Atlas of New Zealand fish and squid distributions from research bottom trawls

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Contents

Introduction

Fishes are the most abundant and diverse group of vertebrate animals and are a major component of marine ecosystems. Interactions between fish species, and between fishes and other marine animals and plants, are therefore important in defining the structure, diversity, and stability of ecosystems and for managing them effectively. Determination of fish distribution and community structure are important first steps to improving our understanding and knowledge of marine ecosystems.

In New Zealand, general geographic distributions have been documented for many groups of species. Moreland (1959) briefly summarised the distributions of 253 shore fishes; Paulin & Stewart (1985) provided geographical ranges for about 700 marine teleosts; Ayling & Cox (1982) and Paul (1986) noted the general distribution of about 500 and 300 species, respectively, of fish and shellfish; Francis (1988) reported distributional limits for 120 inshore teleosts and elasmobranchs (mostly reef-associated) and later (Francis 1996) extended this to 375 reef fishes in 16 geographic regions; and Paulin & Roberts (1992, 1993) detailed the distributions of 83 and 94 species, respectively, of rock pool fishes. These reports did not always list all the species analysed and often did not provide detailed distributional data on individual species. There are also numerous detailed accounts on fish fauna from selected regions (e.g., Campbell Island, Parrott (1958); Kaikoura, Francis (1979), Davison & van Berkel (1985); Snares Islands, Hardy (1986); Chatham Islands, Roberts (1991)), but no detailed accounts of areal and depth distribution for the entire New Zealand 200 nautical mile Exclusive Economic Zone (EEZ) (Figure 1).

Studies using distributional data to determine New Zealand fish community structure and species interactions have also been limited in scope. Key studies include relation of coastal fish distribution to latitudinal variation in water temperature (Moreland 1959, Paulin & Roberts 1992) and to depth and sediment type in the Hauraki Gulf (Francis 1976); relation of the distribution and species associations of mesopelagic fish, crustaceans, and cephalopods on the Chatham Rise to water masses (Robertson *et al.* 1978); species distribution and diversity across large-scale thermohaline fronts (Robertson *et al.* 1979); analysis of some aspects of fish communities off the southeast coast of the South Island (McClatchie 1994); relation of community diversity by depth and latitude to regional water masses and surface phytoplankton densities on the Chatham Rise and Southern Plateau (McClatchie *et al.* 1997); and a New Zealand wide biogeographic analysis of 375 reef fish species in 16 geographic regions, which identified seven fish communities (Francis 1996).

In 1997, we began a research programme to determine if fish assemblages in the New Zealand region could be classified into clearly identifiable communities based on their associations with each other and with environmental features. The main source of data was the Ministry of Fisheries research trawl database, which included species catch data from over 22 000 tows and spanned nearly 40 years and most trawlable areas of the EEZ seafloor, down to about 1500 m depth. Trawl data were first computerised in the late 1970s and a relational database was created in 1989 (Mackay 1993). Selected surveys dating back to 1961 were also added to the database. Much of the data from these surveys (species lists, distribution maps, and relative abundance estimates of the key species) has been published in the fisheries literature, usually as individual survey reports. Some comparisons of the abundance and length frequency of key commercial species have been made for time series of

surveys within certain areas (e.g., Hurst & Bagley 1997, Anderson & Fenaughty 1996), but no attempt has been made to integrate these data across all areas, depth ranges and time periods, nor to analyse them for information on community structure as proposed in our study.

As a first step towards analysing community structure, we checked and validated species identifications and outliers. This required the production of geographical and depth distribution maps, which we believe to be of value to other researchers as they considerably extend our knowledge of the range of most species. These distribution maps, and the procedures followed to validate the data in them, are the subject of this report.

The Fish Communities Database

At the time of copying relevant data from the Ministry of Fisheries trawl survey database (12 May 1997), it contained 22 619 tows with 335 469 occurrences of 634 species and species groups. Most records were from random bottom trawls, but there were also records from mid-water trawls, prawn trawls, and some non-random tows (such as gear trials and target tows). Species (and species groups) included mainly fish, squids, and other invertebrates (e.g., crustaceans, molluscs, salps), but incidental catches of birds and marine mammals were also recorded.

For the initial fish community structure analysis, only successful, research, random, bottom trawl records of fishes and squids were selected. All "foul" shots were excluded as the net may have been ripped, or some species of fish may have escaped on hauling. Only bottom trawl tows were selected because other trawl types are likely to have different species composition (Wassenberg *et al.* 1997). In particular, midwater nets can sample from near the bottom to near the surface and are therefore likely to include species from different communities. The effect of variations in the design (e.g., headline height, codend mesh size) of bottom trawl nets on species presence/absence was not taken into account in production of this atlas. Fish and squid were selected because they were usually identified to species level, whereas other invertebrates were often recorded only to order or family level. Also, the bottom trawl is not considered to efficiently or consistently capture other organisms.

The resulting fish communities database contained 19 232 research bottom trawl records from 292 surveys by 20 vessels (Table 1). The geographical and depth distribution of all tows is shown in Figure 2. Most areas shallower than 1200 m have reasonable coverage, except for the Fiordland coast, the Kermadec Ridge, parts of the Challenger Plateau, and deeper waters to the northwest of the EEZ. By far the largest proportion of tows has been made in shallower coastal waters to about 200 m depth. The next best sampled depth range is about 800–1100 m, particularly on the Chatham Rise and restricted parts of the west coast South Island and Challenger Plateau. Depths of 200–800 m have been sampled with lower intensity but still have reasonable coverage, again on the Chatham Rise and west coast South Island, but also extending down into Southland and the Sub-Antarctic.

Distribution maps were produced for 270 species or species groups (236 species, 26 species groups, 8 families) that occurred in more than 20 tows (0.1% of the total). A number of species identification issues were addressed as the database spans over 35 years. In the 1960s

and early 1970s, most of the surveys were in shallow inshore water (under 250 m depth) where the maximum number of species recorded per trip was about 60. In 1978, New Zealand declared a 200 n. mile EEZ and the number of middle depth (most stations in 250–800 m) and deepwater (most stations in 700–1500 m) surveys increased, with a corresponding immediate increase in the maximum number of species recorded per survey to about 120 (Figure 3). During the 1980s, the maximum number of species recorded for middle depth and deepwater surveys increased to about 140 and 170, respectively. The low number of species recorded on some recent surveys is because few bottom tows were made.

The increase in the number of species recorded per survey during the 1980s is directly related to the exploration of new areas and depths, as well as the increasing effort put into new species identification. This can be seen from the number of new species added to the official database species list from 1961 (Figure 4).

Species identification

Identification of fish and squid at sea depends on the experience of the scientific staff on each voyage and the availability of reliable reference texts. During the late 1980s, many newly discovered deepwater species were identified using "in house" guides and photographs. Ayling & Cox (1982) provided the first comprehensive identification guide to nearly 500 species of coastal and deeper water bottom-living fishes. More recent identification guides include those by Paul (1986) for over 300 species of fish and shellfish and Paulin *et al.* (1989) for about 1000 fish. Species identification is also kept constantly updated through communication with Museum of New Zealand Te Papa Tongarewa (MoNZ) staff. Elasmobranch identification followed Compagno (1984) and Compagno & Didier (in press), and squid identification followed Roper *et al.* (1984). Often, unidentified specimens were brought ashore for identification by MoNZ and NIWA taxonomists.

Possible sources of error or uncertainty

Species were sometimes misidentified or lumped into generic groups (e.g., rattails) in the early years of deeper water surveys before comprehensive identification guides were available. The main objective of trawl surveys was research on commercially important species, and the identification to species level of non-commercial bycatch species was sometimes given low priority. As detailed guides for these species became available, identification to species level became more reliable. Some single "species" have been found to include more than one species (e.g., sprats, giant stargazer).

Some identification problems were specific to the way in which trawl survey data were collected. Computerisation of the database required the establishment of unique, three-letter, species codes. The early data recording forms provided space for recording the common or scientific name, making it possible to check species codes later. As staff became more familiar with the codes, species names were not always filled in. On *Tangaroa* surveys from 1991, species codes were entered directly into the shipboard computer and checked while at sea. This makes subsequent error-checking of species codes impossible.

The species code system included "generic" codes for use when the species was not or could not be identified. This has caused problems with the verification of a few records for about 13 species where the "generic" code is the same as a species code (e.g., WAR is the code for blue warehou but may have occasionally been used for other warehou species). Where it is obvious that such a "generic" code was used throughout a survey for a genus rather than a species, the records for this code have been omitted.

Footnotes are provided for distribution maps where we consider that unresolvable errors may still exist.

Species distribution

The start and finish positions of each tow were recorded with various degrees of accuracy. Position fixing methods included Global Positioning System (GPS), satellite navigation, radar, and dead reckoning. Seabed depth and depth of the bottom trawl gear groundrope (usually not more than 0.5 m above the seabed) were recorded for all tows. Where possible, average tow depth was calculated as the mean of the minimum and maximum gear depths. If these data were not available, the mean of the start and finish gear depths, or the start and finish seabed depths, was used.

Possible sources of error or uncertainty

Initial distribution maps and depth plots showed occasional outliers for which location or depth had obviously been misrecorded. These errors were corrected where possible. If the correct position and matching depth could not be determined, the record was deleted.

Another possible source of error arose where the net, the fish holding bins, or the conveyors were not completely cleared of fish for a particular tow. Such fish may have been occasionally recorded in the catch from the next tow. Outliers which appeared to have resulted from incorrect tow allocation were omitted.

There may be some-small scale errors in tow location for early database records, caused by inaccuracies of the methods used. Accuracy in recording positions has improved steadily since the start of the time series of surveys. Early surveys relied on radar and dead reckoning, but were often in shallow inshore waters where these techniques can be relatively accurate. In the late 1970s and early 1980s, satellite navigation became available, but satellite passes were often infrequent and positions could be inaccurate by several miles. The use of GPS from the late 1980s has improved position fixing to within about 100 m.

Some species may have been caught off the bottom. When a bottom trawl net is shot and hauled, it is generally not thought to be capable of efficiently catching fish in mid water. However, there may be some occasions when fish in mid water are caught, and hence the depth record will be inaccurate.

In summary, the criteria used to remove outliers were as follows.

One or more specimens of the species were recorded in the previous tow in a more common depth range.
All depth outliers came from the same voyage as a result of the species being given the wrong code.
Verified data entry errors (i.e., the original data forms were located and data had been incorrectly entered onto the database).
Verified recorder errors (i.e., the original data recorder can verify incorrect code or identification was used).
The depth and the position were inconsistent.
The tow position was incorrectly recorded.

Data presentation

This atlas of fish distribution provides information on the 270 most frequently caught species and species groups in the database used for the analysis of community structure. Each map gives the location and depth distribution of capture and the number of tows on which the species was caught. The location of the tow represents the start position (calculation of the mid-point of the tow was not warranted as most tows were under 3 nautical miles (5.6 km) long and the circle size covers several square miles). Average tow depths were calculated and are presented as the proportion of tows within each 10 m depth interval in which the species was caught. The mean depth and latitude of capture (weighted by the number of tows in each depth interval or in each 0.1° of latitude, respectively) and the ranges in depth and latitude are given in Appendix 1. The maps are arranged in alphabetical order by scientific name, with one common name (where it exists) listed on each map. Footnotes identify issues concerning the reliability of the data presented or provide additional information.

Distribution maps have been produced for some genera where identification to species level was impossible and for some groups above genus level where minimal identification to genus or species has been made. For other family groups, such as Macrouridae (rattails), catches were often identified to species level and distribution maps of the family were not considered to be useful.

Two indexes are provided, an index of family names and an index of common names. The family names for teleosts, elasmobranchs, and squids follow Roper *et al.* (1984), Paulin *et al.* (1989), Compagno & Didier (in press), and Roper *et al.* (1984), respectively, except for a few recently updated names (C. Paulin and A. Stewart, MoNZ, pers. comm.; S. O'Shea, NIWA, pers. comm.). Common names vary considerably between countries and between regions within a country. On the plots, we have attempted to provide the names used most often within New Zealand, especially those which appear most often in standard texts. They generally follow Paulin & Stewart (1985) and Paulin *et al.* (1989) who based their names on earlier lists (Phillips 1927, Graham 1956, Whitley 1968, Doak 1972, Ayling & Cox 1982). In the index of common names, we also list other common names used by fisheries researchers and the fishing industry. For lists of Maori fish names, see Whitley (1968) and Strickland (1990).

Acknowledgments

We thank the many fisheries researchers over the years who have taken the time to identify species and bring back new or rare specimens, and colleagues at the Museum of New Zealand Te Papa Tongarewa (MoNZ) and NIWA for formal identifications. In particular, we thank Kevin Mackay (NIWA) for assistance with setting up the fish communities database and Andrew Stewart (MoNZ), and Steve O'Shea (NIWA) for assistance with scientific names and checking outliers. The Ministry of Fisheries provided access to their trawl survey database and the Foundation for Research, Science and Technology funded the project.

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***Table 1*: Details of all research surveys in the database**

Vessel	Years	Number of surveys
Amaltal Explorer	1987–90	8
Akebono Maru No. 3	1984, 1985	2
Akebono Maru No. 73	1986	1
Arrow	1983–87	7
Cordella	1988–90	7
Giljanes	1990, 1992	2
Ikatere	1961–81	24
James Cook	1980–91	47
Kaharoa	1982–97	46
Kaltan	1982	1
Otago Buccaneer	1984–87	4
Otago Galliard	1986	1
San Waitaki	1995	1
Seamount Enterprise	1994, 1995	2
Shinkai Maru	1981–83, 1986	8
Tangaroa	1991–97	45
Wanaka	1985, 1986	5
Wesermünde	1979, 1980	7
Will Watch	1989–91	3
W. J. Scott	1979–83	71
All vessels	1961–97	292

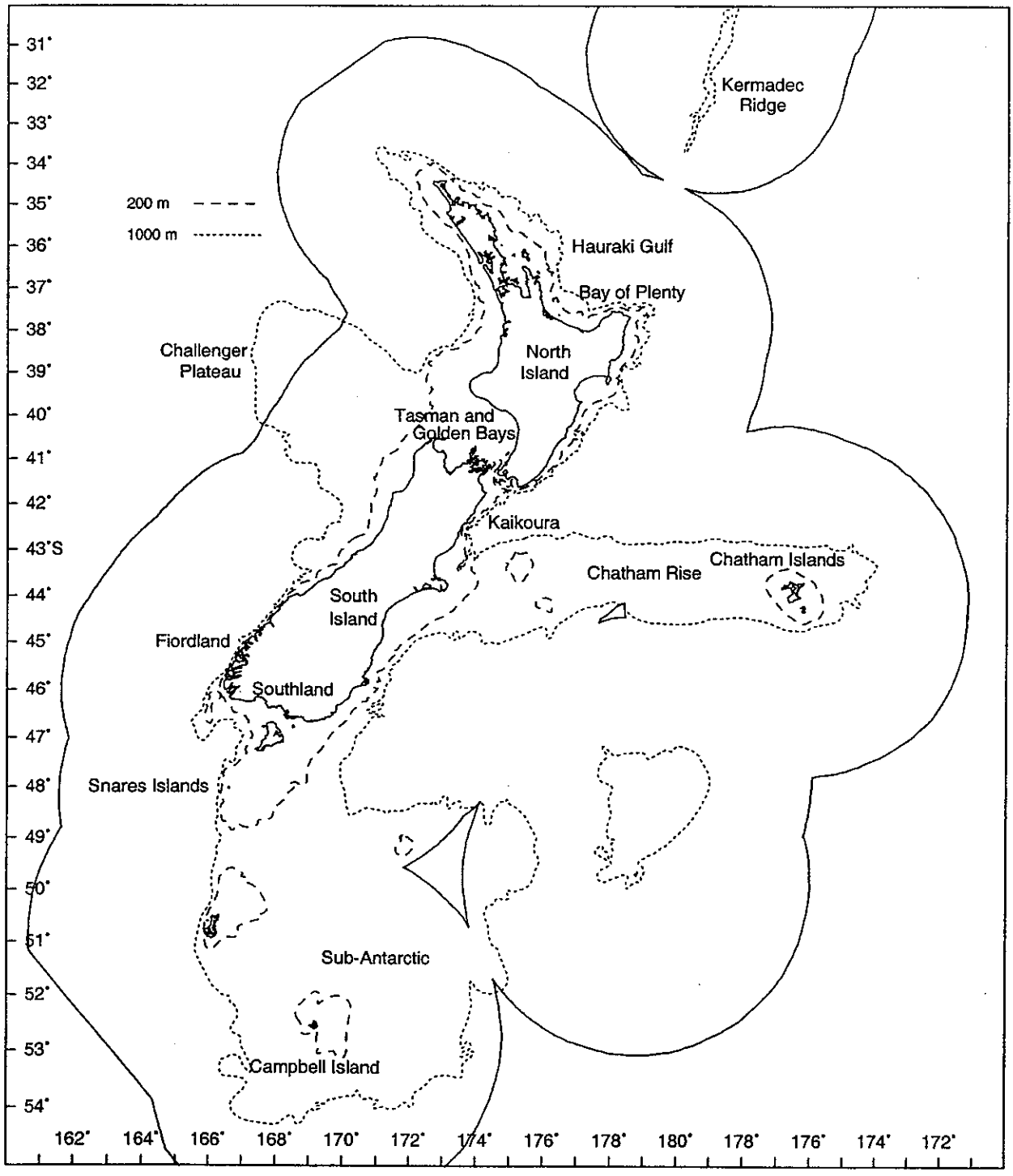


Figure 1: New Zealand 200 n. mile Exclusive Economic Zone (EEZ) and places mentioned in the text.

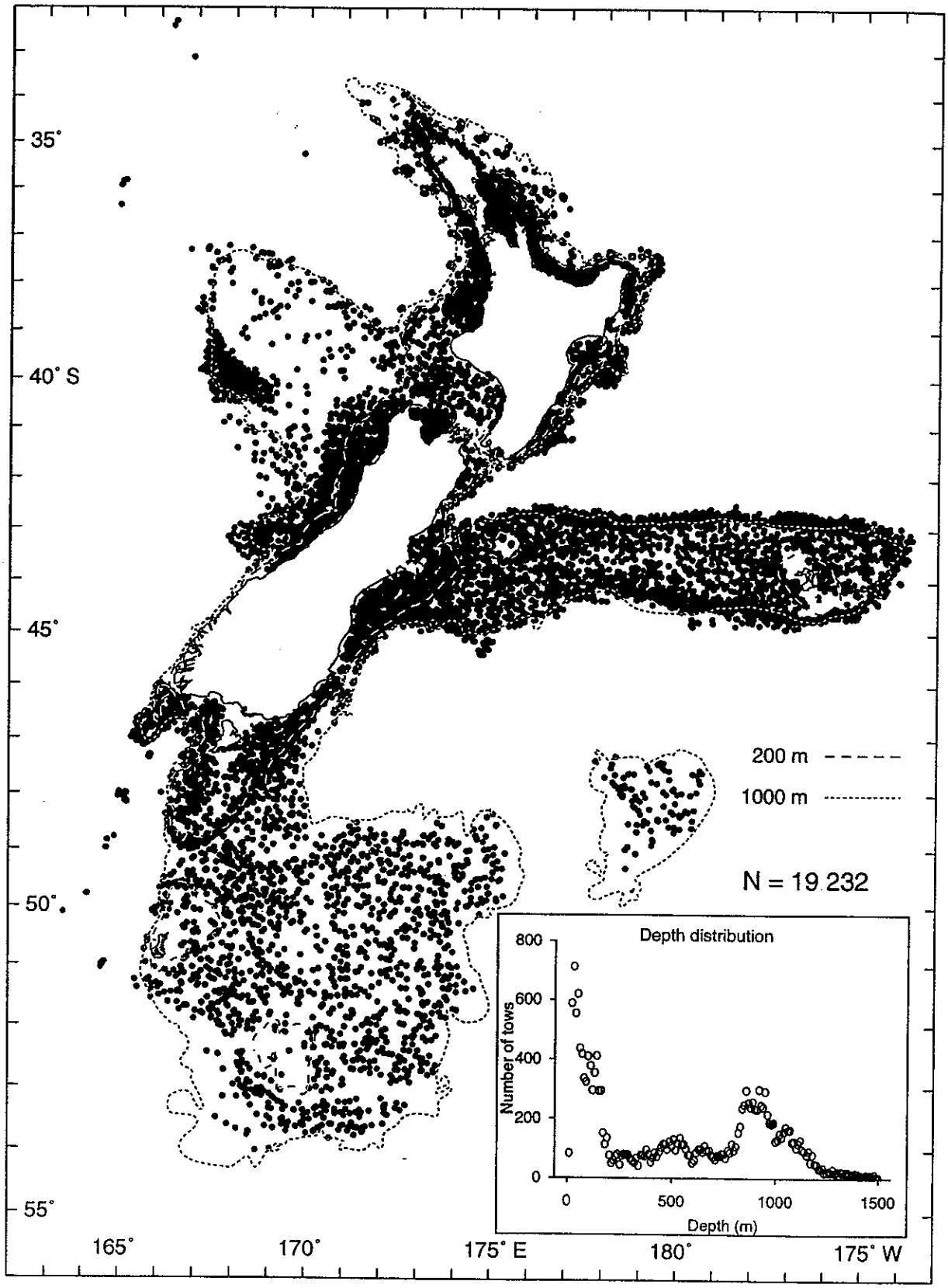


Figure 2: Distribution of all bottom trawl tows on the fish communities database. The insert shows the 200 n. mile EEZ. Depth represents the average depth for the tow, grouped by 10 m depth intervals. N, number of tows.

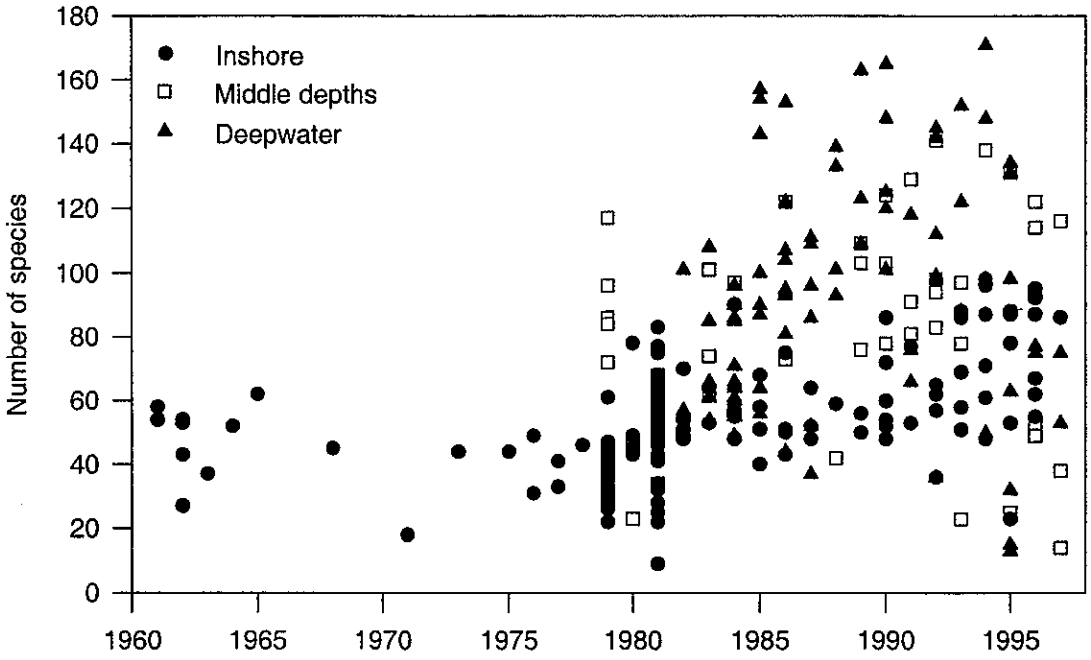


Figure 3: The number of fish and squid species recorded by survey, 1961–97. Survey types were classified by the following depth ranges: inshore, most stations shallower than 250 m depth; middle depths, most stations 250–800 m depth; deepwater, most stations deeper than 700 m depth.

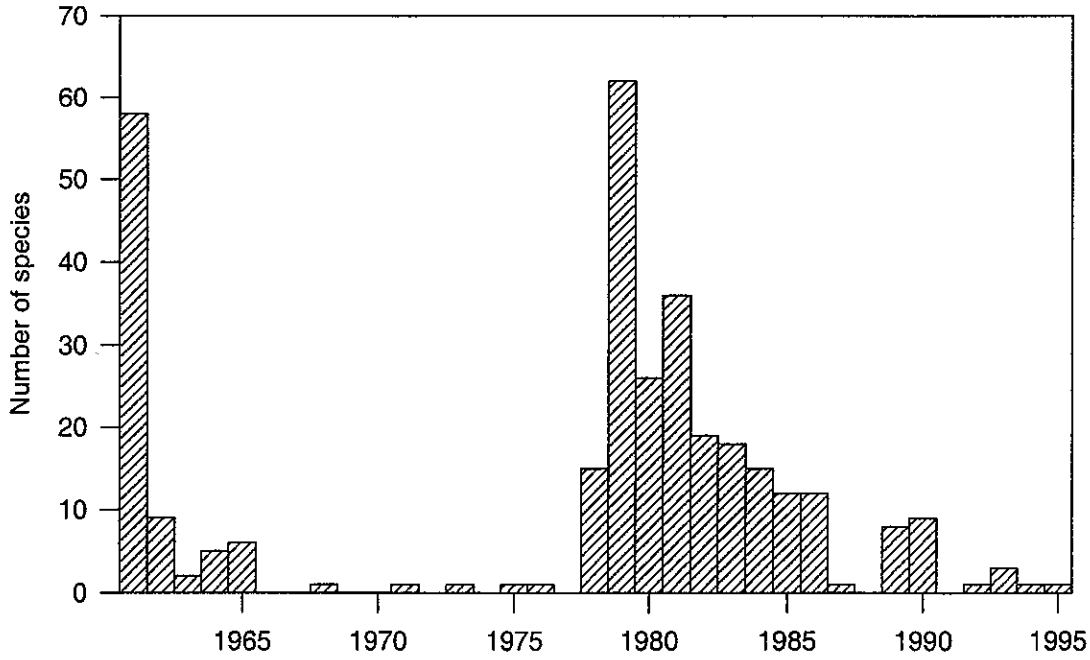
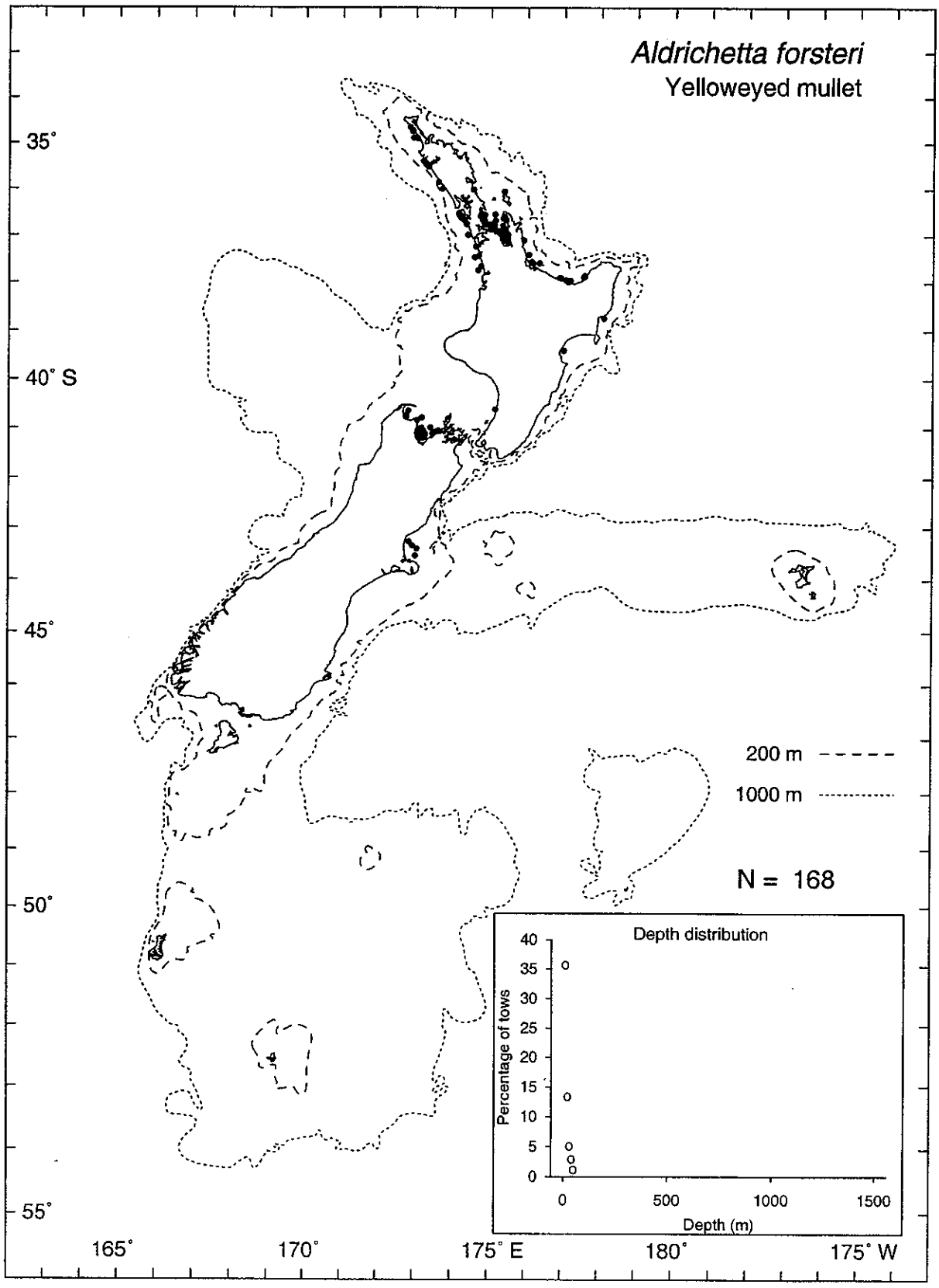
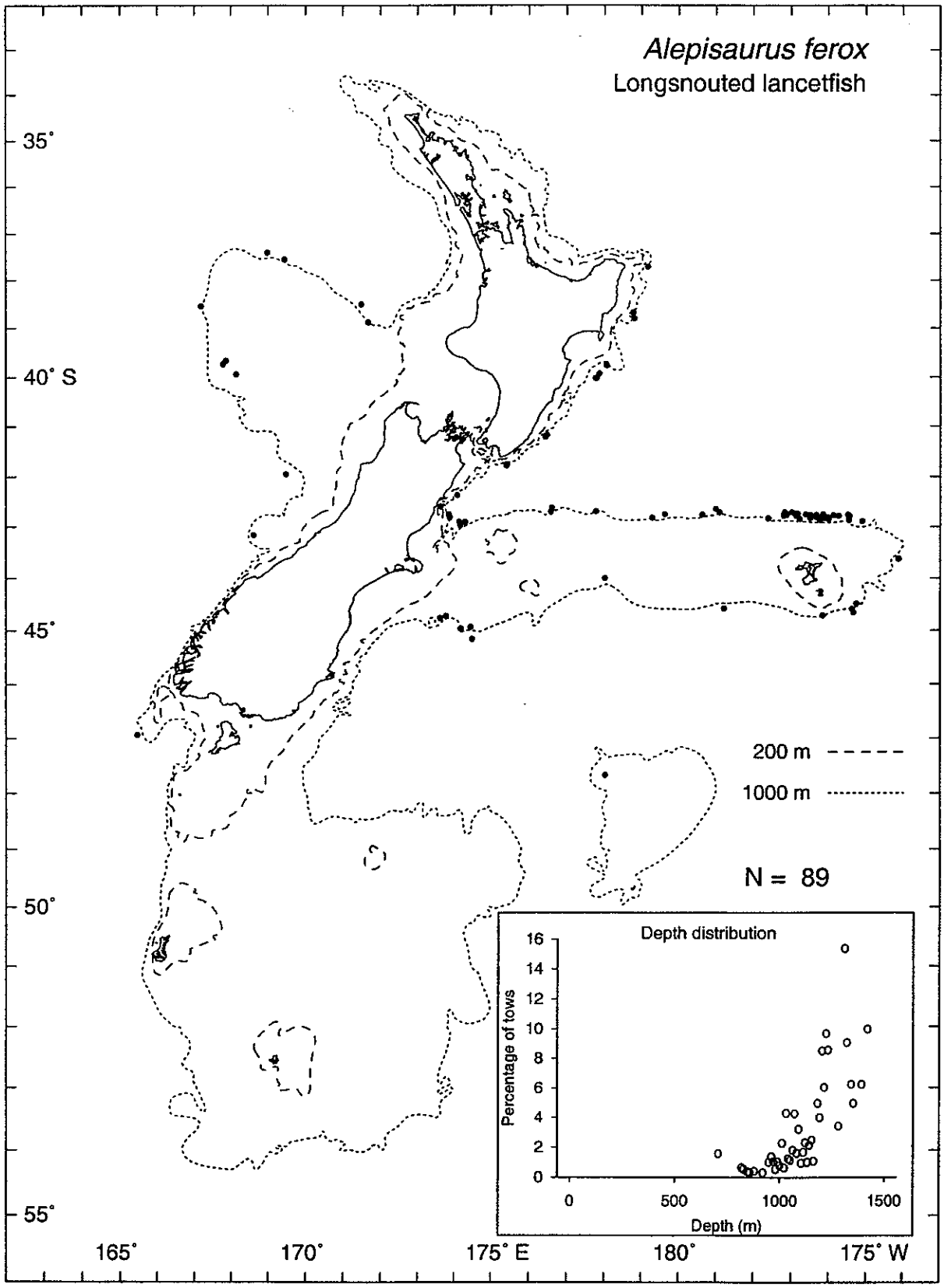
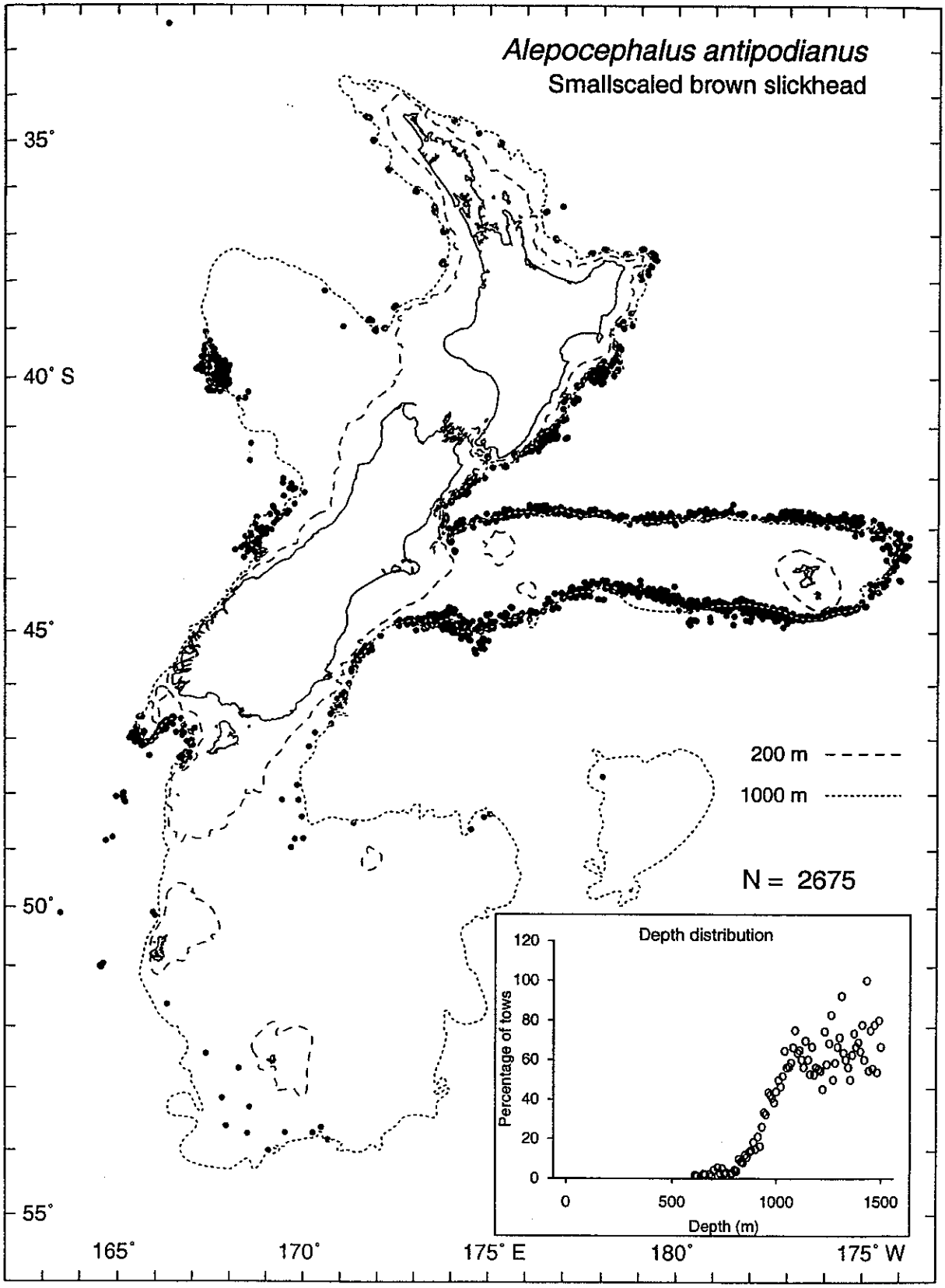


Figure 4: The number of new fish and squid species codes added to the Ministry of Fisheries research trawl database by the year of first use.

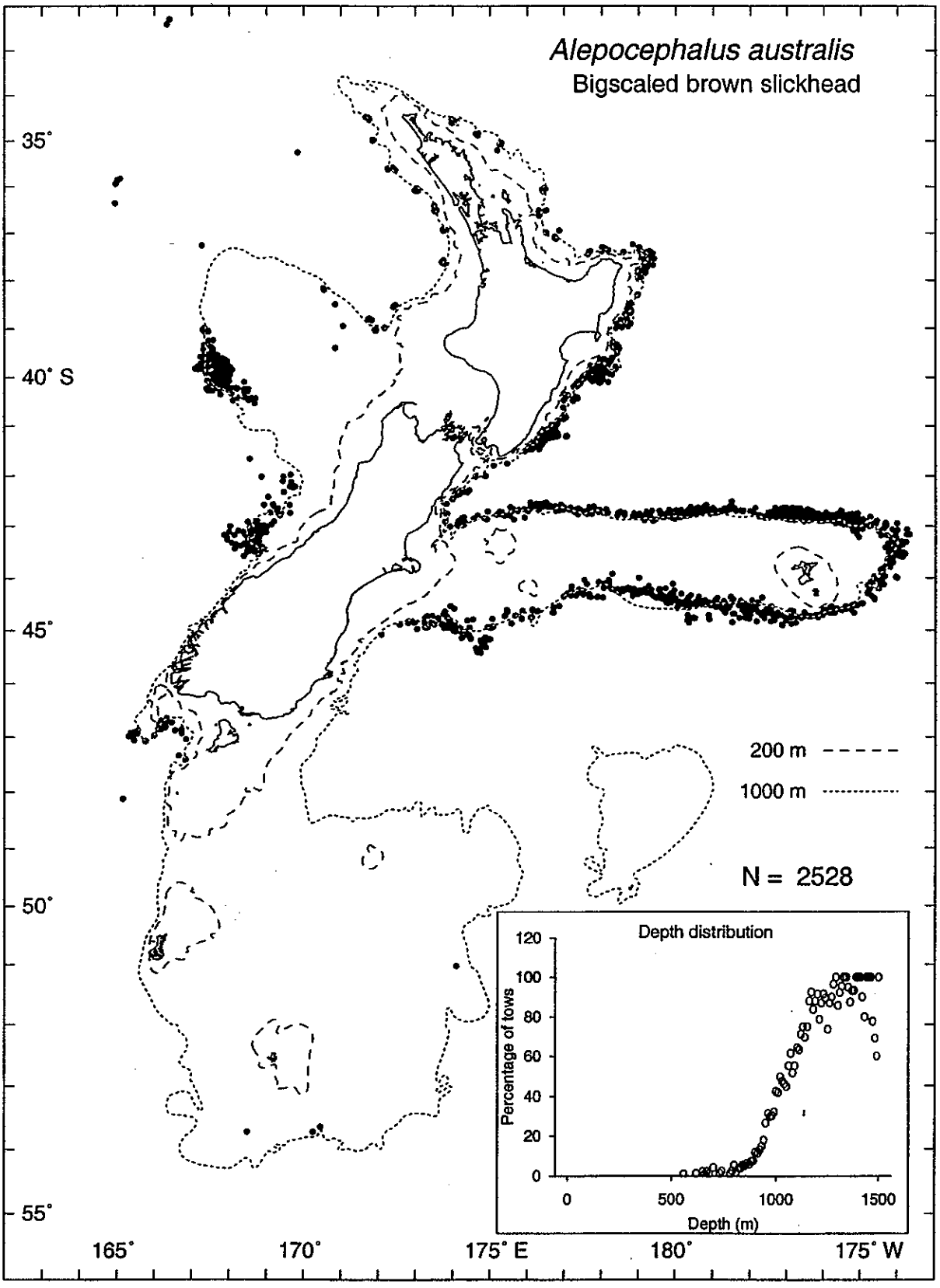

Aldrichetta forsteri
Yelloweyed mullet
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 168
Depth distribution
Percentage of tows
0
5
10
15
20
25
30
35
40
0
500
1000
1500
Depth (m)



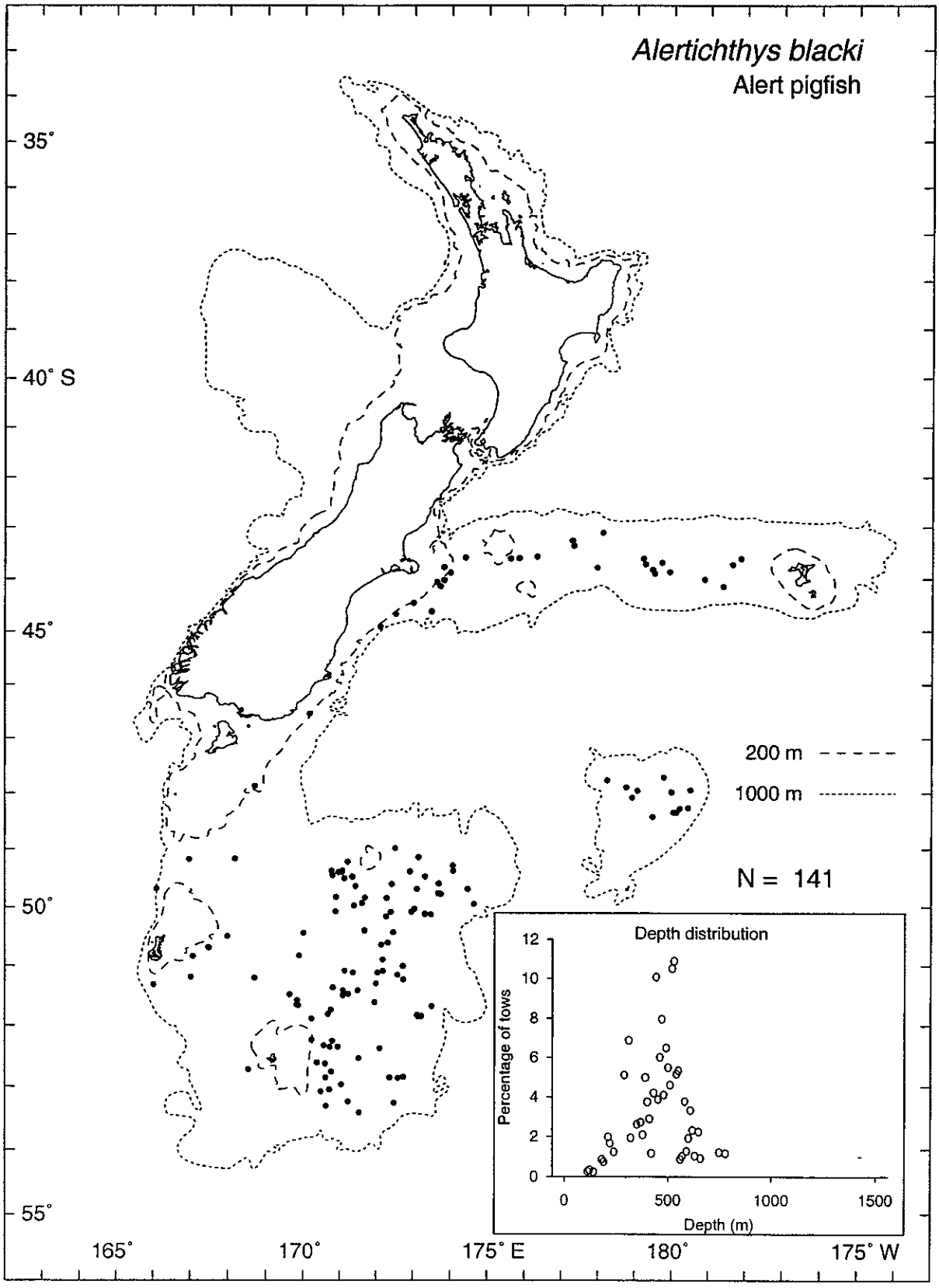
May include some *Alepisaurus brevirostris*.

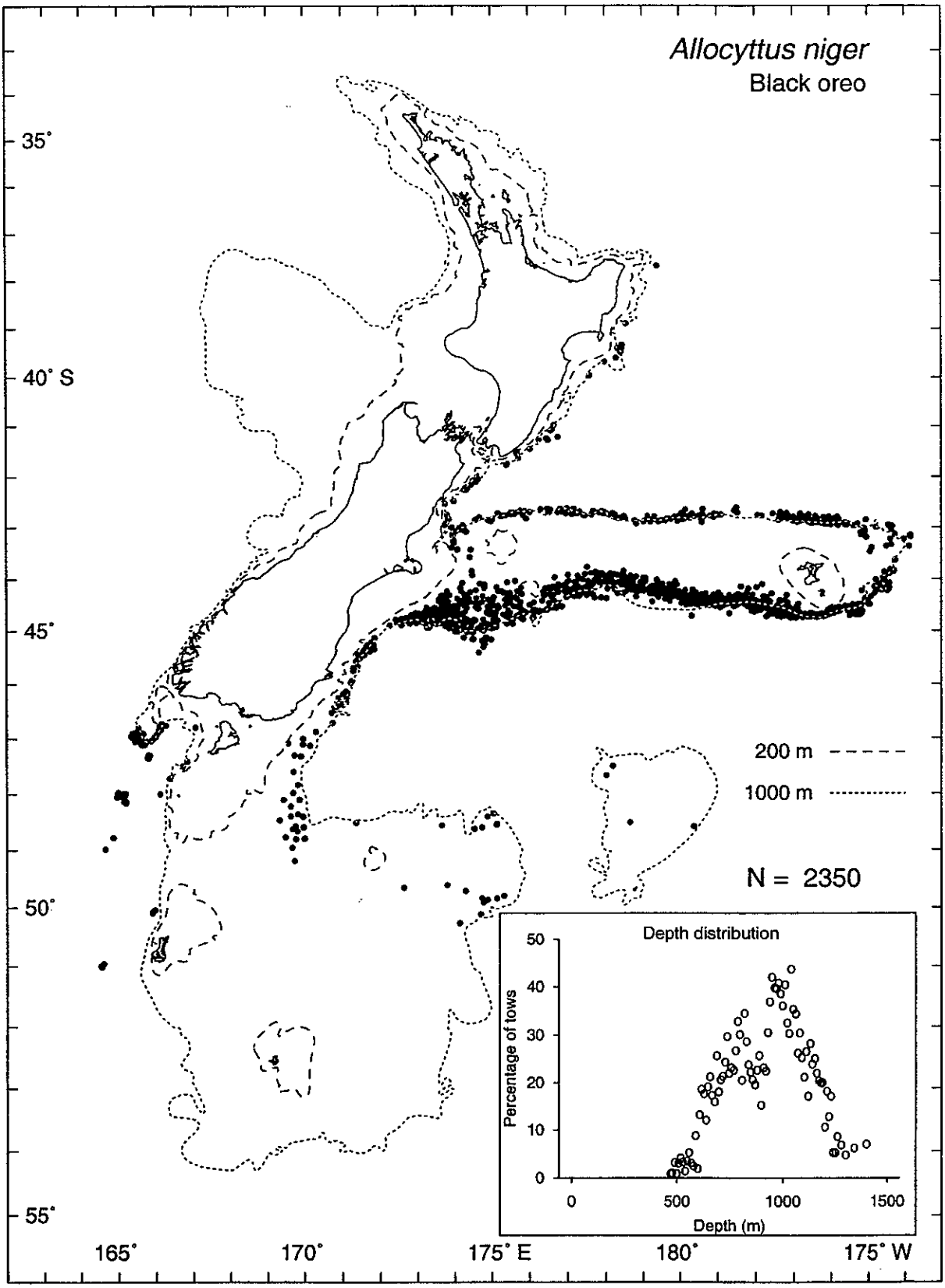


May include some *A. australis*.

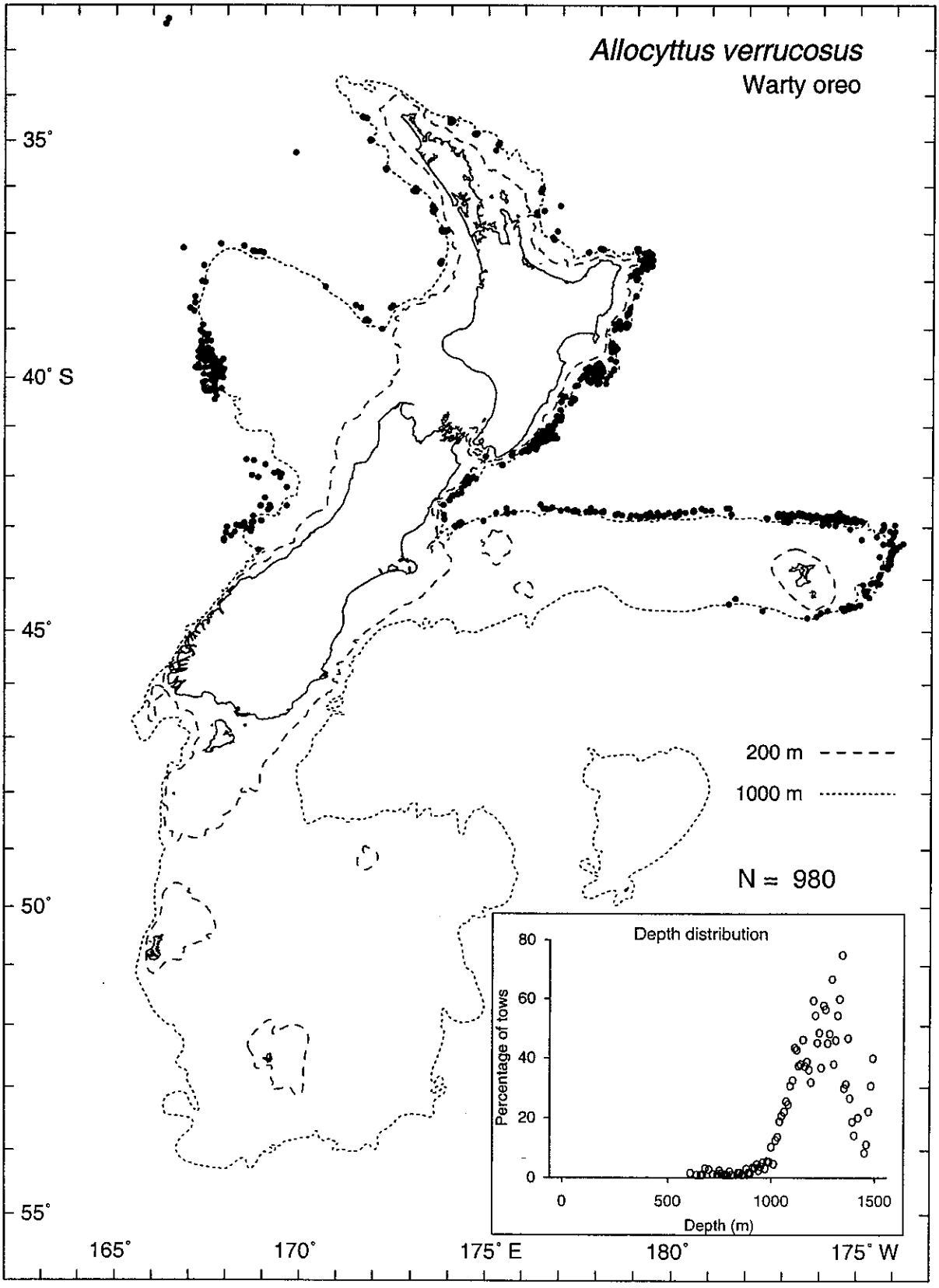


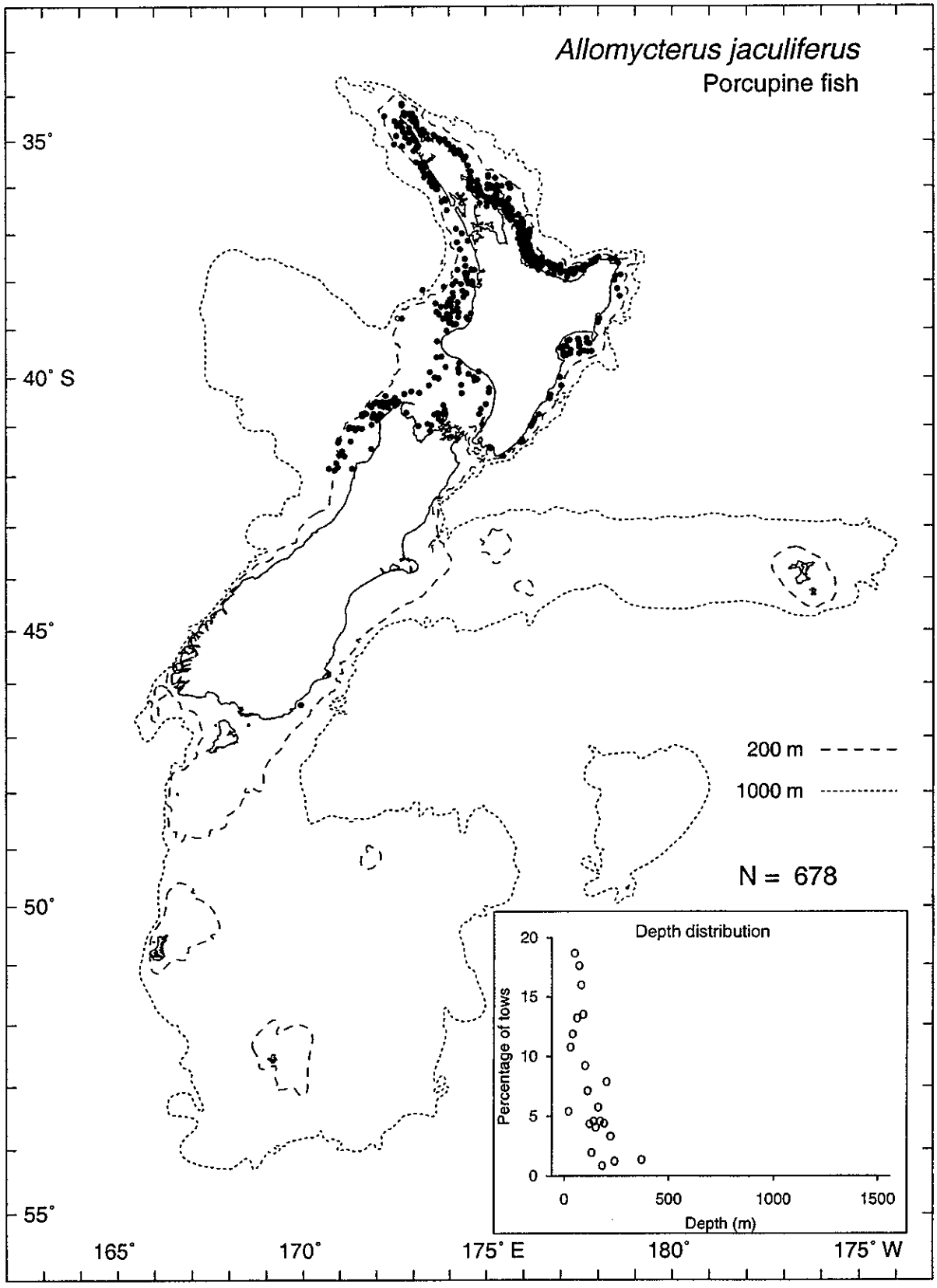
May include some *A. antipodianus.*

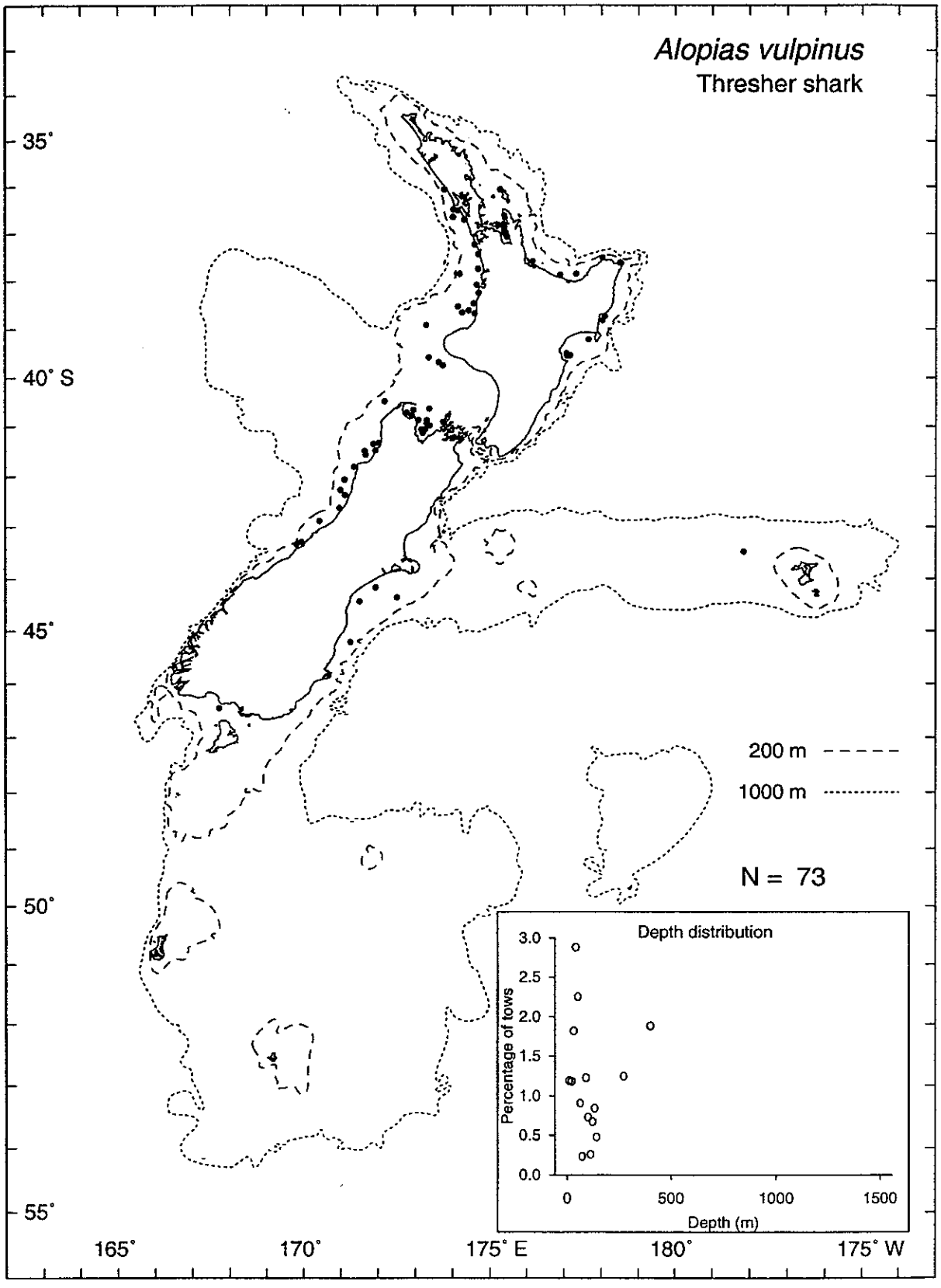

Alertichthys blacki
Alert pigfish
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 141
Depth distribution
Percentage of tows
Depth (m)
0
2
4
6
8
10
12
0
500
1000
1500



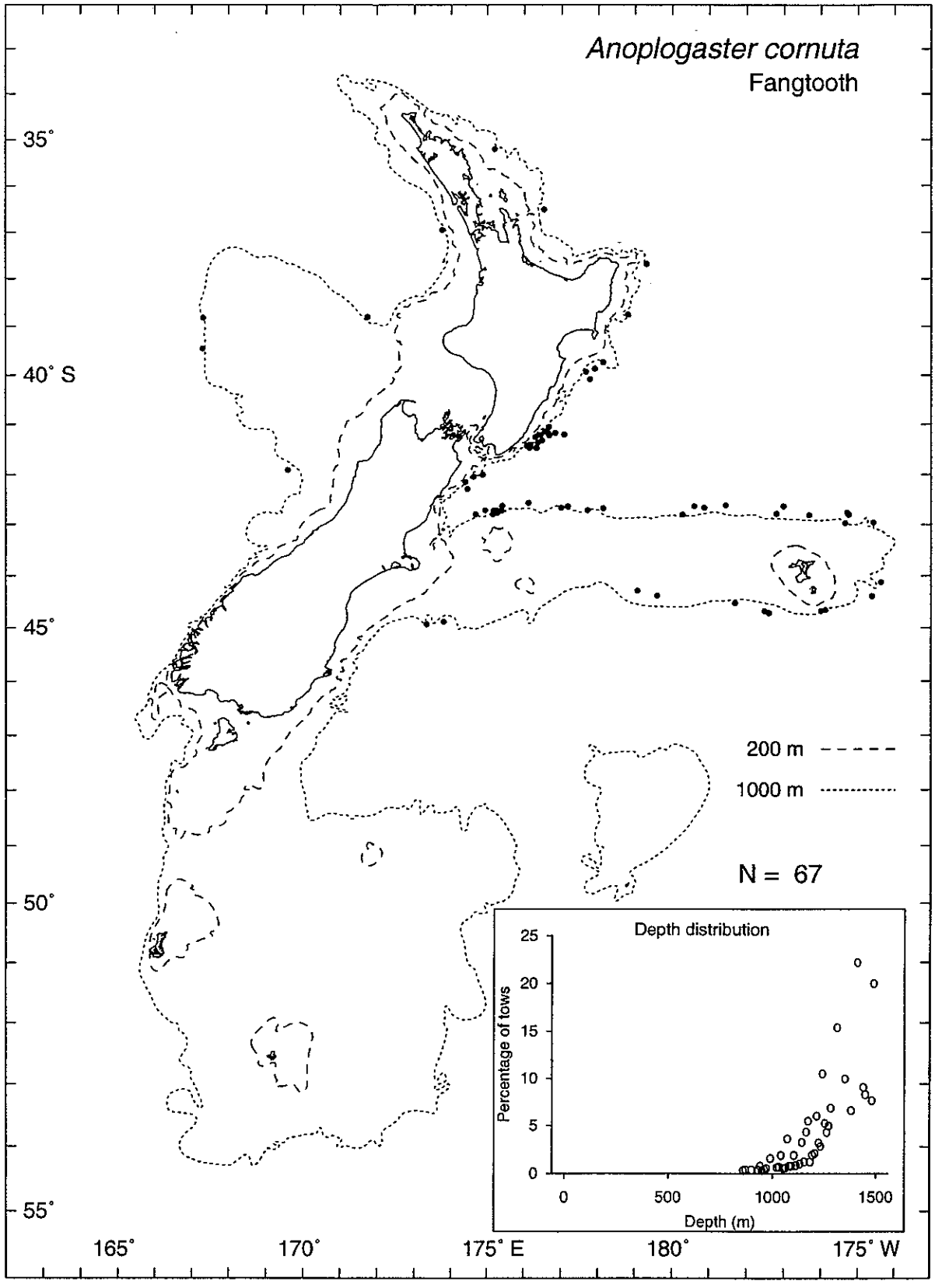
May include some *Neocyttus rhomboidalis.*

