

STATUS OF THE PACIFIC WALRUS

WILDLIFE INFORMATION
LEAFLET NO. 4
AUGUST 1978

Of the many species of marine mammals found in Alaskan waters, the walrus is perhaps one of the most unusual, economically important, and controversial.

They are studied and hunted in the icy waters of the Bering and Chukchi seas, and their tusks are carved into items of art which are marketed from Barrow to New York. The status and fate of the walrus are discussed in courtrooms from Nome to Washington, D. C.

Although many of the facts and opinions regarding walrus vary with time and the individual expressing them, one fact is clear to all. Walrus are now, and have been for many years, a very important resource to residents of the Bering and Chukchi sea coasts. Recognizing this importance, the Alaska Department of Fish and Game has, since Statehood, maintained an active program of walrus management

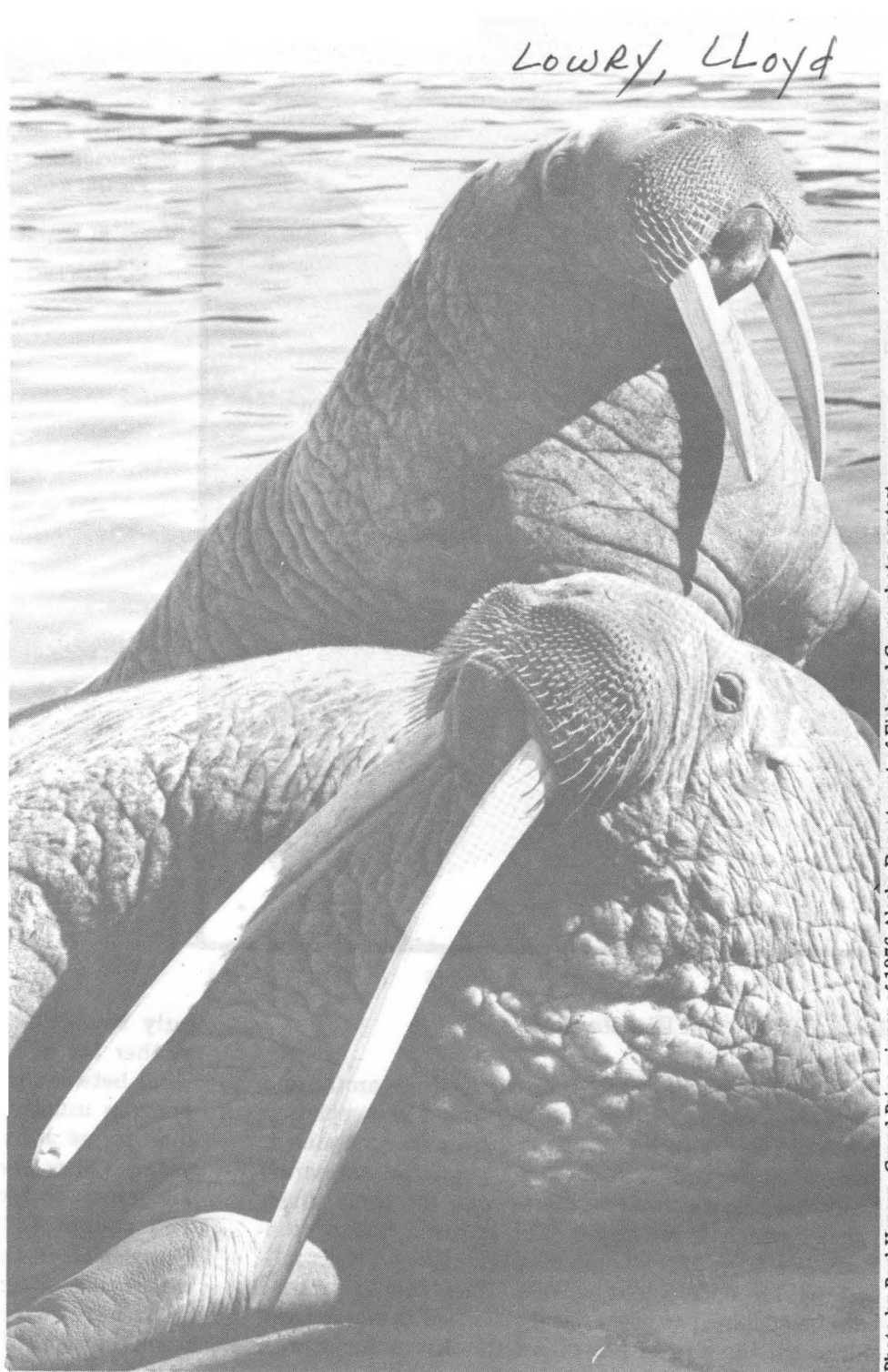


Photo by Paul Hansen, Grand Prize winner of 1976 Alaska Department of Fish and Game photo contest

