Review of sperm whale (*Physeter macrocephalus*) strandings around the North Sea

Chris Smeenk[1] and Peter G.H. Evans[2,3] *

[1] Roodborststraat 16, 2333 VP Leiden, the Netherlands, e-mail: smeenk.enserink@casema.nl
[2] Sea Watch Foundation, Ewyn y Don, Bull Bay, Amlwch, Anglesey, LL68 9SD, UK
[3] School of Ocean Sciences, University of Bangor, Menai Bridge, Anglesey LL59 5AB, UK,
e-mail: peter.evans@bangor.ac.uk

Abstract: Young adult male sperm whales (*Physeter macrocephalus*) undergo extensive nomadic movements to high latitudes. Although an oceanic species favouring deep waters, on occasions they enter the North Sea from the eastern North Atlantic. In the central and southern sectors they invariably strand on the shores of northern Europe. Although recorded in the region in all months of the year, most strandings occur between November and March. Records of sperm whale strandings along North Sea coasts from the thirteenth century to the present are documented with details of date, location, numbers of individuals and their lengths where known, and a list of published sources. Although historical estimates of lengths are likely to have been inaccurate, there is some evidence that the larger (16 m or greater), more mature, individuals recorded in earlier times have become scarce in the region since the mid 1980s.

Keywords: sperm whale, *Physeter macrocephalus*, strandings, North Sea, historical time series, ecology, migration, cetaceans.

Introduction: the occurrence of sperm whales in the North Sea

The sperm whale (*Physeter macrocephalus* L., 1758) is an oceanic species with a worldwide distribution. Many animals undertake large-scale seasonal migrations. Groups of females and young stay in warm or warm-temperate waters, in the Northeast Atlantic generally below 45° N. Young-adult males of about 14-21 years old form "bachelor" groups which migrate to higher latitudes. In summer the animals reach cold-temperate regions, as far north as Iceland and the northern Norwegian Sea. Old males, in particular, roam over great distances and may even penetrate into the Arctic Ocean (Øien 1990, Christensen et al. 1992). The seasonal movements of males are not well understood and appear rather nomadic (Mesnick 2014). Many animals seem to return to warmer areas in autumn or the beginning of winter, whereas others may stay in colder waters for long periods of time (Whitehead 2003). An important migration route appears to be the Faroe-Shetland Channel and Rockall Trough (Evans 1997, Hastie et al. 2003). Sperm whales normally live beyond the 200-m depth line, but often stray onto the continental shelf, thereby approaching Shetland, Orkney, mainland Scotland and Ireland (Evans 1997, Reid et al. 2003, Pierce et al. 2007, Gordon & Evans 2008).

Sperm whales feed mainly on deep-sea squid. In the Northeast Atlantic, their princi-

* Corresponding author

pal diet consists of *Gonatus fabricii*, the most abundant species in the area which, however, does not normally occur in the North Sea. The stomachs of most sperm whales stranded on the coasts of the North Sea have been found empty, but if not, they contained mainly (generally >90% in numbers and reconstructed weight) beaks of *Gonatus*, often in very large quantities, showing that shortly before stranding, the animals had been feeding in oceanic waters further north (Lick et al. 1996, Clarke 1997, Santos Vázquez 1998, Santos et al. 1999, 2002, Simon et al. 2003, Pierce et al., this volume). The sizes of the squid beaks have corresponded with those of mature specimens. The main spawning period of *Gonatus* in the Norwegian Sea is from December to April. During that time, the females, laden with eggs, form huge concentrations of very nutritious prey, easy to catch as they have lost the ability to swim actively, thus attracting many predators including sperm whales (Arkhipkin & Bjørke 1999, Bjørke 2001, Simon et al. 2003, Pierce et al. 2007). This may explain the prolonged presence of sperm whales in northern waters far into the winter or early spring, although this needs further investigation.

On their way south, sperm whales that have been feeding in Norwegian waters must migrate in a southwesterly or even westerly direction, in order to pass the continental shelf edge west of Shetland and mainland Scotland. Animals that would keep too far east are in danger of straying into the North Sea. It is not known whether this happens frequently, as there are very few sightings of sperm whales in the North Sea (Evans et al. 2003, Reid et al. 2003, Camphuysen & Peet 2006, van der Meij & Camphuysen 2006). However, if animals do enter the North Sea and continue swimming south, they will find themselves in progressively shallow waters, characterised by complicated systems of sandbanks, mudflats and tidal currents. The oceanic sperm whale appears to have great difficulty navigating in such areas. This can be deduced from the behaviour of (groups of) sperm whales approaching the coast, which swim very hesitantly, milling around and showing every sign of being disoriented. With outgoing tide, such whales become easily trapped or beached in shallow water. Due to social cohesion in a group, animals that still could escape, may stay near others already in distress, and eventually become stranded as well (Smeenk & Addink 1993, Smeenk 1997, Jensen 1998, Jensen & Tougaard 1998; and several unpublished witness accounts). Finally, sperm whales that have been roaming through the North Sea for some time without food will eventually become weakened and stressed and, if they do not find a way out in time, will be fatally lost. Carcasses of animals that have died at sea often become washed up onto the shore. In view of its oceanographic character and its position at the edge of a traditional feeding area and migration route, the North Sea has been characterized as a natural "sperm whale trap" (Smeenk 1997, Jauniaux et al. 1998). This explains why most mass strandings of sperm whales occur in the southern part of the North Sea, on the sandy coasts of the German Bight and of the Netherlands, Belgium and Southeast England. Judging from the rarity of sperm whales in The Channel, only very few animals seem to escape that way. An analysis of the Sea Watch Foundation sightings database for the North Sea and environs (UK EEZ extending north to include Shetland and Orkney) compared with strandings, gave strandings to sightings ratios of 0.12 between 57°N and 63°N, 0.19 between 54°N and 57°N, and 4.50 between 51°N and 54°N, emphasising the fact that in waters averaging less than 50 metres depth south of 54°N, the probability of animals stranding is very high (Evans 2016).

Sperm whale strandings in the North Sea have always aroused excitement, of public and scientists alike, and have been documented since the 16th century. Looking at the historic data, it appears that strandings are not evenly distributed in time, even if one takes into account that in previous centuries many cases

must have gone unnoticed due to a far lower human population, inaccessibility of remote beaches, and the absence of modern means of communication and media. There are periods in which hardly any sperm whales were reported, against years with great numbers of strandings. The most recent period showing peak numbers started in the 1990s, and has led to an increased interest in the phenomenon of sperm whale strandings, and to some wild speculations about the causes of such events; see, e.g., Sonntag & Lütkebohle (1998) and Wright (2005).

Analyses of sperm whale strandings and sightings in and off the British Isles during the 20th century are given by Berrow et al. (1993) and Evans (1997); for the Northeast Atlantic, a review was attempted by Camphuysen (1996) which, however, is very incomplete. These authors found an increase in strandings during the 20th century, particularly since the 1980s. Smeenk (1997, 1999) gave an overview of documented strandings in the North Sea since the 16th century and showed that periods with great numbers of strandings had occurred before, with the peak in the early 1760s being particularly obvious. Based upon those data, Vanselow & Ricklefs (2005), Vanselow et al. (2009) and Pierce et al. (2007) have tried to explain trends (see also Vanselow et al. (2017) in relation to the most recent mass stranding in January / February 2016). Vanselow and his colleagues have reported positive correlations between sperm whale strandings and solar activity. They noticed an increase in winter strandings during periods of shorter sunspot cycles, and suggested that changes in the earth's magnetic field caused by increased solar activity might disturb navigation in sperm whales. Pierce et al. rather sought an explanation in climatic factors, as they found an association between high numbers of strandings and periods of higher temperatures, which they supposed could have influenced the distribution and abundance of spawning squid in the Northeast Atlantic.

Since publication of these reviews and analyses of sperm whale strandings in the North Sea, several additional cases have been discovered and many incomplete or erroneous data could be completed or corrected. In view of the continuing interest in the subject, it is important that the underlying data are as complete and exact as possible. Therefore, a revised documentation of strandings appears useful; this is presented here. For every record, the earliest published sources have been retrieved, although it has not been feasible to try and trace the countless local archives, annals, chronicles and newspapers in the various contries; that would have taken a lifetime or more. Hence, many published records are necessarily second-hand, but all publications, scientific and popular alike, have been consulted and scrutinised for possible errors. All sources are given in the references.

Preliminary remarks

Area covered

An attempt has been made to bring together all documented strandings of sperm whales which have stranded around the North Sea. The area covered includes the east coast of the Scottish mainland south of Duncansby Head and the east coast of England north of Dover, the coast of France north of Cap Gris Nez, the shores of Belgium, the Netherlands, Germany, Denmark, Sweden, and of Norway south of Boknafjorden; as well as the Baltic Sea. Of course, these boundaries are somewhat artificial, but one has to draw the line somewhere. The sperm whale forms part of the regular fauna of the Atlantic Ocean west of Shetland and Orkney. Strandings (and sightings) in and around those islands are quite common and are not considered here.

Strandings

Defining a sperm whale stranding seems simple enough, but is not always easy. There are records of sperm whales which seemed very close to a stranding and appeared trapped

between sandbanks or islands at low tide, sometimes for days, but escaped at the last moment ("near-strandings"); see, e.g., the five sperm whales off the Dutch island of Ameland in April 1993, reported by Camphuysen & Reijnders (1993) and Smeenk & Addink (1993). Other animals that seemed to have stranded, got free again with the rising tide without human aid as, e.g., the sperm whale off the Belgian coast in December 1991, reported by Vandewalle (1992). Such events are regarded as sightings and have not been counted here, although this is, of course, somewhat arbitrary.

In old records, the number of sperm whales stranded on one occasion is not always documented exactly and sometimes there are discrepancies between sources, so one has to judge which report seems most reliable. Apart from this, it may be difficult or impossible to decide whether an event concerns the stranding of a single animal, a multiple or group-stranding, or forms part of a series of strandings which are in some way connected.

Associations between males may be loose, with the animals swimming far apart but likely staying in acoustic contact. On other occasions, they may form tight groups; and if one or more members of such a group are in distress, social cohesion or panic may prevent the others from turning back in time, resulting in a true multiple stranding. The earliest account of such an event where some animals became stranded and others escaped, is from November 1577 on the Dutch coast. The most recent and spectacular mass strandings were those on the Danish island of Rømø in 1996 and 1997. Also, groups that are connected in some way may gradually fall apart and become widely scattered, with some animals stranded whereas others seem to escape, maybe to become stranded later, in different places and on different days; see the confusing situation in the southern North Sea in January/February 1762 and, recently, in January/February 2016.

Finally, sperm whales may die at sea, and the body may float about for some time before it is washed up onto the shore. Sometimes a beached carcass may come afloat again with the tide to be washed up somewhere else, the most baffling example being the sperm whale that was found in The Wash at the end of January 2004, drifted away around 15 February, and was found again on 26 February on the Belgian coast. The animal was recognisable beyond doubt, as in England its lower jaw had been sawn off. Other carcasses may disintegrate and sink; skeletal parts washed up or fished up in nets have not been considered here. A few cases are included where a carcass was found floating close to the shore and towed inland by a ship such as, e.g., the sperm whale found off Seaton Snook in the Tees Estuary in November 1766, over which there has been considerable confusion, due to a falsified document.

Many reports describe the fate of sperm whales that were stranded alive and died after a considerable time or, in the past, were slaughtered by people who saw a ready profit. But in many cases, it cannot be concluded with certainty whether an animal became live-stranded or was already dead when coming ashore. Animals stranded during the night may be found the following morning; in remote places, then may even be discovered one or more days after the event. A carcass moving in the surf is sometimes reported as still being alive. Therefore, no distinction has been made between strandings of live and dead animals here until the most recent cases.