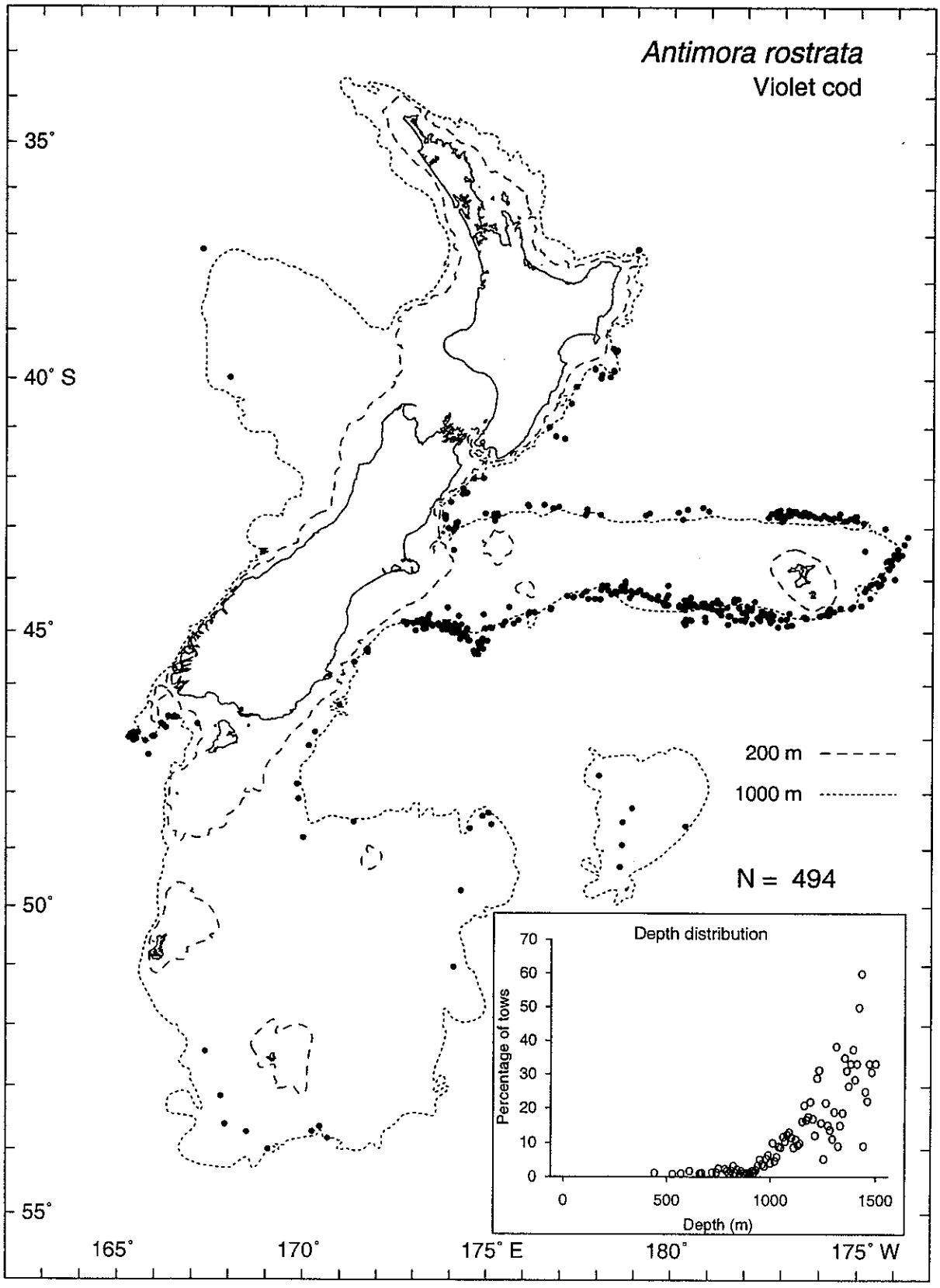

Allocyttus verrucosus
Warty oreo
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 980
Depth distribution
Percentage of tows
0
20
40
60
80
0
500
1000
1500
Depth (m)

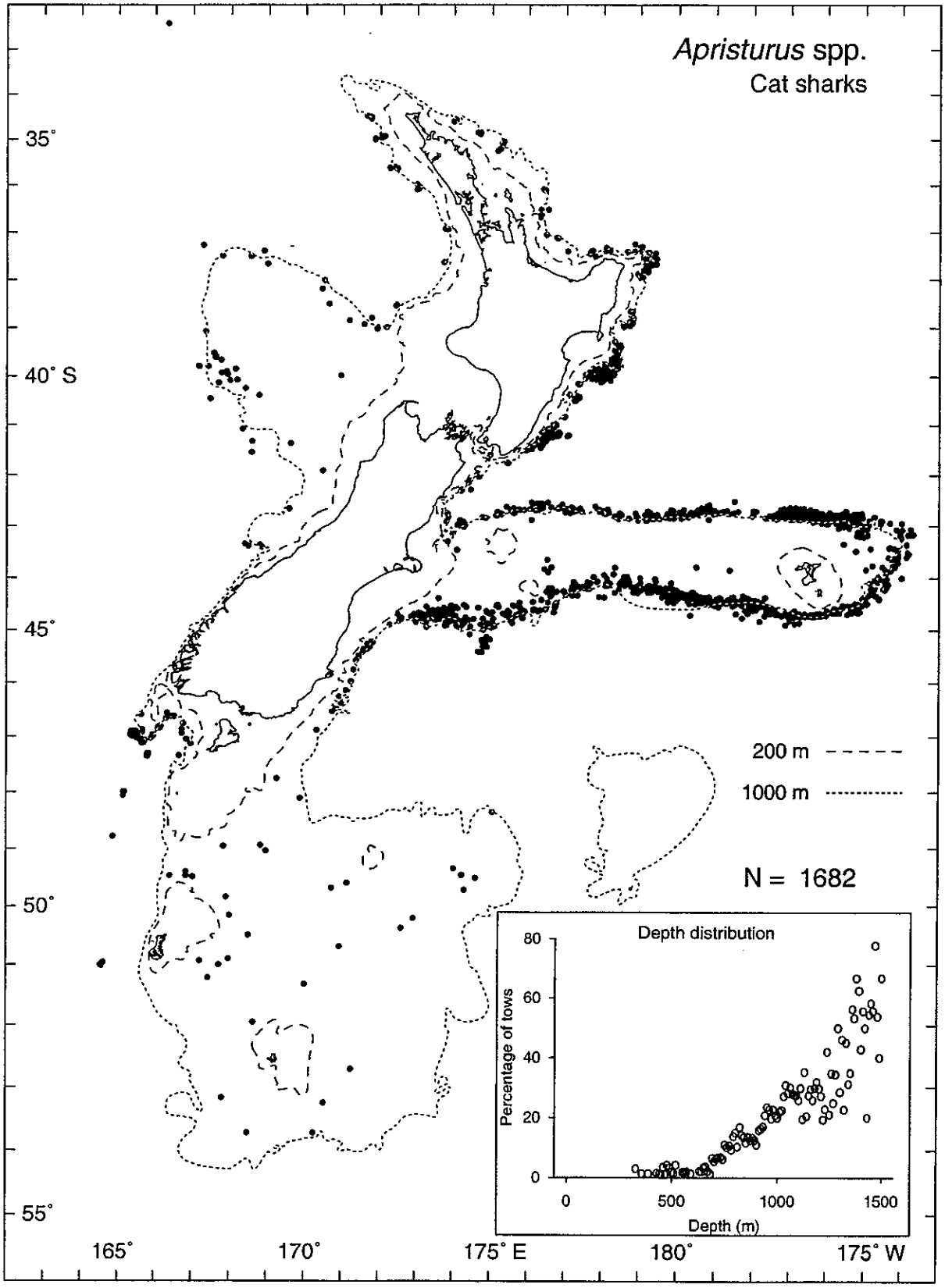

Allomycterus jaculiferus
Porcupine fish
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 678
Depth distribution
Percentage of tows
Depth (m)
0
5
10
15
20
0
500
1000
1500

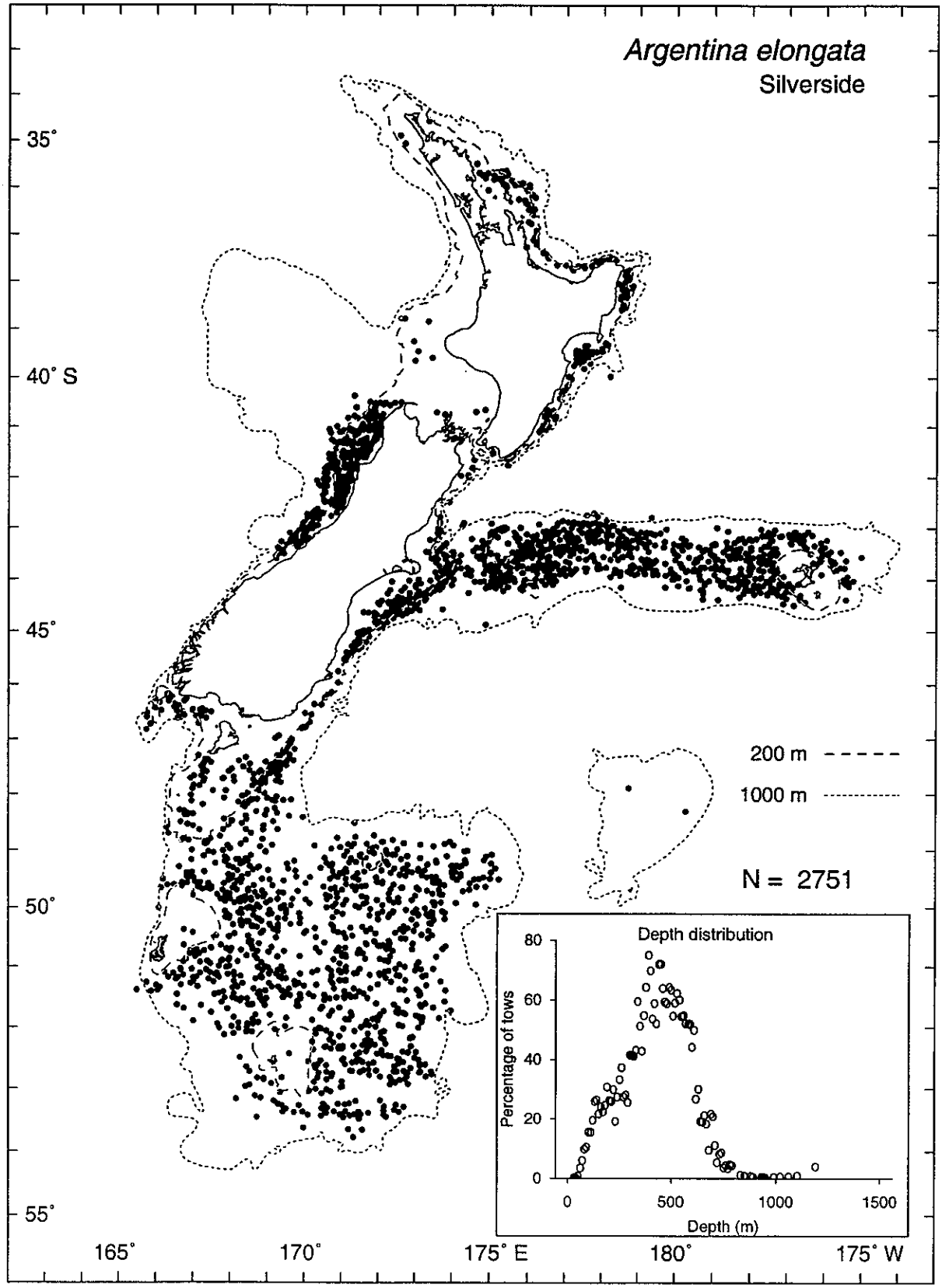


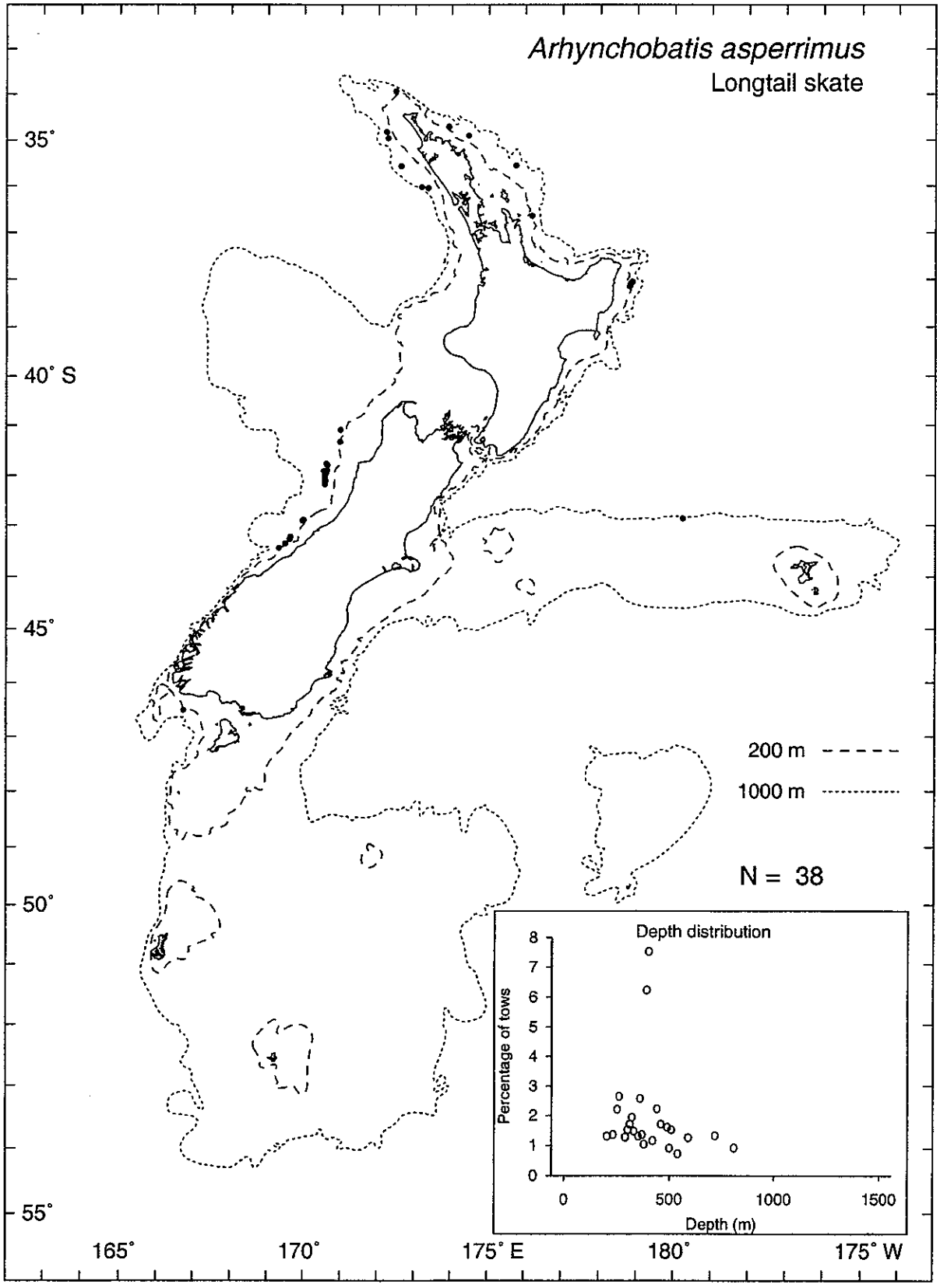
May include some *Alopias superciliosus*.

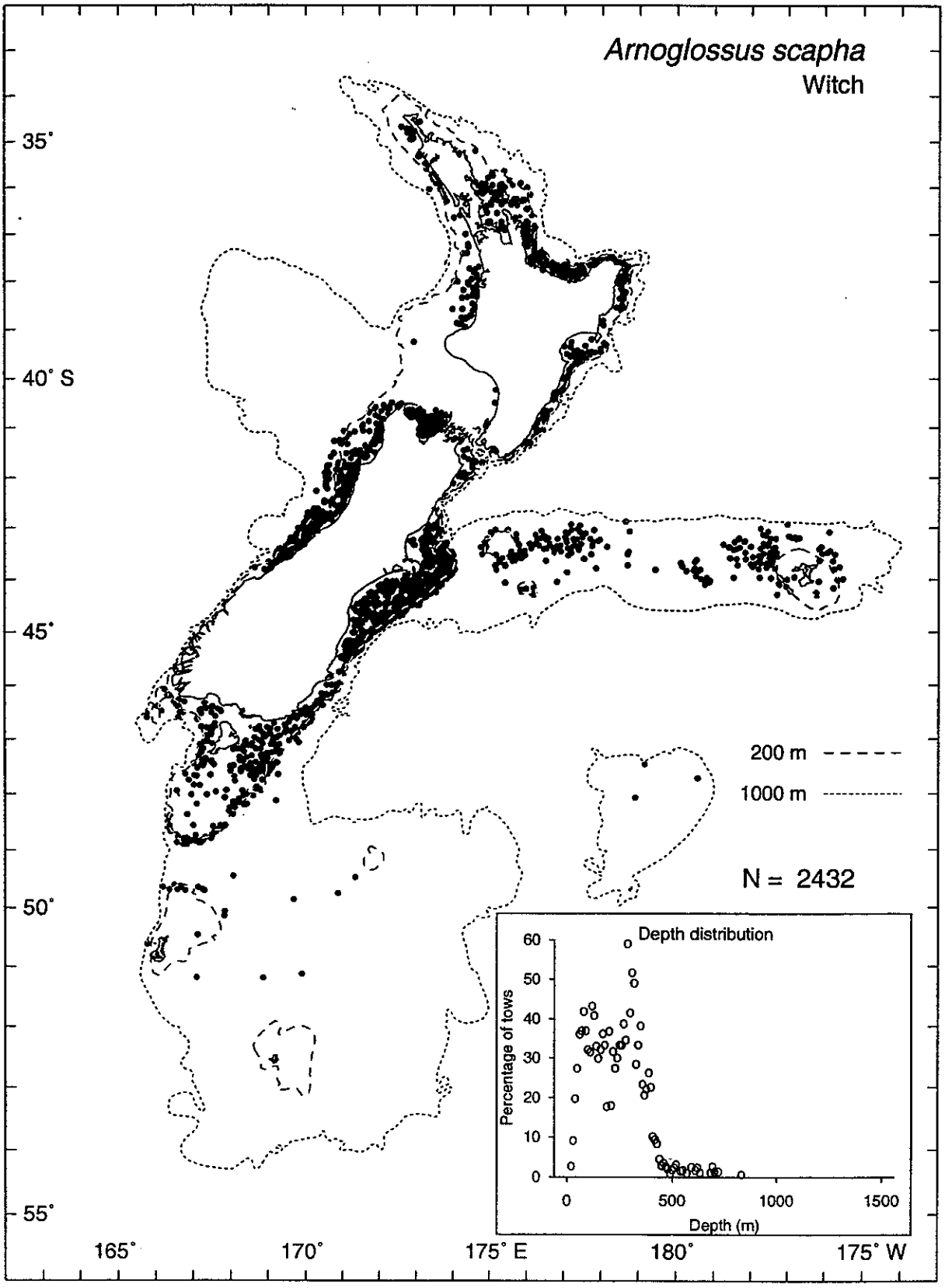

Anoplogaster cornuta
Fangtooth
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 67
Depth distribution
Percentage of tows
25
20
15
10
5
0
0
500
1000
1500
Depth (m)


Antimora rostrata
Violet cod
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 494
Depth distribution
Percentage of tows
Depth (m)
0
10
20
30
40
50
60
70
0
500
1000
1500

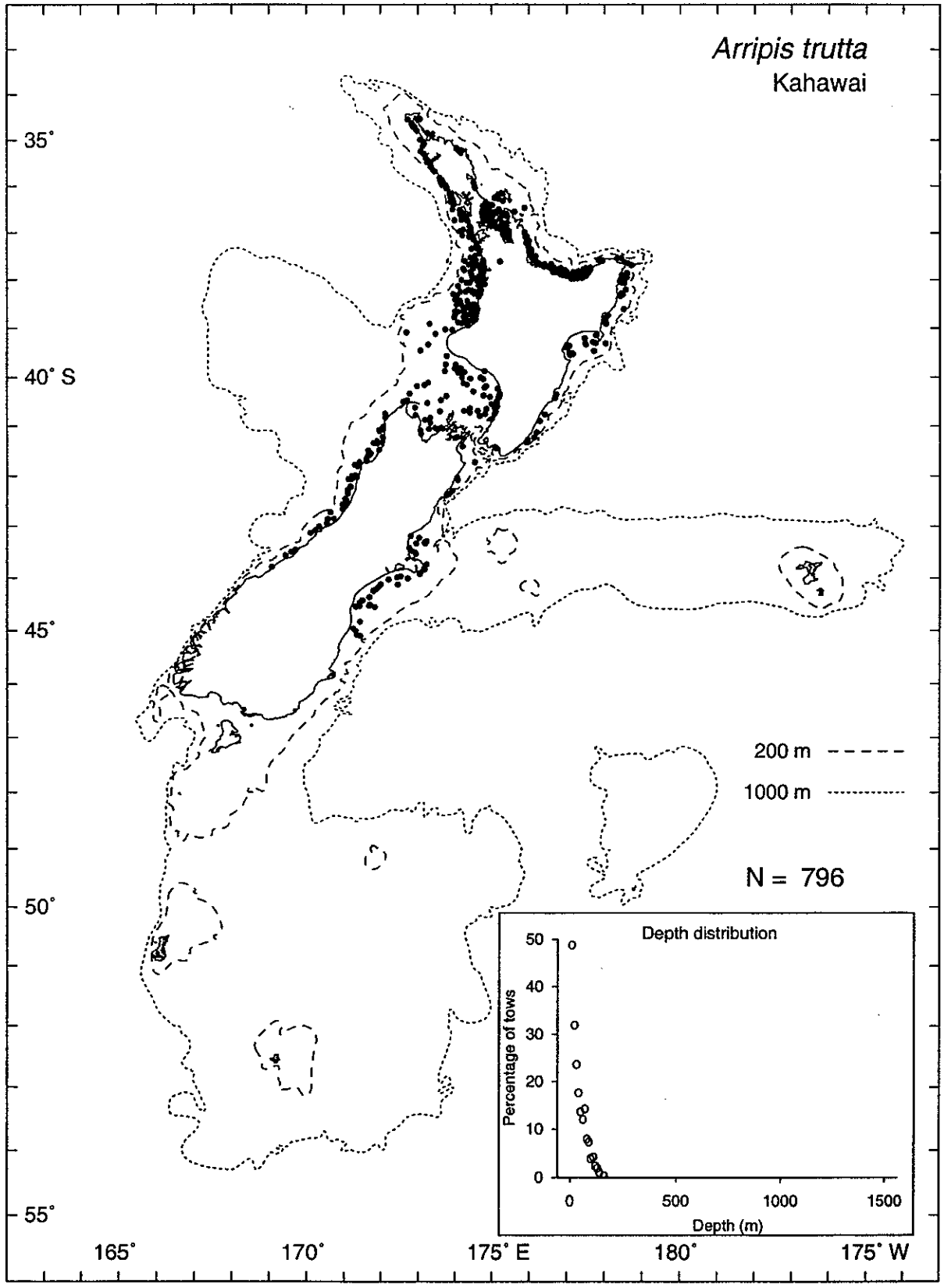

Apristurus spp.
Cat sharks
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 1682
Depth distribution
Percentage of tows
0
20
40
60
80
0
500
1000
1500
Depth (m)


Argentina elongata
Silverside
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 2751
Depth distribution
Percentage of tows
0
20
40
60
80
0
500
1000
1500
Depth (m)

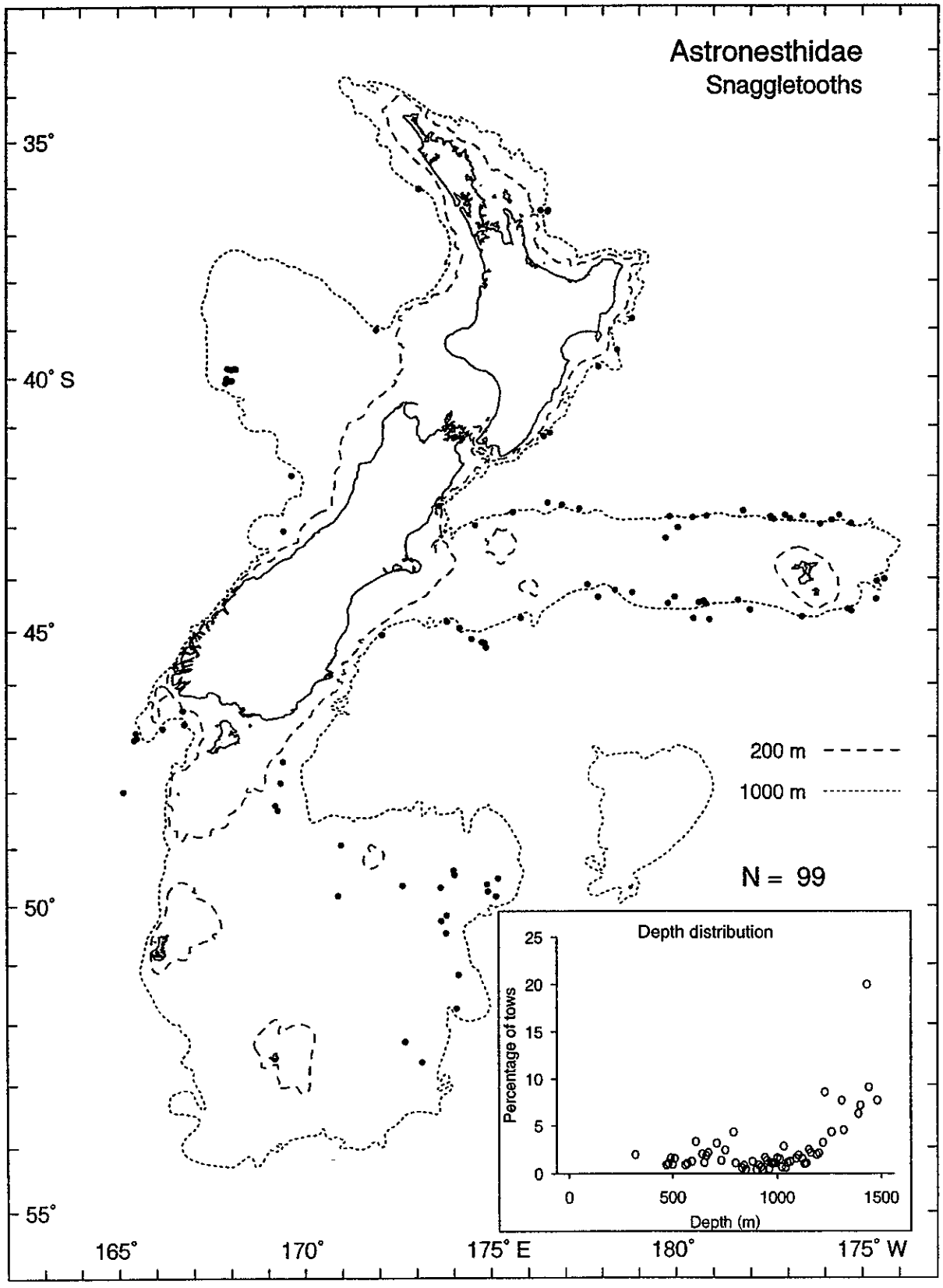

Arhynchobatis asperrimus
Longtail skate
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 38
Depth distribution
Percentage of tows
0
1
2
3
4
5
6
7
8
0
500
1000
1500
Depth (m)

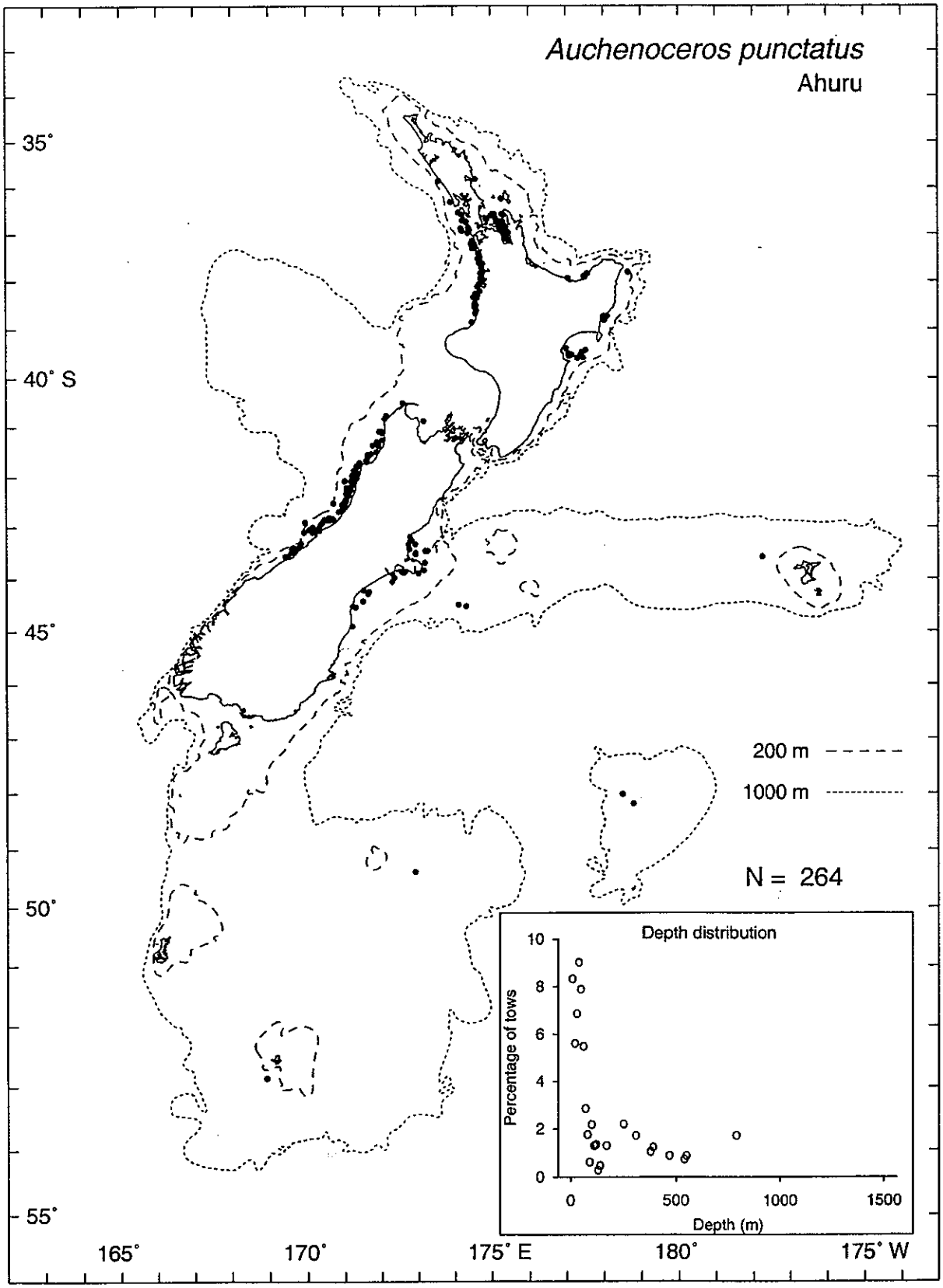


May include some *Neoachiropsetta milfordi.*

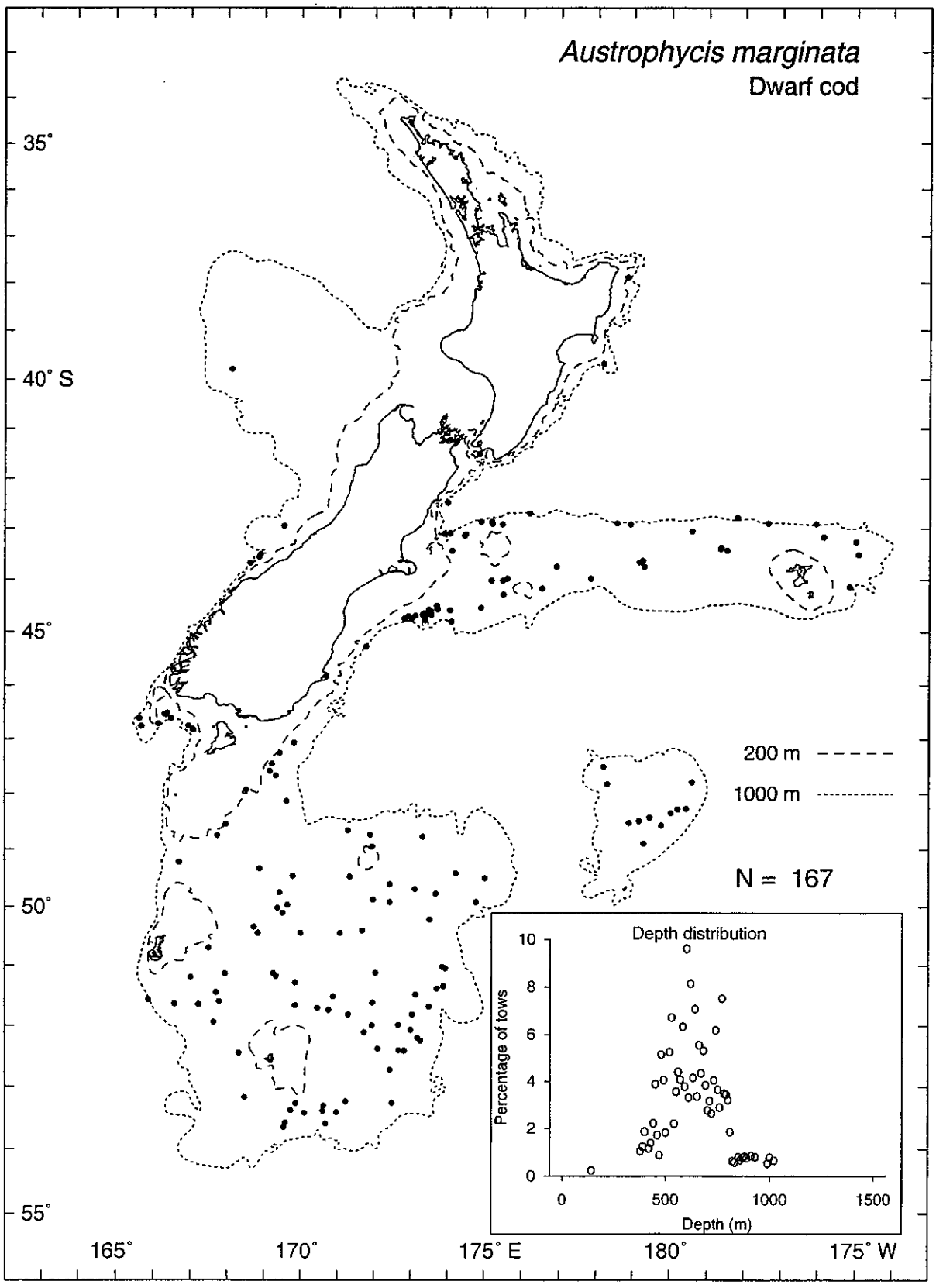


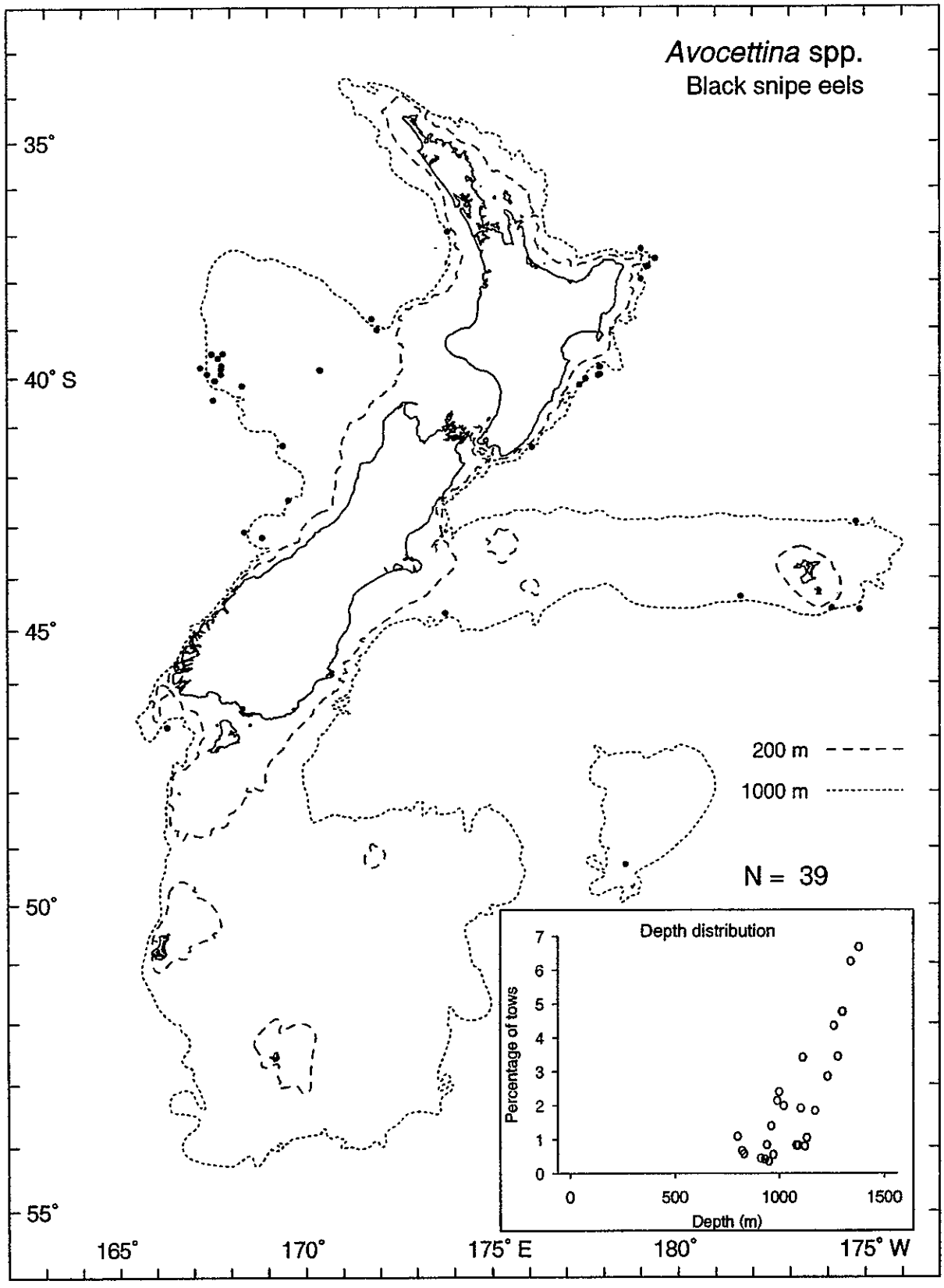
Northern records may include *A. xylabion*.

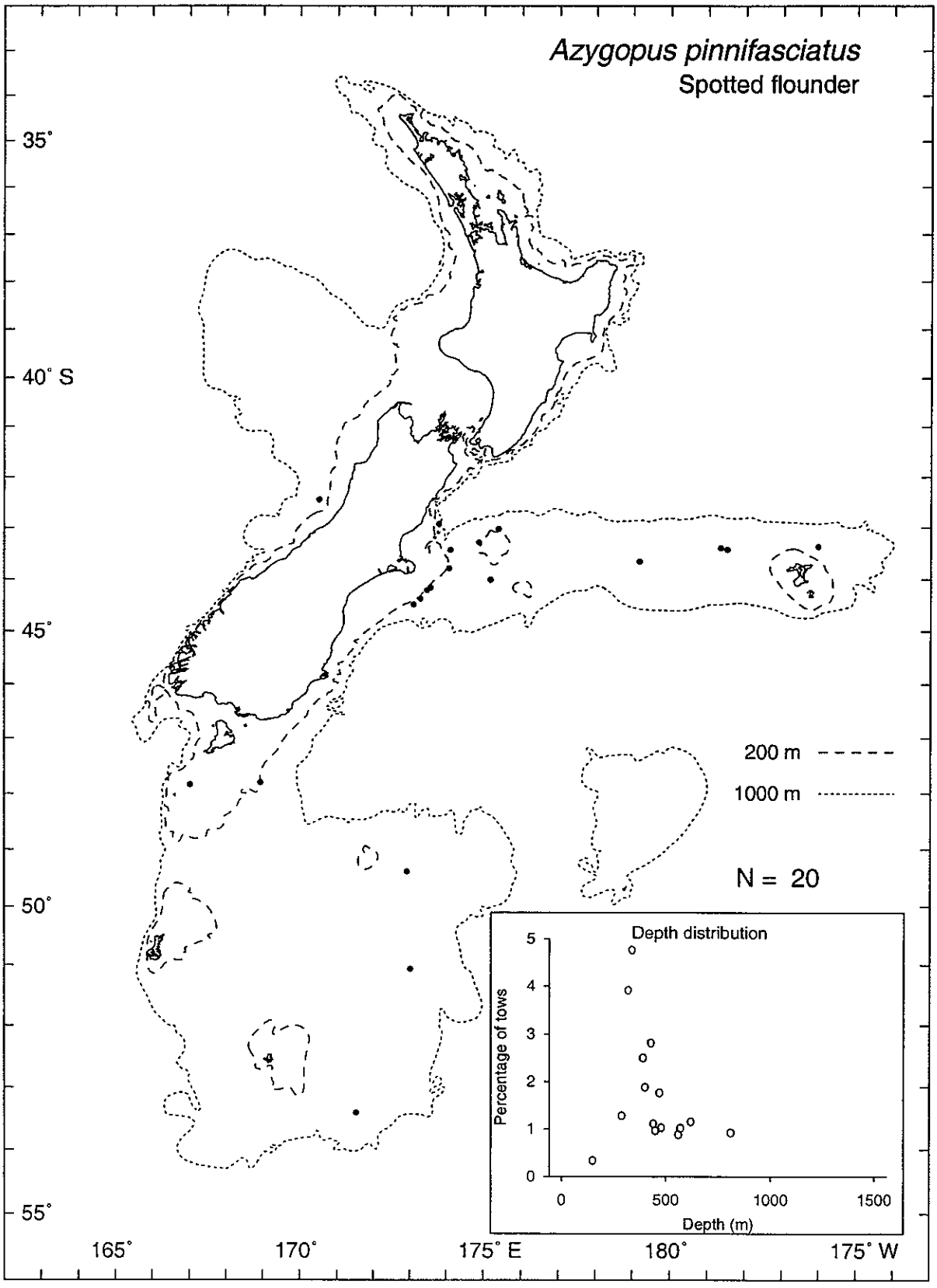

Astronesthidae
Snaggletooths
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 99
Depth distribution
Percentage of tows
0
5
10
15
20
25
0
500
1000
1500
Depth (m)

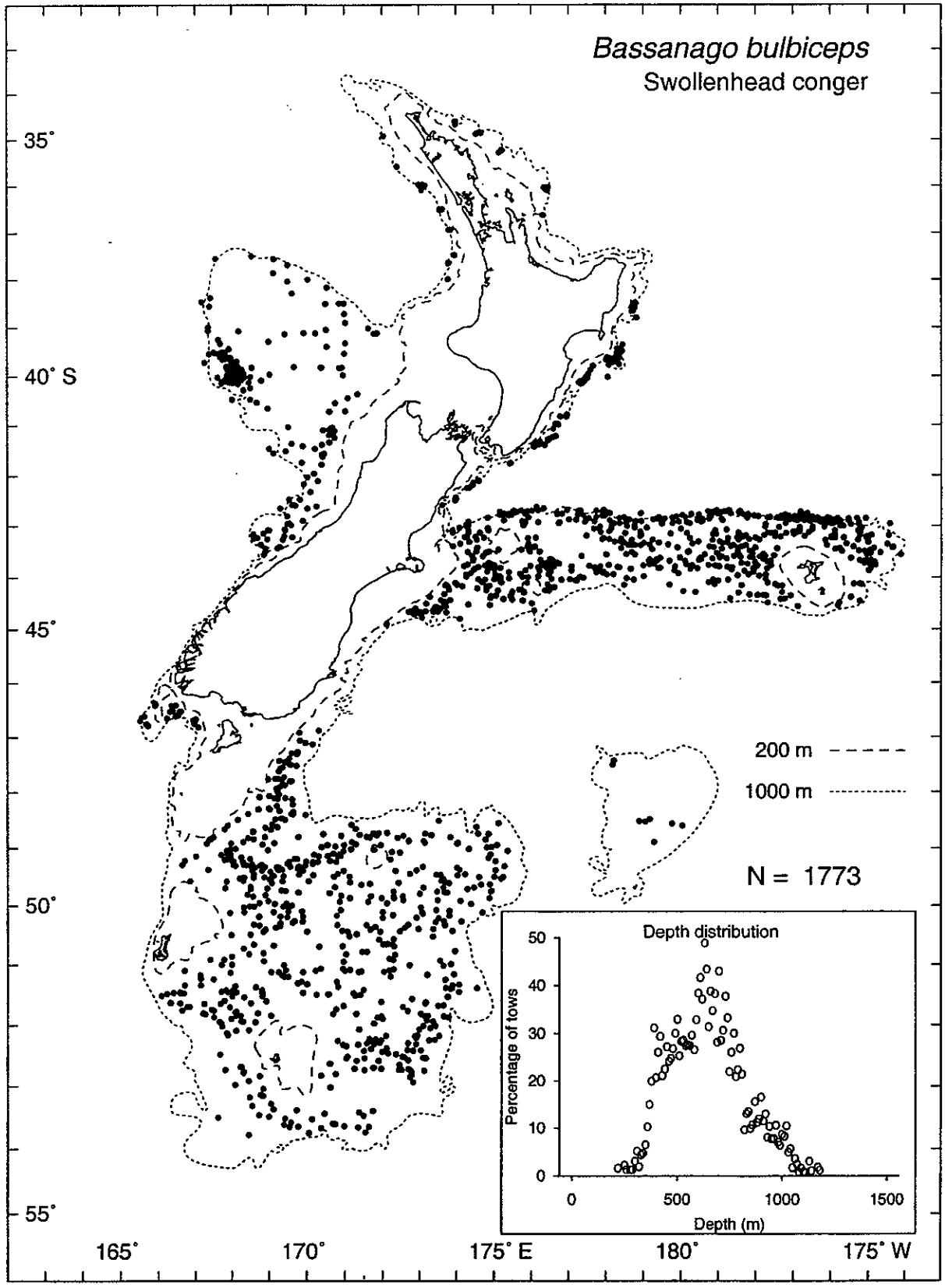


Records deeper than 200 m, particularly on the Chatham Rise and Sub-Antarctic, may be *Austrophycis marginata*.

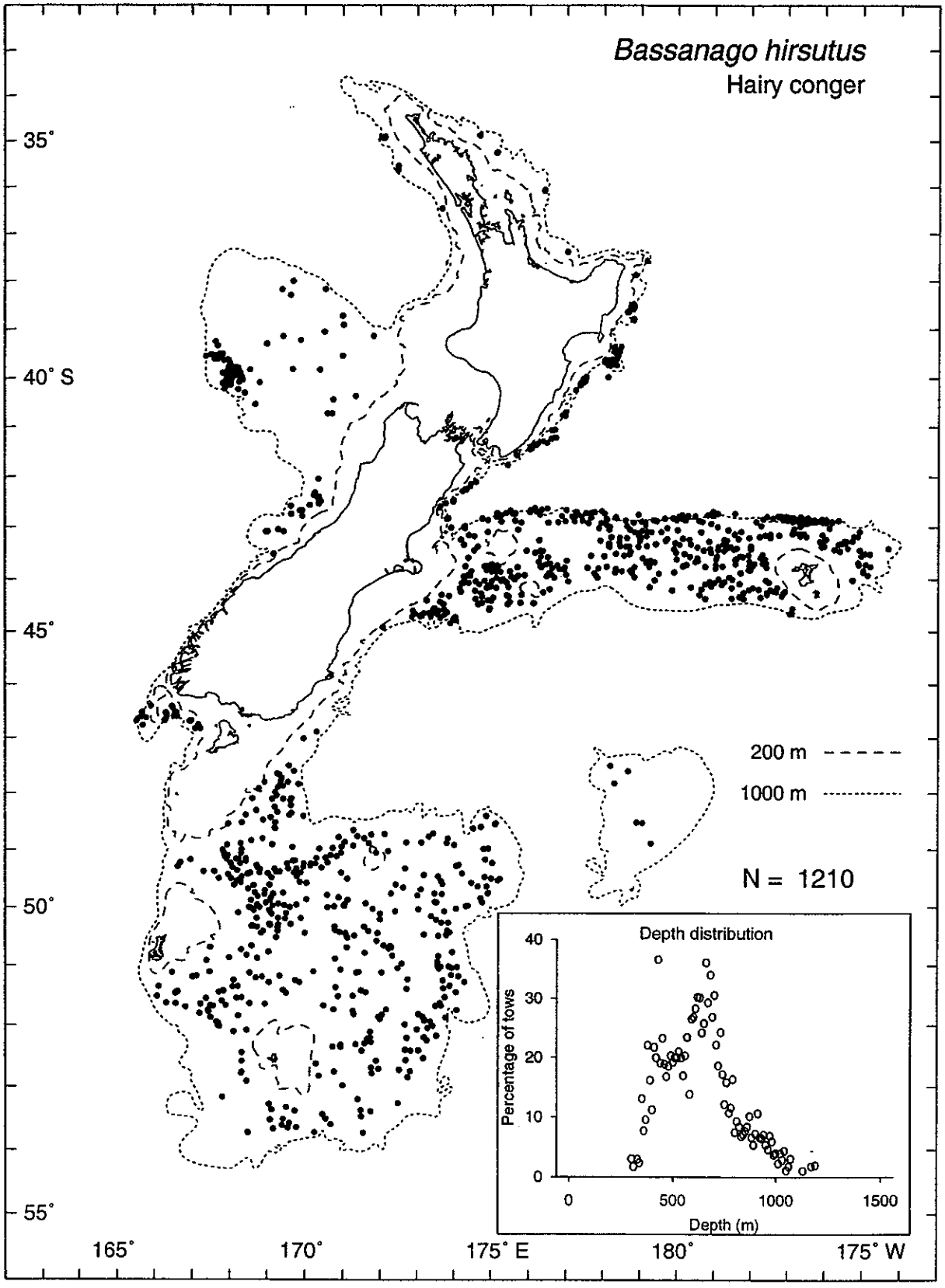

Austrophycis marginata
Dwarf cod
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 167
Depth distribution
Percentage of tows
Depth (m)
0
2
4
6
8
10
0
500
1000
1500


Avocettina spp.
Black snipe eels
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 39
Depth distribution
Percentage of tows
0
1
2
3
4
5
6
7
0
500
1000
1500
Depth (m)

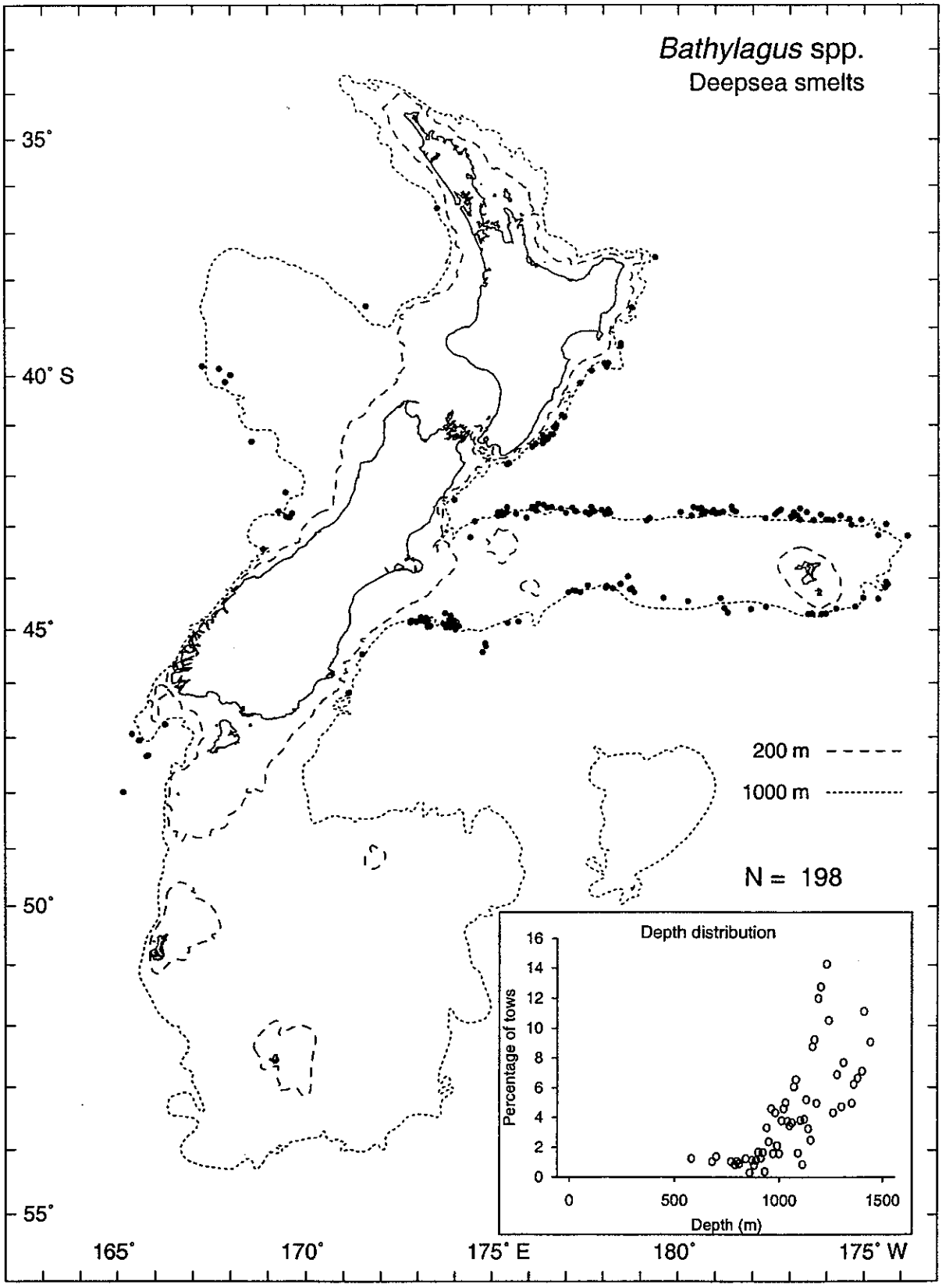

Azygopus pinnifasciatus
Spotted flounder
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 20
Depth distribution
Percentage of tows
Depth (m)
0
1
2
3
4
5
0
500
1000
1500



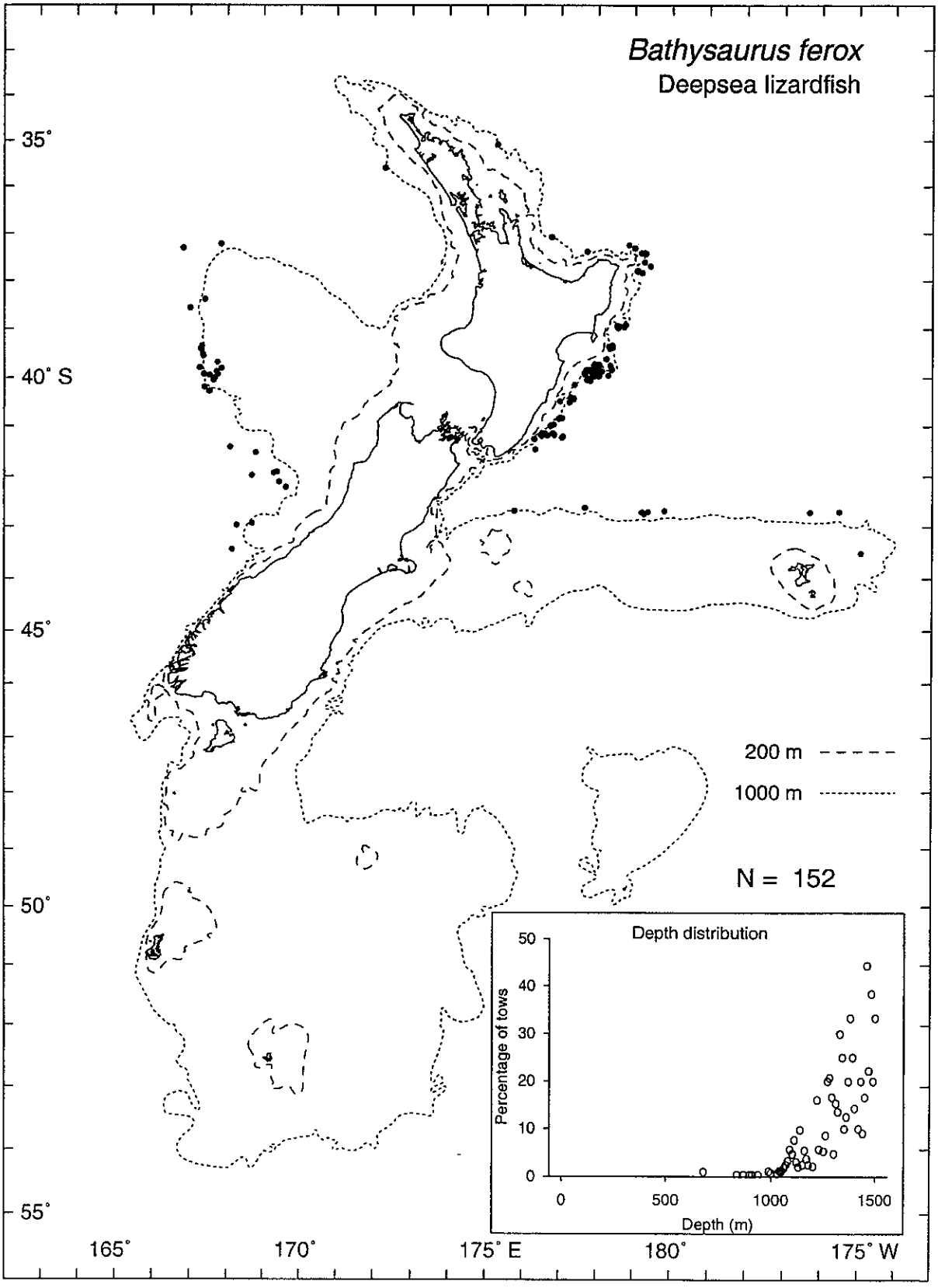
This species may include *B. hirsutus*.

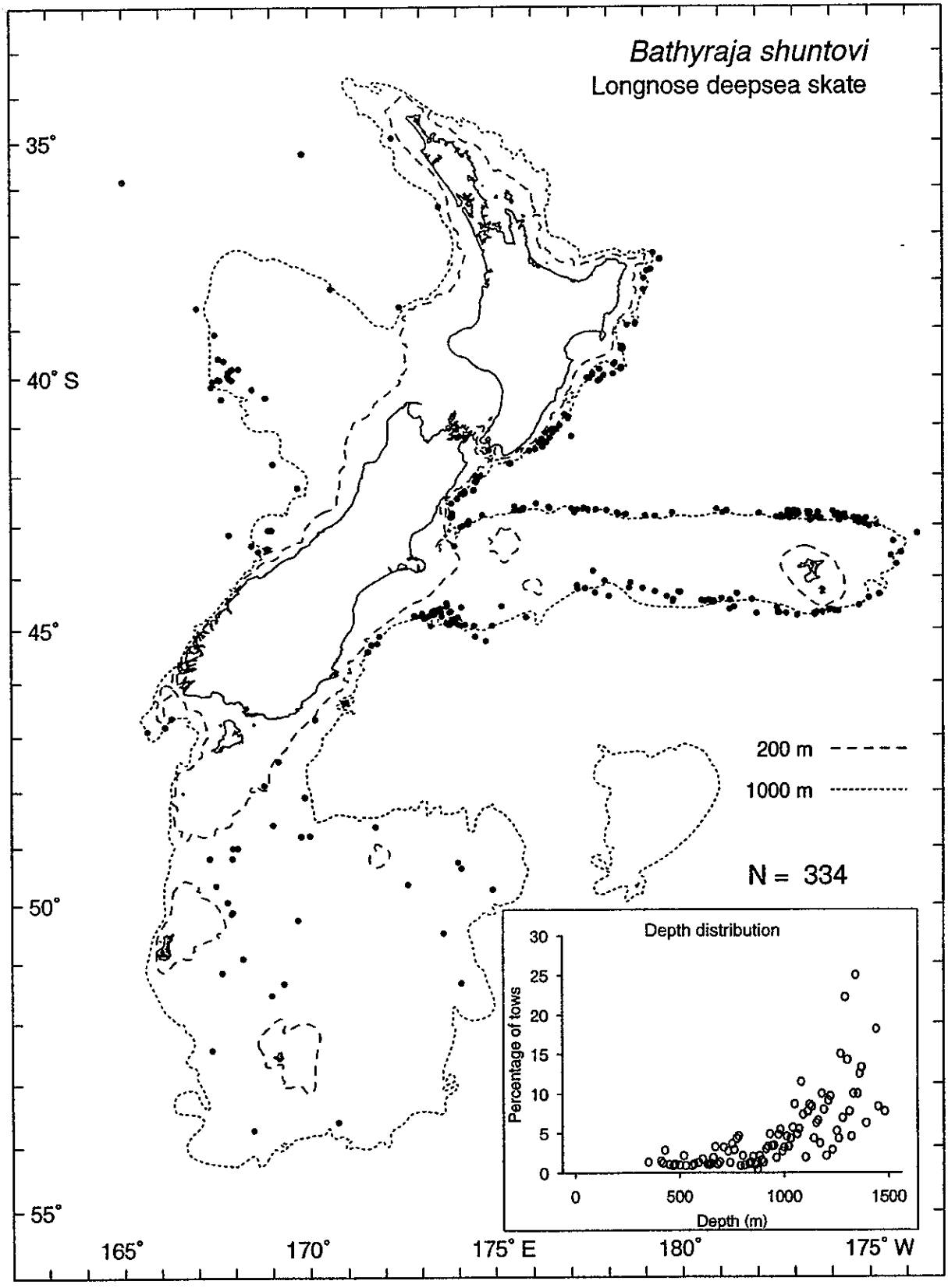


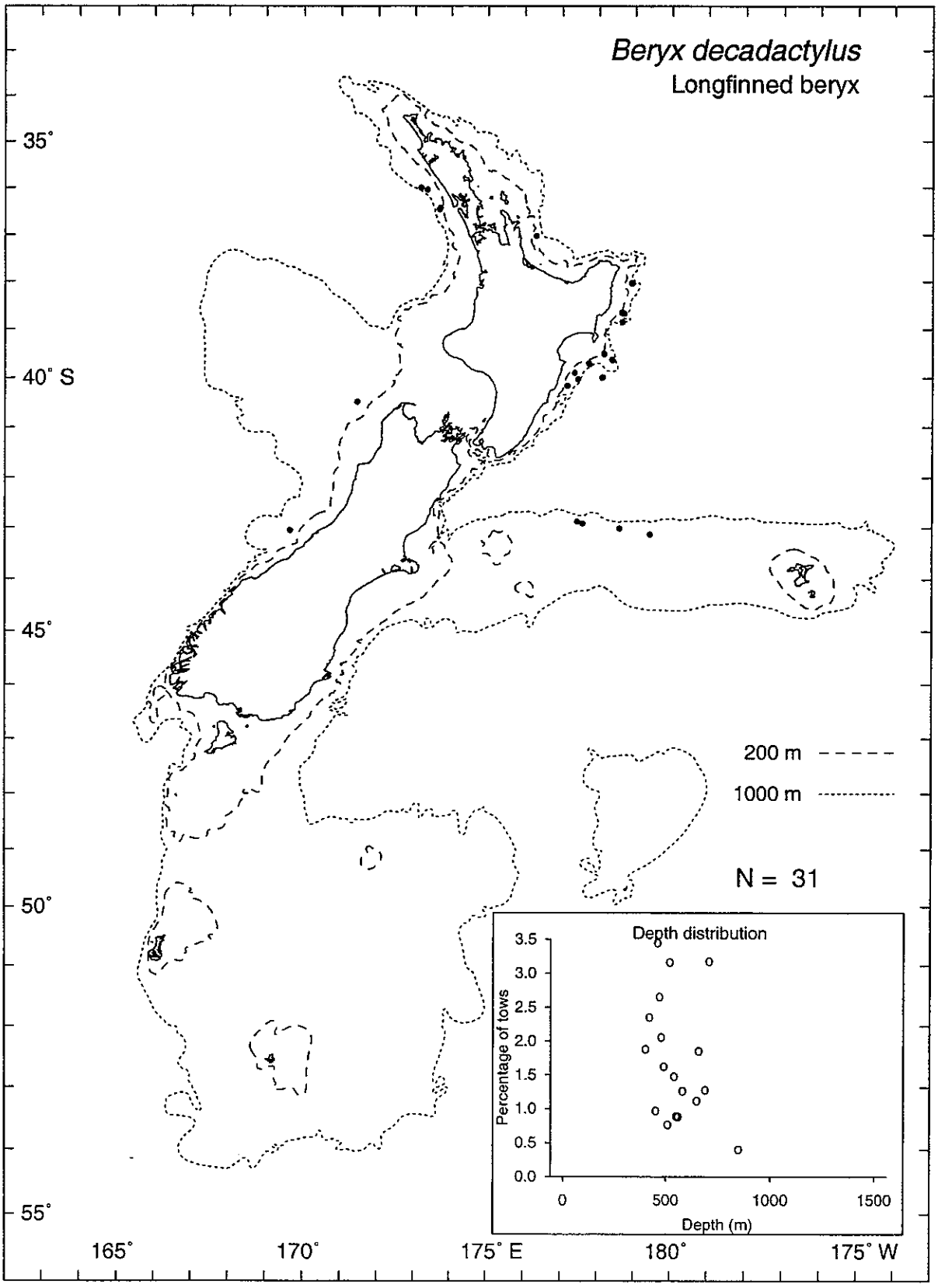
This species may include *B. bulbiceps*.

