

Bowhead Whale Field Studies in Alaska, 1975



Marquette

WILLMAN M. MARQUETTE

INTRODUCTION

The bowhead whale, *Balaena mysticetus*, is found in Arctic and northern subarctic waters. Its numbers were greatly reduced over a period of about 300 years, initially in the European Arctic, then in the eastern Canadian Arctic and the Okhotsk Sea. Commercial whaling for bowheads began in the Chukchi Sea and later in the Beaufort Sea during the mid-1800's; the last reported voyage occurred in 1916 (Bower and Aller, 1917) when the steamer *Herman* and the auxiliary whaling schooner *Belvedere* sailed north in the spring from San Francisco and Seattle, respectively, returning that autumn with some whale products. Some of the Arctic Alaskan trading companies continued to deal in whalebone for a few more years into the early 1920's. These animals have been completely protected from commercial whaling by the International Convention for the Regulation of Whaling since 1947, and subsequently, by the Marine Mammal Protection Act (MMPA) of 1972 and the Endangered Species Act (ESA) of 1973.

Two sections (Numbers 1 and 3) of the Schedule to the International Whaling Convention of 1946, revised 1975, are applicable to the harvest of bowhead whales by aborigines. Number 1 (1) includes *Balaena mysticetus*, the bowhead, in the definition of "right whale." Number 3 (b, c) classifies right whales as a Protection Stock which is defined as follows: "A Protection Stock is a stock which is below 10 percent of MSY stock level. There shall be no commercial whaling on species or stocks whilst they are classified as Protection Stocks." Number 3 (7) specifies that ". . . the taking of gray or right

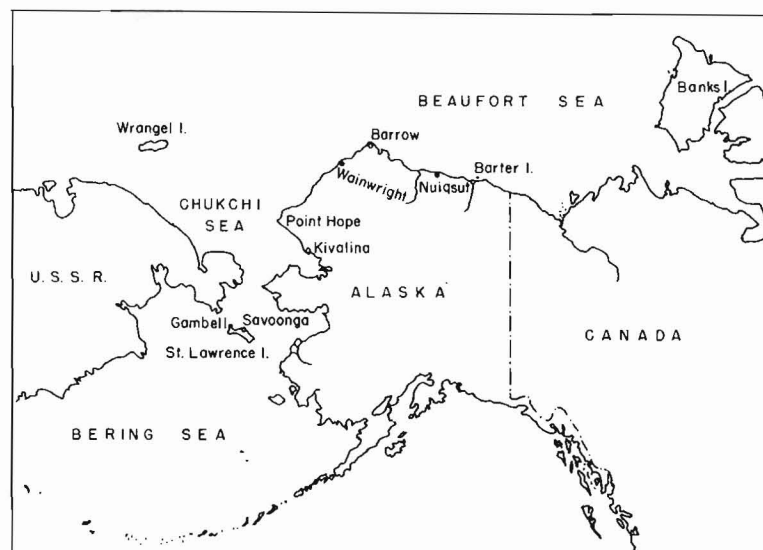
whales by aborigines or a Contracting Government on behalf of aborigines is permitted but only when the meat and products of such whales are to be used exclusively for local consumption by the aborigines." The MMPA (Sec. 101b) provides that any Indian, Aleut, or Eskimo "who dwells on the coast of the North Pacific Ocean or the Arctic Ocean" may take bowhead whales for subsistence or for the purpose of creating authentic articles of handicraft, if not accomplished in a wasteful manner. The ESA (Sec. 10, b, 3e) allows Alaskan Indians, Aleuts, and Eskimos the same privileges as does the MMPA. If, however, the taking of an endangered species affects it "materially and negatively," the ESA allows the Secretary (of Commerce) to prescribe protective regulations for that species.

The first studies on bowhead whales by a member of the staff of the Marine

Willman M. Marquette is with the Marine Mammal Division, Northwest Fisheries Center, National Marine Fisheries Service, NOAA, Naval Support Activity, Building 192, Seattle, WA 98115.