For our knowledge of the occurrence of sperm whales in the North Sea, sightings of live animals are an additional source (Evans 1997). Such observations are fairly rare in this area, although they have increased during the last few decades, with the increasing observer effort at sea and from coastal sites. In some cases, sightings have been associated with strandings in the same period, but generally, the fate of the animals seen remains unknown (Smeenk 1997, Camphuysen & Peet 2006, van der Meij & Camphuysen 2006). No sightings

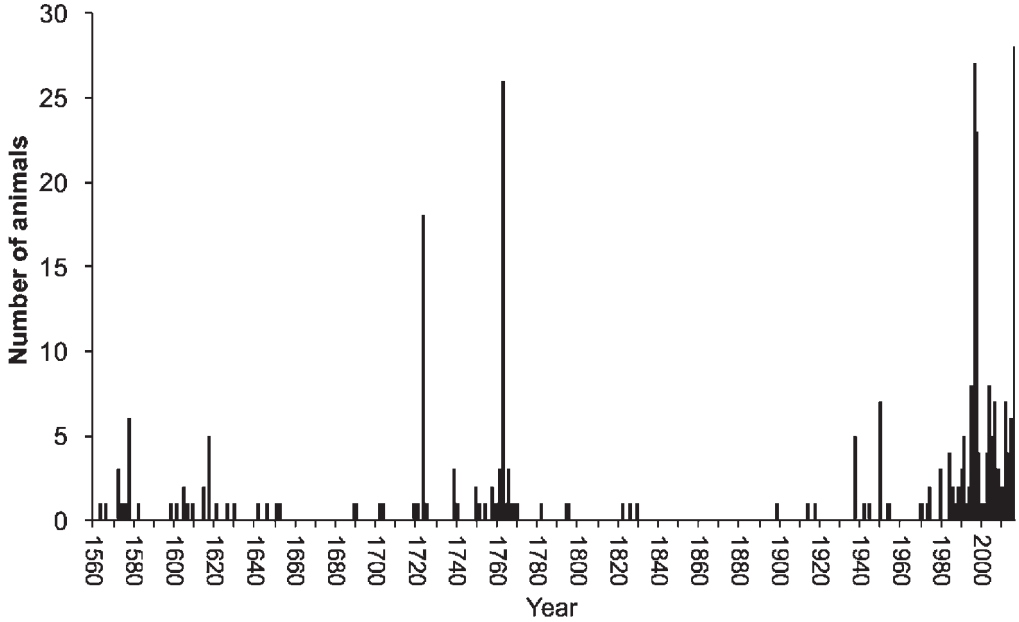

Figure 1. Occurrence of sperm whale stranding events reported in the North Sea from the 1500s to 2016.

records are included here; escaping sperm whales which were seen in the company of others that became stranded are mentioned, but it cannot always be established how many there were.

In the following, events that could be regarded as multiple or group-strandings, with or without escapes, are given in bold type. Events that may have been related (serial strandings) are indicated as such in the text, also in bold. The most obvious years in which such events occurred are the winters of 1761/62, 1994/95 and 2016 (see also figure 1).

Identification

In the past, many whales and larger dolphins have been recorded as "sperm whale" or its equivalent in other languages, or were regarded as such by later authors as, e.g., van Deinse (1918, 1931), Sliggers & Wertheim (1992) and Camphuysen (1996). However, many of such cases are insufficiently documented, and identification is often based on very inadequate descriptions to say the least. All those records, as well as other incomplete reports from past centuries, have been carefully re-considered. Many identifications turned out to be doubtful assumptions only, or proved obviously wrong: a striking example being the "sperm whale" stranded on the English coast in 1532, which was clearly described by Gesner (1558) as a large baleen whale (see below).

The name "sperm whale" often was (and sometimes still is) misapplied to other species, particularly bottlenose whales *Hyperoodon rostratus* (Forster 1770) and pilot whales *Globicephala melas* (Traill 1809). A clear example of this is the account by T. Browne (quoted by Southwell 1881) of sperm whale strandings in Norfolk in 1626 and 1646, in which it says: "and not far off, eight or nine came ashore, and two had young ones after they were forsaken by the water"; these can only have been pilot whales. Sibbald (1692: cited from the 1773 edition) too, when describing a mass stranding of pilot whales in Orkney which had been communicated to him by others, mixed up the characters of sperm and pilot whales. [This was not recognised by Linnæus (1758) who

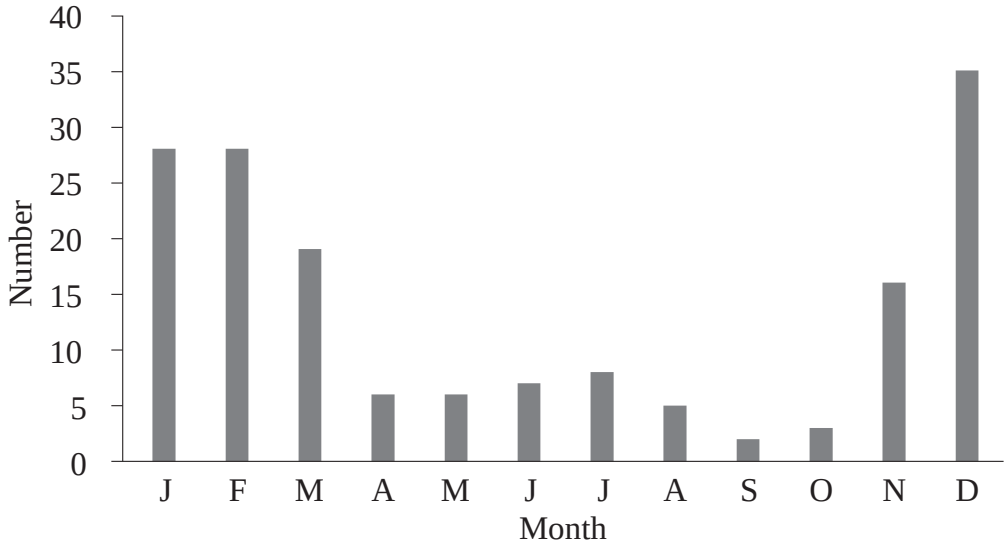

Figure 2. Seasonal distribution of sperm whale strandings in the North Sea.

had no first-hand knowledge of these species, when he described *Physeter Catodon* based on Sibbald's composite description. This has been demonstrated and extensively discussed by Husson & Holthuis (1974), but despite their sound nomenclatural reasoning and conclusions, some authors still stubbornly use the name *Physeter catodon* L., 1758 for the sperm whale.

In the following, identification as a sperm whale is accepted only where there is an unmistakable description or drawing, or where the presence of teeth (in combination with length) or of spermaceti (with its equivalent terms in other languages) is recorded. Some doubtful or insufficiently documented cases have provisionally been included nonetheless; these are given in italics.

Date

The exact date of a stranding cannot always be traced; for many cases only the month is known, or not even that. Many old records are incomplete, inaccurate or even contradictory. Sometimes a carcass had already been reported floating off the coast before being washed ashore (or was towed ashore, see above). Strandings often occur during the night and are discovered the following day; animals stranded in remote places are often found one or more days after the stranding. In general, the earliest date mentioned is given here. In a few cases a discrepancy in dates affects the recorded month of stranding, in one instance even the year (Germany, 1720/1721). Inaccuracies in reporting have sometimes led to double-counts in the literature; where possible, these have been corrected. Years with a notoriously "chaotic" documentation were 1617 and particularly 1762, with strandings later misdated 1788 or double-counted for both years.

A particular problem in dating historical strandings is the change from the Julian to the Gregorian calendar which is used today. The Gregorian calendar was not adopted simultaneously throughout Europe, but various countries, or even regions within a country, changed dates in different years, varying from 1582 to 1753. Generally, the correction meant a loss of 11 days, which means that 1 January on the Julian calendar became 12 January in the Gregorian reckoning, and 25 December Julian became 5 January in the following year.

[Note that corrections have been made here for the Netherlands, but not for other countries.]

Although strandings in the North Sea have occurred in every month of the year, there is a strong peak between November and March (figure 2). Sperm whale males in the Norrth Atlantic are known to spend the summer at high latitudes, particularly around Iceland and northern Norway, but also north and west of the British Isles (Evans 1997). Some clearly remain in the North Atlantic into the winter months, when stranding is most likely to occur.

Place

Most places of stranding are well-documented, but for some old records only the general area is known, and the exact site cannot be established. In one case, a sandbank could not be located: "Blyth Sand" mentioned for 30 January 1762 has been assumed by some to be near Blyth in Northumberland, whereas the context makes it obvious that the animal, which was towed to London, was stranded somewhere in the Thames Estuary, and another record of the same animal gives Hope Point as the locality. Sperm whales stranded in between two villages are sometimes recorded for either, and occasionally not the site itself, but a larger town further inland is given. Such facts are easy to reconstruct. Later authors have sometimes mixed up places (and dates), but such problems could be solved by going back to the oldest records. In the following, the most accurate site of stranding that could be traced, is given. Re-strandings are recorded for the original site.

In a few cases, later authors confounded places. The alleged sperm whale (baleen whale) of 1532 mentioned above was described by Gesner from Tynemouth in North England, but in later publications this was misinterpreted as Teignmouth in Devon. The sperm whale stranded in 1575 has been reported for Tondern in Germany as well as for Tønder in Denmark, so has previously been counted separately for both countries. At the time of stranding, that town (which is no longer on the sea) belonged to Schleswig-Holstein, so was mentioned by its German name. The most hilarious confusion again concerns some strandings in January / February 1762: two of the sperm whales stranded in The Wash were found in the district of Holland in Lincolnshire. Needless to say, some later authors interpreted this as the Netherlands, so these animals became double-counted for both sides of the North Sea.

Apart from the above cases, assigning the country of stranding poses no problem. In all cases, the present political borders are observed, ignoring the many changes that have occurred during past centuries, as there are the border shifts between Denmark and Schleswig-Holstein mentioned above, and the separation of Belgium from the Netherlands in 1830. In view of the length of the British coastline, Scotland and England are specified separately.

Gender

Sperm whales exhibit the greatest sexual dimorphism of all cetaceans; females rarely exceed 12 m in length, adult males may reach over 18 m. All sperm whales in the North Sea described or figured with any accuracy have been males, which agrees with their known migration pattern. There are some early records of males and females stranded together, but these either turned out to concern pilot whales (see above), or lacked a comparative description, such as the absence as opposed to the presence of a penis, which is unmistakable in stranded sperm whales, or the relatively smaller head of females. Animals estimated to be of smaller size which were seen to escape from a mass stranding, were sometimes assumed to be females. Strangely, the sperm whale stranded on 2 December 1993 near Heacham is reported as a female by the Natural History Museum, London (unpublished data) without comment, although its length is given as 14.5 m, which is far too large for a female. A note on the