and research. In fact, the walrus was one of the first species to be selected by the State for intensive study. Concern for the protection of the walrus population has resulted in the passage of laws such as the one which established the Walrus Islands State Game Sanctuary in 1960.

With the modernization of outlying areas during recent years, the nature of traditional dependence on walrus is changing. The purpose of this status report is to examine past trends in walrus numbers and utilization and consider the present status of the population with regard to ecological, sociological and economic factors.

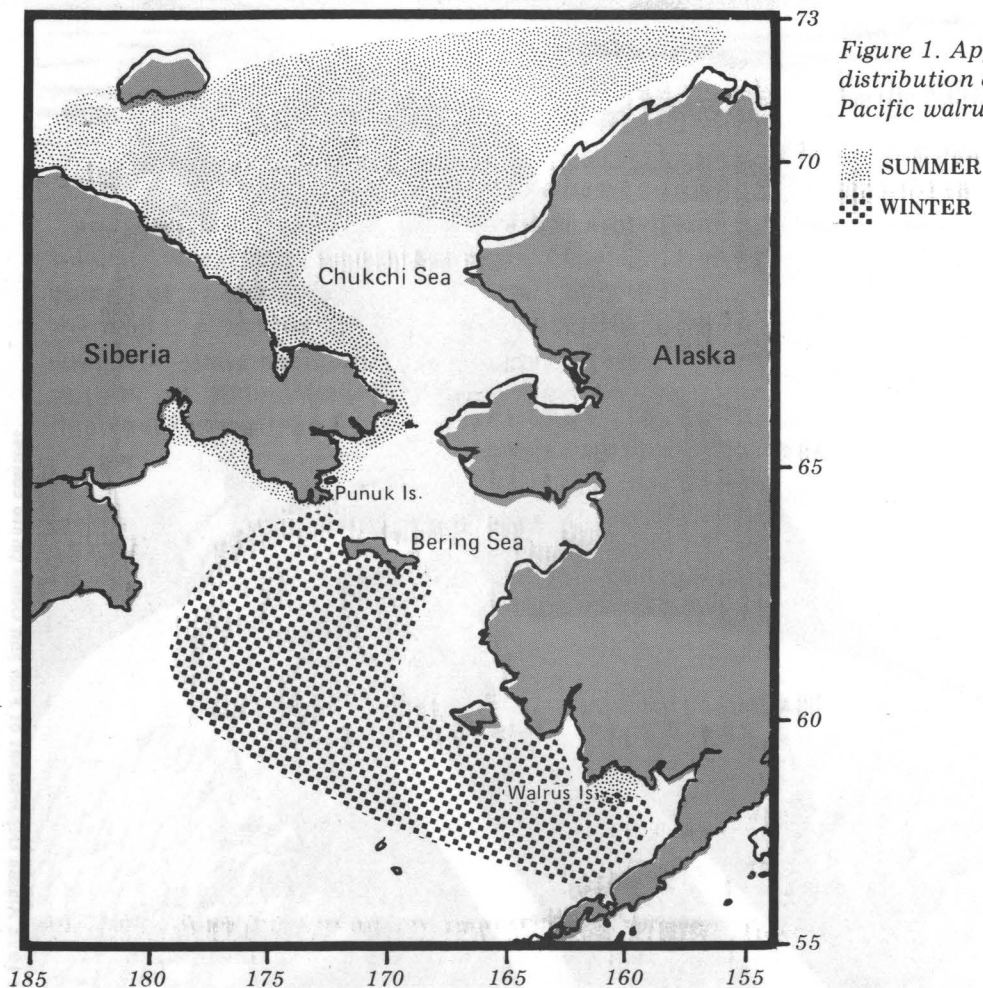


Figure 1. Approximate summer and winter distribution of the major portion of the Pacific walrus population.