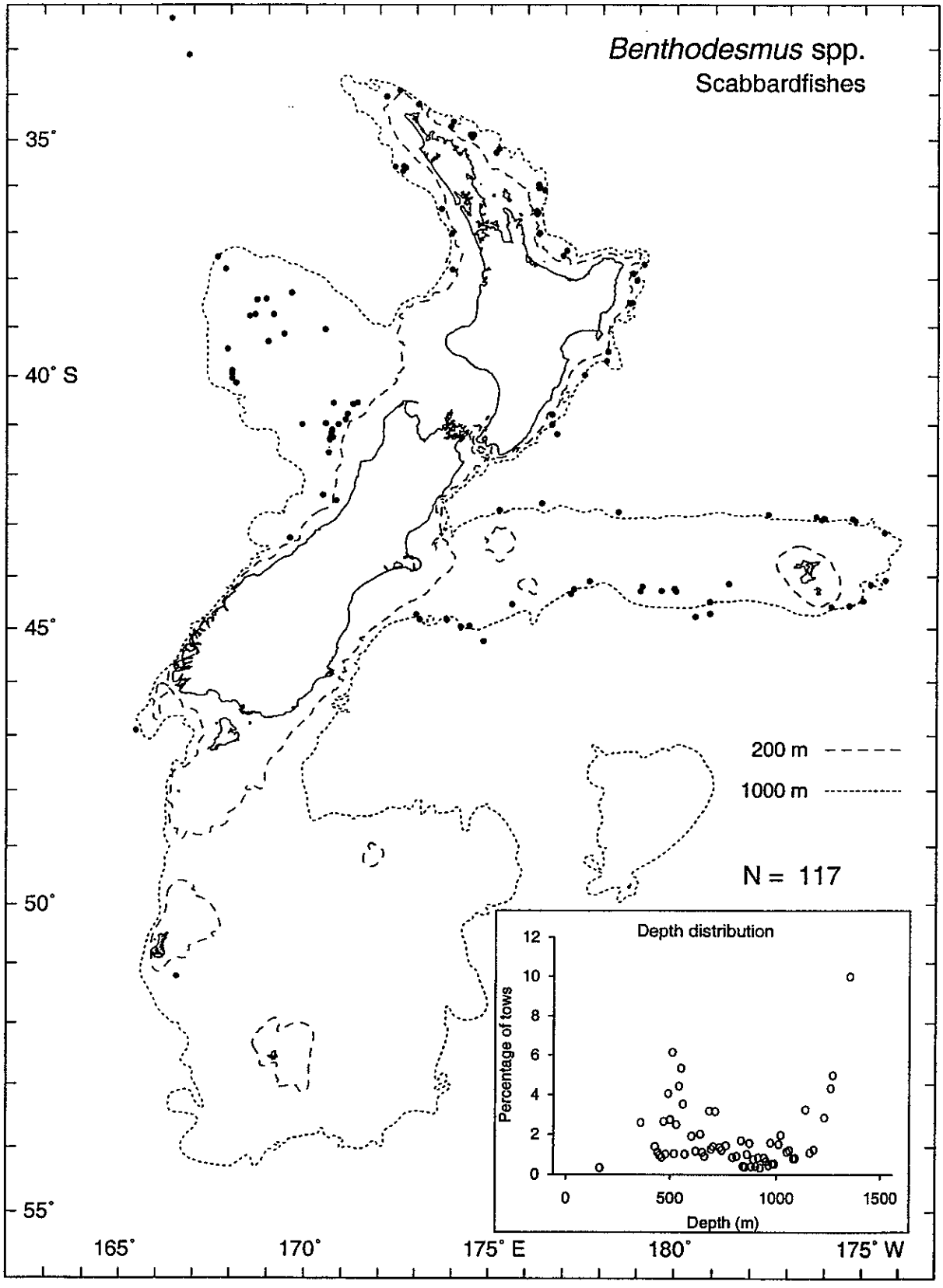


Probably includes some *Nansenia* spp.

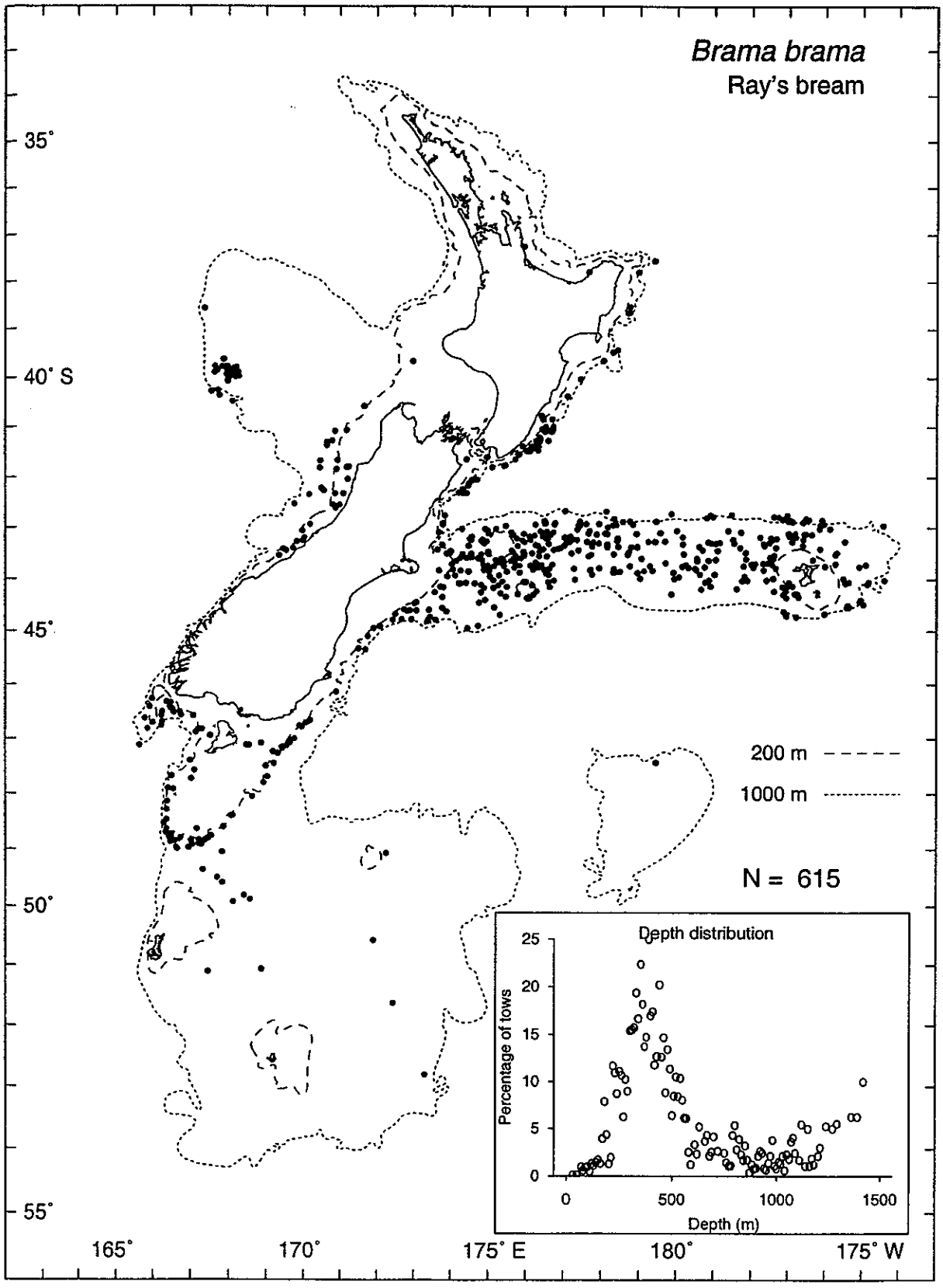

Bathysaurus ferox
Deepsea lizardfish
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 152
Depth distribution
Percentage of tows
Depth (m)
0
10
20
30
40
50
0
500
1000
1500


Bathyraja shuntovi
Longnose deepsea skate
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 334
Depth distribution
Percentage of tows
0
5
10
15
20
25
30
0
500
1000
1500
Depth (m)

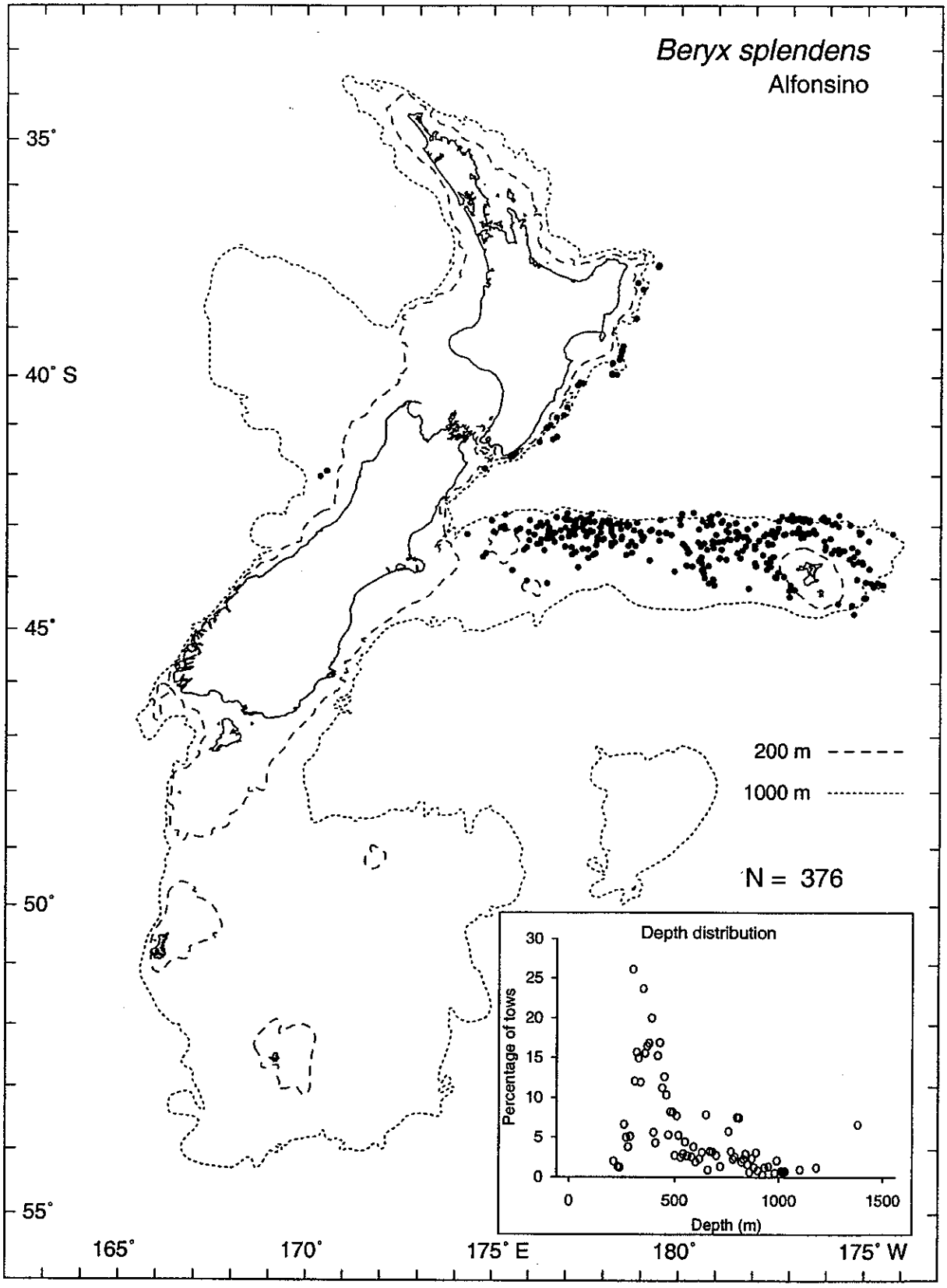

Beryx decadactylus
Longfinned beryx
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 31
Depth distribution
Percentage of tows
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0
500
1000
1500
Depth (m)



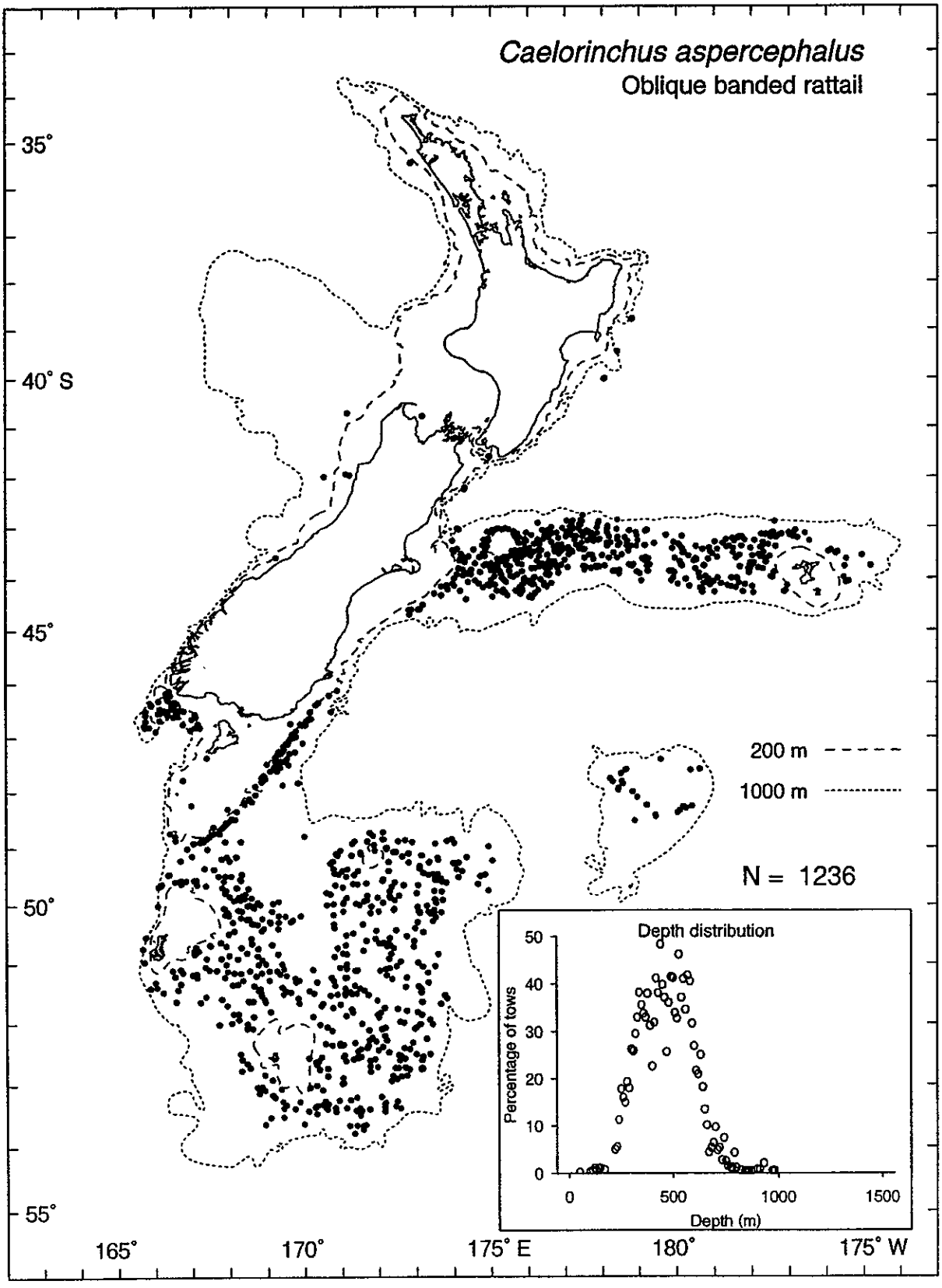
Includes some *Benthodesmus elongatus* and *B. tenuis* and possibly also *Paradiplospinus* sp.

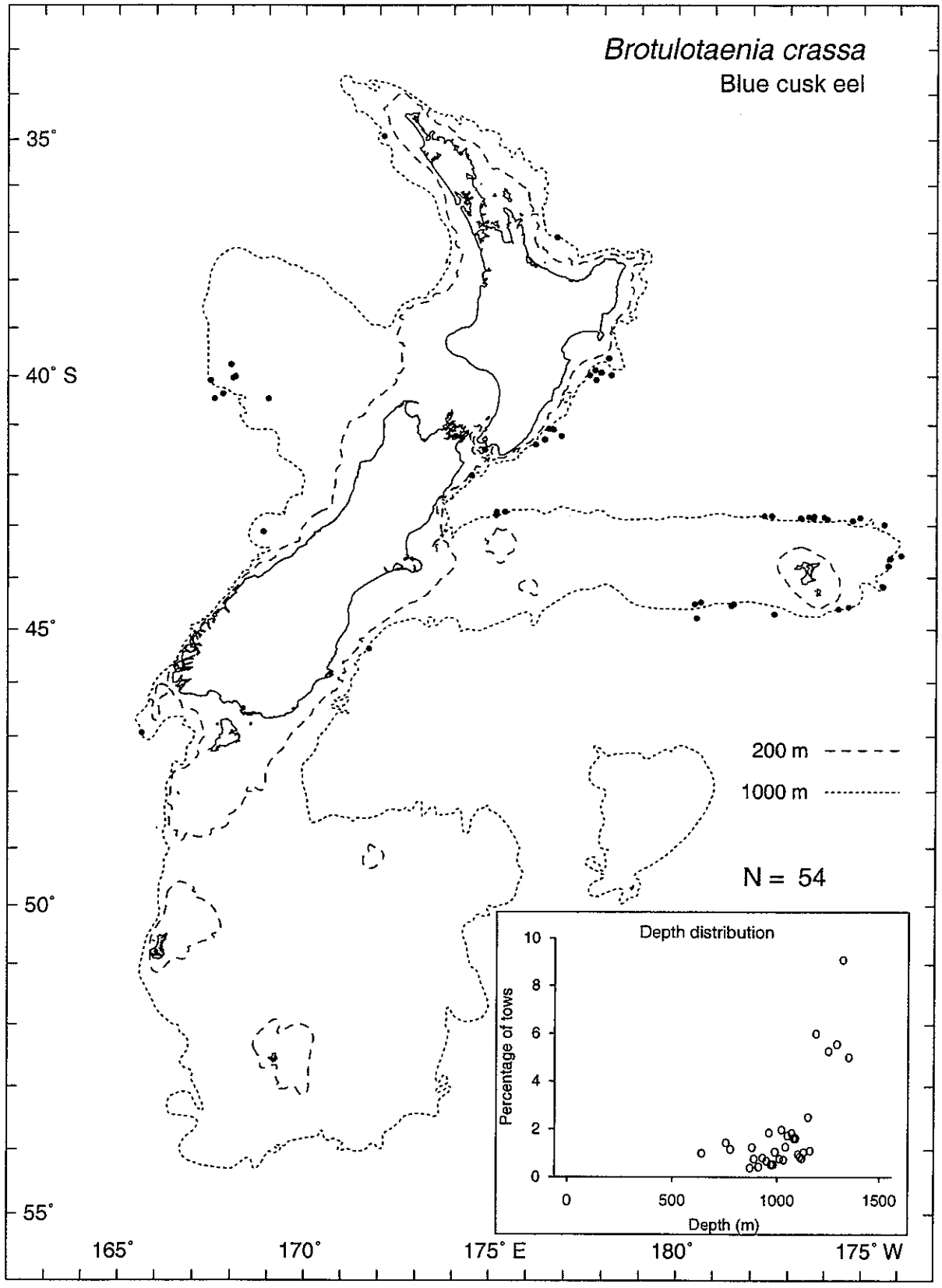


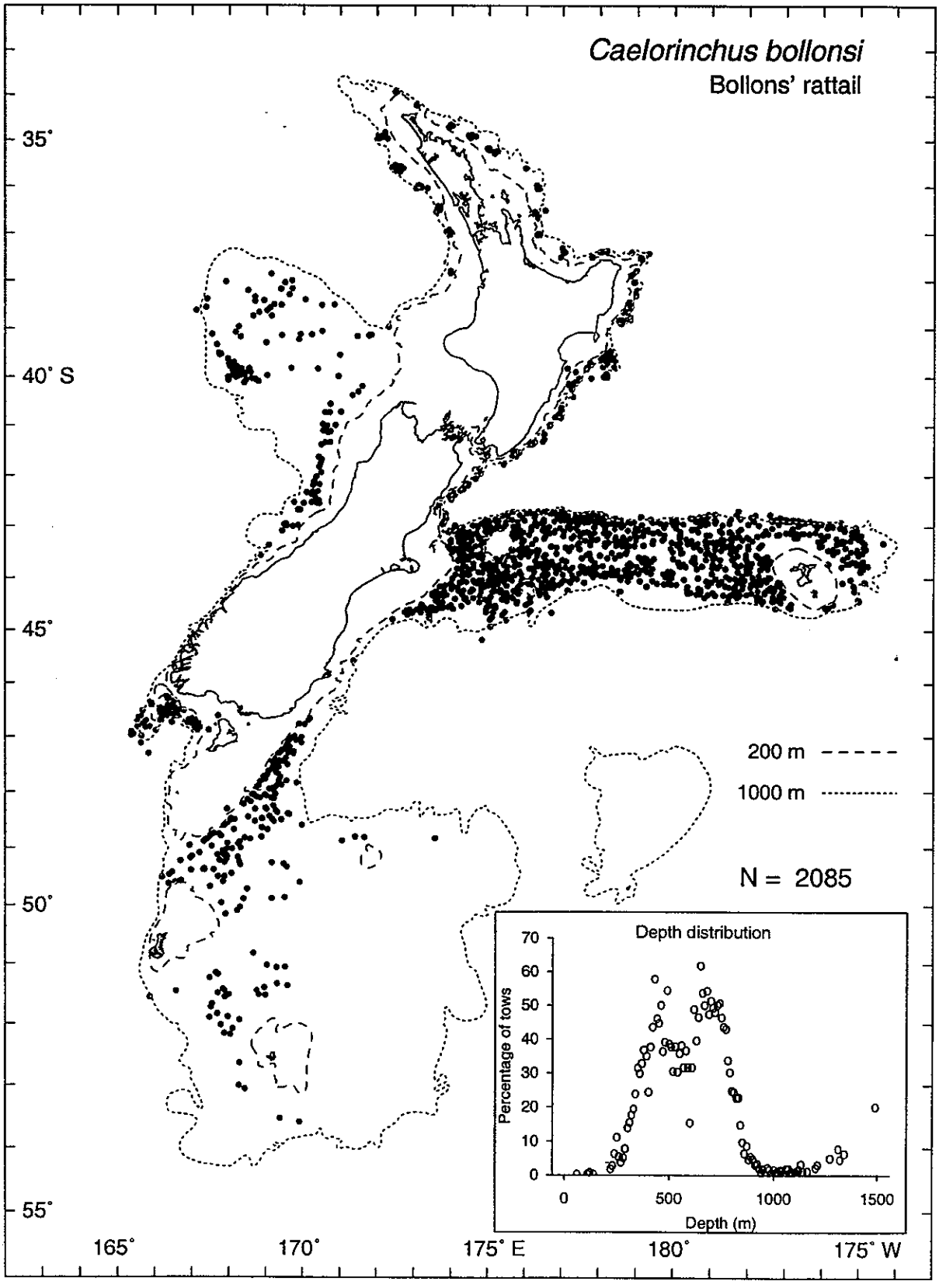
May include some *B. australis* and *Xenobrama microlepis*.



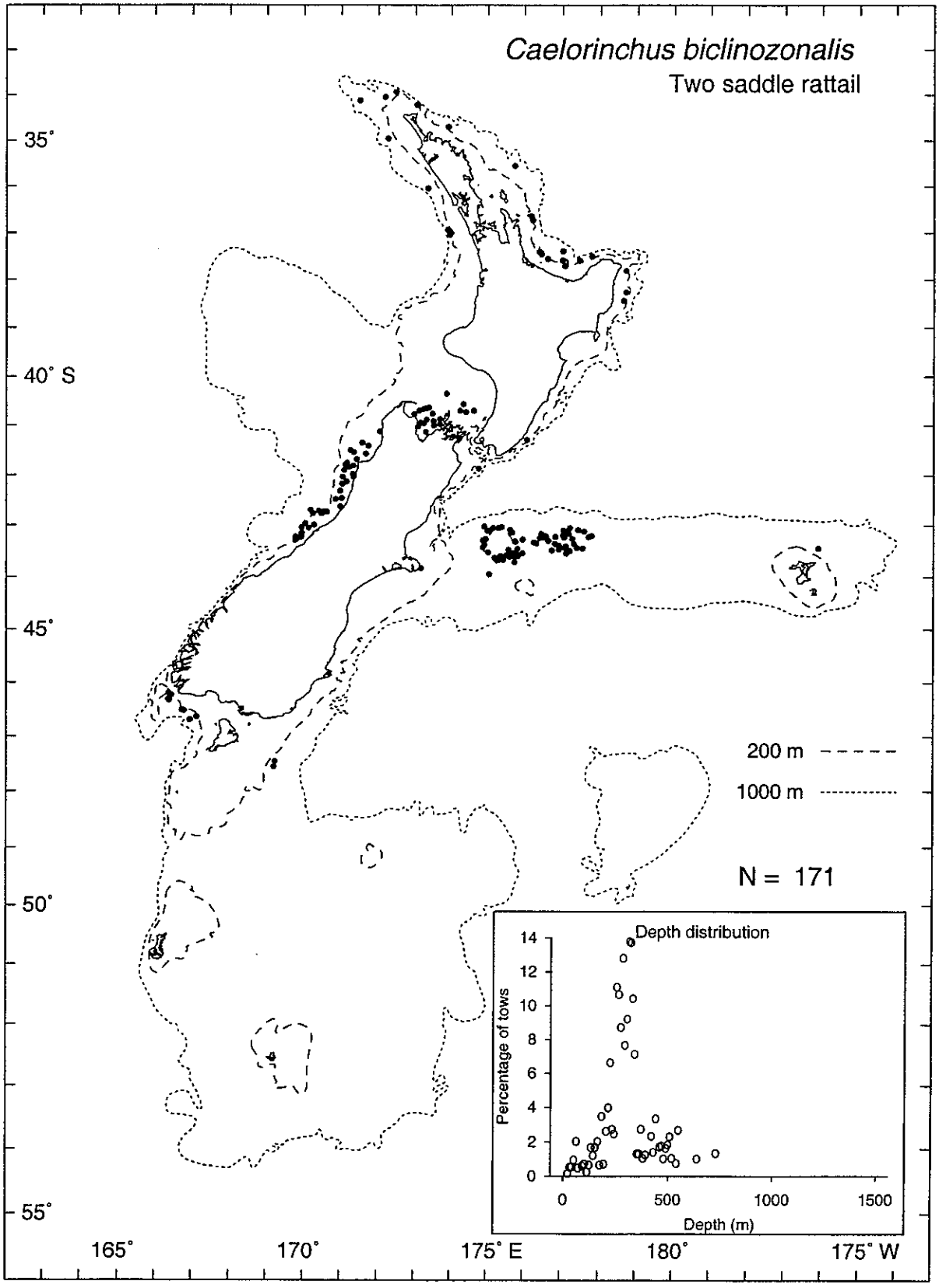
Includes some *B. decadactylus.*

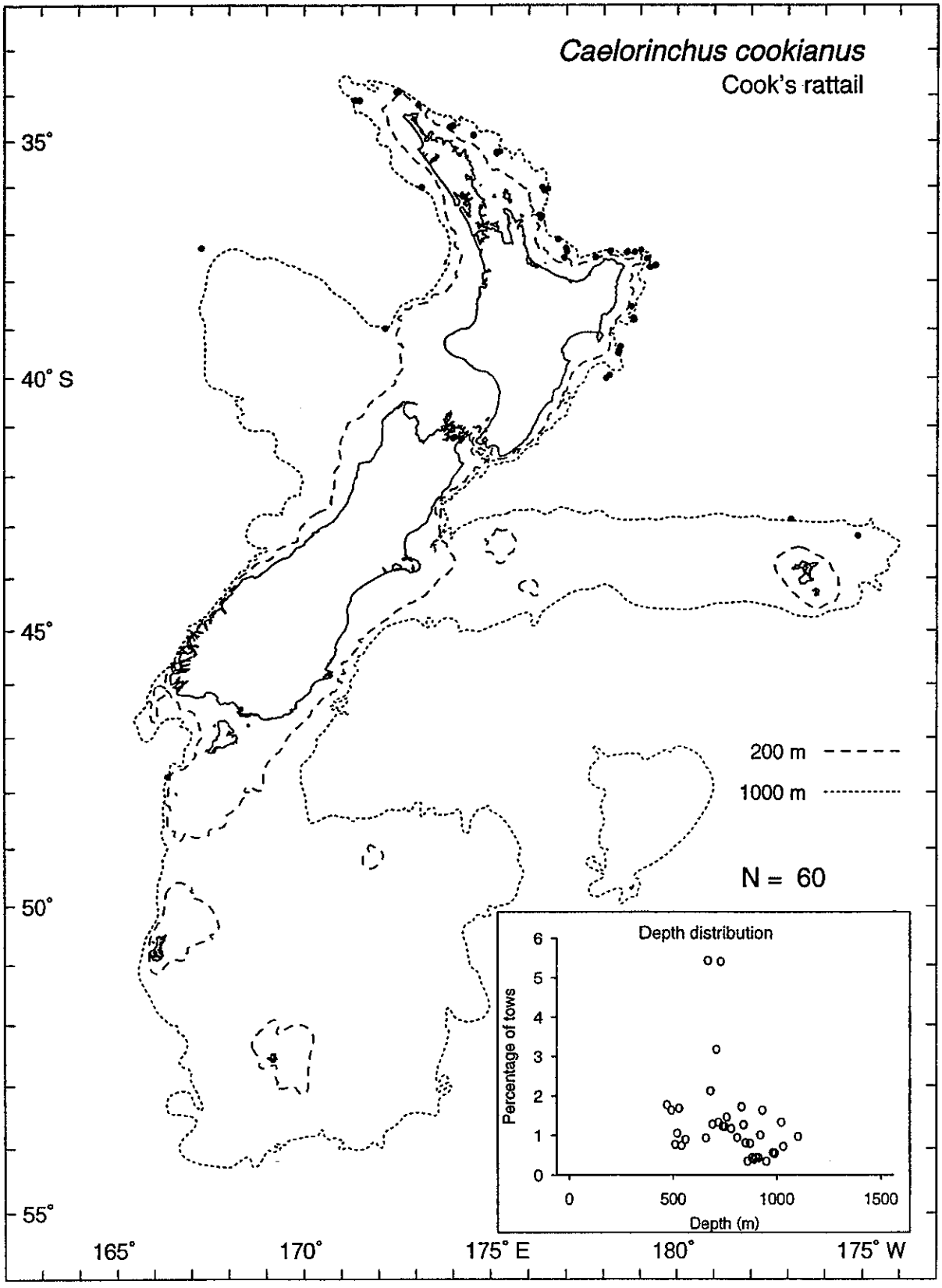

Caelorinchus aspercephalus
Oblique banded rattail
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 1236
Depth distribution
Percentage of tows
0
10
20
30
40
50
0
500
1000
1500
Depth (m)

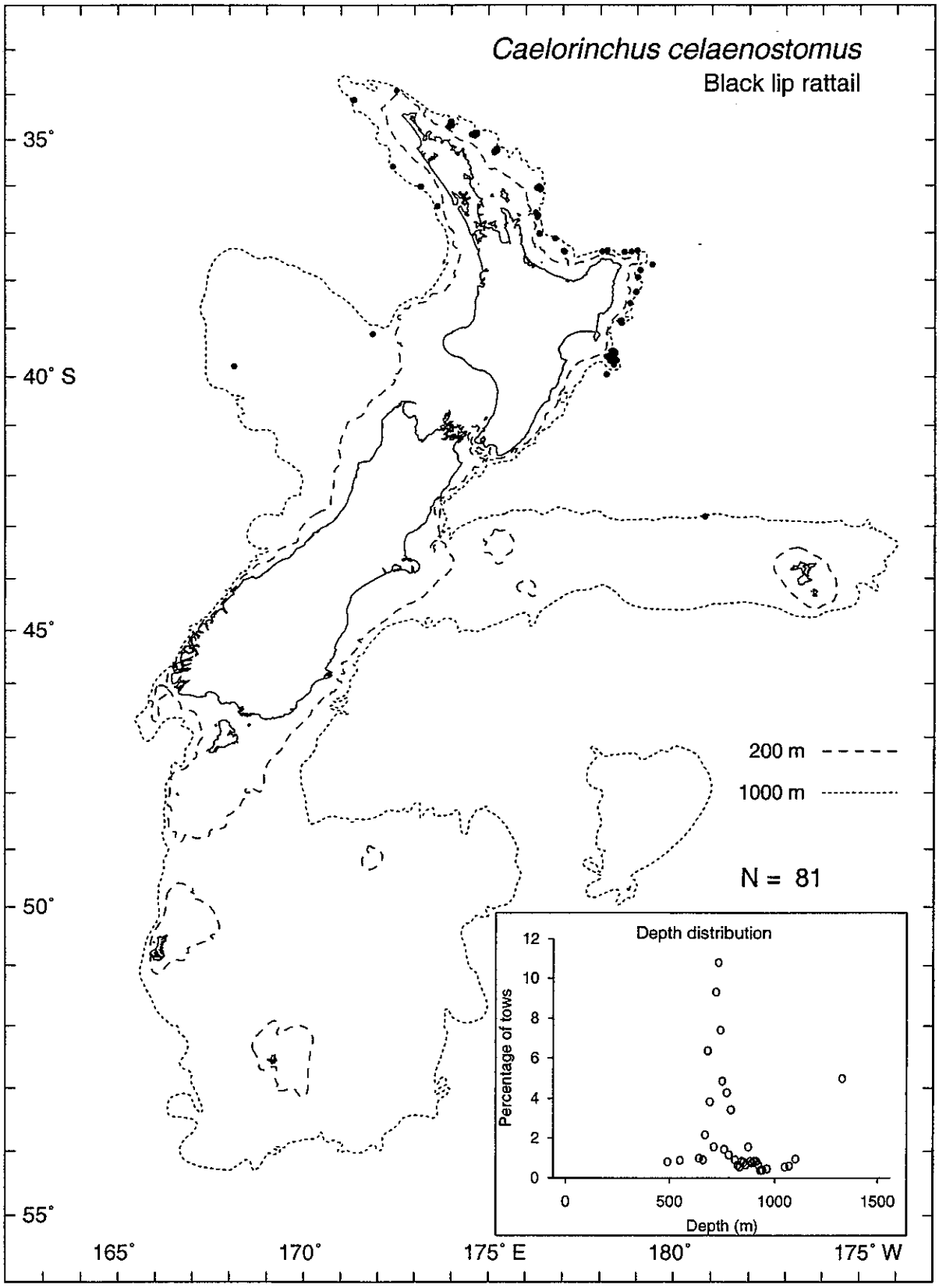

Brotulotaenia crassa
Blue cusk eel
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 54
Depth distribution
Percentage of tows
Depth (m)
0
2
4
6
8
10
0
500
1000
1500

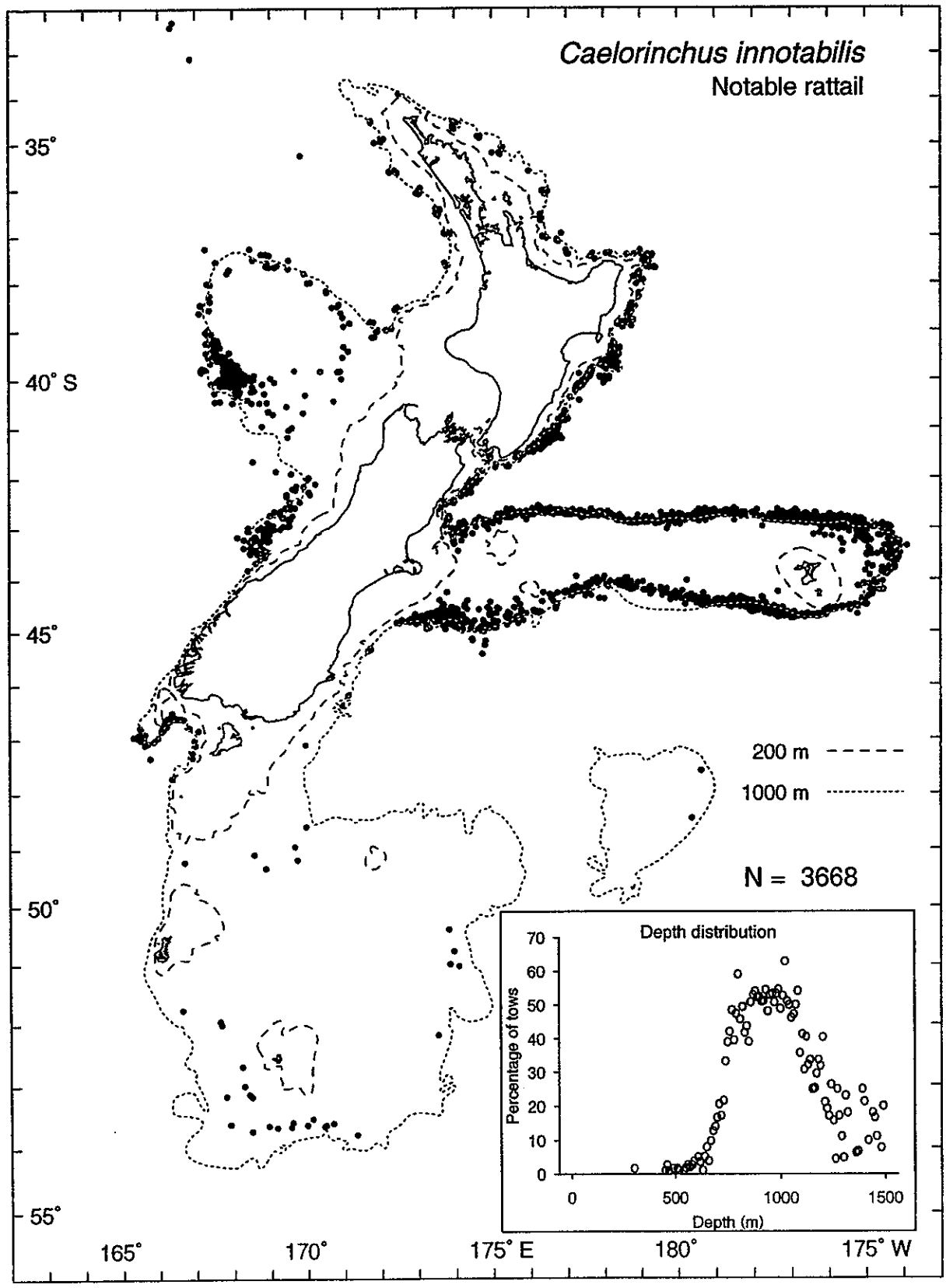


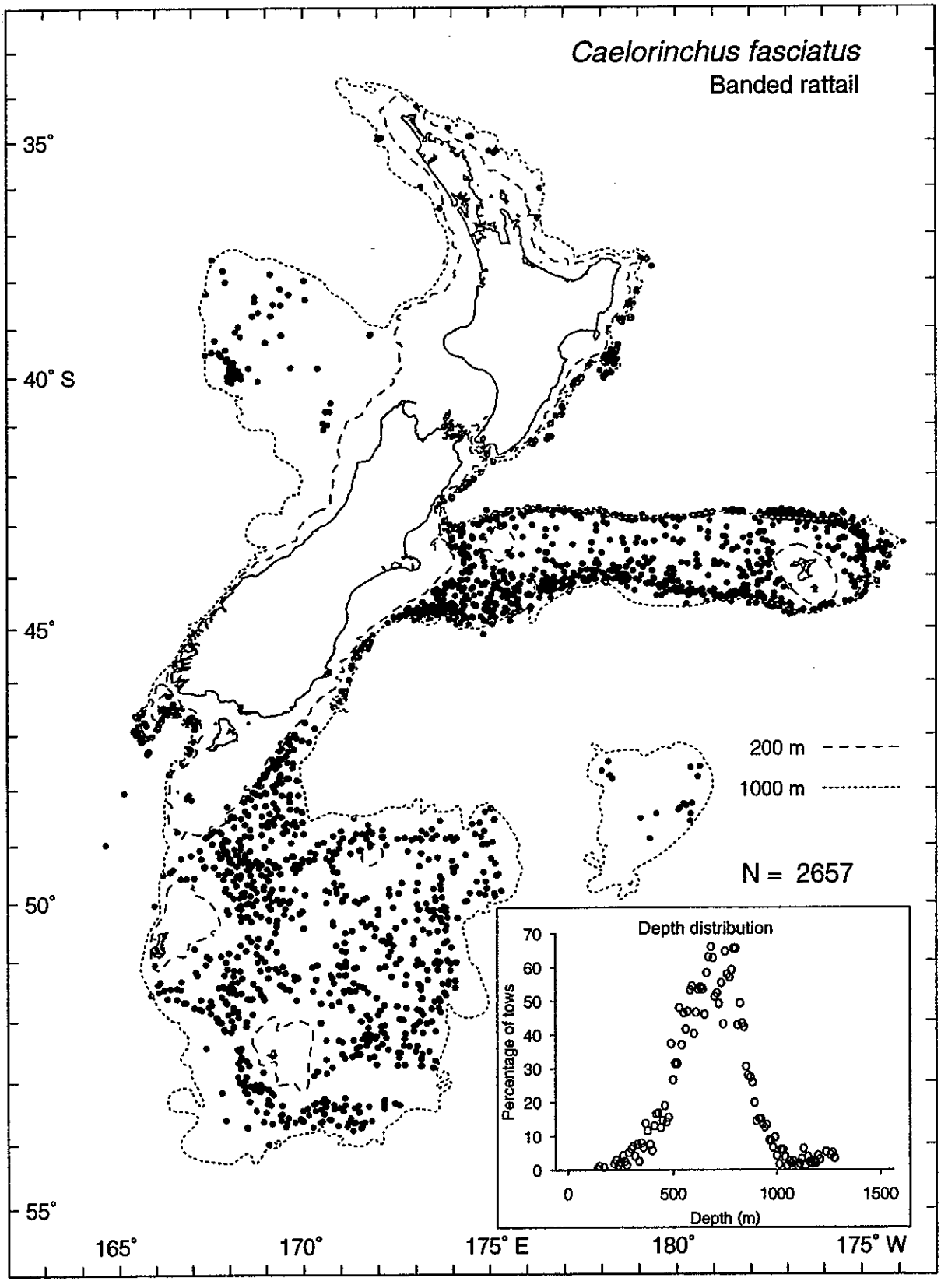
Records deeper than 1200 m may have been misidentified and are possibly *Macrourus carinatus*.

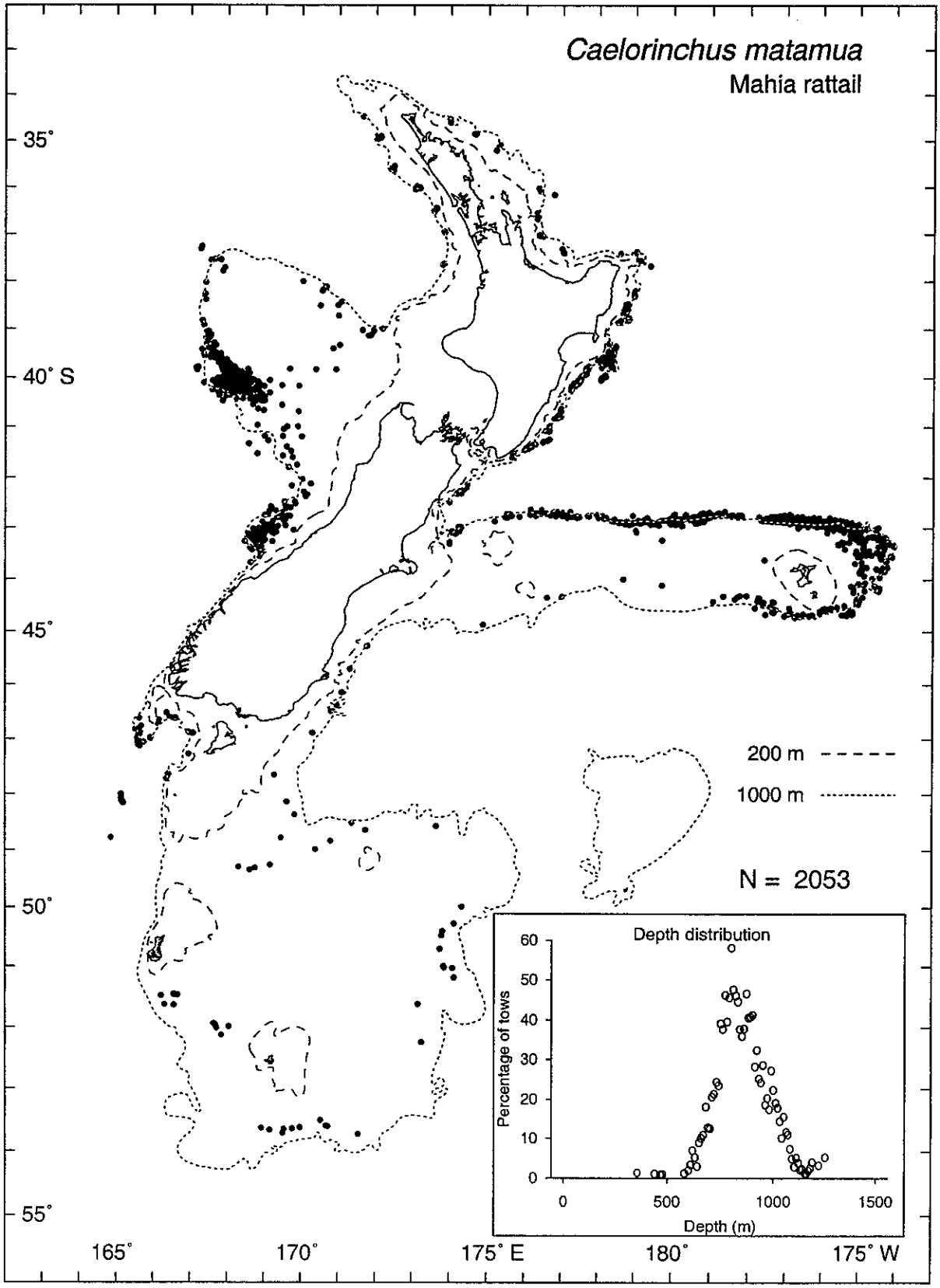

Caelorinchus biclinozonalis
Two saddle rattail
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 171
Depth distribution
Percentage of tows
Depth (m)
0
2
4
6
8
10
12
14
0
500
1000
1500

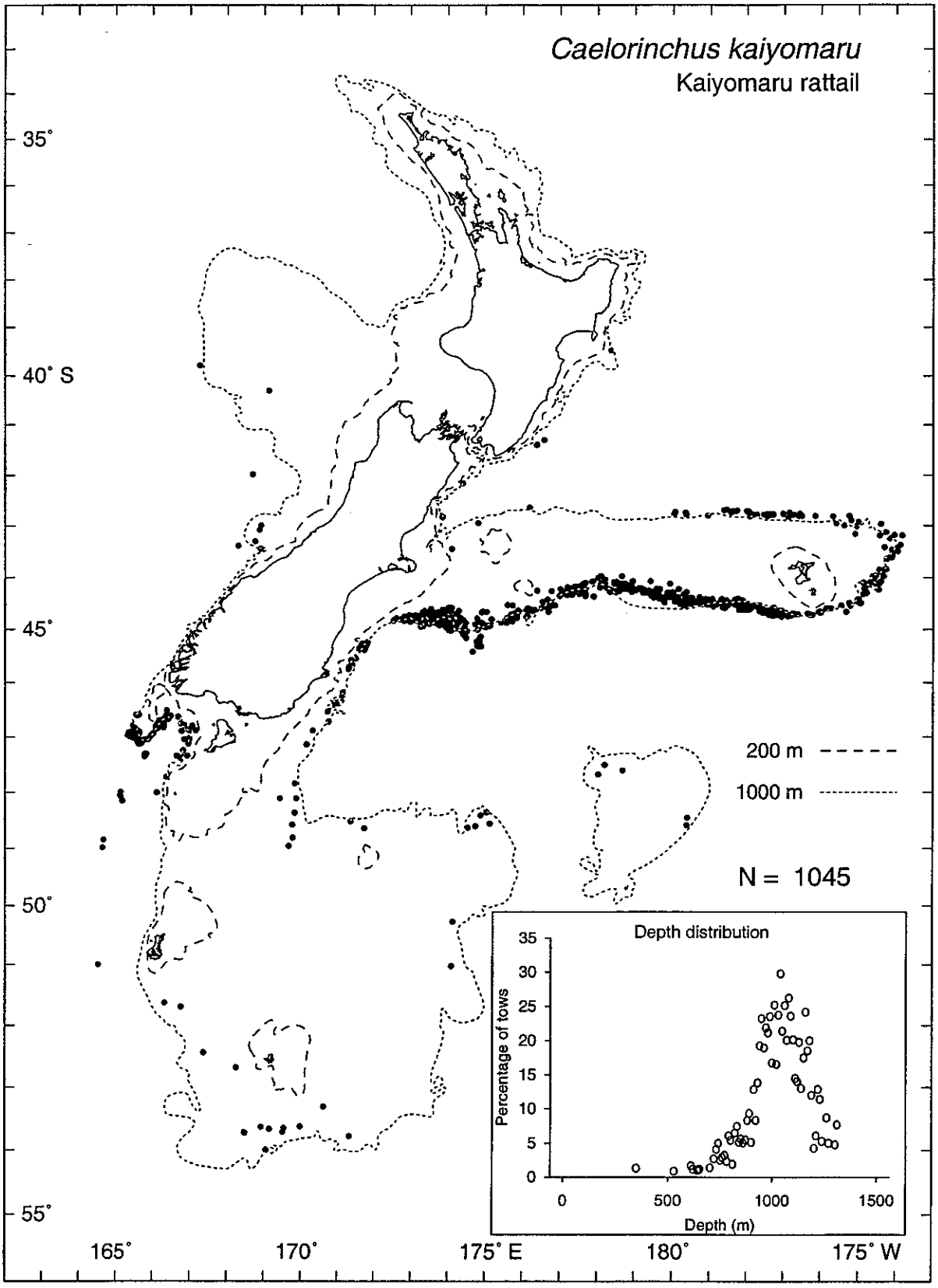

Caelorinchus cookianus
Cook's rattail
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 60
Depth distribution
Percentage of tows
0
1
2
3
4
5
6
0
500
1000
1500
Depth (m)

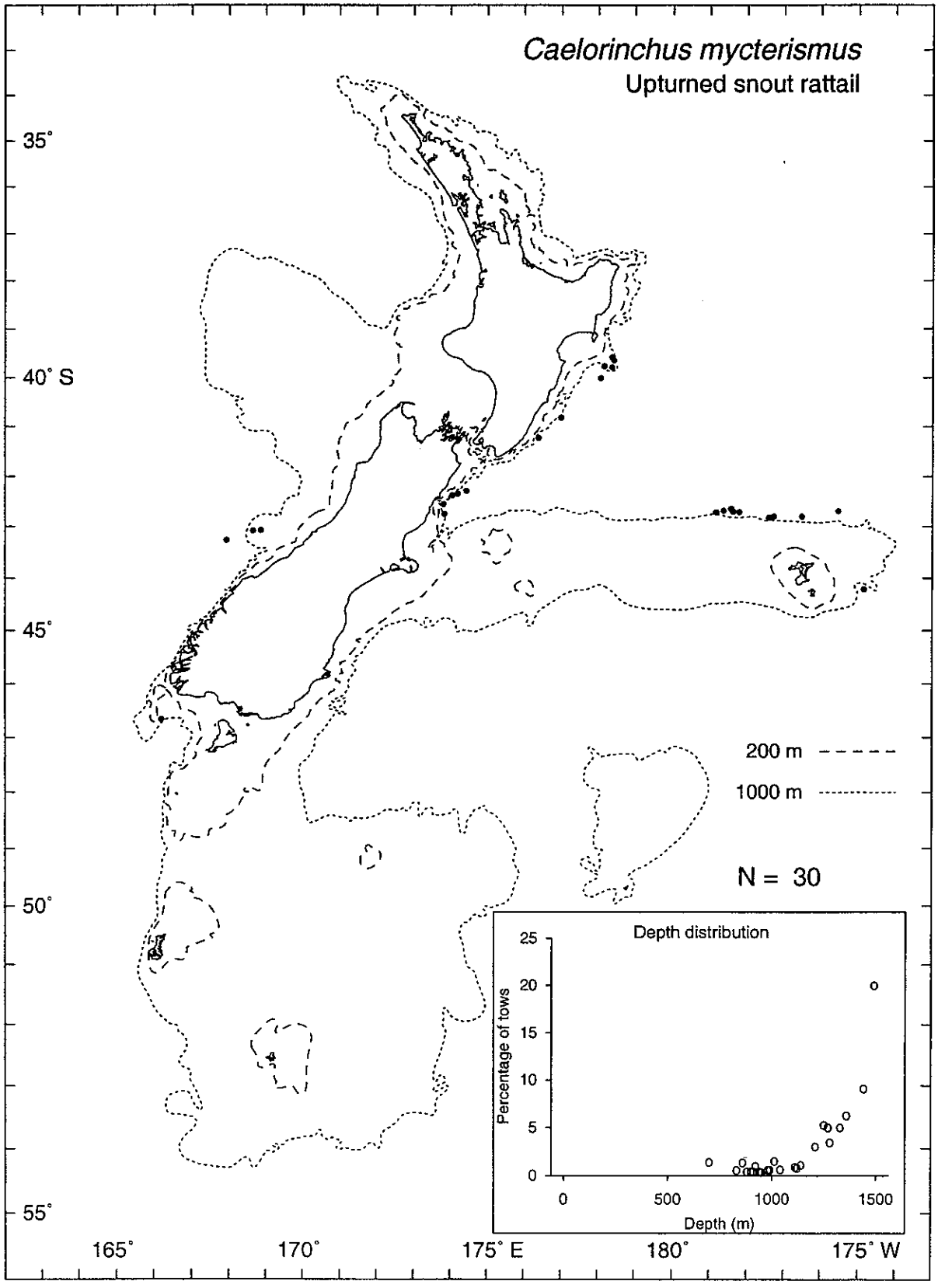

Caelorinchus celaenostomus
Black lip rattail
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 81
Depth distribution
Percentage of tows
Depth (m)
0
2
4
6
8
10
12
0
500
1000
1500

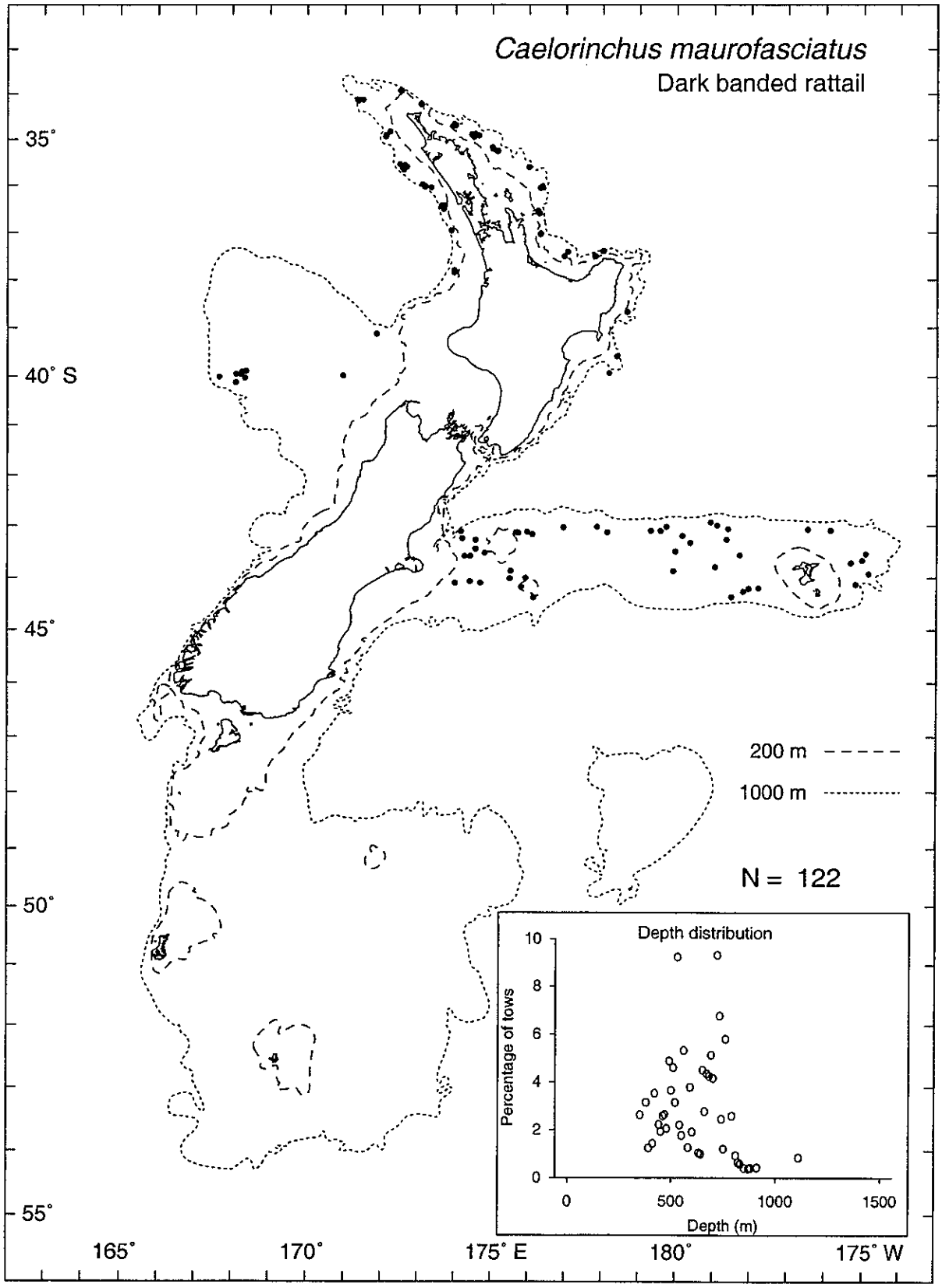

Caelorinchus innotabilis
Notable rattail
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 3668
Depth distribution
Percentage of tows
70
60
50
40
30
20
10
0
0
500
1000
1500
Depth (m)

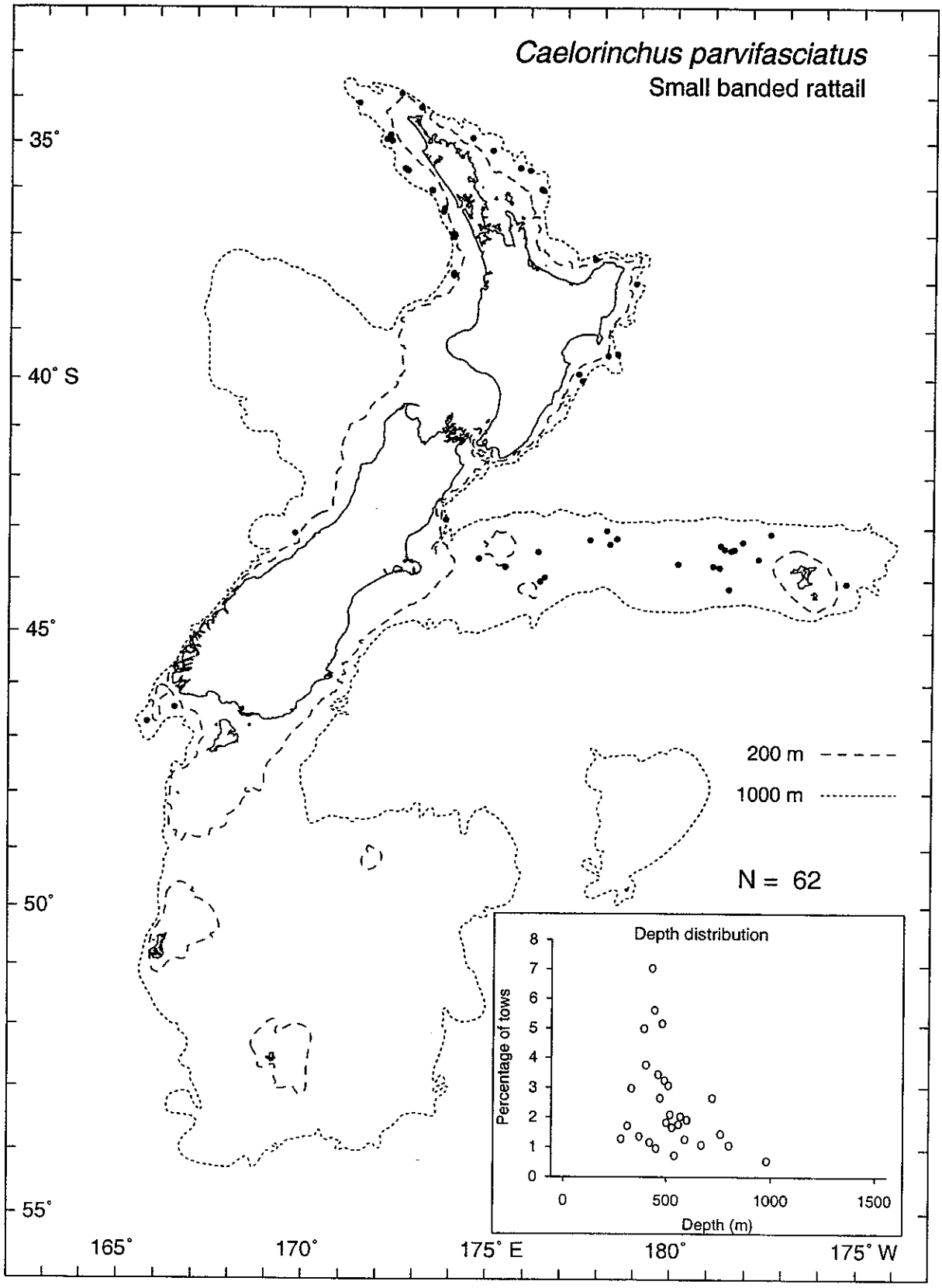

Caelorinchus fasciatus
Banded rattail
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 2657
Depth distribution
Percentage of tows
Depth (m)
0
10
20
30
40
50
60
70
0
500
1000
1500

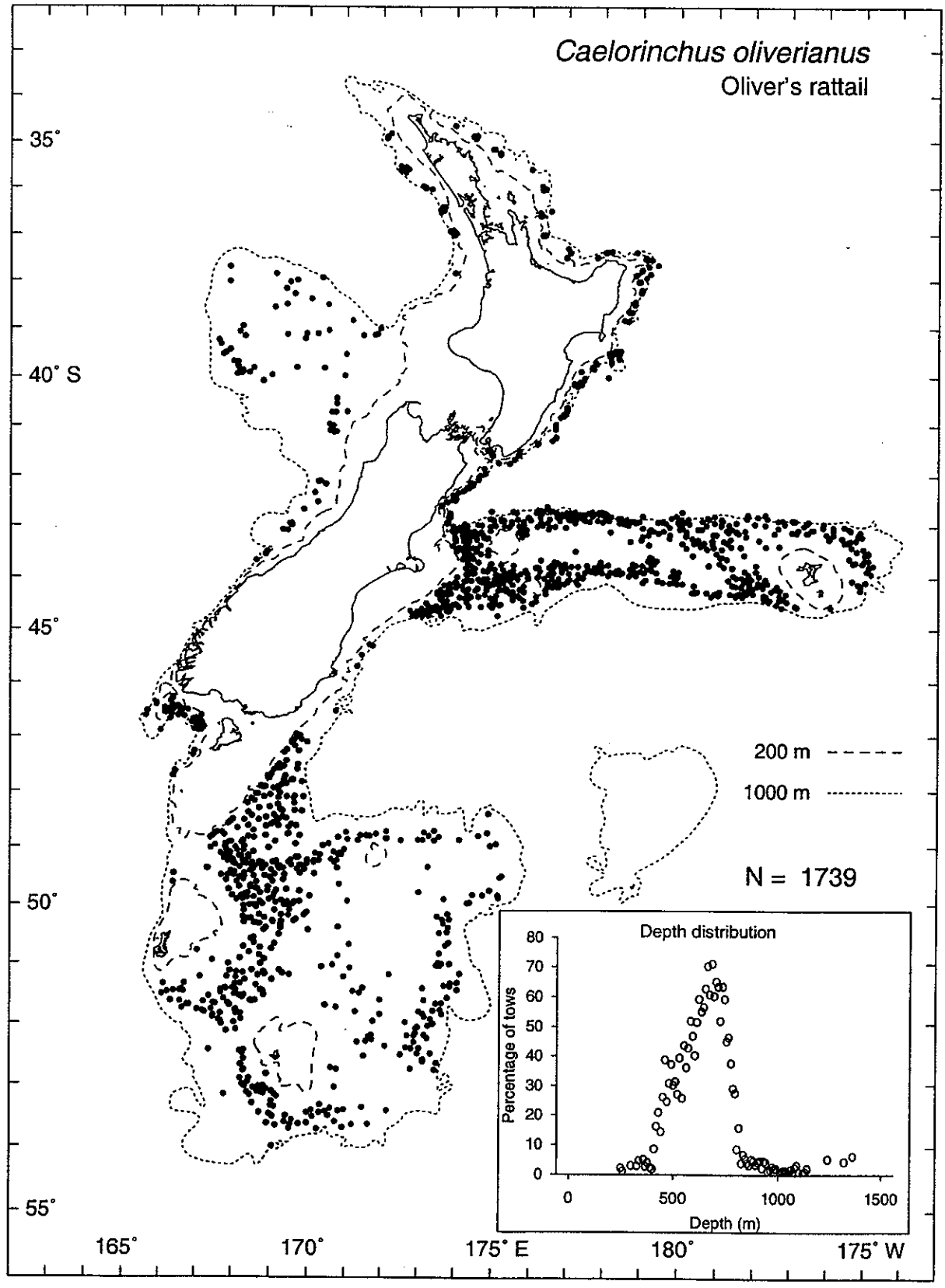

Caelorinchus matamua
Mahia rattail
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 2053
Depth distribution
Percentage of tows
Depth (m)
0
10
20
30
40
50
60
0
500
1000
1500


