

# Distribution and catch of white whales (*Delphinapterus leucas*) at Svalbard

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The distribution and catch of white whales at Svalbard are discussed based on literature, interviews with local residents, trappers and pilots, opportunistic observations recorded in the Norwegian Polar Institute fauna-data-base, and personal observations by the authors. The total number of white whales killed in Svalbard from the 18th century to the early 1960s was considerably higher than 15 000 animals. Today white whales are protected in Norwegian waters. Most white whales seem to appear at Svalbard in the spring and to leave again when the western fjords freeze in the autumn. However it is not known whether they come from and return to the eastern Greenland Sea or the Barents Sea. The number of white whales using the Svalbard area is not known, but since they have been protected for the last 30 years the population is assumed to be secure.

Key words:

White whales, beluga, *Delphinapterus leucas*, Svalbard, catch, distribution.

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## Introduction

Since the white whale fishery at Svalbard ended in the 1960s white whales (*Delphinapterus leucas*) have, in effect, been totally protected and may only be hunted under permit in Norwegian waters (Anonymous 1939, 1978, 1983, Wiig & Gjertz 1992). Little attention has been paid to the species in Norway and little new information is available on its biology and distribution. The recent data consist mostly of opportunistic observations. In the last few years, however, the Norwegian Polar Institute (NP) has started mapping the distribution of white whales and other species in Svalbard based on data from aerial surveys and interviews with local residents.

Svalbard is largely uninhabited. Most of the human population is confined to the inner fjord areas along the west coast of Spitsbergen (Fig. 1). Large migrations of whales in the archipelago may therefore go undetected. However in three different periods there has been a significant hunt of white whales at Svalbard. Information from hunters and from recent opportunistic interviews permit some conclusions as to the migrations of white whales to Svalbard and their distribution within the archipelago.

## Materials and methods

Much of our information on white whales at Svalbard comes from interviews with local residents, trappers and pilots, opportunistic observations recorded in the NP-fauna-data-base, and our personal observations. In addition, information on biology and possible migrations was obtained from the literature.

In the summer of 1990 large parts of Svalbard were photographed from the air, mostly in colour, and 870 of these photographs which covered coastlines at a scale of 1:15 000 were scrutinised for white whales. These photographs covered the southern part of Isfjorden and Van Mijenfjorden (Fig. 1).

In 1992 NP undertook one aerial survey for walrus (*Odobenus rosmarus*) on 30 May and two aerial surveys for white whales on 31 May and 30 June. The first covered the lead from south of Nordaustlandet north-eastwards to Kvitøya, parts of the north coast of Nordaustlandet and part of Hinlopenstretet. The second survey covered the west coast of Spitsbergen from Sørkapp to Isfjorden, and the last covered Isfjorden, Van Mijenfjorden and Bellsund (Fig. 1).