Basic Biology and Distribution

Walrus are widely distributed in arctic and subarctic waters, and are usually found in association with sea ice. Two forms or subspecies are recognized: the Atlantic walrus (*Odobenus rosmarus rosmarus*) and the Pacific walrus (*Odobenus rosmarus divergens*), which is far larger. The Atlantic walrus numbers less than 10,000 animals presently and is classified as an endangered species. The Pacific walrus, discussed here, has never been classified as endangered although the size of the population has at times been much smaller than it is today.

Pacific walrus are migratory animals. Their movements closely follow the advance and retreat of seasonal sea ice on which they haul out to rest, sun themselves and socialize. In the absence of sea ice, beaches are sometimes used as haul-out areas. The most notable of these areas in Alaska are the Walrus Islands in Bristol Bay and the Punuk Islands in the northern Bering Sea. Wrangell Island off the northeast Siberian coast and several sites along the northern and eastern shore of the Chukchi Peninsula are also utilized. The general winter and summer distribution of walrus is shown in Figure 1.

Most female walrus begin to breed at five or six years of age. Mating occurs in winter and the young are born about 15 months later, generally in

early May. The single calf born is dependent on its mother for at least 18 to 24 months, and the social bond between them is very strong during that period. Females usually breed at two-year intervals when in their prime and at somewhat longer intervals in later years. Calves weigh 85 to 140 pounds (39 to 64 kilograms) at birth and grow rapidly to reach about 750 pounds (340 kilograms) by two years of age. Females reach their maximum weight of about a ton when nine or ten years old, while males continue to grow until at least 14 or 15 years of age and may reach a weight of two tons. Walrus sometimes attain an age of over 40 years, but due to selective hunting pressure and other mortality factors few ever do.

The diet of walrus in the northern Bering Sea consists primarily of clams. Snails, amphipods, crabs, shrimps, several kinds of worms, sea cucumbers and even seals are occasionally eaten. Food items in other areas are less well known but apparently similar.

Walrus are gregarious and have a complex social system. Vocalizations and motions of the head and tusks are important social signals, and large animals with large tusks are dominant over smaller animals. Both males and females will care for and protect calves and wounded animals. Walrus are not particularly wary and are quite easily approached. Though their vision seems to be poor, their senses of hearing and smell are apparently quite keen.

