage of it.) In 1961 a similar requirement went into effect on brown, grizzly, and polar bear hides: the form is shown in Fig. A4.

Beaver sealing data has been analyzed each year since 1951 when W. L. Libby (Buckley and Libby, 1955) started taking pelt measurements to determine the age composition of the harvest. I have been unable to determine whether beaver harvest data for prior years were based on sealing data or on data obtained from fur export permits.

Because of market conditions some beaver pelts are not sealed until a year after they are taken. The error thus introduced in the harvest figures as shown in Table 32, however, is not thought to be significant.

Ignorance of or poor compliance with the requirement that bear hides be sealed before export or within a specified period may have been reflected in a slightly deflated harvest figure for two or three years after the requirement went into effect, but the number of unsealed pelts was probably not large, and the increases in harvests shown in Table 12 are no doubt very real. Since early 1965, the requirement has been regularly publicized, and the reported harvest has probably been very close to the actual take.

#### Fur Export Permits

Since 1910 there has been in effect a regulation requiring that furs exported from Alaska be reported by the shipper. The form on which reports are to be made has undergone a number of changes; the one currently in use is shown in Fig. A5.

Comparison of beaver sealing data with recorded beaver exports, together with occasional checks of other kinds, has shown that the export report falls well short of perfection in providing accurate fur harvest data. Judging from the beaver harvest data, the discrepancy is at least 25 per cent each year. At times, the recorded harvest has taken this discrepancy into account, and at times it apparently has not, which means that figures showing less than 25% change in the harvest of any species from one year to the next may indicate nothing more than a change in the method of estimating the total take. Only longterm trends, and fluctuations of a regular or cyclic nature, can safely be adduced from the recorded figures. Since 1965 efforts have been made to publicize the export permit regulation, and it is believed that the resultant figures are thereby becoming increasingly reliable.

#### Fur Dealer Reports

Since 1943 fur dealers have been required to report their purchases on forms provided by the U. S. Fish and Wildlife Service (before 1960) and the Alaska Department of Fish and Game (subsequently; see Fig. A6). Comparison of resultant data with information from beaver sealing and fur export reports has shown that there are large fluctuations in the proportion of furs sold or reportedly sold to dealers in Alaska. For example, below is a comparison of beaver harvest figures obtained by these methods in 1961, 1962, and 1963:

	<u>1961</u>	1962	<u>1963</u>
Fur export reports	15,504	10,431	20,071
Fur dealer reports	18,650	14,560	11,047
Sealing Certificates	23,859	15,187	19,619

#### Hunter Interviews and Postal Surveys

Since 1957 an annual survey of deer hunters in Southeast Alaska has been conducted immediately after the close of the season each year. The form used to record information obtained for interviewees is illustrated in Fig. A7.

The consistency of results from year to year seems to indicate that the interview is providing very reliable data. It also provides information on hunter success and sex composition of the harvest, by area.

Hunter interviews have also been used to determine the magnitude of Prince William Sound and Kodiak Island deer harvests.

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As in Southeastern, the technique involves simply stopping people on the street in the various villages and towns--a technique which would be wastefully unproductive in most other parts of the nation, where the proportion of hunters is much lower than it is in Alaska.

In 1962 a postal survey was conducted involving about one out of every seven resident full-fee purchasers of 1961 hunting licenses (Courtright, 1964); data from this survey are included in the various tables in this report when no more reliable figures exist. Because this survey did not include non-resident hunters, resident hunters who were eligible for the 25¢ license by virtue of their low incomes, nor resident hunters under 16 years old, the resulting harvest data must necessarily be regarded as establishing only a minimum take for each species.

#### RECENT TRENDS IN ALASKA GAME HARVESTS

Hunting license and nonresident big game tag sales and moose and sheep harvest ticket issuances for the past few years clearly show that hunting pressure is increasing in Alaska. The rate of increase is not great, however, and the effects, in terms of increased harvests, have so far necessitated only a few restrictions in seasons, bag limits, or other methods of control in addition to those previously in effect. Some species, in some parts of their range at least, could not only withstand larger harvests but would actually benefit in terms of productivity and resistance of populations to heavy losses in rigorous winters.

In contrast to hunting pressure, trapping pressure is declining. It appears, however, that recreational trapping may become more popular in the future. Small game (except waterfowl) harvests continue to fluctuate with the cyclic changes in abundance of most of the species involved.

#### BIG GAME

Lack of ready access to huntable populations is the most apparent single factor influencing big game harvests in Alaska. This lack has less effect on harvests of those species hunted (and managed) primarily as trophies--brown bear, polar bear, goat, wolf and sheep--than on those hunted for meat in addition to, or exclusive of, their trophy value (moose, caribou, deer, elk). There have been only minor changes in this situation in the past decade or more: construction of a new road to Fairbanks, advent of the ferry system, construction of airstrips, increasing use of cross country vehicles and snow machines. Snow machines may ultimately have far-reaching effects as they become more reliable and more numerous.

#### Deer

Alaska deer harvests have been relatively stable for a number of years. This attests to (1) a lack of change in accessibility, and (2) generally light winter losses. When ferries start serving some of the smaller villages in the Southeast Panhandle, some increases in deer harvests can be expected. When a really hard winter hits, as has happened periodically, losses will depress subsequent harvests for two or three years--or even

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longer if populations build up too high and curtail the supply of food, or if we have a series of hard winters, rather than just an occasional single one.

Hunting has affected deer populations only within a small radius of the larger towns such as Juneau, Ketchikan, Petersburg, Sitka, and Kodiak. Even in these areas deer are not scarce-though their increased wariness sometimes leads people to think they are.

#### Moose

The moose is the most widely and evenly distributed of all the big game meat animals in Alaska, and probably the most avidly sought. It is also a popular trophy animal, particularly with nonresident hunters.

Moose harvests are presently kept far below the level of maximum sustainable yield by lack of access to many huntable populations and because of restrictions on the harvesting of antlerless moose. The latter arise from public sentiment and lack of knowledge about the high potential reproductive rate of moose and the important relationship between population size and range quality. In one or two areas where these factors are not operative, harvests are now at, or near, the maximum sustained yield point; the Matanuska Valley is the main such place.

The prospects are for continued relatively low harvests, with some increases arising from new highway construction and from increasing use of snow machines and cross country vehicles. Changes in public attitudes toward taking of cows could, however, boost present harvest levels by up to about 50 per cent with little effect--or mainly beneficial effects--on the moose populations in general.

#### Caribou

The nomadic movements of caribou in Alaska make the harvesting of them dependent on the routes they choose and the timing of their movements. Sometimes the Arctic caribou herd will move within striking distance of Hope, Kivalina, Kobuk, and even Kotzebue and Selawik in the winter, and the harvest is high; in other years the take may be quite low. Likewise with the Nelchina and Steese-Fortymile herds, the main targets of hunters from the large population centers of Anchorage and Fairbanks: sometimes they're available close to roads for long periods, while in other years the movements across roads will be over just a few days and hunting the rest of the year amounts to flying in or finding stragglers.

Snow machines are beginning to change the picture slightly, somewhat more than the advent of swamp buggies and weasels did a decade or more ago, but there are still vast areas out of safe reach of this means of transportation, as well as areas simply inaccessible to them. There isn't a discrete caribou population in Alaska at the present time that wouldn't benefit, in terms of herd health in general, from increased harvests. Yet bag limits and season lengths are already so liberal that no useful increases in take would be likely to result from any changes. The situation is most critical with the Nelchina herd, which provides the vast majority of caribou for both Anchorage and Fairbanks Now estimated to number about 100,000 animals, this hunters. herd has shown increasing signs that segments of it will wander off, more-or-less permanently, to less accessible areas. It may even be that many animals have already left. A certain amount of dispersal could be beneficial, by reducing the "firing line" aspects of caribou hunting which sometimes prevail in this area, if the majority of the herd doesn't wind up inhabiting an area which is virtually inaccessible from the road system.

Double or even triple the present level of caribou harvest could be easily sustained in Alaska.

#### Dall Sheep

There have been considerable increases in sheep hunting pressure during the past few years, without a fully corresponding increase in harvests. One reason for this is that since most sheep hunters are seeking trophies, they concentrate on a few areas where large heads have been taken in the past rather than spreading out to lightly-hunted areas like the Brooks Range. With a limit of one three-quarter-curl ram, the production of an area such as the Wrangell or Chugach Mountains is comparatively limited, though increased wariness of animals in heavily hunted areas can also account for lowered hunting success.

Increases in the sheep harvest are likely to be small unless the three-quarter-curl restriction is reduced or removed, hunting of ewes is allowed, or there is increased appreciation of the esthetic qualities of the lower-scoring horns found in such areas as the Brooks range which are now lightly hunted. Depending on the relationship between range quality and production of large horns, it's possible that a lowering of restrictions could actually increase the production of high-scoring trophies. Much must be learned, however, before such speculations can be any more than that.

#### <u>Elk</u>

Alaska's elk easily qualify as the emperors of inaccessibility compared to deer, caribou, and moose, which at least have the kindness to occur along <u>some</u> road systems. The elk, being stuck out on Afognak and Raspberry Islands, are not only out of sight but out of mind.

This last is demonstrated by the fact that in 1965, when some publicity was given to the relative uniqueness of elk hunting, the take rose to the highest level in history (still only 142 animals!). The next year, with no publicity, the take dropped down to 116. There is little prospect for any large increases in elk harvests for many years to come.

#### Goat

Sales of nonresident goat tags have been increasing at about the same rate as those for other species, but the total is still small (292 tags in FY 1966). There has never been any good tally of the goat harvest in Alaska, so it's not possible to say whether the harvest is increasing appreciably. Current estimates, based on limited observation of goat herds, are that it is not. Increases can be expected over the next few years, and it may be necessary to reduce the present liberal seasons and bag limits in a few of the more accessible areas. The population as a whole, however, can sustain much higher harvests than at present.

#### Brown and Grizzly Bear

Good records have been kept of the brown-grizzly harvests since a pelt-sealing program was inaugurated in 1961 (previous

figures are estimates). Since that time, the harvest has nearly doubled. This has necessitated restrictions on Kodiak Island and the Alaska Peninsula, the major large-trophy producing areas, and a few other places. Restrictions are currently being considered for parts of the southeast Panhandle. The State's bear populations are capable of sustaining larger harvests than at present, but only at a likely sacrifice in average trophy size; and this species, of course, is taken almost entirely for trophies. The range of brown-grizzly bears is extensive enough that it may be possible to provide relatively high yields in some areas for the benefit of those who seek nicely-furred trophies and care little about size, while still producing high-scoring trophies in other areas.