From 1 to 11 September 1992 all of Svalbard's coast-

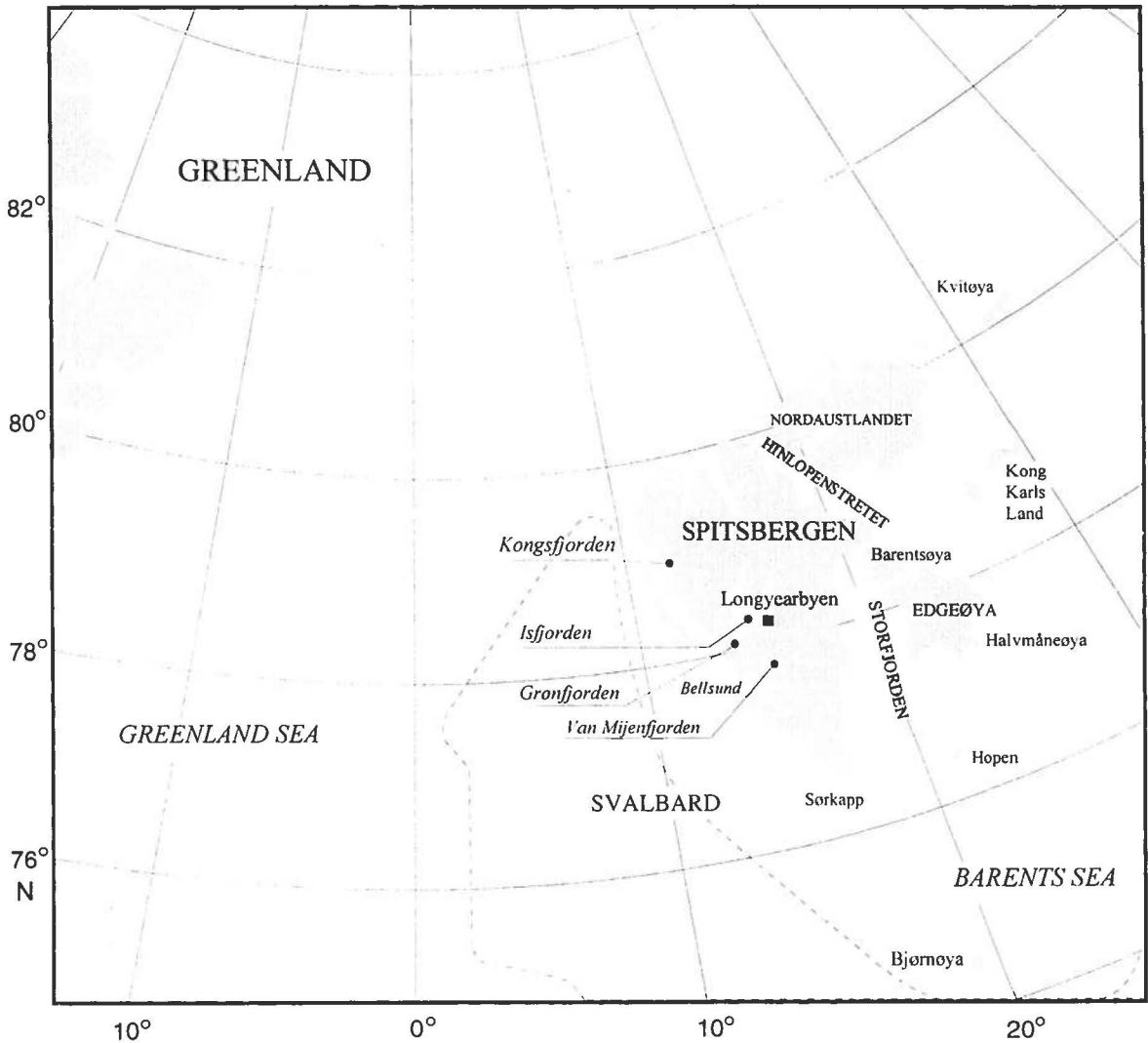


Fig. 1. Map of Svalbard with maximal extension of the drift ice indicated (from Vinje 1985).

line, except Bjørnøya and Hopen, was covered at least once as part of a 30-hour aerial survey. This survey was primarily designed for walrus but had white whales as secondary targets. Large parts of the northern and south-eastern coasts were covered two or three times.

## Results

The first episode of white whale hunting at Svalbard was by the Russians in the 18th and early 19th centuries. Little is known about numbers taken, but we do know the sites of the Russian combined trapping and whaling stations. These stations were primarily situated in the fjords of the west coast of Spitsbergen (Storå 1987). The best

known of the Russian catches was taken in 1818 at Sørkapp, the southernmost point of Spitsbergen, when a wintering crew supposedly caught 1200 white whales (Isachsen 1916–1919).