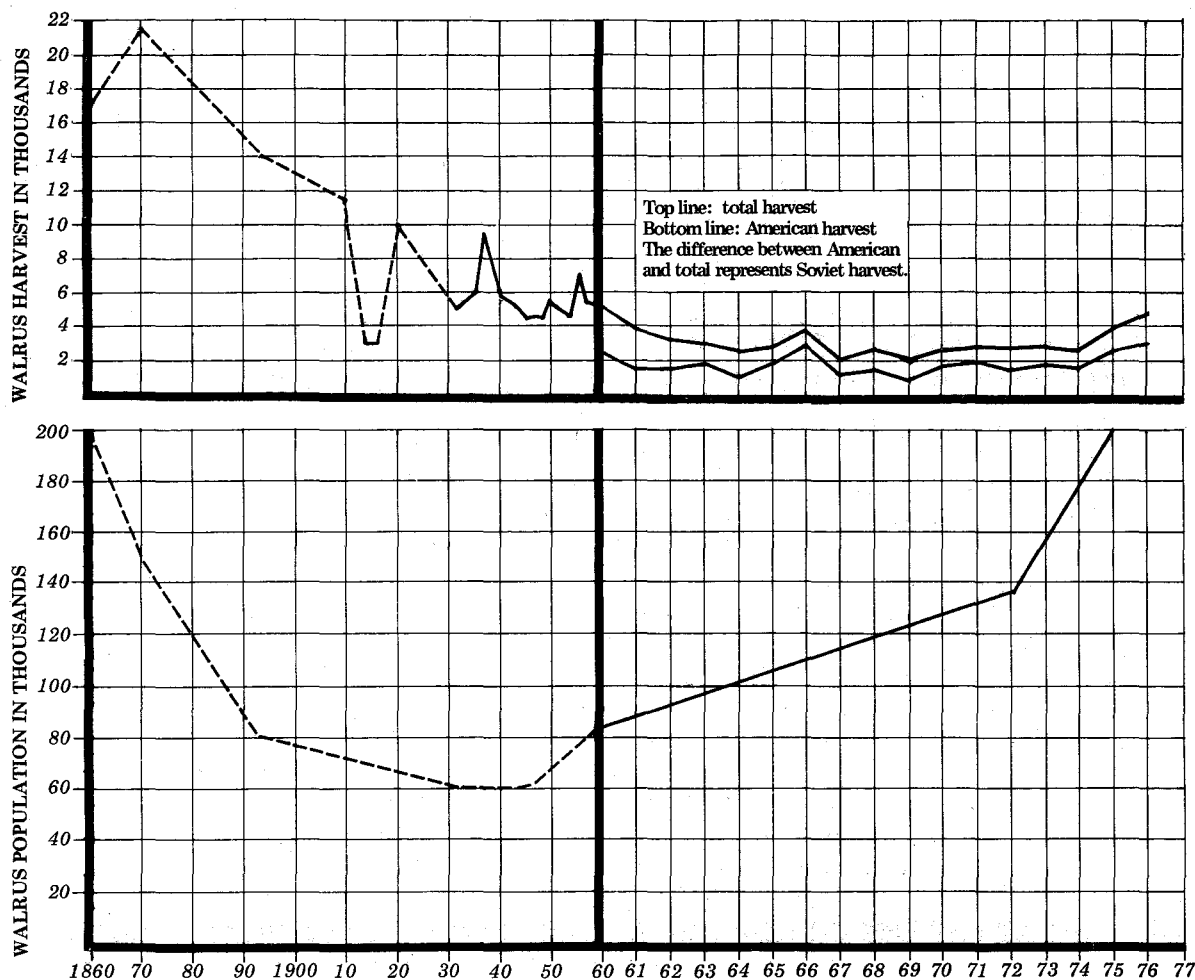


Figure 2. Estimated trends in walrus harvest and population levels. Dashed lines indicate approximate data.

Historical Population Size, Harvest and Regulations

Walruses have been hunted for thousands of years by Eskimos living along the Alaskan coast. For most of those years the small number of hunters, the rigorous nature of the hunt and the relatively primitive weapons and equipment used kept the harvest small. Skin boats powered by sail and paddle did not range far but were seaworthy and could carry tons of meat. A hunting season was considered successful when all the meat storage areas were full. When whaling ships began to pursue bowhead whales in the Bering Sea and north through the Bering Strait, the situation changed drastically. The whalers found the gregarious and unwary walruses to be easy targets. Starting in the 1860's, tens of thousands of walruses were taken annually for oil and ivory. Estimates of population size during this period of overexploitation and the harvest levels on which they are based are shown in Figure 2. By 1880 the population was so severely reduced that walruses in commercial quantities were difficult to obtain and such harvests occurred incidental to other pursuits. During and after World War I harvesting was generally by coastal residents who took walruses mostly for food for themselves and their dog teams, and hides for lines and boat coverings. Commercial take by the Soviets

intensified in the 1930's and 1940's. Commercial hunting in Alaska ended in 1941 with the passage of the Walrus Act which prohibited exportation of raw ivory. The walrus population may have reached its lowest level of fewer than 60,000 animals in the 1930's or early 1940's.

Throughout this period there were no legal restrictions on the native harvest of walrus. The size of the annual harvest by Alaskan natives was limited largely by weather, hunt technology and the need for meat and other parts of the animals.

Recent Population Size, Harvest and Regulations

In 1960 the newly created Alaska Department of Fish and Game took steps to encourage a recovery of the walrus population. A bag limit of seven females or subadults and unlimited bulls per resident hunter was set. Nonresidents were limited to one bull walrus per year. In 1961 the limit on cows and immatures was reduced to five per hunter. Up to 1956 the Soviet government was still conducting commercial harvests of walruses though in decreasing amounts, and in the early 1960's the allowable catch for subsistence use was sharply reduced. In 1963 the Soviets imposed a yearly quota of 1,100 animals. Throughout the 1960's and early 1970's the total harvest ranged

between two and five thousand animals per year, well below the harvest levels of previous decades (Fig. 2).