Mammal Division (MMD), then the Marine Mammal Biological Laboratory, were carried out by Dale W. Rice (1974) in 1961 and 1962. In 1973, through a contract with the University of Southern California, the National Marine Fisheries Service (NMFS), through the MMD of the Northwest Fisheries Center (NWFC), supported Floyd Durham's studies of the bowhead whale, which he had begun in 1961.

The principal objective of the current research is to determine the status of the bowhead whale stock of the Bering, Chukchi, and Beaufort seas. A biologist and several biological aids were stationed at the two most important whaling villages (Point Hope and Barrow) during the 1974 and 1975 spring whaling seasons. They visited the whaling camps as often as possible and gathered information on the number of bowheads sighted, killed and



Map of bowhead whale study area.

recovered, and struck but subsequently lost. When a whale was taken, the biologists attempted to obtain measurements, collect specimen material, and take photographs. In addition, they made observations of whaling methods and equipment employed as a first step toward determining if it is possible to reduce the number of whales struck but not recovered.

The biologist and aids participating in the field work in 1975 were: Willman M. Marquette, Fisheries Biologist (Research), NMFS, NWFC, Marine Mammal Division; Geoffrey M. Carroll, John R. Patee, and Michael R. Busby, Biological Aids (Fisheries). Carroll, Patee, and Busby are students at the University of Alaska, Fairbanks.

Residents of the two St. Lawrence Island villages (Gambell and Savoonga), Kivalina, Point Hope, Wainwright, and Barrow engaged in spring whaling. Ice conditions east of Barrow do not permit spring whaling by residents of Nuiqsut or Barter Island (Kaktovik), however, these people participate in the autumn hunt as do the Barrow whalers. The locations of Alaskan whaling villages or areas are shown on the map.

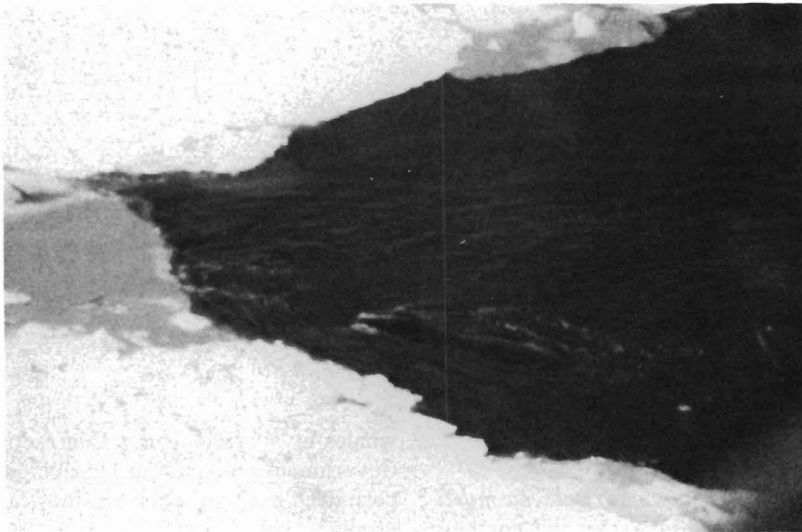
SPRING WHALING

Whaling Villages

We collected information at Point Hope and Barrow and indirectly learned of whaling activities at other villages from various sources. James A. Estes, U.S. Fish and Wildlife Service, Anchorage; Francis H. Fay, University of Alaska, Fairbanks; and Thomas J. Eley, Jr., Alaska Department of Fish and Game, Fairbanks, supplied information from St. Lawrence Island. The Reverend Clinton Swan of Kivalina provided information on whaling at that village.

St. Lawrence Island

The whaling season was begun on St. Lawrence Island about 25 April and ended on approximately 30 May. Nineteen crews from Gambell were active in whaling during this period. Two bowheads were killed by Gambell crews. One of these animals was a male 12.8 m (42 feet) in length; the sex of the other whale, which was large, could not be determined because the animal sank and was lost when the harpoon



Openings and large cracks, or leads, in the Arctic ice are utilized by the bowhead whale to migrate to and from summering and wintering areas.