Caelorinchus kaiyomaru
Kaiyomaru rattail
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 1045
Depth distribution
Percentage of tows
0
5
10
15
20
25
30
35
0
500
1000
1500
Depth (m)

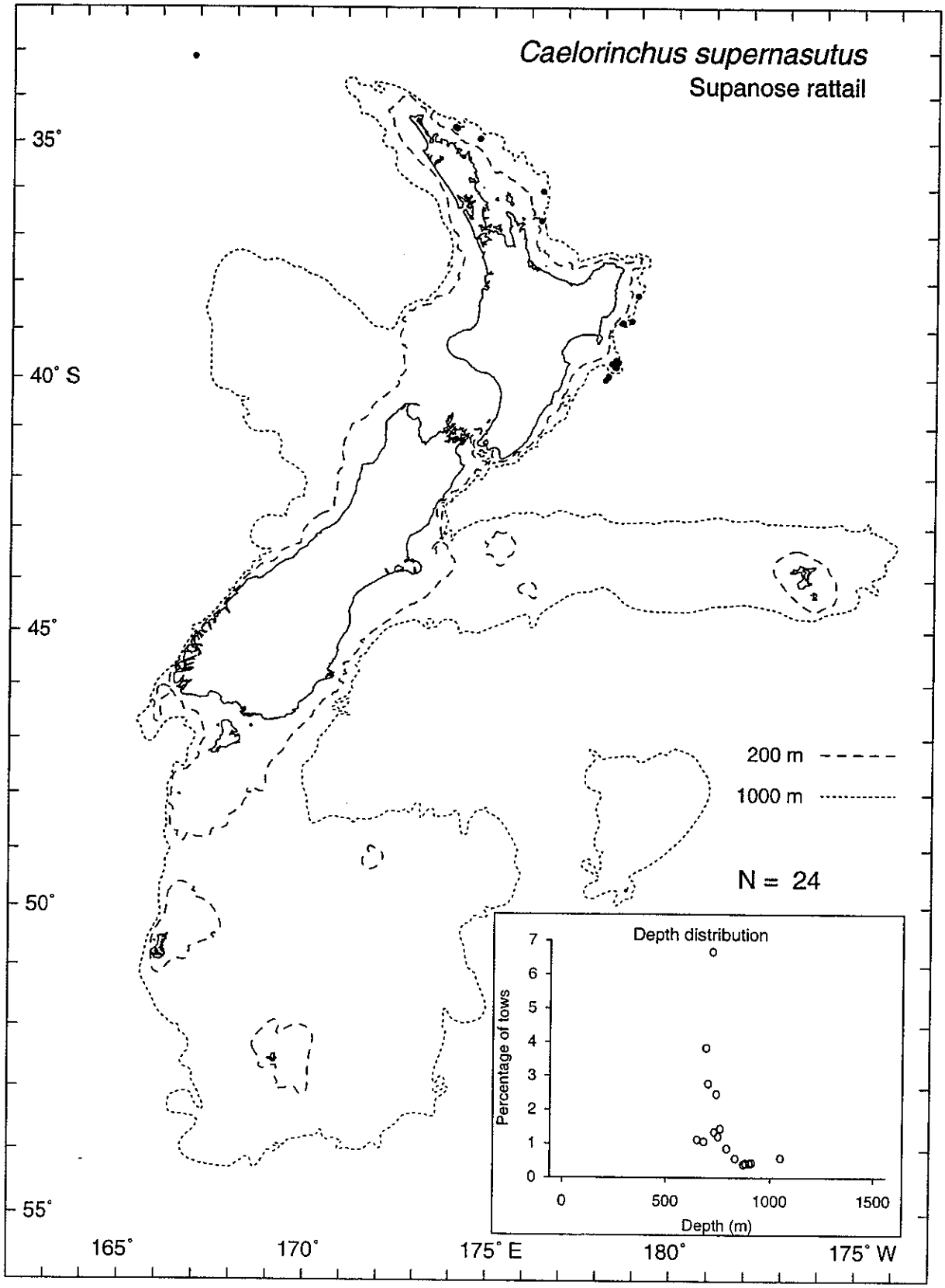

Caelorinchus mycterismus
Upturned snout rattail
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 30
Depth distribution
Percentage of tows
Depth (m)
0
5
10
15
20
25
0
500
1000
1500

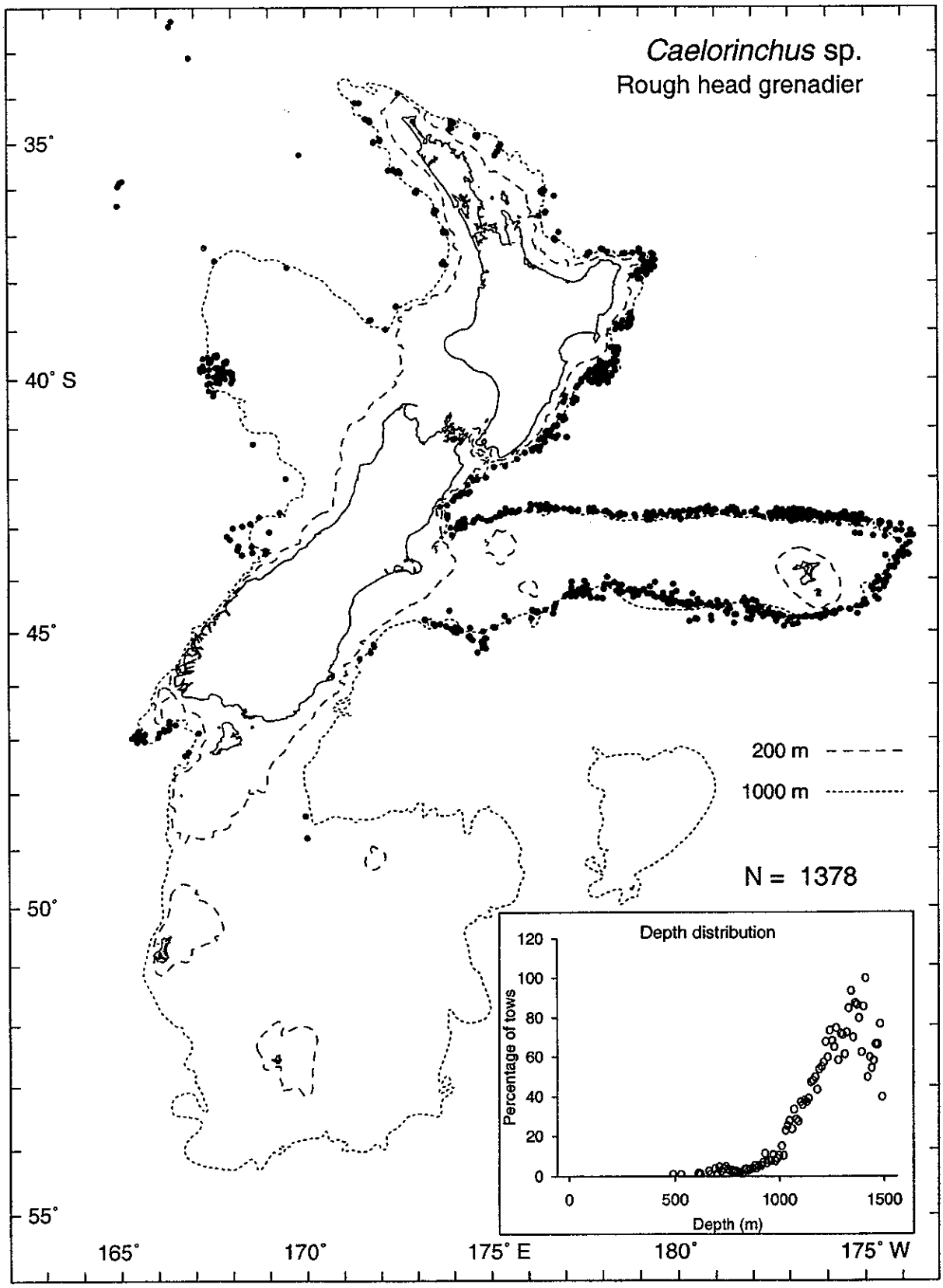

Caelorinchus maurofasciatus
Dark banded rattail
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 122
Depth distribution
Percentage of tows
Depth (m)
0
2
4
6
8
10
0
500
1000
1500


Caelorinchus parvifasciatus
Small banded rattail
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 62
Depth distribution
Percentage of tows
Depth (m)
0
1
2
3
4
5
6
7
8
0
500
1000
1500

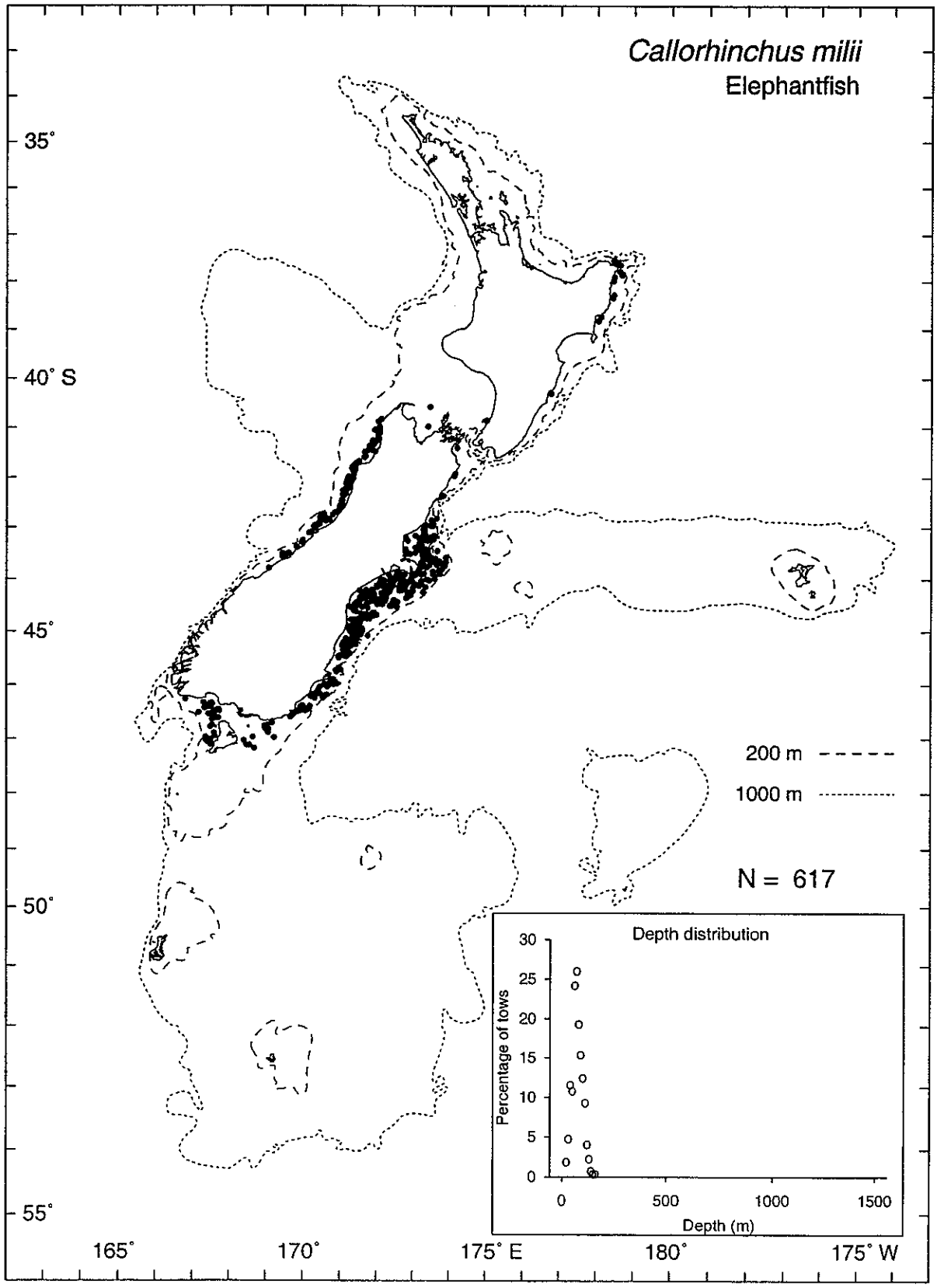


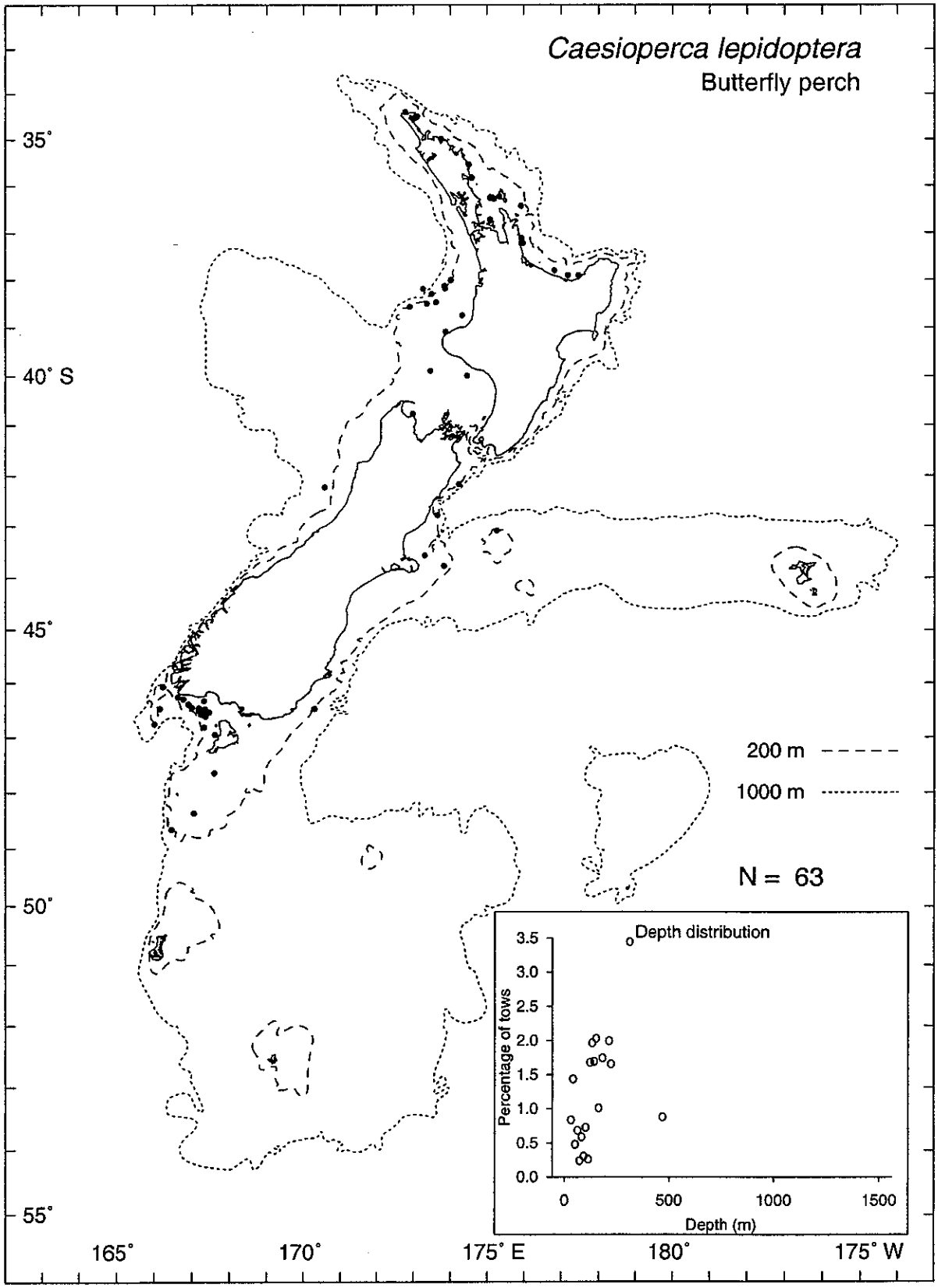
Records deeper than 1000 m may have been misidentified.

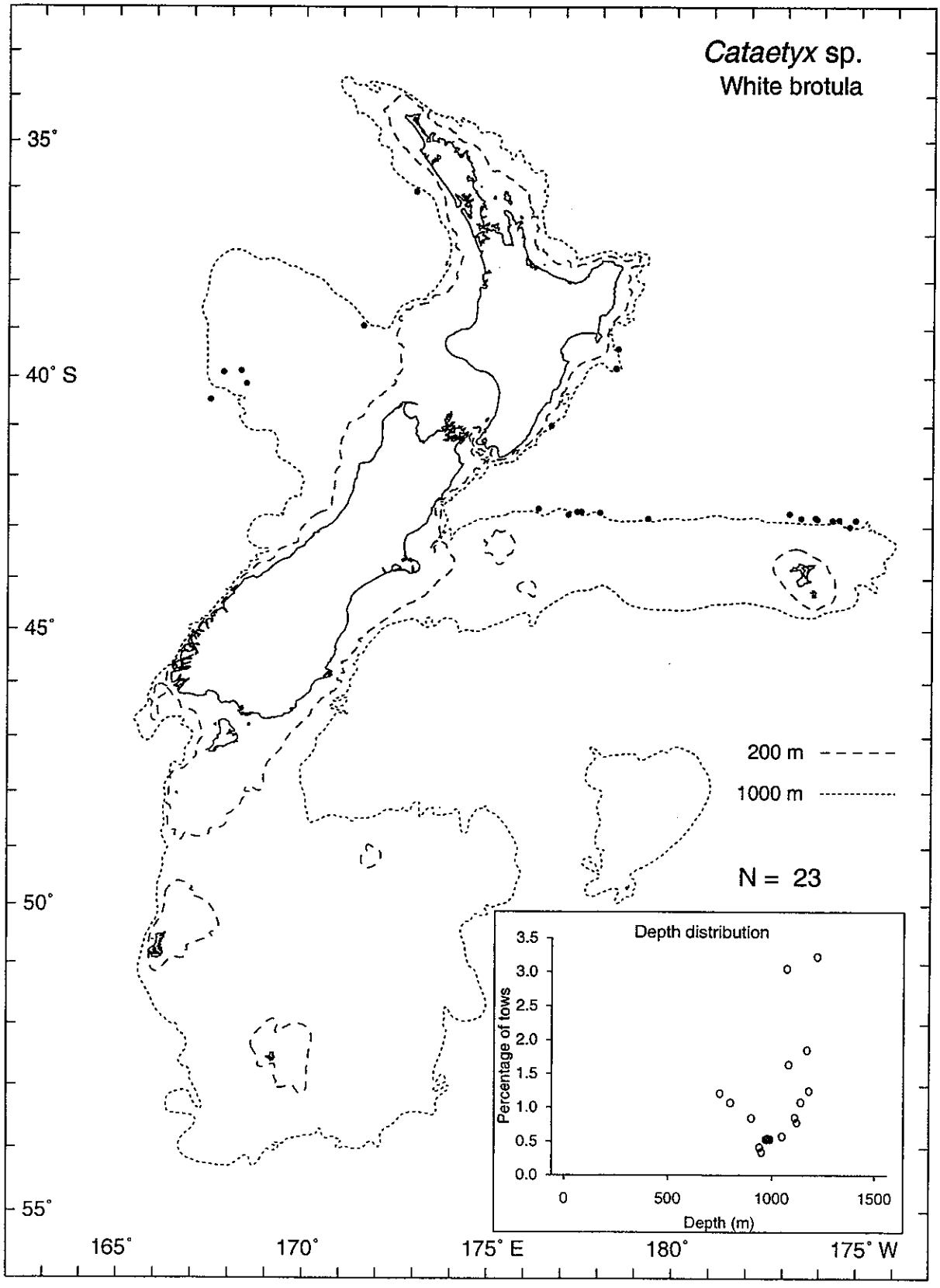

Caelorinchus supernasutus
Supanose rattail
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 24
Depth distribution
Percentage of tows
Depth (m)
0
1
2
3
4
5
6
7
0
500
1000
1500

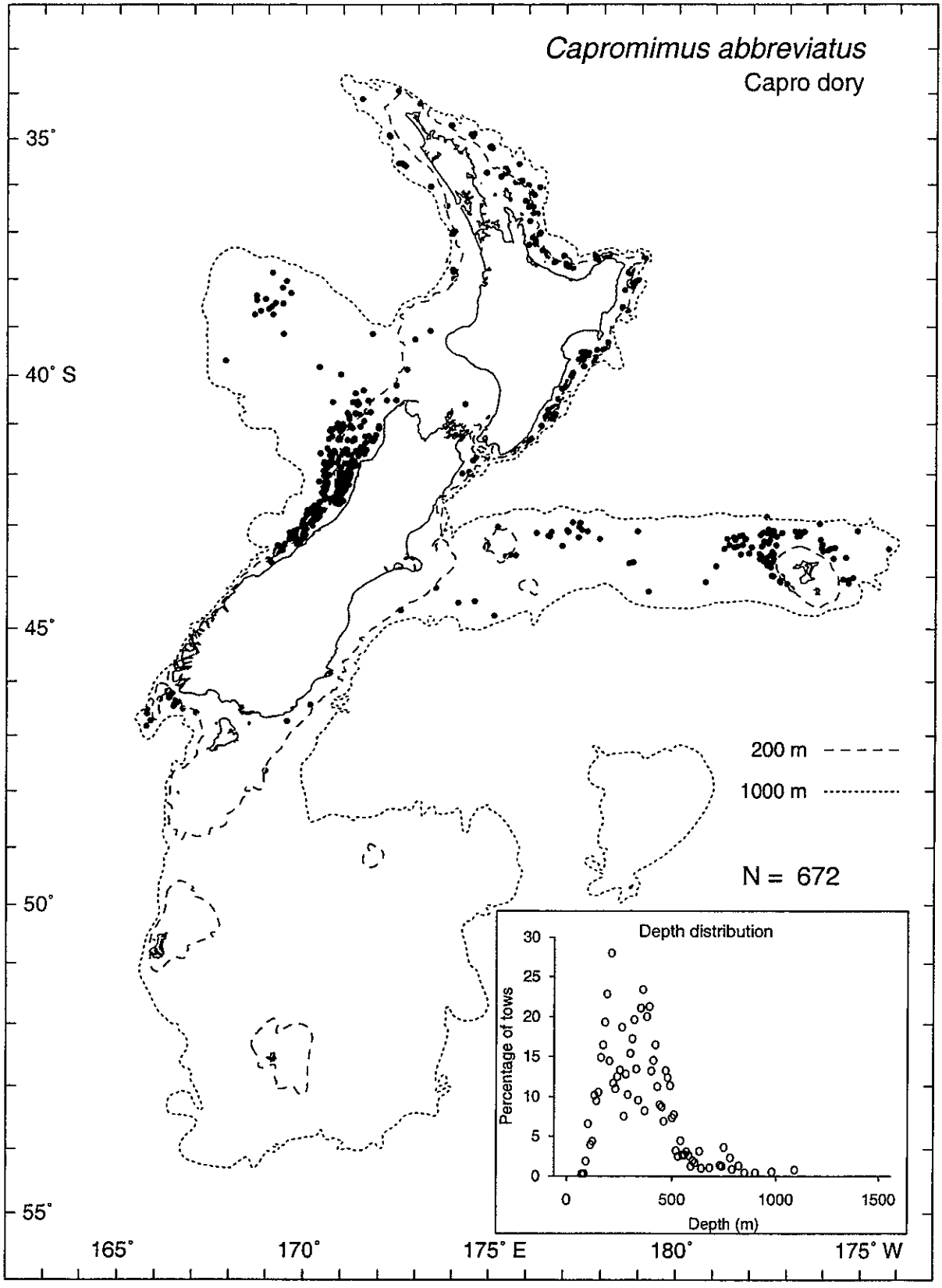


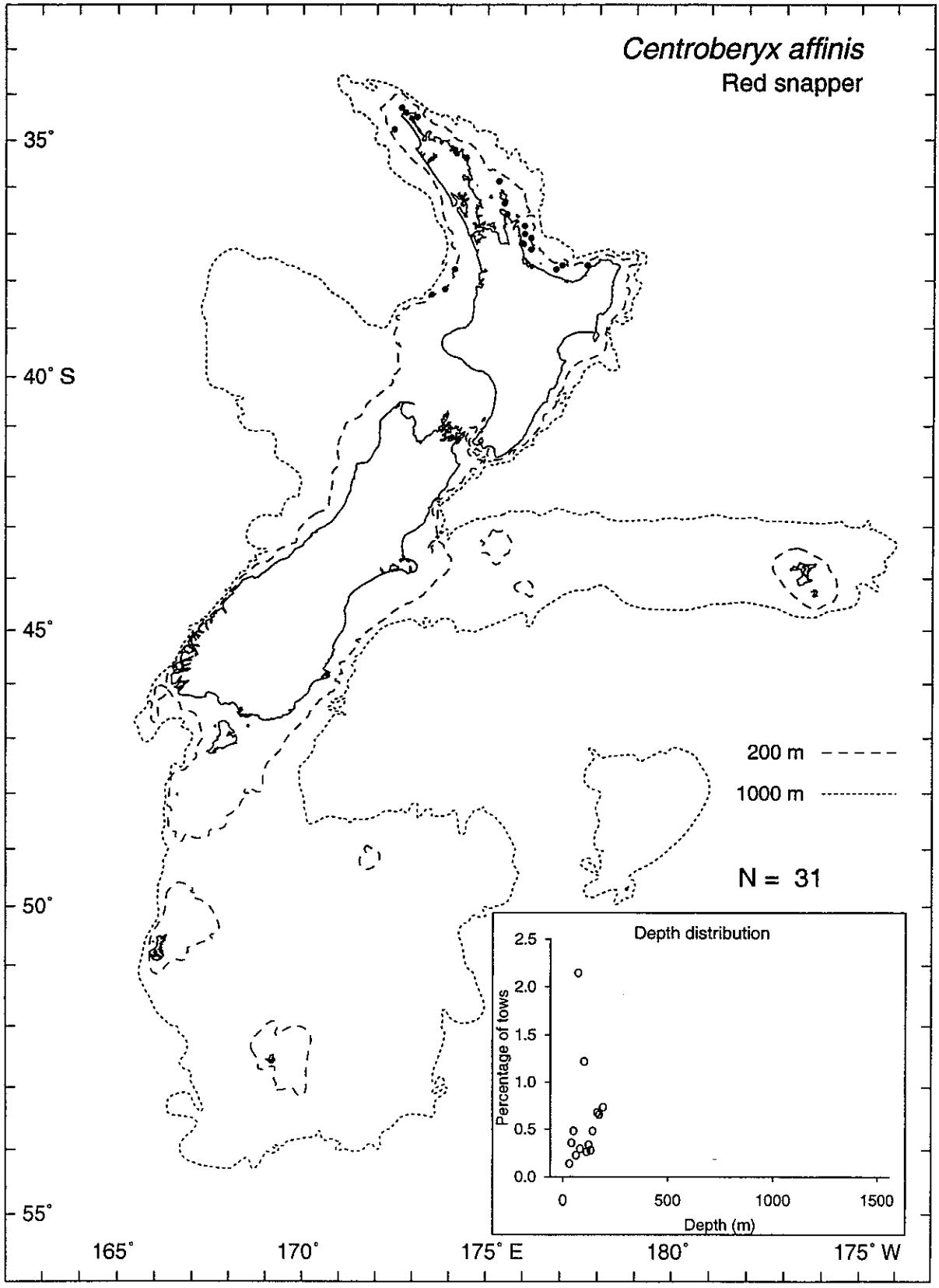
May include some *Caelorinchus acanthiger*.

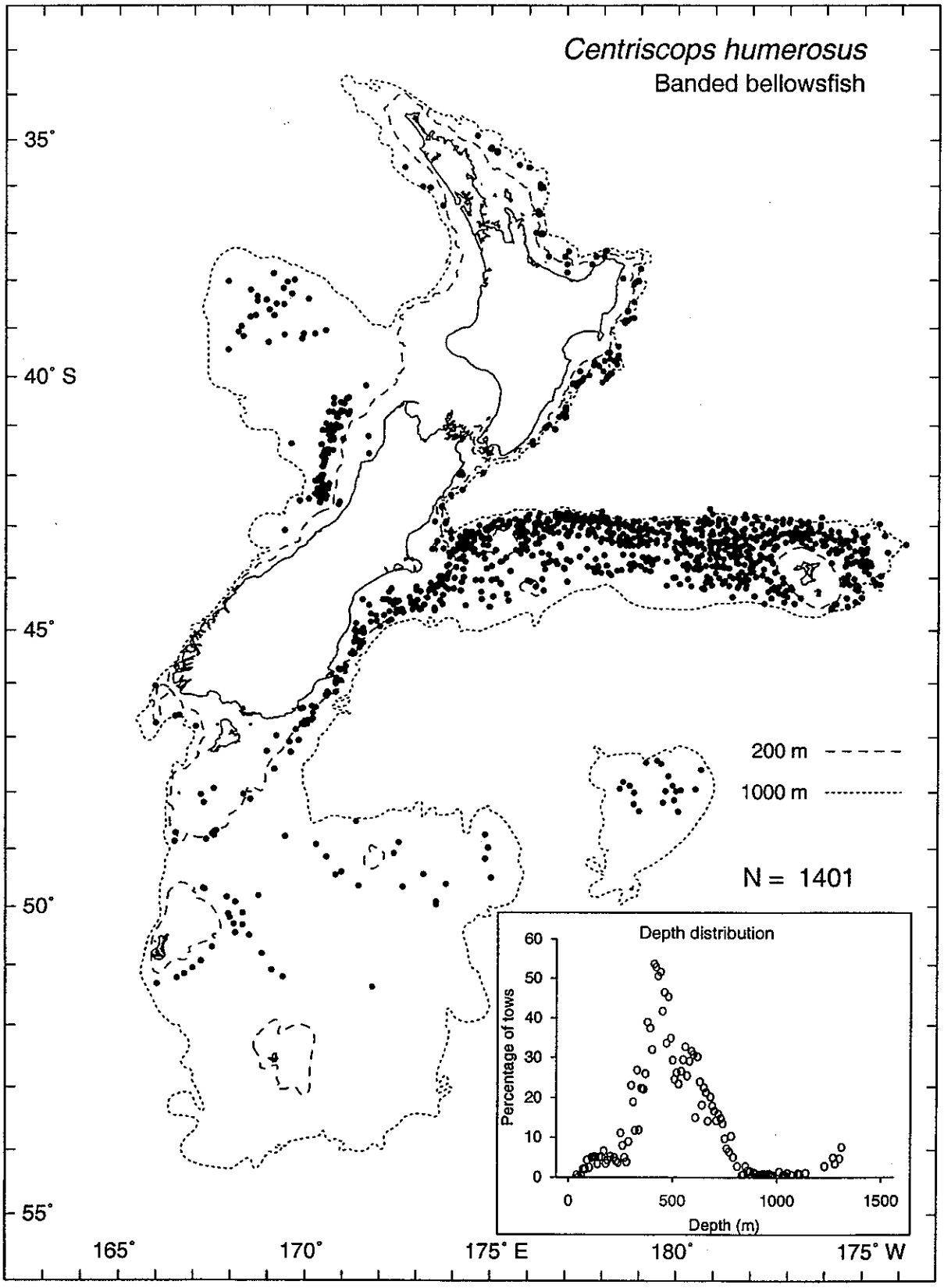

Callorhinchus milii
Elephantfish
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 617
Depth distribution
Percentage of tows
30
25
20
15
10
5
0
0
500
1000
1500
Depth (m)


Caesioperca lepidoptera
Butterfly perch
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 63
Depth distribution
Percentage of tows
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0
500
1000
1500
Depth (m)

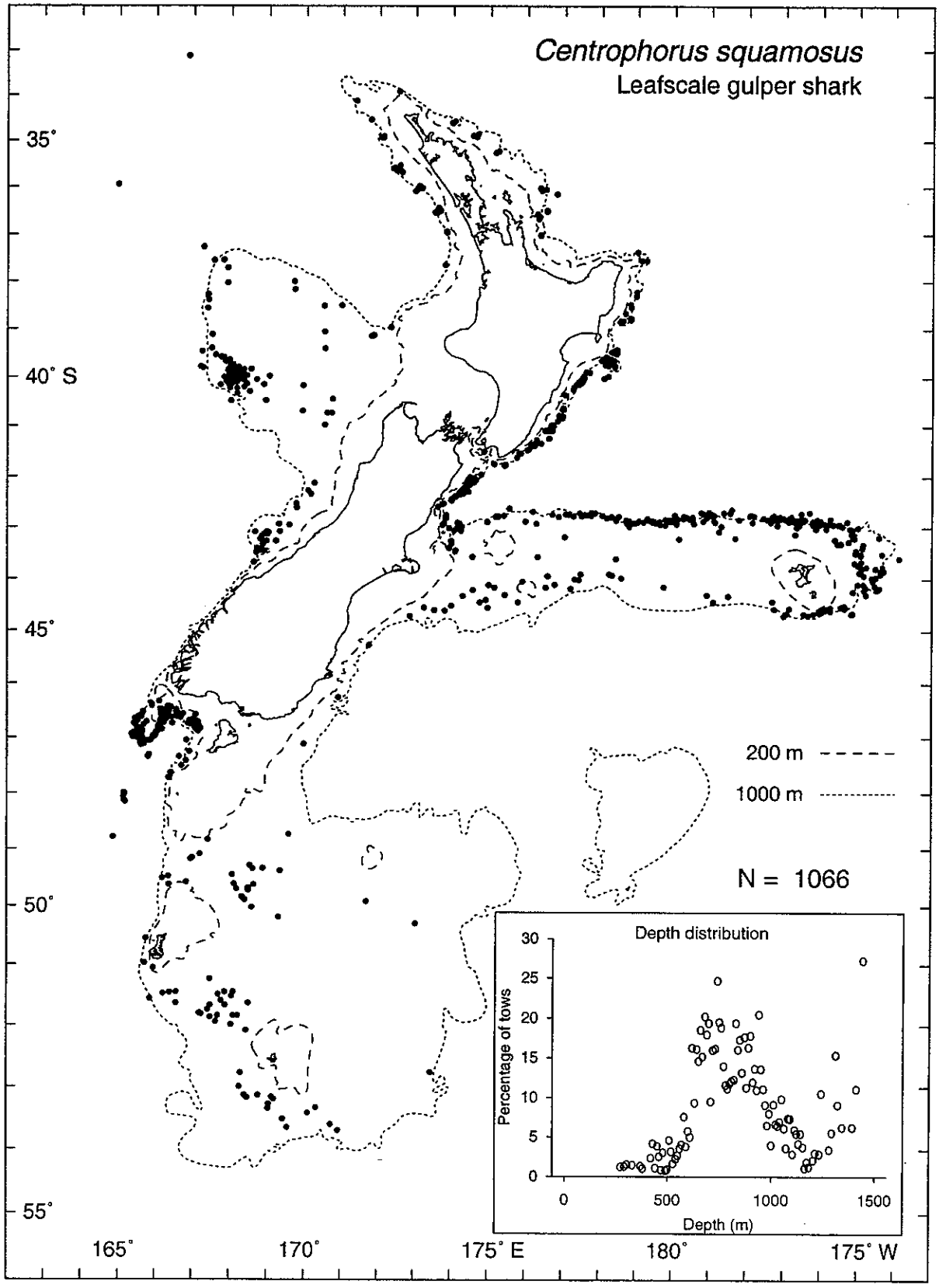

Cataetyx sp.
White brotula
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 23
Depth distribution
Percentage of tows
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0
500
1000
1500
Depth (m)

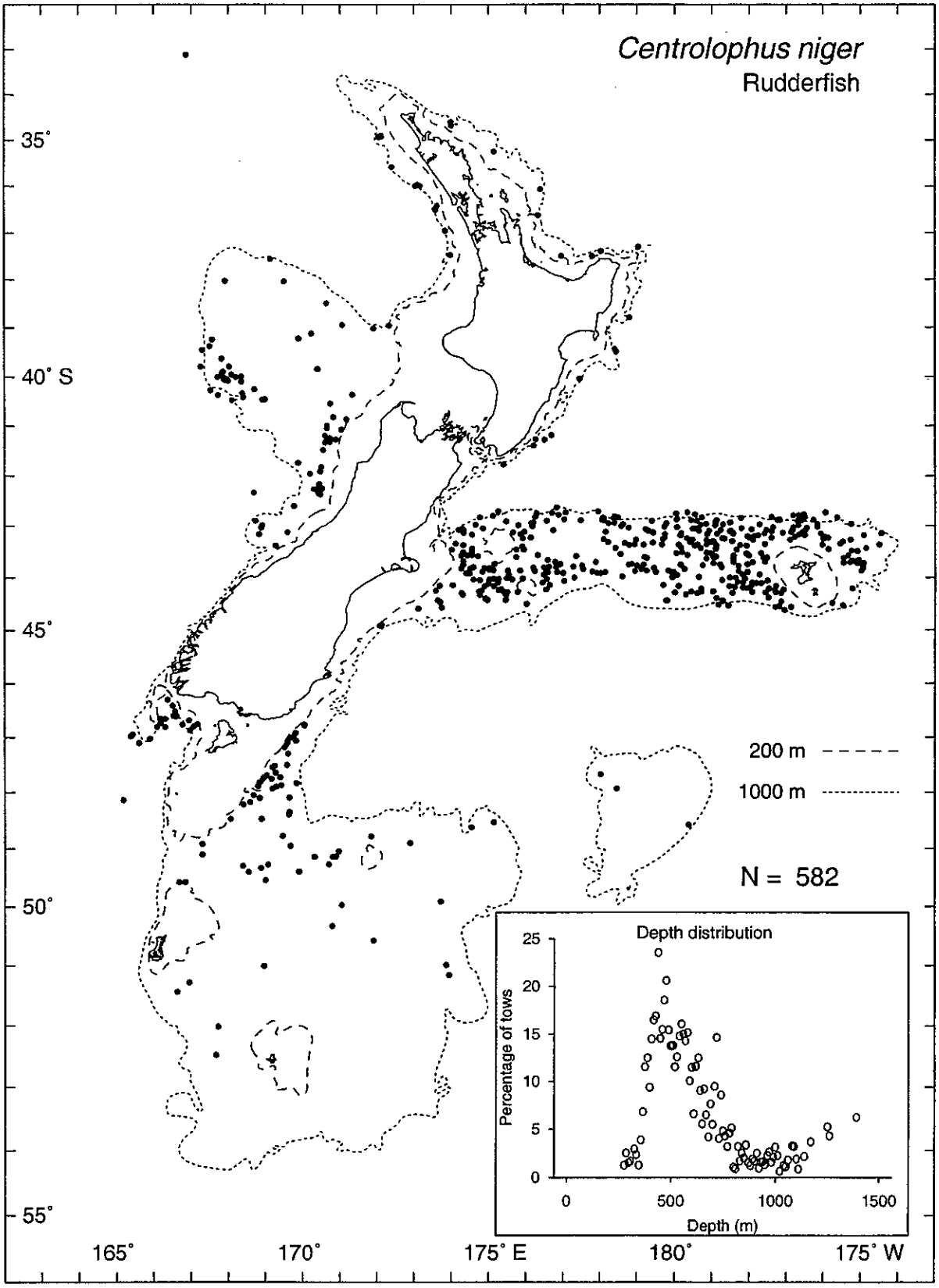

Capromimus abbreviatus
Capro dory
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 672
Depth distribution
Percentage of tows
Depth (m)
0
5
10
15
20
25
30
0
500
1000
1500

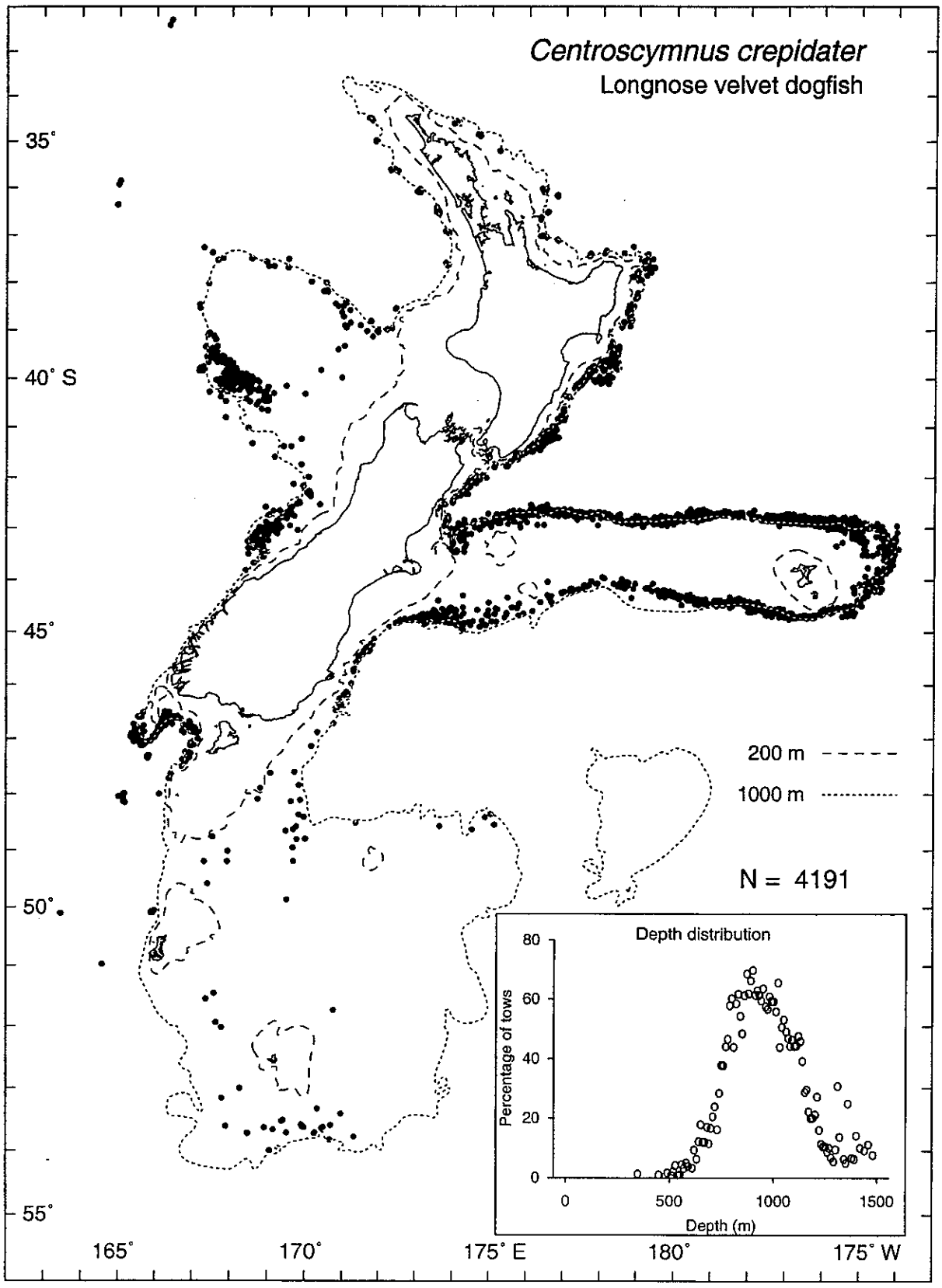

Centroberyx affinis
Red snapper
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 31
Depth distribution
Percentage of tows
2.5
2.0
1.5
1.0
0.5
0.0
0
500
1000
1500
Depth (m)

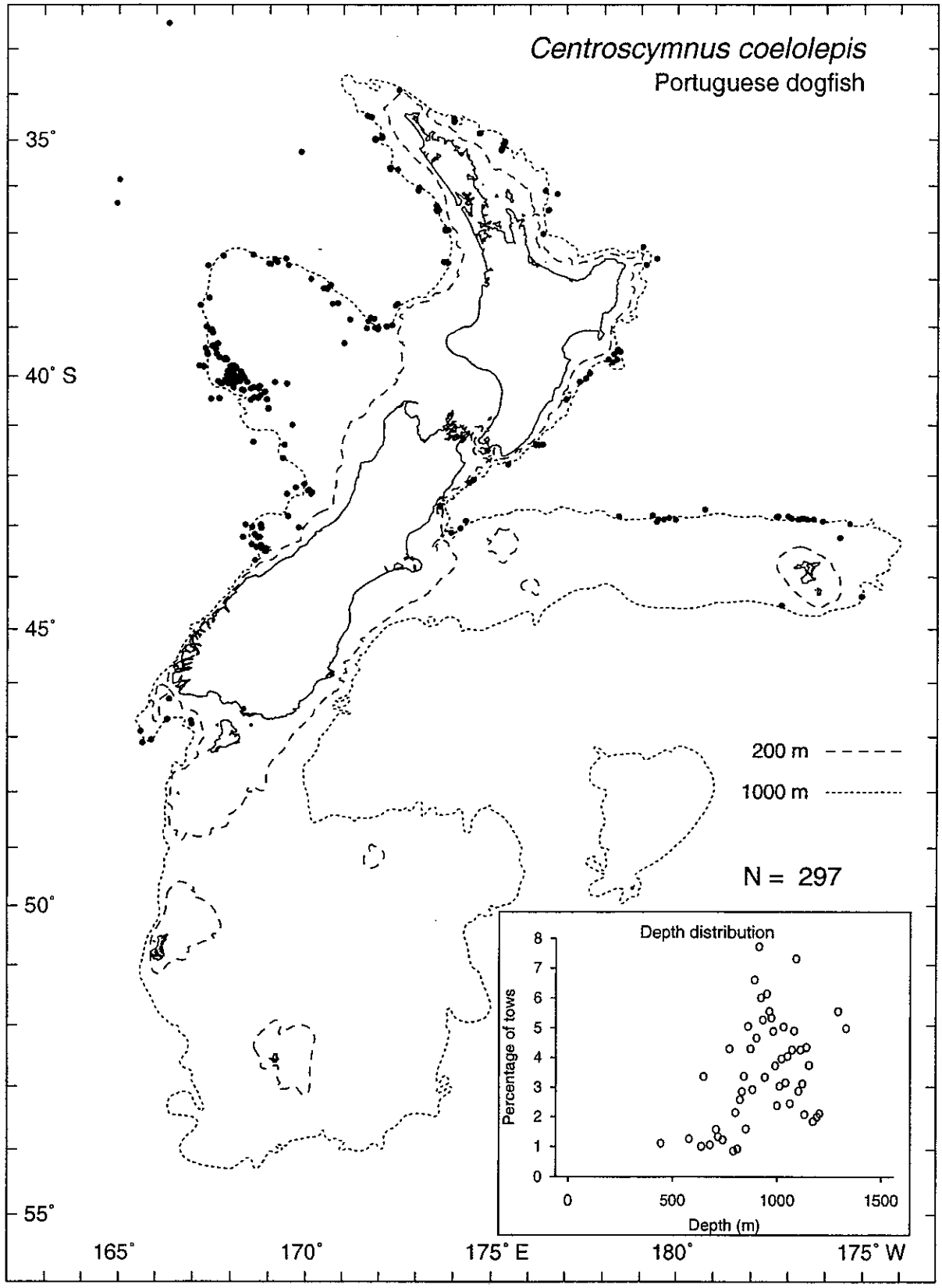


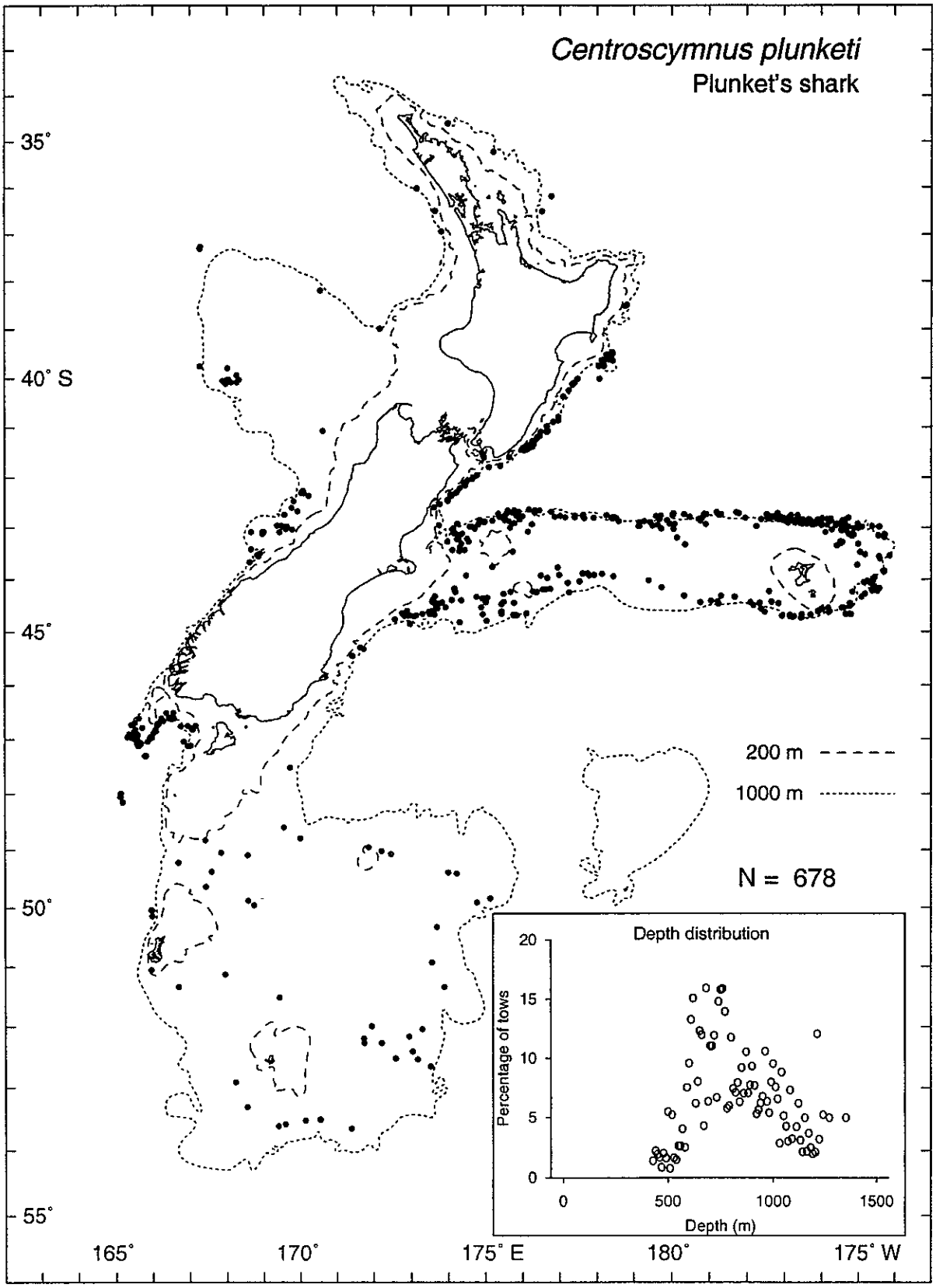
Records shallower than 200 m may be *Notopogon lillei*.

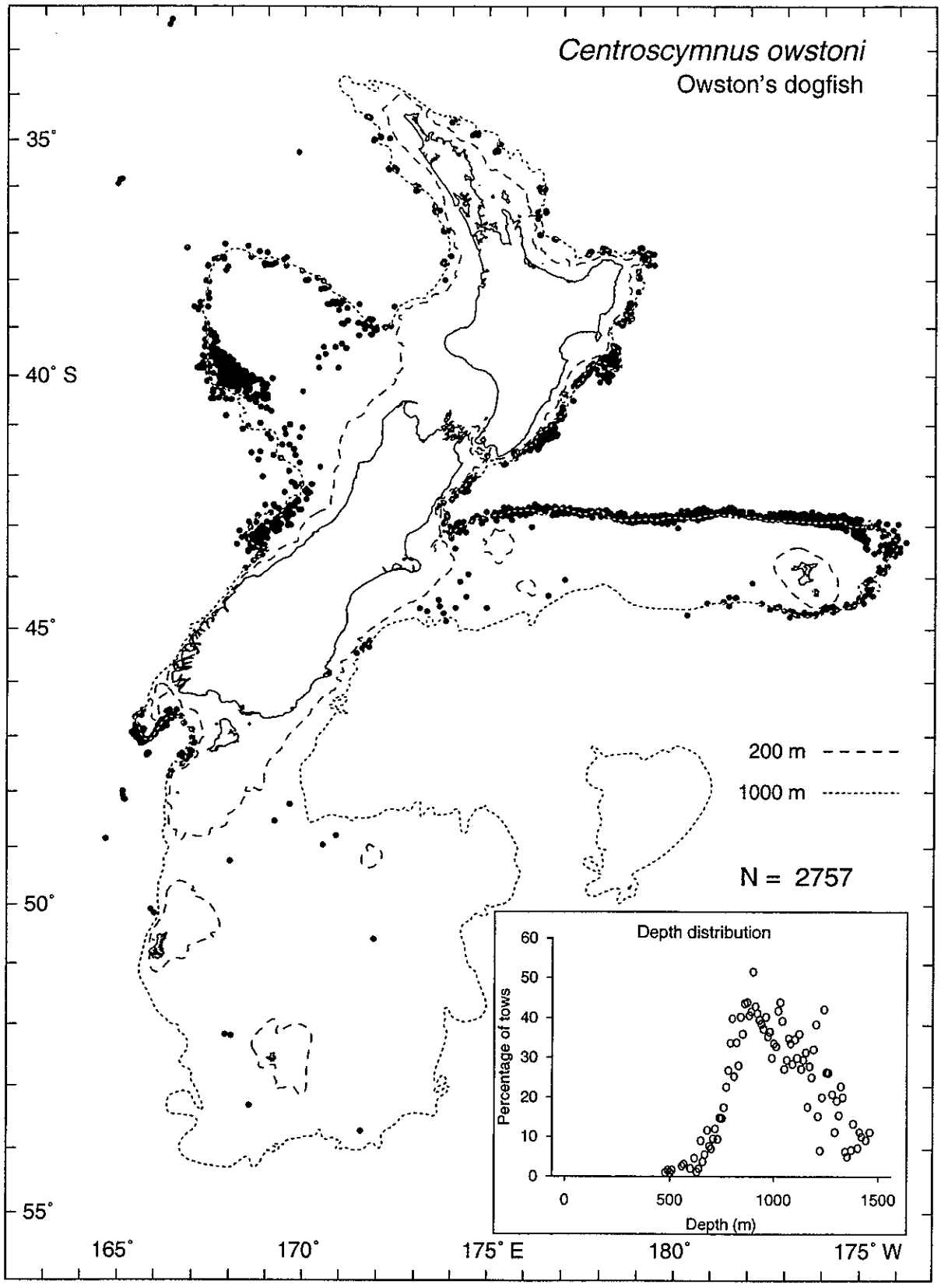

Centrophorus squamosus
Leafscale gulper shark
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 1066
Depth distribution
Percentage of tows
Depth (m)
0
5
10
15
20
25
30
0
500
1000
1500

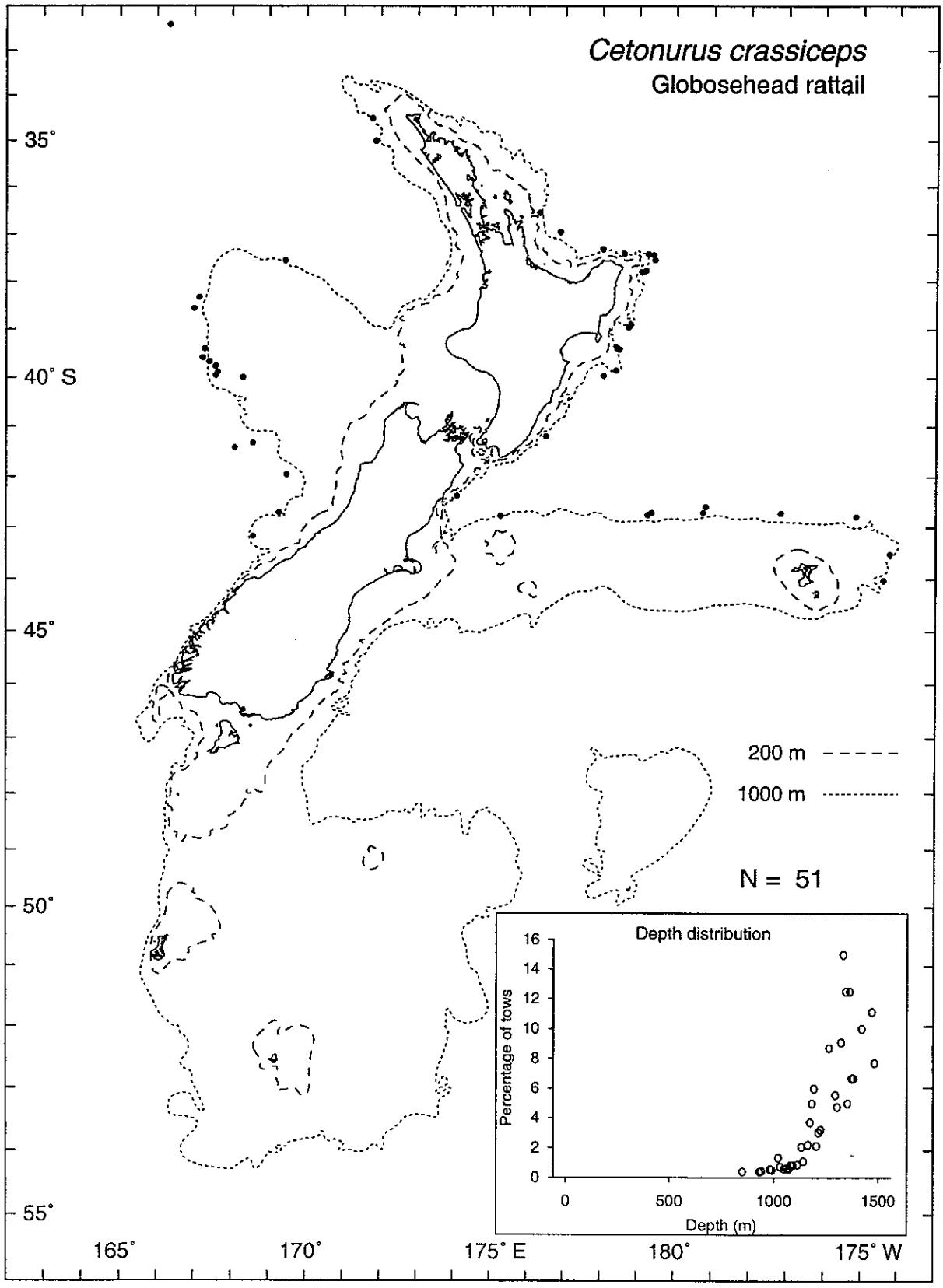

Centrolophus niger
Rudderfish
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 582
Depth distribution
Percentage of tows
Depth (m)
0
5
10
15
20
25
0
500
1000
1500

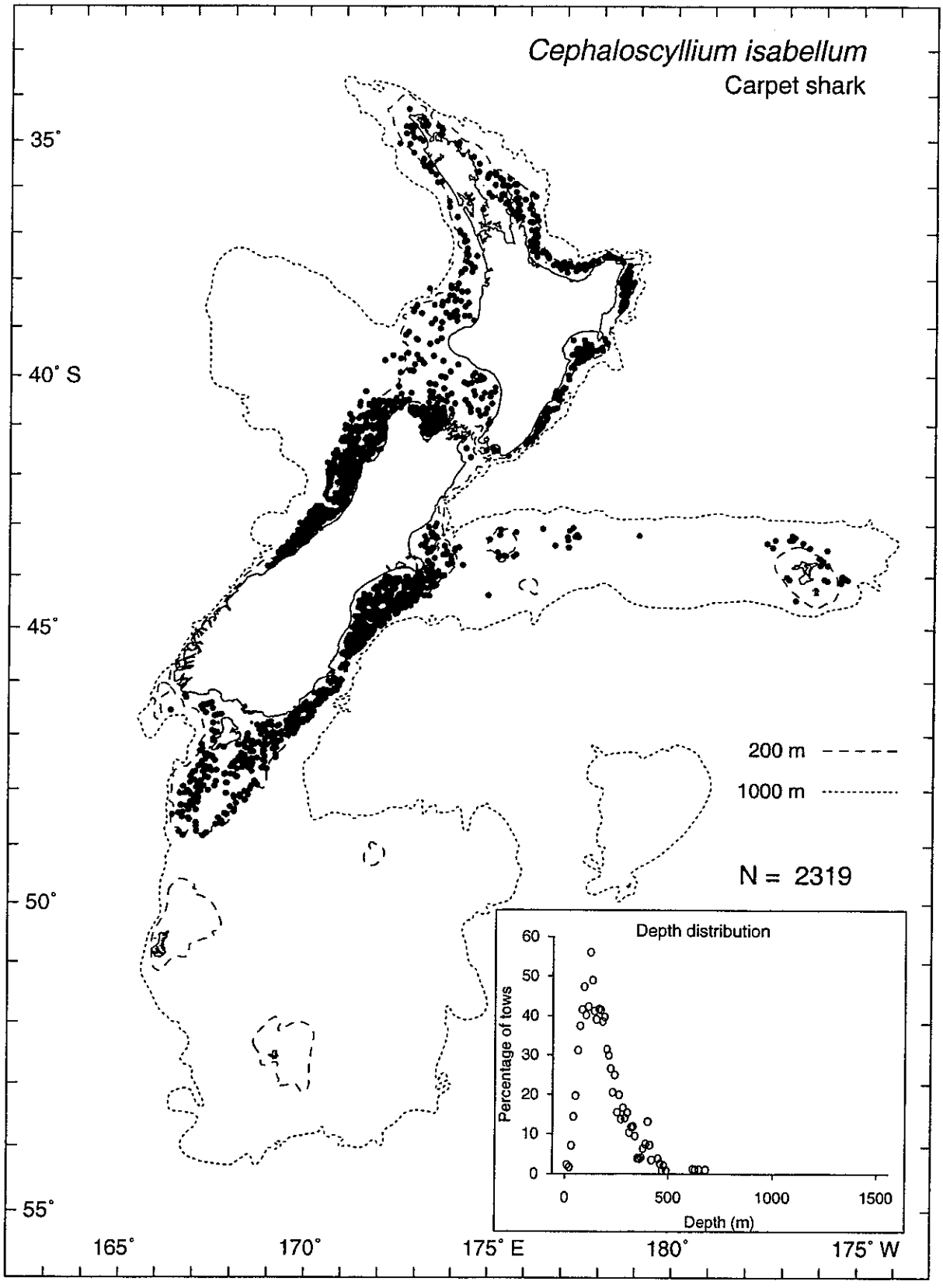

Centroscymnus crepidater
Longnose velvet dogfish
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 4191
Depth distribution
Percentage of tows
0
20
40
60
80
0
500
1000
1500
Depth (m)