#### Polar Bear

Partly in response to rumors that restrictions would soon be imposed, the polar bear harvest soared to over 400 animals in 1966--more than enough to demonstrate that restrictions <u>were</u> in order, particularly in view of public concern over the future of this internationally-distributed species.

Subsequently, a regulation was passed restricting guides to taking out no more than six polar bear hunters per year. In 1967, ice and weather conditions were so poor that only 189 bears were taken; although the restriction probably contributed somewhat to the decrease from the previous year, its full impact couldn't be assessed.

#### Black Bear

Although there has been some increase in black bear hunting in Alaska in the past few years (particularly in Prince William Sound), most black bears are probably still taken "incidentally"; that is to say, by hunters who are out after other game, and simply take advantage of opportunity when they run across a bear. An exception to this is the blue color phase or glacier bear, which is rarely taken incidentally.

As restrictions are imposed on brown-grizzly hunting in years to come, it can be expected that more black bears will be taken. And as has been the case elsewhere, the latter will no doubt prove more adaptable to living around man than will his larger cousin. It would not be too early to start gathering some reliable harvest and other data on black bears.

#### Bison

Bison harvests will need to be closely controlled for the foreseeable future. The harvest can be expected to vary from none to, optimistically, about 100 animals following a series of good reproductive years.

#### SMALL GAME

Alaska's grouse, ptarmigan, and hare populations have probably always fluctuated cyclically. Although there is little data, no doubt harvests and hunting effort fluctuate with them. In the future, it's likely that larger harvests can be taken by publicizing areas of abundance, for the various species and areas have their ups and downs at varying times.

Waterfowl populations fluctuate in Alaska also, but available information does not indicate that the changes are sufficiently regular to be called cyclic. It's unlikely that hunting effort varies a great deal, since so many species of waterfowl are available that there's almost always <u>something</u> to hunt. And waterfowl hunters are notoriously disregardful of the elements.

#### FUR ANIMALS

The slight decline in trapping effort after 1964 shown by Table 3 can probably be attributed to a decrease in market prices for mink. Mink are the major late fall and winter target of most trappers, and a decline in prices is likely to affect not only the harvest of mink but of other species also, with the probable exception of beaver, which are taken during a later season.

In reviewing the fluctuations in the harvests of fur animals shown in the tables and graphs, it should be kept in mind that before 1963 mink seasons were open only in alternate years in Southeastern Alaska. This practice was followed because in this area almost all mink are found along the beaches, where they are quite vulnerable; only after trapping pressure in this area was found to have declined was it deemed safe to drop the alternate-year seasons. It appears that were it not for an increase in recreational trapping, (O. E. Burris, <u>viva voce</u>) Table 3 would show a much larger decline in trapping license sales. Recreational trappers probably take far fewer furs per individual than do those who trap for a livelihood, and license sales can increase considerably in the future as a result of this trend without presaging any significant increase in harvests.

It can be expected that the more recreational trapping is done, the less fur market fluctuations will influence effort, since recreational trappers are after "pocket money" and recreation rather than vital income. Fluctuations in fur animal abundance, and weather, may on the other hand be even more influential than at present in varying the harvest.

Despite increases in recreational trapping, "professional" trappers will no doubt continue to take the vast majority of furs in Alaska for many years to come. Many of these trappers are using snow machines now rather than dog sleds, and the trend is certain to continue. Whether this trend will have any marked effect on total fur harvest and in return per trapper cannot presently be foretold.

#### MARINE MAMMALS

#### <u>Seals</u>

The extent to which market fluctuations can influence harvests of animals open to commercial exploitation is amply demonstrated by hair seal harvesting the past few years. As Table 15 and the accompanying graph show, there was a tremendous increase in seal (mainly harbor seal) harvests beginning This increase resulted entirely from increases in prices in 1963. paid for pelts, which mainly came about because declines in Atlantic seal stocks led European furriers to look for other sources. After reaching a high point in 1965 prices have decreased again, though not to former low levels, and the harvest has declined also. Future harvests, at least of harbor seals, hinge on market fluctuations. The market has considerably less effect on the take of bearded and ringed seals, which are a dietary mainstay of northwest coastal residents. The take of these species and of the uncommon (in Alaska waters) ribbon seal depends on weather and ice conditions and the availability of walrus.

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#### <u>Walrus</u>

Walrus harvests have depended for many years mainly on availability, which in turn is a function of weather and ice conditions. The take is undoubtedly lower than it would be were it not for restrictions on taking females and selling raw ivory, which were imposed to reduce the "head hunting" that had begun to develop in Territorial days to supply tourists with walrus tusks and ivory. Increases can be expected in hunting of walrus for trophies, which might well bring decreases in the number taken for food and ivory, for trophy hunters would divert Eskimo hunters to guiding. Trophy hunting would have to increase manyfold before it would have any effect on walrus stocks.

#### Sea Otter

Sea otter populations have in some parts of their range saturated the available habitat, and limited harvesting is planned (some has already been done on an experimental basis). Such harvests will necessarily be under rigid State control for the foreseeable future, and probably will not exceed one or two thousand animals annually for many years.

#### <u>Sea Lions</u>

Several times during the current decade various interests have looked into the possibilities of harvesting sea lions commercially. The usual intent has been to sell meat and liver as pet food or to fur farms, though Japanese interests were looking for protein for human consumption. To date, nothing has developed from these ideas, mainly because costs appear to be too high to allow a reasonable profit.

During the same period, the price of sea lion pup skins rose along with those for hair seal skins, and some harvests have taken place on two or three rookeries. Approximately 5,000 animals were taken each summer, the take being closely monitored by the Department of Fish and Game. There are possibilities for some expansion of this small industry, but prices appear to be dropping and may make expansion uneconomical.

### Other Marine Mammals

A few beluga whales continue to be taken annually, particularly along the northwest coast, and whales of other species are occasionally taken from Pt. Hope, Wainwright, Barrow, and other northwest villages.

#### TABLE 1. ALASKA HUNTING LICENSE SALES, 1926-1966\* (Fiscal Years)

YEAR	NONRES. TOTAL, ALL LICENSES	RES. TOTAL,ALL LICENSES*	TOTAL RES. & NONRES.		NONRES. TOTAL, ALL LICENSES	RES. TOTAL,ALL LICENSES*	TOTAL RES. & <u>NONRES.</u>	YE AR	NONRES. TOTAL, ALL LICENSES	RES. TOTAL,ALL LICENSES*	TOTAL RES. & <u>NONRES.</u>	YEAR	NONRES. TOTAL,ALL LICENSES	RES. TOTAL,ALL LICENSES*	
1926	118	1,864	1,982	1938	205	10,898	11,103	1950	1,747	21,063	22,810	1960	3,450	35,830	39,280
1927	162	3,186	3,348	1939	170	11,579	11,749	1951	1,762	23,176	24,938	1961	3,940		41,464
1928	268	5,265	5,533	1940	183	10,475	10,658	1952	2,281	25,427	27,708	1962	4,115		41,652
1929	227	4,641	4,868	1941	289	11,571	11,860	1953	3,047	29,874	32,921	1963	4,386	41,065	45,451
1930	214	4,253	4,467	1942	425	11,121	11,546	1954	3,042	34,493	37,535	1964	4,946	43,015	47,961
1931	198	4,425	4,623	1943	445	10,064	10,509	1955	3,180	37,988	41,168	1965**	6,288	42,715	49,003
19 <b>3</b> 2	176	4,013	4,189	1944	287	13,812	14,099	19 <b>56</b>	3,030	37,306	40,336	196 <b>6</b>	6,484	44,295	50,779
1933	89	3,638	3,727	1945	287	13,411	13,698	1957	3,057	35,922	38,979				
1934	100	3,450	3,550	1946	486	13,942	14,428	1958	2,565	32,809	35,374				
1935	128	3,699	3,827	194 <b>7</b>	1,217	14,653	15,870	195 <u>9</u>	2,796	31,986	34,782				
1936	138	5,975	6,113	1948	1,755	17,092	18,847					~			
1937	172	9,891	10,063	1949	1,653	19,561	21,214					year)			
	-	1gures were 20,000- - -	<b>1n.</b>			s compiled o	000-	Jes icensed	50000-			(incomplete fiscal year)		quoted shou ed. See te:	
							N	onresident	Licenses						
	1926-	1930	1932- 1934-	1936- 1938-	1940- 1942-	1944- 1946-	1948-	195C-	1954- 1956-	1958- 1960-	1962-	-964-			

	1960	1961	1962	1963	1964	1965	1966
Brown-Grizzly Bear	375	437	446	475	551	746	968
Polar Bear	58	78	96	110	155	183	211
Black Bear	552	616	639	870	781	1,147	1,362
Deer	429	n.a.	586	655	681	740	675
Moose	489	n.a.	696	796	933	1,150	1,364
Sheep	226	n.a.	294	360	483	622	856
Walrus	6	n.a.	11	4	7	8	12
E1k	22	n.a.	88	44	44	52	45
Goat	79	n.a.	45	114	151	238	292
Caribou	629	n.a.	800	923	1,110	1,501	1,812
TOTAL TAG SALES	2,865		3,701	4,351	4,896	6,387	7,597 *

TABLE 2. NONRESIDENT BIG GAME TAG SALES IN ALASKA, 1960-1966 (Calendar Years)

\* This equals 265% increase over 1960.



These figures should be interpreted cautiously, and if quoted should be qualified. See text.

# TABLE 3. ALASKA TRAPPING LICENSE SALES, 1959-1966 (INCLUDING SUBSISTENCE LICENSES) (Fiscal Years)

6,600
3,910 *
7,464
7,079
8,525
9,657
8,585 **
8,837

For the last half of F.Y. 1960 only, when the first State licenses were sold. Χ.

\*\* Calendar year.





# TABLE 4. ESTIMATED AND COMPUTED ALASKA<br/>DEER HARVESTS, 1944-1966 (1)

YEAR	NUMBER	YEAR	NUMBER
1944	7,204	1955	5,900
1945 -	9,077	1956	7,800
1946	11,280	1957	8,250
1947	10,922	1958	13,000
1948	7,476	1959	12,100
1949	4,520	1960	13,300
1950	4,600	1961	12,100
1951	4,200	1962	11,700
1952	3,300	1963	12,500
1953 1954	5,100 4,600	1964 1965 1966	11,700 12,200 14,200

(1) Since 1959, deer harvest estimates have been based on post-season hunter interviews for the most part, with questionnaires and estimates sometimes substituting on Kodiak and in Prince William Sound.



These figures should be interpreted cautiously, and if quoted should be qualified. See text.