Most of the bowhead whales taken by the Eskimos are pulled up onto the ice for butchering by means of blocks and tackle anchored to an ice bridge. All available men assist in hand pulling the whale up on the ice.

line parted. Whaling effort at Savoonga in 1975 was at least double that of 1974 (when two crews were reported actively whaling). Three additional whales were reported struck but lost off St. Lawrence Island. The bowhead whaling season ends when conditions become favorable for walrus hunting, and although whaling gear is carried in the boats, few whales are taken at this time. The people of Gambell and Savoonga share their whale catch each year.

Thomas Eley reported that during spring whaling at St. Lawrence Island, 15 bowhead whales were sighted on 7 May heading north, a few were seen on 9 May, and one was reported on 24 May about 48 km west of Gambell, also swimming north.

Kivalina

The period of whaling at Kivalina approximated that of Pt. Hope, although the exact dates are not known.

Five crews actively whaled at Kivalina during the spring of 1975. Whales were neither taken nor struck.

Point Hope

The whaling season was begun on 19 April and ended on 1 June when the ice became unsafe. NMFS observers were stationed in the village from 30 April until 3 June to monitor the harvest.

Thirteen whaling crews at Point Hope in 1975 killed four whales (Table 1) and biological information was collected by an NMFS observer from two. Two of the whales were young animals less than 8.5 m (27 feet 9 inches) in length and two were older animals estimated by the Eskimos to be about 11 m (36 feet) or more in length.

During the 1975 season 132 bowhead whales were sighted at Point Hope (Table 2), 128 by whaling crews or observers on the ice, and 4 from an aircraft that flew over open leads near Cape Lisburne, about 80 km north of the village. Bowheads taken by the whalers were included in the total and every effort was made to eliminate duplicate reports of sightings. Because other whales may have been seen by crew members and not reported, the 132 sightings represent a minimum

Table 1.—Biological features of bowhead whales taken during spring 1975.

Area and date	Length (m)	Sex/Remarks
St. Lawrence Island -- Gamble 7 May	12.8	M
Point Hope 24 April	¹ 11.0	— Ingutuk ²
26 April	¹ 6.0	—
10 May	8.5	F Ingutuk
15 May	¹ 11.6	M
Barrow 5 May	8.0	F
9 May	6.9	M
13 May	9.3	F
14 May	¹ 8.0	—
15 May	8.5	M
16 May	16.2	F
20 May	7.8	F
21 May	11.1	F
23 May	7.2	—
31 May	14.0	M Stinker ³

¹Estimate of length in feet was provided by the Eskimos.

²Some whales that are especially fat are designated as Ingutuk by the Eskimos.

³See text for description. Shot on 21 May but not recovered until 31 May.

number of bowheads seen at Point Hope.

Wainwright

Four whaling crews were active during the spring of 1975 at the village of Wainwright. Whales were not taken, and information was not received on whales that may have been struck but lost. The whaling period at Wainwright approximates that of Barrow.

Table 2.—Sightings of bowhead whales, spring 1975.

Date	Location	
	Point Hope	Barrow
April 20-26	27	11
27	0	0
28	0	0
29	0	0
30	4	0
May 1	0	0
2	2	0
3	0	0
4	0	0
5	0	3
6	1	1
7	0	15
8	0	0
9	7	3
10	22	1
11	1	0
12	0	0
13	0	3
14	18	1
15	2	6
16	12	6
17	15	0
18	3	3
19	2	0
20	1	1
21	0	3
22	0	0
23	0	6
24	4	0
25	1	0
26	5	0
27	¹ 1	0
28	3	0
29	0	0
30	0	0
31	1	0
Total	132	63

¹Two separate sightings, a pair (large whale with calf) and a single large whale.



An 11.1-m (36.4-foot) whale pulled up on the ice; butchering has just begun. Note the profile of the head which is a distinctive characteristic of the bowhead.

The whaling season was begun on 21 April and ended on 4 June when the ice became unsafe for travel. Two observers were stationed at the Naval Arctic Research Laboratory (NARL), Barrow, from 22 April to 6 June, except for the period 30 April to 5 May when only one observer was present.