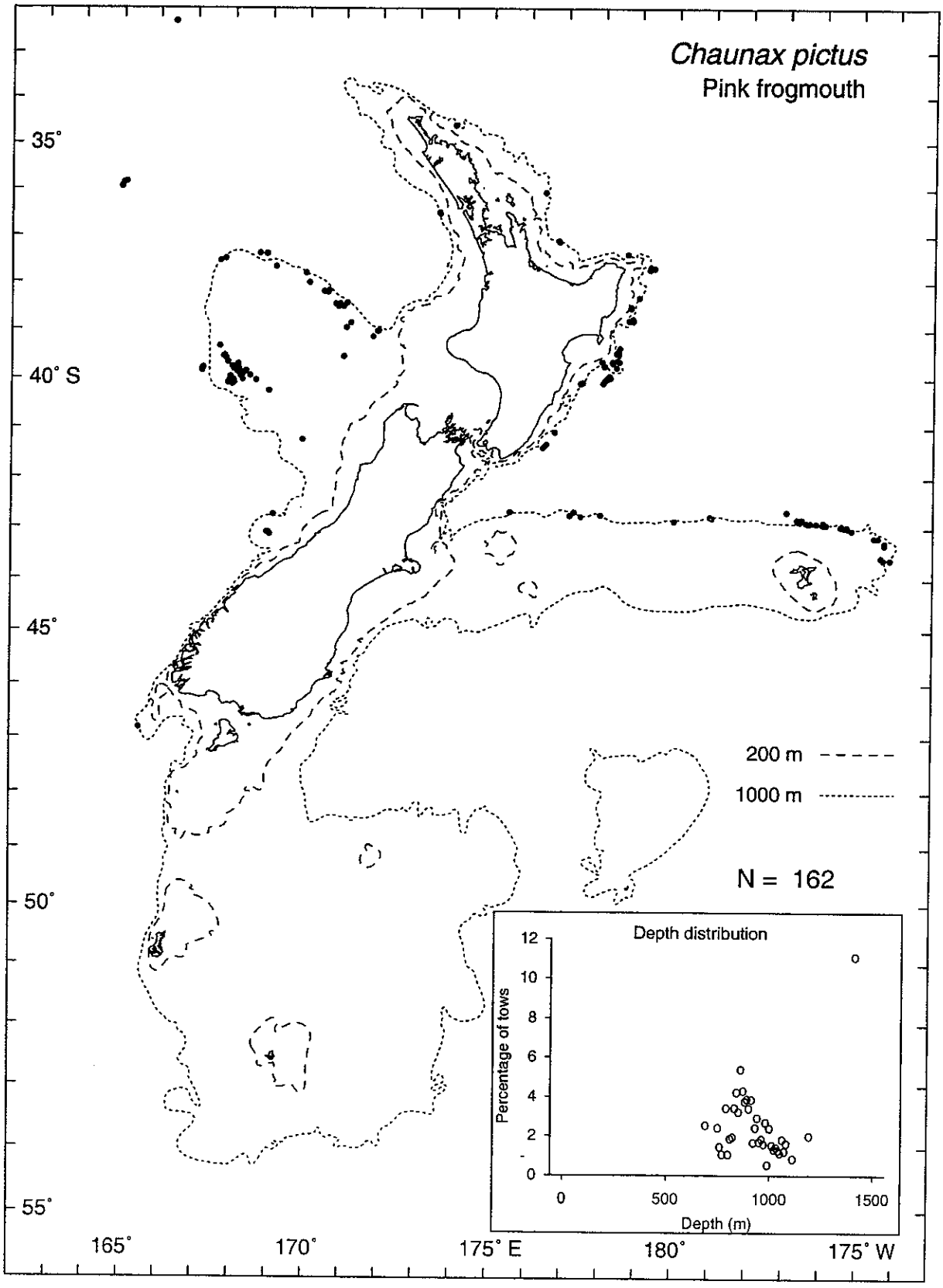

Centroscymnus coelolepis
Portuguese dogfish
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 297
Depth distribution
Percentage of tows
Depth (m)
0
1
2
3
4
5
6
7
8
0
500
1000
1500

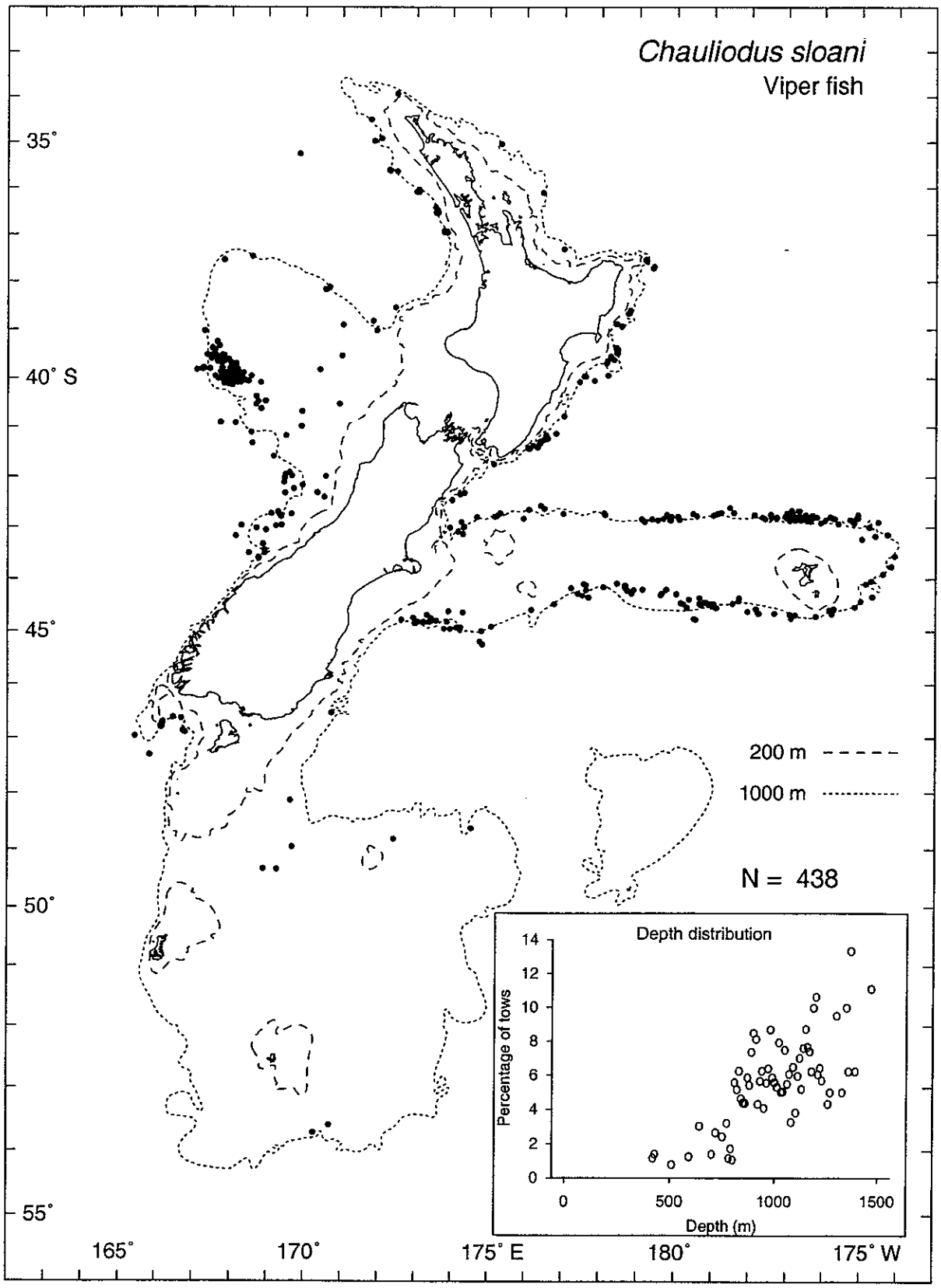

Centroscymnus plunketi
Plunket's shark
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 678
Depth distribution
Percentage of tows
0
5
10
15
20
0
500
1000
1500
Depth (m)

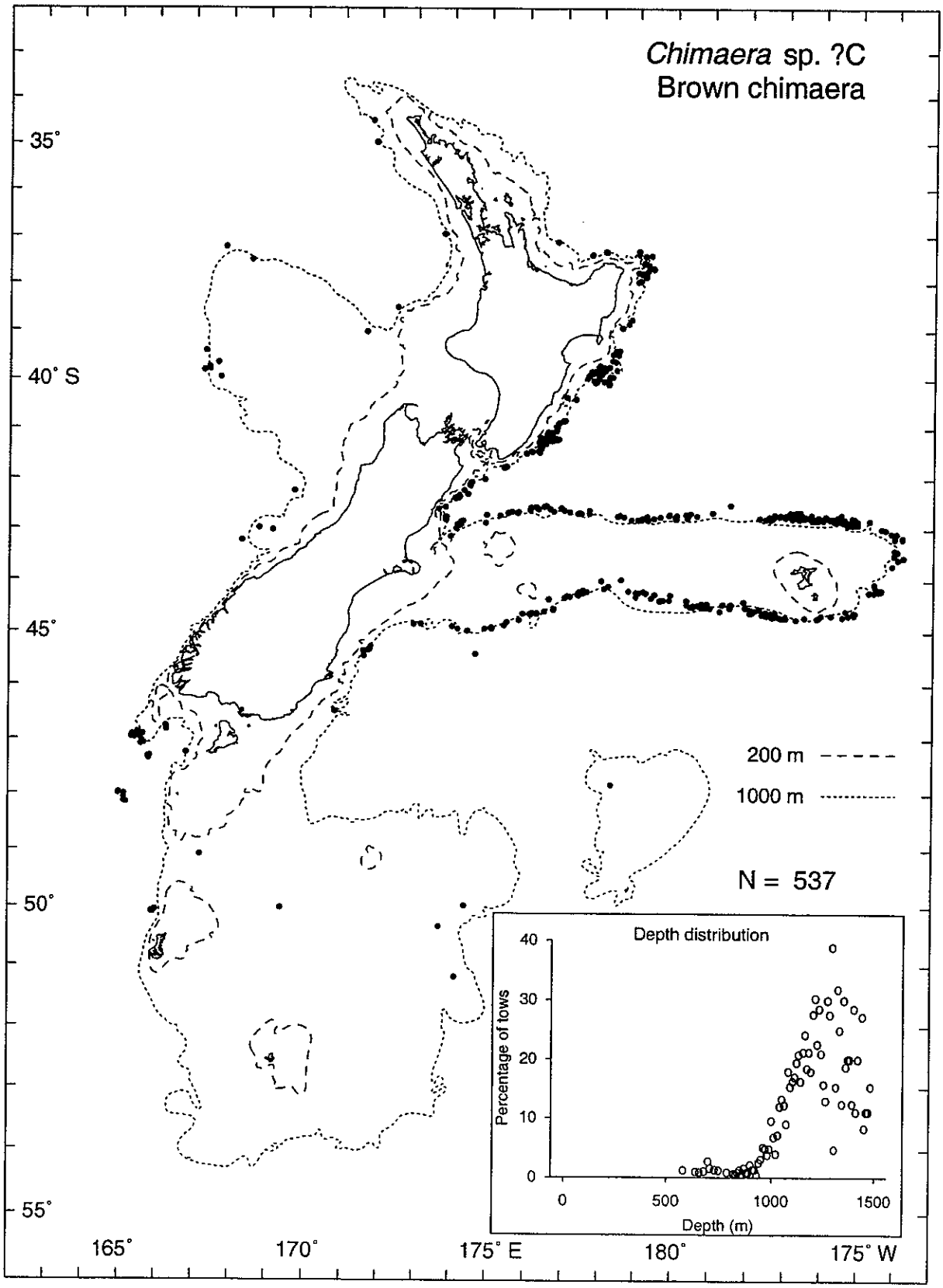

Centroscymnus owstoni
Owston's dogfish
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 2757
Depth distribution
Percentage of tows
0
10
20
30
40
50
60
0
500
1000
1500
Depth (m)

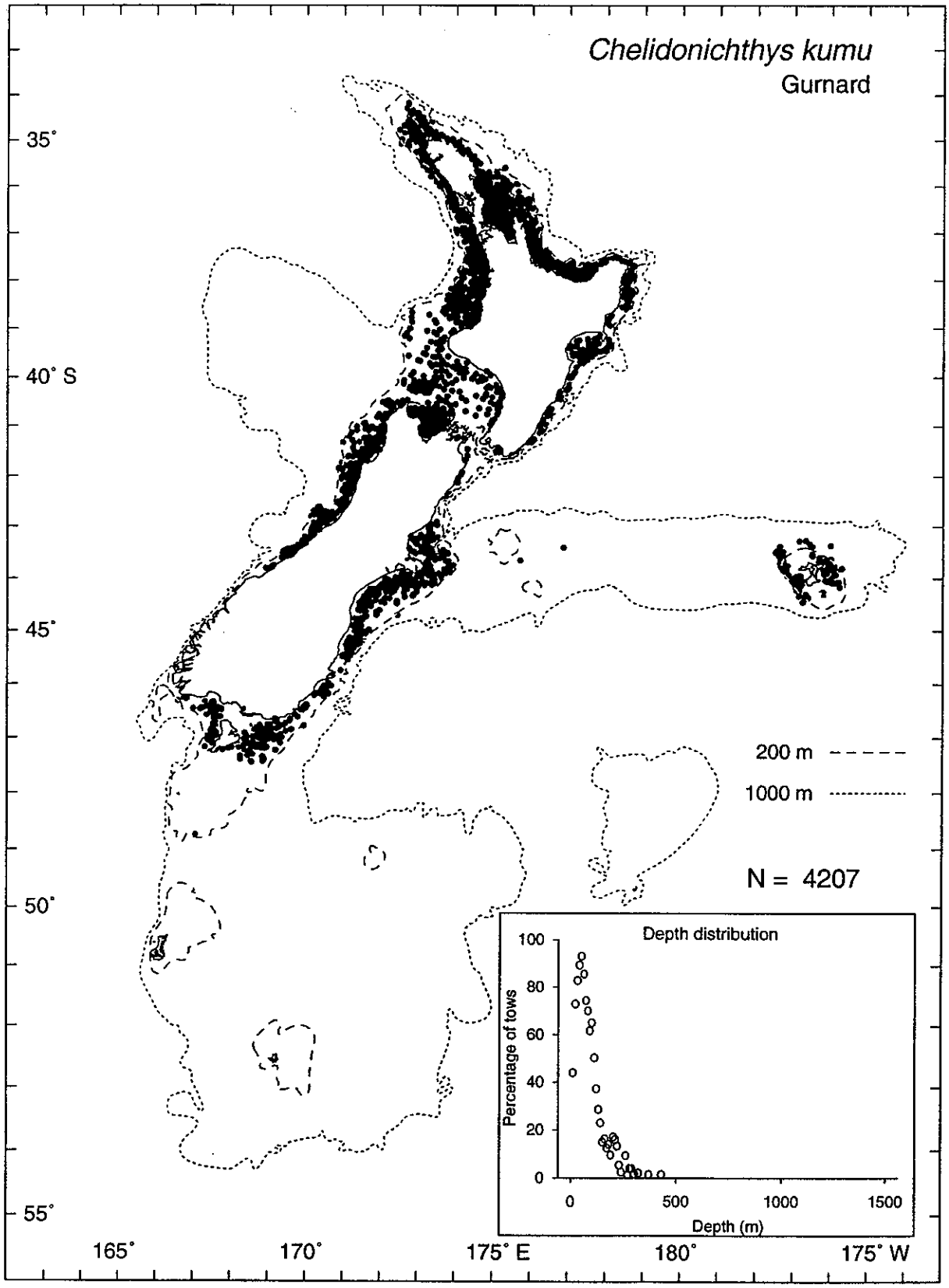

Cetonurus crassiceps
Globosehead rattail
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 51
Depth distribution
Percentage of tows
0
2
4
6
8
10
12
14
16
0
500
1000
1500
Depth (m)


Cephaloscyllium isabellum
Carpet shark
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 2319
Depth distribution
Percentage of tows
Depth (m)
0
10
20
30
40
50
60
0
500
1000
1500

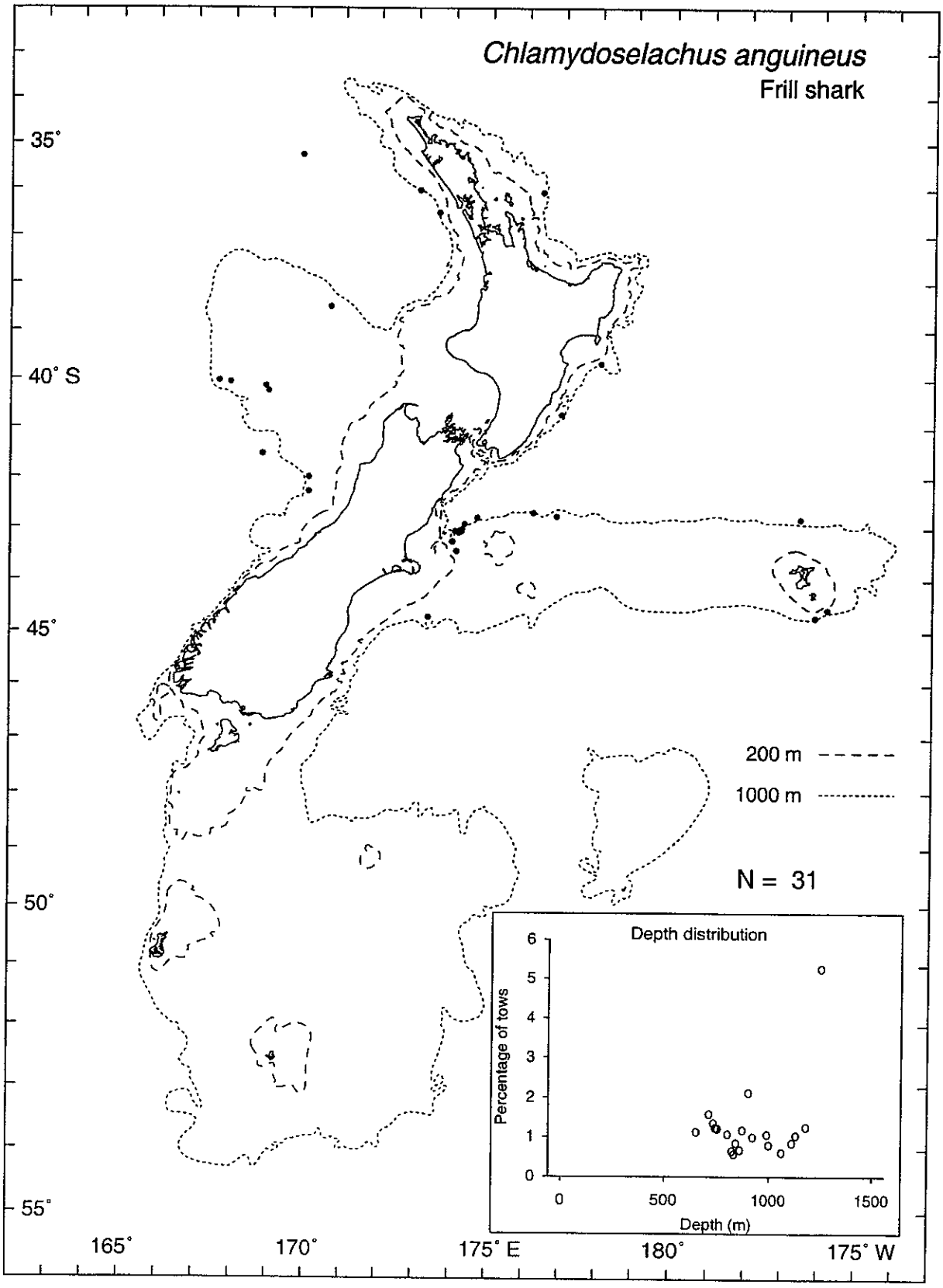

Chaunax pictus
Pink frogmouth
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 162
Depth distribution
Percentage of tows
Depth (m)
0
2
4
6
8
10
12
0
500
1000
1500

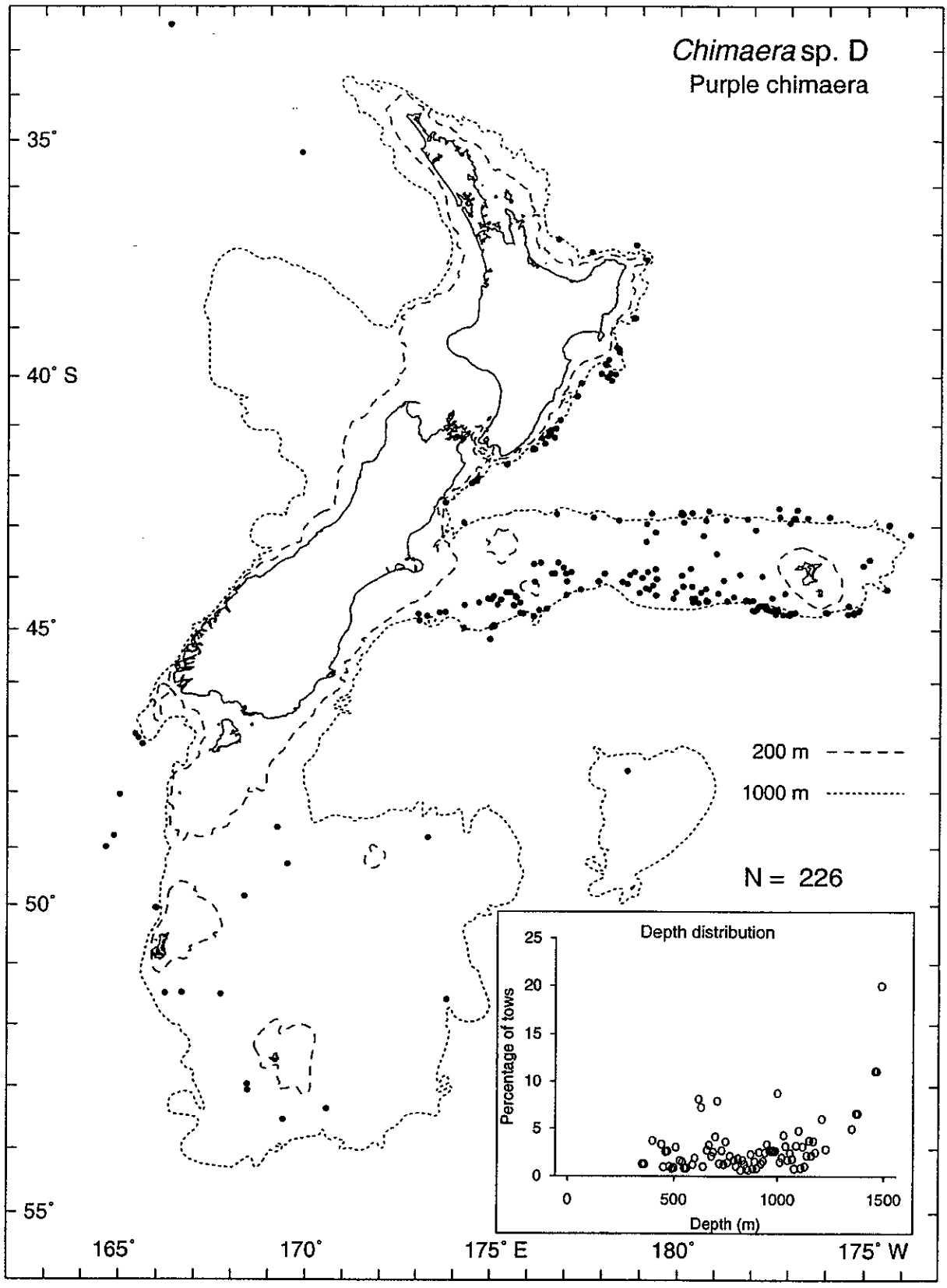

Chauliodus sloani
Viper fish
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 438
Depth distribution
Percentage of tows
0
2
4
6
8
10
12
14
0
500
1000
1500
Depth (m)


Chimaera sp. ?C
Brown chimaera
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 537
Depth distribution
Percentage of tows
0
10
20
30
40
0
500
1000
1500
Depth (m)

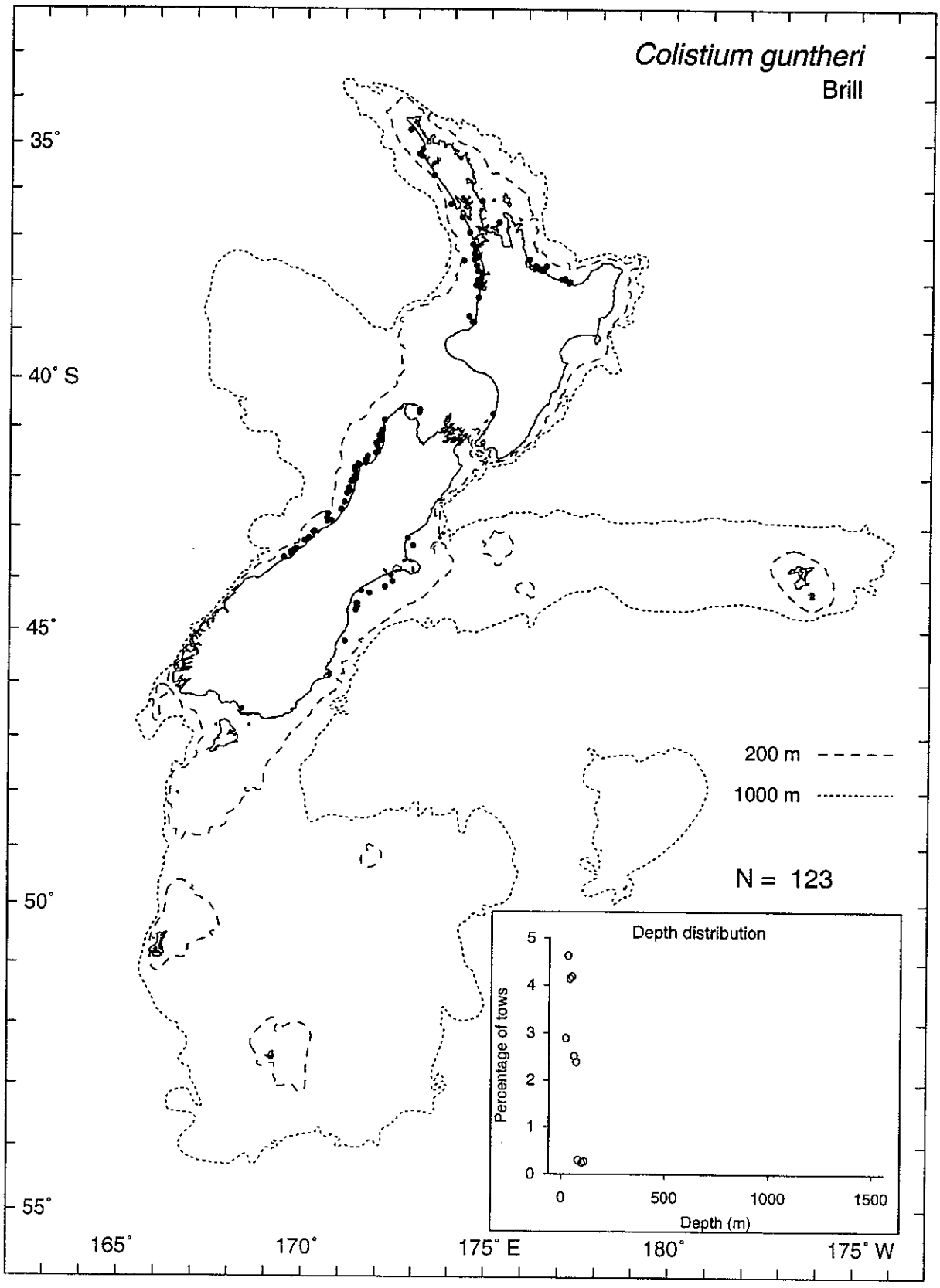


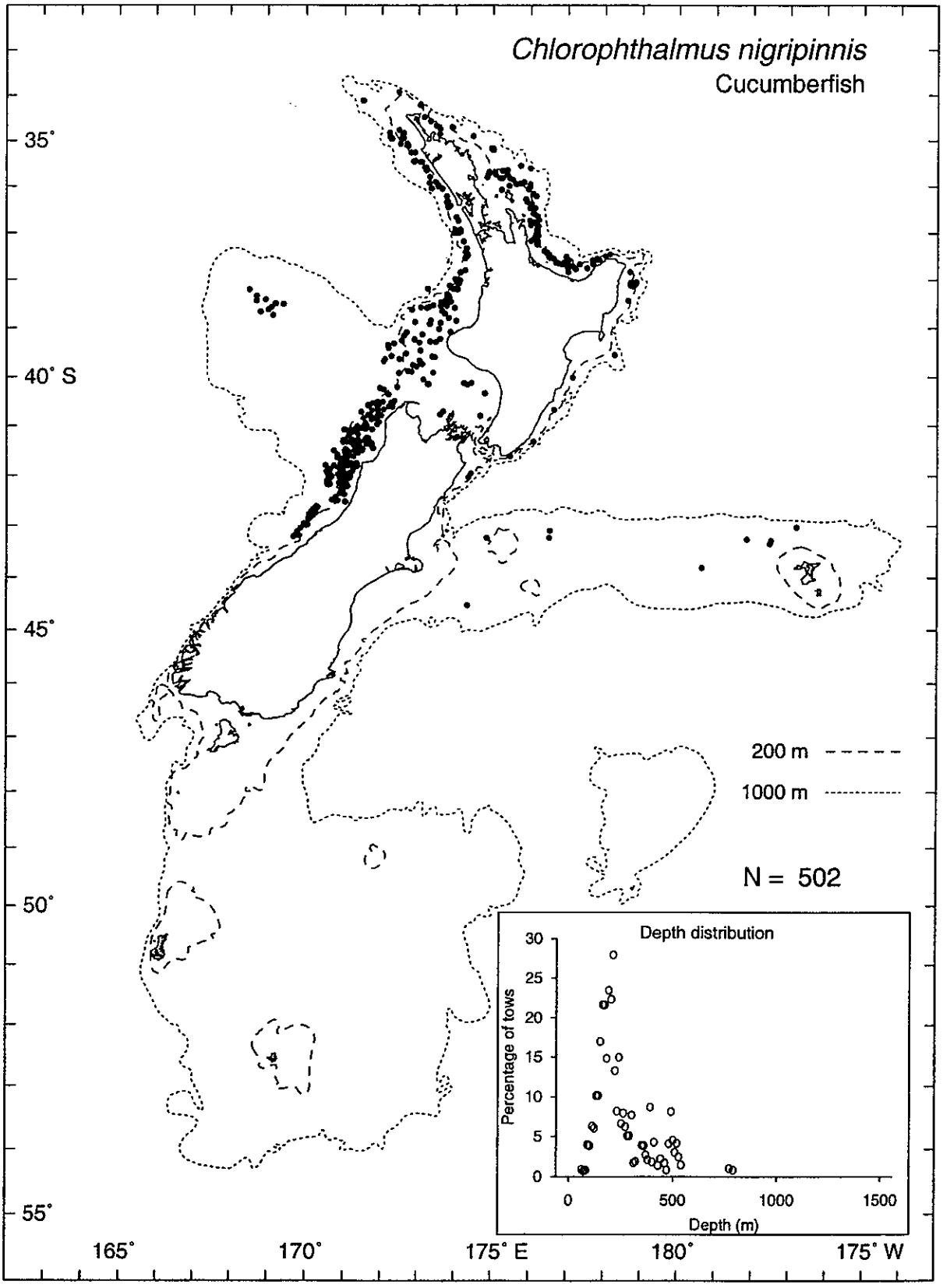
May include some *Lepidotrigla brachyoptera.*


Chlamydoselachus anguineus
Frill shark
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 31
Depth distribution
Percentage of tows
0
1
2
3
4
5
6
0
500
1000
1500
Depth (m)

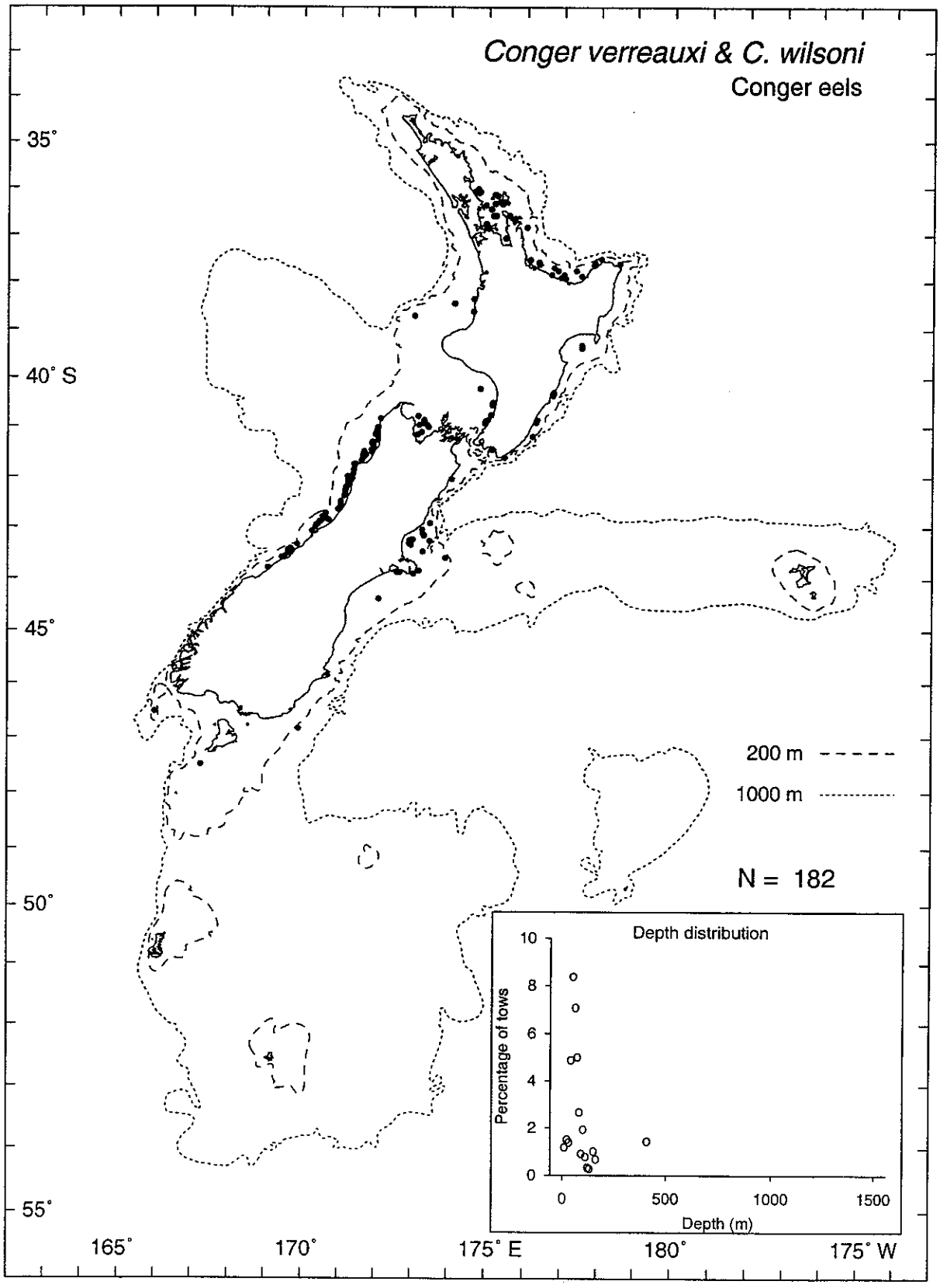


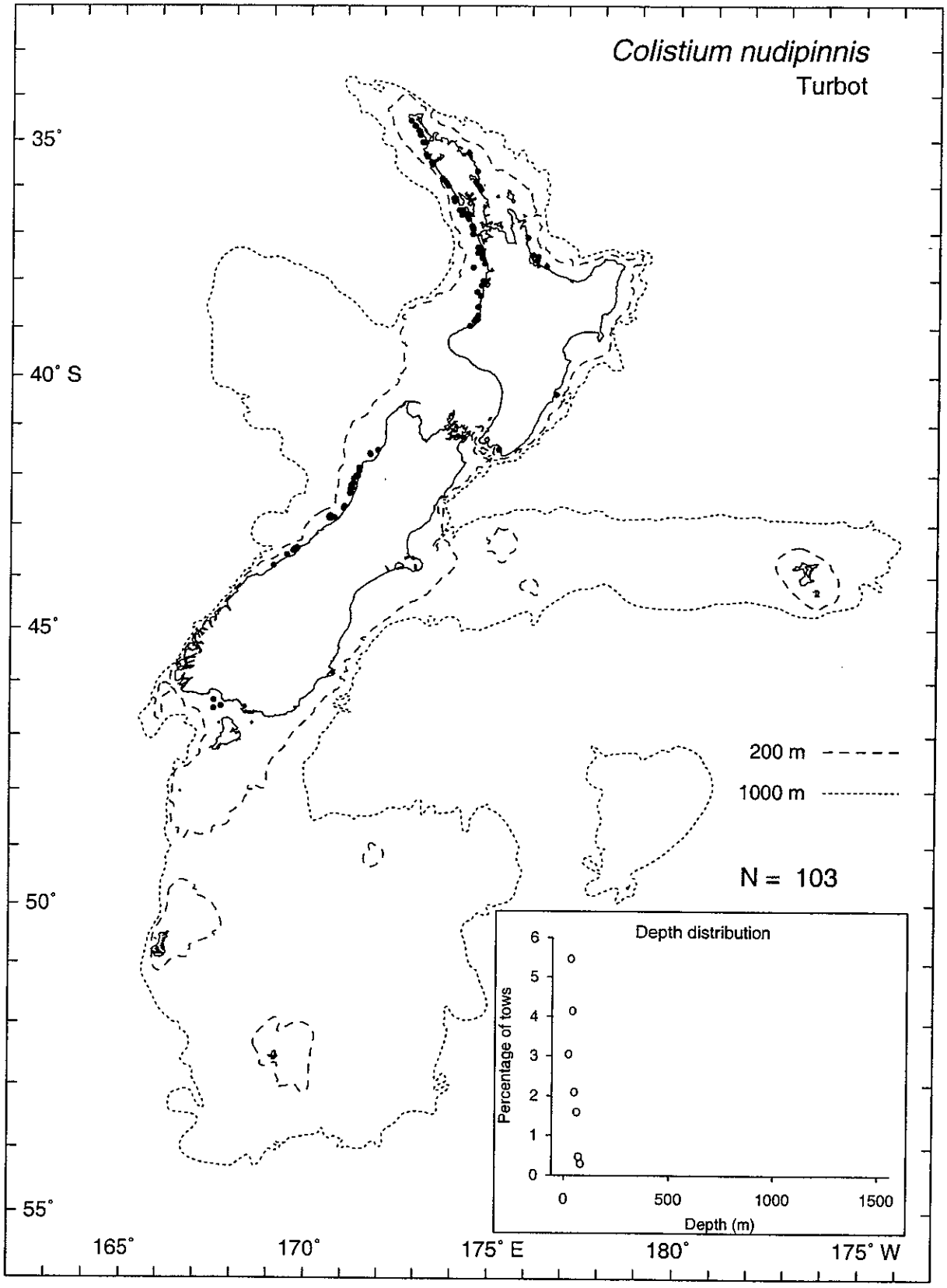
May include other *Chimaera* spp.

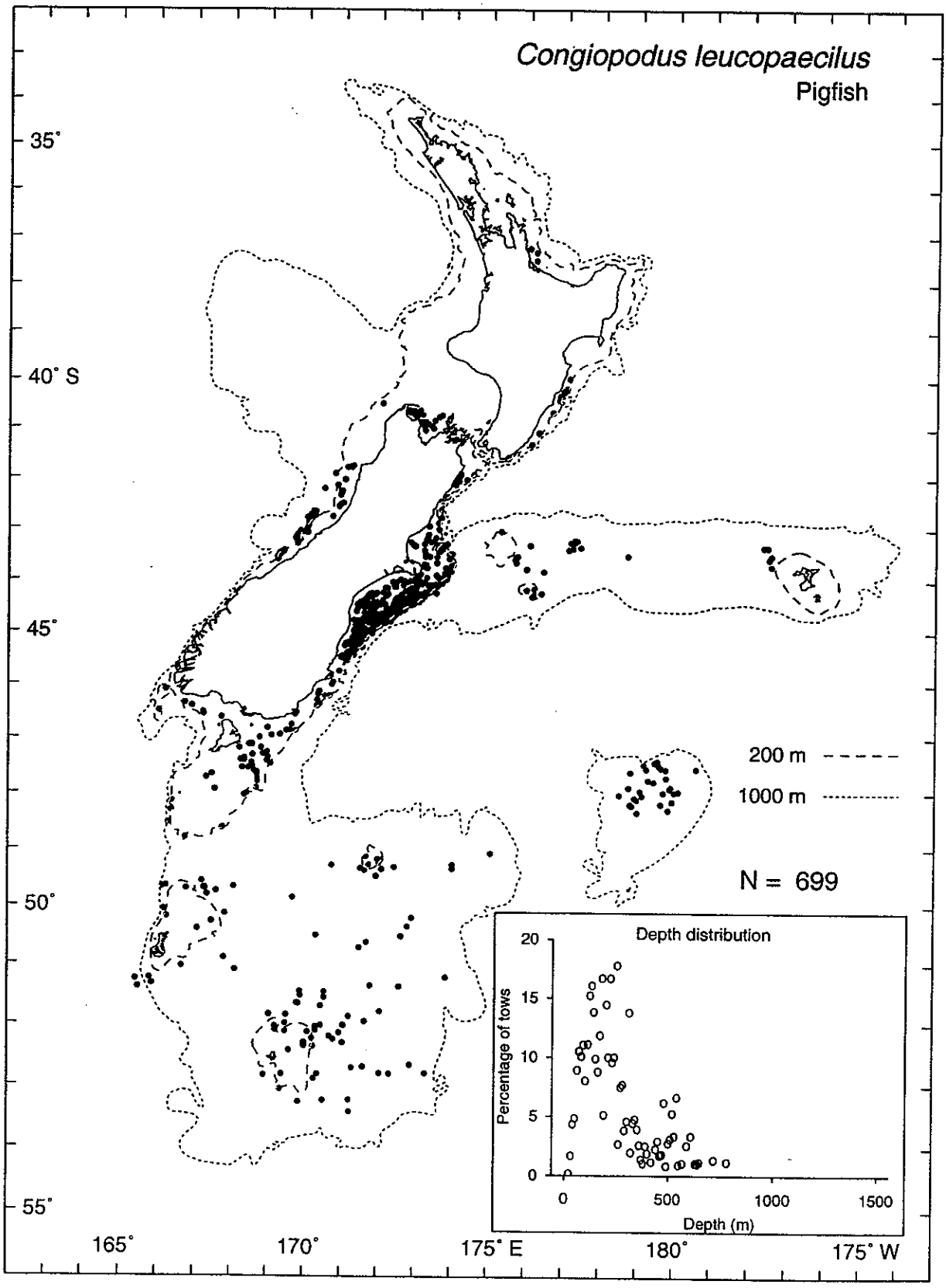

Colistium guntheri
Brill
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 123
Depth distribution
Percentage of tows
0
1
2
3
4
5
0
500
1000
1500
Depth (m)



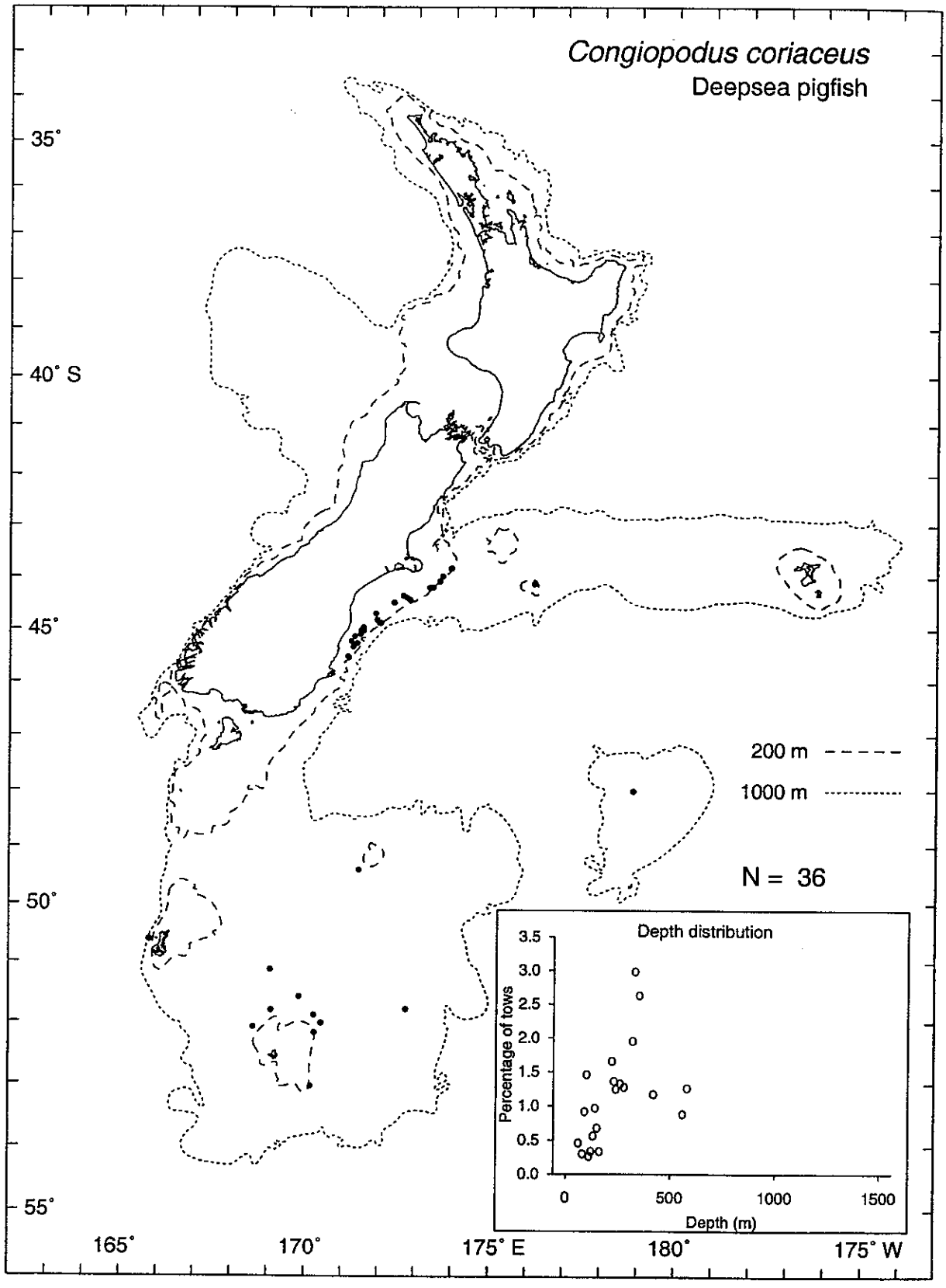
May include other *Chlorophthalmus* spp.


Conger verreauxi & C. wilsoni
Conger eels
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 182
Depth distribution
Percentage of tows
Depth (m)
0
2
4
6
8
10
0
500
1000
1500

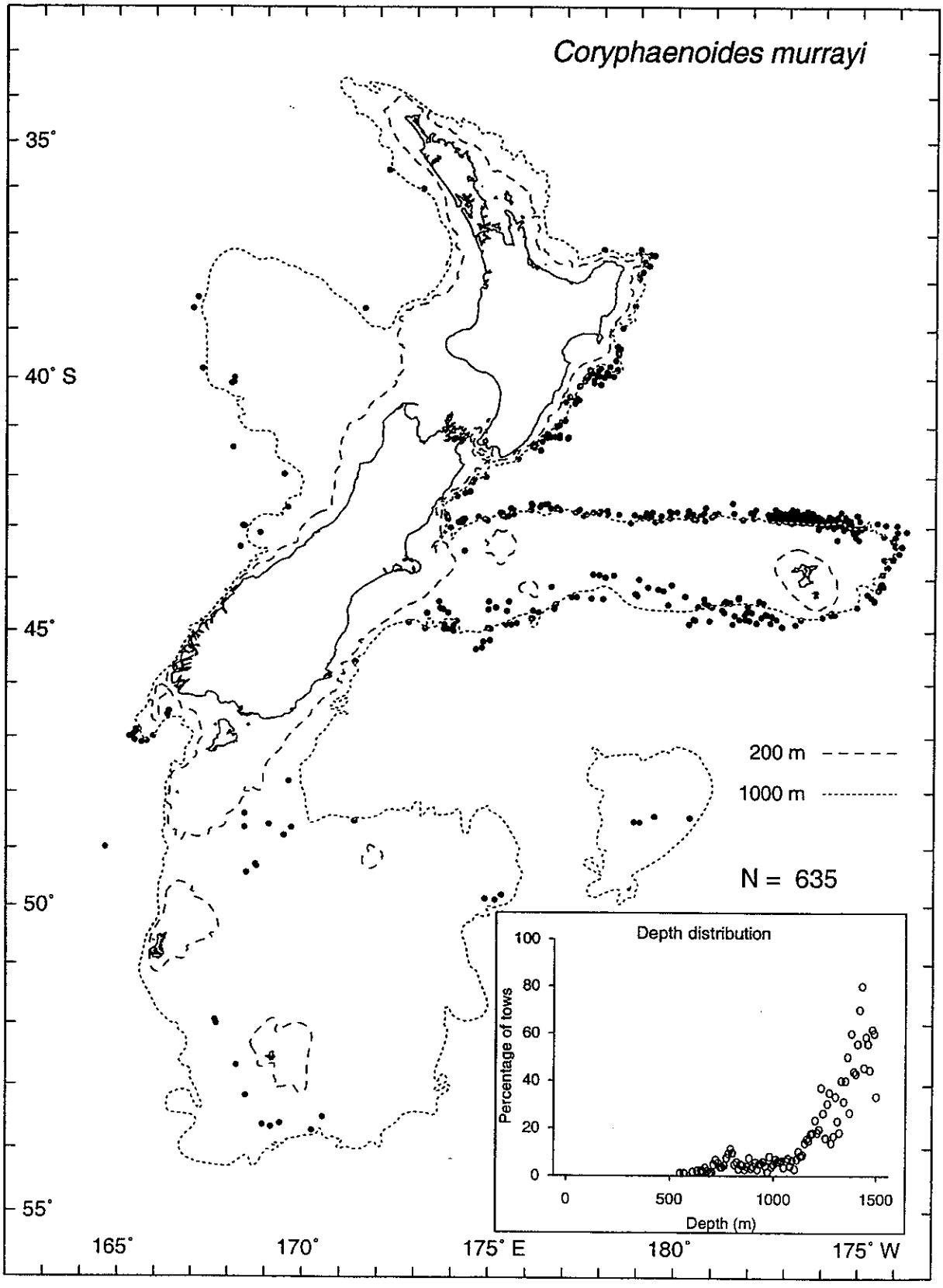

Colistium nudipinnis
Turbot
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 103
Depth distribution
Percentage of tows
0
1
2
3
4
5
6
0
500
1000
1500
Depth (m)



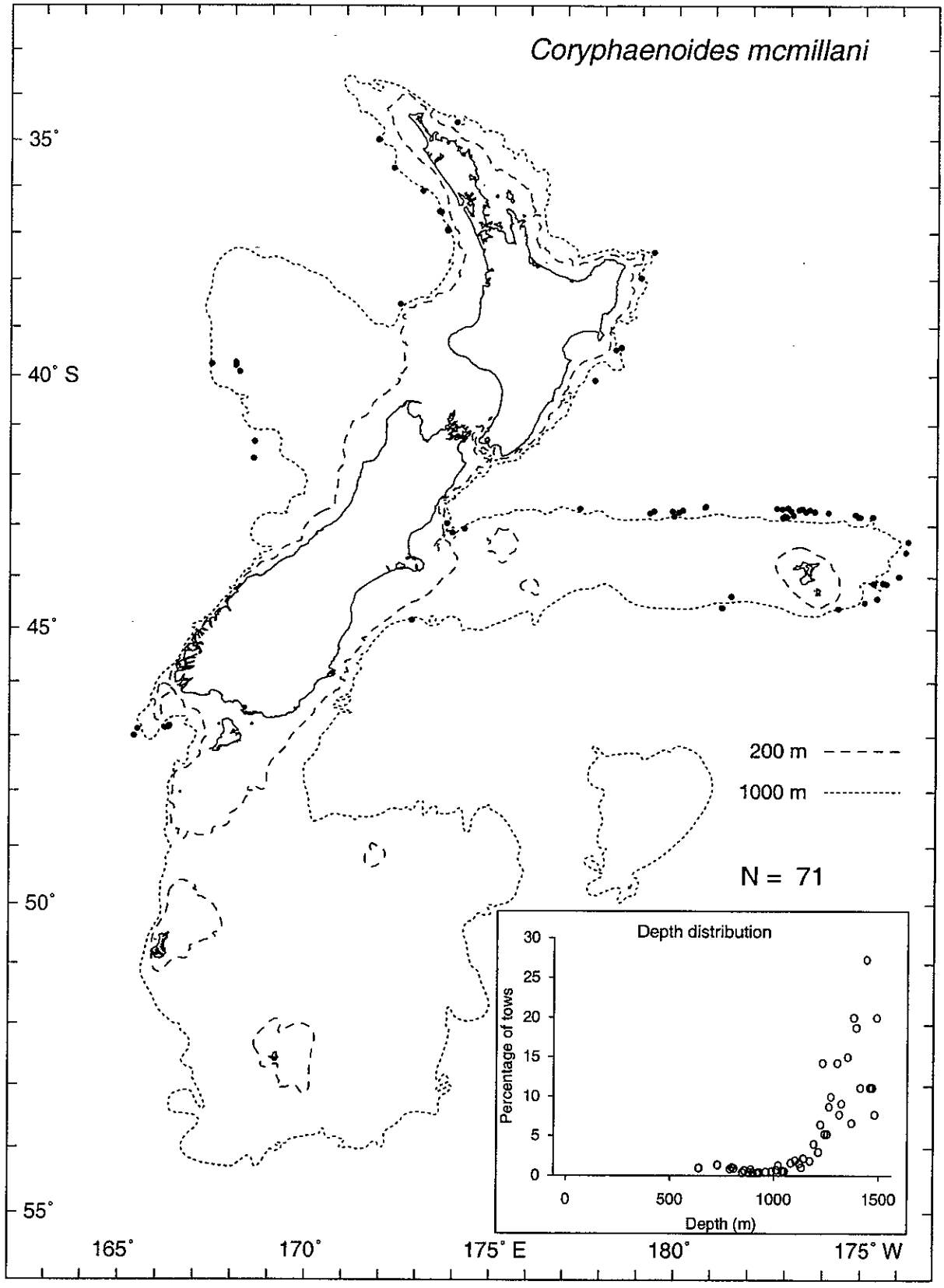
May include some *Congiopodus coriaceus*.

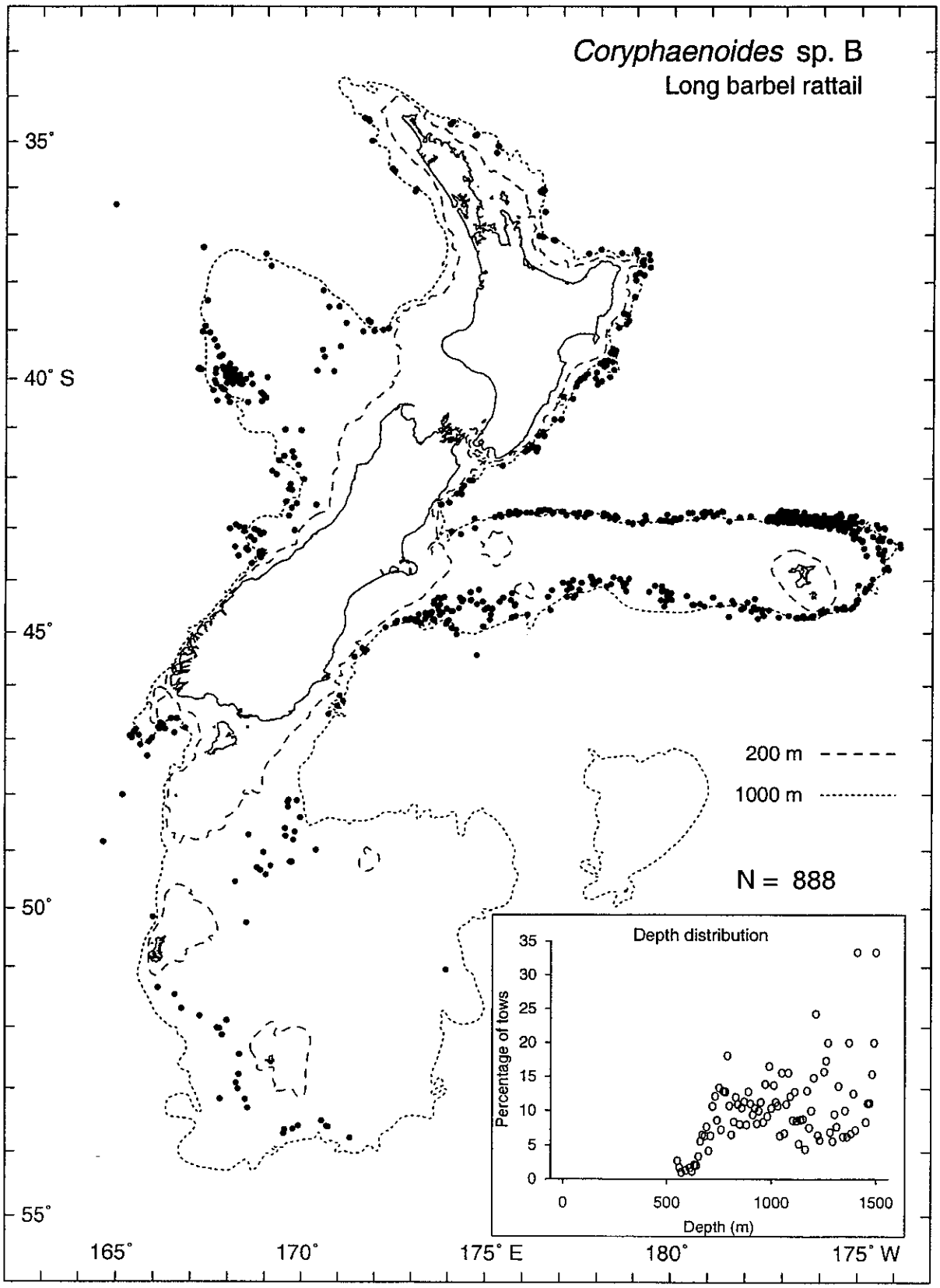


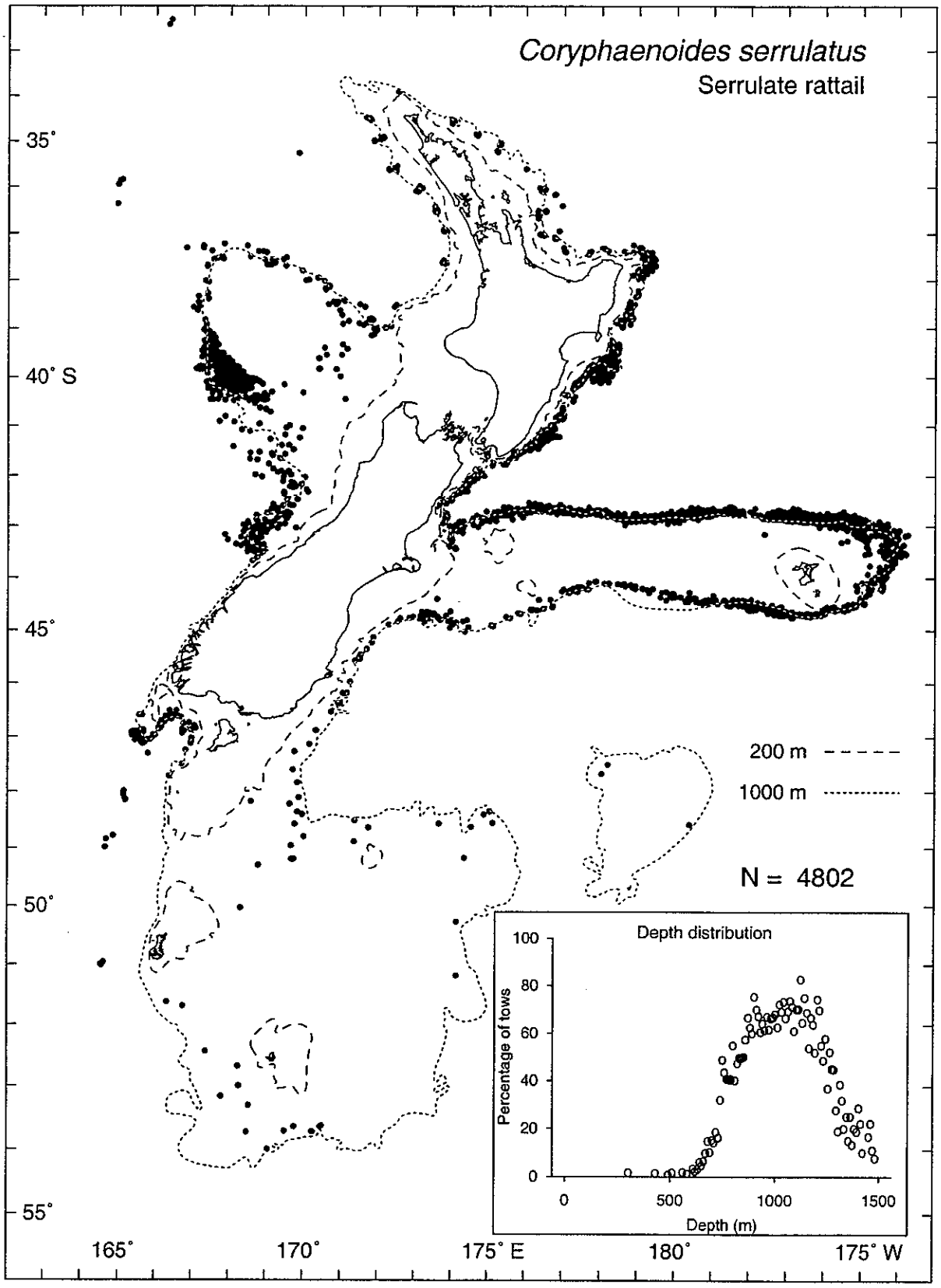
May include some *Congiopodus leucopaecilus*.