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TABLE 5. ESTIMATED AND RECORDED ALASKA MOOSE HARVESTS, 1945-1966 AND NUMBER OF MOOSE HUNTERS AND SUCCESS RATIOS, 1963-1966

YEAR	HARVEST	YEAR	HARVEST	NUMBER HUNTERS*	PERCENT SUCCESS*
1945 1946 1947 1948 1949 1950 1951 1952 1953 1954 1955	1,547 2,028 3,215 3,369 3,319 3,000 3,900 3,700 2,880 3,500 3,800	1956 1957 1958 1959 1960 1961 1962 1963 1964 1965 1966	4,280 5,300 4,000 4,000 5,500 8,000 (1) 9,000 8,860 (2) 8,770 8,622 7,048	25,147 21,135 22,166 21,839	35.2 41.5 38.9 32.3

These figures should be interpreted cautiously, and if quoted should be qualified. See text.



- \* Excluding unreturned tickets, and without corrections for persons taking two moose (the latter a negligible number).
- (1) Several reports at this time listed an estimate of 12,000. Available data do not support this figure.
- (2) Since 1963, regulations have required that hunters obtain a "harvest ticket" before hunting moose, and fill out and mail a post card report after taking an animal, or after the close of the season if unsuccessful.

		1963			1964			1965			1966	
Un	it <del>o</del>	<u> </u>	Total*	ď	ç	Total*	ď	Ŷ	Total*	ੀ	Ŷ	Tota 1*
- <u></u>	L 149	l	150	158	65	223	128	35	176	168	60	230
	5 189	111	302	154	111	265	153	125	282	116	90	212
	5 15	2	17	15	0	15	24	0	24	23	1	24
	7 251	174	427	163	206	369	60	1	61	112	1	113
(	9 179	46	227	185	64	249	213	68	285	240	75	323
1		37	123	89	38	127	116	70	188	89	69	163
12		22	161	145	16	161	151	33	190	156	19	182
N 13	3 1,385	343	1,735	1,213	394	1,607	1,321	3	1,331	1,336	181	1,553
<sup>5</sup> <sup>5</sup> 14	•	557	1,486	795	52.5	1,320	1,127	1,125	2,262	565	202	776
1		417	1,440	1,212	858	2,070	. 841	731	1,584	819	307	1,144
10	•	27	373	262	61	323	333	52	392	393	144	555
1.	7 61	Ö	61	31	1	32	41	1	42	25	1	26
18	3 75	3	78	39	0	39	28	0	30	31	1	33
19	9 144	24	168	96	33	129	121	28	150	136	43	183
20	) 1,324	131	1,457	1,034	242	1,276	1,050	140	1,223	814	157	994
2	L 168	72	247	137	49	186	96	31	128	114	50	166
22	2 68	1	69	5 <b>7</b>	0	57	55	3	60	52	1	54
23		1	77	73	0	73	44	0	45	68	0	69
24	<b>1</b> 92	4	96	84	18	102	66	14	84	52	17	72
2		2	79	55	2	57	52	1	5 <b>3</b>	70	12	83
26		0	13	13	0	13	0	0	1	12	· 🔒 O	12
	? 67	6	74	6	1	77	32	9	41	59	13	81
TOTAL	6,847	1,981	8,860	6,016	2,684	8,770	6,052	2,470	8,622	5,450	1,444	7,048

TABLE 5A. Alaska Moose Harvests by Game Management Unit, 1963-1966 as determined from Harvest Tickets.

Totals include some animals for which data on sex were not listed on the returned harvest \* tickets.

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# TABLE 6.ESTIMATED ALASKA CARIBOU HARVESTS1945-1966

YEAR	NUMBER	YEAR	NUMBER
1945	4,897 (1)	1956	17,000
1946	1,852	1957	19,000
1947	5,522	1058	16,000
1948	6,337	1959	13,500
1949	6,946	1960	22,500
1950	4,150	1961	30,000
1951	5,000	1962	20,000
1952	5,600	1963	21,000
1953	3,900	1964	25,000
1954	16,000	1965	30,000
1955	17,000	1966	36,000

These figures should be interpreted cautiously, and if quoted should be qualified. See text.



(1) It is apparent that prior to 1954 "official" estimates took little cognizance of the caribou harvests by Arctic residents. In 1954, a survey of villages first disclosed the magnitude of such harvests, which had formerly been thought to be small.

#### TABLE 7. ESTIMATED ALASKA GOAT HARVESTS, 1945-1966

YEAR	NUMBER	YEAR	NUMBER	YEAR	NUMBER	YEAR	NUMBER
1945	229	1951	600	1957	470	1962	600
1946	320	1952	650	1958	250	1963	600
1947	493	1953	450	1959	125	1964	600
1948	660	1954	430	1960	250	1965	600
1949	580	1955	500	1961	600	1966	600
1950	580	1956	420	-		-	



TABLE 8. ESTIMATED AND RECORDED ALASKA SHEEP HARVESTS, 1945-1966

YEAR	NUMBE	<u>YEAR</u>	NUMBER	YEAR	NUMBER	YEAR	NUMBER
1945	. 300	1951	400	1957	700	1962	666 **
1946	553	1952	500	<b>19</b> 58	600	1963	977
1947	685	1953	420	1959	500	1964	938
<b>19</b> 48	572	e 1954	510	1960	1,000	* 1965	887
1949	488	1955	532	1961	1,000	* 1966	955
1950	200	1956	540				

- \* These estimates were probably higher than the scanty data warranted, in view of subsequent findings.
- \*\* Since 1962, regulations have required that sheep hunters obtain a "harvest ticket" before hunting sheep, and fill out and mail a postcard report after taking a sheep or after the season if unsuccessful. The first year the regulation was in effect, lack of knowledge about the requirement probably led to incomplete reporting.



These figures should be interpreted cautiously, and if quoted should be qualified. See text.

Game Management	No. Sheep Taken						
Unit	1962	1963	1964	1965	1966		
7	15	25	8	22	18		
9		1	2	0	0		
11	117	131	151	131	125		
12	92	149	128	141	180		
13	107	132	156	143	154		
14	99	110	67	62	49		
15	35	43	26	35/2 1	48		
16	4	15	20	16	6		
17	9	1	12	11	9		
19	. 24	27	26	44	66		
20	74	157	182	165	148		
21			2	3	1		
22			2	0	0		
23	7	20	2	11	13		
24	38	52	57	43	47		
25	12	23	10	19	38		
26	28	83	37	26	35		
Unknown	6	1	4		18		
Total Sheep	667	970	892	887	955		
No. Hunters <sup>2</sup>	2,281	3,630	2,892	3,545	4,143		
Percent Success <sup>2</sup>	29.2	26.7	30.8	25.0	23		

Table 8A. Dall Sheep Harvests in Alaska by Game Management Unit, and Hunting Pressure and Hunter Success Ratios, 1962-1966, as Determined from Harvest Tickets.

<sup>1</sup> Illegal ewes

<sup>2</sup> Unreturned tickets excluded from totals

TABLE 9. ESTIMATED AND RECORDED ALASKA ELK HARVESTS, 1950-1966

	YEAR	NUMBER	YEAR	NUMBER
	Before 1950	Closed	1958	111
Š.	1950	27	1959	120
	1951	Closed	1960	127
	1952	15	1961	120
	1953	19	1962	110
	1954	Closed	1963	100
	1955	26	1964	60
	1956	40	1965	142
	1957	70	1966	114



TABLE 10. ALASKA BIS

ALASKA BISON HARVESTS, 1950-1966



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TABLE 11. SUMMARY OF RECORDED AND ESTIMATED BLACK BEAR HARVESTS IN ALASKA THROUGH 1966

YEAR OR Period	NUMBER		YEAR	NUMBER	YEAR	NUMBER	YEAR	NUMBER
<b>1867-1</b> 871 (1)	24 *		1922	751	193 <b>7</b>	108	1952	1,870
1872-1880	82 *		1923	612	<b>193</b> 8	112	1953	1,500
1881-1909	n.d.		1924	453	1939	158	1954	1,410
1910	1,343(6) (2)		1925	930	1940	158	1955	1,300
1911	628(1) (3)		1926	486	1941	70	1956	1,250
1912	703(5) (4)		1927	423	1942	81	1957	1,280
1913	1,474(111)		1928	709	1943	133	<b>195</b> 8	1,300
1914	666(3)		1929	491	1944	160	1959	1,500
1915	742(3)		1930	1,125	1945	1,127	1960	1,100
1916	1,134(5)		1931	332	1946	1,219	1961	1,100
1917	1,069(8)		1932	251	1947	1,634	1962	1,200
<b>191</b> 8	1,199(35)		1933	182	<b>19</b> 48	1,709	196 <b>3</b>	1,200
1919	1,408(20)	20001	1934	272	<b>19</b> 49	1,970	1964	1,100
1920 (5)	747		1935	190	1950	1,970	1965	1,200
1921	719	1,600-	1936	178	1951	1,870	1966	1,200
These figures interpreted ca and if quoted qualified. Se	autiously, should be	400 1,200 800 400 1,200 1	.0191	1920- 1926- 1926-	19 30- 19 35- 19 40-	1945- 1950- 1960- 1965-	nonresident tag sales	

- (1) In the same publication, on the same page, there is another figure given which would make the average 72; I've used the higher figure because all authors agree that published totals were conservative.
- (2) Non-superscript figures in parenthesis are glacier bears throughout this table; the glacier bear figures also form part of the totals in all cases.
- (3) Including 9 cinnamon bear. (The numbers of this color phase in subsequent harvests is unknown. Note included for historical interest.)
- (4) The "Alaska Fisheries and Fur Industries" reports of the period 1911-1919 list Black, Brown, Glacier, Brizzly, and Polar bears; because of the classification system in use at that time, it's possible that the "Brown" classification actually referred to or included "cinnamon", or brown-colored black bears. However, the "brown" figures are included in the "Brown-Grizzly"table in this report.
- (5) Statistics on glacier bear and "cinnamon" bear were no longer kept separate after 1919.

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HARVESTS IN ALASKA THROUGH 1966 YEAR OR PERIOD NUMBER YEAR YEAR NUMBER YEAR NUMBER NUMBER 110 \* (1) 1798-1821 1822-1842 255 \* 1,107 95 \* 1843-1862 1863-1867 118 \* 473 (2) 478 \* 1868-1871 1,080 1872-1880 521 \* 1881-1909 n.d. 1920-1944 n.d. \* Annual mean. These figures should be interpreted cautiously, and if quoted should be

TABLE 12.

SUMMARY OF RECORDED AND ESTIMATED BROWN-GRIZZLY BEAR



(1) Dall (1870) lists 2,650 animals under "Black Bear" for the period 1797-1821, the same number that here provides a mean of 110. Because of the way the figures are presented in the "Alaska Fisheries and Fur Industries" reports, I am inclined to believe Dall was in error in listing these as black bears and the above figure correct.