The number of whaling crews actively engaged in whaling varied almost daily, but approximately 30 crews were so occupied at Barrow some time during the season. Ten of eleven whales killed at Barrow during the spring season were recovered, and one was lost when it sank and broke the harpoon line. Some data were obtained on each of the butchered whales (Table 1). Length of the whales taken ranged from 6.0 to 16.2 m (19 feet 8 inches to 53 feet 2 inches). The last whale recovered at Barrow had been struck with a lance-bomb 21 May but it escaped and died and was recovered 31 May. Whales taken several days after death are called stinkers. The muktuk (skin and blubber), flukes, and baleen of a stinker can be salvaged but the remainder is discarded. Usually the crew that killed a stinker is identified by marks on the harpoon or bomb particles embedded in the whale and the crew that recovers the animal shares the carcass with the crew that killed it. Otherwise, a stinker belongs to the crew that recovered it.

Whaling Methods

The method presently used by Alaskan Eskimos to take whales has evolved from ancestral methods and the adoption of commercial whaling gear and methods introduced by Yankee whalers in the last century. VanStone (1958) has described the era of commercial bowhead whaling in Alaskan waters. The most recent description of the development of current Eskimo whaling methods is that of Durham (1974). VanStone (1962) described the traditional method of marking and cutting shares from a whale carcass at Point Hope, which, with some modification, is still in use there. A similar though much simplified method of marking and cutting shares from whales is used at Barrow. The



Butchering of the whale has almost been completed. All portions of the whale are divided up among the crews that assisted in taking it, including the baleen that the workers are beginning to cut from the upper jaw. Note the 2.5-cm (1-inch) thick layer of black skin and the 17.2-cm (7-inch) layer of blubber.



A seal-skin covered whaling boat (umiak) is being transported back from the edge of the lead because of incoming ice. The whaling crew's tent is always located on safe, land-fast ice. The black smoke coming from the stovepipe indicates that whale blubber is being burned for fuel.

three papers cited above provide background material on Alaskan bowhead whaling and the methods used to capture and cut up whales.

A detailed description of the whaling crews, whaling methods, and equipment employed in the fishery was presented in the report of the bowhead harvest in 1974 (Fiscus and Marquette,

1975¹). Details on umiaks (skin boats) in use at Point Hope are given in Table 3. These boats averaged 6.9 m in

¹Fiscus, C. H., and W. M. Marquette. 1975. National Marine Fisheries Service field studies relating to the bowhead whale harvest in Alaska, 1974. Natl. Mar. Fish. Serv., Northwest Fish. Cen., Seattle, Wash. Processed report, 23 p.



Belukha accompany bowheads on their spring migration and are frequently taken by the eskimos. Three belukha suddenly surfaced in front of a whaling crew and one was shot with a high-powered rifle.

length and 1.6 m in width (22 feet 6 inches by 5 feet 4 inches). Umiaks measured at Barrow in 1974 averaged 7 m in length and 1.7 m in width (23 feet by 5 feet 7 inches). Two of the skin boats used in 1975 at Point Hope were newly constructed and measured 6.4

and 6.8 m (20 feet 11 inches and 22 feet 4 inches) in length and 1.5 and 1.6 m (4 feet 10 inches and 5 feet 2 inches) in width. Some of the whaling captains

stated that as the umiaks age they widen at the gunwales amidships. Whaling gear for the 13 crews at Point Hope is listed in Table 4.

At Point Hope only two individuals own heavy blocks and tackle capable of hauling whales out of the water onto the ice for butchering. Each set of this gear is valued at about \$1,000. When this equipment is used to remove a whale from the water, the owner is entitled to a share of that animal. At least two individuals own blocks and tackle at Barrow.

The fact that a whale is struck and lost does not necessarily mean that it later dies. Some whales harpooned with the darting gun escape when the line breaks, and others hit with a missile from the shoulder gun escape if the bomb fails to explode. An unknown number of these animals may later die and some may recover. We have endeavored to collect data on all whales taken and on those struck but lost in an effort to obtain information related to mortality occurring as a result of the Eskimo harvest.

Several factors contribute to the problem of striking a whale and failure to recover it. In this respect, the effect of equipment used by the Eskimos to take whales was presented in the report for 1974. Another factor contributing to the struck but lost problem is increasing number of whalers. During the past few years, an increasing number of men have become financially able to purchase whaling gear, a factor that can be expected to cause an increase in the number of whales struck and lost.

