

Juvenile *Hippocampus guttulatus* from a neuston tow at the French-Belgian border

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The long-snouted seahorse *Hippocampus guttulatus* Cuvier, 1829 occurs mostly in shallow inshore waters among algae and eel grass (*Zostera* or *Posidonia*) and also in littoral lagoons (1). The species can be found in the Eastern Atlantic from the British Isles to Morocco, including the Canary Islands, Madeira and the Azores (2). The presence of the long-snouted seahorse in Belgian waters was already suspected (see CITES appendix II) but never confirmed. *Hippocampus ramulosus* Leach, 1814 is regarded as an invalid synonym of this species, although this name is still widely used for what is now *H. guttulatus* (2).

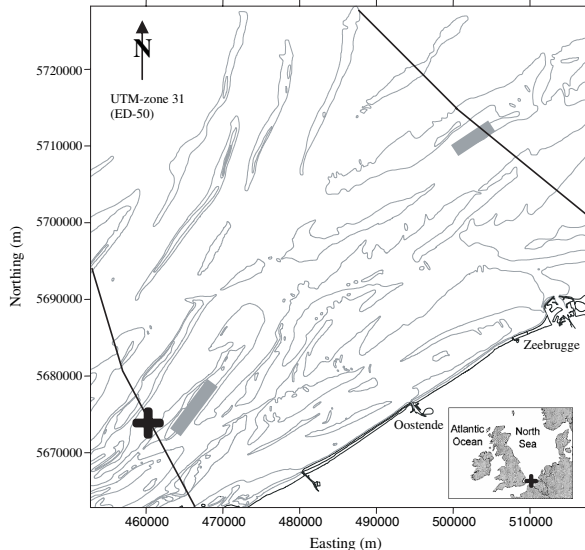


Fig. 1. – Sampling station *Hippocampus guttulatus* (black cross) and fishermen's catches of *Hippocampus hippocampus* (grey areas) in Belgian marine waters (border represented by black lines)

The sampling station where *Hippocampus guttulatus* was found is situated between the sandbanks Buiten Ratel en Oost Dyck (UTM 5674450 - 460236.7), on the French-Belgian border (Fig. 1). This station was investigated during a sampling campaign on August 20th (2003) with the research vessel 'Zeeleeuw'. The sample was taken with a rectangular neuston net (2m x 1m, 1mm mesh) from which only the lower 50cm is immersed, thereby sampling the upper 50cm of the water column. Identifications

of the specimens, which were preserved in a 10% formaldehyde-seawater solution, are based on characteristics described by LOURIE et al. (2).



Fig. 2. – Photograph of specimen 2

The neuston sample contained two well-preserved juveniles (approximately 3 to 4 weeks old) of the species *Hippocampus guttulatus*. Most of the examined characteristics (Table 1) are within the range for both *Hippocampus guttulatus* and *H. hippocampus* (i.e. number of trunk rings, number of tail rings, number of pectoral fin rays, number of dorsal fin rays). However, the ratio of snout length to head length ($> 1/3$) certainly suggests that these specimens are *H. guttulatus* or the European long-snouted seahorse, and the number of pectoral fins on one of the specimens is consistent with it being *H. guttulatus*. Both specimens lack a mane of thick skin fronds on neck and head, usually seen in adults (Fig. 2).

TABLE 1

Examined identification characteristics for both specimens

| | Specimen 1 | Specimen 2 |
|----------------------------|--------------------------|------------|
| Overall height | 2.93 cm | 3.51 cm |
| Number of trunk rings | 11 | 11 |
| Number of tail rings | 36 | 37 |
| Snout length / head length | 0.42 | 0.42 |
| Coronet | Rounded knobs | |
| Spine development | Blunt and well-developed | |
| Pectoral fin rays | 15 | 16 |
| Dorsal fin rays | 18 | 18 |
| Cheek spine | Low and blunt | |
| Eye spine | Prominent, rounded | |