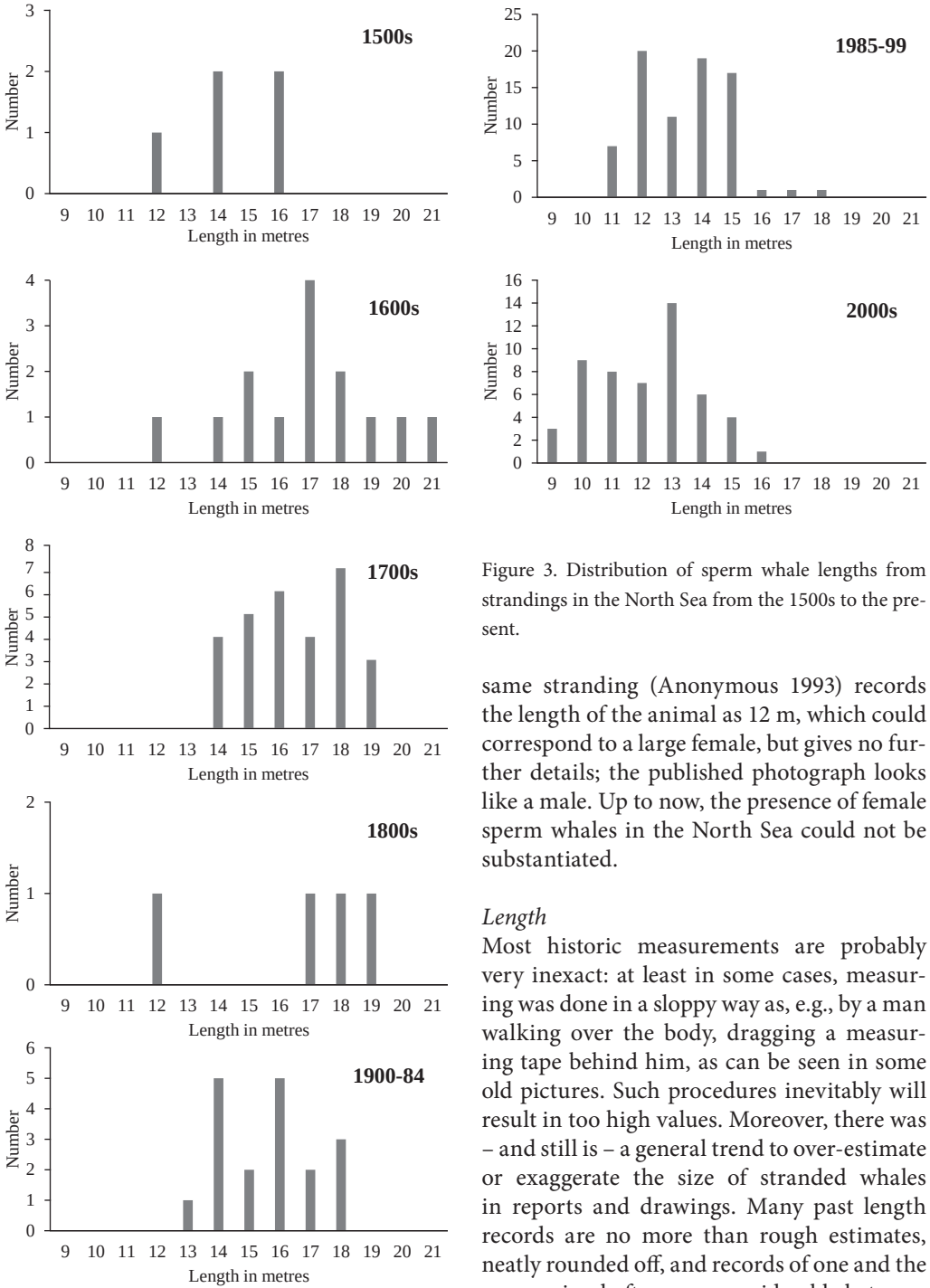

Figure 3. Distribution of sperm whale lengths from strandings in the North Sea from the 1500s to the present.

same stranding (Anonymous 1993) records the length of the animal as 12 m, which could correspond to a large female, but gives no further details; the published photograph looks like a male. Up to now, the presence of female sperm whales in the North Sea could not be substantiated.

Length

Most historic measurements are probably very inexact: at least in some cases, measuring was done in a sloppy way as, e.g., by a man walking over the body, dragging a measuring tape behind him, as can be seen in some old pictures. Such procedures inevitably will result in too high values. Moreover, there was – and still is – a general trend to over-estimate or exaggerate the size of stranded whales in reports and drawings. Many past length records are no more than rough estimates, neatly rounded off, and records of one and the same animal often vary considerably between sources, with some carcasses seeming to grow with time. Finally, in the past there was no

standard unit of length, every area or city used its own ells, feet, inches and equivalents in other languages, and in some places different units were in use simultaneously. No attempt has been made to convert the published values into metres, as this might suggest an accuracy that is unrealistic.

In the following, for every animal that has been estimated or measured in some way, the length is given as it appears in the original record; unlikely figures are given in "quotation marks". However, if lengths have been expressed in more than one set of units, both have been given. This applies to some of the most recent records and it is assumed that the metric system will have been more accurate than feet as often expressed in UK press reports. Even records in recent (press) reports may show a great variation in length (see above).

Bearing in mind the above provisos, nevertheless, plots of the distribution of measurements where given to the nearest metre / foot, show similar average values from the 1500s through to the late 1980s: 15.47m (1500s), 17.43m (1600s), 17.07m (1700s), 17.22m (1800s), and 16.05m (1900-84) (see figure 3). Since the moratorium on whaling came into force in 1985, sperm whale lengths of strandings in the North Sea have been much lower, averaging 13.88m between 1985-99 and 12.58m between 2000-16 (figure 3). This may reflect a change in the age structure on the breeding grounds with more young animals moving away to higher latitudes. The most intense period of whaling for sperm whales in the North Atlantic (Azores, Madeira, Iceland) was from the late 1940s to the end of the 1970s (Martin 1980, Brito 2008). Over this period, male sperm whale lengths from catches also declined, with a marked reduction in the occurrence of large individuals (Martin 1980, 1981, Avilo de Melo & Martin 1985). Thus, despite the difficulty in interpreting early measurements from North Sea strandings, it would appear that, in recent years, there have been few large males in the North Sea compared with earlier times (and possibly more, younger, animals although in earlier centuries, these may have escaped attention).

Acknowledgements: The bulk of the research for this catalogue was undertaken by Chris Smeenk, with input from Carl Kinze (historical Danish records) and Peter Evans (historical UK records). Sadly, Chris Smeenk died before he was able to complete the work, which has been finished by Peter Evans, who would like to thank Nellie Smeenk-Enserink for all her help in this regard, and both Graham Pierce and Carl Kinze for their input.

Catalogue of documented strandings in the North Sea

Early records

1254/57 – Stavoren, the Netherlands; Enkhuizen(?), the Netherlands (2 animals).
Gesner 1558, De Haaze [1723] 1724, G. Cuvier 1825, Mulder 1836, Gervais 1855, Van Beneden & Gervais 1880, Killermann 1919, van Deinse 1933, 1946, IJsseling & Scheygrond 1943, van Laar 1963b, Taekema & Wijnandts 1991, Sliggers & Wertheim 1992, Peet 1993, Camphuysen 1996, Smeenk & Camphuysen 2016.
Note – Strandings badly documented, possibly related.

1291 *– Weichselmünde (near Gdańsk), Baltic Sea, Poland.*
Length: 29 ells or 58 ft.
Hensche 1861, Japha 1909, Kinze et al. 2011.
(Insufficiently documented, but a toothed whale of 58 ft is indicative of a sperm whale).

1402/04, 9 July (20 July) or 12 November (23 November) – Oostende, Belgium (8 animals).
Length of 1 animal: "nearly 70 ft".
Dewhurst 1832, van Deinse 1931, De Smet, 1974, 1981, 1997.
(Insufficiently documented, dates contradictory, but a multiple stranding of large whales is indicative of sperm whales).

1455, 15 April (21 April) *– Frische Nehrung (Mierzeja Wiślana), Baltic Sea, Poland/Russia. Length: "66 ft".*
Hensche 1861, Japha 1907, 1909, Schultz 1970a, b. (Insufficiently documented, but a toothed whale of large size is indicative of a sperm whale.)

16th Century

Note – *There is a considerable confusion regarding an alleged sperm whale stranding in 1532 near Tynemouth in England. Gesner (1558), citing an anonymous letter, describes a large whale which he called "Cetus britanicus", stranded near Tynemouth in August 1532. On pp. 251-252 he writes: "Apographum ex literis ad Polydorũ Vergilium, ex urbe Tynemutho in partibus Angliæ Borealibus. Proiecit in arenas apud Tynemuthũ mare hoc nostrum mense Augusto (anno Domini 1532.) mortuam beluam, molis & magnitudinis ingentissimæ… Aiunt qui primùm beluã uiderunt, & uti poterant diligenter perscripserunt, longitudinam illam fuisse triginta ulnarum, hoc est pedum nonaginta… certum non habetur. nam uicesimoseptimo die Augusti ipse ibi affui, fœtente iam belua, ut uix ferri posset odor... Tres uentres ueluti uastos specus: & triginta guttura, quorum quinque prægrandia sunt. Palato adhærebant quaso laminæ corneæ, una ex parte pilosæ: qualem iam unã uides, supra mille, (non est fabula Polydore, sed res uerissima,) quamuis non omnes unius magnitudinis… Aiunt genitale ei fuisse prodigiosæ magnitudini, membrum inquam masculum… In capite duo magna foramina erant: per quæ putatur beluam, plurimam aquam ueluti per fistulas eiectasse. Nulli illi fuêre dentes…" Gesner very clearly describes here a huge baleen whale, a male said to be 90 ft long, heavily decomposed, washed onto the sands of Tynemouth in North England around 27 August 1532 (7 September according to the Gregorian calander). It had 30 throat grooves, five of which very large. It had no teeth, the palate having over a thousand horny and hairy plates of different length. There were two large blowholes through which one supposed that the animal had ejected great quantities of water. However, the woodcut on p. 256 bears no resemblance to any existing marine mammal; the picture on p. 851, to which the caption also refers, is a very poor representation of a killer whale. It seems incomprehensible how G. Cuvier (1825), followed by Gray (1850, 1866) came to regard this animal as a sperm whale. Moreover, and as inexplicably, these authors transferred the stranding site from Tynemouth in Yorkshire to Teignmouth in Devon. In a Dutch manuscript from 1584/85 by Adriaan Coenenszoon van Schilperoort ("Coenen"), Gesner's description is partly quoted but, though the locality is correctly given here, the text has been grossly misread, the horny plates having been translated as "teeth like horns". To make matters worse, the author illustrated the story with a drawing of a sperm whale stranded at Ter Heijde in the Netherlands in November 1577, which he had seen himself; see Egmond & Mason (2003) who, however, did not notice these errors.*

1563, December – Grimsby, Lincolnshire, England.
Smeenk 1997, Howes 2010.

1566, 11 March (22 March) – Zandvoort, the Netherlands.
Length: 42 ft.
Mulder 1836, van Bemmelen 1864, Van Beneden 1888, Maitland 1898, van Deinse 1918, 1931, Boschma 1938a, van Laar 1963b, Schultz 1970b, Sliggers & Wertheim 1992, Egmond & Mason 1992, 2003, Camphuysen 1996, Smeenk 1997, Barthelmess 1998a, Camphuysen & Peet 2006, Smeenk & Camphuysen 2016.

1572, 1/2 November (12/13 November) – Skallingerkraag, Denmark (3 animals).
Rørdam 1896, Smeenk 1997.

1574 [1575?], 9 July (20 July) – Isle of Thanet, Kent, England.
Length: "20 ells".
Thorburn 1921, Smeenk 1997, Redman 2004.

1575 –Tønder (Tondern), Denmark.
Mohr 1931, 1935, 1967, Schultz 1970a, b, Kinze 1995, Camphuysen 1996, Lick et al. 1996, Smeenk 1997.

1577, 2-5 July (13-16 July) – Westerschelde, the Netherlands/Belgium (≥3 animals, scattered).
Length of 1 animal: 58 ft.
Clusius 1605, De Haaze [1723] 1724, Houttuyn 1762, Pasteur 1800, G. Cuvier 1825, F. Cuvier 1836, Mulder 1836, de Selys-Longchamps 1842, Deby 1848, Gervais 1855, Blasius 1857, van Bemmelen 1864, Mulder Bosgoed 1873, Van Beneden & Gervais 1880, Van Beneden 1888, Maitland 1898, D'Arcy W. Thompson 1918, 1928, van Deinse 1918, 1931, 1949, Slijper 1938, Boschma 1938a, 1951, Frechkop 1958, Jux & Rosenbauer 1959, Timm 1961, Dudok van Heel 1962, Mol 1969, Schultz 1970b, Husson & Holthuis 1974, De Smet 1974, 1976, 1977, 1978, 1981, 1997, Rappé 1977, van Berge Henegouwen 1988, Smeenk & Addink 1990b, 1993, Barthelmeß & Münzing 1991, Sliggers & Wertheim 1992, Egmond & Mason 1992, 2003, van Rossum 1995, Weisscher 1995, Camphuysen 1996, Barthelmess 1997, 1998a, Smeenk 1997, Faust 2002, Egmond 2005, Bekker 2010, Smeenk & Camphuysen 2016.
(Situation confused, see De Smet (1974); only 1 animal: near Doel, Belgium, is well documented; total number perhaps 3-6 animals).