Table 4.—Type of equipment used by whaling crews at Point Hope, spring 1975. Each horizontal line refers to the equipment of one crew.

Boats		Outboard motor	Shoulder gun	Darting gun		Floats			Cross-bow	Harpoon
Umiak	Metal			With harpoon	Without harpoon	Large plastic	Small plastic	Sealskin		
1	—	—	2	1	—	1	1	—	—	
1	—	—	—	1	1	1	1	—	—	
1	—	1	2	1	—	1	1	1	—	
1	—	1	2	1	—	1	1	—	—	
—	1	—	—	1	1	1	1	—	—	
1	—	—	—	1	1	1	1	1	—	
1	—	—	2	1	2	1	1	—	1	
1	—	1	2	1	1	1	1	—	1	
1	—	—	1	1	1	1	1	—	—	
1	—	—	1	1	—	1	1	—	—	
1	—	1	—	1	1	1	1	—	—	
1	—	—	1	1	1	1	1	—	—	
1	—	1	—	1	1	1	1	1	—	
12	1	5	13	13	10	13	13	3	1	

¹Lost overboard from umiak at beginning of season.
²Both lost through young ice at beginning of season.

Table 3.—Measurements of boats used by whaling crews at Point Hope, Alaska, spring 1975.

Length (m)	Width (m)	Remarks
7.20	1.56	Umiak
6.37	1.48	Umiak, new
7.20	1.75	Umiak
6.10	1.73	Umiak
4.90	1.61	Aluminum
6.80	1.57	Umiak, new
7.00	1.63	Umiak
7.39	1.68	Umiak
6.90	1.52	Umiak
6.95	1.65	Umiak
6.71	1.52	Umiak
7.35	1.63	Umiak
6.45	1.68	Umiak

Fewer whales were reported struck and lost at Barrow than at Point Hope in 1975. One of eleven bowheads killed by Barrow crews sank and could not be recovered. An incomplete count indicated a minimum of 10 animals struck and lost. Point Hope crews killed 4 whales and struck but lost 13. The point Hope data are considered reasonably complete, whereas that for Barrow is incomplete.

Whaling Effort

The number of crews engaged in bowhead whaling increased in 1975 compared to those that were active in 1974. The number of crews increased from 10 to 13 at Point Hope, and from 21 to 30 at Barrow. Our observations at Barrow have shown that although a large number of crews may be outfitted with whaling gear, the number that actively engage in whaling throughout the season is significantly smaller. Reports received from scientists who visited St. Lawrence Island indicate that eight crews were observed whaling there in 1974 compared to 23 crews in 1975. The information on whaling activities in 1974, however, was obtained after the season had ended and may not be as complete as the data obtained throughout most of the season in 1975. Further study is needed, therefore, before any trend in the whaling activity off St. Lawrence Island can be established.

The number of crews hunting at the lead (a channel of water through a field of ice) varied during the season. In an attempt to evaluate hunting effort, we maintained a record of crew activities throughout the season (Tables 5, 6). In 1975, Point Hope crews were at the lead 27 days (81.8 percent of the time) from 30 April to 1 June. At Barrow, crews were at the lead 37 days (86.0 percent of the time) from 22 April to 3 June. Whalers return to shore or to fast ice when leads close or the ice becomes unsafe.

Although the number of crews engaged in whaling in the spring of 1975 at Barrow was large, the number that actively engaged in whaling at every opportunity throughout the season averaged close to 14. A daily count of active crews was not obtained because their camps were scattered



A whaling crew towing a dead belukha to their camp site where it will be butchered.

along some 40 km of lead and not all could be reached during a single day. The whaling season lasted about a month and a half at Point Hope and Barrow with the most productive hunting occurring during May.

Utilization

The whales were pulled from the water when possible by means of blocks and tackle and then butchered. Thin ice required partial butchering of

the animal before it could be hauled from the water, a situation that greatly increased the time spent on this aspect of whaling. Accordingly, the butchering process required from as few as 3 to as many as 30 hours. Parts removed from the animal were taken ashore as soon as possible to prevent their loss when the ice shifted.

