

# Occurrence of the short-snouted seahorse *Hippocampus hippocampus* in the central North Sea

by

John K. PINNEGAR (1), Vanessa STELZENMÜLLER (1), Jeroen VAN DER KOOIJ (1),  
Georg H. ENGELHARD (1), Neil GARRICK-MAIDMENT (2) & David A. RIGHTON (1)

**RÉSUMÉ.** - Apparition de l'hippocampe à museau court *Hippocampus hippocampus* en mer du Nord centrale.

Lors de campagnes scientifiques, réalisées durant ces deux ou trois dernières années en Mer du Nord centrale, une augmentation d'hippocampes à museau court, *Hippocampus hippocampus* (Linnaeus, 1758) a été constatée. Plus précisément en 2006, des spécimens ont été capturés sur le Dogger Bank (54°11'N, 01°00'E) et le long des côtes allemandes (54°13'N, 08°30'E). Cela représente la position la plus au Nord à laquelle cette espèce a été enregistrée depuis plus de 100 ans, et indique une importante augmentation du territoire de répartition. Dans cet article, nous avons compilé et discuté des observations historiques de cette espèce dans la mer du Nord (provenant du Royaume-Uni, de l'Allemagne, de la Belgique et des Pays Bas).

**Key words.** - Syngnathidae - *Hippocampus hippocampus* - Seahorse - ANE - North Sea - Distribution - Records.

The short-snouted seahorse *Hippocampus hippocampus* (Linnaeus, 1758) is one of only two seahorse species known to occur along the north Atlantic coast of Europe. *H. hippocampus* is described as occurring from the Wadden Sea southward to the Gulf of Guinea, whereas the spiny seahorse, *Hippocampus guttulatus* Cuvier, 1829, has been reported from northern Scotland and the western coasts of the British Isles south to Morocco (Garrick-Maidment, 2004).

Over the past 2-3 years a number of individuals have been recovered during research surveys in the central North Sea. These have included (Fig. 1) a female of 69.2 mm standard length, 59.8 mm height caught by a modified scallop dredge during the night of 12<sup>th</sup> May 2006 on the Dogger Bank (54°11.40'N, 01°0.18'E). Other recent observations have included 12 individuals from the area off Sankt Peter Ording, Schleswig-Holstein (54°13'N, 8°30'E) between 2001 and 2007 (Tab. I).

Together these records represent the first confirmed incidence of this species occurring north of 54° latitude in the North Sea in over 100 years. The species has been recorded regularly along the coasts of Belgium (Vandendriessche *et al.*, 2005; Tab. I, Fig. 2), and the Netherlands (Nijssen and De Groot, 1974). Around the British Isles, most records are from the Channel Islands, but specimens are regularly reported all along England's south coast, Isles of Scilly, south Wales and southern Ireland (Garrick-Maidment, 2004). Five individuals have been reported from the Thames estuary (Tab. I, Fig. 2) including several individuals from power station intake screens (notably the individual from West Thurrock Power Station in 1986).



Figure 1. - Photograph of the live *Hippocampus hippocampus* shortly after being caught on the 12<sup>th</sup> May 2006, Dogger Bank, central North Sea. Scale bar = 1 cm. [Photo de *H. hippocampus* vivant, peu après sa capture le 12 mai 2006, sur le Dogger Bank, centre de la mer du Nord. Échelle = 1 cm.]

Most specimens of *H. hippocampus* in the North Sea have been captured by coastal fishing vessels, using trawl gears or gill-nets (Tab. I). Often they have been caught on offshore sand banks and there are several records of specimens associated with the erect bryozoan *Alcyonidium diaphanum*. The specimen reported here from the Dogger Bank, occurred in a benthic sample which included *A. diaphanum*.

All North Sea records (Tab. I) have occurred between May and October. During the winter (and during stormy weather) *H. hippocampus* is thought to migrate to deeper waters where it benefits from more stable environmental conditions (Garrick-Maidment, 2004). Seahorses are occasionally brought up from deeper water by crab and lobster fishermen where it is thought that they are attracted to the pots

(1) Centre for Environment, Fisheries & Aquaculture Science, Lowestoft Laboratory, Pakefield Road, Lowestoft, Suffolk, NR33 0HT, UK. [john.pinnegar@cefas.co.uk]

(2) The Seahorse Trust, 36 Greatwood Terrace, Topsham, Devon, EX3 0EB, UK.