(2) Since January 1, 1961, regulations have required that brown-grizzly pelts be sealed within 30 days of taking or before being exported from Alaska. Figures listed for 1961 and later are calendar years.

Game Mgt.	Year								
Mgt. Unit	1961	1962	1963	1964	1965	1966			
1	13	12	9	20	8	13			
2	1								
3									
4	37	46	31	56	64	75			
5	9	7	6	11	15	22			
6	9 13	24	32	32	34	38			
5 6 7	1	1	- 1						
8	118	131	110	118	185	199			
9	120	158	163	155	208	230			
10	1	3		15	10	6			
11	1 5	14	9	22	18	12			
12	14	19	23	15	19	12			
13	42	33	41	33	44	63			
14	16	9	13	12	15	63 5 4			
15	4	9 5	4	2	3	4			
16	28	18	27	20	37	27			
17	28 2	3	3	5	6	.9			
18									
19	13	11	11	19	18	18			
20	16	26	42	41	32				
21	4	7	3			57 1 2 12			
22	i	i			1	2			
23	6	6	11	14	27	12			
24	6 3	6	9	9	11	17			
25	4	4	9 7	11	11	25			
26	$\underline{1}$	2	10	16	5	9			
TOTAL	472	546	565	626	771	856			

### TABLE 12A. BROWN-GRIZZLY BEAR HARVESTS BY GAME MANAGEMENT UNIT, 1961-1966 (Calendar Years)

TABLE 13.SUMMARY OF RECORDED POLAR BEAR PELT EXPORTS<br/>AND HARVESTS IN ALASKA THROUGH 1966

YEAR OR PERIOD	NUMBER	YEAR	NUMBER	YEAR	NUMBER	YEAR	NUMBER
1910	56	1930	156	1943	100	1955	128
1911	$313^{(1)}$	1931	73	1944	71	1956	135
1912	9	1932	17	1945	82	1957	206
1913	72	1933	44	1946	152	1958	128
1914	104	1934	34	1947	110	1959	225
1915-1916	n.d.	1935	38	1948	106	1960	163
1917	144	1936	58	1949	105	1900 (2) 1961	152
1918-1924	n.d.	1937	31	1950	69	1962	201
1925	190	1938	81	1951	60	1963	189
1926	132	1939	37	1952	39	1964	253 (7)
1927	46	1940	62	1953	50	1965	296 (3)
1928	80	1941	33	1954	100	1966	415 (3)
1929	48	1942	42				



These figures should be interpreted cautiously, and if quoted should be qualified. See text.

- An act "to protect the seal fisheries of Alaska, and for other purposes," approved April 21, 1910, appears to have prohibited the taking of polar bears by omission of the species from a listing of seasons and temporary closures; the "Alaska Fisheries and Fur Industries" report for 1911 states that polar bears may not be taken. Whether natives were allowed to take them, and whether the shipments in 1911 through 1914 and in 1917 represent such native taking, is not stated. The season was apparently reopened in 1925.
   (2) Beginning Lanuary 1, 1961, regulations have required that polar bear polar bear polar bear of a sealed within 30 days or
- <sup>(2)</sup> Beginning January 1, 1961, regulations have required that polar bear pelts be sealed within 30 days or before being exported from Alaska.
- (3) Includes five bears taken for scientific purposes in 1965, 14 for scientific purposes and 2 in defense of life and property in 1966.

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#### TABLE 14. SUMMARY OF RECORDED WALRUS HARVESTS\* IN ALASKA THROUGH JUNE, 1966

YEAR	NUMBER	YEAR	NUMBER	YEAR OR PERIOD	NUMBER	YEAR OR PERIOD	NUMBER
1868	8,000	1881	3,895	1894	2,463	1939	1,300
1869	14,000	1882	4,417	1895	n.d.	1940-1950	n.d. **
1870 1871	12,760 7,520	1883 1884	5,545 1,405	1896 1897	2,000 8,343	1951-1953 1954-1958	1,337 annual mean n.d.
1872	6,400	1885	1,313	1898	5,140	1959	1,453 ***
1873	8,800	1886	710	1899	4,460	1960	2,300
1874	6,600	1887	1,346	1900	1,194	1961	1,486
1875	5,080	$\begin{array}{c} 1888\\ 1889 \end{array}$	1,032	1901	1,400	1962	1,353
1876	6,300		1,246	1902	2,498	1963	1,725
1877	14,800	1890	1,160	1903	2,820	1964	2,215
1878	6,000	1891	1,040	1904	1,700	1965	1,767
1879 1880	7,664 4,930	1892 1893	960 1,580	1905 1906-1938	2,267 n.d. **	1966	2,355

The "Commercial Fisheries in Alaska" (Cobb, 1906) report for 1905 listed Walrus Ivory and Oil shipments from Alaska from 1868 through 1905, and states that walrus tusks average five pounds per pair. The figures for that period are derived by dividing the pounds of ivory by five. Fay (1957) lists the harvest of Pacific Walrus during 1860-1880 as 15-20 thousand annually, during 1880-1910 as 8-12 thousand annually, but this of course is the total Pacific harvest, not the Alaskan harvest.

\*\* Brooks (1954) estimated the retrieved harvest during at least a portion of this period as 1,300 annually.
\*\*\* Alaska Department of Fish and Game biologists, from 1959 on, have regularly listed both the total kill, within computed limits, and the retrieved kill. The listed figures are the maximums given under "retrieved kill."



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TABLE 15. SUMMARY OF RECORDED HAIR SEAL HARVESTS IN ALASKA THROUGH JUNE, 1966, AS DETERMINED FROM PELT SHIPMENT AND BOUNTY RECORDS



' The "Alaska Fisheries and Fur Industries" reports, from which most of the earlier records were taken, state that the records are "very fragmentary," and that only a small portion of the hair seal pelts taken were shipped from Alaska and thus subject to recording.

(2) The figures are given by biennium for the period 1927-1958 in the 1958 Annual Report of the Alaska Department of Fish and Game. The figures for those years in the above table are means, rather than totals for each two-year period.

(3) Just period. In addition to these numbers bountied, the Alaska Department of Fish and Game killed 30,250 seals in control operations on the Stikine and Copper River delta areas from 1951 to 1958.

Note: Figures prior to 1927 are pelt shipment records; after that, bounty records were used, as reported by Lensink in the 1958 Annual Report of the Alaska Department of Fish and Game.

\* Annual mean.

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က ၊ TADLE IV. SUMMARI OF KEUVKDED SEA UTTEK MARVESTS IN ALASNA, 1/40-1900.



(1) Bancroft (op. cit.) found some confusion in the records concerning this first recorded harvest from the Aleutians. These 320 skins are apparently the number that came through a shipwreck after a considerably larger harvest. Earlier harvests of sea otters were from the Commander Islands: the first such was in 1741-1742.

1863-1867 1868 -1870

1746-

|747-|756<sup>.</sup> |757-|766<sup>.</sup> |767-|776 -1786-

1777

1**7 98 - 18**21-1822- 1842<sup>-</sup> 1843-1862-

1787-1797

19 65-T

962-

1913-1961-

-1906

1681

1871-1880 1881-1890 901-1910

- (2) Lensink (op. cit.) lists this as the recorded take, exclusive of cargoes lost in shipwrecks, west of the Fox Islands; presumably, this includes the Commander Islands, but Bancroft indicates that the species was exterminated from the Commander Islands by 1756.
- (3) Dall (1870) gives 114,195 as the number taken during the same period or an annual average of over 11,000, but Lensink (op. cit.) says the Russians were taking 1,000-2,000 skins annually at this time. Dall's figure would be nearly in agreement if he had given the period as 1745-1797.
- (4) Not indicated whether these were taken in previous years, when still legal. (Killing sea otters was made illegal beginning in 1911 by international treaty.)
- (5) During this period there are records of shipment of an occasional one or two skins from Alaska; these were from illegally killed animals or, occasionally, from animals found dead.
- (6) State experimental harvests.
- \* Annual mean.

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ώ 6TABLE 17. SUMMARY OF RECORDED FUR SEAL HARVESTS IN ALASKA, 1752-1966.

YEAR OR PERIOD	NUMBER	YEAR	NUMBER	YEAR	NUMBER	YEAR	NUMBER
1752 (1) (2)	804	1913	2,901	1931	51,173	1949	71,080
1786-1796 (2)	50,638 *	1914	3,101	1932	51,274	1950	60,537
1797-1816	42,245 *	1915	4,386	1933	56,626	1951	51,506
1817-1826	41,285 *	1916	7,097	1934	53,758	1952	63,950
1827-1836	15,959 *	1917	8,907	1935	58,276	1953	66,723
1837-1846	9,704 *	1918	35,373	1936	54,373	1954	63,882
1847-1856	15,018 *	1919	28,447	1937	58,012	1955	65,453
1857-1866 (3)	27,918 *	1920	28,991	1938	59,915	1956	122,826
1867-1876	99,160 *	1921	26,796	1939	61,110	1957	93,618
1877-1886	114,801 *	1922	33,719	1940	65,328	1958	78,919
1887-1896	86,714 *	1923	21,738	1941	95,034	1959	57,810
1897-1906	45,452 *	1924	20,504	1942	150	1960	40,616
1907	31,000	1925	26,369	1943	117,184	1961	95,974
1908	33,147	1926	26,030	1944	47,743	1962	77,915
1909	28,507	1927	27,243	1945	77,003	1963	85,254
1910 1911 (4)	14,381	1928	35,001	1946	64,940	1964	64,206
TATE	12,145	1929	45,037	1947	61,633	1965	51,020
1912	3,969	1930	46,484	1948	70,386	1966	52,866



### TABLE 17. SUMMARY OF RECORDED FUR SEAL HARVESTS IN ALASKA, 1752-1966 (Continued)

- (1) Bancroft (1886) says that the first sizeable cargo of furs "from the Aleutians" (in 1752) included 840 fur seals. These may have represented a pelagic harvest, or may have been taken on the Commander Islands, at which many ships of the time stopped for water to and from trips beyond. One report (Anon. 1898) lists a harvest of 2,000 fur seals in 1746, the earliest reported apparently, but these were almost certainly not from Alaska. The Pribilof Islands were discovered in 1786.
- (2) Riley (1961) gives 417,758 as the number taken during 1786-1796, but in "Seal and Salmon Fisheries and General Resources of Alaska" that is the number given for the period 1745-1797, by Russian traders; an additional 139,266 are listed as having been reported traded by the Shelikof Company from 1786 to 1797. Riley (op. cit.) however, points out the difficulty of obtaining authentic records from years prior to 1786. The higher total is given here because all authors agree that the reported totals were far below actual takes.
- (3) In "Seal and Salmon Fisheries" etc. (Anon, 1898) the number of fur seal hides shipped under Russian rule is given as 3,354,478. This compares to 2,627,215 through 1866 on this listing. The higher figure undoubtedly includes some seals from the Commander Islands, pelagic harvests, etc.
- (4) The Convention for the Protection and Preservation of the Fur Seals and Sea Otters was signed on July 7, 1911. On August 12, 1912, an Act of Congress provided for a five-year suspension of sealing.
- Note: Riley (op. cit.) gives the take year by year from 1817 to 1960, and also separates pelagic from Pribilof harvest from 1868 to the end of pelagic sealing in 1953. The figures in this table are totals of pelagic and land takes.