Most meat and muktuk were removed from the butchering site immediately after the whale was cut up.

Table 5.—Whaling effort at Point Hope, Alaska, spring 1975.

Date	Number of crews on lead	Remarks
April 30	5	Lead open, strong north wind, water rough.
May 1	2	Lead open, all crews went out in evening when wind subsided.
2	13	Lead open and very wide.
3	9	Lead open but all crews went ashore at end of day as wind continued strong, ice not safe.
4	0	Lead open, miles wide, windy but too rough to whale.
5	8	Lead open, crews began going out at noon, at 1800 hours eight crews were out.
6	5	Lead closing, south wind.
7	8	Lead closed.
8	11	Lead closed.
9	11	Lead opening on west end.
10	11	Lead open, getting wide.
11	13	Lead open.
12	13	Lead closed at noon by current.
13	11	Lead open.
14	13	Lead open.
15	7	Lead open, but windy and rough.
16	6	Lead open, but windy and rough.
17	4	Lead open, windy and rough.
18	2	Lead open, windy and rough.
19	2	Lead closed.
20	12	Lead open.
21	13	Lead open, three crews off ice at evening.
22	12	Lead open, one crew went out in morning, two in afternoon.
23	0	Lead began closing 0800 hours, closed by noon.
24	0	Lead closed.
25	7	Lead opening on west end.
26	12	Lead open, one crew off ice in evening.
27	12	Lead open, two crews off ice in afternoon.
28	0	Lead open but ice dangerous because of current.
29	0	Lead open, ice dangerous.
30	2	Lead open, ice dangerous.
31	5	Lead open, two crews out in morning, one out at 1600 hours, two out at 1900 hours.
June 1	0	Lead open but ice dangerous, three crews off ice at noon, two off at 1700 hours, season had ended.

Occasionally, however, several days elapsed before all parties hauled off their shares. Remains of the backbone, some ribs and internal organs, and the skull (at Barrow) were generally left on the site. Usually, fewer parts of the whale were left on the ice at Point Hope than at Barrow. At Point Hope, the skull was returned to the sea after the tympanic bullae and lower jawbones were removed, and the latter taken to the village for use during the spring whale feast. At Barrow, the skull (tympanic bullae removed), including jawbones, was usually left at the butchering site. At some butchering sites, mostly at Barrow, blubber was left on the ice. Before the snowmobile

Table 6.—Whaling effort and weather data at Barrow, Alaska, spring 1975.

Date	No. of crews on lead	Aver. temp. (°F)	Average wind velocity (mph)	Wind direction (°)
April				
22	2	12	10.0	280
23	4	5	13.0	270
24	5	-5	9.0	220
25	5	-3	17.0	050
26	15	5	17.0	010
27	15	7	10.0	330
28	6	7	6.0	150
29	3	4	10.0	230
30	0	-1	10.0	230
May				
1	0	6	11.4	050
2	19	9	12.4	070
3	21	15	13.6	070
4	21	21	12.9	070
5	21	21	10.0	190
6	22	17	5.5	190
7	23	15	6.6	070
8	20	23	—	130
9	21	22	8.3	070
10	21	24	14.9	070
11	0	27	22.1	060
12	4	16	18.9	080
13	18	15	18.0	080
14	19	17	13.4	090
15	20	14	10.2	040
16	17	20	10.3	300
17	12	15	5.6	340
18	17	18	5.7	040
19	17	19	—	270
20	17	16	10.2	100
21	17	17	10.5	080
22	17	16	6.1	060
23	17	15	8.4	110
24	12	15	11.6	120
25	15	19	6.2	080
26	0	20	17.8	070
27	0	—	—	—
28	5	—	—	—
29	11	—	—	—
30	10	—	—	—
31	10	—	—	—
June				
1	7	—	—	—
2	0	—	—	—
3	3	—	—	—
4	0	—	—	—
5	0	—	—	—
6	0	—	—	—

¹Lead closed.

²Strong winds, crews moved back to safe ice.

³Lead partly closed.