TABLE 2
Recent seahorse catches (*Hippocampus hippocampus*) by local fishermen in Belgian marine waters

| Year | Date | Num-ber | Method of capture / vessel | Capture site | Destination of sea horses | Remarks |
|------|--------------|---------|----------------------------|---|--------------------------------|--|
| 1997 | May | 4 | Coastal fisheries | – | Oostende North Sea Aquarium | alive |
| 1998 | 14-20 March | 1 | – | 3 nautical miles from Zeebrugge | – | – |
| 1998 | 24 July | 1 | Shrimp fisheries / O.211 | – | Died and was discarded | During night |
| 1998 | 22 September | 7 | Gill net / N.95 | Between 51 12.70 N- 02 29.70E and 51 15.43N – 02 32.99E | released | Associated with <i>Alcyonidium</i> |
| 1998 | 23 September | 14 | – | – | Aquarium of skipper-ship owner | – |
| 1998 | 24 September | 33 | – | – | Oostende North Sea Aquarium | – |
| 1998 | 25 September | 66 | – | – | Sealife Blankenberge | – |
| 1999 | 24 June | 1 | Coastal fisheries / O.101 | – | – | – |
| 1999 | 10 July | 1 | Coastal fisheries / O.152 | – | – | Dead but no signs of decay |
| 1999 | 14 July | 1 | O.20 | – | – | Pregnant male |
| 1999 | – | – | N.95 | Between 51 12.70 N- 02 29.70E and 51 15.43N – 02 32.99E | – | Skipper is convinced of the presence of a local population |
| 2000 | 28 September | 1 | O.190 | Westpit fishing grounds | – | Dead |
| 2001 | 17 February | 1 | Gill net / O.369 | – | – | – |
| 2001 | 18 August | 1 | Coastal fisheries / O.190 | – | – | – |
| 2001 | 25 September | 1 | Coastal fisheries / O.190 | – | – | Male |
| 2002 | 11 September | 1 | O.191 | Fishing grounds near Oostendebank | – | – |
| 2004 | 20 April | 1 | O.190 | Wenduinebank | – | – |
| 2004 | 21 May | 1 | O.20 | 3 nautical miles from Oostende | – | Alive |

This is the first reported catch of *Hippocampus guttulatus* for the Belgian waters, and the origin of the specimens is unclear. Although there are numerous records for southern Britain, it is unlikely that specimens could reach the Belgian coast due to their poor swimming ability and the lack of assisting currents (3). On the other hand, the presence of a local population seems unlikely because from 1997 onwards, only *Hippocampus hippocampus* was occasionally caught by local fishermen (Table 2, Fig. 1). As the specimens were caught near the sea surface, it is likely that they were carried to the Belgian coastal zone through the English Channel in association with floating debris (the sample contained decaying duckweed, plant seeds and pieces of plastic). However, the presence of seahorses (and their fry) in the neuston is quite uncommon. Only *Hippocampus erectus* has already been reported from the neuston in association with floating debris and vegetation (4, 5, 6).

As the entire genus *Hippocampus* is listed in Appendix II of CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) and both *H. guttulatus* and *H. hippocampus* are listed as Data Deficient by IUCN (World Conservation Union), it is most important to gather information on the presence and persistence of local populations of seahorse species to form the basis of legal protection and conservation. Hopefully, this note will be the starting point for a detailed record of Belgian seahorse catches.

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REFERENCES

- LELONG, P. (1995). Hippocampe moucheté, *Hippocampus ramulosus*. *Océanorama* (Institut Océanographique Paul Ricard), 24 : 19-20.
- LOURIE, S.A., A.C.J. VINCENT & H.J. HALL (1999). Seahorses : an identification guide to the world's species and their conservation. Project Seahorse, London.
- GARRICK-MAIDMENT, N. (1998). A note on the status of indigenous species of seahorse. *J. Mar. Biol. Ass. UK*, 78 : 691-692.
- POWELL, A.B., D.G. LINDQUIST & J.A. HARE (2000). Larval and pelagic juvenile fishes collected with three types of gear in Gulf Stream and shelf waters in Onslow Bay, North Carolina, and comments on ichthyoplankton and hydrography. *Fish. Bull.* 98 : 427-438.
- CASTRO, J.J., J.A. SANTIAGO & A.T. SANTANA-ORTEGA (2001). A general theory on fish aggregation to floating objects : an alternative to the meeting point hypothesis. *Reviews in fish biology and fisheries*, 11(3) : 255-277.
- TEIXEIRA, R.L. & J.A. MUSICK (2001). Reproduction and food habits of the lined seahorse, *Hippocampus erectus* (Teleostei : Syngnathidae) of Chesapeake Bay, Virginia. *Brazilian Journal of Biology*, 61(1) : 79-90

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