A major change in the technique used to estimate the size of the walrus population occurred in 1960. For the first time, extensive aerial surveys were flown over the Bering and Chukchi seas and the walrus observed in the survey area were counted. Extrapolations of the numbers seen in the area surveyed to the total area of walrus habitat resulted in population estimates of about 50,000 by the Soviets and 90,000 by the Americans. A subsequent aerial survey conducted in 1972 indicated a population of 101,000 to 135,000 walrus. In that year the Soviets increased the quota for their subsistence harvesting operation to 2,000 per year. A joint Soviet and American aerial survey in 1975 resulted in an estimate of 200,000 walrus after the spring harvest.

Passage of the federal Marine Mammal Protection Act in 1972 had major and varied consequences for all species of marine mammals in U. S. waters. The primary effect on the Pacific walrus was elimination of all restrictions on Native harvests. The State of Alaska immediately requested return of management authority for walrus and several other species of major importance to residents of the State. Walrus harvests in 1973 and 1974 were similar to previous years but the 1975 harvest was one of the highest on record. On April 7, 1976, after lengthy judicial and administrative proceedings, management authority for walrus was returned to the State. Emergency regulations published April 16 were similar to those instituted in 1960 and were intended to keep the total American harvest of walrus below 2,300 animals. If the harvest exceeded 3,000 animals, the hunting season would be closed. Due largely to favorable hunting conditions, the total American harvest for 1976 was 2,989 animals. In order to avoid excessive harvest and to insure that all people had an opportunity to harvest walrus before the limit was reached, quotas were established for the major hunting areas for the 1977 season. Though the absolute harvest limit is based on biological parameters of the walrus population, the area quotas were based largely on sociological and economic factors. Needless to say, the quotas which were established for each area were and still are the subject of much controversy.

Cultural and Economic Aspects

Major cultural changes began for Alaskan Eskimos many years ago. With the arrival of non-Native explorers, settlers, whalers and missionaries came the whole complex of Western culture and values. But until fairly recently modern commodities and conveniences were difficult to obtain and the seas provided most of the raw materials necessary for existence. At villages in the favorable locations,

particularly near the Bering Strait, the annual migration of walrus provided the bulk of annual needs for food and raw materials. The meat, skin, organs, bones, and ivory were all used for a variety of purposes. Ivory carvings were initially traded for useful commodities such as flour, tea, knives, guns and ammunition. But as the availability of outside goods increased so did the need for ivory with which to purchase desirable items. Manufactured items replaced traditional ones and the use of many parts of the walrus decreased. Replacement of dog teams with snowmachines decreased the need for meat considerably while the need for ivory to provide cash increased drastically. Many hunters felt that it was no longer necessary or desirable to bring all parts of the walrus back to the villages. The money that could be derived from ivory carvings became a necessity to support a cash-based economy.

The results of these continual and irreversible changes are a considerably altered walrus hunting technology and ethic. High-powered rifles have increased both killing efficiency and the potential for wounding and not retrieving animals. Binoculars and outboard motors have increased hunting range and "walkie-talkies" have allowed coordination of many boats. All this has resulted in an ever-increasing demand for ivory and a surplus of walrus meat. The replacement of skin-covered umiaks with aluminum and wooden speedboats perhaps best exemplifies these changes. Speedboats and the motors to power them cost a considerable amount of money, they can range far and fast and they can carry very little meat.

A number of factors were considered when the first area quotas were established for the 1977 walrus hunting season. Among these were area population size, traditional dependence on walrus and availability of other sources of income. With the exception of one area, in the vicinity of Little Diomed Island, the established quotas were above the average yearly harvest over the previous 10-year period. The value of raw ivory has increased from \$4 to \$6 a pound in 1970 to as much as \$25 a pound in 1977. Costs of commodities in the coastal and island communities have also increased during this period, as have the number and kinds of available and desirable items.

The economic success of these communities is precariously dependent on the health and stability of the walrus population. How much of the cash income of a village can or should be expected to be provided by walrus ivory is still an open question. Regardless of the answer to this question, the harvest cannot be allowed to adversely affect the walrus population, or people and animals alike will suffer. The present regulations on walrus hunting are designed to apportion the harvest among residents of the State on the basis of need while maintaining the walrus population at its presently high level.

by Lloyd F. Lowry
Division of Game