⁴Crews out in the morning, back off ice in evening

era, surplus blubber was used for dog feed. The Eskimo utilizes the meat, muktuk, baleen, gum tissue (mamaak), flukes, flippers, brains, tongue, intestines, heart, kidneys, epithelium of the liver, and the tympanic bullae.

Migration

The Eskimos of Point Hope and Barrow recognize three distinct runs of whales past their villages. Whales making up the first two runs are usually small animals of both sexes, and many of them are the size that Durham² would call yearlings. Durham reports that yearling bowhead whales range in length from 6.7 to 7.9 m (22 to 26 feet). Whales making up the third run include large males and females with calves. According to Durham³ as many as four runs (or waves) of bowheads occur; the first run passes Point Hope in early April and Barrow in late April, which in some years may pass unnoticed due to ice conditions that prevent the whalers from going out; two runs pass Barrow in May; and the fourth run, which includes large males and females with calves, passes Barrow in early June.

Three distinct runs of the bowhead occurred at Point Hope in the spring of 1974. In 1975, only two runs were noted, probably because during late May several open leads existed far offshore from Point Hope, within which the whales may have traveled instead of migrating through the nearshore lead. The first run occurred 20-30 April and the second 10-17 May. Two distinct runs were all that were observed at Barrow this spring, but as at Point Hope additional runs could have moved through large open leads far offshore.

The above data are weak and more information must be gathered on migration waves before definite conclusions can be drawn. Certainly, the bowhead is dependent on leads or recently fractured ice containing thin spots through which it can surface for air.

²Durham, F. E. 1972. Biology of the bowhead whale (*Balaena mysticetus* L.) in the western Arctic. University of Southern California, Los Angeles, Calif. Unpubl. manuscr.

³Durham, F. E. 1973. Census and spring migration studies on the bowhead whale in the western Arctic in 1973. National Marine Fisheries Service, Seattle, Wash. Unpubl. manuscr.

Leads far offshore obviously allow whales to migrate unobserved.

Many species of marine mammals migrate in series of waves from wintering to summering grounds. Rice and Wolman (1971) described the seasonal migratory cycle of the gray whale, *Eschrichtius robustus*, which exhibits temporal segregation by age, sex, and reproductive status. Similar segregation has been reported among humpback whales, *Megaptera novaeangliae*, by Dawbin (1966).

Other Mammals and Birds

In addition to bowhead whales the following species of mammals were observed or reported in 1975 at Point Hope during the spring whaling season:

Belukha	<i>Delphinapterus leucas</i>
Bearded seal	<i>Eringnathus barbatus</i>
Polar Bear	<i>Ursus maritimus</i>
Ringed seal	<i>Phoca hispida</i>
Walrus	<i>Odobenus rosmarus</i>
Wolverine	<i>Gulo luscus</i>

Although belukha were occasionally observed from 30 April to 1 June, three noticeable waves of these animals migrated past Point Hope whaling camps—the first prior to 30 April, the second 10-15 May, and a third from 22 to 26 May. Belukha sighted and taken at Point Hope are given in Table 7. The Eskimos at Point Hope did not actively pursue belukha during the bowhead whaling season because they sink quickly and require considerable effort to recover, although they are prized for food. A belukha harvest at this time is

Table 7.—Belukha taken and sighted at Point Hope, Alaska, spring 1975.

Date	No. sighted	No. taken	Remarks
Prior to 30 April	1	1	
30 April	100	0	Observed from aircraft over leads off Cape Lisburne.
Prior to 2 May	1	0	
2 May	7	7	One was female with fetus.
10	25	0	
13	30	0	
14	20	0	
15	11	0	
22	15	0	
23	12	0	
26	15	2	
27	7	3	A 3.15-m female was taken, but not calf with it.
Total	244	13	

¹All following observations made from ice edge of lead.

incidental to the bowhead whale fishery. Rifles are normally used to kill the animals. It is difficult to obtain data on the belukha because these animals are butchered immediately after they are killed, a process that requires but a few minutes to complete after the animal is hauled onto the ice. Crew members at times eat some of the meat at the whaling camp, but usually take their shares directly home. Measurements were obtained of a lactating female killed 27 May, but her calf was not taken. The technique used to butcher these animals at Point Hope is illustrated in an accompanying photograph.