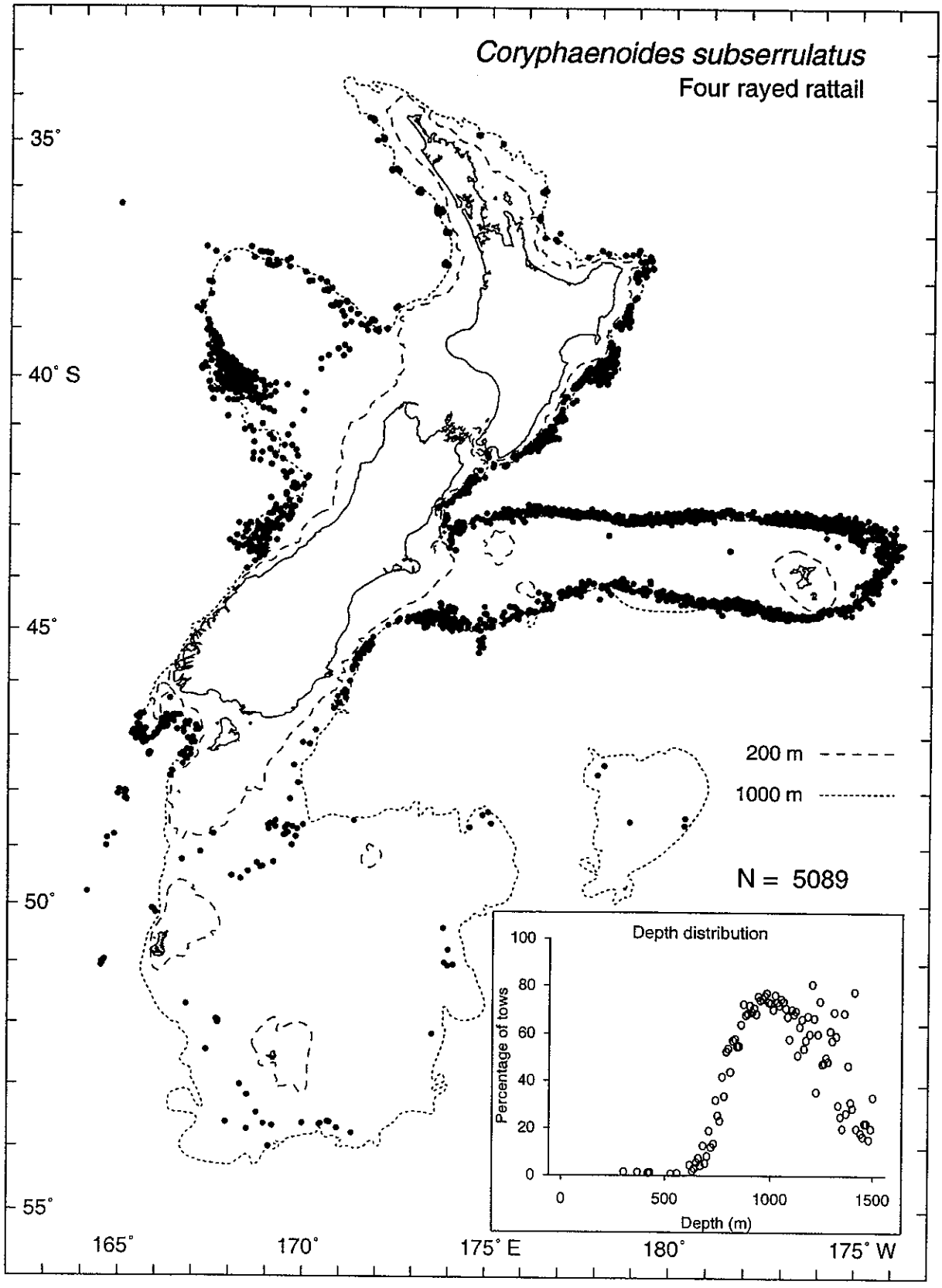


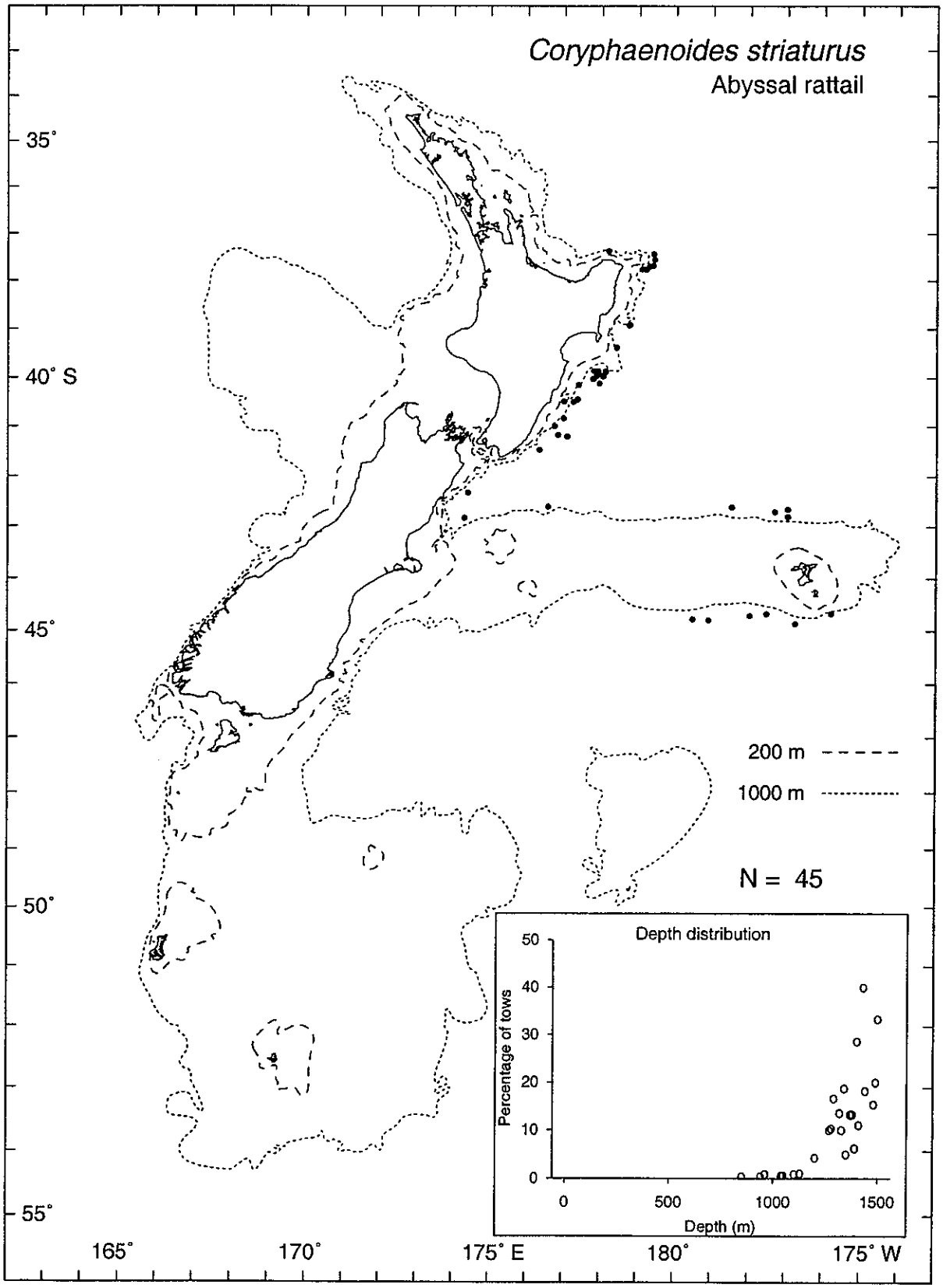
May include some *Coryphaenoides striaturus*.

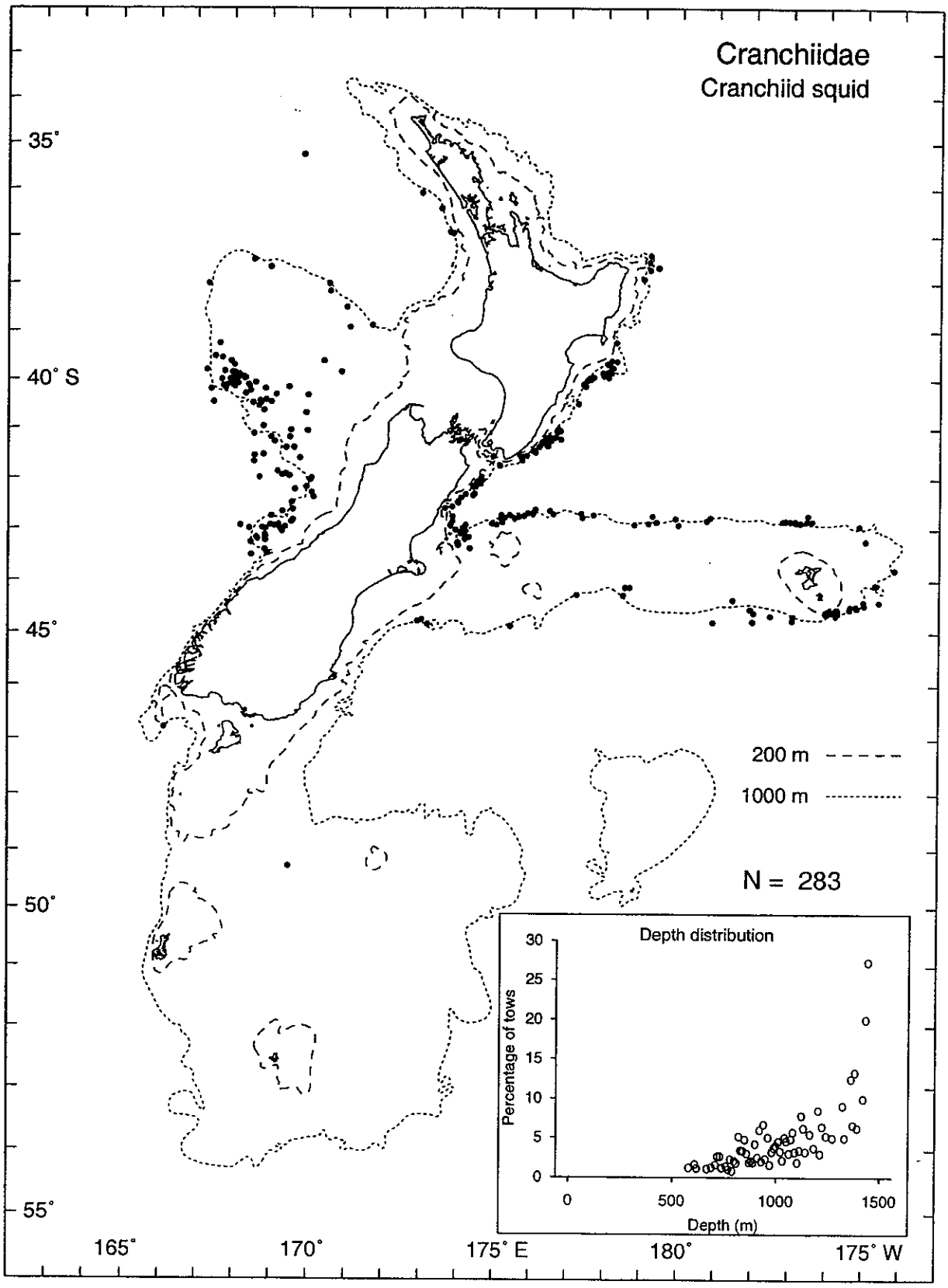

Coryphaenoides mcmillani
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 71
Depth distribution
Percentage of tows
Depth (m)
0
5
10
15
20
25
30
0
500
1000
1500


Coryphaenoides sp. B
Long barbel rattail
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 888
Depth distribution
Percentage of tows
0
5
10
15
20
25
30
35
0
500
1000
1500
Depth (m)

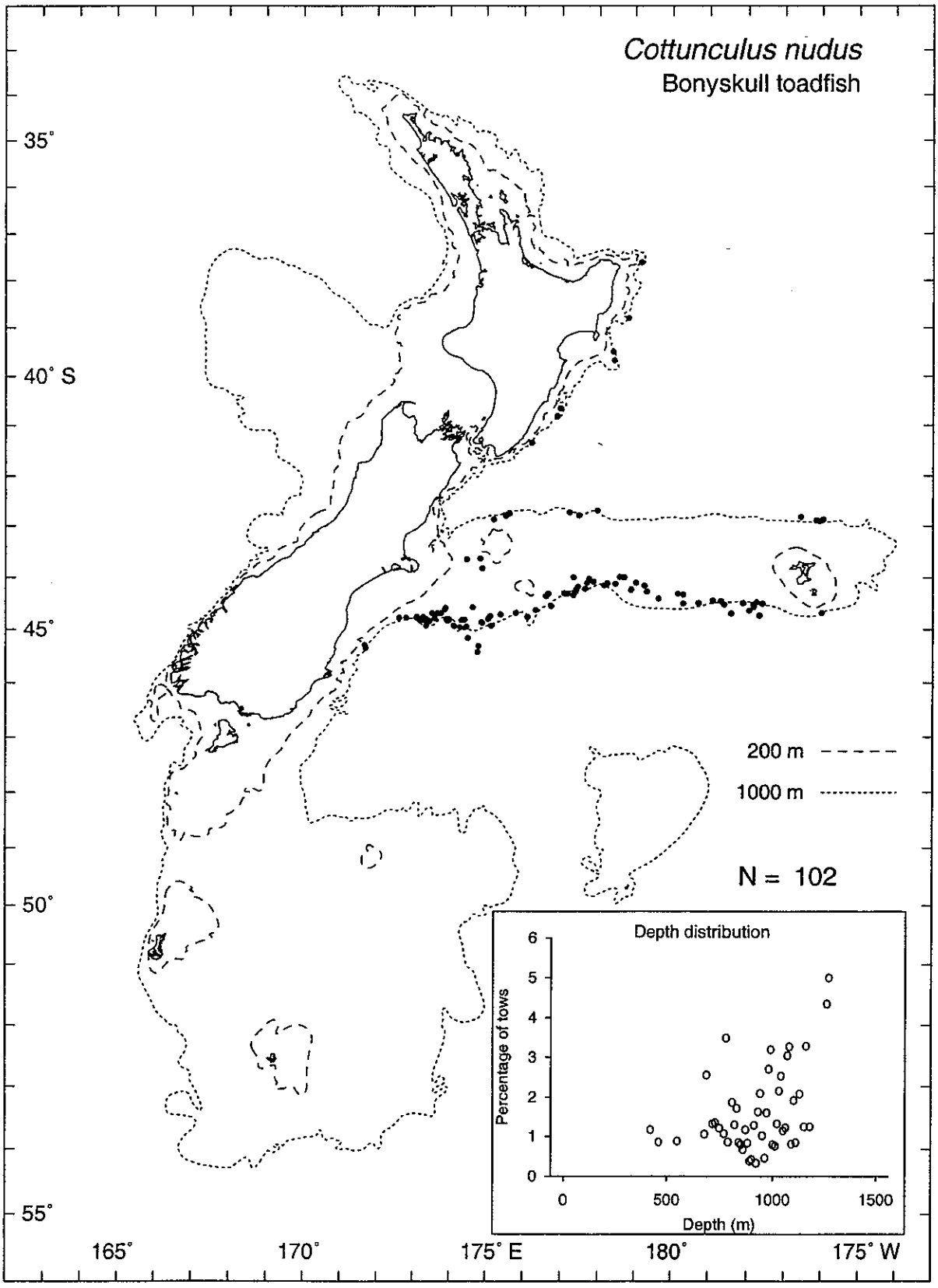

Coryphaenoides serrulatus
Serrulate rattail
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 4802
Depth distribution
Percentage of tows
Depth (m)
0
20
40
60
80
100
0
500
1000
1500

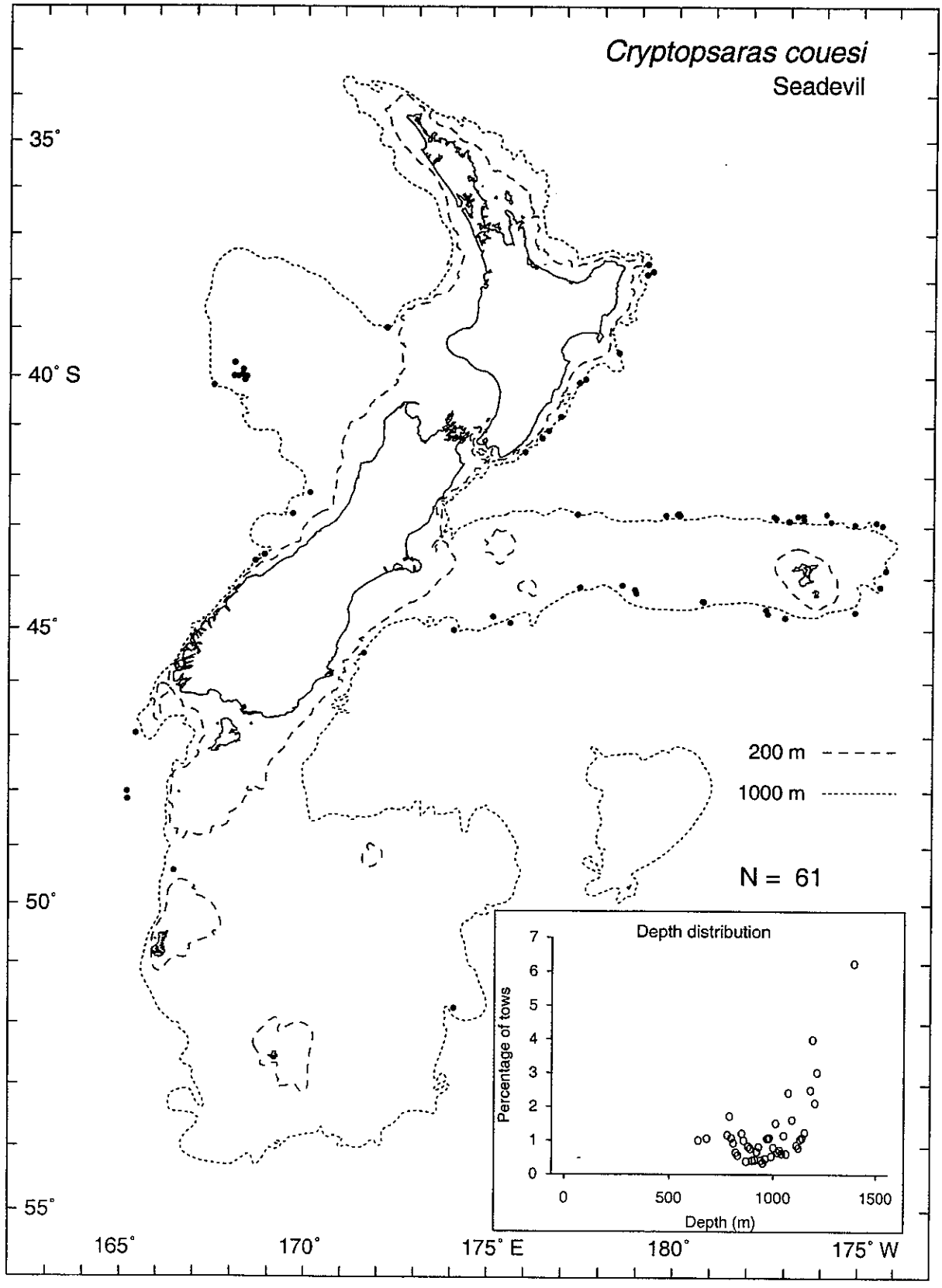

Coryphaenoides subserrulatus
Four rayed rattail
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 5089
Depth distribution
Percentage of tows
100
80
60
40
20
0
0
500
1000
1500
Depth (m)

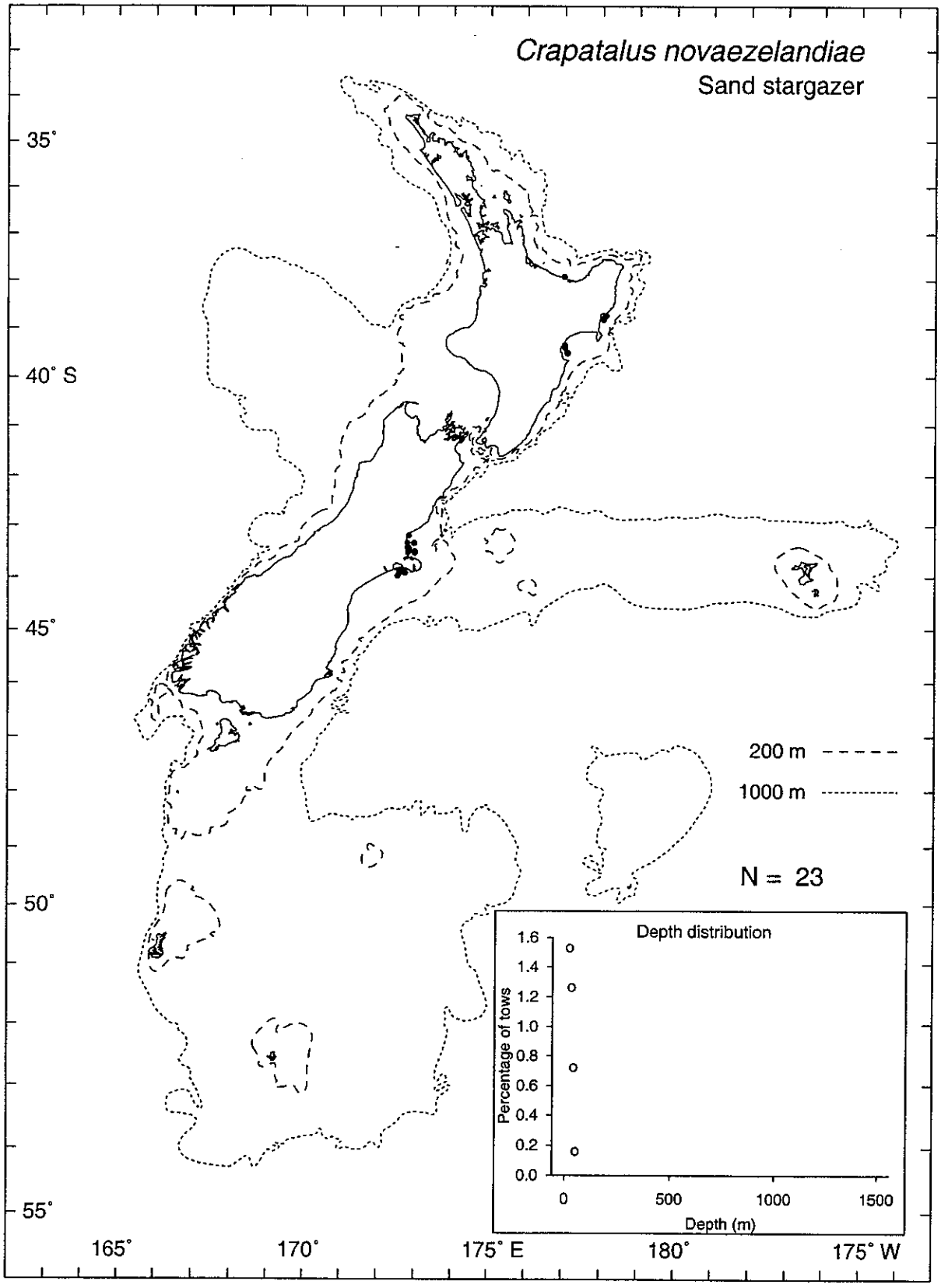

Coryphaenoides striaturus
Abyssal rattail
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 45
Depth distribution
Percentage of tows
0
10
20
30
40
50
0
500
1000
1500
Depth (m)

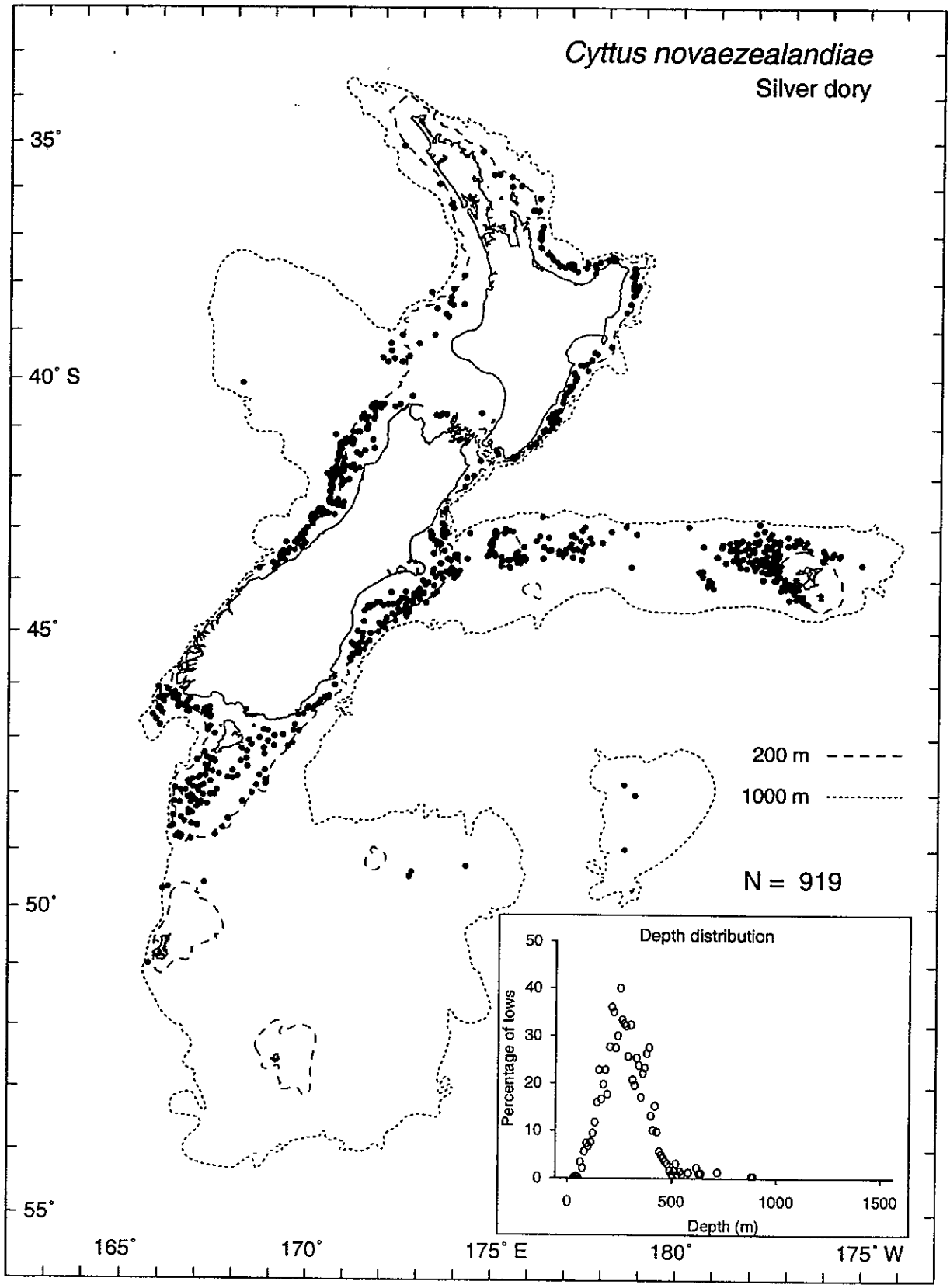


May include up to 14 species but most will be *Teuthowenia pellucida* or *Galiteuthis glacialis.*

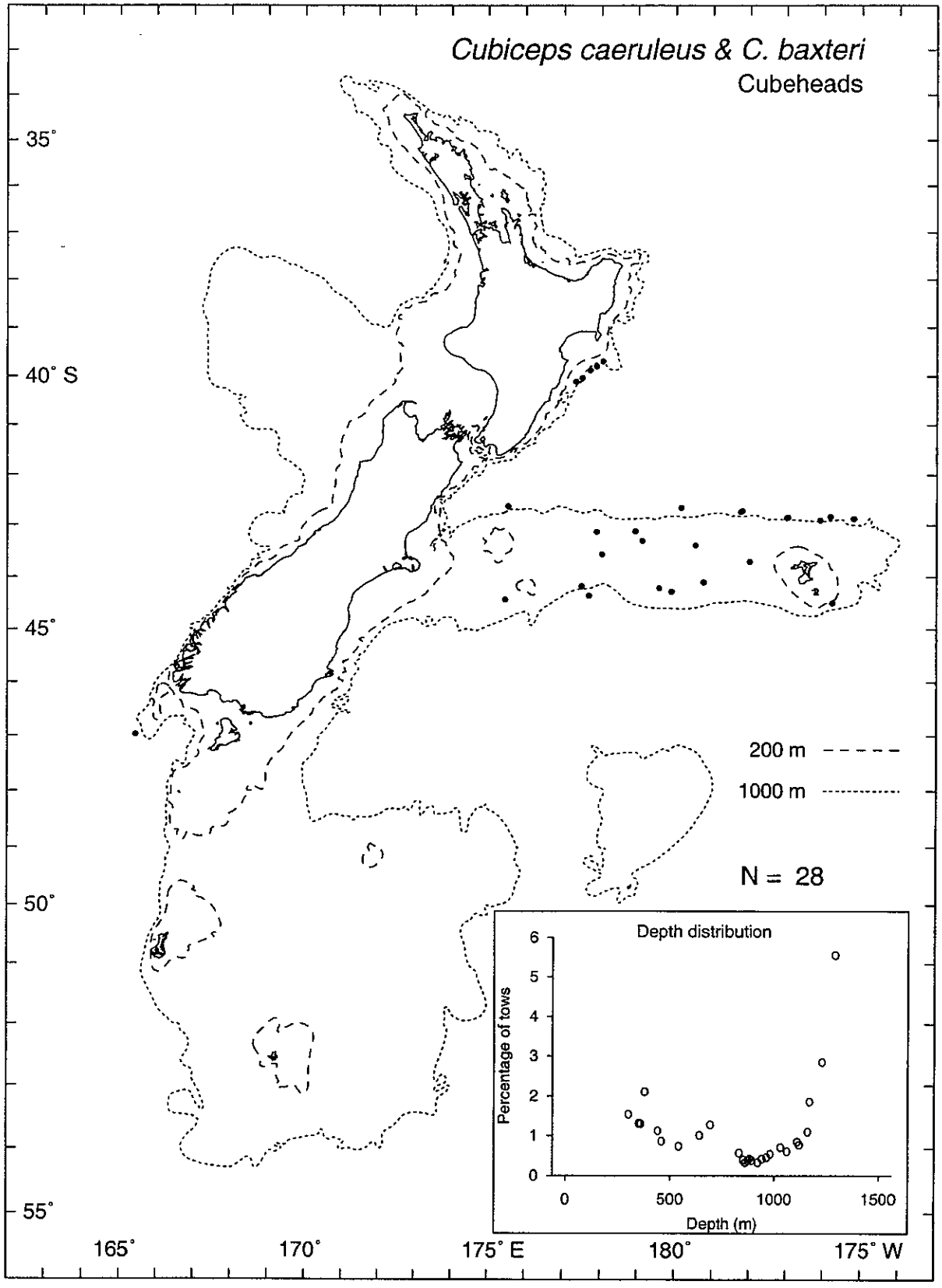

Cottunculus nudus
Bonyskull toadfish
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 102
Depth distribution
Percentage of tows
Depth (m)
0
1
2
3
4
5
6
0
500
1000
1500

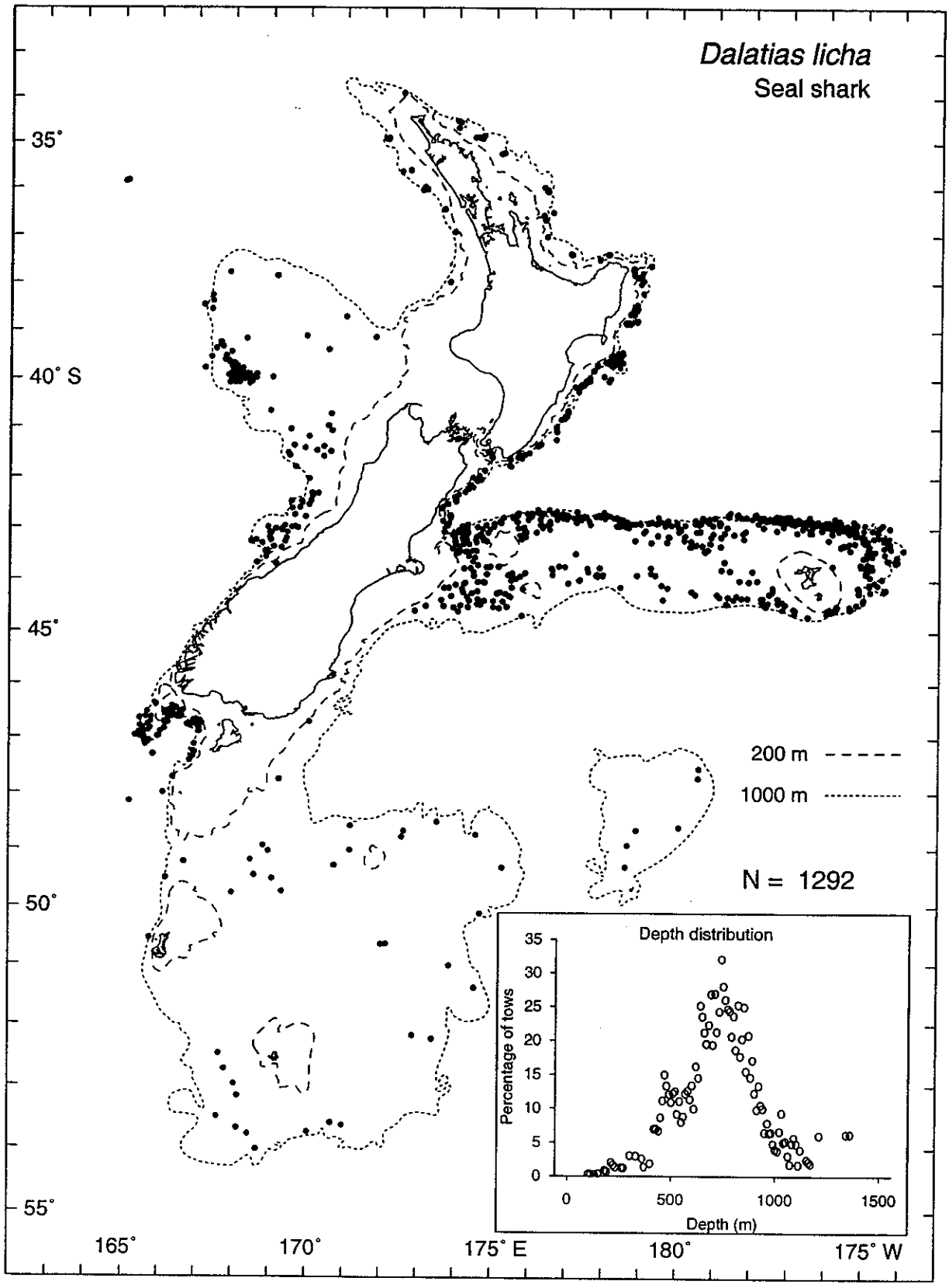

Cryptopsaras couesi
Seadevil
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 61
Depth distribution
Percentage of tows
Depth (m)
0
1
2
3
4
5
6
7
0
500
1000
1500


Crapatalus novaezelandiae
Sand stargazer
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 23
Depth distribution
Percentage of tows
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
500
1000
1500
Depth (m)

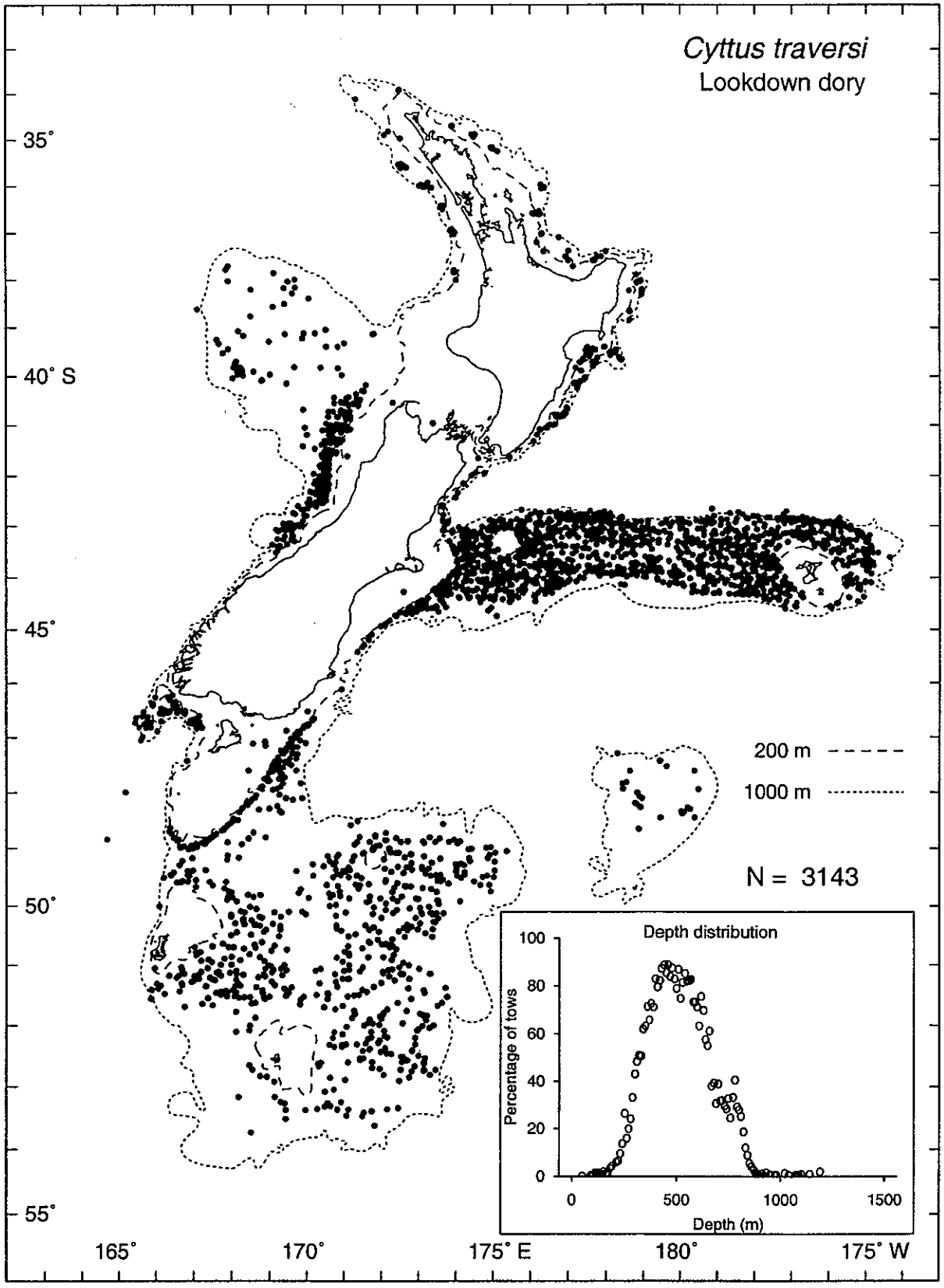


Deeper records may be *Cyttus traversi*.

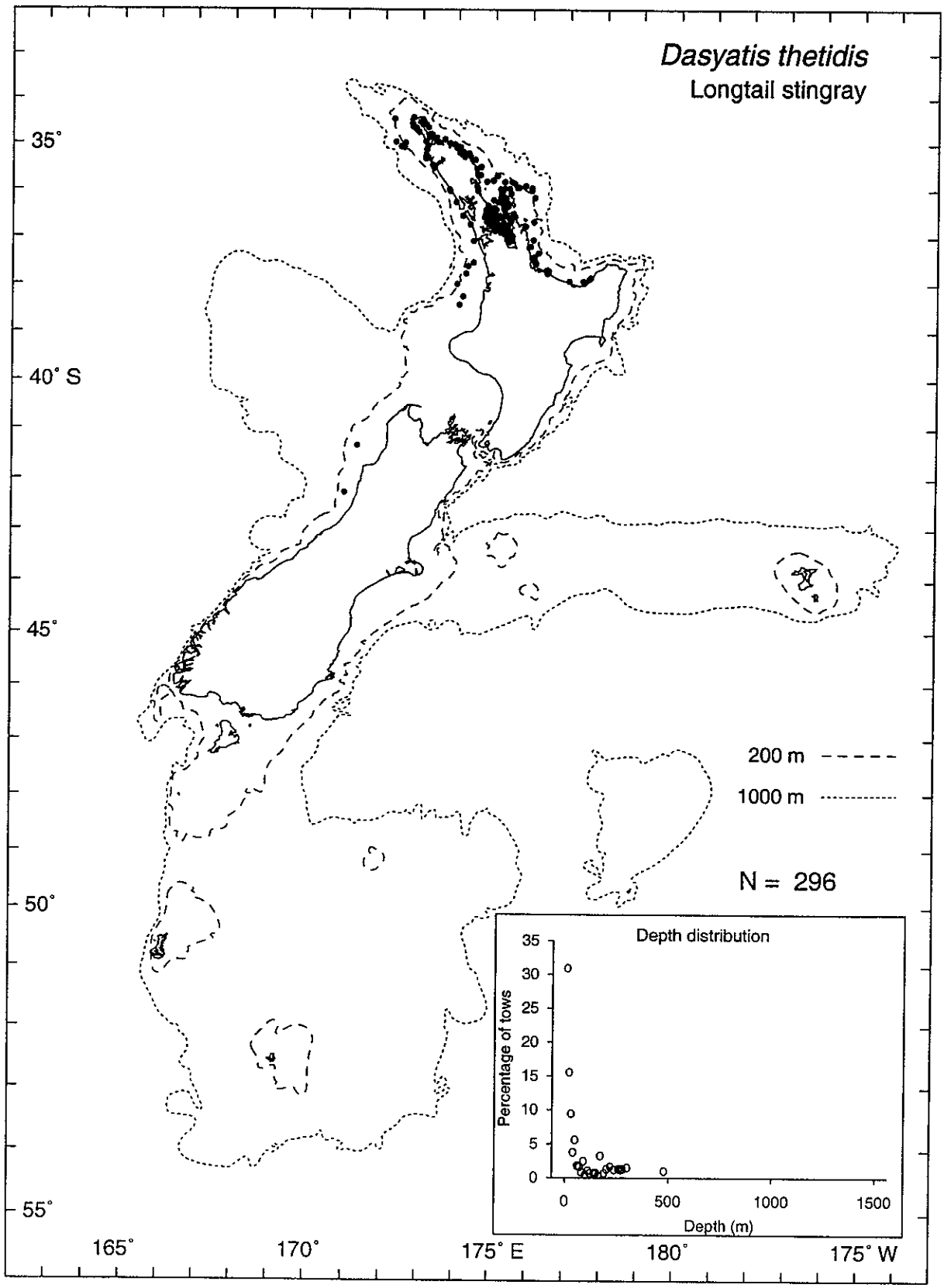

Cubiceps caeruleus & C. baxteri
Cubeheads
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 28
Depth distribution
Percentage of tows
Depth (m)
0
1
2
3
4
5
6
0
500
1000
1500

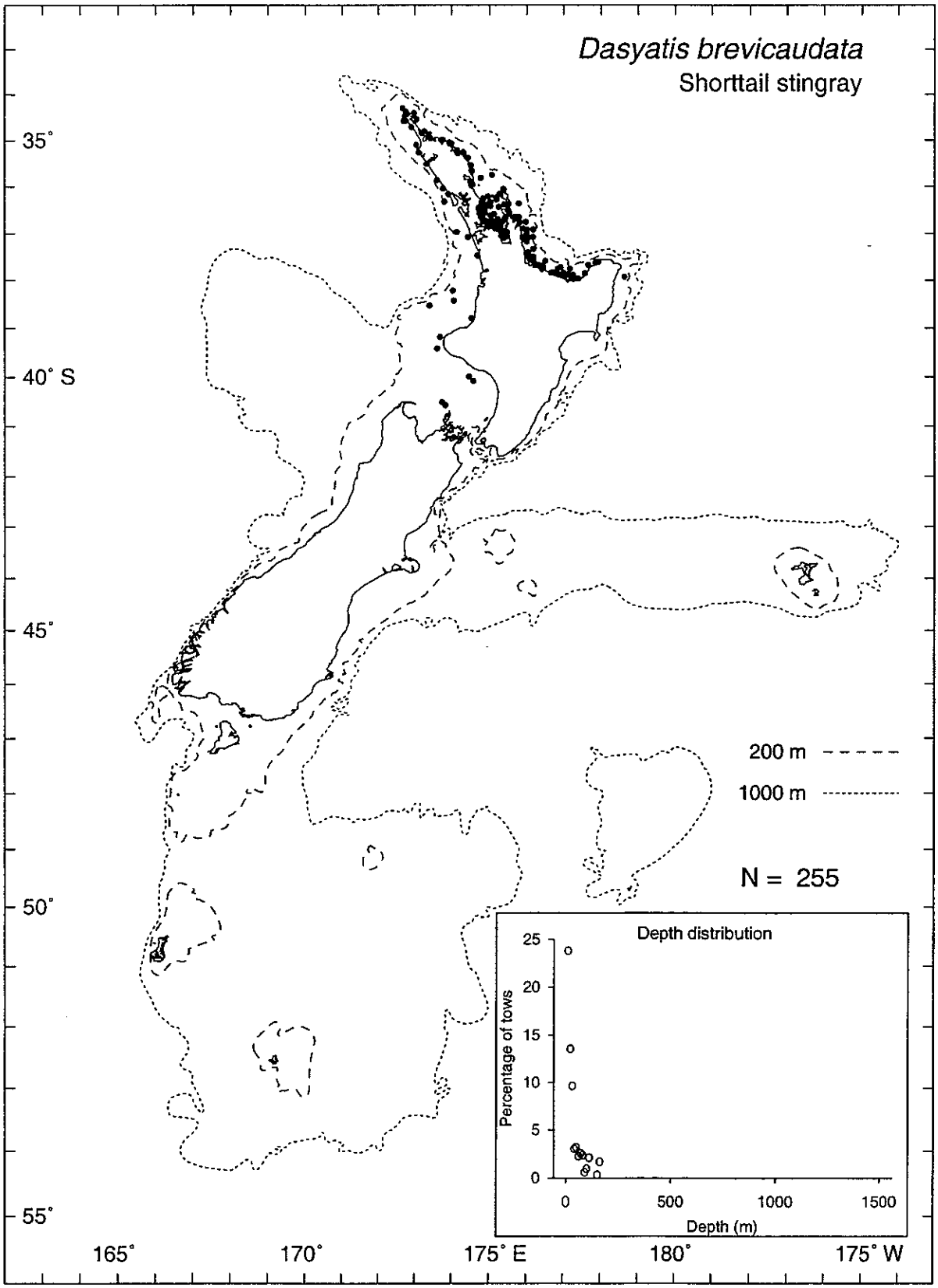


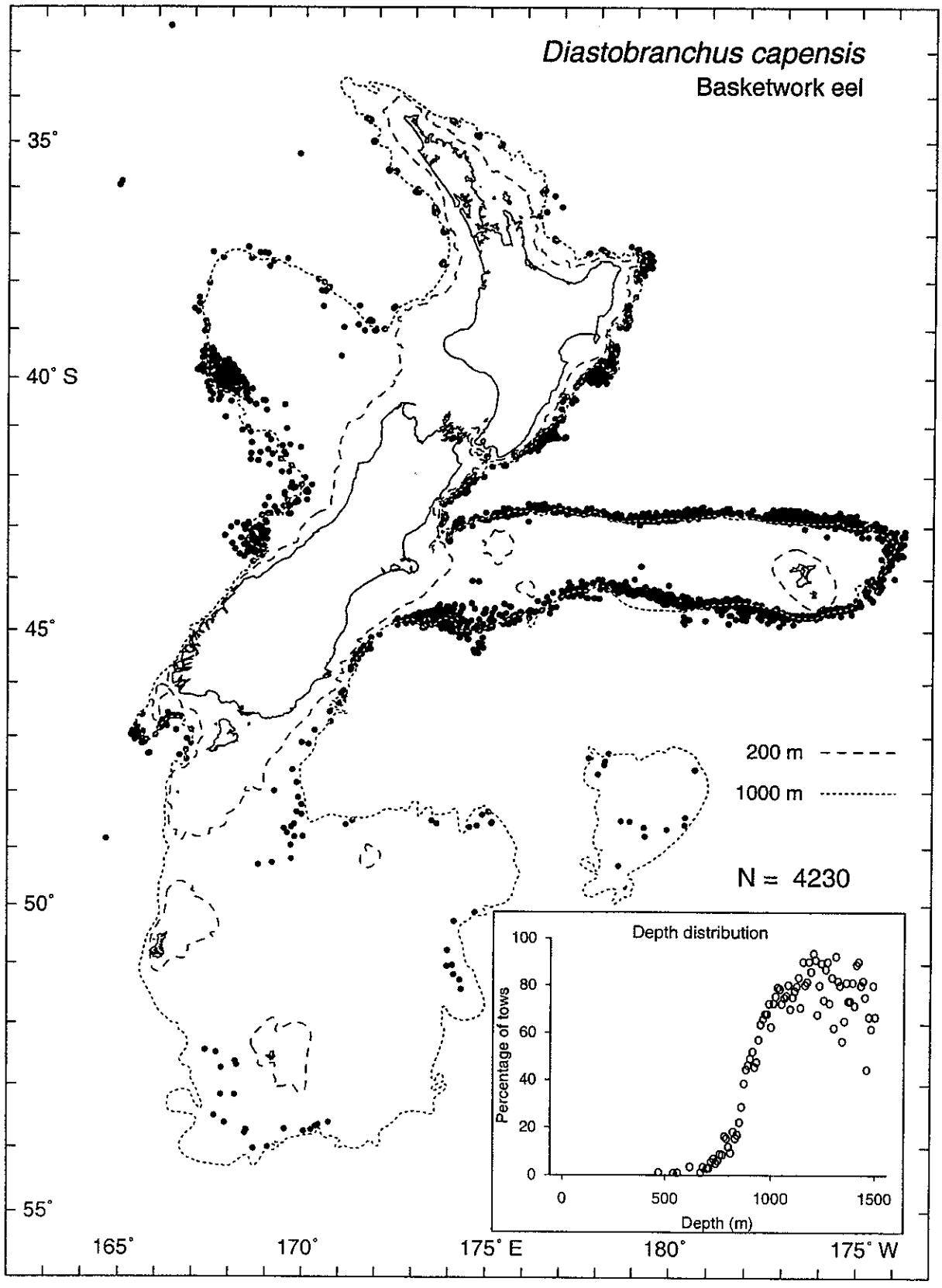
Also known by the common name black shark. Some records may represent other black shark species.

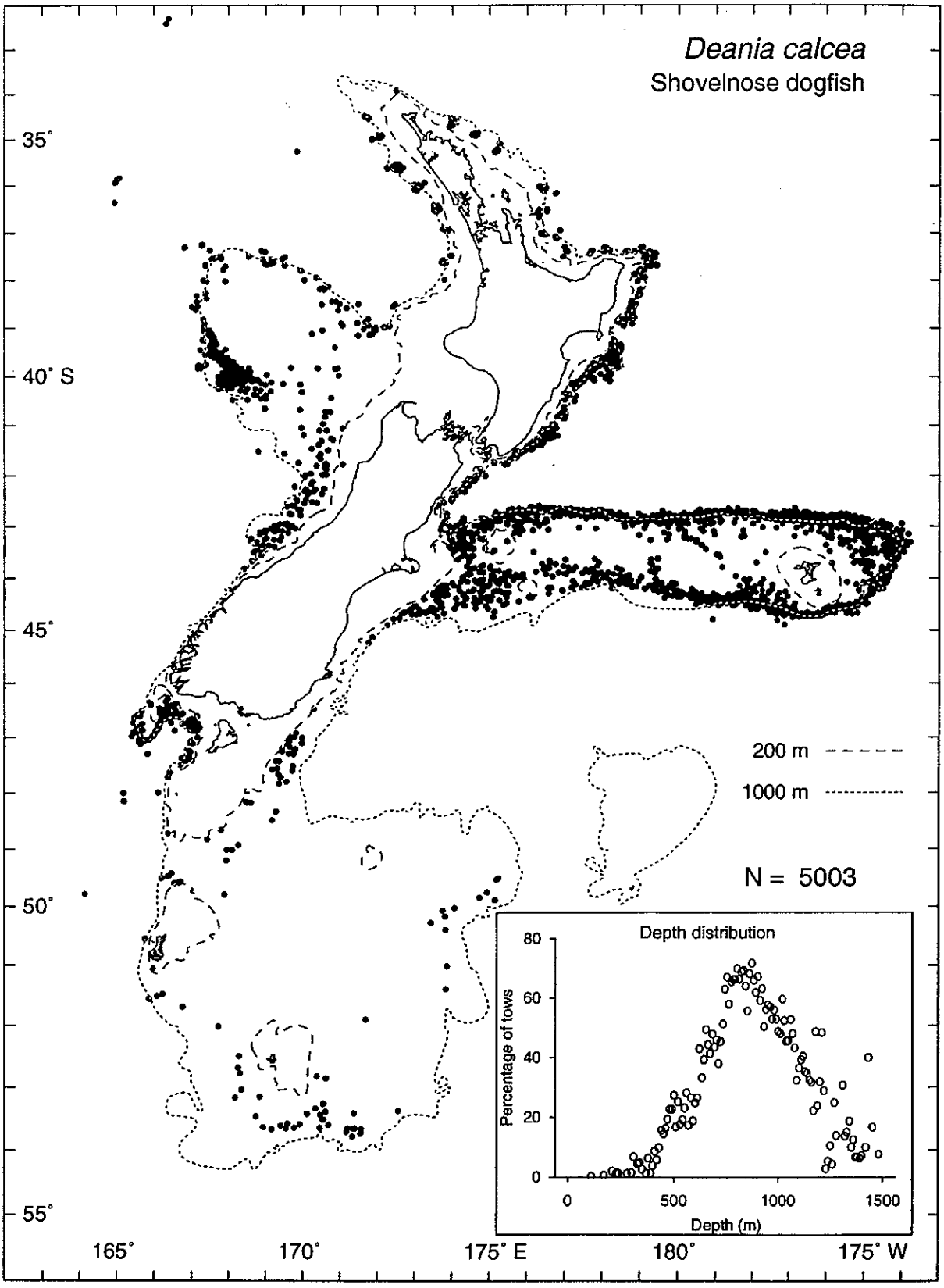


May include some *Cyttus novaezealandiae.*

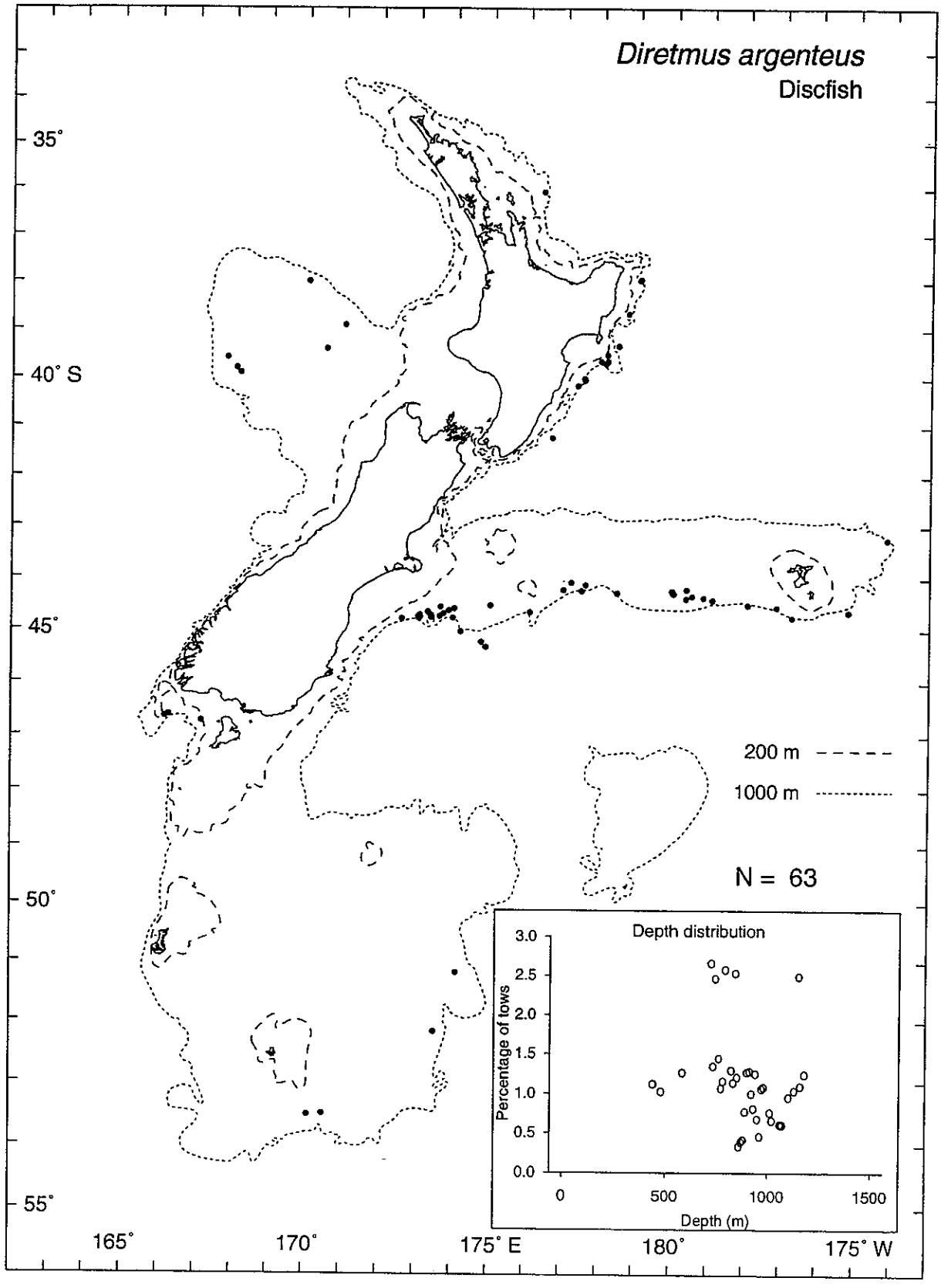

Dasyatis thetidis
Longtail stingray
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 296
Depth distribution
Percentage of tows
Depth (m)
0
5
10
15
20
25
30
35
0
500
1000
1500

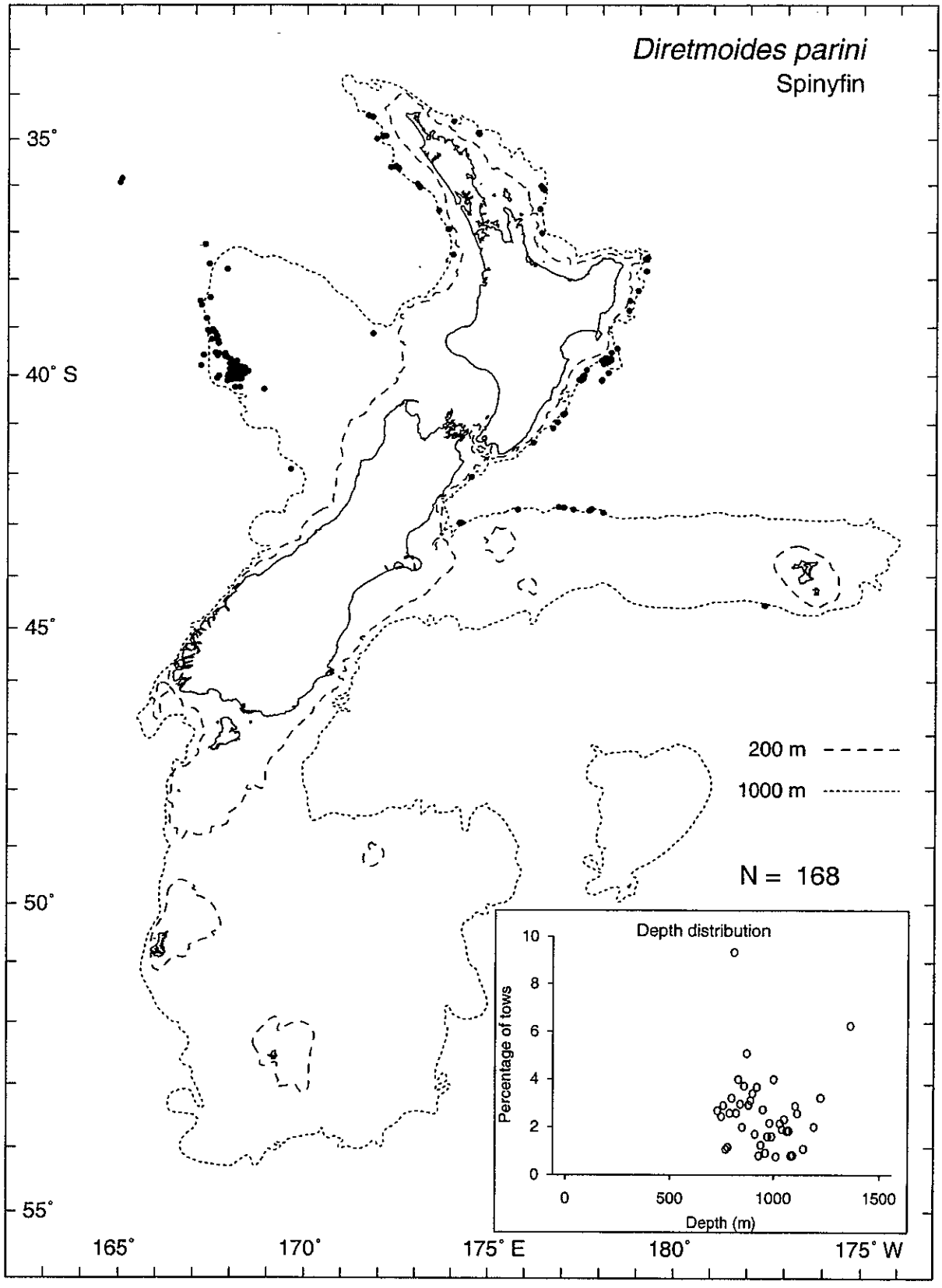

Dasyatis brevicaudata
Shorttail stingray
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 255
Depth distribution
Percentage of tows
25
20
15
10
5
0
0
500
1000
1500
Depth (m)

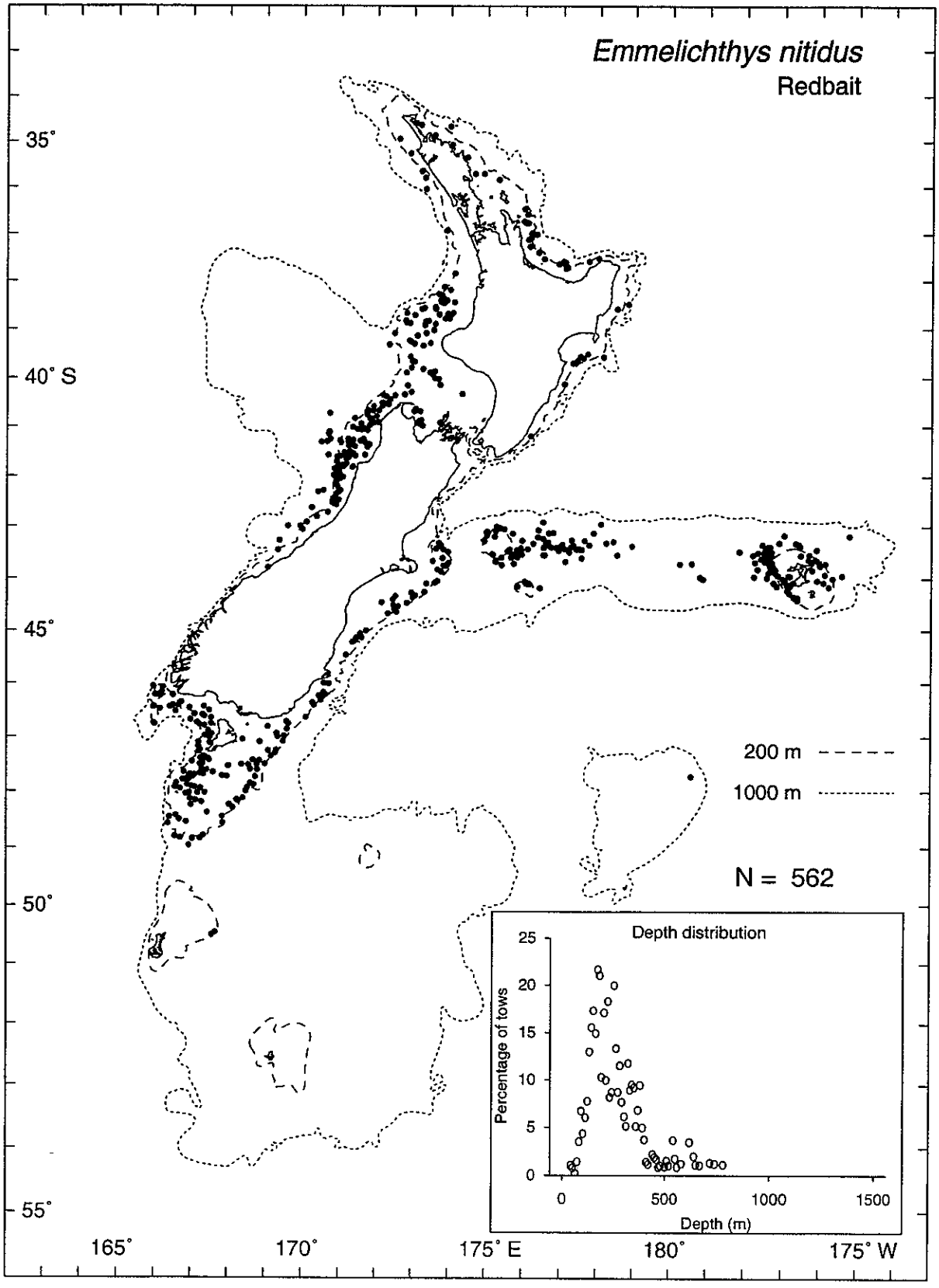

Diastobranchus capensis
Basketwork eel
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 4230
Depth distribution
Percentage of tows
100
80
60
40
20
0
0
500
1000
1500
Depth (m)