1577, 22/23 November (3/4 December) – Ter Heijde, the Netherlands (3 stranded, 10-11 escaped).
Lengths: 48, 49, 55 ft.
Houttuyn 1762, Pasteur 1800, Mulder 1836, de Selys-Lonchamps 1842, van Bemmelen 1864, Van Beneden 1888, Maitland 1898, van Deinse 1918, 1931, Mohr 1935, 1967, Boschma 1938a, 1944, Dudok van Heel 1962, van Laar 1963b, Schultz 1970b, Husson & Holthuis 1974, Schama 1988, Smeenk & Addink 1990b, 1993, Barthelmeß & Münzing 1991, Sliggers & Wertheim 1992, Egmond & Mason 1992, 2003, van Rossum 1995, Camphuysen 1996, Barthelmess 1997, 1998a, Egmond 1997, 2005, Smeenk 1997, Faust 2002, Camphuysen & Peet 2006, Smeenk 2016a, Smeenk & Camphuysen 2016.

c. 1582 – Caister, Great Yarmouth, Norfolk, England.
Southwell 1881, 1904, Millais 1906, Patterson 1912, van Deinse 1918, Harmer 1918, Redman 2004 (Editor's Note: it is possible that the skull of this whale formed the "Devil's Seat" of the church of St Nicholas, Great Yarmouth, recorded as being painted in churchwardens' accounts in 1606, although Southwell (1881) suggests it may be of some antiquity).

1598, 3 February – Berckhey (near Wassenaar), the Netherlands.
Length: 52-53 ft.
Anonymous 1599, Clusius 1605, Houttuyn 1762, Pasteur 1800, G. Cuvier 1825, F. Cuvier 1836, Mulder 1836, Anonymous 1839, Blasius 1857, van Bemmelen 1864, Mulder Bosgoed 1873, Van Beneden & Gervais 1880, Van Beneden 1888, Maitland 1898, van Deinse 1918, 1931, Boschma 1938a, 1951, IJsseling & Scheygrond 1943, Brewington & Brewington 1969, Schultz 1970b, Husson & Holthuis 1974, Kraaijenga 1984, Puyn 1984, Frank 1986, van Berge Henegouwen 1988, Schama 1988, Nols 1989, Smeenk & Addink 1990b, Barthelmess 1989, 1997, Barthelmeß & Münzing 1991, Egmond & Mason 1992, Sliggers & Wertheim 1992, Weisscher 1995, Camphuysen 1996, Smeenk 1997, 2002, Faust 2002, Redman 2010a, Smeenk & Camphuysen 2016.

17th Century

1601, 19 December – Wijk aan Zee, the Netherlands.

Length: 60 ft.
Clusius 1605, Houttuyn 1762, Pasteur 1800, G. Cuvier 1825, F. Cuvier 1836, Mulder 1836, Gervais 1855, Blasius 1857, van Bemmelen 1864, Mulder Bosgoed 1873, Van Beneden & Gervais 1880, Van Beneden 1888, Maitland 1898, van Deinse 1918, 1931, Killermann 1919, Boschma 1938a, 1951, Timm 1961, Brewington & Brewington 1969, Schultz 1970b, Husson & Holthuis 1974, Kraaijenga 1984, Frank 1986, Schama 1988, Barthelmess 1989, 1997, Barthelmeß & Münzing 1991, Sliggers & Wertheim 1992, Camphuysen 1996, Barthelmess 1997, Smeenk 1997, Faust 2002, Smeenk & Camphuysen 2016.

1603, 17 December *– Westerschelde, Belgium.*
Length: 42 ft.
Houttuyn 1762, Pasteur 1800, Mulder 1836, Van Bemmelen 1864, Maitland 1898, van Deinse 1918, 1931, 1949, Boschma 1938, 1951, Frechkop 1958, Jux & Rosenbauer 1959, Schultz 1970b, Husson & Holthuis 1974, De Smet 1974, 1976, 1978, 1981, 1997, Barthelmeß & Münzing 1991, Sliggers & Wertheim 1992 Camphuysen 1996, Barthelmess 1997, Smeenk 1997, Bekker 2010, Smeenk & Camphuysen 2016.
(Insufficiently documented: identity unclear).

1604, November – Pellworm, Germany (2 animals).
De Haaze [1723] 1724, Mohr 1935, 1967, Schultz 1970a, b, Smeenk & Addink 1993, Camphuysen 1996, Lick et al. 1996, Smeenk 1997.

1606, 14 January – Springersplaat (Grevelingen), the Netherlands.
Length: 72 ft.
Van Bemmelen 1864, Van Beneden 1888, Maitland 1898, van Deinse 1918, 1919, 1931, Boschma 1938a, Anonymous 1970a, Schultz 1970b, Frank 1986, Nols 1989, Barthelmess 1989, Barthelmeß & Münzing 1991, Sliggers & Wertheim 1992, Camphuysen 1996, Smeenk 1997, Smeenk & Camphuysen 2016.

1609, 26 March – Rammekens, the Netherlands.
Length: 60 ft.
Barthelmeß & Münzing 1991, Barthelmess 1997, Smeenk 1997, Bekker 2010, Smeenk & Camphuysen 2016.

1614, 2 January – Walden, France.
Length: 49 ft.
De Smet 1981, Duguy 1983, Smeenk 1997, Robineau 2005.

1614, 28 December – Noordwijk, the Netherlands.
Length: 58 ft (or 52 ft).
Mulder 1836, van Bemmelen 1864, Mulder Bosgoed 1873, Van Beneden 1888, Maitland 1898, Van Deinse 1918, 1931, Killermann 1919, Timm 1961, Brewington & Brewington 1969, Schultz 1970b, Frank 1986, Barthelmeß & Münzing 1991, Sliggers & Wertheim 1992, Camphuysen 1996, Barthelmess 1997, Smeenk 1997, Faust 2002, Baalbergen & Baalbergen 2003, Smeenk & Camphuysen 2016.

1617, January *– Friesland, the Netherlands.*
Pasteur 1800, van Bemmelen 1864, Maitland 1898, Schultz 1970b, Camphuysen 1996, Smeenk & Camphuysen 2016.
(Insufficiently documented).

1617, 21 January – Berckhey (near Wassenaar), the Netherlands.
Length: 52 ft 3 in.
Houttuyn 1762, Pasteur 1800, Camper 1820, F. Cuvier 1836, Mulder 1836, Gray 1850, 1866, van Bemmelen 1864, Van Beneden 1888, Maitland 1898, van Deinse 1918, 1931, 1954b, Killermann 1919, Boschma 1944, Dudok van Heel 1962, Schultz 1970b, Frank 1986, Schama 1988, Barthelmeß & Münzing 1991, Sliggers & Wertheim 1992, Smeenk & Addink 1993, Camphuysen 1996, Barthelmess 1997, Smeenk 1997, Faust 2002, Smeenk 2002, Camphuysen & Peet 2006, Redman 2010a, Smeenk & Camphuysen 2016.

1617, January/February – Voorne/Goeree, the Netherlands (2 animals).
Houttuyn 1762, Pasteur 1800, van Bemmelen 1864, Maitland 1898, van Deinse 1918, 1931, Sliggers & Wertheim 1992, Smeenk & Addink 1993, Camphuysen 1996, Barthelmess 1997, Smeenk 1997, Faust 2002, Smeenk & Camphuysen 2016.

1617, 1 February – Harwich, Essex, England.
Length: 56 ft.
Barthelmess 1998a, Faust 2002.

1617, 6 February – Noordwijk, the Netherlands (1 stranded, several escaped).
Length: 54½ ft.
Houttuyn 1762, Pasteur 1800, van Bemmelen 1864, Maitland 1898, van Deinse 1918, 1931, Boschma 1944, Timm 1961, Sliggers & Wertheim 1992, Barthelmess 1997, Smeenk 1997, Smeenk & Camphuysen 2016.

Note – Documentation of 1617 strandings confused, possibly more strandings and sightings; all probably related.

1620, March – Rozenbug/Zwartewaal, the Netherlands.
Length: 56 ft.
Van Deinse 1931, Schultz 1970b, Sliggers & Wertheim 1992, Camphuysen 1996, Smeenk 1997, Smeenk & Camphuysen 2016, Archive RMNH.

1626, December *– Terneuzen, the Netherlands.*
Archive RMNH, Smeenk & Camphuysen 2016. (Insufficiently documented).

1626, 6 December – Holme-next-the-Sea, Norfolk, England.
Length: 57 ft.
Booth 1781, Southwell 1881, 1904, Lydekker 1895, Millais 1906, Patterson 1912, D'Arcy W. Thompson 1918, Thorburn 1921, Schultz 1970b, Husson & Holthuis 1974, Smeenk 1997, Redman 2004.

Note – Initially, this stranding was wrongly dated June 1626 by Southwell (1881) who also noted another record twenty years late in the month of December, quoting Booth's History of Norfolk (1781, vol. ix, page 33). The confusion has been perpetuated by later authors. It was correctly documented by Southwell (1902), but, apparently, that paper was overlooked, so the mistake has persisted in the literature. The original reference is in a book of manuscripts held at Hunstanton Hall, notes relating to their estate, kept by Sir Hamon le Strange and Sir Nicholas le Strange between the years 1612 and 1723. There is a mention of 8-9 coming ashore nearby, two with young ones but it is not clear whether these were indeed sperm whales; it depends how one interprets "young ones".)

1629, January *– Zoutelande, the Netherlands. Archive RMNH, Smeenk & Camphuysen 2016. (Insufficiently documented).*

1629, 4 January – Noordwijk, the Netherlands.
Length: 63 ft.
Mulder 1836, van Bemmelen 1864, Mulder Bosgoed 1873, Van Beneden 1888, Maitland 1898, van Deinse 1918, 1931, IJsseling & Scheygrond 1943, Timm 1961, van Laar 1963b, Brewington & Brewington 1969, Schultz 1970b, Barthelmeß & Münzing 1991, Sliggers & Wertheim 1992, Camphuysen 1996, Smeenk 1997, Faust 2002. Baalbergen & Baalbergen 2003, Smeenk & Camphuysen 2016.

1635 *– Scheveningen, the Netherlands.*
Zorgdrager 1720, Houttuyn 1762, Pasteur 1800, Mulder 1836, van Bemmelen 1864, Van Beneden 1888, Maitland 1898, van Deinse 1918, 1931, Schultz 1970b, Sliggers & Wertheim 1992, Camphuysen 1996, Smeenk 2016b, Smeenk & Camphuysen 2016. (Insufficiently documented).

1641, 5 October – Callantsoog, the Netherlands.
Length: 68 ft.
Houttuyn 1762, Pasteur 1800, Mulder 1836, van Bemmelen 1864, Van Beneden 1888, Maitland 1898, van Deinse 1918, 1931, Schultz 1970b, Barthelmeß & Münzing 1991, Sliggers & Wertheim 1992, Camphuysen 1996, Smeenk 1997, Faust 2002, Smeenk & Camphuysen 2016.

c. 1646 – Wells-next-the-Sea, Norfolk, England.
Length: 62 ft.
Brown 1658, Southwell 1881, 1904, Lydekker 1895, Millais 1906, Patterson 1912, D'Arcy W. Thompson 1918, Schultz 1970b, Husson & Holthuis 1974, Smeenk & Addink 1993, Camphuysen 1996, Smeenk 1997.

c. 1650/51 – Scheveningen, the Netherlands.
Sliggers & Wertheim 1992, Smeenk 2016b.

c. 1652 – Great Yarmouth, Norfolk, England.
Southwell 1881, 1904, Lydekker 1895, Millais 1906, Patterson 1912, Schultz 1970b, Camphuysen 1996, Smeenk 1997.