The Norwegian white whale hunt at Svalbard started in 1866. The most important hunting areas were the fjords along the west coast of Spitsbergen and Hinlopenstretet (Ingebrigtsen, cited by Hjort 1902). During the first four years a total of somewhat more than 800 animals was caught, while in 1870 alone about twice this number was caught (Wollebæk 1901). Norwegian catches for the years from 1871 to 1940 amount to approximately 9000 whales (Anonymous 1882–1921, Wollebæk 1901, Lønø & Øynes 1961). Thus a total minimum catch of about 11 400 white whales was recorded from 1866 to 1940, although it must be noted that a few of these were actually



Fig. 2. Netting of white whales at Svalbard in 1958. In addition to the methods of killing mentioned in the text, the whales were sometimes also killed instantaneously by the pressure emitted from underwater explosions of dynamite (cf. Lønø & Øynes 1961). Photo: O. Lønø.

taken in the White Sea and at Novaya Zemlya. The main method of catching was to trap part of a herd in a seine and then to kill individual animals and drag them ashore. Another common method was to shoot the whales in shallow water and harpoon them by hand. A significant number of killed whales must have been lost.

The final whaling episode lasted from 1945 to 1960 and is well documented by Lønø & Øynes (1961). In this period 3281 white whales were caught in Svalbard, while only 1290 were recorded in the official statistics. Lønø & Øynes (1961) indicated that most of the whales were killed along the west coast of Spitsbergen and relatively few were taken in Hinlopenstretet and Storfjorden.

Several large herds of migrating white whales have been observed in Svalbard. In September of one of the years between 1910 and 1920 the trapper Hilmar Nøis observed a herd of whales at Grønfjorden that he claimed was 32 km long; it must have consisted of thousands of whales (Berset 1953). On 27 September 1947 a herd of at least 1000 whales was observed swimming southwards at Halvmåneøya (Lønø & Øynes 1961). The largest migrating spring herd ever reported was observed in Kongsfjorden on 15 May 1952, when an estimated 10 000–12 000 whales were said to have been seen feeding on polar cod (*Boreogadus saida*) (Wahl 1978). However Lønø & Øynes (1961) suggested that this number may have been rather overestimated. A small part of the herd, 402 animals, was caught. Of these 399 were adult males and three were females. During the following two weeks

another 367 males were caught in the same area. On 27 May 1959 a herd of about 800 whales was seen at Grønfjorden (Lønø & Øynes 1961)

Two herds of four and 123 whales were detected on the photographs from Isfjorden taken in summer 1990. On the first aerial survey, 31 May 1992, no white whales were seen in the northern and eastern areas of Svalbard. On the second survey, 30 June, two herds were seen in Isfjorden. One contained at least 35 animals, five of which were calves, while the other was probably an all-male herd of 42 whales. On the surveys of 1–11 September only one white whale was seen off the north-east coast of Edgeøya on 1 September.

## Discussion

According to whalers and early naturalists white whales were common along the coasts of Svalbard and were frequently found in shallow waters in the inner fjord areas at the mouths of glacial rivers (Malmgren 1863, Küken-thal 1900, Nathorst 1900, Collett 1911–12) and at glacier fronts where they fed on polar cod (Kolthoff 1903, Grieg 1921). According to Ingebrigtsen (cited by Hjort 1902) the distribution of white whales varied according to the prevailing weather and ice conditions. In northeasterly winds they were found in Storfjorden and in southerly winds in Bellsund. In periods with heavy ice along the

northern coasts they aggregated in the ice-free fjords along the northwest corner of Spitsbergen. Even though white whales were mainly expected to be found in near-shore waters, they were also observed in the pack ice in the Greenland Sea (Wells 1876, Kolthoff 1903).

White whales were believed to arrive at Svalbard in large herds in April or May (Hjort 1902, Collett 1911–12). Some of these were mixed herds while others consisted only of adult males (Lønø & Øynes 1961). Some of these herds frequented the fjord areas but most continued migrating eastwards (Collett 1911–12). When all fjords and coastal waters of Svalbard froze and became filled with ice, the white whales were forced to move out of the area and were believed to migrate southwestwards to southern Greenland and eastern Canada (Hjort 1902, Collett 1911–12). The finding of American rifle bullets in many of the white whales killed in Svalbard were taken as proof of this (Ingebrigtsen, cited by Hjort 1902).

