Strandings of male sperm whales
Physyter macrocephalus Linnaeus, 1758
in Western Europe between
October 1994 and January 1995


Between October 1994 and January 1995 a total of 21 male sperm whales Physyter macrocephalus stranded on North Sea shores. Both individual and mass strandings took place. This article briefly reports data on these strandings. The social groups to which the whales belonged and the possible causes of the strandings are shortly discussed.


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INTRODUCTION
During the 1994-1995 autumn/winter season 21 strandings of male sperm whales Physyter macrocephalus Linnaeus, 1758 were reported from the coasts of the North Sea. This article briefly reports data on these strandings.

STRANDING IN 1994-1995
Table 1 summarizes the strandings, which are also indicated on Fig. 1.
The first stranding involved a sperm whale on the beach near Whitby, Yorkshire (England), in October 1994. We have no specified date for this beaching. A freshly dead male sperm whale was found between the Dutch islands of Terschelling and Ameland on 3 November 1994 (Kompane & Van Duijn 1994; Smeenk & Van Gompel 1994). This specimen was dissected during the following week. The skeleton was collected for the Fries Natuurmuseum, Leeuwarden (the Netherlands). On the same day, a male sperm whale stranded alive on the German island of Baltrum. The two localities are some 125 km apart in the row of islands fringing the Wadden Sea.
The first mass stranding took place when three living male sperm whales were found on the beach at Koksijde (Coxyde), Belgium, on 18 November 1994. Partial autopsies were executed on 21 November. On 19 November a dead male sperm whale was found floating in the coastal waters near Nieuwpoort, Belgium (some 8 km NE of Koksijde); it was subsequently towed ashore. The rostral (toothbearing) parts of the lower jaws were collected for the Institut Royal des Sciences Naturelles de Belgique, Brussels. The remainders of these four whales
were destroyed (Anonymous 1994). The second, and largest, mass stranding took place in the afternoon of the 7 December 1994. Eleven male sperm whales stranded at Backaskaill, on the south coast of the island of Sanday, one of the Orkney Islands, Scotland. All eleven whales were buried on the beach four days later. No detailed autopsies have been carried out. One of
mass strandings took place on the North Sea coasts, followed by New Zealand, Tasmania, the Gulf of California, Florida, the Bay of Biscay, Brazil, the Falkland Islands, Tierra del Fuego, Oregon, Australia and the Seychelles (Boschma 1938, Bryant 1979, Castello & Pinero 1974, Van Deine 1918, Gaskin 1968, Gilmore 1959, Robson & Van Bree 1971, Sergeant 1982, Simões-Lopes & Ximenez 1993, Smeenk & Addink 1993, Stephenson 1975). Most of these involved breeding schools (males, females and juveniles). Others, in particular the North Sea strandings, concern male bachelor schools. Strandings of single animals, whether dead or alive, including newborn animals, are commonly reported.

As for the reasons of strandings, Robson & Van Bree (1971) mentioned violent electric storms and/or very sudden meteorological changes to have influence on the sonar system. This would result in panic, after which the animals strand in mass due to the strong social cohesion. Klinowska (1988) believes that mass strandings of living whales are due to disturbances in the geomagnetic field. Rice (1989) noted that 'navigational error' in addition to the strong social cohesion could be the most probable cause of mass strandings. Geraci (1978) summarized possible causes. The North Sea, when entered from the North, acts as a trap, seemingly without an escape. It is a shallow sea with many sand banks that could influence the sonar system of the entrapped sperm whales. In the days before the stranding on the Dutch coast of three animals on 12 January 1995, a strong northwesterly storm took place.

Table 1 gives the lengths of the animals. There is some confusion about the specimen from Nieuwpoort (no. 7). Its length was given as 1820 cm in a Belgian report (Anonymous 1994), while Smeenk & Van Gompel (1994) mentioned all Belgian animals to be between 13.8 and 14.8 m long. Male sperm whales attain puberty at an age of 7-11 years. They then have a length between 870 and 1030 cm. Full sexual maturity is attained at an age of about 18-21 years. The whales then have a length of about 1100 to 1200 cm. At an age of 35-60 years male sperm whales, with an average length of 1520 to 1610 cm, have reached physi-
Figure 2 The three sperm whales that were beached on 12 January 1995 between Kijkduin and Scheveningen (just south of The Hague), the Netherlands. [Photo: AEROPHOTO-SCHIPHOL BV.]
cal maturity (Rice 1989). According to Gambell (1995), the male sperm whale is not physically mature before the age of 45 years. The maximum age to be reached is about 60 years.

Sperm whales aggregate in two types of social groups: breeding schools and bachelor schools. Breeding schools consist of females of all ages and immature and young adolescent males. Sexually mature males join these schools only during the mating season. Adolescent males leave the schools between the ages of 15 and 21 years, prior to attaining sexual maturity at a body length of about 1100 to 1200 cm (Rice 1989). They join bachelor schools, which consist entirely of older adolescent males and sexually mature males. Such a group may count up to 50 animals, and most of its members tend to be similar in size and age. Social bonds are not as strong as in the breeding schools, animals split and re-unite easily. In the North Atlantic only male whales are found. No more than three strandings of female sperm whales are known above 48° North (Boschma 1938). All other observations concern male animals. In the North Sea sperm whales appear only accidentally. Sometimes an entire bachelor school is trapped in the North Sea. Almost always they will strand, like the bachelor school(s) described in this article.

Finally, it would be interesting to know whether the strandings of the 1994-1995 season could be considered to be one single mass stranding of animals belonging to one single bachelor school. This would then be a school that was entrapped in the North Sea basin during the autumn season, with subsequent strandings of individuals or smaller groups. So far, however, we do not know of sightings of sperm whales between October 1994 and January 1995. Such sightings did occur in 1993 (Smeenk & Addink 1993). The animals that got beached on Sunday, Orkney, had lengths (see Table 1) between 1229 and 1339 cm; all others measured between 1440 and 1580 cm. This could indicate the presence of two bachelor schools, one consisting of adolescents, the other one consisting of older, almost physically mature, males.

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