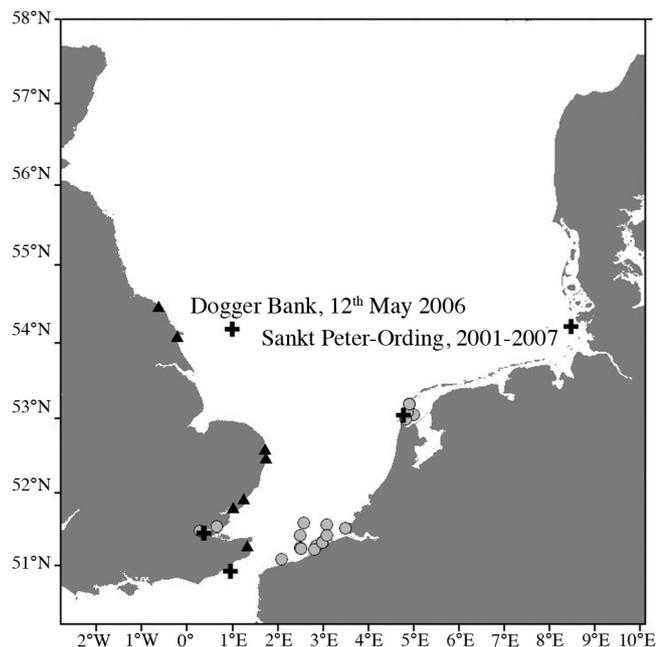


Figure 2. - Map showing historic occurrences of *Hippocampus hippocampus* in the North Sea. Filled/black crosses indicate animals found in 2006-2007, grey circles show records from 1949-2005, black triangles show occurrences based on the reports of authors prior to 1900. [Carte montrant les observations historiques de *H. hippocampus* en mer du Nord. Les exemplaires observés en 2006-2007 sont représentés par des croix noires, les observations de 1949-2005 sont représentées par des ronds gris, les observations faites avant 1900 suivant les rapports des auteurs sont représentées par des triangles noirs.]

Table 1. - Records of seahorse *Hippocampus hippocampus* in the North-Sea, giving date, location and reference. ZMA = Collections of the Zoological Museum Amsterdam, BMNH = Collections of the Natural History Museum, London (formerly British Museum Natural History). [Observations de l'*hippocampe* *H. hippocampus* en mer du Nord avec dates, lieux et coordonnées.]

Date	Location	Comment	Reference
12 May 2006	Dogger Bank, central North Sea 54°11.40'N, 01°0.18'E	Caught using a modified scallop dredge at 55 m depth	This paper
May 2007	Thames, Gravesend Reach, Essex	1 individual recorded	Pers. com. R.A. Kowalik, Zoological Society of London.
25 April 2007	Thames, Gravesend Reach, Essex	1 individual recorded	Pers. com. R.A. Kowalik, Zoological Society of London.
10 March 2007	East Bay off Dungeness	1 individual found in the nets of a trawler	Reported at RXwildlife.org.uk wildlife weblog for the Hastings, Rye Bay, Dungeness and Romney Marsh area
25 October 2006	Thames, Gravesend Reach, Essex	1 individual recorded	Pers. com. R.A. Kowalik, Zoological Society of London.
8 October 2006	Texel, Netherlands	1 individual found on the beach	Reported at <a href="http://www.kustgids.nl/kustmail/KustMail2006-9en10.pdf">www.kustgids.nl/kustmail/KustMail2006-9en10.pdf</a>
Between 2001 and 2007 (including 1 July 2003)	off Sankt Peter-Ording, Schleswig-Holstein (54°13'N, 8°30'E)	12 individuals recorded	Pers. com. R. Fricke, SMNS, Stuttgart. Also <i>Frankfurter Allgemeine Zeitung</i> , 8 <sup>th</sup> July 2003
13-24 June 2005	The Hinder Banks, Belgian Coast	1 animal caught by <i>RV Belgica</i> survey, using a small beamtrawl	Reported at <a href="http://www.naturalsciences.be/museum/sciencenews/archive2005/pioneers">www.naturalsciences.be/museum/sciencenews/archive2005/pioneers</a>
June-August 2004	Oosterschelde (Eastern Scheldt), Netherlands	Several individuals (males, females, juveniles) sighted by scuba divers	Reported at <a href="http://www.anemoon.org/anemoon/spuisluis/2004/040906.htm">www.anemoon.org/anemoon/spuisluis/2004/040906.htm</a>
2005	Westhinder sandbank (Belgium), 51°25'N, 2°30'E	1 animal caught by Royal Belgian Institute of Natural Sciences (RBINS)	J. Haelters, Koninklijk Belgisch Instituut voor Natuurwetenschappen (Pers. com.)
June 2004	Leigh-on-Sea, Essex (Thames estuary), UK	1 animal found by a fisherman trawling in shallow water	Reported in <i>The Times</i> , Tuesday June 15 <sup>th</sup> 2004
21 May 2004	3 nautical miles from Oostende, Belgium	1 animal caught by Belgian fishing vessel O.20	Vandendriessche <i>et al.</i> (2005)