Other species killed at the Point Hope lead during the spring whaling season were 17 ringed seals (including two juveniles), one walrus, three polar bears, and two wolverines (Table 8). In addition, one ringed seal and two bearded seals were sighted.

Eider ducks, initially the king eider, *Somateria spectabilis*, and later the Pacific eider, *S. molissima v-nigra*, began to pass up the lead in considerable numbers beginning about 8 May and were regularly taken at the camps, especially when the lead was closed or strong winds made whaling impractical. King and Pacific eider ducks are abundant at Barrow and are taken in numbers throughout their migratory period by the whalers.

Other mammals killed at Barrow included 17 ringed seals and one polar



As soon as the belukha has been pulled up on the ice, it is butchered and divided up among the members of the whaling crew.

bear. In addition, sightings of 10 ringed seals were recorded. Reports were not received of belukha or walrus being

seen or taken during our stay at Barrow.

AUTUMN WHALING

Only one crew actively whaled at Barrow in the autumn. A camp was maintained at Point Barrow from 17 to 25 September. Whaling during most of

Table 8.—Mammal species other than whales taken or observed at Point Hope, Alaska, spring 1975.

Species	Date	No. seen	No. taken	Remarks
Ringed seal	2 May	1	1	
	Prior to 8 May	2	2	
	8 May	1	1	
	16 May	1	1	
	19 May	1	1	Male, 129 cm
	19 May	2	2	
	19 May	1	0	
	20 May	2	2	
	21 May	2	2	
	25 May	1	1	Male, 104 cm
	28 May	1	1	
	28 May	1	1	Juvenile
28 May	1	1	Juvenile	
28 May	1	1	Male, 98 cm	
Bearded seal	13 May	1	0	
	19 May	1	0	
Walrus	20-26 April	1	1	Large bull
Polar bear	20-26 April	1	1	
	6 May	1	1	
Wolverine	20-26 April	1	1	
	6 May	1	1	



Two darting guns in position in the bow of the skin boat. One gun has a harpoon rigged. When a whale is sighted the crew launches and gets as close to the whale as possible. The darting gun with harpoon is driven into the whale's back as close to the head as possible. When the white-tipped rod, to the left of the muzzle, touches the whale it fires a bomb into the whale, which if placed properly may kill the whale instantly. The harpoon, to the right of the muzzle, remains in the whale and is attached to a float by a line about 61-m (200 feet) in length.



Two shoulder guns have been placed so that they can be easily picked up. The bomb has been removed from the gun in the foreground to show its size. After the darting gun has been fired into the whale and the harpoon attached, a shoulder gun may be used to finish off the whale.

this period was impossible because of severe ice conditions. The crew sighted one bowhead on 17 September and killed a 2-year-old polar bear on 25 September. Two crews whaled at Kaktovik, Barter Island, but whales were not taken. One small bowhead was seen at the beginning of the season, which began about 7 September. One crew from Nuiqsut was reported to be whaling, but whales were not sighted.

SUMMARY

During the spring of 1975, 15 bowheads were caught, 2 were killed but lost, and 26 were struck but lost. No bowheads were taken in the autumn of 1975 (see Table 9).

Table 9.—Number of bowheads taken, known killed but lost, and known struck but lost in 1975.

Location	Season	Bowheads butchered	Killed but lost	Struck but lost
Gambell	Spring	1	1	3
Savoonga	Spring	0	0	0
Kivalina	Spring	0	0	0
Pt. Hope	Spring	4	0	13
Wainwright	Spring	—	—	—
Barrow	Spring	10	1	10
Barrow	Autumn	0	0	0
Nuiqsut	Autumn	0	0	0
Kaktovik	Autumn	0	0	0
Total		15	2	26

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*Harry Reynolds, Alaska Department of Fish and Game, Barrow, determined the age of the polar bear.



A jumbled mass of recently shifted ice pressed against the landfast ice. The phenomenon known as water sky is plainly visible above the open water of the lead.



When a whale is captured, 50 to 60 people will come out on the ice to help haul it out and cut it up. Early in the season when the first whales are taken, several hundred people may come to the butchering area, especially if it is close to a village.

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