



Lineage

Annual distribution of blue cod

FD0320_1; FD0321_1; FD0322_1; FD0323_1; FD0324_1

1. Electronic databases were used to generate initial maps of species distribution.
 - a. Commercial fishing returns (larger vessels): **TCEPR** database. All records from 1 October 1989 to 30 September 2005 were extracted on 17 October 2005. Data were used to estimate mean annual catch and catch rate (kilograms per kilometre towed) in 0.25 degree rectangles. Only the top five species caught are reported on these forms so information on the absence of a species is not available. Records of blue cod (species code BCO) from depths greater than 400 m off the Chatham Rise near Mernoo Bank, and off the Puysegur Bank, are probable mis-identifications or mis-codings of yellow cod (species code YCO), and were ignored (blue cod has never been recorded from these regions in research trawl tows). Records from Campbell Plateau may be mis-identified notothenid codes, and are not supported by trawl survey records.
 - b. Commercial fishing returns (smaller vessels mainly potting): **CELR** database. All records from 1 October 1989 to 30 June 2003 were extracted on 15–17 July 2003. Data were used to estimate mean annual catch in statistical areas. Only the top five species caught are reported on these forms so information on the absence of a species is not available. Reported blue cod catches from the Kermadec Fisheries Management Area (FMA 10) were ignored because they likely represent mis-recording of fisheries statistical area 10 (blue cod has not been recorded from the Kermadec Islands).
 - c. Scientific observer records from larger vessels: **obs** database. All records from 1 March 1990 to 30 September 2005 and stored in the new data format were extracted on 20 October 2005. Data were used to estimate mean annual catch and catch rate (kilograms per kilometre towed), and proportion of tows that caught the species, in 0.25 degree rectangles. Records of blue cod (species code BCO) from depths greater than 400 m off the Stewart Is – Snares Shelf are probable mis-identifications or mis-codings of yellow cod (species code YCO), and were ignored (blue cod has never been recorded from these regions in research trawl tows).
 - d. Research bottom trawl records: **fish_comm** database. This database is a groomed version of the research trawl database **trawl**. All records from 2 September 1978 to 30 September 2005 were extracted on 19 May 2006. Data were used to estimate total

catch, proportion of tows that caught the species, and catch rate (kilograms per kilometre towed) in 0.25 degree rectangles.

- e. Recreational fishing database: **rec_data**. All records were extracted on 24 July 2003. Data were used to determine the presence of a species in a variety of statistical reporting areas.
 - f. Museum of New Zealand Te Papa records of this species based on voucher specimens held in their collection were searched for distributional information that added to the distributional ranges determined from other databases.
 - g. Databases of commercial tuna longline catches (**TLCER**), observer records from tuna longlines (**I_line**), Russian trawl surveys (**trawl**), and aerial sightings (**aer_sight**) were not used as they contained no records of this species, or the number of records was too small to provide useful additional distributional information.
2. Literature sources were searched for distributional information that added to the distributional ranges determined from databases.
- a. Unpublished electronic bibliography of New Zealand fishes compiled by L. J. Paul and held on a NIWA computer.
 - b. Aquatic Sciences and Fisheries Abstracts.
 - c. *New Zealand Professional Fisherman and Seafood New Zealand* for 1986–2002.
 - d. *New Zealand Fishing News* for 1998–2002.
 - e. Scientific papers, unpublished reports and university theses available to the expert who prepared the distributional layers.
3. Other sources.
- a. Nil.
4. Summary
- a. Maps generated from the electronic databases were provided to an expert scientist who integrated this information with other information from the literature, and expert opinion, and produced hand-drawn distributional zones on a template map containing depth contours at 250 m, 500 m, and 1000 m. These maps were then digitised and imported into a GIS software package as layers. The areas of the zones were calculated, and the layers were linked to attribute and metadata files.
 - b. The primary sources of distributional data for blue cod were TCEPR, CELR, and fish_comm databases.
 - c. Blue cod is endemic to New Zealand and occurs throughout mainland waters from the Three Kings Islands to the Snares Shelf. There are also many records of blue cod from the northern and southern coasts of the South Island, the Mernoo Bank and the Chatham Islands, but none from the deeper waters of the Chatham Rise. Commercial catch records from the Campbell and Bounty Plateaus cannot be confirmed from other sources and may be mis-identifications of notothenid cods. Blue cod are mostly found shallower than 150 m, but are present in areas of foul bottom as deep as 400 m.

5. References

The following sources provided useful information on the distribution of this species. This is not an exhaustive list of all references to the species.

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