

The logo for NABIS (New Zealand Aquatic Biodiversity Information System) features the word "NABIS" in a bold, blue, sans-serif font. To the right of the text is a stylized map of New Zealand, with a magnifying glass icon overlaid on it, symbolizing search and discovery.

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Lineage – Scientific methodology

Annual distribution of Mero's umbrella octopus lineage

1. Literature

Literature sources were searched for distributional information on Mero's umbrella octopus *Opisthoteuthis mero* O'Shea, 1999 (Suborder Cirrata, Family Opisthoteuthidae) around New Zealand. This octopus has been recorded only from New Zealand waters, off both coasts of the North and South Islands, the Chatham Rise, and Campbell Plateau, at depths between 360 and 1000 m.

- a. Using the keywords **Opisthoteuthis** or **mero**, extracts were made from Aquatic Sciences and Fisheries Abstracts and NIWAcat (all records at 14 August 2005). Relevant publications were obtained and used to help define distribution.
- b. Using the keyword **Opisthoteuthis mero**, Google records were examined on 12 August 2005. Relevant entries were obtained and used to help define distribution.
- c. Guided searches of library catalogues using the keywords (anywhere or global) **Opisthoteuthis AND thesis** and **umbrella AND octopus AND thesis** (The University of Auckland, Auckland University of Technology, Massey University, Victoria University of Wellington, University of Canterbury, The University of Waikato, University of Otago) on 14 August 2005 registered no hits.

2. Ministry of Fisheries electronic databases

No MFish databases were checked as it was decided that they would not contain useable information on the distribution of *O. mero*. Although thought to include mainly *O. mero*, the MFish species code OPI is generically applied to all umbrella octopus species and so is not useful in defining the distribution of this species. Nonetheless, on the 8 November 2007, the MFish trawl database was checked to determine whether there had been additional records which may extend the generic range. Between 15 September 2004 and 25 July 2007, 56 records of the generic code OPI were recorded. Records were plotted, and although species could not be determined, the recorded locations of combined species fell within the previously reported range for *O. chathamensis* and *O. mero* combined.

3. Museum holdings

Holdings of *O. mero* in the following museums were considered. Other museum holdings were not considered because discussions with Dr O'Shea, Auckland University of Technology, Auckland, indicated that any material received after that referred to in O'Shea (1999) would have either been shelved without formal identification or the identification would require confirmation.

- a. NIWA Greta Point. The **AllSeaBio** database was examined for records on 26 August 2005, with none being present. Additions made to the collection since about 1995 have not been loaded onto this database; in a search of more recent shelved material made on 29 August 2005, no additional material—formally identified as *O. mero*—was found.
- b. Museum of New Zealand Te Papa Tongarewa records of *O. mero* formed the basis of O'Shea (1999); no additional material—formally identified as *O. mero*—has been added (Bruce Marshall, Collection Manager Molluscs, Museum of New Zealand, pers. comm.).

2009 updates: Examination of the NIWA Invertebrate Collection database **Specify** in May 2009 revealed two recently identified records of *Opisthoteuthis mero* collected from east of the Auckland Islands in March 2009. This location is within the known spatial and depth distribution for the species.

4. Summary

Opisthoteuthis mero O'Shea, 1999 is the most common and widespread cirrate species, having been reported off both the North and South Islands, as well as on the Chatham Rise and Campbell Plateau, at depths between 360 and 1000 m. It was particularly common as a bycatch species from the Bay of Plenty scampi fishery and around the Auckland Islands, but appears not to be so common in those places now (www.tonmo.com/science/public/Finned_octopoda.pdf —26 August 2005).

The above information on the distribution of Mero's umbrella octopus, derived mostly from museum collections and the literature, was integrated by hand onto a large-scale map of New Zealand. The maximum depth was taken to be the 1000 m contour, the minimum 350 m. The rounded lines, after being reviewed by Dr Steve O'Shea, were digitised and imported into a GIS software package as layers. The areas of the hotspot and 100% distribution classes were calculated and the layers linked to attribute and metadata files.

There is no reason to believe that the seasonal distributions of this species are any different to this annual one.

5. References

The following publications were the key references and/or the ones most useful in describing the annual distribution of Mero's umbrella octopus *O. mero*. The list is not intended to be an exhaustive bibliography of publications about this species.

O'Shea, S. (1998). The deepsea finned Octopoda of New Zealand. *Seafood New Zealand October*: 26–28.

O'Shea, S. (1999). The marine fauna of New Zealand: Octopoda (Mollusca: Cephalapoda). *NIWA Biodiversity Memoir 112*.