by small crustaceans that feed on the bait (Garrick-Maidment 2004).

Early reports of seahorses in the North Sea offer a somewhat confusing picture, given that they use a variety of different synonyms and it remains unclear whether they are referring to *H. hippocampus* or *H. guttulatus*. Yarrell (1836) and Couch (1865) suggested that seahorses (*Hippocampus brevisrostris*) had been encountered at Great Yarmouth (Norfolk) and were also caught in shrimp-trawls at Sandwich (Kent), Yarrell (1836) also stated that one had lived for three weeks in confinement at Harwich in Essex (Fig. 2). Day (1884) added that *Hippocampus antiquorum* had been reported three times at Whitby and once at Bridlington (Yorkshire), and Collings (1933) reported *H. antiquorum* from Brittlesey (Essex). However, the name *H. antiquorum* has been used interchangeably by authors to describe both *H. hippocampus* and *H. guttulatus*. Andrews and Wheeler (1985) and Wheeler (1979) list a number of seahorse occurrences in the Thames estuary (at Whitstable, Dagenham, West Thurrock, Brightlingsea, Shoebury sands, East Swin, Sunk Light, the 'Outfalls') but all were subsequently attributed to *H. ramulosus* (now *H. guttulatus*).

There has been much discussion about the possible influence of long-term climate change on the distribution of marine fish species. Whether or not the apparent increased occurrence of *H. hippocampus* in the North Atlantic is a result of warmer waters (as suggested by Stebbing *et al.*, 2002), and/or changes in the position of the Gulf Stream remains unclear. The British Seahorse Survey (Garrick-Maidment, 2004), although highlighting that seahorses tend to occur in regions influenced by the Gulf Stream, have argued that the recent pronounced increase in observations along UK coasts reflects increased awareness and more people knowing where to report their sightings, and not necessarily a real increase in the prevalence of *H. hippocampus* and *H. guttulatus*. Indeed, there is a tendency for more sightings to be reported in the vicinity of estab-

Table I. - Continued. [Suite]

