

RECENT RECORDS OF THE CALIFORNIA GREY WHALE (*ESCHRICHTIUS GLAUCUS*) ALONG THE NORTH COAST OF ALASKA

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THE migratory movements of the California grey whale (*Eschrichtius glaucus*) are better known than those of any other baleen whale. This is because it is the only species that enters shallow waters to calve and because part of its migration route lies close to the shore. Scammon (1874 p. 23), for example, states that these whales "will be seen . . . following the shore so near that they often pass through the kelp near the beach. It is seldom they are seen far out at sea." Its migration is known in considerable detail where it travels along the western coasts of the United States and southern Canada to and from calving grounds in the coastal lagoons of Baja California and adjacent mainland of Mexico. The foregoing comments are based on the works of Scammon (1874), Andrews (1914), Kellogg (1929), and Gilmore (1955, 1958); they are apparently the principal references on the migration of this species.

On its northward movement in the spring the grey whale leaves the coast of North America at the Queen Charlotte Islands. On its return migration in the fall it reaches the coast at Oregon and northern California. Between the time it leaves the coast in April and May until it returns in October and November, records of its occurrence at specific localities are scarce and the extent of its movements in summer are poorly known. The summer range of the Korean population of the grey whale studied by Andrews (1914) is also poorly known.

In the summers of 1953 to 1959 I made some observations of grey whales at several places on the north coast of Alaska. Since previous records from this area are scarce, these observations are reported here.

Known summer range of the grey whale

The summer range of the grey whale has not been well defined. According to Scammon (1874, p. 23) they congregate in the Arctic Ocean and the Okhotsk Sea, but no further details are given. He does, however, describe the primitive whaling methods of the Eskimos, without mentioning

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the locality at which he became acquainted with them. Because there are Eskimo settlements at East Cape, Siberia, and in Alaska along the east side of the Bering Sea as well as on the shores of the Arctic Ocean, this reference does not help. Andrews (1914, p. 236) says "Information gathered from the whalers tends to show that a large part of the former herd [the Korean population] summers in the Okhotsk Sea and the latter [the California population] in the Bering Sea and farther north." Risting (1928)