Lønø & Øynes (1961), however, believed that white whales from Svalbard migrated eastwards into the Barents Sea. They considered the observations of these whales by Norwegian sealers along the Barents Sea pack-ice edge from early April onwards to indicate such a migration. In extreme ice years when the pack-ice edge in the Barents Sea moved far south, as it did in 1902/03 when the ice limit was in a straight line from Spitsbergen to the Kola Peninsula, large groups of white whales occurred along the Norwegian coast and many hundreds were caught there in January (Collett 1911–12, Lønø & Øynes 1961).

During recent years white whales have first been seen in April–May, mainly in nearshore areas and in fjords along the west coast of Spitsbergen and in Storfjorden. They have been less numerous along the northern coasts (Svein Rundtom Luftransport, Longyearbyen, pers. comm.).

Observations of white whales recorded in the NP-fauna-data-base, noted from occasional interviews with trappers or made directly by the authors, are consistent with the information reported by white whale hunters. White whales have been most often observed in shallow waters near the mouths of rivers or at glacier fronts. Many of the major rivers in Svalbard are in the fjords of western Spitsbergen, especially in Isfjorden and Van Mijenfjorden. It is in these same areas that white whales are most frequently sighted. Any conclusion from these observations may, however, be somewhat biased as these fjords are where Svalbard's inhabitants live. This is especially true in the case of Longyearbyen. In summer large numbers of white whales can regularly be seen at the mouth of the Adventelva, the river just outside town.

If the theory that white whales arrived at Svalbard from the west is correct, then the herds would probably have followed the ice edge across the Greenland Sea in April or May. If so, they would have arrived at the northwest corner of Spitsbergen and split, with some herds moving southwards and others eastwards along the northern coasts. If unable to continue along the northern coasts

because of heavy ice, the herds might have continued southwards. This could explain the occasionally very large herds observed along the northwest coast of Spitsbergen in May. Present knowledge does not, however, allow any conclusions as to the migratory routes of white whales to and from Svalbard. DNA studies and satellite telemetry could shed light on this subject.

Some white whales may winter in Svalbard. One of the crew at Isfjord Radio, situated at the mouth of Isfjorden, has observed white whales in winter, when there has been open water (Gustav Halsvik, Longyearbyen, pers. comm.). This information is supported by trappers from the north coast of Spitsbergen who have heard whales blowing in the pack ice. However in total winter darkness the animals could not be seen and might have been other species (Hans Bjelke pers. comm.).

Nearly 15 000 whales have been registered as killed in one century of Norwegian white whale hunting. This number must be considered a minimum since the official statistics are not very accurate. According to Iversen (1930) the numbers given for the Russian catch in the 18th and 19th centuries may well be too high, since white whale hides usually were split in two. It is therefore probable that the actual catch quoted by Isachsen (1916–1919) was 600 whales, with 1200 half-hides being recorded. If the pre-1940 statistics are as inaccurate as those after 1945 (Lønø & Øynes 1961) then the number of white whales actually killed in Svalbard is significantly greater than 15 000 animals.

At the turn of the last century catches of white whales were insignificant compared to those of the 1870s (Wollebæk 1901, Collett 1911–12). According to Ingebrigtsen (cited by Hjort 1902) the numbers of white whales in Svalbard had been dramatically reduced due to hunting. He believed that in 1891 there were not more than 400–500 whales left in Svalbard. These whales were believed to be site tenacious and to visit the same areas every year.

It is not possible to reach any conclusions about population size based on the data presently available. However since white whales have been protected during the last 30 years in Norwegian waters, the population at Svalbard is assumed to be secure. Further research on white whales in Norwegian waters is needed.

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