\* Annual mean.

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TABLE 18.SUMMARY OF RECORDED HARE HARVESTSIN ALASKA THROUGH 1965 \*

YEAR	NUMBER	YEAR	NUMBER	YEAR	NUMBER	YEAR	NUMBER
1910	4	1924	826	1938	8,909	1952	44,000
1911	n.d.	1925	1,976	1939	6,887	1953	45,000
1912	55	1926	6,593	1940	270	1954	88,000
1913	49	1927	12,571	1941	60	1955	93,000
1914	1,263	1928	3,670	1942	24,515	1956	140,000
1915	51	1929	831	1943	27,775	1957	160,000
1916	1,090	1930	882	1944	700	1958	n.d.
1917	89	1931	1,286	1945	25,000	1959	n.d.
1918	38	1932	1,445	1946	25,942	1960	n.d.
1919	135	1933	2,634	1947	32,000	1961	53,200 **
1920	197	1934	7,357	1948	110,416	1962	n.d.
1921	199	1935	6,494	1949	75,000	1963	n.d.
1922	78	1936	10,739	1950	88,000	1964	n.d.
1923	96	1937	13,841	1951	50,000	1965	n.d.

These figures should be

interpreted cautiously, and if quoted should be qualified. See text.



- \* Prior to 1926 figures are from fur export records; subsequent figures (except for years 1940, 1941 and 1944 which are from export records, and 1961 as noted below) are from questionnaires completed by hunters when licenses were purchased.
- \*\* The 1961 data are from a questionnaire mailed to a sample of full-fee license holders. The harvest by subsistence license holders was not estimated, and the total given is therefore highly conservative as a harvest for the State.

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YEAR	NUMBER	YEAR	NUMBER	YEAR	NUMBER	YEAR	NUMBER
1926	1,527	1935	7,650	1944	n.d.	1952	70,000
1927	1,649	1936	6,322	1945	54,000	1953	70,000
1928	1,982	1937	9,343	1946	41,000	1954	77,000
1929	1,242	1938	5,498	1947	53,000	1955	63,000
1930	2,605	1939	3,790	1948	47,109	1956	50,000
1931	5,272	1940	n.d.	1949	40,000	1957	40,000
1932	9,330	1941	n.d.	1950	28,000	1958-1960	n.d.
1933	12,533	1942	27,847	1951	50,000	1961	45,139
1934	10,463	1943	38,354				

#### TABLE 19. SUMMARY OF RECORDED GROUSE HARVESTS IN ALASKA, 1926-1961, AS OBTAINED FROM HUNTER QUESTIONNAIRES.\*

\* From 1926 to 1957, figures are from a questionnaire that hunters were required to complete when obtaining their next year's licenses. In 1961, a mailed questionnaire was sent to resident full-fee license holders only. Thus all figures listed exclude the subsistence take and much or all of the take by nonresidents: on some species in some areas it may be substantial.

NOTE: These figures should be interpreted cautiously, and if quoted should be qualified. See text.

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YEAR	NUMBER	YEAR	NUMBER	YEAR	NUMBER	YEAR	NUMBER
1926 1927 1928 1929 1930 1931 1932 1933	4,242 3,364 4,303 3,426 3,615 6,385 9,515 12,659	1935 1936 1937 1938 1939 1940 1941 1942	13,015 12,048 17,824 7,595 7,623 n.d. n.d. 52,262	1944 1945 1946 1947 1948 1949 1950 1951	n.d. 50,000 57,000 56,000 53,354 60,000 50,000 58,000	1952 1953 1954 1955 1956 1957 1958-1960 1961	55,000 78,000 90,000 119,000 130,000 140,000 n.d. 45,800
1934	12,791	1943	65,750				, <b>,</b>

\* From 1926 to 1957, figures are from a questionnaire that hunters were required to complete when obtaining their next year's licenses. In 1961 a mailed questionnaire was sent to resident full-fee license holders only. Thus all figures listed exclude the subsistence take and much or all of the take by nonresidents: on some species in some areas it may be substantial.



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#### TABLE 20. SUMMARY OF RECORDED PTARMIGAN HARVESTS IN ALASKA, 1926-1961, AS OBTAINED FROM HUNTER QUESTIONNAIRES.\*

#### TABLE 21. SUMMARY OF RECORDED DUCK HARVEST IN ALASKA, 1945-1961, AS OBTAINED FROM HUNTER QUESTIONNAIRES.\*

YEAR	NUMBER	YEAR	NUMBER	YEAR	NUMBER	YEAR	NUMBER
1945 1946 1947 1948	131,000 130,000 141,000 137,786	1949 1950 1951 1952	147,000 156,000 150,000 155,000	1953 1954 1955 1956	130,000 133,000 131,000 135,000	1957 1958-1960 1961	140,000 n.d. 60,300

\* From 1926 to 1957, figures are from a questionnaire that hunters were required to complete when obtaining their next year's licenses. In 1961, a mailed questionnaire was sent to resident full-fee license holders only. Thus all figures listed exclude the subsistence take and much or all of the take by nonresidents: on some species in some areas it may be substantial.

NOTE: These figures should be interpreted cautiously, and if quoted should be qualified. See Lext.



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AS OBTAINED FROM HUNTER QUESTIONNAIRES.*									
YEAR	NUMBER	YEAR	NUMBER	YEAR	NUMBER	YEAR	NUMBER		
1945 1946 1947 1948	26,000 28,000 32,000 30,628	1949 1950 1951 1952	36,000 38,000 30,000 29,000	1953 1954 1955 1956	28,000 28,000 28,000 31,000	1957 1958-1960 1961	55,000 n.d. 8,510		

TABLE 22. SUMMARY OF RECORDED GOOSE HARVESTS IN ALASKA, 1945-1961,

\* From 1926 to 1957, figures are from a questionnaire that hunters were required to complete when obtaining their next year's licenses. In 1961 a mailed questionnaire was sent to resident full-fee license holders only. Thus all figures listed exclude the subsistence take and much or all of the take by nonresidents: on some species in some areas it may be substantial.



NOTE: These figures should be interpreted cautiously, and if quoted should be qualified. See text.

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(Fiscal Years)										
YEAR OR PERIOD	NUMBER	YEAR	NUMBER	YEAR	NUMBER	YEAR	NUMBER			
$1822-1842 \\1843-1862 \\1863-1867 \\1868-1870 \\1871-1880 \\1881-1909 \\1910 \\1911 \\1912 \\1913 \\1914 \\1915 \\1916 \\1917 \\1918 \\1919$	10 * 1 * 23 * 60 * 42 * n.d. 78 77 103 163 44 51 57 195 207 284	1920 1921 1922 1923 1924 1925 1926 1927 1928 1929 1930 1931 1932 1933 1934 1935	87 223* 233* 350* 350* 733* 733* 1400* 1400* 688 355 263 258 387 757 642	1936 1937 1938 1939 1940 1941 1942 1943 1944 1945 1946 1947 1948 1949 1950 1951	904 730 640 405 444 599 464 351 418 853* 853* 1178* 614* 614* 680*	1952 1953 1954 1955 1956 1957 1958 1959 1960 1961 1962 1963 1964 1965 1966	680* 619* 619* 765* 910 1,080 227 520 725 869 (1) 757 (1) 818 (1) 825 (1) 1,360 (1)(2)			

TABLE 23. SUMMARY OF RECORDED WOLF HARVESTS IN ALASKA THROUGH JUNE, 1966, AS DETERMINED FROM PELT SHIPMENT AND BOUNTY RECORDS (Fiscal Voors)

(1) Since 1962 Bounty Information forms have supplemented the information provided by bounty affidavits (which don't precisely identify the period taken); the figures shown subsequent to that year are those obtained from these forms, rather than figures obtained from affidavits.

1935

<u>930</u>

940

<u>9</u> 9

(2) The 1966 figure is not an exact final total.

822-1842 843-1862 868-1870 871-1880 881-1909

863-1867

Annual mean. Figures for 1921-28 and 1945-56 are from bounty records (Lensink, 1958); the origin of other post 1921 figures is unknown. Some figures in FWS files included animals taken under control programs 1,000-500σ 1955-1945-996 1965 **970** 

925

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These figures should be interpreted cautiously, and if quoted should be qualified. See text.

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## TABLE 24. SUMMARY OF RECORDED WOLVERINE HARVESTS IN ALASKA THROUGH JUNE, 1966, AS DETERMINED FROM PELT SHIPMENTS AND BOUNTY RECORDS

YEAR OR PERIOD	NUMBER	YEAR	NUMBER	YEAR	NUMBER	YEAR	NUMBER
1798-1821	51 *	1921	191	1937	369	1953	360
1822-1842	74 *	1922	296	1938	248	1954	300
1843-1862	1 *	1923	296	1939	228	1955	350
1863-1867	16 *	1924	220	1940	326	1956	200 **
1868-1909	n.d.	1925	360	1941	232	1957	200 **
1910	110	1926	468	1942	161	1958	350
1911	179	1927	809	1943	92	1959	213 **
1912	189	1928	831	1944	87	1960	420
1913	242	1929	873	1945	108	1961	441
1914	136	1930	495	1946	157	1962	383
1915	119	1931	406	1947	527	1963	445
1916	297	1932	234	1948	488	1964	551
1917	435	1933	281	1949	490	1965	402 ***
1918	846	1934	279	1950	500	1966	659 ***
1919	516	1935	260	1951	350		
1920	561	1936	290	1952	400		

\* Annual mean

\*\* These may be export totals rather than number bountied, in which case the figures would be low. \*\*\* Bounty records not complete.