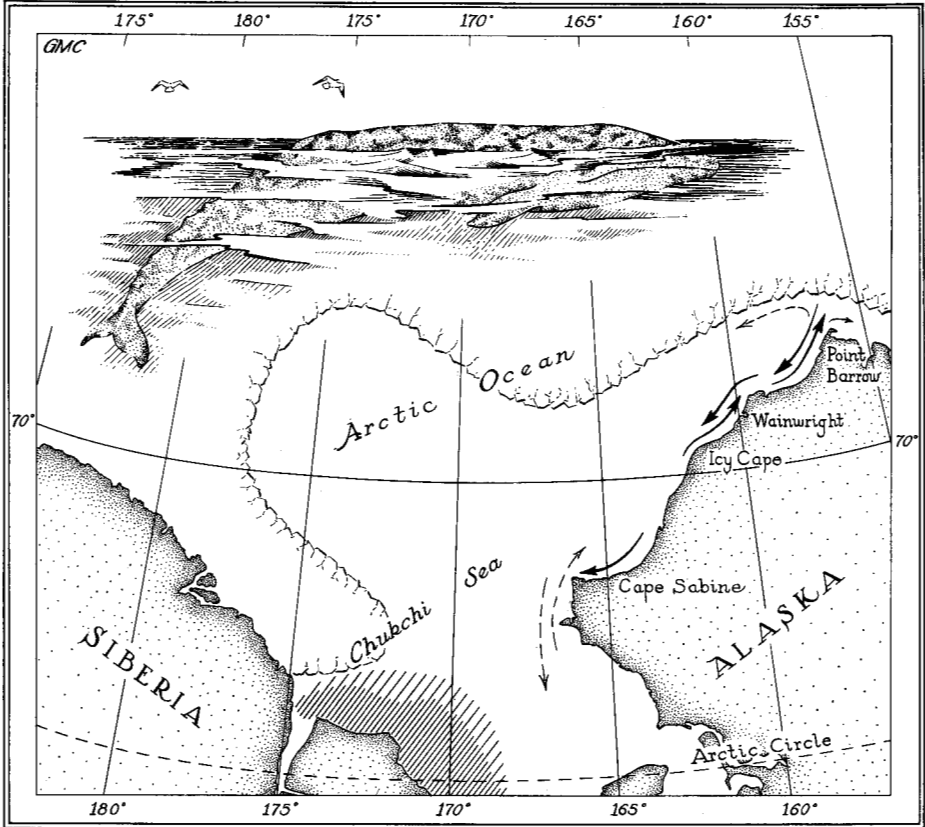


Fig. 1. The localities where grey whales have been observed along the North Alaska coast. The directions of their movements are shown by the heavy arrows. The hatching at the lower left is the range of the grey whale in the Arctic Ocean as indicated by Gilmore (1955, 1958). The approximate mean limit of pack ice in August and September is also shown.

published data on length and sex of 31 grey whales caught off the east coast of Kamchatka between July 27 and August 22, 1925. The most recent publication dealing specifically with the summer range of the grey whale is that of Ichihara (1958). He reports the sighting of three herds of grey whales in the Bering Sea just west of St. Lawrence Island on August 2, 1955. The whales were in groups of 2, 20, and 150, respectively, and were

Table 1. Details of grey whales killed at Wainwright and Barrow.

<i>Locality</i>	<i>Date</i>	<i>Length in feet</i>	<i>Remarks</i>
Barrow	August 10, 1954	25	Calf assoc. with an adult
Wainwright	August 9-15, 1954	25	
Barrow	September 11, 1958	30-35	
Barrow	September 11, 1958	30-35	
Barrow	July 18, 1959	25-28	
Barrow	July 19, 1959	25-28	Calf of the female below
Barrow	July 19, 1959	43	Adult female, lactating
Barrow	September 13, 1959	40-45	Adult female, lactating
Barrow	September 13, 1959	25	Calf of the above female
Barrow	September 13, 1959	25	

traveling west-southwest or southwest. He recorded one other whale moving north in Unimak Pass in the southern Bering Sea on May 29, 1957. Ichihara also cites the work of Sleptsov, who has summarized the range of the grey whale along the Siberian coast. According to Sleptsov, the grey whales arrive in Siberian waters in the Bering Sea in late May and early June. They usually stay in the Bering Strait and along the coast of the Chukchi Sea in summer. They range south along the Siberian coast to the Olyutorsky Gulf but no longer as far as Kamchatka. This is essentially the distribution indicated by Gilmore (1958) in his most recent map of the distribution of the grey whale.

According to Mizue (1951), the Korean population of the grey whale is confined to the Okhotsk Sea in the summer and there is no intermingling with the California population at present. This paper, then, will be concerned with the northern extent of the range of the California population.

Records from northern Alaska

The first published record that I have found on the grey whale being sighted in the Arctic Ocean along the north coast of Alaska is that of Bailey and Hendee (1926) who saw "one or two" at Wainwright in the summer of 1924. Bee and Hall (1956) attribute to P. Sovalik the statement that the grey whale is "occasionally taken or seen" at Barrow. On August 10, 1954, a whale was killed at Barrow. I was present when the animal was butchered and identified it as a grey whale. Hurley and Mohr (1957) described a new species of whale louse from a large series of lice collected from this specimen. Their paper thus contains the first specific record of the grey whale being killed in northern Alaska.

Nine grey whales have been killed by the Eskimos at Barrow and Wainwright subsequent to the one cited above. Table 1 lists all kills with the available data. The length of most whales was estimated by various informants who saw the animals butchered. The length of the largest whale killed in July 1959 was determined by pacing.