Date	Location	Comment	Reference
20 April 2004	Wenduinebank, Belgium	1 animal caught by Belgian fishing vessel O.190	Vandendriessche <i>et al.</i> (2005)
11 Sept. 2002	Oostendebank, Belgium	1 animal caught by Belgian fishing vessel O.191	Vandendriessche <i>et al.</i> (2005)
18 Aug 2001 25 Sept 2001	Belgian coast	2 animals caught by Belgian fishing vessel O.190	Vandendriessche <i>et al.</i> (2005)
17 Feb. 2001	Belgian coast	1 animal caught by Belgian gill-net vessel O.369	Vandendriessche <i>et al.</i> (2005)
28 Sept. 2000	Westpit fishing grounds, Belgium	1 animal caught by Belgian fishing vessel O.190	Vandendriessche <i>et al.</i> (2005)
14 July 1999 10 July 1999 24 June 1999	Belgian coast	1 caught by O.20 1 caught by O.152 1 caught by O.101	Vandendriessche <i>et al.</i> (2005)
21-26 Sept. 1998	Belgian coast, 51°15'N, 2°30'E	~120 Seahorses, in 5 hauls close to the coast. Caught in gill nets and associated with <i>Alcyonidium</i>	J. Haelters (Pers. com.)
22 Sept. 1998	Belgian coast, between 51°12'N, 2°30'E and 51°15'N, 2°33'E	7 animals caught by Belgian gill-net vessel N.95 associated with <i>Alcyonidium</i>	Vandendriessche <i>et al.</i> (2005)
24 July 1998	Belgian coast	1 animal caught during night by shrimp fishing vessel O.211	Vandendriessche <i>et al.</i> (2005)
14-20 March 1998	3 nautical miles from Zeebrugge	1 animal	Vandendriessche <i>et al.</i> (2005)
1986	Grays, Essex, UK	Found at West Thurrock Power Station	Natural History Museum (BMNH), London. Fish collection database. BMNH 1986.10.3.2
4 July 1975 (or 1976)	Southern North Sea, 51°05'N, 2°05'E	1 animal, reported as <i>H. europaeus</i> caught by Belgian fishing vessel O.150	De Clerk (1976)
July 1962	Wadden Sea, Texelstroom	1 animal. VII-1962, coll. NIOZ	Nijssen and De Groot (1974)
Aug. 1959	Wadden Sea	2 animals, coll. NIOZ	Nijssen and De Groot (1974)
8 Aug 1960	Wadden Sea, east of Texel	1 animal, coll. WR 107, (ZMA 111.014)	Nijssen and De Groot (1974)
12 July 1949	Wadden Sea, De Cocksdorp, Texel	1 animal, coll. NIOZ (ZMA 111.014)	Nijssen and De Groot (1974)
13 July 1948	Wadden Sea, Malzwin, NE of Den Helder	1 animal, coll. NIOZ (ZMA 111.013)	Nijssen and De Groot (1974)
Prior to 1884	Whitby, North Yorkshire, UK	3 animals, identity uncertain, described as <i>H. antiquorum</i>	Day (1884) citing <i>Yorkshire Vertebrata</i>
Prior to 1884	Bridlington, North Yorkshire, UK	1 animal, identity uncertain, described as <i>H. antiquorum</i>	Day (1884) citing <i>Yorkshire Vertebrata</i>
Prior to 1865	Sandwich, Kent, UK	Identity uncertain, described as <i>H. brevisrostris</i>	Couch (1865)
1861	Lowestoft, Suffolk, UK	1 animal described as <i>H. antiquorum</i> taken in fisherman's nets	Patterson (1910)
1860s	Brightlingsea, Essex, UK	1 animal, identity uncertain, described as <i>H. antiquorum</i>	Collings (1933)
Prior to 1836	Harwich, Essex, UK	Identity uncertain, described as <i>H. brevisrostris</i>	Yarrell (1836)
Prior to 1834	Great Yarmouth, Norfolk, UK	Identity uncertain, described as <i>H. brevisrostris</i>	Yarrell (1836)

lished marine science institutes, (e.g. around Plymouth in the UK and around Texel in the Netherlands).

The life history characteristics of seahorses (including *H. hippocampus* and *H. guttulatus*), which involve relatively protracted parental care, low fecundity, monogamy, low mobility, and small range size make them particularly sensitive to overexploitation and habitat degradation. The entire genus *Hippocampus* is listed in Appendix II of CITES, thereby restricting international trade. In addition, *H. hippocampus* is listed in the Red Data Book of Portugal, the OSPAR Biodiversity Committee has nominated the species

as being 'threatened and/or declining', and the UK has recently (February 2008) listed both seahorse species in Schedule 5 of the UK Wildlife and Countryside Act, 1981 citing the sensitivity and rarity of the species. *H. hippocampus* is listed as 'data deficient' by IUCN, since there are no published data about population trends or total numbers of mature animals.

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