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TABLE 25. SUMMARY OF RECORDED MINK PELT SHIPMENTS FROM ALASKA THROUGH 1966

YEAR OR PERIOD	NUMBER	YEAR	NUMBER	YEAR	NUMBER	YEAR	NUMBER
1798-1821	223 *	1919	28,040	1935	60,501	1951	21,679
1822-1842	737 *	1920	36,115	1936	44,016	<b>1952</b>	39,200
1843-1862	635 <b>*</b>	1921	18,091	1937	52,436	1953	25,000
1863-1867	138 *	1922	31,983	1938	39,866	1954	36,300
1868-1870	10,700 *	1923	20,668	1939	42,883	1955	27,700
1871-1880	7,213 *	1924	39,356	1940	43,702	1956	11,100
1881-1909	n.d.	1925	59,504	1941	31,782	1957	35,000
1910	23,738	1926	44,674	1942	53,060	1958	15,200
1911	21,595	1927	45,466	1943	33,705	1959	10,400
1912	31,363	1928	32,353	1944	61,038	1960	20,600
1913	47,062	1929	26,695	1945	31,339	1961	19,622
1914	35,623	1930	27,785	1946	64,837	1962	8,813
1915	23,073	1931	30,431	1947	42,772	1963	20,930
1916	22,255	1932	43,207	1948	55,429	1964	22,484
1917	18,832	1933	50,812	1949	39,348	1965	15,623
1918	24,572	1934	57,858	1950	27,468	1966	12,657

\* Annual mean.

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- NOTE 1: These figures should be interpreted cautiously, and if quoted should be qualified. See text.
  - OTE 2: Since 1960, fur records have been kept on an October 1 - September 30 trapping year basis.

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TABLE 26. SUMMARY OF RECORDED MARTEN PELT SHIPMENTS FROM ALASKA THROUGH 1966

YEAR OR PERIOD	NUMBER	YEAR	NUMBER	YEAR	NUMBER	YEAR	NUMBER
1786-1797	17 *	1918	1,023	1934	4,866	1950	7,476
1798-1821	747 <b>*</b>	1919	1,107	1935	3,314	1951	9,471
1822-1842	746 *	1920	123	1936	1,306	1952	6,350
1843-1862	684 <b>*</b>	1921	676	1937	16,969	1953	5,500
1863-1867	184 *	1922	10,385	1938	9,237	1954	3,500
1868-1870	8,104 *	1923	6,726	1939	1,287	1955	7,000
1871-1880	8,161 *	1924	6,019	1940	9,626	1956	4,200
1881-1909	n.d.	1925	3,647	1941	707	1957	3,650
1910	5,567	1926	1,107	1942	240	1958	2,710
1911	300	1927	342	1943	8,182	1959	2,368
1912	12,999	1928	142	1944	13,352	1960	3,286
1913	9,682	1929	276	1945	453	1961	3,280
1914	6,497	1930	637	1946	2,670	1962	4,531
1915	3,028	1931	7,054	1947	12,172	1963	7,526
1916	3,100	1932	3,289	1948	17,802	1964	6,172
1917	1,210	1933	4,022	1949	14,141	1965	8,869
	,		•		•	1966	6,225

\* Annual mean.

NOTE 1: These figures should be interpreted cautiously, and if quoted should be qualified. See text. NOTE 2: Since 1960, fur records have been kept on an October 1 - September 30 trapping year basis.



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			NUMBER OR	MEAN		** <u>-</u>
YEAR OR	RED	CROSS	BLACK	SILVER	BLUE	WHITE
PERIOD	FOX	FOX	FOX	FOX	FOX	FOX
1745-1797 *	390	384	284	n.d.	1,188	n.d.
1798-1821 * (1)	1,477	1,022	629	n.d.	1,913	214
1822-1842 *	2,188	1,260	853	n.d.	2,653	649
1843-1862 *	1,677	1,155	1,061	n.d.	1,607	1,100
1863-1867 *	2,463	1,588	2,862	n.d.	1,616	1,024
1868-1870 *	10,571	2,071	770	n.d.	1,473	1,437
1871-1880 *	8,292	1,941	699	n.d.	751	1,149
L881-1910 *	n.d.	n.d.	n.d.	nd	n.d. (2)	'nd
1911	7,499	402	1	$\frac{11.01}{82}$ (2)	1,300	8,083
1912	8,018	603	3	142	502	3,108
1913	10,820	768	24	132	892	3,756
1914	14,967	1,380	13	153	239	6,530
1915	11,770	1,360	8	187	635	6,007
1916	15,711	2,508	26	318	1,079	6,198
1917	10,485	2,669	10	443	1,454	3,721
1918	12,232	1,704	6	440	1,432	4,550
1919	7,723	1,280	13	315	1,233	4,605
1920	6,469	× 937		423	n.d.	n.d.
1921	2,497	371		189	n.d.	n.d.
1922	5,979	740		296	n.d.	n.d.
1923	10,787	993		259	1,718	7,080
1924	13,353	1,284		398	2,427	5,743
1925	19,489	2,248		577	5,493	16,658
1926	22,976	2,703		611	8,776	8,489
1927	21,945	3,656	1,	085	11,021	2,849
1928	26,907	3,018		761	7,854	4,548
1929	21,023	3,109		069	8,520	12,188
1930	16,288	1,956	1,	149	7,855	4,880
1931	12,003	1,286		664	6,922	5,642
1932	10,450	1,083		922	9,942	6,207
1933	12,794	1,050		919	9,960	6,359
1934	14,909	1,370	1,	014	12,137	4,313
1935	16,192	1,984	1,	355	10,281	6,848
1936	19,937	2,889		573	10,045	5,117
1937	21,549	2,118		031	11,433	4,912
1938	15,076	2,186		103	11,403	3,519
1939	21,366	2,278		614	10,444	4,198

TABLE 27.SUMMARY OF RECORDED FOX PELT SHIPMENTS<br/>FROM ALASKA THROUGH 1966

🗶 \* Annual mean.

	SUMMARY	OF	RECORDED	FOX	PELT	SHIPMENTS	(Continued)
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		NUMBER OR MEAN							
	RED	CROSS	BLACK	SILVER	BLUE	WHITE			
YEAR	FOX	FOX	FOX	FOX	FOX	FOX			
1940	9,031	1,501		632	8,844	4,634			
1941	12,574	1,484		466	6,804	6,526			
1942	12,537	1,468		428	5,079	2,159			
1942 1943	4,916	1,240		262	1 793	4,800			
L943 L944	6 016	1,240		406	1,783	4,000			
	6,916 7,605	1,831		644	1,101	4,552			
1945 1946 (3)	7,605	1,614	2		1,190	4,102			
	4,754	1,096		335	1,443	2,518			
1947	3,071	785	з,	918	2,084	1,888			
1948	2,040	580		580	673	1,384			
L949	2,0	078		158	430	2,220			
1950	2,9			190	210	2,660 700			
L951	2,5			180	200	700			
1952	1,5	500		90	100	1,200			
1953	1,1	.00		75	30	2,000			
1954	1,0	000		40	70	2,848			
1955	1,2	200		40	10	800			
1956	- e	500		50	20	460			
1957		950		40	20	500			
L958		500		40		500			
L959		23		17	29	593			
1960		L	731			,850			
1961		·	700		2	,100			
1962			750		_	800			
1963	•		1,000		1	,500			
1964		-	999			,134			
1965		· · · · ·	1,020			,973			
1966			1,700			,232			

(1) Dall (1870) lists small additional numbers as "sold in the colonies."

(2) Beginning some time toward the end of the 1800's, ranch-raised silver, blue, and a bit later, white foxes constituted an undetermined portion of the exports of these species listed in reports. One source (Anon. 1925) estimates, for example, that 90% of the blue fox pelts exported in 1925 were ranch-raised.

(3) Beginning in FY 1946 and continuing through FY 1951 there are conflicting figures available from different compilations in U.S.F.W.S. files. I have in all cases used the higher figures. This leads to some black-silver fox totals for 1946 and 1947 that are unexplainably high in view of the fact that no fox farms were in operation after the war. I have been unable to unearth any explanation for these high totals. It may be that some pelts taken just after the war began were held in anticipation of higher prices.

NOTE: These figures should be interpreted cautiously, and if quoted should be qualified. See text.

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YEAR OR PERIOD	NUMBER	YEAR	NUMBER	YEAR	NUMBER	YEAR	NUMBER
1910	3,706	1924	10,724	1938	9,755	1952	5,230
1911	4,910	1925	13,418	1939	13,828	1953	3,000
1912	7,957	1926	10,387	1940	9,895	1954	4,400
1913	6,559	1927	8,663	1941	8,580	1955	3,300
1914	6,873	1928	10,253	1942	11,280	1956	3,000
1915	3,538	1929	17,467	1943	3,892	1957	1,500
1916	4,345	1930	11,582	1944	5,508	1958	2,200
1917	4,639	1931	15,358	1945	5,967	1959	2,207
1918	9,133	1932	17,536	1946	6,629	1960	1,993
1919	18,617	1933	11,372	1947	4,815	1961	1,701
1920	13,590	1934	14,278	1948	11,121	1962	1,319
1921	6,786	1935	19,279	1949	8,801	1963	968
1922	10,656	1936	11,012	1950	5,689	1964	1,441
1923	10,276	1937	8,453	1951	7,977	1965	945
						1966	1,032

## TABLE 28.SUMMARY OF RECORDED WEASEL (ERMINE) PELT SHIPMENTS<br/>FROM ALASKA THROUGH 1966

- NOTE 1: These figures should be interpreted cautiously, and if quoted should be qualified. See text.
- NOTE 2: Since 1960, fur records have been kept on an October 1 - September 30 trapping year basis.

1970-

1965-

1955-

1950-

1960-

-51-

20000-

16,000-

12,000-

8,000 --

4,000

1910-

1915.

1925-

1930-

1935-

1940-

1945-

1920.