It is evident from the lengths of the whales killed that the Eskimos mostly take juvenile animals. The grey whale is born in the winter months. The young are 15 to 17 feet long at birth according to Risting (1928). Mizue (1951) gives the length of the Korean grey whale at birth as 15 to 16 feet. Growth is rapid. The young whale doubles its length in one year so that by the following winter the yearlings are approximately 30 feet long. In late July and August they are between 25 and 30 feet in length (Risting, 1928).

According to these criteria most whales listed in Table 1 were born the previous winter. This is certainly true of the whale taken on August 10, 1954, that I estimated to be 25 feet long and was accompanied by its mother. The female was shot at but could not be killed. The two whales taken on July 19, 1959 were an adult female and its calf; the one killed on the previous day was also a calf. Those taken on September 11, 1958 (Fig. 2) may also have been juvenile, though the estimated length of 30 to 35 feet is a little too great for that age class. An adult female and two calves were shot on September 13, 1959. It was reported that milk was running from the female's nipples when she was pulled on to the beach. One of the calves was believed to be hers.

Five skulls found on the beach near Barrow Village were measured. The largest was 108 by 49 inches. The remaining four were considerably smaller, their lengths ranged from 62 to 65 inches, and the widths from 30 to 33 inches.

The dates on which these whales were taken range from July 18 to September 13. This is essentially the average period in which the coast at Barrow is free of ice.

Movements

There are several observations of the grey whale along the coast of northern Alaska. On August 9 and 10, 1953 I observed between 50 and 100 grey whales from the beach at Wainwright. All were moving in a south-westerly direction and one or two were in sight at any time during both days. No detailed notes were taken. Hahn observed a passage of the grey whale at Wainwright on July 5, 1954. He says (*in litt.*) that a large number went by "right after the ice went out. We watched them go by all day . . . These whales were definitely on the move, also, because we watched them come from the south and disappear in the north. [They were traveling] about a half mile to a mile off of the beach, sometimes closer and sometimes farther." I observed one playing in heavy surf off Point Barrow in August, 1954. A few whales were seen passing Cape Sabine, 30 miles east of Cape Lisburne, from August 3 to 5, 1959 heading southwest. On the evening of August 5 a group of them were feeding off the mouth of the Pitmegea River at the Cape. This group consisted of at least three calves with their mothers, and four to six other adults. They were dispersed along the coast for one mile east of the mouth of the river and were gone the following day.

From these data, as well as from information obtained from Eskimos, the following outline of the occurrence of the grey whale along the north coast of Alaska is suggested (see map). A brief description of ice conditions along the coast will clarify the following discussion. In the winter the Arctic Ocean is almost completely covered with ice, which extends over the northern one-third of the Bering Sea south to latitude 60° N. However, there is usually a break or lead between the pack ice and shore-fast ice which runs parallel to the coast and at Wainwright and Barrow lies a few miles from shore. Movements of the pack ice open the lead periodically, but during the coldest months the water freezes over within hours, so that there is little open water except that which is exposed briefly by the constantly shifting masses of ice. When the weather moderates in the spring,

