



SCIENTIFIC MEETING

SEAHORSES AND PIPEFISH IN THE NORTH SEA

Tuesday, 12 February 2008

The Meeting Rooms, The Zoological Society of London, Regent's Park, London NW1 4RY

**Chair: Alison Shaw,
Marine and Freshwater Conservation Programme Manager, Zoological Society of London**

Mass occurrence of snake pipefish in the north-east Atlantic: result of a change in climate?

Cindy J. G. van Damme, Wageningen IMARES (Institute for Marine Resources and Ecosystem Studies), IJmuiden, The Netherlands

In 2004 a sudden mass occurrence of snake pipefish *Entelurus aequoreus* took place in the north-eastern Atlantic and this abundance increased rapidly over a few years. Before 2004 the species was mainly found in coastal areas and was rarely reported in oceanic waters. The oceanic form lives free in the water column while the coastal form is found among sea weeds or in sea grass beds. Literature from the beginning of the 20th century indicates that at that time snake pipefish was considered a pelagic rather than a coastal species.

Oceanic specimens of snake pipefish are much leaner than coastal specimens. Length distributions show that coastal snake pipefish are larger compared to pelagic specimens. Although the outward appearance of the coastal pipefishes seems different from the pelagic specimens, no differences were found when comparing taxonomic features. Could this be a cryptic species?

It seems that the pelagic specimens live in a harsher environment but the question arises - 'Why and how is it possible that these huge outbursts occur?'

I will present an overview of the occurrence of snake pipefish in the different ecosystems and discuss different hypotheses that may explain these mass occurrences. I will also give some examples of the impact such mass occurrences can have on the ecosystem.

Further Reading:

Kirby, R. R., Johns, D. G. & Lindley, J. A. (2006) Fathers in hot water: rising sea temperatures and a Northeastern Atlantic pipefish baby boom. *Biology Letters* **2**: 597–600.

Kloppmann, M. H. F. & Ulleweit, J. (2006) Off-shelf distribution of pelagic snake pipefish, *Entelurus aequoreus* (Linnaeus, 1758), west of the British Isles. *Marine Biology* **151**: 271–275.

Lindley, J. A., Kirby, R. R., Johns, D. G. & Reid, P. C. (2006) Exceptional abundance of the snake pipefish (*Entelurus aequoreus*) in the north-eastern Atlantic Ocean. ICES CM 2006/C:06.

Van Damme, C. J. G. & Couperus, A. S. (2006) Mass occurrence of snake pipefish in the Northeast Atlantic: result of a change in climate? ICES CM 2006/C:17.

Vincent, A. C. J., Berglund, A. & Ahnesjö, I. (1995) Reproductive ecology of five pipefish species in one eelgrass meadow. *Environmental Biology of Fishes* **44**: 347–361.

Wilson, A. B., Ahnesjö, I., Vincent, A. C. J. & Meyer, A. (2003) The dynamics of male brooding, mating patterns, and sex roles in pipefishes and seahorses (family Syngnathidae). *Evolution* **57**: 1374–1386.

Snake pipefish as food for seabirds: famine or feast?

Prof Sarah Wanless, Centre for Ecology & Hydrology, Edinburgh

Many seabird species require energy-rich food to raise healthy chicks. Among UK seabirds the traditional food is the lesser sandeel *Ammodytes marinus*, a small shoaling fish with a high fat content. However, sandeel availability has declined dramatically in recent years, probably as a result of over fishing and/or rising sea temperatures. Starting in about 2003, the abundance and range of the snake pipefish *Entelurus aequoreus* increased dramatically in the North Sea and north-east Atlantic and simultaneously pipefish started to be recorded in the diet of seabirds breeding at colonies throughout this area.

I will consider whether the population explosion of pipefish has benefited seabirds and, in particular, examine whether pipefish are a good alternative source of food for seabird chicks.

Further Reading:

Harris, M.P., Newell, M., Daunt, F., Speakman, J.R. & Wanless, S. (2007) Snake pipefish *Entelurus aequoreus* are poor food for seabirds. *Ibis online*, doi:10.1111/j.1474-919x.2007.00780x

Harris, M.P., Beare, D., Toresen, R., Nøttestad, L., Kloppmann, M., Dörner, H., Peach, K., Rushton, D.R.A., Foster-Smith, J. & Wanless, S. (2007) A major increase in snake pipefish (*Entelurus aequoreus*) in northern European seas since 2003: potential implications for seabird breeding success. *Marine Biology* **151**: 973–983.

Wanless, S., Harris, M.P., Redman, P. & Speakman, J.R. (2005) Low fish quality as a probable cause of a major seabird breeding failure in the North Sea. *Marine Ecology Progress Series* **294**: 1–8.

British seahorses: fact or fiction

Neil Garrick-Maidment, Executive Director, The Seahorse Trust

The British Seahorse Survey was established in 1994 by Neil Garrick-Maidment, Executive Director of The Seahorse Trust. The survey was set up to observe and monitor the populations of seahorses around the British Isles.

Using data on historic sightings from books, databases, wildlife trusts and other conservation bodies, it has been possible to build a picture of the distribution of seahorses in British coastal waters. Owing to greater public awareness and the longevity of the study,

the survey now receives a great many sightings. This information will form the basis of legal protection and conservation strategies for these highly vulnerable and environmentally sensitive animals.

It has long been supposed that both species of seahorse, the spiny seahorse (*Hippocampus guttulatus*) and the short-snouted seahorse (*Hippocampus hippocampus*), were seasonal visitors but results from the survey indicate that they are indigenous and occupy areas ranging from Ireland and the Shetland Isles down the west coast to the Isles of Scilly.

Along with its work with captive seahorses, the Seahorse Trust works with many other researchers in the field to understand more about these elusive creatures.

Further Reading and Information

British Seahorse Survey Report 2004, Neil Garrick-Maidment and Louisa Jones, The Seahorse Trust.

British Seahorse Survey Report 2007, Neil Garrick-Maidment, The Seahorse Trust.

Seahorses; Conservation and Care. Neil Garrick-Maidment, Interpet Books.

www.britishseahorsesurvey.org

www.theseahorsetrust.co.uk