TABLE 29. SUMMARY OF RECORDED LYNX PELT SHIPMENTS FROM ALASKA THROUGH 1966

YEAR OR PERIOD	NUMBER	YEAR	NUMBER	YEAR	NUMBER	YEAR	NUMBER
1798-1821 1822-1842 1843-1862 1863-1867 1868-1870 1871-1880 1881-1909 1910 1911 1912 1913 1914 1915 1916 1917 1918	76 * 203 * 346 * 802 * 804 * 631 * n.d. 1,049 1,208 2,720 4,772 6,930 9,374 21,008 21,210 7,692	1919 1920 1921 1922 1923 1924 1925 1926 1927 1928 1929 1930 1931 1931 1932 1933 1934	$ \begin{array}{r} 1,085\\ 649\\ 318\\ 628\\ 1,385\\ 3,323\\ 7,920\\ 7,495\\ 9,809\\ 10,173\\ 7,575\\ 2,980\\ 623\\ 502\\ 591\\ 723\\ \end{array} $	$1935 \\1936 \\1937 \\1938 \\1939 \\1940 \\1941 \\1942 \\1943 \\1944 \\1945 \\1946 \\1947 \\1948 \\1949 \\1950$	1,338 2,421 2,089 2,130 2,705 1,698 781 639 713 990 922 601 883 862 777 608	1951 1952 1953 1954 1955 1956 1957 1958 1959 1960 1961 1962 1963 1964 1965 1966	843 600 900 2,000 3,100 2,900 2,200 1,500 605 782 864 1,107 2,312 4,700 3,957 5,134
- 20000- - 16000- - 12000- - 8,000- - 4,000- -	1789-1821 - 1822-1842- 1843-1862 - 1863-1867 - 1868-1870 - 1871 - 1880 -	.p.n - 6061 - 1881 - 0 161 - 161 - 161	-0261 -0261 -0300- -0261	66 66 66 67 67 66 67 67 66 67 66 78 66 78 66 78 66 78 66 78 76 78 76	NOTE 1: NOTE 2: $\mathbf{S_{G}}$	These figures sh interpreted caut and if quoted sh qualified. See Since 1960, fur have been kept o October 1 - Sept trapping year ba	ould be iously, ould be text. records n an ember 30

\* Annual mean.

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TABLE 30. SUMMARY OF RECORDED LAND OTTER PELT SHIPMENTS FROM ALASKA THROUGH 1966

YEAR OR					•		
PERIOD	NUMBER	YEAR	NUMBER	YEAR	NUMBER	YEAR	NUMBER
1745-1797 1798-1821 1822-1842 (2) 1843-1862 1863-1867 1868-1871 1872-1880 1881-1890 1891-1900 1901-1904 1905 1906 1907 - 1908 8,000-1909 1910 1911	97 * 740 *(1) 1,402 * 8,523 * 4,363 * 2,123 *(3) 1,896 *(4) 2,773 * 2,100 * 2,134 * 1,889 1,709 1,393 1,333 1,493 1,861 n.d.	1913 1914 1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926 1927 1928 1929	1,300 1,008 980 1,330 1,308 1,647 1,709 3,017 1,174 1,899 1,781 1,950 3,265 2,932 2,783 3,191 2,943	$     1930 \\     1931 \\     1932 \\     1933 \\     1934 \\     1935 \\     1936 \\     1937 \\     1938 \\     1939 \\     1940 \\     1941 \\     1942 \\     1943 \\     1944 \\     1945 \\     1946 \\     $	3,491 2,432 2,284 3,211 3,897 3,224 3,235 3,007 2,892 2,792 2,804 2,188 2,821 1,547 2,772 1,721 3,364	1948 1949 1950 1951 1952 1953 1954 1955 1956 1957 1958 1959 1960 1961 1962 1963 1964	2,596 2,287 2,678 2,352 2,950 2,340 3,480 3,100 2,300 3,300 3,300 3,890 1,657 3,681 2,220 1,140 2,944 2,282
6000- 1912	1,480			1947	2,609	1965 1966	2,781 3,286
4,000-			$\sim \sim \sim$	$\sim$			These figures should be
Before 1797 1798 - 1821 1798 - 1821 1843 - 1862 1863 - 1867 1868 - 1871	1872-1880- 1881-1890- 1891-1900- 1901-1904- 1901-1905-	1910- 1915- 1920-	1929-1930-1930-1930-1930-1930-1930-1930-193	1940-		NOTE 2:	interpreted cautiously, and if quoted should be qualified. See text. Since 1960, fur records have been kept on an October 1 - September 30 trapping year basis.
(1) $Dall()$	1870) lists 17,7	68 as the m	umber exported,	which gives	the listed mean (	of 740, and	an additional

- 2,145 as "sold in the colonies."
- (2) The original reference for this material listed figures for 1798-1821, 1821-1842, 1842-1862, etc., without indicating whether the overlap years connoted listings on a fiscal year basis. To provide a logical basis for computing means, the periods covered have been changed to the dates given in the above table, for this and all other tables listing these periods.
- (3) Cobb (1906) gives 27,730 for this period which would give a mean of 2,773; this is identical with the mean for the following decade also, and is thus judged to be a typographical error, since another figure is available for this same period from another source.
- \* Annual mean.

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TABLE 31.	SUMMARY	OF RECC	ORDED MUS	SKRAT	PELT	SHIPMENTS	
	FROM	ALASKA	THROUGH	1966			

YEAR OR PERIOD	NUMBER	YEAR	NUMBER	YEAR	NUMBER	YEAR	NUMBER
1868-1870	5,969 *	1917	72,264	1933	154,573	1949	142,843
1871-1880	5,032 *	1918	86,624	1934	133,312	1950	206,787
1881-1890	9,000 *	1919	113,652	1935	127,901	1951	260,833
1891-1900	3,000 *	1920	138,443	1936	153,772	1952	163,000
1901-1904	12,599 *	1921	218,737	1937	231,842	1953	138,000
1905	12,599 (1)	1922	313,145	1938	291,140	1954	172,200
1906	3,611	1923	319,611	1939	417,442	1955	110,000
1907	6,481	1924	194,053	1940	453,300	1956	45,000
1908	31,712	1925	395,142	1941	511,805	1957	84,000
1909	n.d.	1926	183,320	1942	267,356	1958	100,000
1910	121,568	1927	155,041	1943	212,352	1959	43,289
1911	223,893	1928	197,957	1944	142,530	1960	132,530
1912	123,925	1929	190,377	1945	152,542	1961	58,634
1913	163,616	1930	411,934	1946	137,656	1962	27,206
1914	101,202	1931	455,897	1947	182,969	1963	81,414
1915	32,933	1932	500,640	1948	139,456	1964	48,822
1916	101,827					1965	33,005
(1)						1966	22,467
	ably an estimate	based on me	an of previous j	period.			
* Annu	al mean.				Note 1:	These figures sh interpreted caut	
						and if quoted sh	

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Note 1: These figures should be interpreted cautiously, and if quoted should be qualified. See text. Note 2: Since 1960, fur records have been kept on an October 1 - September 30 trapping year basis.



TABLE 32. SUMMARY OF RECORDED BEAVER PELT SHIPMENTS FROM ALASKA THROUGH 1966



The "Alaska Fisheries and Fur Industries" report for 1910 gives exports by region as well as totals for the Territory.
 Since November 1, 1926, all beaver pelts have been required, by regulation, to be sealed within 30 days or before being exported from Alaska. The subsequent figures, therefore, should closely approximate the actual annual harvest. On at least one occasion, the export report figure was higher than the number sealed; for ease of comparison, only the sealing records are given here.

\* Annual mean. . . ., only the sealing records are given here, insofar as available figures can be so identified.

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### TABLE 33. SUMMARY OF RECORDED COYOTE HARVESTS IN ALASKA THROUGH JUNE, 1966, AS DETERMINED FROM PELT SHIPMENT AND BOUNTY RECORDS (Fiscal Years)

1911-1924n.d.19352971946n.d.195719256119361,09819479001958192611319371,33019481731959192719119381,35519491311960n192862119391,5071950221961n	550
19256119361,09819479001958192611319371,33019481731959192719119381,35519491311960n192862119391,5071950221961n	
192611319371,33019481731959192719119381,35519491311960n192862119391,5071950221961n	300
192719119381,35519491311960n192862119391,5071950221961n	280
1928 621 1939 1,507 1950 22 1961 n	24
	ı.d.
	n.d.
1929 480 1940 2,080 1951 56 1962	50
1930 306 1941 1,208 1952 459 1963	250
1931 206 1942 460 1953 410 1964	69
1932 216 1943 376 1954 420 1965	495
1933 299 1944 n.d. 1955 480 1966	516

These figures should be interpreted cautiously, and if quoted should be qualified. See text.



18.30

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## APPENDIX

Forms currently in use or recently used by the Alaska Department of Fish and Game to obtain information on game harvests.

	MOOSE HARVEST TICKET 1966 No. A 16212 Non-transferable
Alaska Dept. of Fish & Game KETCHIKAN, ALASKA 99901 JUNEAU,	No. 13 Address
BUSINESS REPLY CARD NO POSTAGE STAMP NECESSARY IF MAILED IN THE UNITED STATES Postage will be Paid by Alaska Department of Fish & Game 1829 TONGASS KETCHIKAN, ALASKA 99901	Date Issued, 1966       License No         Punch month and date and attach this ticket immediately upon taking to a recognizable and retained portion of the moose.         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       26       27       28       29       30       31         AUG.       SEPT.       O       OCT.       O         NOV.       DEC.       O
MODSE HARVEST TICKET 1966 No. A 16212 NameMailing AddressState CityState Date Issued, 1966 License No VENDOR: WRITE NUMBER OF THIS TICKET ON BACK OF APPLICANT'S LICENSE. DETACH AND MAIL TO ALASKA DEPT. OF FISH	PLEASE DO NOT       11       1       A. HUNTED MOOSE       YES         FOLD OR       3 3 3 3 3       B. MOOSE KILLED       Yes       Male         STAPLE       5 5 5 5 5       C. KILLED IN GAME MGMT.       No       Female         6 6 6 6 6       D. SPECIFY LOCALITY       E. DATE MOOSE KILLED       / / 66         9 9 9 9 9       9 9 9 9 9       Mate       / / 66
AND GAME, 1829 TONGASS, KETCHIKAN.	THIS REPORT MUST BE FILLED OUT AND MAILED WITHIN 15 DAYS IF YOU KILL A MOOSE, OR WITHIN 30 DAYS AFTER CLOSE OF SEASON IF YOU DID NOT HUNT, OR HUNTED BUT WERE UNSUCCESSFUL.

j,

1

b



## Fig. A3 BEAVER CERTIFICATE

03006	G-8a				
ALASKA DEPARTMENT OF FISH AND GAME		0-52	53 - 59	60-64	<b>65</b> +
Beaver Certificate	1				
	2	· · · · · · · · · · · · · · · · · · ·			
	3				
Trapper's License Number	4				
Number of Beaver Skins	5				<u> </u>
Drainage Taken	6				
Game Management Unit Number	7	·····			
	8				
	9	·	· · · · · · · · · · · · · · · · · · ·		
Trapper's Name					
Trapper's Address					
	12				
Total Beaver Taken to Date	13			· · · · · · · · · · · · · · · · · · ·	
	14				· · · · · · · · · · · · · · · · · · ·
	15				
String Tagging Officer's Signature					
String Tagging Officer's Address	17				
	18				
	19				
	20				
Seeling Officer					·
Sealing Officer					·
Seal Numberstot_to_tto_to_					
	24				
	25				
Trapper's Signature		uiana Wita -	ictual measuremen	+ /total of lar	سابيم مرزمانه) فرير
Date		_	column. Begin wi	-	
		AND A THE PLACE			