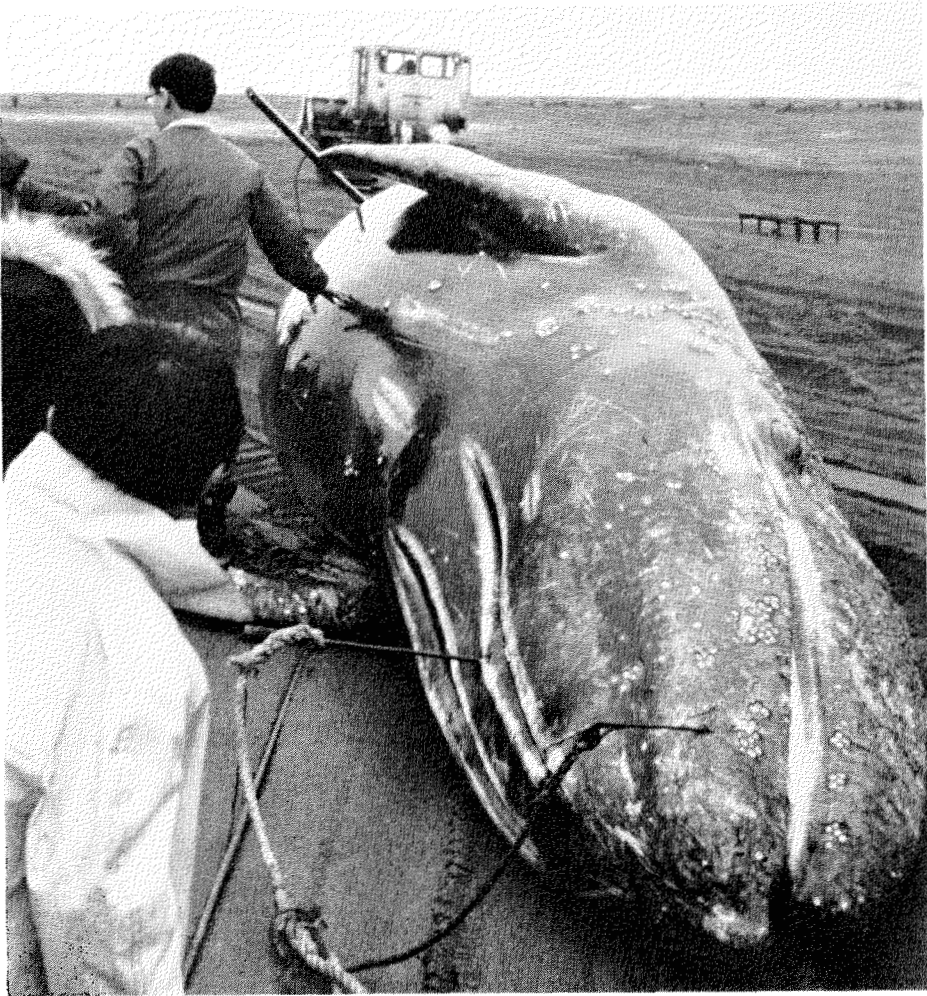


Photo: Stephen Nathanson

Fig. 2. Young California grey whale killed near Barrow Village, September 11, 1958.

the water no longer freezes quickly, and the current that sweeps along this coast from the Bering Strait becomes stronger; "like a river" according to the Eskimos. These two factors keep the lead open more or less continuously. At the same time the southern limit of the pack ice is retreating to the north. By late June and early July there is open water in the southern part of the Chukchi Sea just north of Bering Strait. This extends northeast along the Alaskan coast to Icy Cape, from where the narrow lead continues along the shore to Barrow and beyond to the east. The grey whales probably enter the Arctic Ocean in the middle of June. Nikulin (1946) reports that they appear at this time in Bering Strait. The bowheads (*Balaena mysticetus*) have already migrated along the lead and reached Barrow in mid-April. The grey whales move along the same route and reach Wainwright and Barrow in the later part of June and early July. By this time the shorefast ice is rotten and the Eskimos have ended their spring whaling. In late July, August, and September, the Arctic Ocean is usually free of ice to latitude 70 to 73° N. The coast is then ice-free all the way to Barrow. East of Barrow a narrow coastal strip of water is usually free of ice, but in general the ice tends to remain close to this section of the coast during the entire summer.

Grey whales are seen near shore in summer by the Eskimos from Barrow west to Icy Cape, and are considered common along this part of the coast. Those seen near Barrow appear to be settled. They are scarce along the coast east of Barrow. Pete Sovalik reports seeing them at Flaxman Island, the mouth of the Shaviovik River, Foggy Island, and Beechy Point. They are also seen at Barter Island according to Vincent Nagiak.