1656 *– Scheveningen, the Netherlands.*
Van Deinse 1918, 1931, Timm 1961, Schultz 1970b, Sliggers & Wertheim 1992, Camphuysen 1996, Camphuysen & Peet 2006. (Insufficiently documented; probably confusion with 1635).

1689 *– Norfolk, England*
Millais 1906, Schultz 1970b, Smeenk 1997. (Insufficiently documented).

1689, February – Limekilns, Fife, Scotland.
Length: 52 ft.
Sibbaldus [1692] 1773, Houttuyn 1762, G. Cuvier 1825, F. Cuvier 1836, Gray 1850, 1866, Blasius 1857, Turner 1871, 1872, Walker 1871/72, Van Beneden & Gervais 1880, Van Beneden 1888, Millais 1906, Thorburn 1921, D'Arcy W. Thompson 1918, 1928, Boschma 1938, Schultz 1970b, Smeenk 1997.

1690 – The Nore, Thames Estuary, Kent, England.
Length: 57 ft.
Millais 1906, Smeenk 1997, Faust 2002.

1692/93, March *– Lincolnshire, England.*
Lyddekker 1895, P.G.H. Evans, unpublished, Smeenk 1997.
(Insufficiently documented).

18th Century

1701, 12 July – Cramond Island, Firth of Forth, Scotland.
Length: 52 ft.
Turner 1871, 1872, Walker 1871/72, Van Beneden & Gervais 1880, Millais 1906, D'Arcy W. Thompson 1918, 1928, Smeenk 1997, Faust 2002.

1703, 23 February – Monifieth, Angus, Scotland.
Length: 57 ft.
Turner 1871, 1872, Walker 1871/72, Van Beneden & Gervais 1880, Millais 1906, Boschma 1938a, Schultz 1970b, Smeenk 1997.

1718? (early 1700s) – Læsø, Denmark.
Kinze, unpublished, Smeenk 1997.

1718, November – Stora Överön, Sweden.
Length: "22 ells".
Bernström 1949, Lepiksaar 1966, Schultz 1970b, Mathiasson 1989, Smeenk 1997, Barthelmess & Svanberg 2009, Kinze et al. 2011.

1720, 31 December – Wischhafen, Germany.
Length: 60-70 ft.
Anderson 1746, Anonymous 1784, Pasteur 1800, G. Cuvier 1825, F. Cuvier 1836, Eschricht 1844, Blasius 1857, Van Beneden 1888, Mohr 1935, 1967, Dudok van Heel 1962, Schultz 1970a, b, Camphuysen 1996, Lick et al. 1996, Smeenk 1997, Kölmel & Wurche

1998, Faust 2002.

1723, 2/3 December – Neuwerk/Scharhörn, Germany (c. 18 stranded, 3 escaped).
Length: 70-80 ft.
Anderson 1746, Houttuyn 1762, Anonymous 1784, Pasteur 1800, G. Cuvier 1825, F. Cuvier 1836, Gervais 1855, Blasius 1857, Van Beneden 1888, Southwell 1902, D'Arcy W. Thompson 1918, 1928, Mohr 1931, 1935, 1967, Boschma 1938, 1951, Dudok van Heel 1962, Schultz 1970a b, Barthelmeß & Münzing 1991, Smeenk & Addink 1993, Camphuysen 1996, Lick et al. 1996, Smeenk 1997, Barthelmeß 1998b, Kölmel 1998, Kölmel & Wurche 1998, Faust 2002, Ellis 2011.

c. 1725 – Cresswell, Northumberland, England
Wallis 1769, Mennell & Perkins 1864, Redman 2004.

1738, 2/24 January – Süderhöft, Germany (3 animals).
Length of 1 animal: 48 ft.
Anderson 1746, Houttuyn 1762, Anonymous 1784, G. Cuvier 1825, F. Cuvier 1836, Blasius 1857, Mohr 1935, 1967, Boschma 1938a, 1951, Schultz 1970a, b, Barfod 1981, Barthelmeß 1995, Camphuysen 1996, Lick et al. 1996, Smeenk 1997, Faust 2002, C.C. Kinze, personal communication.
Note – Documentation confused.

1740, December – Near Cramond, Firth of Forth, Scotland (1 stranded at the start of December + another animal said to strand at Culross in the same year, possibly at the same time but date not given)
Length: 50-60 ft (male)
Derby Mercury, 8 Dec 1740; Caledonian Mercury, 9 March 1741; C.C. Kinze, personal communication.

c. 1749 – Hauxley, Northumberland, England.
Length: 54 ft.
Wallis 1769, Mennell & Perkins 1864.

1749, November – Hunnebostrand, Sweden.
Length: c. 70 ft.
Barthelmess & Svanberg 2009.

1751, February/March – Horumersiel; Jadebusen.
14 March – Minser Oldenoog, Germany (total number 3 animals, scattered).
Length of 1 animal: 54 ft 3 in.
Goethe 1983, Smeenk & Addink 1993, Camphuysen 1996, Lick et al. 1996, Smeenk 1997, Schmidt 2001.

1753, February – Findhorn, Moray, Scotland (3 animals).
Millais 1906, Taylor 1914, Schultz 1970b, Smeenk & Addink 1993, Smeenk 1997.

***1757, January** – Aberdeen, Scotland.*
Houttuyn 1762.
(Insufficiently documented).

1757, January – Westervig, Denmark.
Lengths: 28 ells, 52 ft.
Bondesen 1977, Kinze 1993, 1995, 2002, Camphuysen 1996, Smeenk 1997, Jensen & Tougaard 1998.

1757, 10 February – Sønderho (**Fanø), Denmark (3 animals).**
Lengths: 60-62 ft (2 animals), 64 ft.
Københavnske Danske Posttidender 25 February C.C.Kinze, personal communication, Smeenk 1997.

Note – Danish 1757 strandings possibly related.

1758 – Earlsferry, Fife, Scotland.
Length: 52 ft.
Walker 1872, Smeenk 1997.

1759/60, December/January – Eiderstedt, Germany (2 animals).
Length: 58 ft.
Barfod 1981.

1761 – Bovbjerg, Denmark.
Kinze, unpublished, Smeenk 1997.

1761, 5 March – Banc des Laines, Wissant, France (1 stranded, 1 escaped).
Length: 48 ft.
Fischer 1872, Van Beneden & Gervais 1880, Van Beneden 1888, D'Arcy W. Thompson 1918, 1928, Faust 2002.
Note – Fischer (1872) reports that the second animal became stranded on the English coast; this is not further documented.

1761, early December – Eierland (Texel), the Netherlands.
Length: 53½ ft .
Houttuyn 1762, Pasteur 1800, Mulder 1836, van Bemmelen 1864, Van Beneden 1888, Maitland 1898, van Deinse 1918, 1931, Schultz 1970b, Sliggers & Wertheim 1992, Smeenk & Addink 1993, Camphuysen 1996, Smeenk 1997, Faust 2002, Camphuysen & Peet 2006.

1762, January – Terschelling (2 animals), Griend (2-3 animals).
17/18 January – Vlieland, the Netherlands (3 animals).
Length of 1 animal: "75 ft".
Houttuyn 1762, Pasteur 1800, Mulder 1836, Van Bemmelen 1864, Van Beneden 1888, Maitland 1898, van Deinse 1918, 1931, 1946, 1954b, IJsseling & Scheygrond 1943, Dudok van Heel 1962, Schultz 1970b, van Dieren 1980, Smeenk & Addink 1990b, 1993, Sliggers & Wertheim 1992, Peet 1993, Camphuysen 1996, Smeenk 1997, Faust 2002, Camphuysen & Peet 2006, Schmidt 2010.

1762, 18/21 January – Bredene.
Late January – Blankenberge, Belgium.
Length: 62 ft, 64 ft.
Houttuyn 1762, Pasteur 1800, Dewhurst 1832, van Bemmelen 1864, Maitland 1898, Mol 1962, Schultz 1970b, De Smet 1974, 1976, 1978, 1981, 1997, Duyndam 1989, Smeenk & Addink 1990b, 1993, Barthelmeß & Münzing 1991, Sliggers & Wertheim 1992, Camphuysen 1996, Smeenk 1997, Faust 2002.

1762, January – Kachelotplate (near Memmert), Germany.
22 January – Hoge Hörn (Borkum), Germany.
Length of 1 animal: "c. 15 m".
Goethe 1983, Lick et al. 1996, Smeenk 1997, Faust 2002, Schmidt 2010.
Note –Documentation confused; probably 2 animals.

1762, January/February – King's Lynn (2 animals); Essex (2 animals); Holland, Lincolnshire (2 animals).
30 January – Hope Point, Thames Estuary, Kent.
2/4 February – Birchington (2 animals); Broadstairs (2 animals); Deal; (≥ 3 escaped).
Lengths of 4 animals: 54 ft, 58 ft, 60 ft, 62 ft.
Anonymous 1762, Houttuyn 1762, Pennant 1769 [not seen], Pasteur 1800, G. Cuvier 1825, F. Cuvier 1836, Anonymous 1839, Gray 1850, 1866, Flower 1869, Anonymous 1883, Van Beneden 1888, Lydekker 1895, Southwell 1902, Murie 1903, Millais 1906, D'Arcy W. Thompson 1918, 1928, Anonymous 1922, Schultz 1970b, Smeenk & Addink 1993, Barthelmeß 1995, Camphuysen 1996, Smeenk 1997, Faust 2002, Redman 2004.
Note – The documentation of these strandings is extremely confused; the total number was at least 12 animals stranded and 3 or more escaped, some of the latter perhaps re-stranded. Several authors have erroneously dated them for 1763 or even 1763/64, still others for 1788, with varying localities. The source of this confusion is an undated letter on these strandings published in a newspaper of 7 March 1788, which is mentioned by Gray (1866, thereby correcting his error from 1850), and extensively quoted by Southwell (1902); in that letter, the events are erroneously dated February 1763. This has led to numerous misquotations and misdatings in later years, with Millais (1906), Schultz (1970a, b) and Barthelmeß (1995) even double-counting some of these strandings for

1763/64 and 1788. Pennant (1769), followed by various other authors including Faust (2002), located one of them, a live-stranding of 30 January, at "Blyth Sand" (erroneously supposed to be in Northumberland by Anonymous 1839), from where the whale had been towed to Greenland Dock in London. According to the 1788 letter, that animal had become stranded at Hope Point in the Thames Estuary, where at the time there may have been a sandbank of that name. Finally, the district Holland in Lincolnshire has been confounded with Holland, the Netherlands, by Schultz (1970b) and Barthelmeß (1995), though already Van Deinse (1931) had pointed at a likely confusion regarding this locality.

1762, January/February – Scharhörn/Neuwerk, Germany (≥2 animals).
Mohr 1967, Smeenk & Addink 1993, Camphuysen 1996, Lick et al. 1996, Smeenk 1997, Kölmel & Wurche 1998, Faust 2002, Schmidt 2010.

1762, 20 February – Zandvoort/Wijk aan Zee, the Netherlands.
Length: 55½ ft.
Houttuyn 1762, Pasteur 1800, Van Bemmelen 1864, Mulder Bosgoed 1873, Van Beneden 1888, Maitland 1898, van Deinse 1918, 1931, Timm 1961, van Laar 1963b, Brewington & Brewington 1969, Schultz 1970b, Honig & Mol 1971, van Dieren 1980, Barthelmeß & Münzing 1991, Sliggers & Wertheim 1992, Smeenk & Addink 1993, Barthelmeß 1995, Camphuysen 1996, Smeenk 1997, Faust 2002.