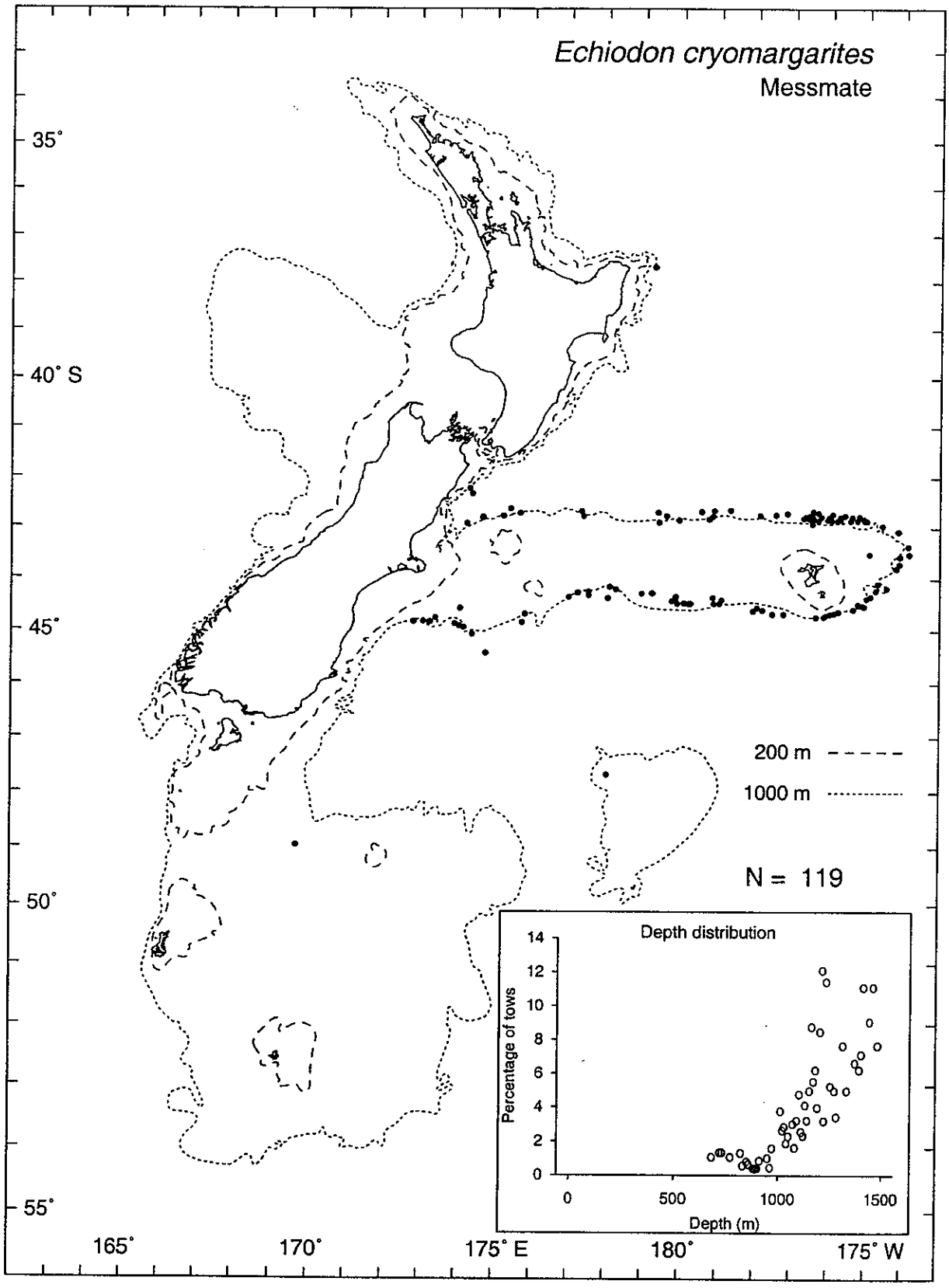


May include some *Deania quadrispinosum.*

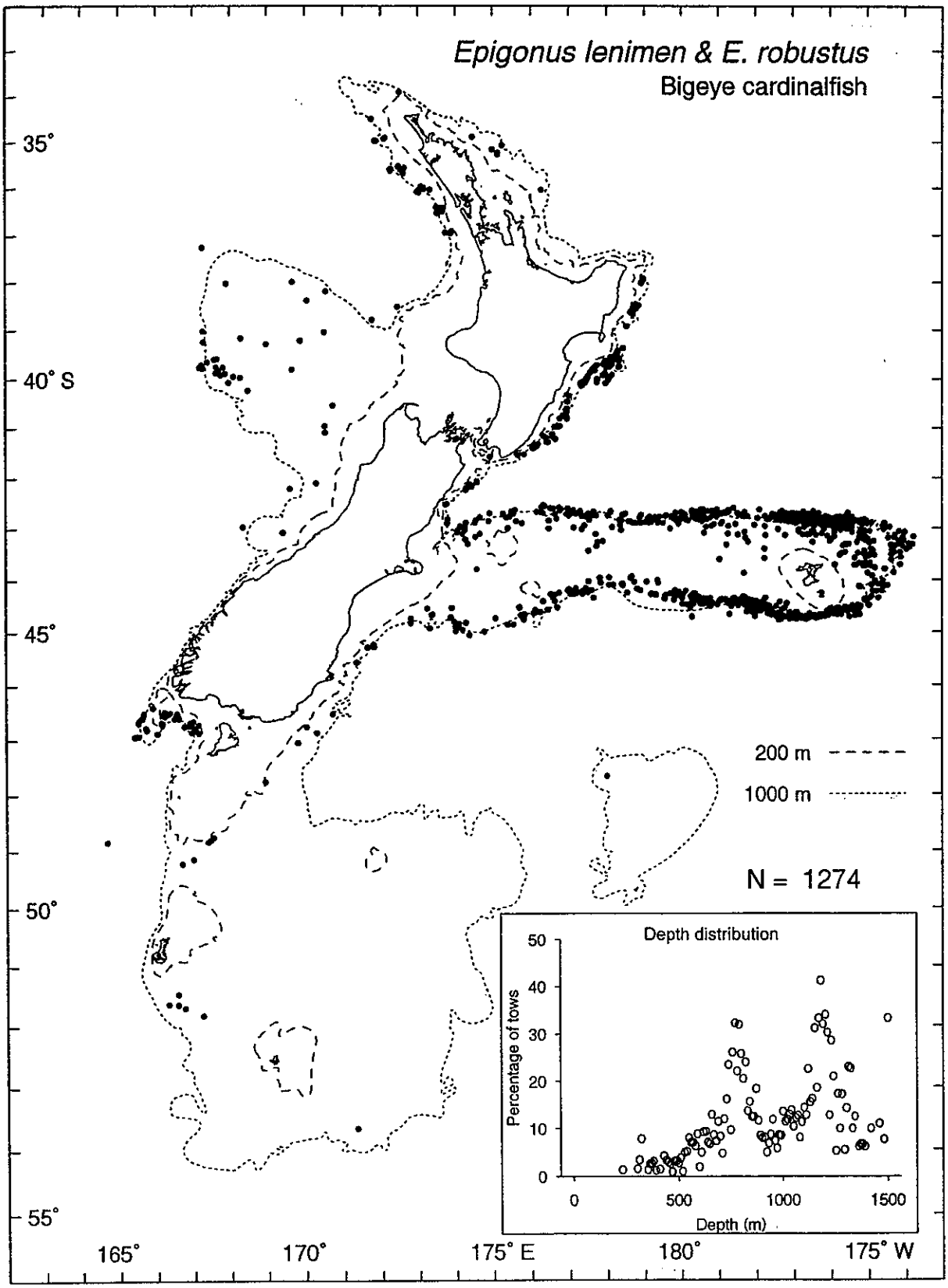

Diretmus argenteus
Discfish
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 63
Depth distribution
Percentage of tows
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0
500
1000
1500
Depth (m)


Diretmoides parini
Spinyfin
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 168
Depth distribution
Percentage of tows
0
2
4
6
8
10
0
500
1000
1500
Depth (m)

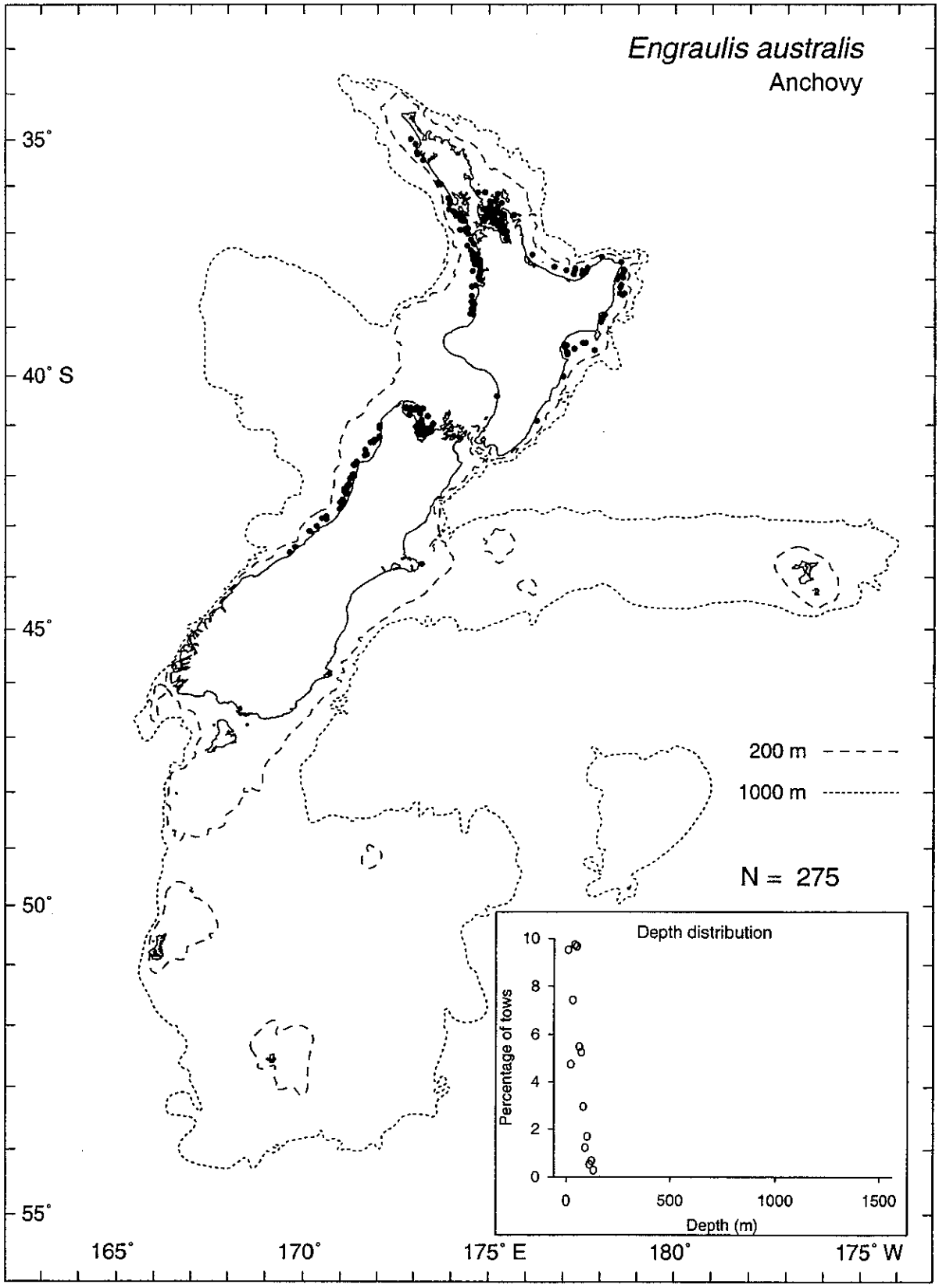

Emmelichthys nitidus
Redbait
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 562
Depth distribution
Percentage of tows
Depth (m)
0
5
10
15
20
25
0
500
1000
1500

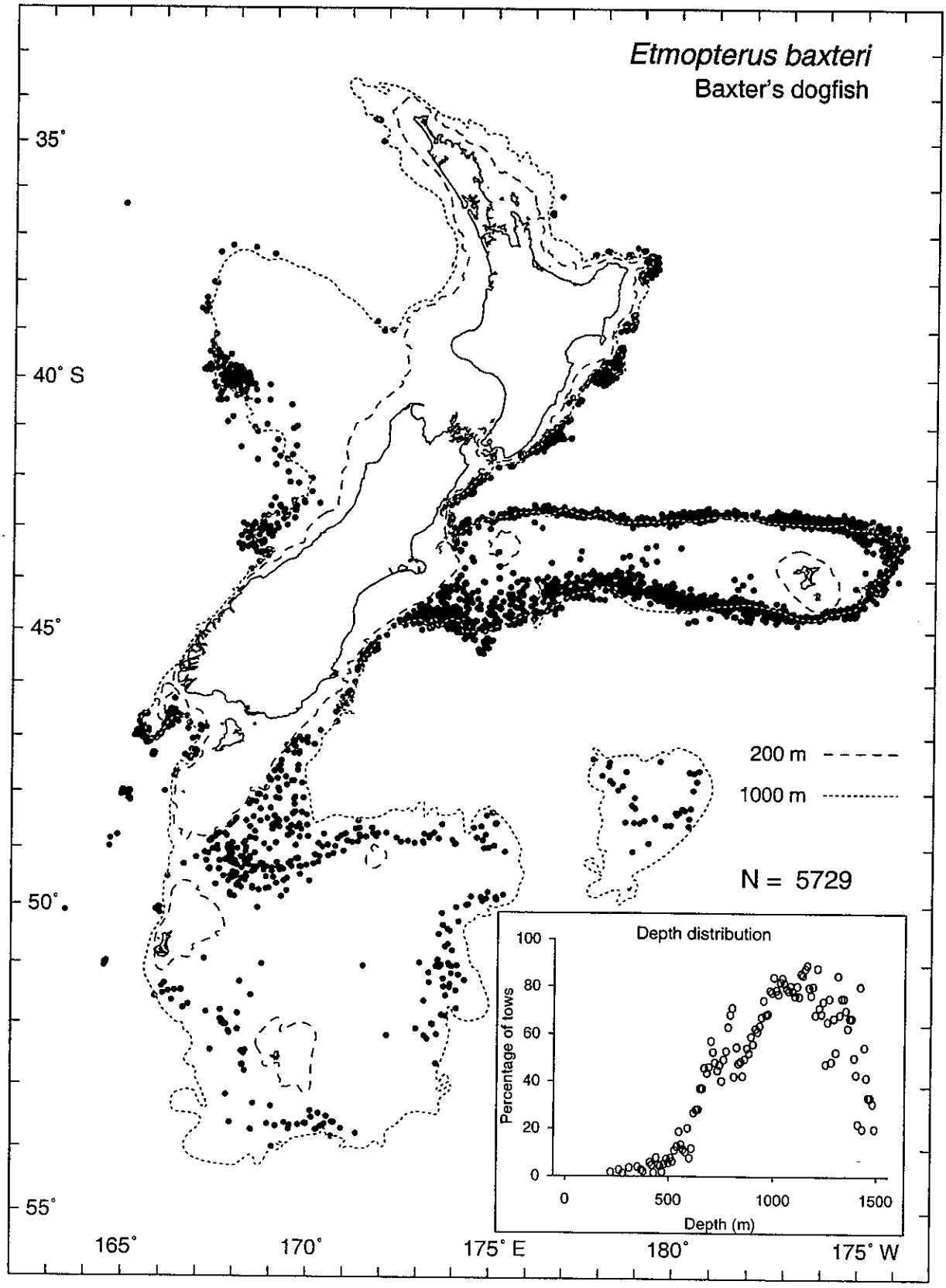


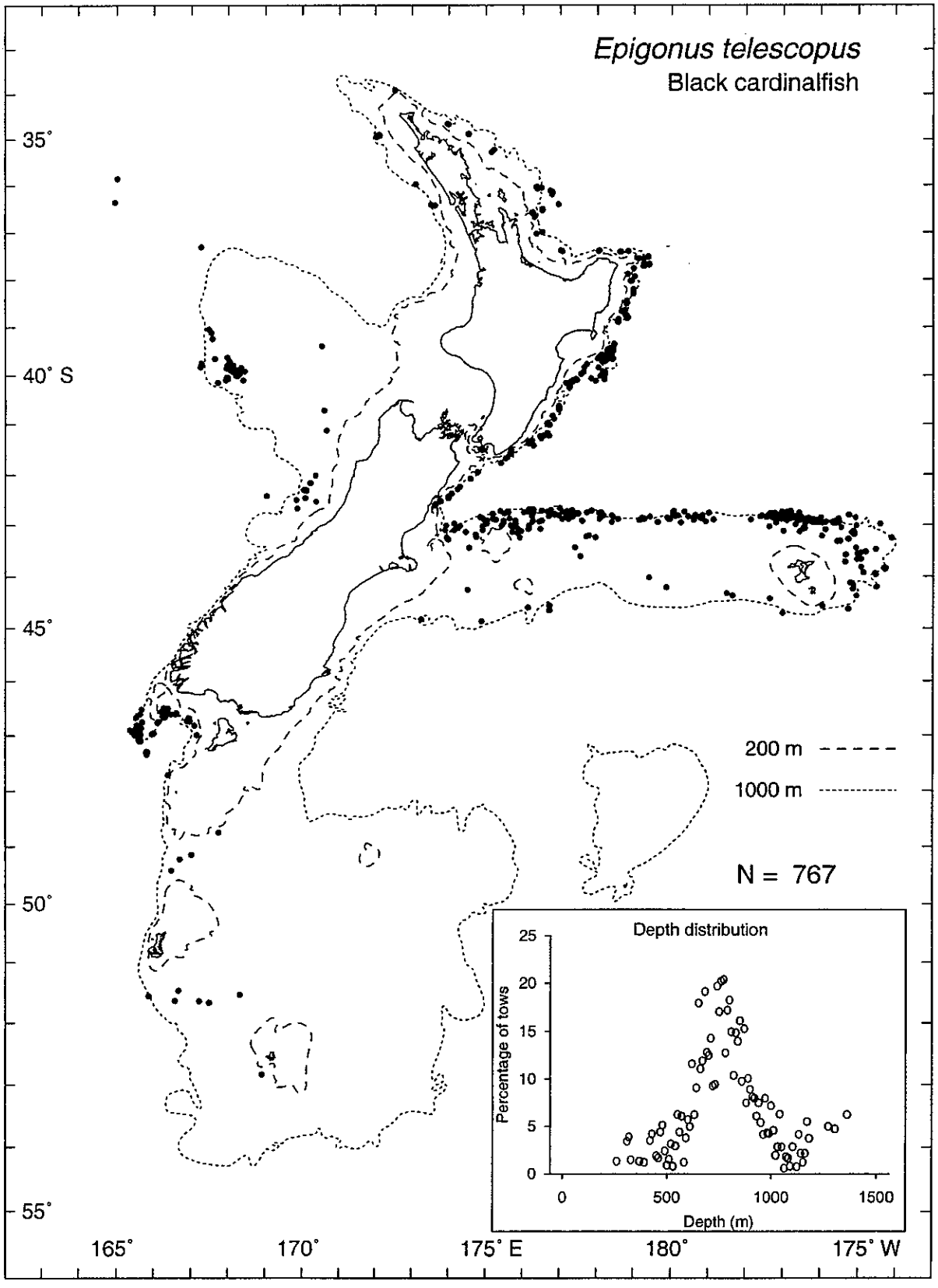
Probably includes other *Echiodon* species.

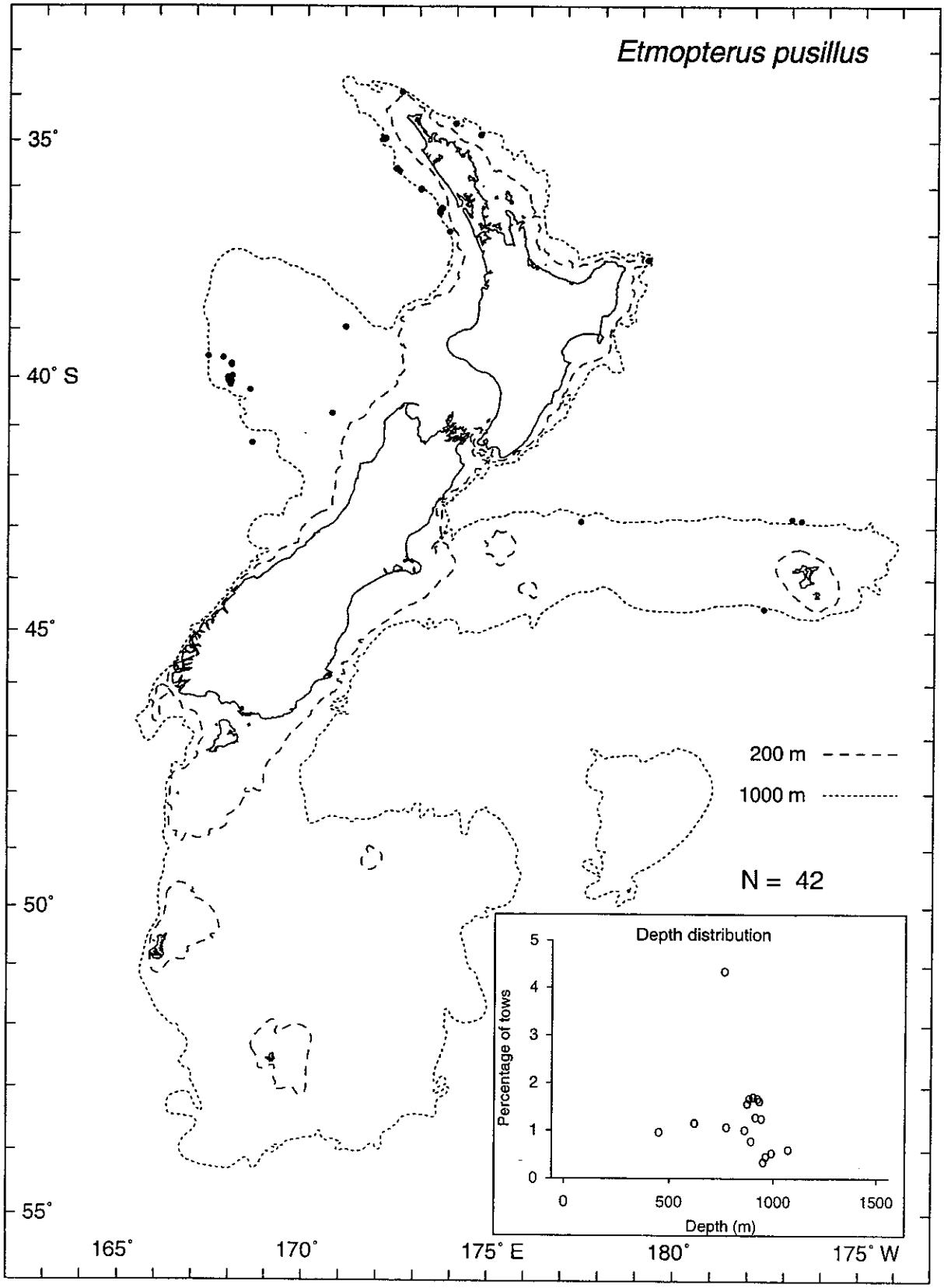


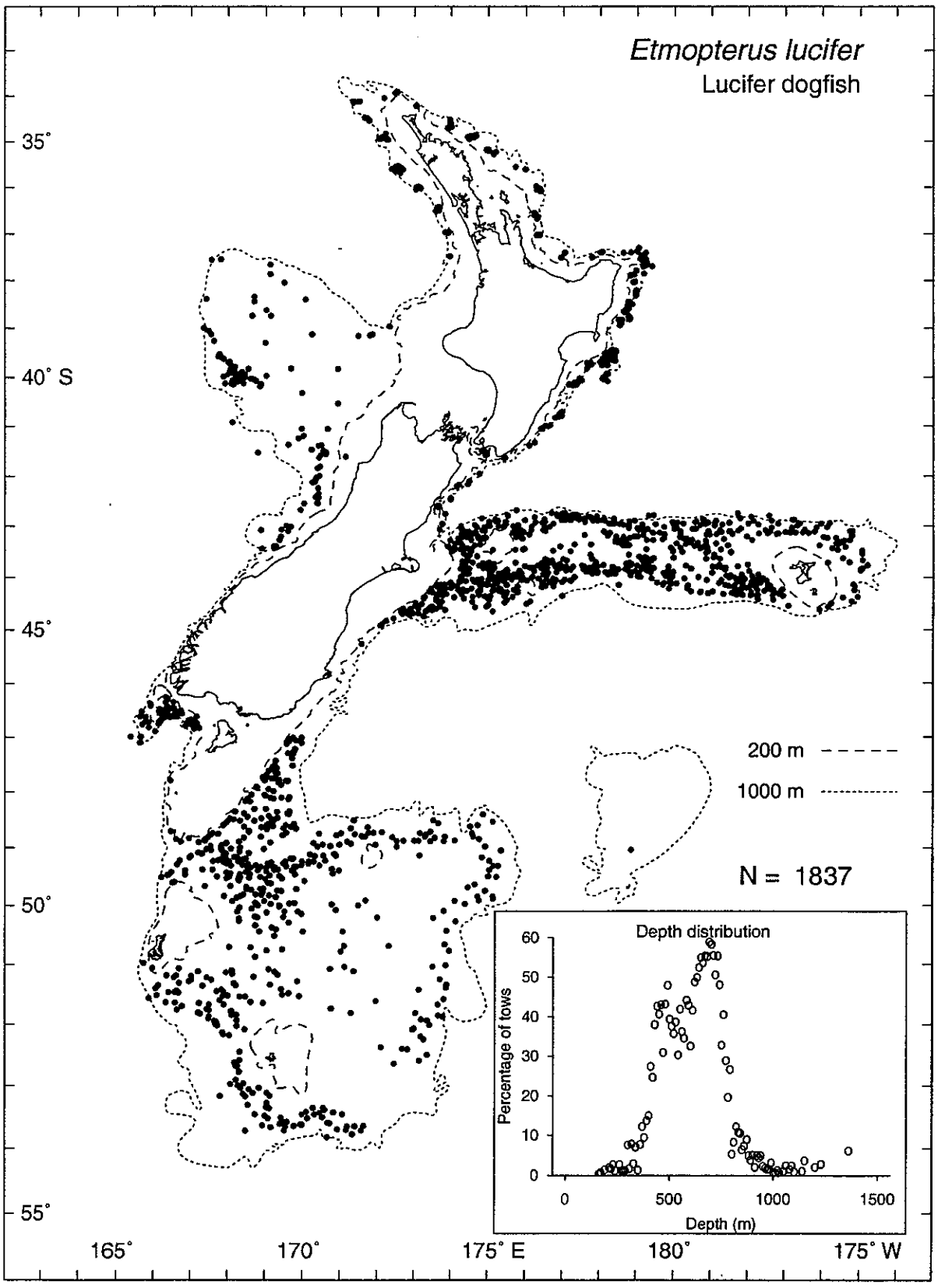
Bigeye cardinal fish refers specifically to *E. lenimen*, but the two species are likely to have been confused.

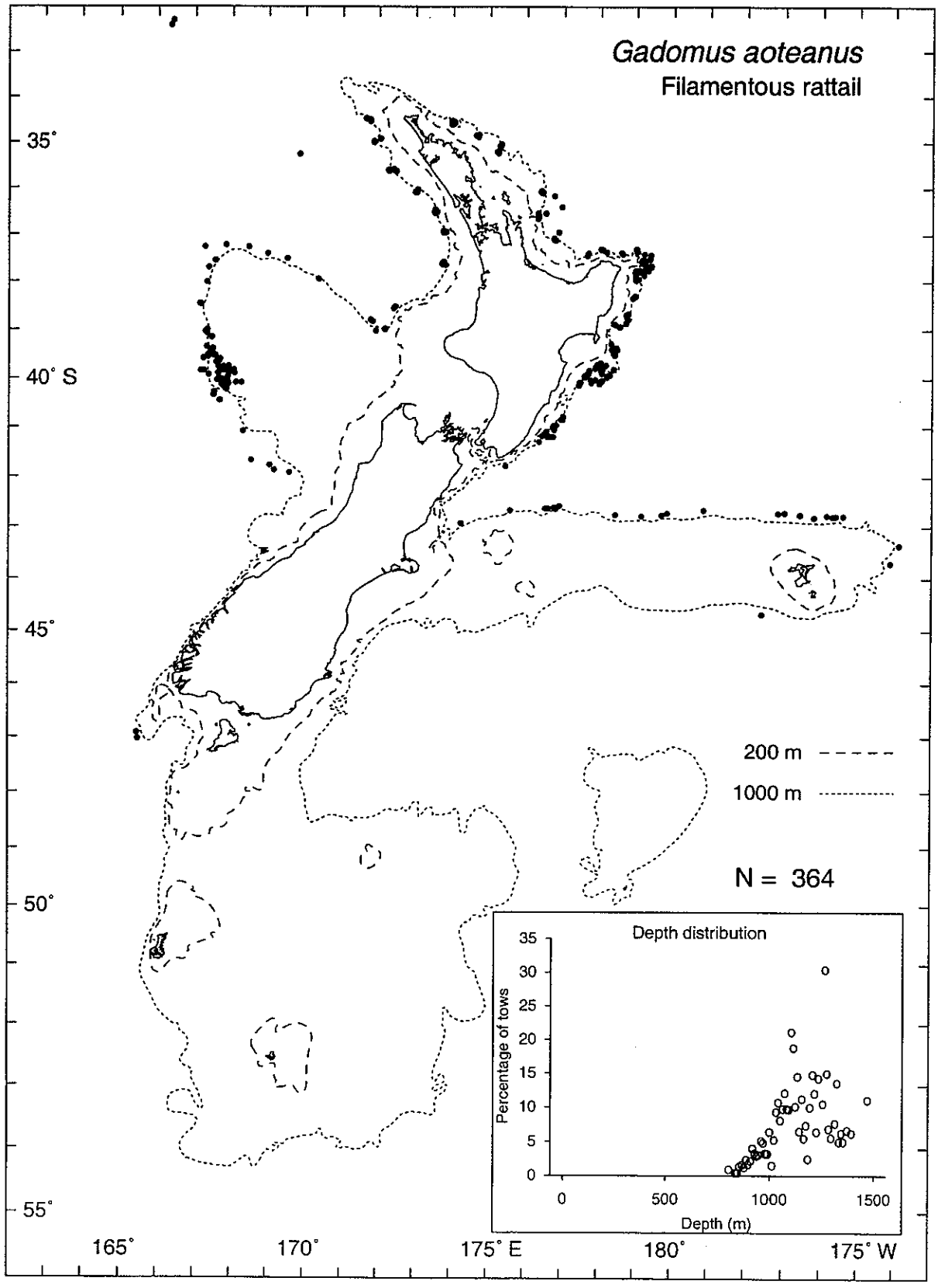

Engraulis australis
Anchovy
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 275
Depth distribution
Percentage of tows
Depth (m)
0
2
4
6
8
10
0
500
1000
1500

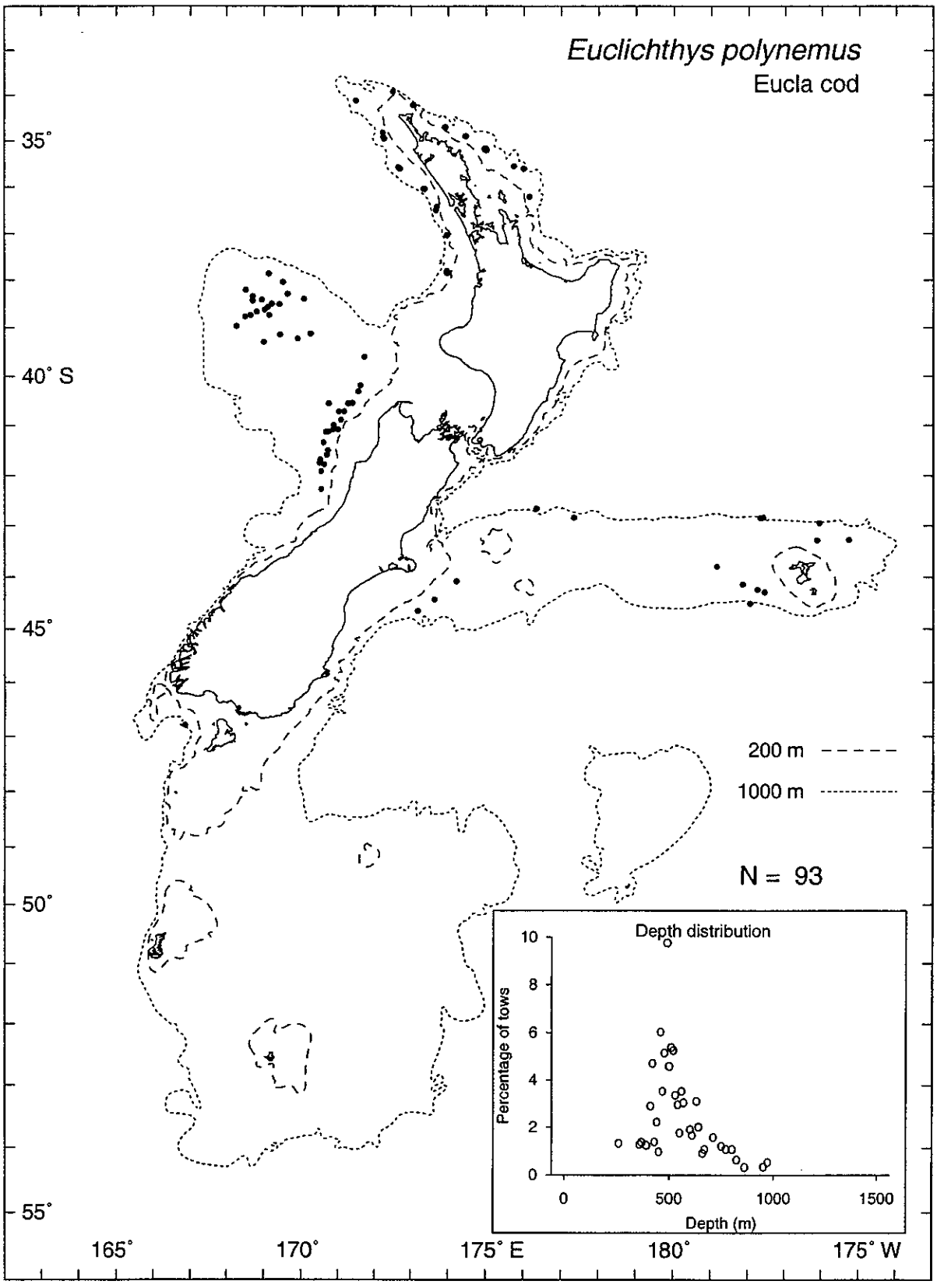

Etmopterus baxteri
Baxter's dogfish
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 5729
Depth distribution
Percentage of tows
100
80
60
40
20
0
0
500
1000
1500
Depth (m)

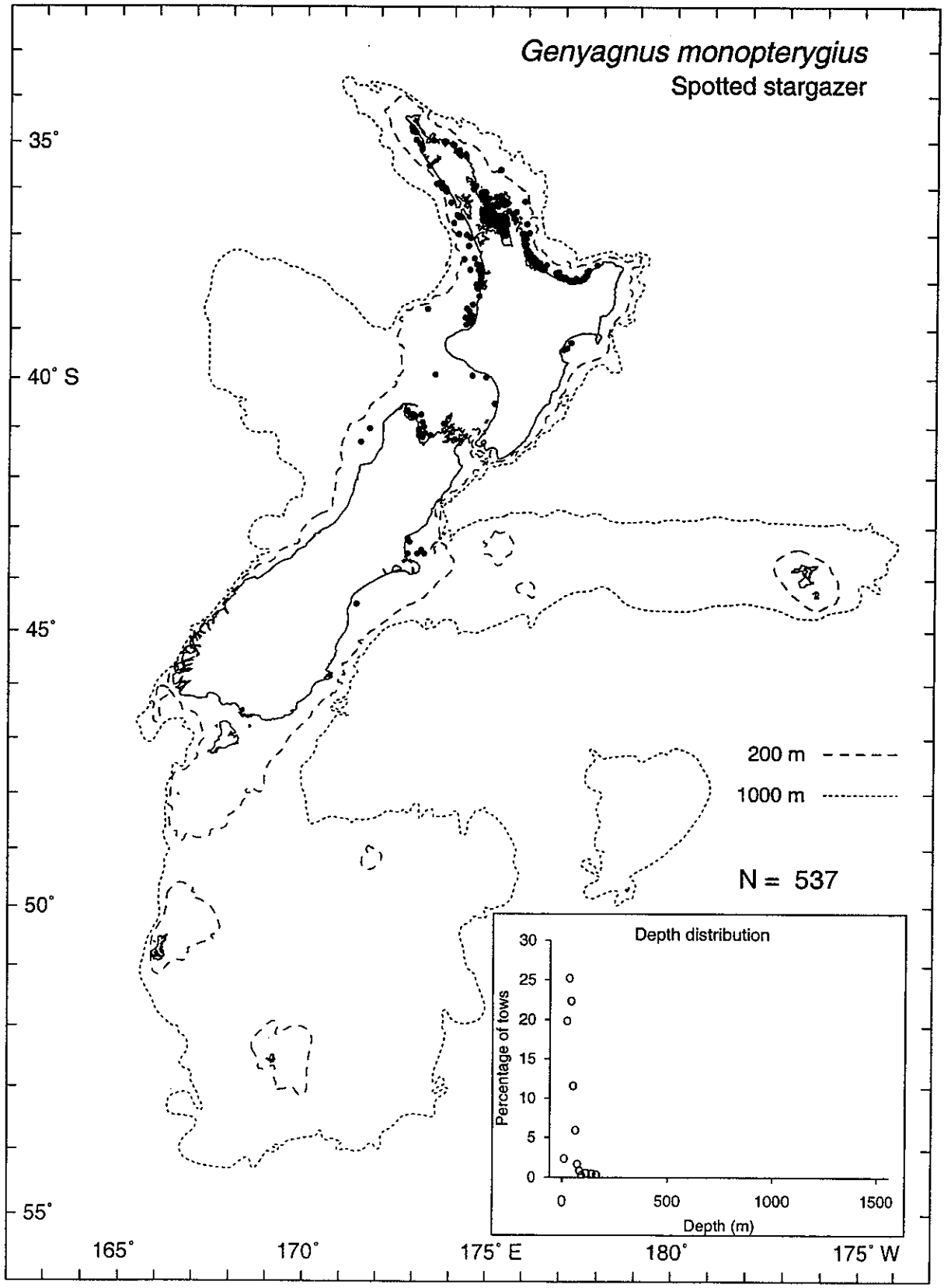

Epigonus telescopus
Black cardinalfish
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 767
Depth distribution
Percentage of tows
0
5
10
15
20
25
0
500
1000
1500
Depth (m)

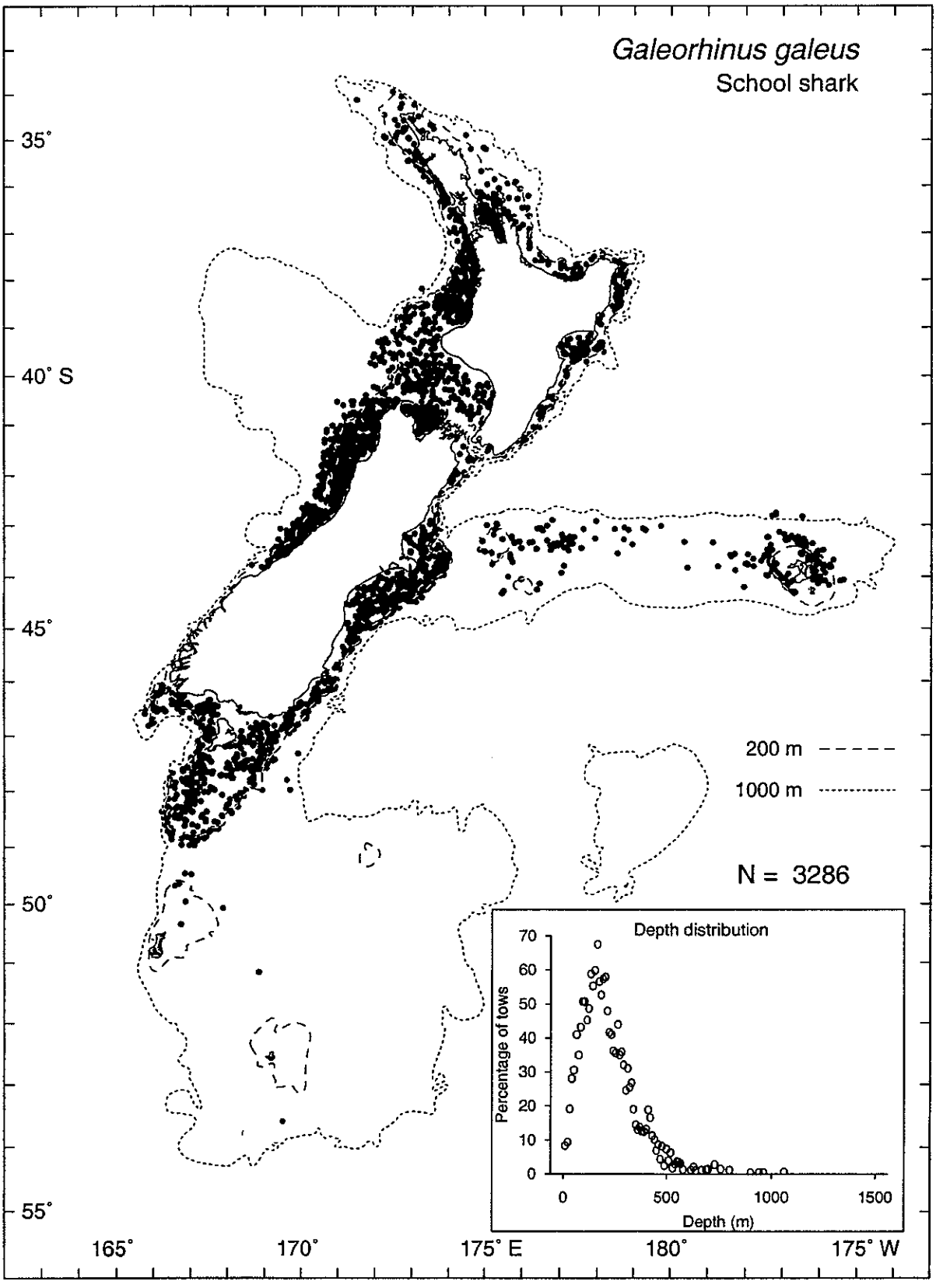

Etmopterus pusillus
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 42
Depth distribution
Percentage of tows
Depth (m)
0
1
2
3
4
5
0
500
1000
1500

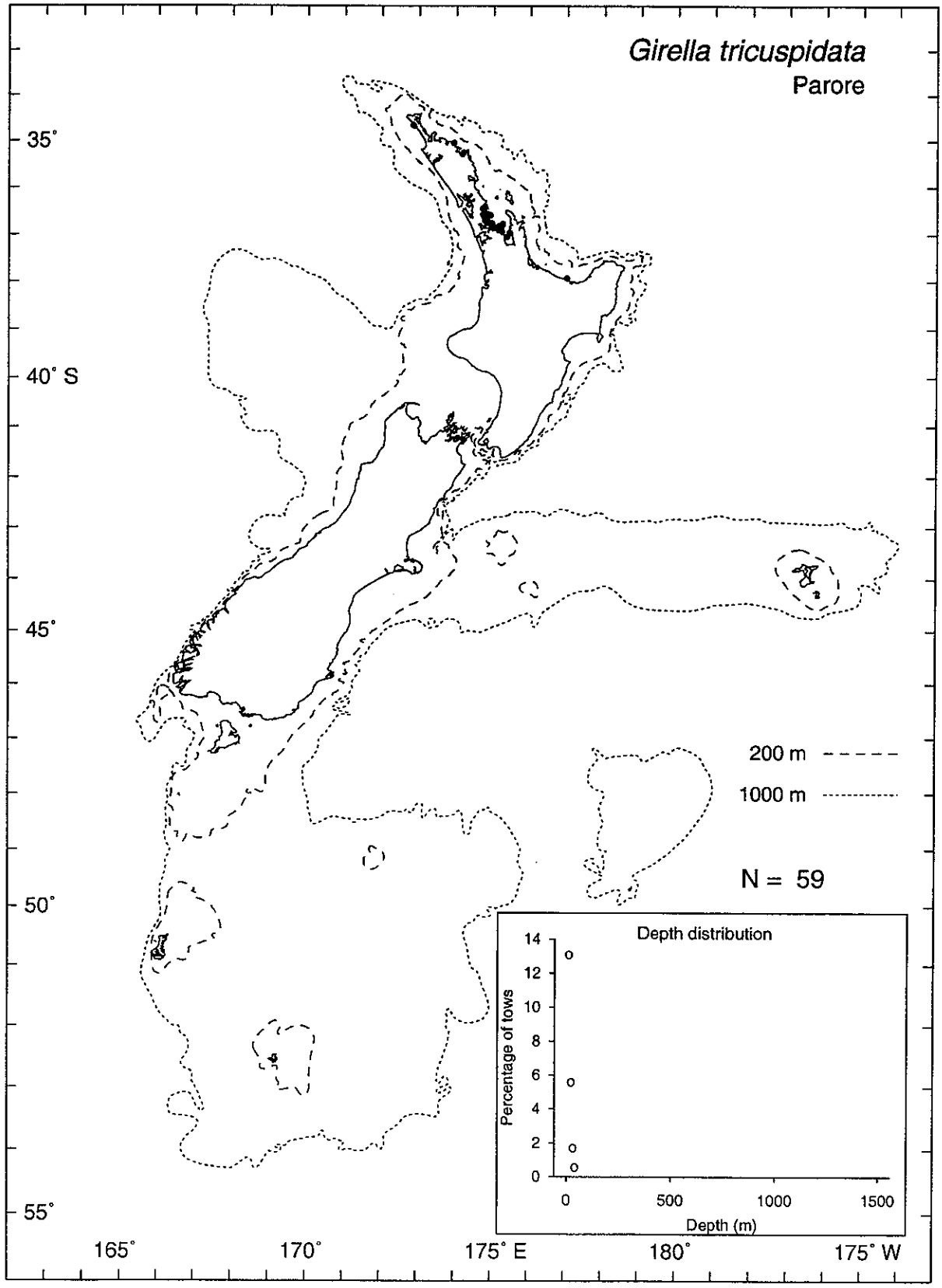

Etmopterus lucifer
Lucifer dogfish
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 1837
Depth distribution
Percentage of tows
0
10
20
30
40
50
60
0
500
1000
1500
Depth (m)

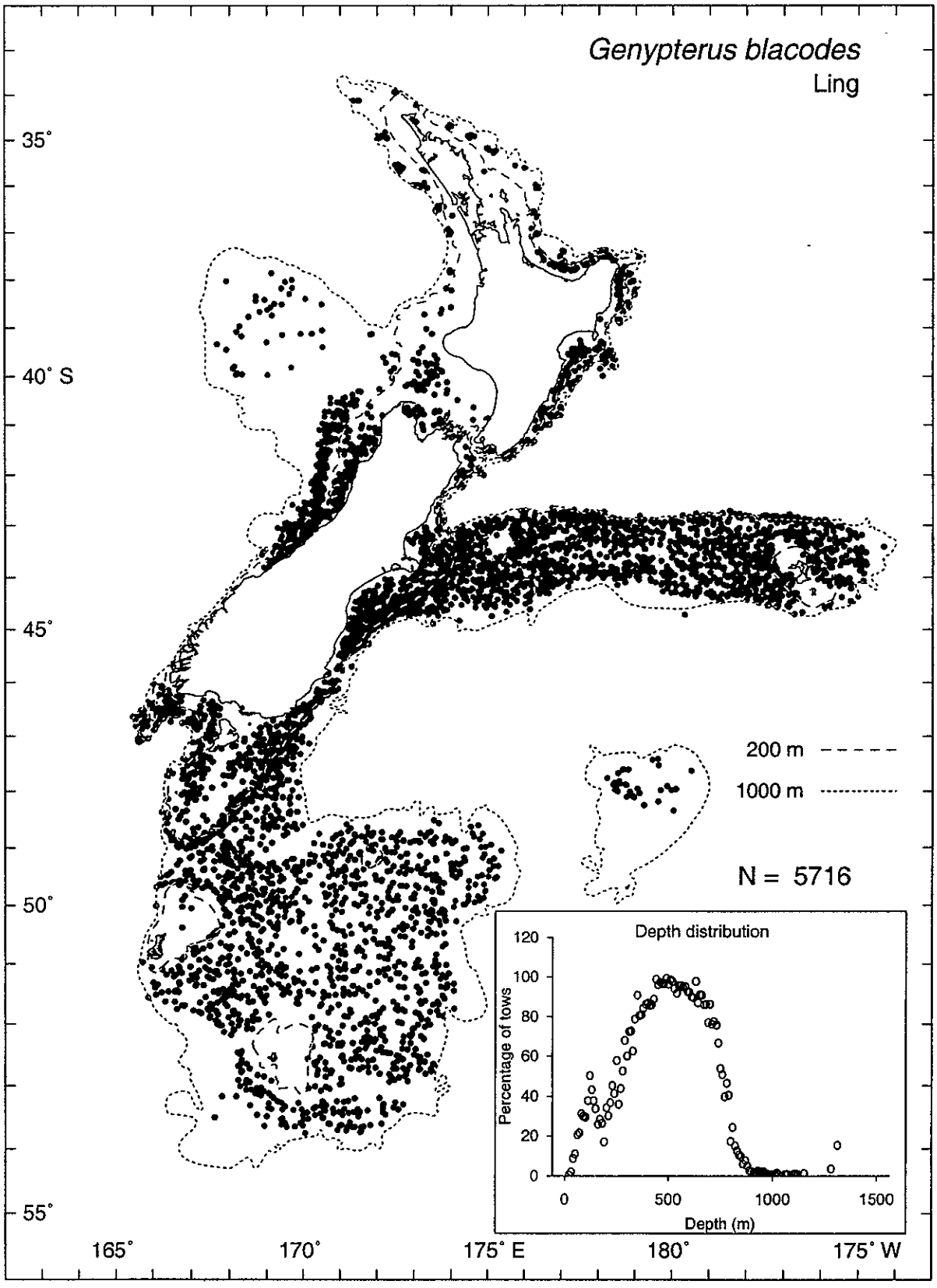

Gadomus aoteanus
Filamentous rattail
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 364
Depth distribution
Percentage of tows
0
5
10
15
20
25
30
35
0
500
1000
1500
Depth (m)

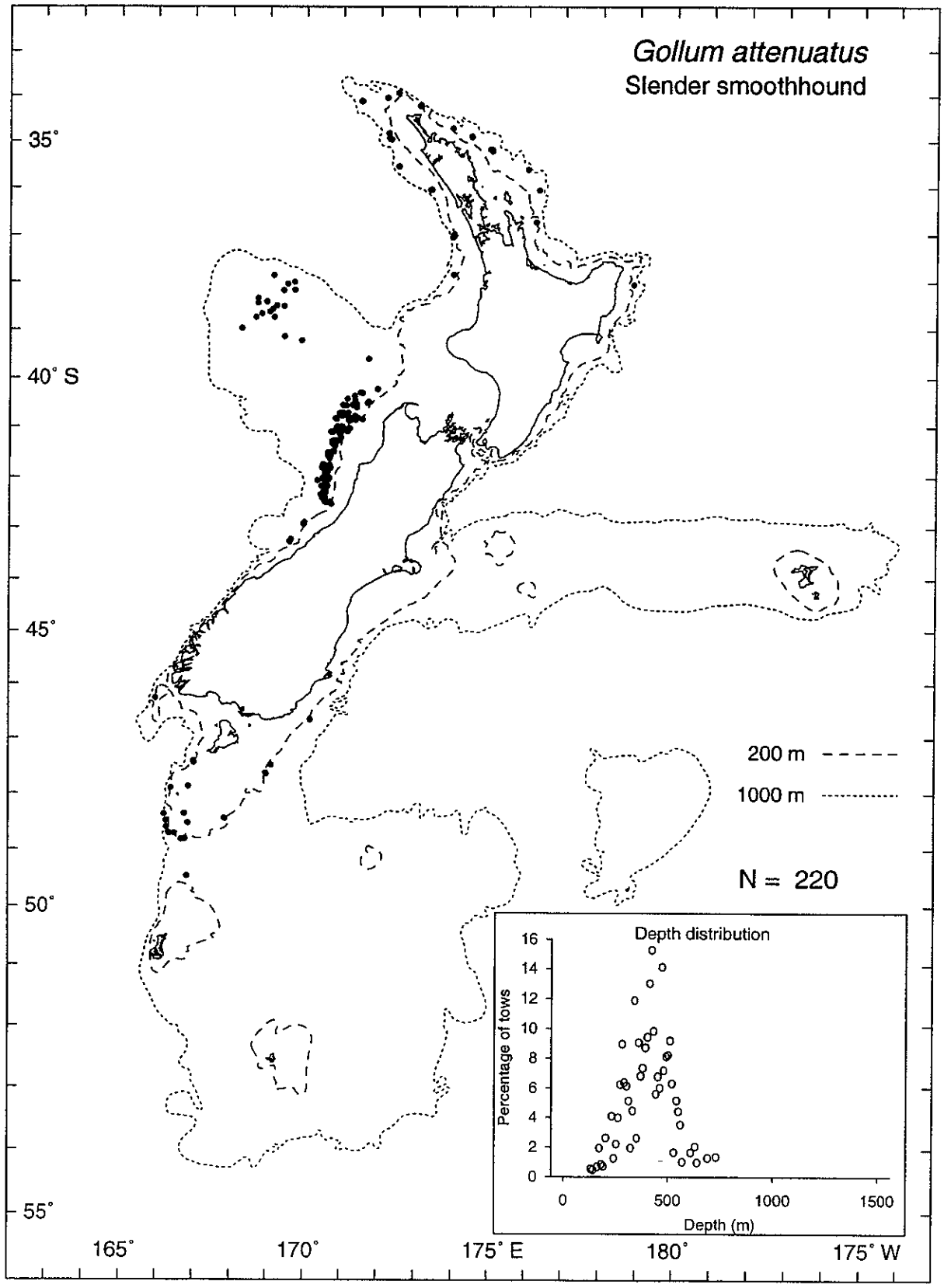

Euclichthys polynemus
Eucla cod
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 93
Depth distribution
Percentage of tows
Depth (m)
0
2
4
6
8
10
0
500
1000
1500

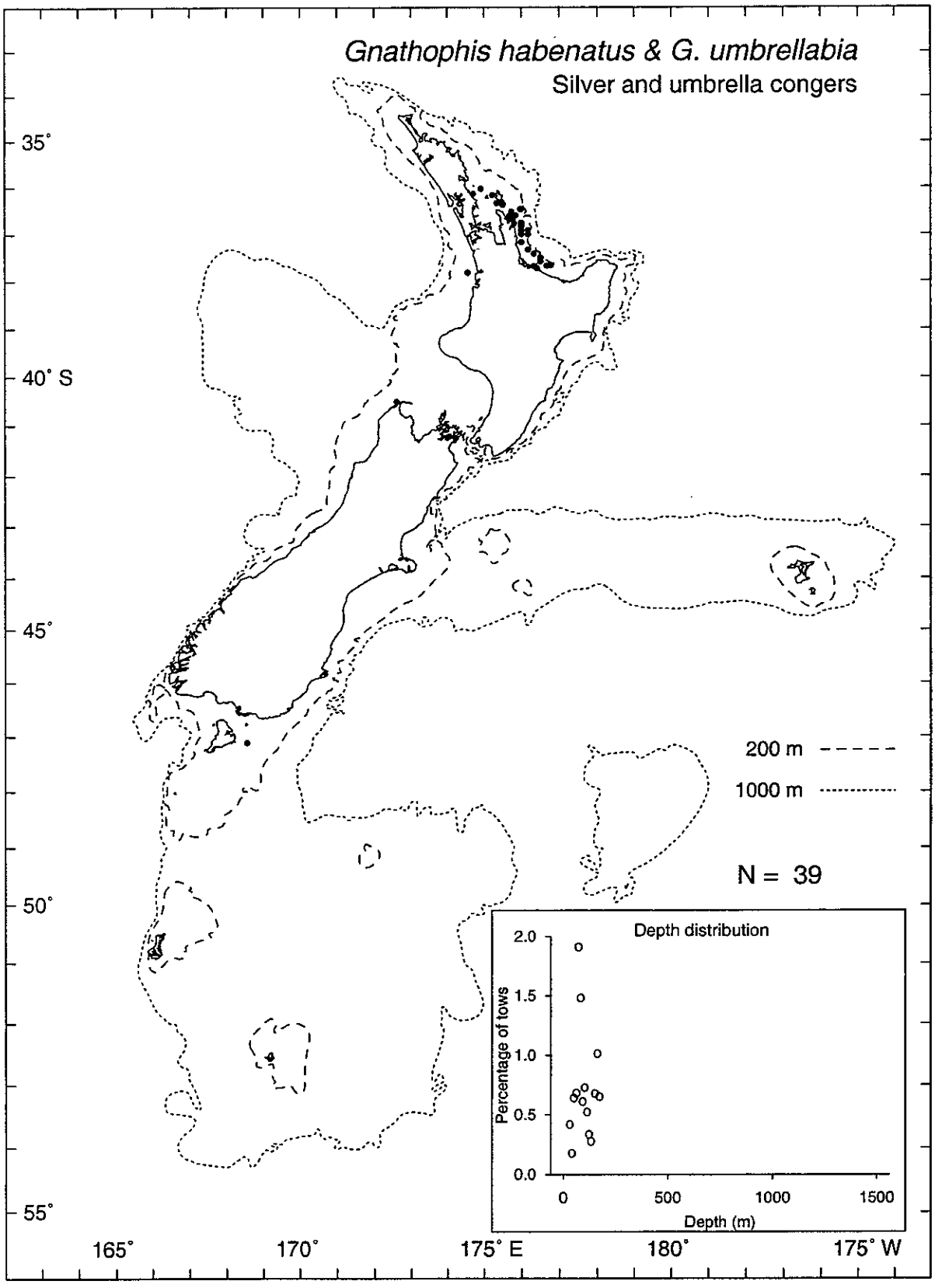

Genyagnus monopterygius
Spotted stargazer
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 537
Depth distribution
Percentage of tows
0
5
10
15
20
25
30
0
500
1000
1500
Depth (m)

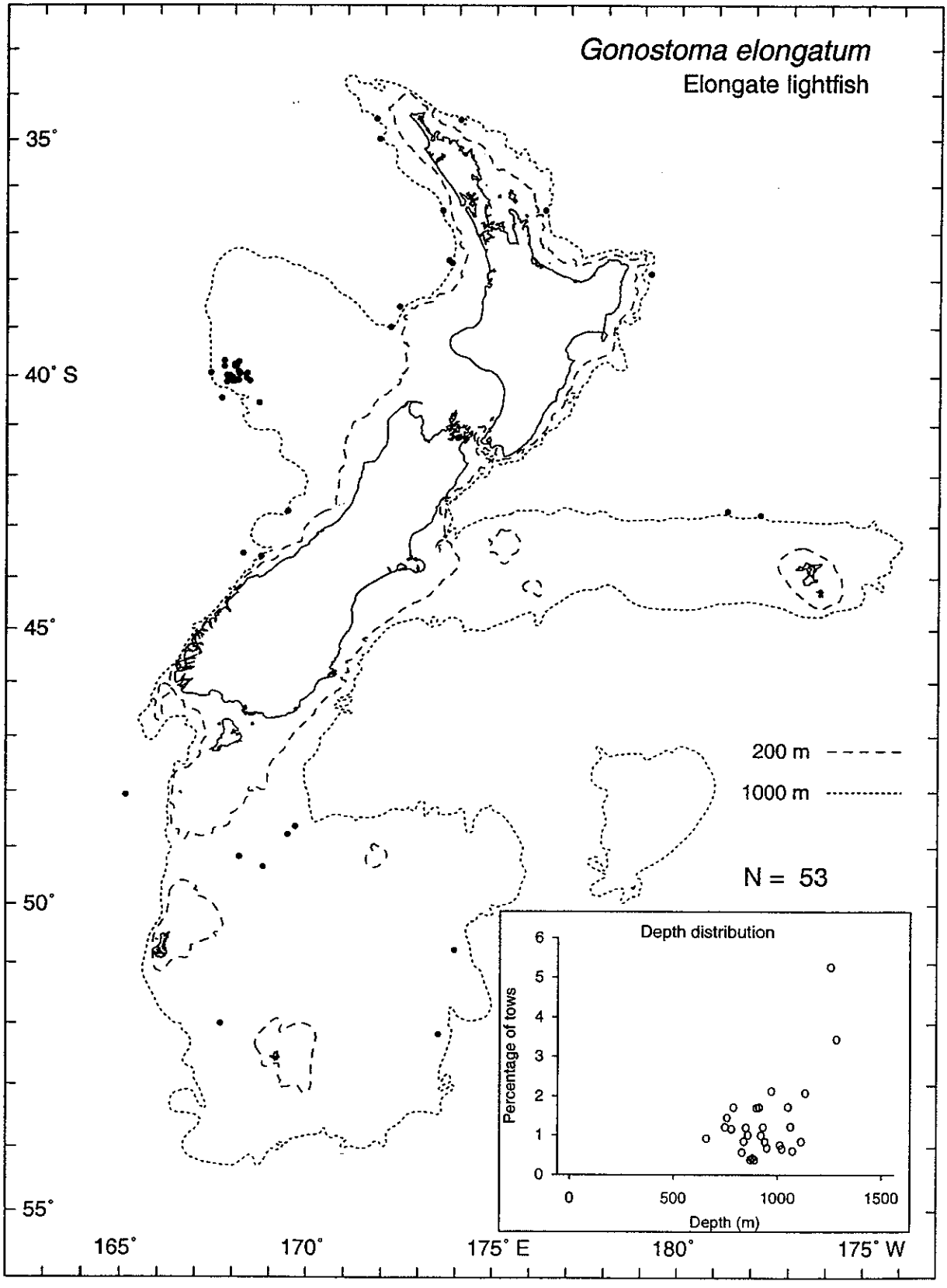

Galeorhinus galeus
School shark
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 3286
Depth distribution
Percentage of tows
Depth (m)
0
10
20
30
40
50
60
70
0
500
1000
1500


Girella tricuspidata
Parore
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 59
Depth distribution
Percentage of tows
0
2
4
6
8
10
12
14
0
500
1000
1500
Depth (m)

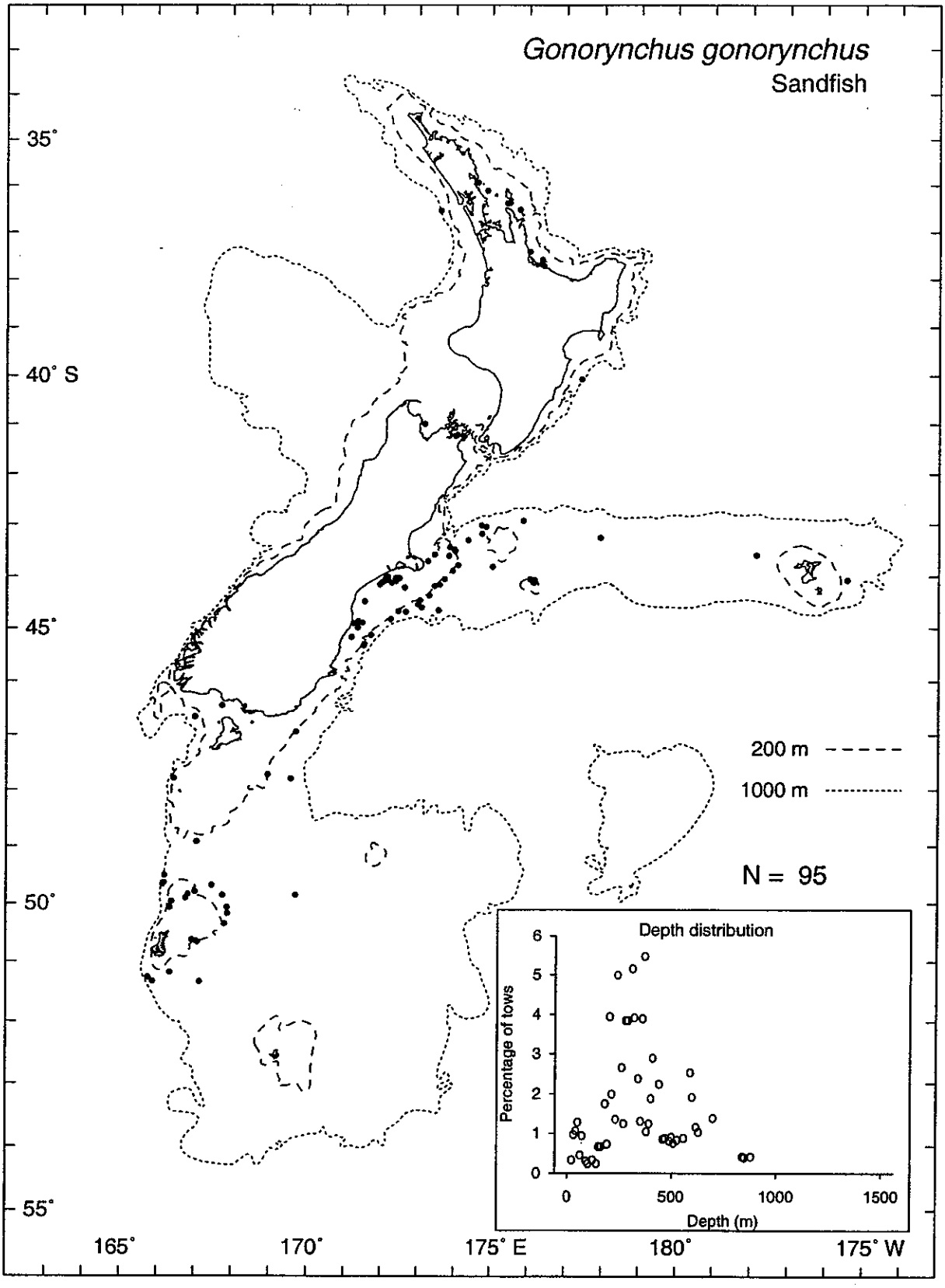

Genypterus blacodes
Ling
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 5716
Depth distribution
Percentage of tows
Depth (m)
0
20
40
60
80
100
120
0
500
1000
1500


Gollum attenuatus
Slender smoothhound
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 220
Depth distribution
Percentage of tows
Depth (m)
0
2
4
6
8
10
12
14
16
0
500
1000
1500