It thus appears that the bulk of the population remains in the waters westward of Barrow feeding and moving about at random during the summer. Comparatively few disperse to the east. It is not known how far from shore the whales move; part of the population may actually stay close to the edge of the ice pack as it moves off shore. Certainly, if the bulk of them remained close inshore, sight records of them would be more frequent than they are.

Beginning in early August they are again seen moving southwest along the coast west of Barrow in what seems to be a purposeful manner. Judging by the dates of the kills given above, the dates of their departure are not well defined. Thus, some were still in the vicinity of Barrow in mid-September in 1959. There is probably considerable variation in their migration as a result of the different movements of the pack ice from year to year. According to Nikulin (1946) they remain in the waters of Bering Strait until October.

Discussion

The lack of records of the grey whale from northern Alaska is puzzling in view of the fact that they have probably always been there. The animal is known to the present natives who say that they have been taking occasional individuals on an average of one every 5 or 6 years. Whaling

ships were in these waters from the middle of the 19th century until the first decade of the 20th century. Townsend (1928) plotted the positions of bowhead whales killed by some of these whalers. He has records of whales taken all along the coast during July, August and September. In his paper Townsend has listed the number of each species of whale taken by the ships whose logbooks he examined. He records 557 grey whales in a total of 53,877 entries. Unfortunately he was not concerned with the grey whale and did not plot the localities of these catches. A check of the total catch of the ships that took grey whales show that many of them had also taken bowheads. The bowhead is the most northern of the baleen whales. The 5,114 kills plotted by Townsend were taken in the northern Okhotsk Sea, Bering Sea, and the Arctic Ocean. The fact that both species were taken on the same voyage by some ships suggests that some grey whales may have been taken in these northern waters. Most, however, were probably taken in temperate latitudes in the winter months. Scammon points out (1874, p. 31) that "in those far northern regions, the animals are rarely pursued by the whale-ship's boats: hence they rest in some degree of security." It may be, therefore, that the species was common in the Arctic Ocean but that it was largely ignored by whalers.

Only three instances of the grey whale having been taken along this coast in former years are known to me. According to the Eskimos a grey whale was killed at Cross Island in 1933, and two were taken at Wainwright by Jim Allen, the local trader in 1934.

Eskimos often hunt the grey whale with rifles rather than with the old brass shoulder and darting guns that they use in the spring whaling for the bowhead. The reason why mainly juvenile grey whales are taken seems to be that the guns used are not powerful enough to kill adult whales in most instances.

There is evidence that indicates that the grey whale does little or no feeding while migrating, or in its winter breeding grounds (Scammon 1874, Andrews 1914). Most authorities have commented on the habit of this species of remaining close to shore and of entering shallow water. All observations that indicate this, however, refer to the species on migration or in its breeding grounds. Their food habits in the summer are poorly known. Evidence that would indicate that they feed in shallow water while they are in the arctic is not conclusive. Zenkovitch (cited in MacKintosh 1946) found that they were feeding on bottom-living amphipods. Nikulin (1946) says that they often enter bays and lagoons. My own observation of a group feeding at the mouth of the Pitmegea River indicates that they feed in shoal water in some instances. However, it is uncertain if these bottom-dwelling amphipods do constitute an important item of diet. Howell and Huey (1930) examined the stomach of a grey whale taken off the coast of northern California in July, 1926 and found that it contained the shrimp *Euphausia pacifica*. Though this whale was far south of its usual summer range, the fact that it was taking krill supports Gilmore's (1958) suggestion that they feed on large plankton, especially euphausiid shrimps.

Scammon (1874) refers to the grey whale forcing its way among the floes in the Arctic Ocean and Okhotsk Sea, and he reproduced a dramatic picture (plate 5, p. 32) of a herd of them among the loose floes at the edge of the pack ice. It is possible that this animal is much more closely associated with arctic ice than has been assumed, and that it does not necessarily feed exclusively or even predominantly in shallow water.

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Gene M. Christman, staff artist of the Museum of Vertebrate Zoology, drew the map.

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