Note – All strandings of December 1761 - February 1762 possibly related; date of Bovbjerg, 1761 stranding unknown. The largest historical "invasion" documented.

1763, 30 June – De Hors (Texel), the Netherlands.
Length: 57½ ft.
Houttuyn 1765, Pasteur 1800, van Deinse 1918, 1931, van Laar 1963a, Schultz 1970b, Sliggers & Wertheim 1992, Peet 1993, Camphuysen 1996, Smeenk 1997, Faust 2002.

1764, 15 February – Egmond, the Netherlands.
Length: 60 ft.
Mulder 1836, Mulder Bosgoed 1873, Van Beneden 1888, Maitland 1898, van Deinse 1918, 1931, IJsseling & Scheygrond 1943, Boschma 1944, Timm 1961, Brewington & Brewington 1969, Schultz 1970b, Sliggers & Wertheim 1992, Camphuysen 1996, Smeenk 1997, Faust 2002, Camphuysen & Peet 2006.

1765, January – Bunken Strand, Denmark (2 animals).
Lengths: 48 ft, 60 ft.
Adressenavisen 6 February 1765, Kinze, personal communication, Smeenk 1997, Kinze et al. 2011.

1765, May – Skallingen, Denmark.
Kristensen 1979, Smeenk 1997.

1766, 29 November – Seaton Snook, Hartlepool, Durham, England.
Length: 48 ft.
Anonymous 1839, 1840, Mennell & Perkins 1864, Flower 1869, Drury 1980, Redman 2004.
Note – The incomplete skeleton of this animal was preserved in a crypt at Durham Castle in 1767, where it was re-discovered in 1839. In a letter by "Jo. Duresme" published by J. Raine (Anonymous, 1839), it was alleged to date from 1661. Drury (1980) has shown that this letter was a hoax and has given an extensive account of the event.

1767, February/March? – Thisted District, Denmark.
Kinze, unpublished, Bondesen 1951, 1977, Schultz 1970b, Mathiasson 1989, Kinze 1993, 1995, Camphuysen 1996, Smeenk 1997.

1769 – Kent, England.
Van Beneden & Gervais 1880, Van Beneden 1888, Millais 1906, Schultz 1970b, Smeenk 1997.

(Insufficiently documented; perhaps a confusion with the strandings in 1762).

1769, 22 December – Cramond Island, Firth of Forth, Scotland
Length: 54 ft.
Robertson 1770, Pennant 1776, G. Cuvier 1825, Woods 1829, F. Cuvier 1836, Anonymous 1839, Gray 1850, Turner 1871, 1872, Walker 1871/72, Van Beneden & Gervais 1880, Van Beneden 1888, Lydekker 1895, Millais 1906, D'Arcy W. Thompson 1918, 1928, Boschma 1938a, 1951, Camphuysen 1996, Smeenk 1997.

1770, 1 December – Hjarnø, Denmark (1 stranded, 1 escaped).
Length: 52 ft.
Japha 1907, 1908, Bondesen 1951, 1977, Schultz 1970b, Kinze 1993, 1995, Camphuysen 1996, Smeenk 1997, Kinze et al. 2011.

1781, 17 May – Zandvoort, the Netherlands.
Length: 64 ft.
Camper 1820, Mulder 1836, Eschricht 1844, van Bemmelen 1864, Maitland 1898, van Deinse 1918, 1931, Strijbos 1948, Schultz 1970b, Sliggers & Wertheim 1992, Camphuysen 1996, Smeenk 1997, Camphuysen & Peet 2006.

1794 – Whitstable Bay, Kent, England.
Gray 1850, 1866, Smeenk 1997.

1795, July – Redcar, Yorkshire, England.
Length: 50 ft.
Howes 2010.

19th Century

1822, 8 August – Lynemouth, Northumberland, England.
Length: 63 ft.
Anonymous, s.a. 1839, Drury 1980, Smeenk 1997, Redman 2004.

1825, 28 April – Tunstall beach, Holderness, Yorkshire, England.
Length: 58 ft 6 in.
Alderson 1827, T. Thompson 1829, Beale 1839, Eschricht 1849, Gray 1850, 1866, Flower 1869, Walker 1871/72, Bell et al. 1874, Van Beneden & Gervais 1880, Van Beneden 1888, Lydekker 1895, Millais 1906, D'Arcy W. Thompson 1928, Schultz 1970b, Frost 1994, Camphuysen 1996, Smeenk 1997, Redman 2004, 2010b, Howes 2010.

1829, 16 February – Whitstable, Kent, England.
Length: 62 ft.
Woods 1829, Gray 1866, Bell et al. 1874, Van Beneden & Gervais 1880, Van Beneden 1888, Lydekker 1895, Murie 1903, Millais 1906, D'Arcy W. Thompson 1918, 1928, Schultz 1970b, Smeenk 1997, Redman 2004.

1898, August – Birchington-on-Sea, Kent, England.
Length: 42.5 ft.
Murie 1903.

20th Century

1913, 18 December – Fort George, Inverness, Scotland.
Length: 48 ft.
Taylor 1914, Harmer 1914, 1927, D'Arcy W. Thompson 1918, 1928, Schultz 1970a, b, Camphuysen 1996, Smeenk 1997.

1917, 23 May – Moray Firth near Latheron, Caithness, Sotland.
Length: 59 ft 4 in.
Anonymous 1917, Harmer 1918, 1927, D'Arcy W. Thompson 1918, 1928, Schultz 1970a, b, Camphuysen 1996, Smeenk 1997.

1937, 25 January – Bridlington, Yorkshire, England.
Length: 59 ft.
Clarke 1937, Pycraft 1937, Fraser 1937, 1946,

IJsseling & Scheygrond 1943, Strijbos 1948, van Deinse 1951, Schultz 1970a, b, De Smet 1974, Camphuysen 1996, Smeenk 1997, Redman 2004a, Howes 2010.

1937, 24 February – Middelplaat (Westerschelde), the Netherlands (2 animals).
Length: 16 m, 18.5 m.
Boschma 1938a, b, 1951, Slijper 1939, Kellogg 1940, IJsseling & Scheygrond 1943, Fraser 1937, 1946, Strijbos 1948, van Deinse 1937, 1946, 1951, 1954b, Slijper 1958, Dudok van Heel 1962, Anonymous 1970a, b, van Aken 1970, Schultz 1970a, b, Stock 1973a, b, Husson & Holthuis 1974, De Smet 1974, 1976, 1981, 1997, Rappé 1977, Desmet 1989, Smeenk & Addink 1990b, Fransen & Smeenk 1991, Sliggers 1992, Sliggers & Wertheim 1992, Smeenk & Addink 1993, Kompanje & van Duijn 1994, Beeftink 1995, Camphuysen 1996, Smeenk 1997, Santos et al. 2002, Camphuysen & Peet 2006, Snell & Parry 2009, Bekker 2010, Redman 2010a, Smeenk & Camphuysen 2016.

(January/February 1937 strandings possibly related).

1937, July – Dunkerque, France (2 animals).
Length: 18 m, [22 m?].
Boschma 1938a, Lacroix 1938, IJsseling & Scheygrond 1943, van Deinse 1946, 1951, Schultz 1970a, b, De Smet 1974, 1978, 1997, Smeenk & Addink 1993, Camphuysen 1996, Smeenk 1997, van Gompel et al. 2003.

1941, 10 March – Hirtshals, Denmark.
Length: 16.65 m.
IJsseling & Scheygrond 1943, Bondesen 1951, 1977, Schultz 1970a, b, Kinze 1995, Camphuysen 1996, Smeenk 1997.

1944, 27 February – Skagen, Denmark.
Length: c. 16 m.
Kinze 1995, Camphuysen 1996, Smeenk 1997.

1949, 25-29 December – Fanø; Mandø (2 animals); Knudedyb; Darum, Denmark (5 animals, scattered).
Lengths of 3 animals: c. 12 m (1 animal), c. 16 m (2 animals).
Van Deinse 1951, Bondesen 1951, 1977, Schultz 1970a, b, Smeenk & Addink 1993, Kinze 1995, Camphuysen 1996, Smeenk 1997.

1953, 7 July – De Hors (Texel), the Netherlands.
Length: 15.5 m.
Van Deinse 1953, 1954a, b, Slijper 1958, IJsseling & Scheygrond 1962, van Laar 1963b, Anonymous 1970a, b, Schultz 1970b, Smeenk & Addink 1990b, Sliggers & Wertheim 1992, Peet 1993, Kompanje & van Duijn 1994, Camphuysen 1996, Smeenk 1997, Camphuysen & Peet 2006, Redman 2010a, Smeenk & Camphuysen 2016.

1954, 19 December – Dunkerque, France (restranded at De Panne, Belgium).
Length: 16.5 m.
Van Deinse 1955, Frechkop 1958, Slijper 1958, Jux & Rosenbauer 1959, Anonymous 1970, Schultz 1970a, b, De Smet 1974, 1976, 1978, 1997, Smeenk & Addink 1990b, Sliggers & Wertheim 1992, Camphuysen 1996, Smeenk 1997, van Gompel et al. 2003, Camphuysen & Peet 2006.

1969, 3 April – Westerhever, Germany.
Length: 16.1 m.
Schultz 1970a, b, De Smet 1976, Smeenk 1997.

1970, 3 January – Spijkerplaat (Westerschelde), the Netherlands.
Length: 16.65 m.
Anonymous 1970a, b, van Aken 1970, Schultz 1970b, Husson & van Bree 1972, De Smet & Bultinck 1972, De Smet 1973, 1976, 1978, 1981, 1997, Rappé 1977, Anonymous 1983, Brouwer de Koning 1990, Smeenk & Addink 1990b, Sliggers & Wertheim 1992, Kompanje & van Duijn 1994, Camphuysen 1996, Smeenk 1997, Camphuysen & Peet 2006, Bekker 2010, Smeenk & Camphuysen 2016.

1973, 6 October – Seaton Point, Northumberland, England.
Length: c. 41 ft.
Sheldrick 1989, Smeenk 1997.

1974, 19 January – Saltfleet, Lincolnshire, England.
Length: 49 ft.
Sheldrick 1989, Smeenk 1997.

1974, 12 September – Skagen, Denmark.
Length: c. 20 m.
Bondesen 1977, Kinze 1995, Camphuysen 1996, Smeenk 1997.

1979, 20 February – Tversted, Denmark.
Length: 14.7 m.
Kinze et al. 1987, Kinze 1995, Camphuysen 1996, Smeenk 1997.

1979, 22 August – Cullen Bay, Moray, Scotland.
Length: 46 ft 4 in.
Sheldrick 1989, Smeenk 1997.

1979, 15 December – Egmond/Castricum, the Netherlands.
Length: 15.2 m.
Van Bree & Smeenk 1982, Camphuysen 1982, van Berge Henegouwen 1988, Brouwer de Koning 1990, Smeenk & Addink 1990b, Sliggers & Wertheim 1992, Kompanje & Van Duijn 1994, Camphuysen 1996, Smeenk 1997, Camphuysen & Peet 2006, Redman 2010a, Smeenk & Camphuysen 2016.

1980, 22 February – Trischen, Germany.
Borkenhagen 1993, Smeenk 1997.

1984, 23 January – Henne Strand, Denmark (2 animals).
Length: 13.8 m, 14 m.
Kinze et al. 1987, Tougaard 1991, Smeenk & Addink 1993, Kinze 1995, Camphuysen 1996, Smeenk 1997.

1984, 16 September – Brunbjerg, Denmark.
Kinze et al. 1987, Kinze 1989, 1995, Camphuysen 1996, Smeenk 1997.

1984, 20 November – Tegeler Plate, Germany.
Length: 17.5 m.
Meyer 1994, Stede 1994, Camphuysen 1996, Lick et al. 1996, Smeenk 1997, Schmidt 2001, Redman 2009.