-60-

## Fig. A4 BEAR SEALING CERTIFICATE

		_		AME	FG-78A
Bt	EAR SEALIN (for departr	G CERIII nent use only)	No.	<b>14</b>	502
					19
(Seal number)	(Place	of sealing)		(Date of	sealing)
SPECIES	SE)	(		SKULL	
OWN (1)	MALE (	I)	LENGTH		in.
RIZZLY (2)	FEMALE (	2)	нтоім		in.
OLAR (3)	UNKNOWN (	3)			in.
LICENSE NUMBER	TAG N	JMBER	G	UIDE'S N	AME
SIDENT (1)					
ON-RES. (2)					
HIDE PREPARATION	HIDE CO	NDITION	HIDE	MEASURE	MENTS
ESHED (1)		1)		FEET	INCHES
VFLESHED (2)		2)			/
IKNOWN (3)		3)	WIDTH		/
					/
LTED (1)	· ·	obed areas	FLAP		/
ISALTED (2) IKNOWN (3)	on hide ou	tline below)	TOTAL		/
(Hunter's addre	ess)	(City)		(State or	Country)
		(City)			coon
		(Si	gnature of hunter	or his agen	ŧ)
		Sex Identi	(Sealed )	y)	
			Penis Sheath	(1)	
TO CLAW TIPS	1		Vaginal Orifice	(2)	
	$\int$	_	Teats		
		Remarks_			
LENGTH					
TIP OF NOSE TO AN				. <u></u>	
°	FLAP - ANUS TO HIDE EDGE				

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## Fig. A6 FUR DEALER REPORT FORM

RI	EPORT OF A	CQUISITION O	FURS	OR HIDES	FG-76	
ALASKA		BUILDING -	-			GAME
1033-	4	DATE				_, 19

PURCHASER'S NAME\_\_\_\_\_

PURCHASED FROM (NAME)\_

ADDRESS\_

LICENSE NUMBER

SPECIES	NUMBER	SPECIES	NUMBER
1. Beaver		11. Wolverine	
2. Mink		12. Wolf	
3. Muskrat		13. Coyote	
4. Marten		14. Hair Seal	
5. Otter, land		15. Black Bear	
White 6. (or blue) Fox		16. Polar Bear	
7. Other Fox		Other 17. (SPECIFY)	
8. Weasel		18.	
9. Lynx		19.	
10. Squirrel		20.	<u>.</u>

#### (SIGNATURE OF PURCHASER)

MAIL THIS COPY TO ALASKA DEPARTMENT OF FISH AND GAME, SUBPORT BUILDING, JUNEAU, ALASKA, WITHIN 30 DAYS AFTER END OF MONTH SHOWN IN DATE, ABOVE.

## Fig. A7

## DEER HUNTER INTERVIEW FORM

DEER HUNTER HARVEST SURVEY - 196

Town

· ···

Date

\_\_\_\_\_

Sample Number	No. Days Hunted	Deer Deer No. Deer Date of Killed Kills M F				Location of Kills			No. Black Bear Killed	No. Mt. Goat Killed	No. Wolves Seen	Remarks			
					<u> </u>							······································			
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#### ALASKA DEPARTMENT OF FISH AND GAME

Juneau, Alaska

Bounty Information Form Wolf, Wolverine, Coyote

Claimant's Name	Date	e	
		Month	Day Year
Address			· · · · · · · · · · · · · · · · · · ·
Certifier	Station		
Type Hunter	Species		Method Taken
<ul> <li>(1) Professional</li> <li>(2) Incidental</li> <li>(3) Recreational</li> <li>(4) Unknown</li> </ul>	(1) Wolf (2) Wolverine (3) Coyote	(2) (3) (4)	Ground Shooting Trapping Snaring Digging Out Aerial Shooting Unknown

Age	Color		Drainage	Unit	Pack Size	Number of Pack Killed
<u>.</u>						
	Age	Age Color	 AgeColorSexDate Taken Mo. Day Yr.Image: Sex Date Taken 			

Remarks (Kills observed, etc.)

Instructions: For color of wolves, refer only to Black (B1), Brown (Br), Gray (Gr), or White (W). Send original to Regional Game Management Biologist, 946 Cowles Street, Fairbanks or Box 6-283 Annex, Anchorage, or Ketchikan, Alaska. A copy <u>MUST</u> accompany the bounty affadavit when it is forwarded to Juneau.

	Fig. A9	
Nº 2523		Claimant's License No.
		INSTRUCTIONS
ALASKA DEPARTMENT OF F		
AFFIDAVIT & CERTIFICATE BOUNTY ON WOLVERINES, W		Juneau y: Give to person claiming bounty
COYOTES.	Pink Copy	
bounty of \$15. on each Wolver penalties on any person who kn	ine; \$50. on each Wolf and \$30	ore signing and executing. AS 16.35.050 places on each Coyote. AS 16.35.120 imposes seven at in an attempt to obtain a bounty on Wolverin n a bounty.
STATE OF ALASKA	Judicial District } ss	
I,	, of	
that on the da	y of, 19	, or between the dates of
19, and	, 19, I took the	(State number and type of pelts)
which claim for payment of bo	ounties is herein made, in the v	icinity of, in the State of Alaska
		securing the said pelt or pelts; that bounty has no
-		
-	led to the payment of bounty in	the amount of Dollars pursuan
to the Laws of Alaska.		
	we want to be an	
· · · · · · · · · · · · · · · · · · ·	······································	(Claimant's Signature)
I, the undersigned, an a	adult resident of	(Claimant's Signature) , Alaska, do hereby certify that I am personall
<b>C</b>		, Alaska, do hereby certify that I am personall
acquainted with	, the pe	
acquainted with	, the pe	, Alaska, do hereby certify that I am personall erson who executed the above affidavit and claim
acquainted with	, the pe	, Alaska, do hereby certify that I am personall
acquainted withacquainted with	erein set forth are true.	, Alaska, do hereby certify that I am personall erson who executed the above affidavit and clain (Signature of Witness) nd
acquainted withacquainted withacquainted withand I believe the statements the The above named	erein set forth are true.	, Alaska, do hereby certify that I am personall erson who executed the above affidavit and clain (Signature of Witness) nd personall Witness
acquainted withacquainted withacquainted withand I believe the statements the The above named	erein set forth are true.	, Alaska, do hereby certify that I am personall erson who executed the above affidavit and clain (Signature of Witness) nd personall Witness
acquainted withand I believe the statements the The above namedand	erein set forth are true.	, Alaska, do hereby certify that I am personall erson who executed the above affidavit and clain (Signature of Witness) nd personall Witness and subscribed and swore to g oath
acquainted withand I believe the statements the The above namedand The before me,	erein set forth are true.	, Alaska, do hereby certify that I am personall erson who executed the above affidavit and clain (Signature of Witness) nd personall Witness
acquainted withand I believe the statements the The above namedappeared before me,	erein set forth are true.	, Alaska, do hereby certify that I am personall erson who executed the above affidavit and clain (Signature of Witness) nd personall Witness and subscribed and swore to g oath
acquainted withand I believe the statements the The above namedand The before me,	erein set forth are true.	Alaska, do hereby certify that I am personall erson who executed the above affidavit and clain (Signature of Witness) nd personall Witness and subscribed and swore to g oath day of 19
acquainted withand I believe the statements the The above namedappeared before me,	erein set forth are true.	Alaska, do hereby certify that I am personall erson who executed the above affidavit and clain (Signature of Witness) nd personall Witness and subscribed and swore to g oath day of 19
acquainted withand I believe the statements the The above namedappeared before me, the above affidavits, at	crein set forth are true.	, Alaska, do hereby certify that I am personall erson who executed the above affidavit and clain (Signature of Witness) nd personall Witness and subscribed and swore to ag oath Signature 
acquainted withand I believe the statements the The above namedappeared before me, the above affidavits, at (SEAL) I hereby certify that I	a Claimant a Claimant a Claimant a Title of Officer acknowledgin, Alaska, on this	Alaska, do hereby certify that I am personall erson who executed the above affidavit and clain (Signature of Witness) nd personall Witness and subscribed and swore to ag oath Signature  Title above described (No. & type of pelts)
acquainted withand I believe the statements the The above namedappeared before me, the above affidavits, at (SEAL) I hereby certify that I I believe them to have been I	have personally examined the state of Al	Alaska, do hereby certify that I am personall erson who executed the above affidavit and clain (Signature of Witness) nd personall Witness and subscribed and swore to ag oath to subscribed and swore to Signature 
acquainted withand I believe the statements the The above namedappeared before me, appeared before me, the above affidavits, at (SEAL) I hereby certify that I I believe them to have been I radius bones of the left forearm	have personally examined the all of the all	Alaska, do hereby certify that I am personall erson who executed the above affidavit and clain (Signature of Witness) nd personall Witness and subscribed and swore to ag oath Signature  Title above described (No. & type of pelts)

(Title of Officer)

Nº 4984		Claimant's License No.			
	INSTRUCTIONS				
ALASKA DEPARTMENT OF FISH & GAME	White Copy:	Mail to Alaska Department of Fish & Game, Juneau			
AFFIDAVIT & CERTIFICATE TO OBTAIN	Green Copy:	Give to person claiming bounty			
HAIR SEAL BOUNTY.	Pink Copy:	Retained by Certifying Official			

Fig. AlO

Affiant and Certifying Official should read carefully before signing and executing. AS 16.35.140 places a bounty of \$3.00 on each hair seal inhabiting the inland and coastal waters of Alaska. AS 16.35.170 imposes severe penalties on any person who knowingly makes a false statement in an attempt to obtain the payment of a bounty on hair seal.

I, of	·
hereby do certify that from the day of 19 to the	day of
19	scalps to
the undersigned, that said hair seals were killed in the vicinity of, Alaska, that r	10 poison
or other means was employed that might cause the wanton destruction of other wildlife, that I am justly	v entitled
to the bounty of \$3.00 for each complete hair seal scalp exhibited. Total number	Total
amount due \$	

(Signed)		
Mailing	Address	

	WITNESSES	
Name	Address	······································
Name	Address	· · · · · · · · · · · · · · · · · · ·

## CERTIFICATE OF AGENT

I hereby certify that I have examined and destroyed, in the presence of the above two witnesses who have stated to me that they are bonafide residents of the State of Alaska, in accordance with the provisions of AS 16.35.160, the above described complete hair seal scalps and believe them to have been taken legally in the State of Alaska.

(Signature of Agent)

(Title of Agent)

(Month)

(Day)

(Year)

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