1985, 23 January – Crovie, Aberdeenshire, Scotland.
Sheldrick 1989, Smeenk 1997.

1985, 1 March – Skegness, Lincolnshire, England.
Length: 40-50 ft.
Sheldrick 1989, Smeenk 1997.

1986, 30 November – Holkham Beach, Wells, Norfolk, England.
Length: 50 ft 3 in.
Sheldrick 1989, Smeenk 1997.

1988, 30 November – Sæby, Denmark.
Length: 14.63 m.
Kinze 1989, 1995, Mathiasson 1989, Camphuysen 1996, Smeenk 1997, Kinze et al. 2011.

1988, 11 December – Träslövsläge, Sweden.
Length: 15 m.
Mathiasson 1989, Camphuysen 1996, Smeenk 1997, Kinze et al. 2011.

Note – November/December 1988 strandings possibly related.

1989, 12 February – Koksijde, Belgium.
Length: 17 m.
Asselberg 1989, Desmet 1989, Brouwer de Koning 1990, Smeenk & Addink 1990b, van Gompel 1991, Sliggers & Wertheim 1992, Camphuysen 1996, Smeenk 1997, De Smet 1997, van Gompel et al. 2003, Camphuysen & Peet 2006.

1990, 1 February – Findhorn, Moray, Scotland.

Length: 14.94 m.
Sheldrick et al. 1994, Camphuysen 1996, Smeenk 1997.

1990, 2 April – Noordvaarder (Terschelling), the Netherlands.
Length: 15.2 m.
Brouwer de Koning 1990, Smeenk & Addink 1990a, b, Barthelmeß & Münzing 1991, Taekema & Wijnandts 1991, Sliggers & Wertheim 1992, Peet 1993, Kompanje & van Duijn 1994, Smeenk 1995b, 1997, Camphuysen 1996, Smeenk & Camphuysen 2016.

1990, 17 November – Nymindegab, Denmark.
Length: 11.85 m.
Jensen 1991, Tougaard 1991, Kinze 1995, Camphuysen 1996, Smeenk 1997, Santos Vázquez 1998, Santos et al. 1999.

1991, 12 November – Brancaster, Norfolk, England.
Length: 15.1 m.
Sheldrick et al. 1994, Camphuysen 1996, Smeenk 1997.

1991, 1 December – Fanø, Denmark (3 animals).
Lengths: 11.70 m, 11.73 m, 12.3 m.
Jensen 1991, Kinze 1995, Camphuysen 1996, Smeenk 1997, Santos Vázquez 1998, Santos et al. 1999.

1991, 8 December – De Panne/Koksijde, Belgium (live stranding, animal escaped).
Length: 16 m
Vandewalle 1992, Camphuysen 1996, Smeenk 1997, Camphuysen & Peet 2006, van Gompel et al. 2010.

1992, 14 May – Husby Klit, Denmark.
Length: 11.25 m.
Smeenk 1997, Kinze et al. 1998.

1993, 2 December – Heacham, Norfolk, England.
Length: 14.5 m; [reported as female: probably incorrect]
Natural History Museum, unpublished, Anonymous 1993.

1993, 15 December – Atwick, Yorkshire, England.
Length: 15.85 m.
Natural History Museum, unpublished, Anonymous 1993, Frost 1994, Camphuysen 1996, Smeenk 1997, Howes 2010.

1994, 3 November – Terschelling/Ameland, the Netherlands.
Length: 14.4 m.
Addink 1994, Smeenk & van Gompel 1994, Kompanje & van Duijn 1994, Barthelmeß 1995, Kompanje & Reumer 1995, Barthelmeß 1995, Fokkema 1995, Camphuysen 1996, Clarke 1997, Smeenk 1997, 2003, Smeenk & Camphuysen 2016.

1994, 4 November – Baltrum, Germany.
Length: 13.8 m.
Siebert 1994, Barthelmeß 1995, van Rossum 1995, Camphuysen 1996, Law et al. 1996, Lick et al. 1996, Stede et al. 1996, Smeenk 1997, Schmidt 2001.

1994, 10 November – Hawsker Bottoms, Yorkshire, England.
Length: c. 15.8 m.
Natural History Museum, unpublished, Evans 1994, Barthelmeß 1995, Kompanje & Reumer 1995, van Rossum 1995, Camphuysen 1996, Smeenk 1997, Howes 2010.

1994, 15 November – Gibraltar Point, Lincolnshire, England.
Length: 52 ft.
Howes 2010.

1994, 18 November – Koksijde, (3 animals); Nieuwpoort, Belgium (1 animal).
Lengths: 14.4 m, 14.9 m, 15.4 m (Koksijde), 18.2 m (Nieuwpoort).
Joiris 1994, Kompanje & van Duijn 1994,

Figure 4. Sperm whale stranded on the Rømø Beach, Denmark, April 1996. *Photo: Svend Tougaard.*

Smeenk & van Gompel 1994, Asselberg 1995, Barthelmeß 1995, Holsbeek et al. 1995, Kompanje & Reumer 1995, van Rossum 1995, Camphuysen 1996, Bouquegneau et al. 1997, Jauniaux et al. 1997, 1998, Joiris et al. 1997, Law et al. 1997, Noël 1997, Smeenk 1997, De Smet 1997, Wells et al. 1997, Santos Vázquez 1998, Santos et al. 1999, van Gompel et al. 2003, Camphuysen & Peet 2006.

1995, 12 January – Scheveningen, the Netherlands (3 animals).
Lengths: 15.2 m, 15.35 m, 15.4 m.
Barthelmeß 1995, Kompanje & Reumer 1995, Moeliker 1995, van Rossum 1995, Smeenk 1995a, 2002, Weisscher 1995, Anonymous 1996a, b, Camphuysen 1996, Kompanje & Moeliker 1996, Boon et al. 1996, Law et al. 1996, Jauniaux et al. 1997, 1998, Law et al. 1997, Wells et al. 1997, Smeenk 1997, 2003, Camphuysen & Peet 2006, Redman 2010a, Smeenk & Camphuysen 2016.

Note – All November 1994 - January 1995 strandings possibly related.

1995, 23 March – Carse of Ardersier, Inverness, Scotland.
Length: 13.7 m.
Camphuysen 1996, Smeenk 1997, Wells et al. 1997, Santos Vázquez 1998, Santos et al. 1999.

1996, 25 January – Hulsig, Denmark.
Length: 13.1 m.
Kinze et al. 1998, Santos Vázquez 1998, Santos et al. 1999, Kinze et al. 2011.

1996, 28 January – Cruden Bay, Aberdeenshire, Scotland (6 animals live stranded, died).
Lengths of 5 animals: 12.1 m, 12.6 m, 12.85 m, 13.65 m (2 animals), 13.75 m.
Natural History Museum, unpublished, Santos Vázquez 1998, Santos et al. 1999, Smeenk 1999, Camphuysen & Peet 2006.

1996, 31 January – Norderney, Germany.
Length: 15 m.
Stede et al. 1996, Smeenk 1999, Schmidt 2001.

1996, 21 February – Gjerrild Strand, Denmark (1 animal stranded dead; first stranded at Skagen on 10 February, then at Laesø on 14 February, before finally stranding at Gjerrild Strand)
Length: 12.8 m.
Kinze et al. 1998, Kinze et al. 2011.

1996, 27 March – Rømø, Denmark (16 animals, live stranded, died).
Lengths: 11.75 m, 11.9 m, 12.15 m, 12.2. m, 12.5 m, 12.6 m, 12.7 m (2 animals), 12.8 m (3 animals), 12.9 m, 12.95 m (2 animals), 13.15 m, 13.2 m.
Kinze et al. 1998, Santos Vázquez 1998, Santos et al. 1999, Tougaard & Kinze 1999, Redman 2009, Camphuysen & Peet 2006 (see figure 4)

1996, July – Klitmøller Denmark.
Kinze et al. 1998.

1996, 17 July – Kærgård Strand, Denmark.
Kinze et al. 1998.

Note – July 1996 strandings probably related: both decomposed.

1997, 31 March – Airth, Falkirk, Scotland (live stranded, died).
Length: 15.2 m.
Natural History Museum, unpublished, Santos Vázquez 1998, Santos et al. 1999, Redman 2004.

1997, 27 November – Wassenaarseslag, the Netherlands (live stranded, died)
Length: 11.75 m.
Smeenk 1999, 2002, 2003, Santos et al. 2002, Camphuysen & Peet 2006, Redman 2010a, Smeenk & Camphuysen 2016.

1997, 28 November – Ameland, the Netherlands (4 animals, live stranded, died).
Lengths: 12.9 m, 13.2 m, 13.6 m, 14.21 m.
Smeenk 1999, 2003, Santos et al. 2002, Camphuysen & Peet 2006, Smeenk & Camphuysen 2016.

1997, 2 December – Skegness, Lincolnshire, England (1 animal, dead).
Length: 15 m.
P.G.H. Evans, unpublished, Natural History Museum, unpublished, Smeenk 1999.

1997, 3 December – Trinity Sands, Humber Estuary, England (1 animal, live stranded, died).
Length: "c. 12.19 m" (2x).
Natural History Museum, unpublishes, Smeenk 1999, Howes 2010.

1997, 4 December – Bremerhaven, Sahlenburg, Germany (2 animals, scattered).
Length of 1 animal: 13 m.
Kölmel 1998, Kölmel & Wurche 1998, Smeenk 1999, Schmidt 2001.

1997, 4 December – Rømø, Denmark (13 animals, live stranded, died).
Lengths: 13.6 m, 14.0 m (2 animals), 14.1 m (2 animals), 14.3 m, 14.45 m, 14.5 m
(2 animals), 14.7 m (2 animals), 15.1 m, 15.8 m.
Jensen 1998, Jensen & Tougaard 1998, Kinze et al. 1998, Camphuysen & Peet 2006, Redman 2009.

1998, 23 January – Eiderstedt, Germany (3 live stranded, died; 3 escaped).
Smeenk 1999, Camphuysen & Peet 2006.

Note – All November 1997 - January 1998 strandings possibly related.

1998, 26 August – Rosehearty, Aberdeenshire, Scotland (1 animal, dead stranded).
Length: c. 10 m.
Natural History Museum, unpublished.

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2000, 3 June – Rømø, Denmark.
Length: 14.3 m.
Kinze et al. 2010.

2001, 2 April – Kolnes, Norway.
Length: 13 m.
Jørgensen, unpublished.

2002, 15 January [1 February?] – Friedrichskoog, Meldorfer Bucht, Germany (3 animals, dead stranded).
K. Barthelmess, personal communication; Press reports.

2002, 28 June –Hopetoun, South Queensferry, Scotland (1 animal, live stranded, died)
Length: 10.05 m.
Sabin et al. 2003.

2003, 23 January – Breast Sand, near Kings Lynn, The Wash, England (1 animal, dead stranded)
Length: 14.27 m.
Sabin et al. 2004, Deaville & Jepson 2007, Howes 2010.

2003, February – Oslofjorden, Norway.
Jørgensen, unpublished.

2003, 15/16 March – Canty Bay, North Berwick, Scotland (1 stranded, 1 floating off the coast).
Length: 13.7 m.
Sabin et al. 2004.

2003, 27 March – Oye Plage, France.
Length: 14.8 m.
T. Jauniaux, unpublished.

2003, 3 April – West Sand, Stiffkey Marshes, Norfolk, England (dead stranded).
Length: 13.72 m.
Sabin et al. 2004.

2003, 4 May – Cruden Bay, Aberdeenshire, Scotland (dead stranded).
Sabin et al. 2004.

2003, end November / 2 December – Norderney, Germany (2 animals, dead stranded).
Redman 2009.

2004 – Baltiyskaya Kosa, Baltic Sea, Russia (decomposed).
Kinze et al. 2011.

2004, before 28 January – Thornham, near Hunstanton, Norfolk, England; seen floating some days before off Holme-next-the-Sea.
Length: 13 m.
Sabin et al. 2005;
(Lower jaw cut off; carcass washed away c. 15 February; re-stranded **26 February** at Koksijde, Belgium: Haelters et al., this volume).

2004, 21 March – Inner Westmark Knock, Breast Sand, The Wash, England (1 animal live stranded, died).
Length: 12.8 m.
Sabin et al. 2005, Camphuysen & Peet 2006.

2004, 5 June – Noordpolderzijl, the Netherlands (1 animal, dead stranded).
Camphuysen et al. 2008, Smeenk & Camphuysen 2016.

2004, 24 / 26 June –Vlieland, the Netherlands.
Length: 15 m.
Camphuysen et al. 2008, Smeenk & Camphuysen 2016.

Note – June 2004 strandings probably related: both decomposed.

2004, 2 November – Richel (Waddensea), the Netherlands
(2 animals, live stranded, escaped).
Camphuysen & Peet 2006, Camphuysen et al. 2008, Smeenk & Camphuysen 2016.

Figure 5. Sperm whale stranded at Forvie on the coast of Aberdeenshire, Scotland in March 2006. *Photo: G.J. Pierce.*

2006, 4 February – Kilnsea mud, Humber Estuary, England (live stranded, died).
Length: 30 ft.
Howes 2010.

2006, 6 February – Gat Sands (2 animals, 1 re-stranded near Brancaster), England.
Howes 2010.

2006, 15 February – Skegness, England (1 animal, dead stranded).
Length: 13.9 m.
Deaville & Jepson 2007, 2011, Howes 2010.

Note – February 2006 strandings probably related.

2006, 24 March –Hackley Bay, Forvie, Newburgh, Scotland (1 animal, dead stranded)
G.J. Pierce, unpublished (see figure 5)

2006, 8 December – Wrangle Flats, Boston, The Wash, England (1 animal, dead stranded)
P.G.H. Evans, unpublished.

2006, 10 December – Roseisle, Burghead, Scotland.
Length: 13.2 m.
Deaville & Jepson 2007, 2011.

2007, 18 February – RAF Wainfleet, The Wash, England (1 animal, dead stranded)
P.G.H. Evans, unpublished, Deaville & Jepson 2008.

2008, 25 January – Burntisland, Fife, Scotland (1 animal, dead stranded)
Length: c. 12 m.
Press reports.

2008, 5 August – Alturlie Point, Inner Moray Firth, Scotland (1 animal live stranded, died)
Length: 13.93 m.
Press reports, Deaville & Jepson 2009, 2011.

2009, 30 October – Balmedie beach, Aberdeenshire, Scotland (1 animal, dead stranded)
P.G.H. Evans, unpublishes (see figure 6), Deaville & Jepson 2010.

Figure 6. Sperm whale stranded at Balmedie beach on the coast of Aberdeenshire, Scotland in October 2009. *Photo: Sea Watch Foundation.*

2010, 25 January – Collith Hole, Beadnell, England (1 animal live stranded, died).
Length: 12.8 m.
Deaville 2011.

2010, 16 June – Off the coast of Hartlepool, England (1 animal, dead floating).
P.G.H. Evans, unpublished.

2011, 3 March – Pegwell Bay, Kent, England (1 animal, dead stranded).
Length: 45 ft (13.90 m)
Press reports, Deaville 2012.

2011, 2 April – Bovbjerg Fyr, Denmark (seen floating off the coast about 2 weeks prior to stranding).
Length: "11-16 m".
C.C. Kinze, unpublished.

2011, 31 May – Redcar, Yorkshire, England (1 animal live stranded, died).
Length: 45 ft (13.95 m)
P.G.H. Evans, unpublished; Press reports, Deaville 2012.

2011, 3 November – Hinderplaat off Voorne, the Netherlands (Live stranding, animal escaped).
Smeenk & Camphuysen 2016.

2011, 14 / 15 November – Pellworm, Germany (1 animal, stranded dead).
Length: 15 m.
Press reports.

2011, 14 December – Holbeach, Lincolnshire, England (1 animal, stranded dead)
Press reports, Deaville 2012.

2011, 18 December – Old Hunstanton, Norfolk, England (1 animal, stranded dead).
Length: 55 ft.
Press reports.

2012, 8 February – Heist-aan-Zee, Belgium (1 animal, live stranded, died).
Length: c. 13 m.
Press reports, Haelters et al., this volume.

2012, 5 March – Skegness, Lincolnshire, England (1 animal, seen earlier floating off the coast on 25 February).
Length: 35 ft.
Press reports.

2012, 13 March – Nørre Lyngby, Denmark (decomposed).
Length: 10 m.
C.C. Kinze, press reports.

2012, 15 December – Razende Bol (Noorderhaaks), the Netherlands (1 animal, stranded dead).
Length: 15.1 m.
P. Bonnet / EcoMare, Camphuysen & Smeenk 2016.

2013, 29 July – East point of Terschelling, the Netherlands (1 animal, live stranding, died).
Length: c. 12 m.
Smeenk & Camphuysen 2016.

2014, 11 January – Joppa, Portobello, Scotland (1 animal, stranded dead)
Length: 50 ft (13.95 m).
Press reports.

2014, February – Henne Strand, Denmark (2 animals, 1 live later died).
Length: 14.5 m, 12.5 m.
Hansen et al. 2016, Jensen 2016.

2014, 20 February – Sheerness, Isle of Sheppey, Kent, England (1 animal, live stranding, died)
Length: 15.3 m
P.G.H. Evans, unpublished, Deaville 2015.

2014, 25 June – Scheveningen/Wassenaar, the Netherlands (scattered remains).
Smeenk & Camphuysen 2016.

2014, 17 December – Tain, Highland, Scotland (1 animal, stranded dead).
Length: 14.35 m
Deaville 2015.

2015, 15 January – Harboøre Tange, Limfjord, Denmark (decomposed).
C.C. Kinze, unpublished.

2015, 11 February – Fanø, Denmark (decomposed, earlier floating off Sylt, Germany).
Length: 12 m.
C.C. Kinze, press reports.

2015, 26 June – near Spiekeroog, Germany (1 animal, stranded dead).
A. Schmidt, press reports.

2016, 8 January – Wangerooge, Germany (2 animals stranded, dead).
Length: 13,1 m, 11,8 m.
Clemens et al. 2016, IJsseldijk et al., in press.

2016, 12 January – Eversand, Weser, Germany (1 animal, stranded dead).
Clemens et al. 2016, IJsseldijk et al., in press.

2016, 12 January – Helgoland, Germany (2 animals floating).
Length: 12.0 m, 12.3 m.
Clemens et al. 2016, IJsseldijk et al., in press.

2016, 12 January – Texel, the Netherlands (5 animals live stranded, died).
Live-stranding. died
Length: 9.6 m, 9.7 m, 10.1 m, 10.25 m, 11.1 m
Clemens et al. 2016, Geelhoed et al. 2016, Smeenk & Camphuysen 2016, IJsseldijk et al., in press.

2016, 13 January – Trischen, Germany (re-stranded Cuxhaven 28 January).
Length: 10.7 m.
Clemens et al. 2016, IJsseldijk et al., in press.

2016, 14 January – Texel, the Netherlands (carcass, not fresh).
Length: 11.5 m.
Clemens et al. 2016, Geelhoed et al. 2016, Smeenk & Camphuysen 2016, IJsseldijk et al., in press.

2016, 23 January – Hunstanton, Norfolk, England (1 live stranded, died; 4-5 escaped).
Length: 13.8 m.
P.G.H. Evans, press reports, Clemens et al. 2016, IJsseldijk et al., in press.

2016, 24 January – Gibraltar Point & Skegness, Lincolnshire, England (3 stranded, 1 died at Gibraltar Point, 2 died at Skegness).
Length: 14.6 m, 14.7 m (Gibraltar Point), 13.5 m (Skegness)
P.G.H. Evans, press reports, Clemens et al. 2016, IJsseldijk et al., in press.

2016, 25 January – Friskney Flats, Wainfleet, Lincolnshire, England (1 stranded dead, 1 escaped).
P.G.H. Evans, press reports, Clemens et al. 2016, IJsseldijk et al., in press.

2016, 31 January – Kaiser-Wilhelm-Koog, Germany (8 animals, 1 live stranded, died; 7 stranded dead).
Length: 10.2 m, 10.5 m, 10.8 m, 11.0 m, 11.2 m, 11.3 m, 11.4 m, 11.7 m
Clemens et al. 2016, IJsseldijk et al., in press.

2016, 2 February – Hemmes de Marck, Calais, France (1 animal, stranded dead).
Length: 13.85 m
Clemens et al. 2016, IJsseldijk et al., in press.

2016, 3 February – Blauortsand, Büsum, Germany (2 animals, stranded dead).
Length: 11.4 m, 12.0 m
Clemens et al. 2016, IJsseldijk et al., in press.

2016, 3 February – Old Hunstanton/Holme-next-the-Sea, England (1 live stranded, died).
Length: 13.6 m
P.G.H. Evans, press reports, Clemens et al. 2016, IJsseldijk et al., in press.

2016, 25 February – Blaavandshuk, Denmark (1 animal, stranded dead, decomposed).
Geelhoed et al. 2016, IJsseldijk et al., in press.

Note – January/February 2016 strandings thought to be related.

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Zorgdrager, C.G. 1727. Zorgdragers bloeijende opkomst der aloude en hedendaagsche Groenlandsche visschery. Waar in met eene geoeffende ervaarenheit de geheele omslag deezer visscherye beschreeven, en wat daar in dient waargenomen, naaukeurig verhandelt wordt. Uitgebreid met eene korte historische beschryving der noordere gewesten, voornamentlyk Groenlandt, Yslandt, Spitsbergen, Nova Zembla, Jan Mayen Eilandt, de Straat Davis, en al 't aanmerklykste in de ontdekking deezer landen, en in de visschery voorgevallen. Met byvoeging van de walvischvangst, in haare hoedanigheden, behandelingen, 't scheepsleeven en gedrag beschouwt. Door Abraham Moubach. Tweeden druk. Met aanmerkelyke zaaken vermeerdert, nevens een korte beschryving van de Terreneufsche bakkeljaau-visschery. Verciert met naauwkeurige, en naar 't leven geteekende nieuwe kaarten en kunstige printverbeeldingen: Verklaaring van de tytelprint, Opdragt, Voorrede, Korte inhoudt der hoofdtstukken, Inleiding, 1-392, Bladwyzer, pls, maps. P. van Thol & R.C. Alberts, s'Gravenhage.
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Samenvatting

Een beredeneerde strandingslijst van potvissen (*Physeter macrocephalus*) rond de Noordzee

Jonge volwassen potvissen maken uitgebreide zwerftochten tot ver in de noordelijke oceanen. Hoewel het hier een uitgesproken oceanische soort betreft, komen er vanuit de oostelijk Noord-Atlantische Oceaan af en toe exemplaren de Noordzee binnen. In de centrale en zuidelijke delen stranden ze dan onveranderlijk op de kusten van noordelijk Europa. Hoewel ze in dit gebied in alle jaargetijden worden waargenomen vinden de meeste strandingen plaats in de periode november-maart. Waarnemingen van potvisstrandingen rond de Noordzee vanaf de dertiende eeuw tot heden worden hier bij elkaar gebracht en gedocumenteerd voor wat betreft datum, vindplaats, aantal individuen en, indien bekend, ook de individuele lengte. Daarnaast wordt per waarneming een lijst van vindplaatsen in de literatuur gepresenteerd. Hoewel de in het verleden opgegeven lengtematen waarschijnlijk onnauwkeurig zijn vastgesteld, zijn er toch wel aanwijzingen dat de grotere (> 16 m lange), oudere individuen zoals waargenomen in het verleden sinds het midden van de jaren 1980 in het gebied van onderzoek zeldzamer zijn geworden.

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