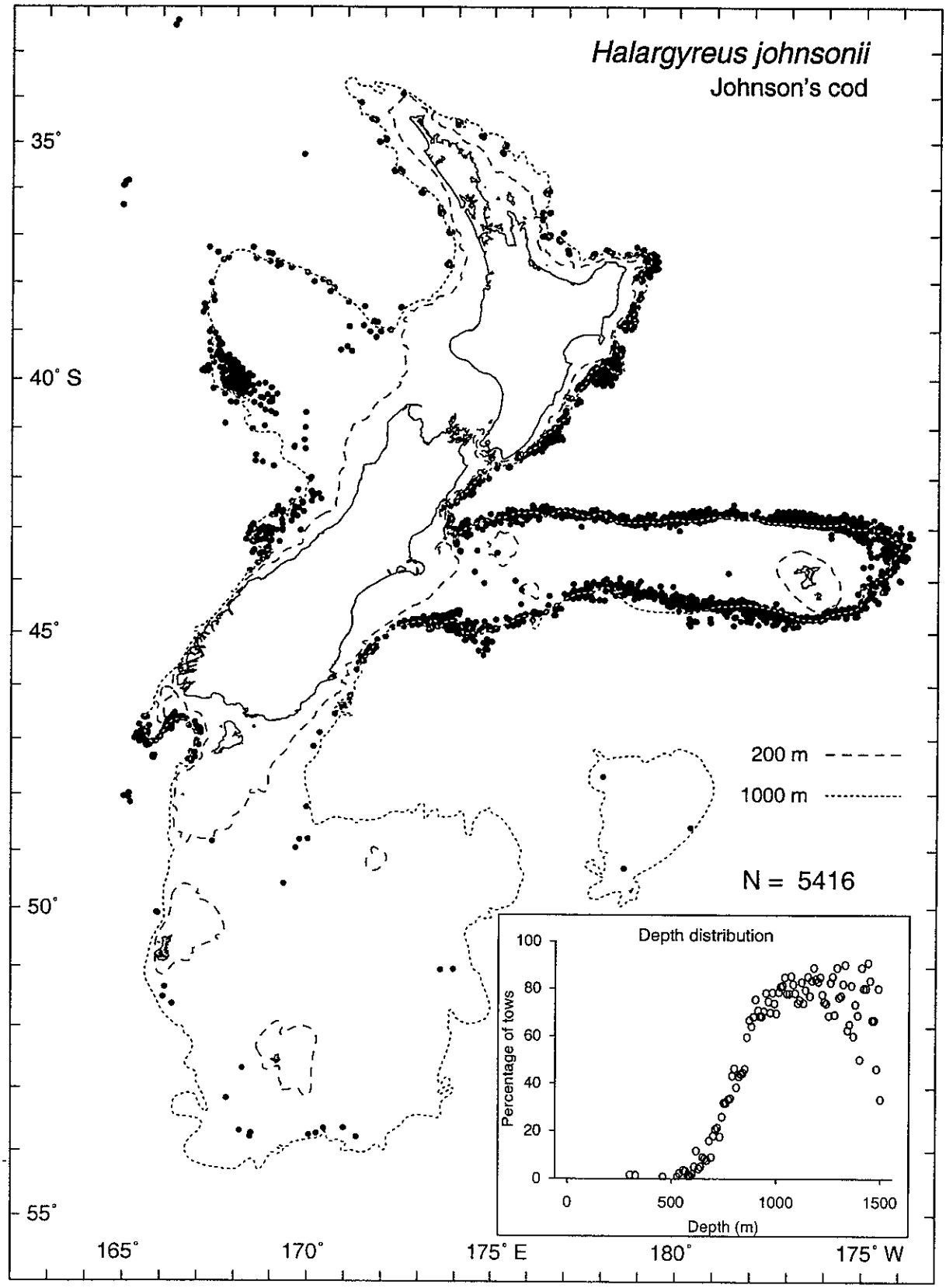

Gnathophis habenatus & G. umbrellabia
Silver and umbrella congers
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 39
Depth distribution
Percentage of tows
2.0
1.5
1.0
0.5
0.0
0
500
1000
1500
Depth (m)

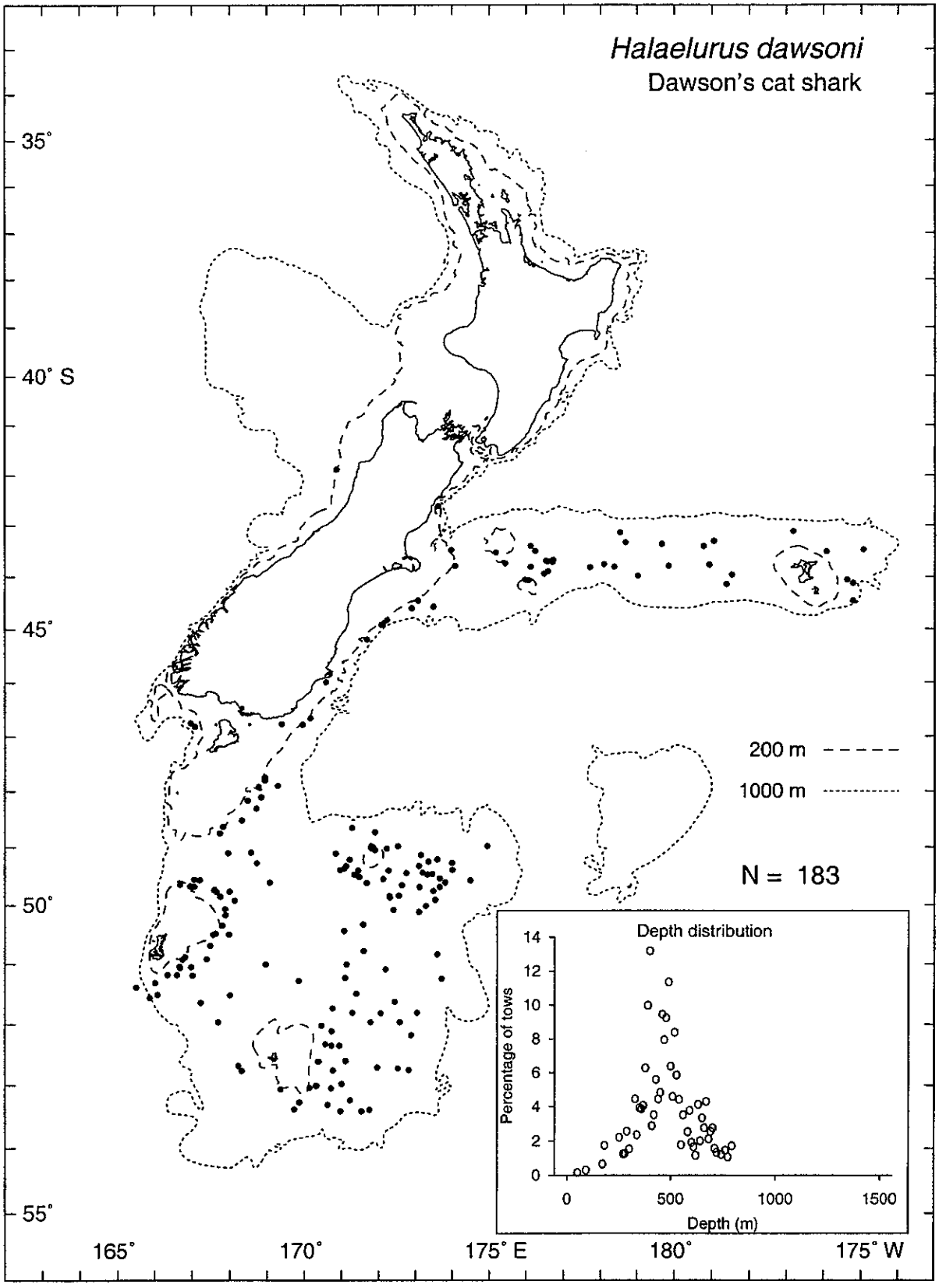


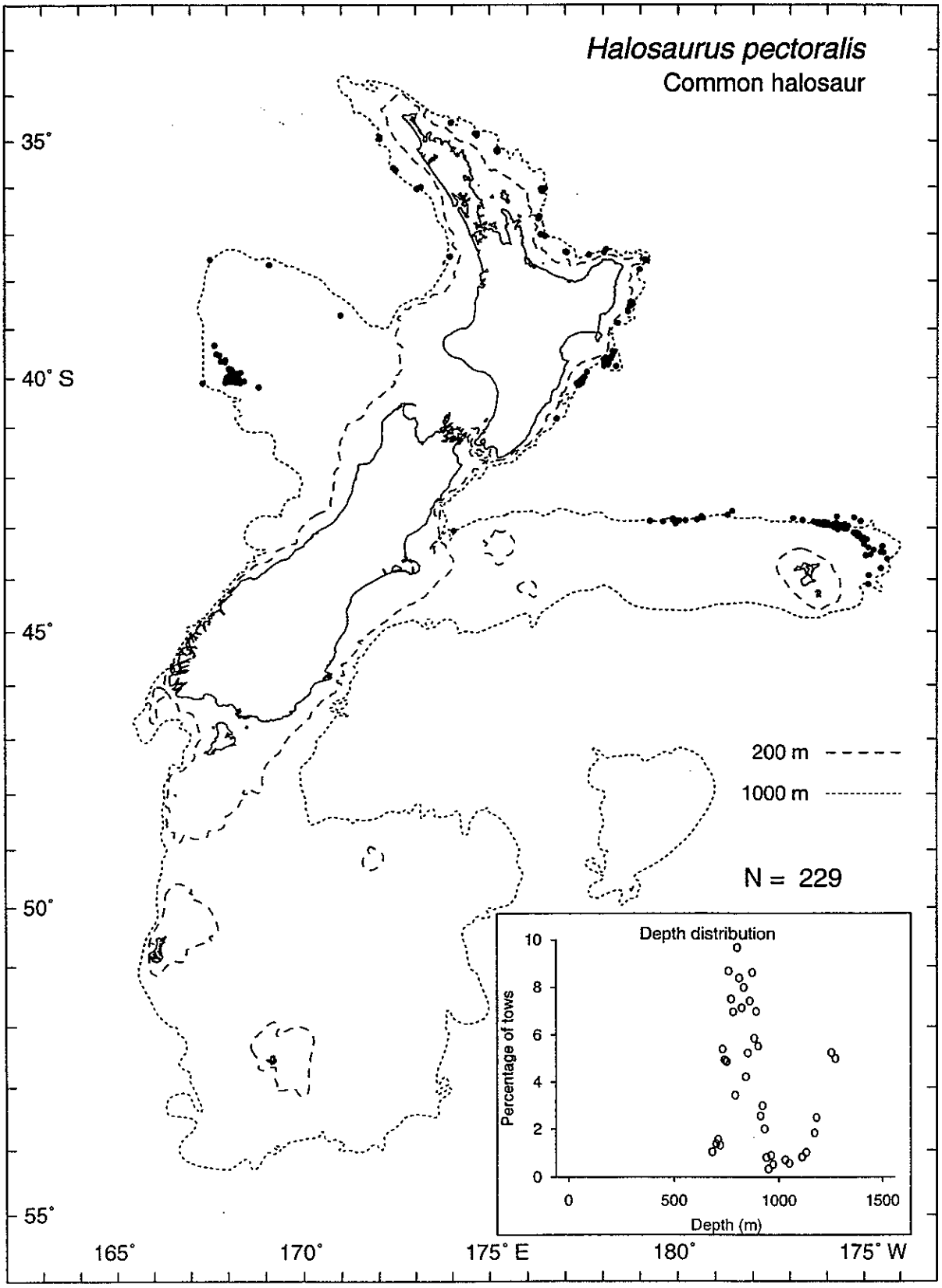
May include some *Gonostoma bathyphilum* and *G. ebelingi*.



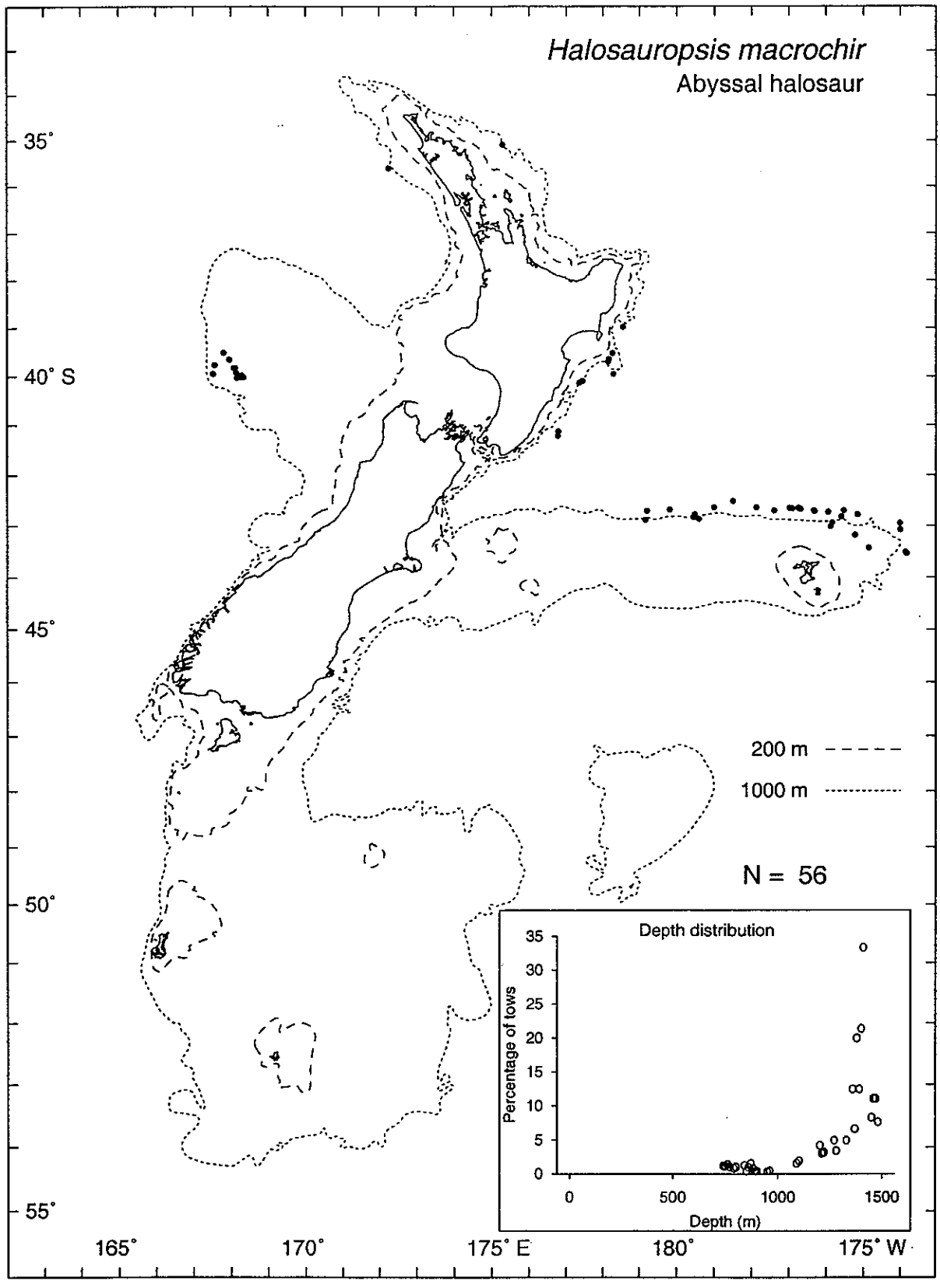
May include another species of *Gonorynchus*.


Halargyreus johnsonii
Johnson's cod
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 5416
Depth distribution
Percentage of tows
100
80
60
40
20
0
0
500
1000
1500
Depth (m)

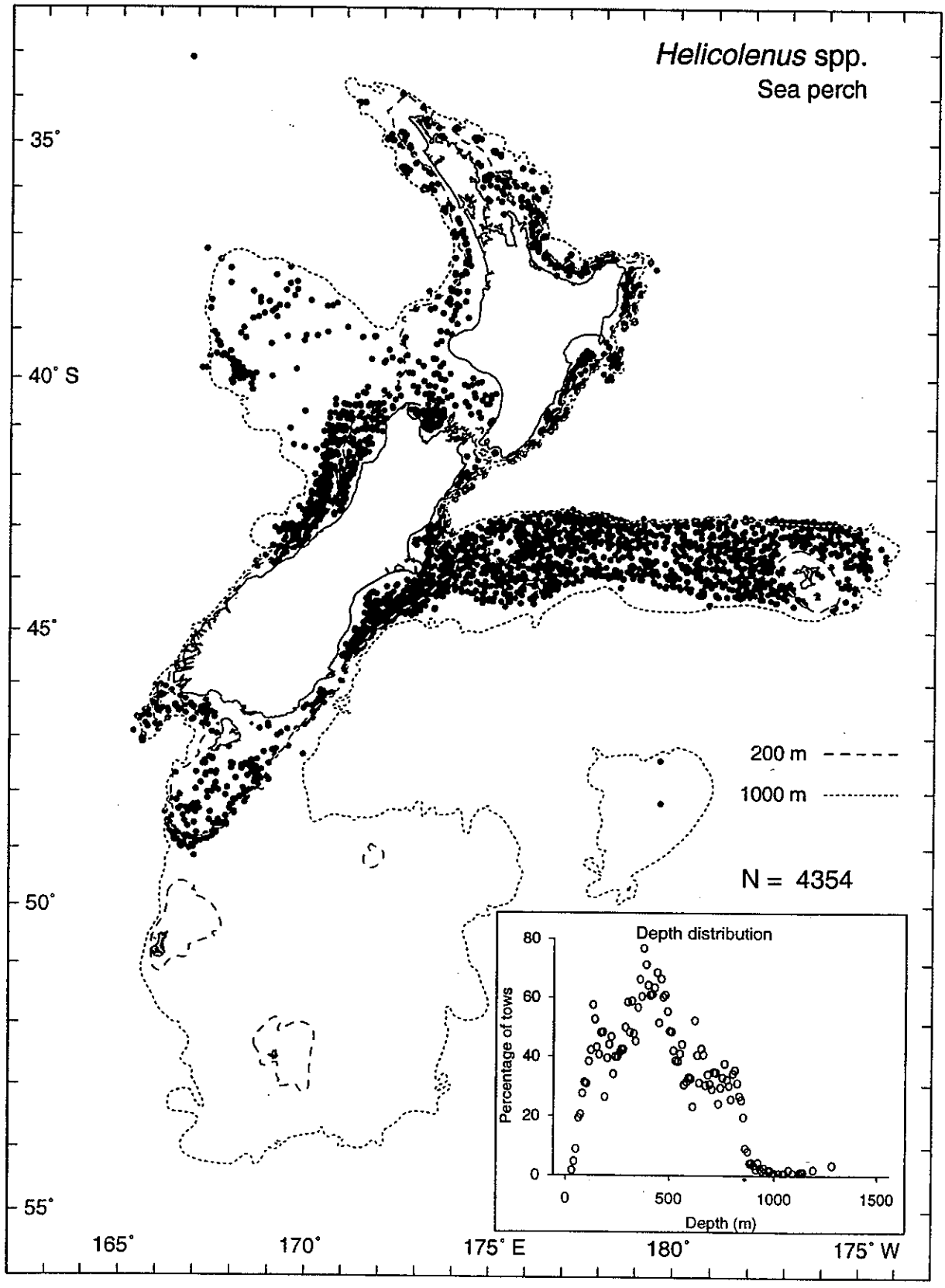

Halaelurus dawsoni
Dawson's cat shark
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 183
Depth distribution
Percentage of tows
Depth (m)
0
2
4
6
8
10
12
14
0
500
1000
1500



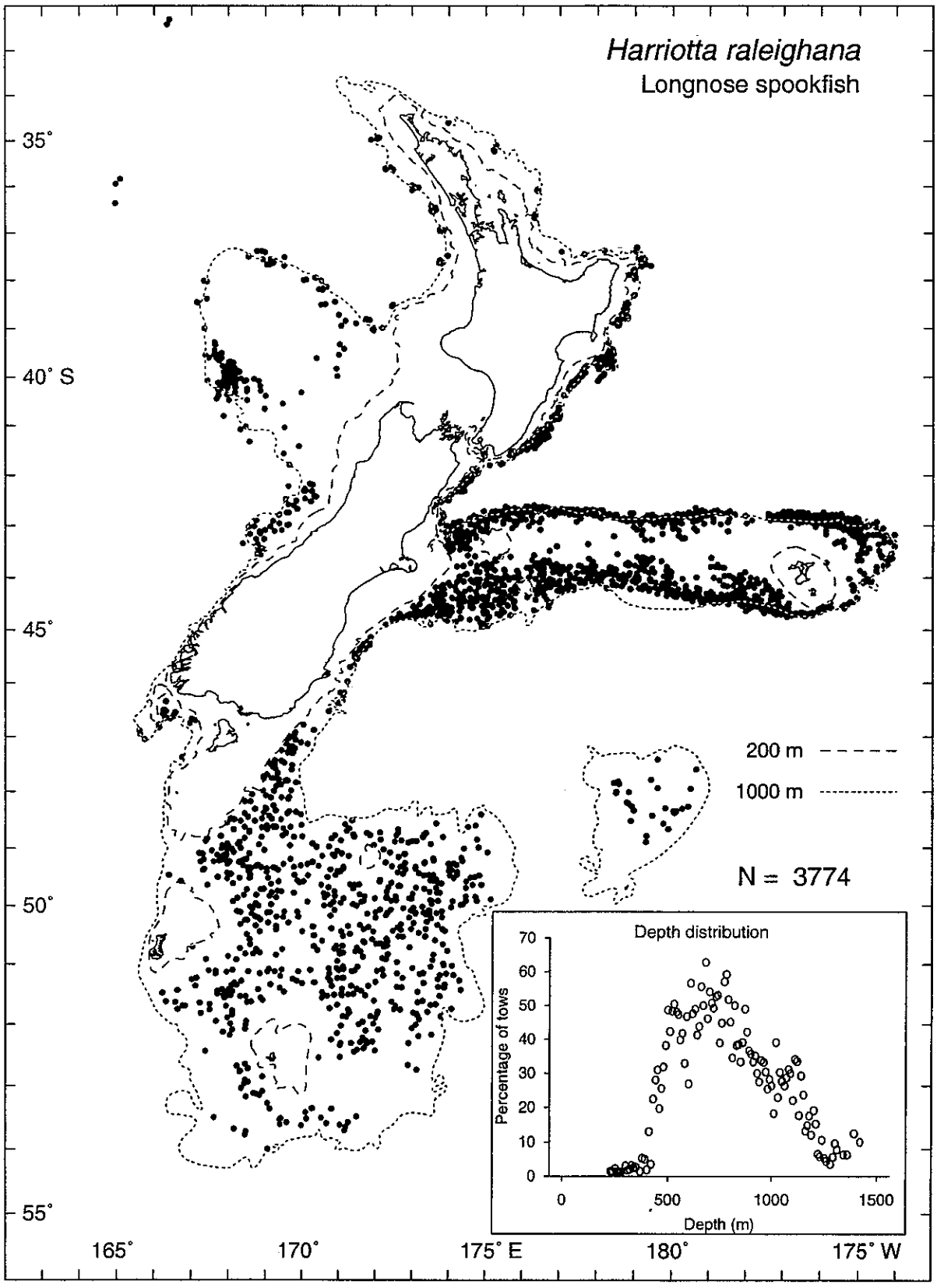
Records deeper than 1000 m may be *Halosauropsis macrochir.*

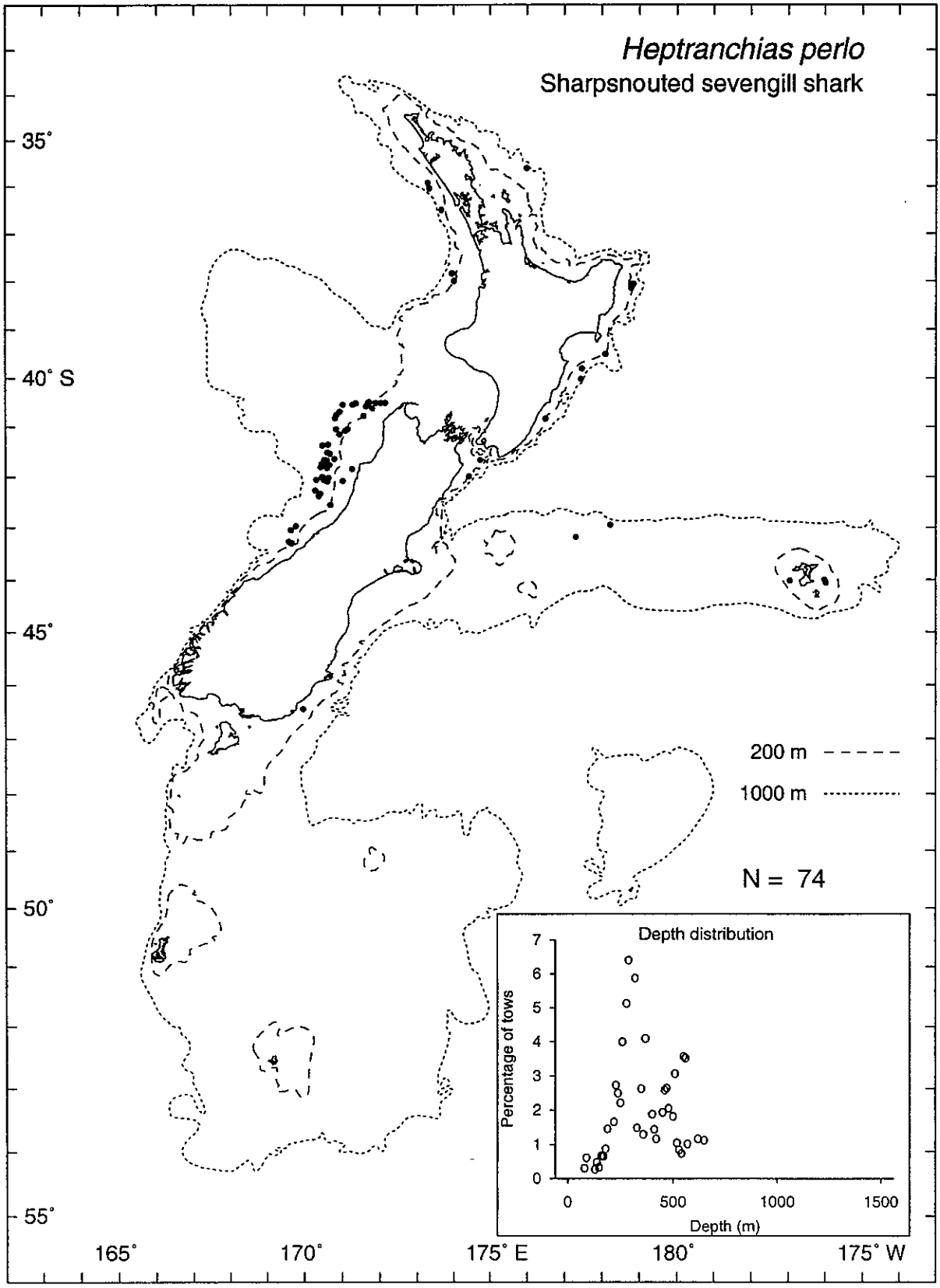


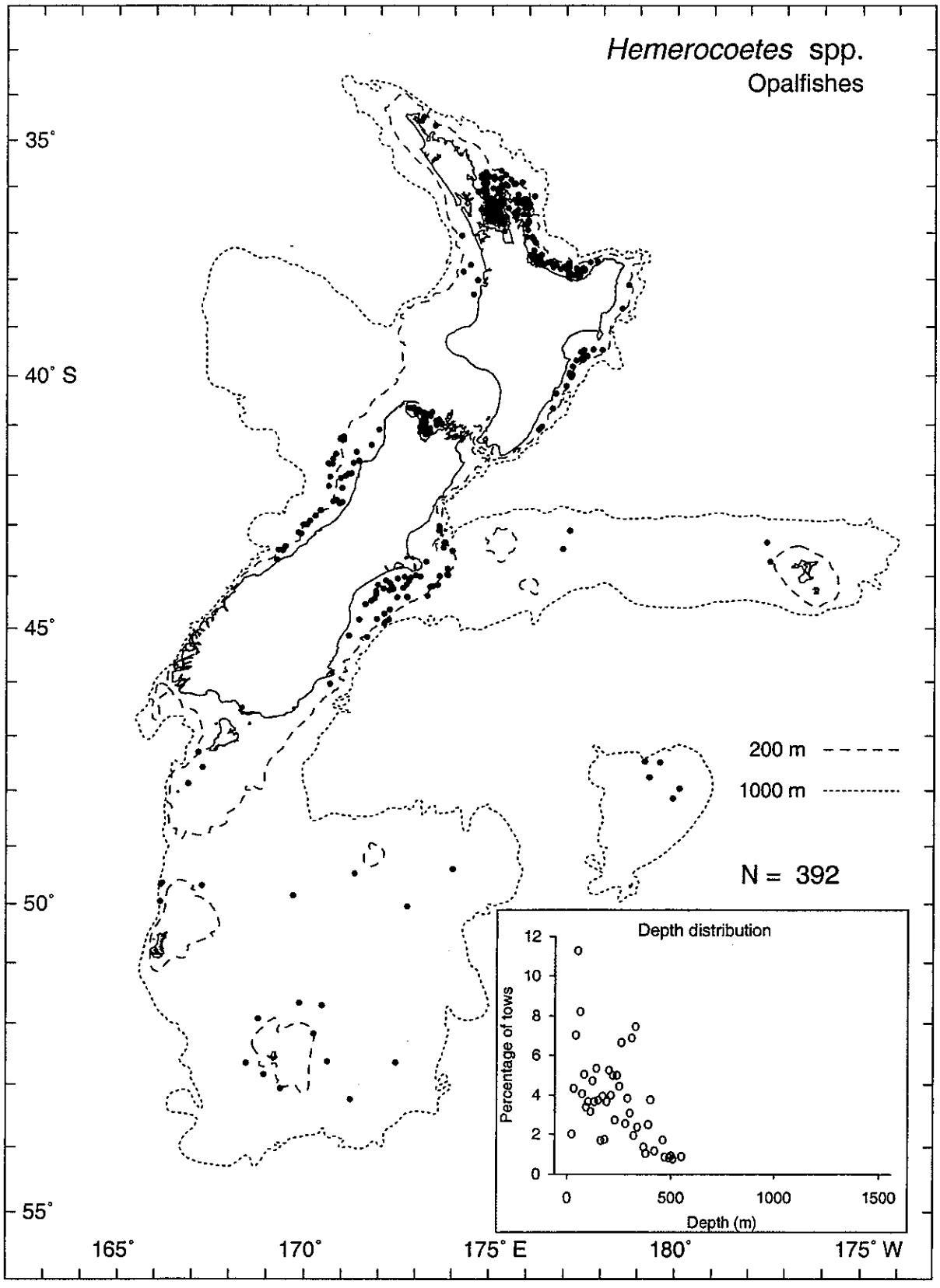
Records shallower than 1000 m may be *Halosaurus pectoralis*.

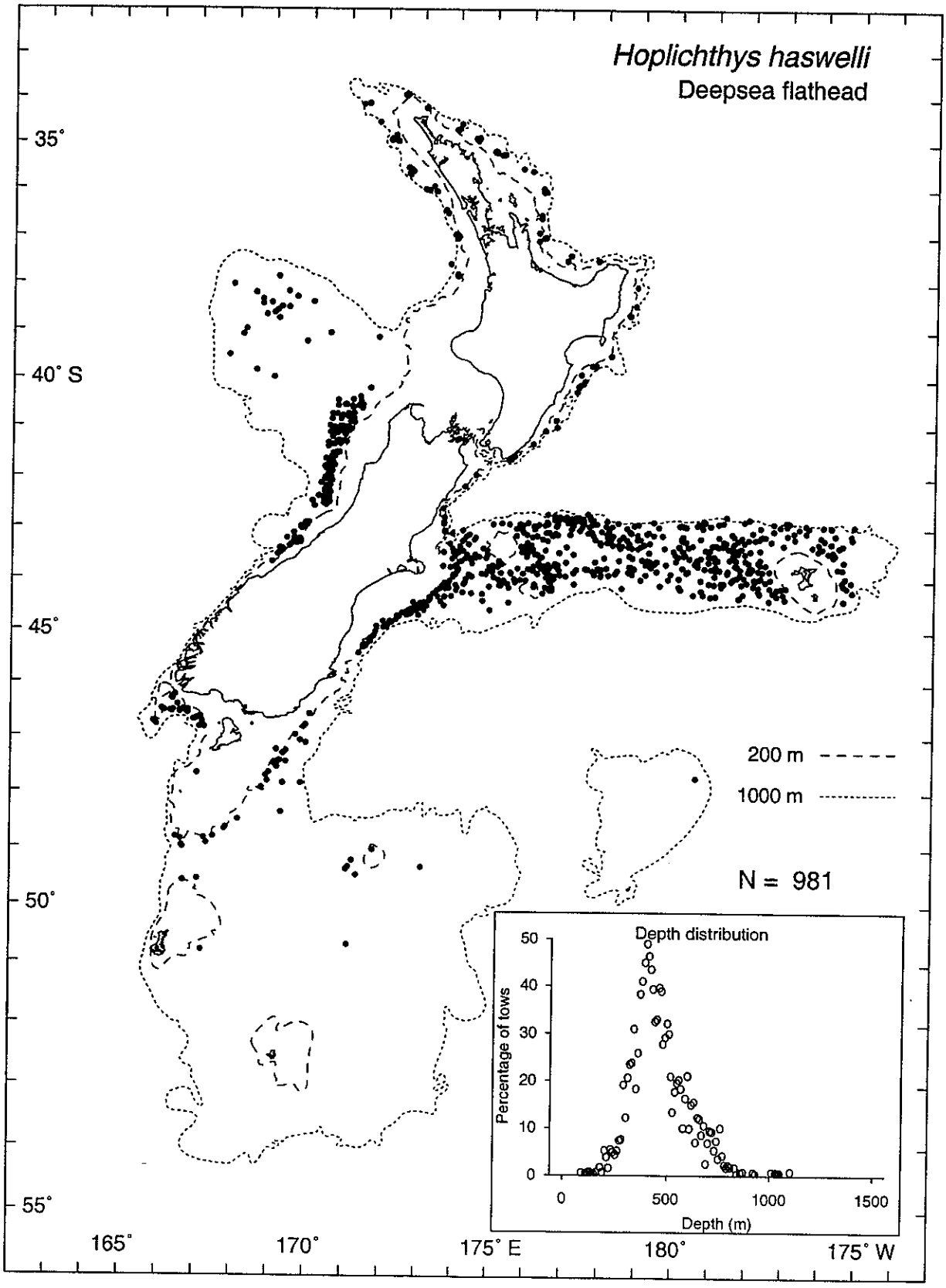


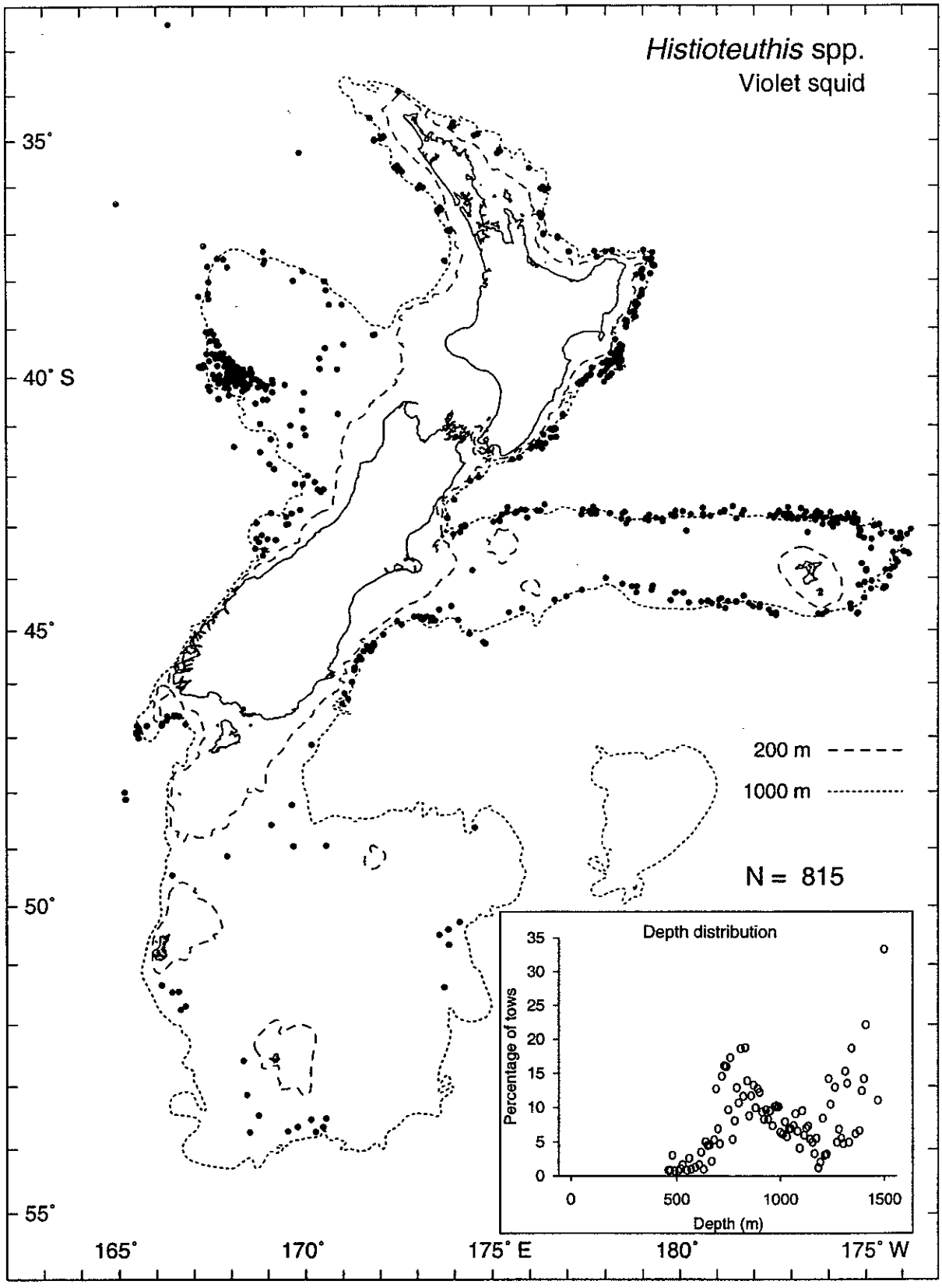
Records deeper than 800 m may include some *Trachyscorpia capensis* and records shallower than 200 may include some *Scorpaena* spp.


Harriotta raleighana
Longnose spookfish
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 3774
Depth distribution
Percentage of tows
Depth (m)
0
10
20
30
40
50
60
70
0
500
1000
1500

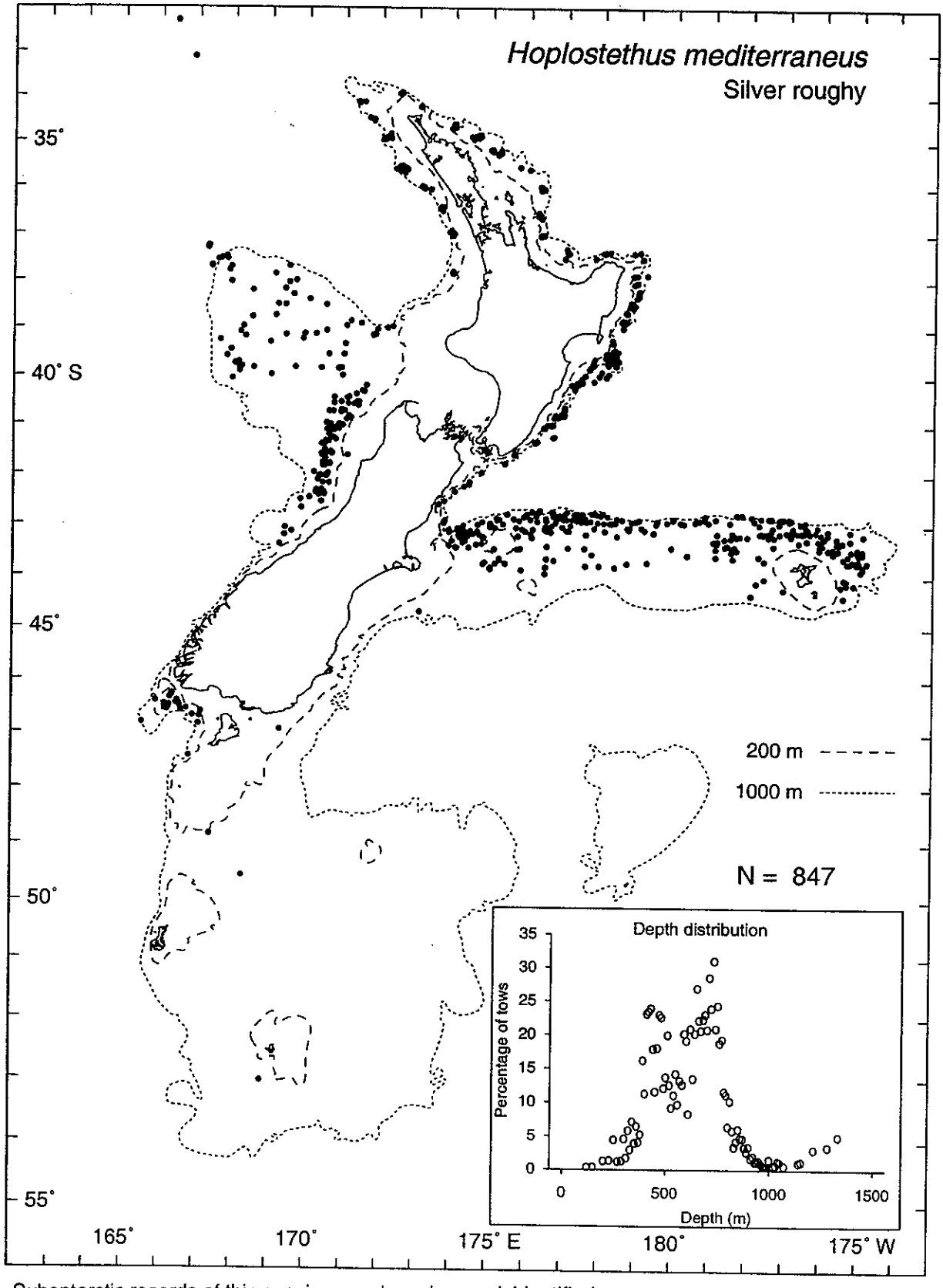

Heptranchias perlo
Sharpsnouted sevengill shark
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 74
Depth distribution
Percentage of tows
Depth (m)
0
500
1000
1500
1
2
3
4
5
6
7


Hemerocoetes spp.
Opalfishes
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 392
Depth distribution
Percentage of tows
0
2
4
6
8
10
12
0
500
1000
1500
Depth (m)

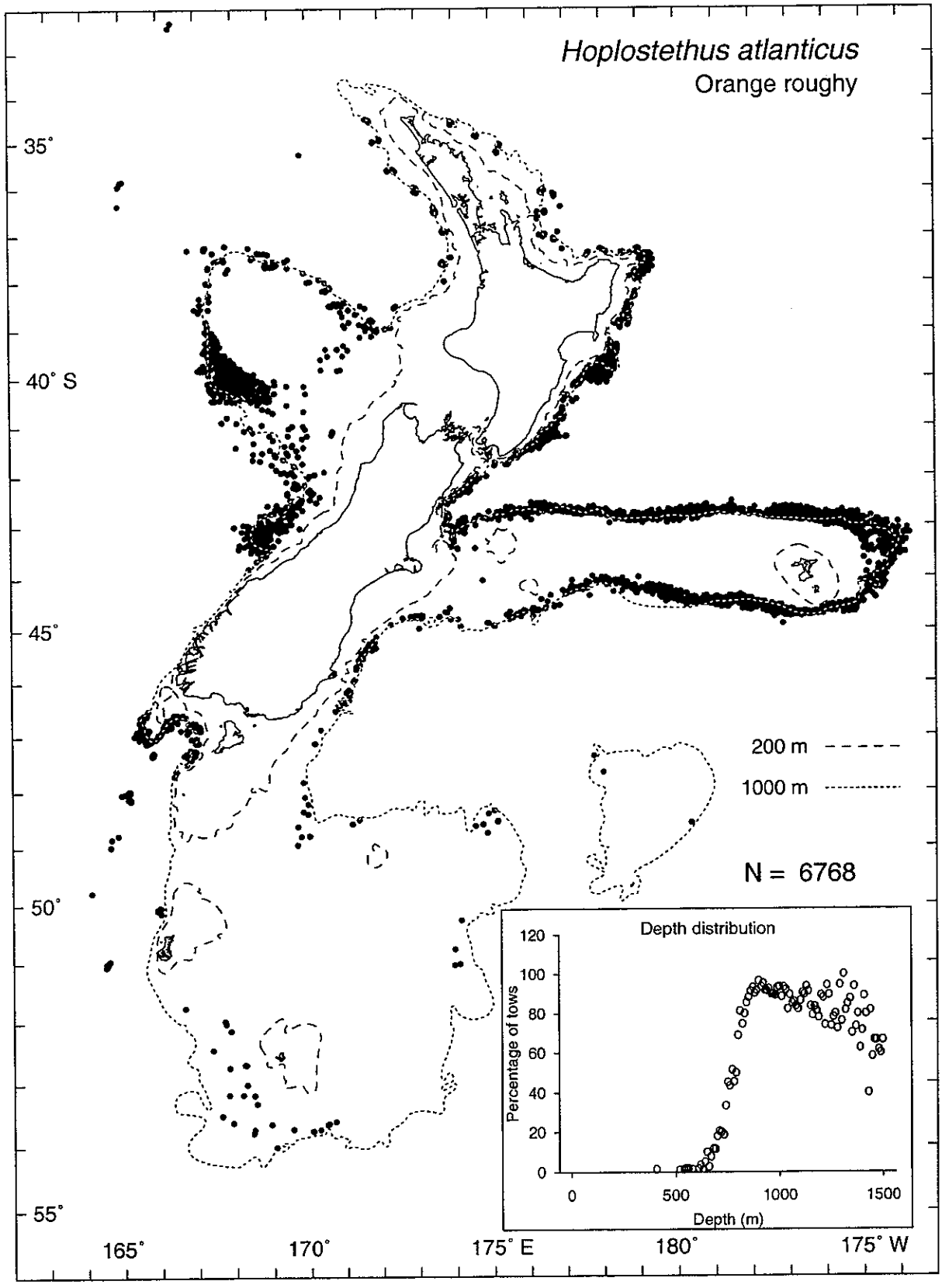

Hoplichthys haswelli
Deepsea flathead
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 981
Depth distribution
Percentage of tows
0
10
20
30
40
50
0
500
1000
1500
Depth (m)

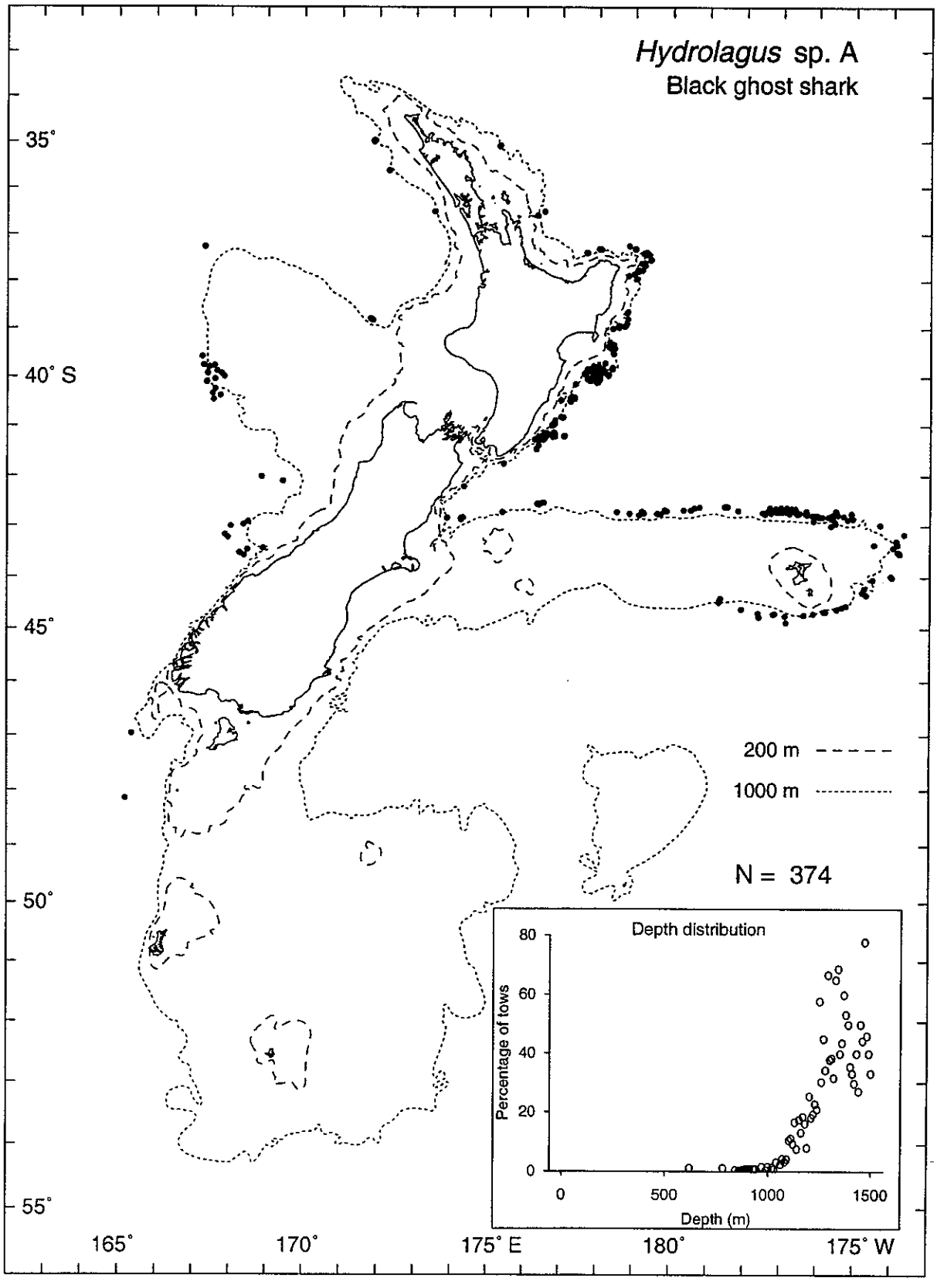


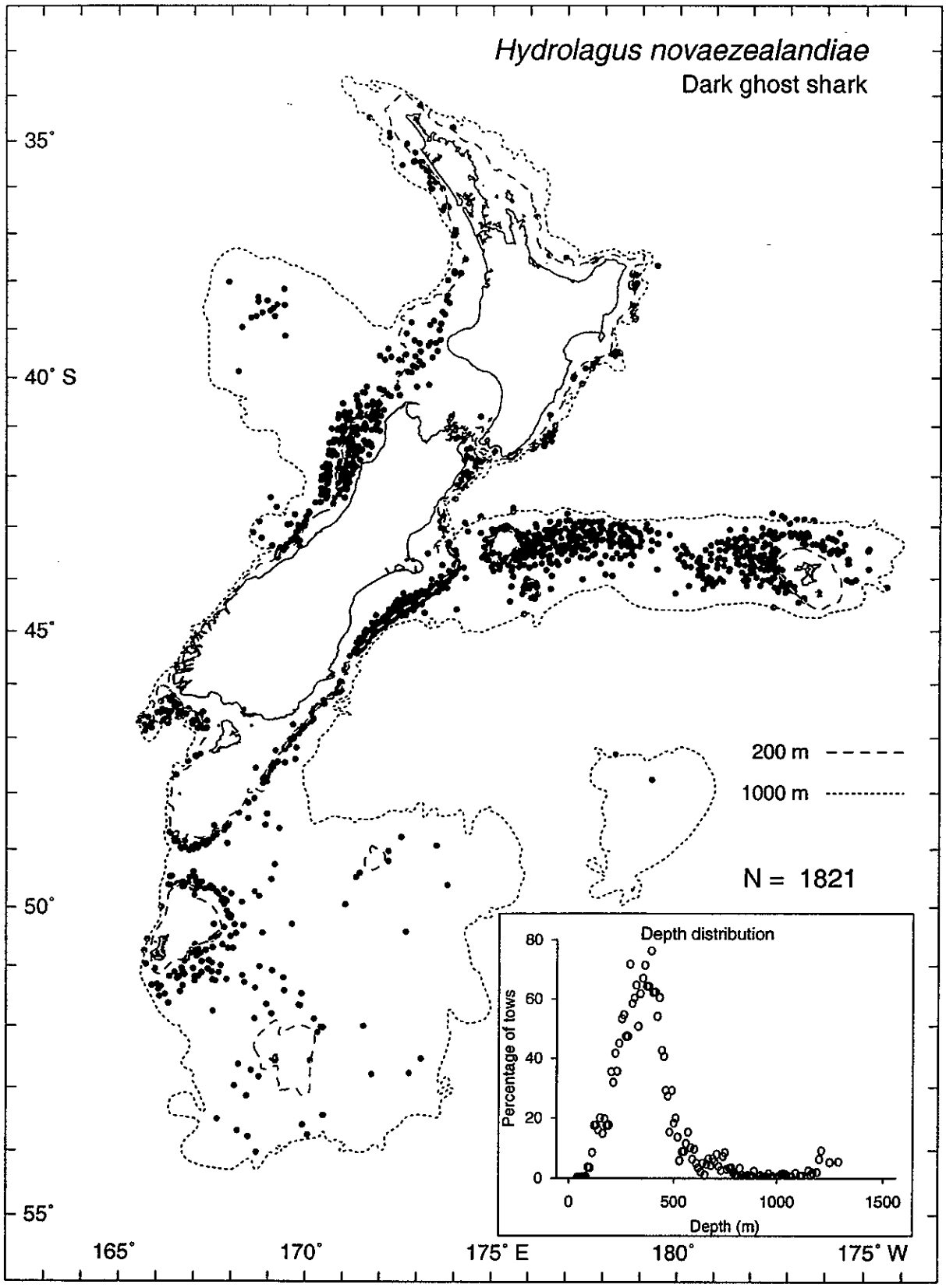
May include up to seven species.



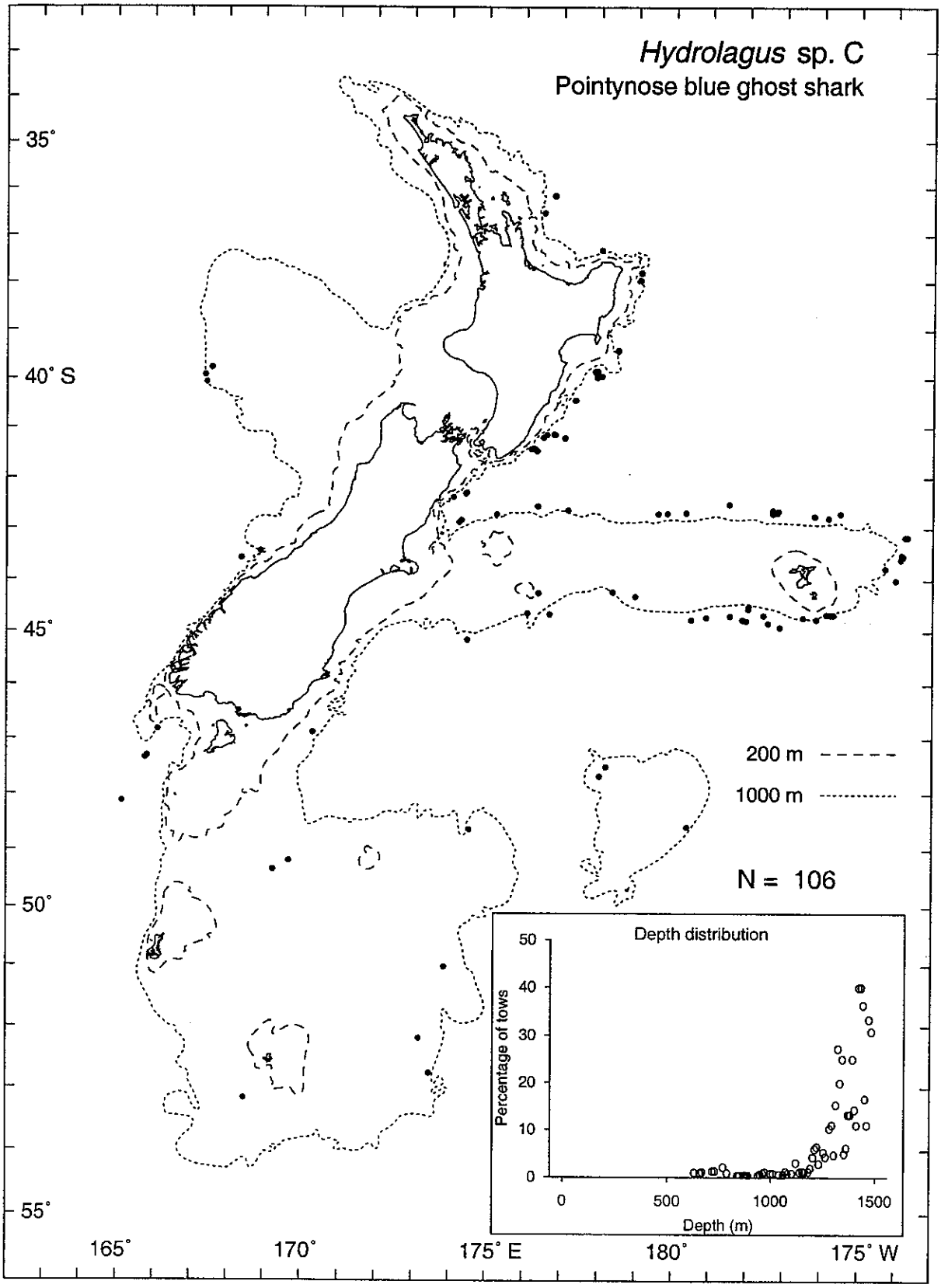
Subantarctic records of this species may have been misidentified.

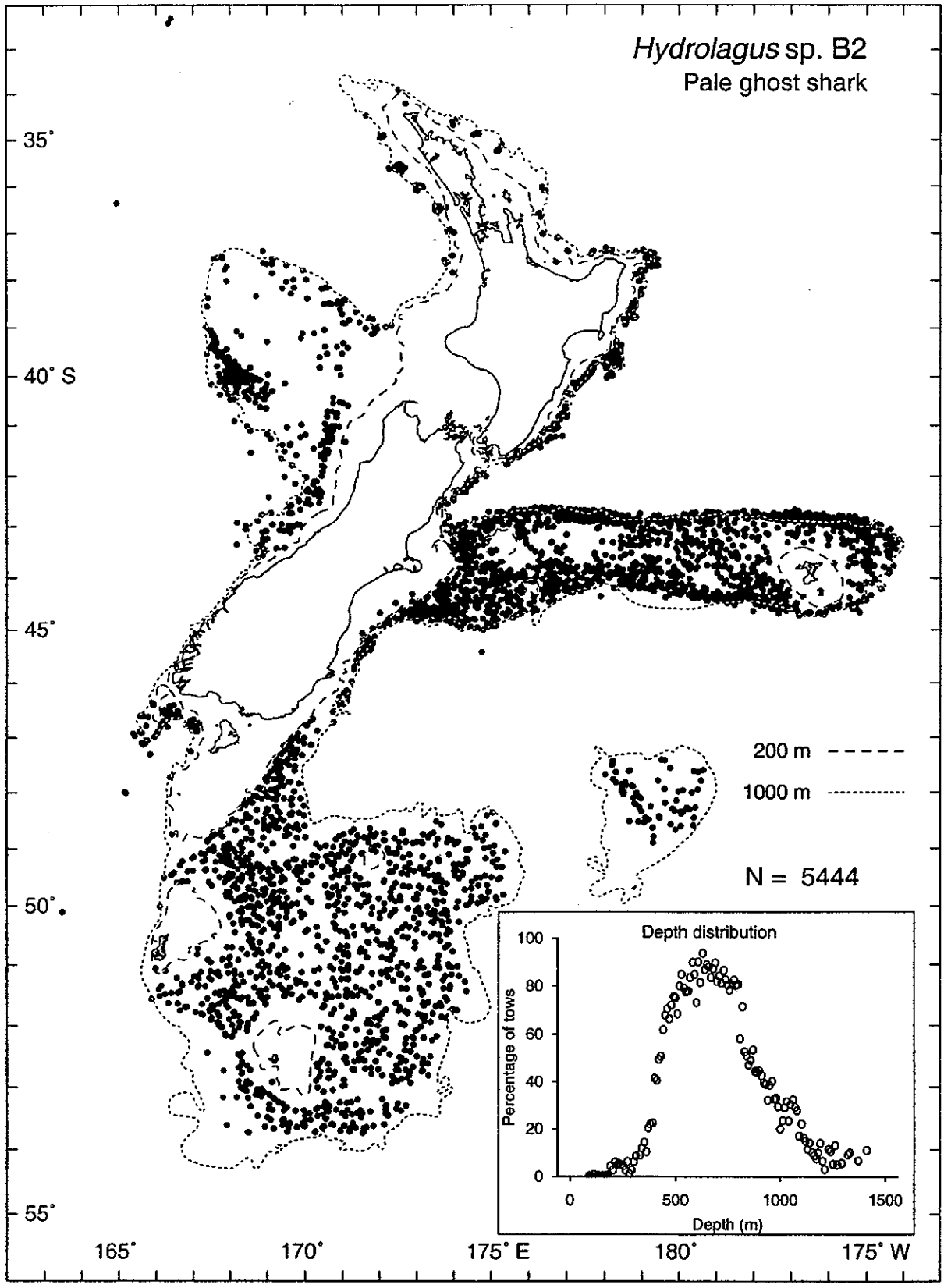

Hoplostethus atlanticus
Orange roughy
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 6768
Depth distribution
Percentage of tows
120
100
80
60
40
20
0
0
500
1000
1500
Depth (m)


Hydrolagus sp. A
Black ghost shark
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 374
Depth distribution
Percentage of tows
Depth (m)
0
20
40
60
80
0
500
1000
1500

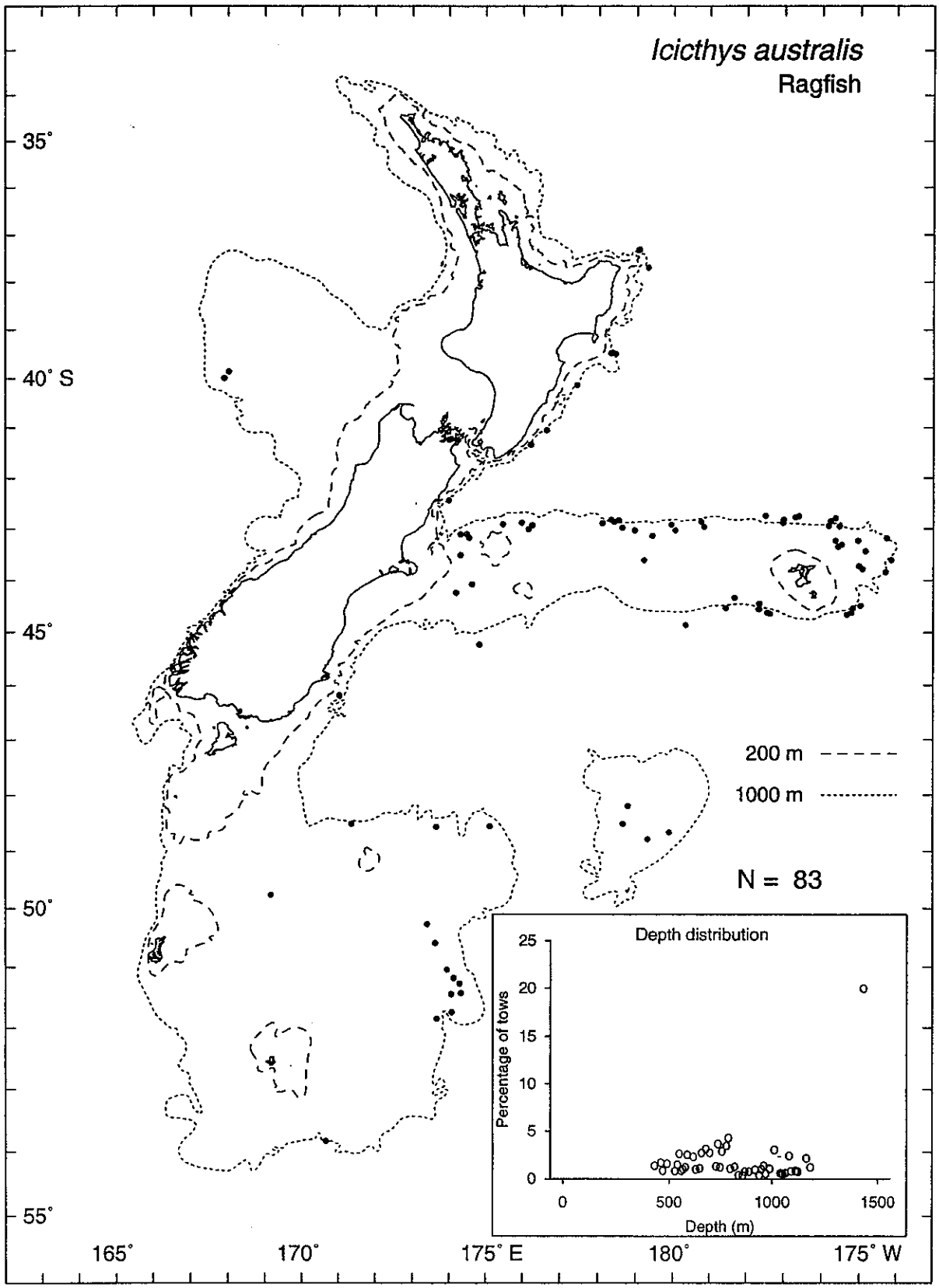


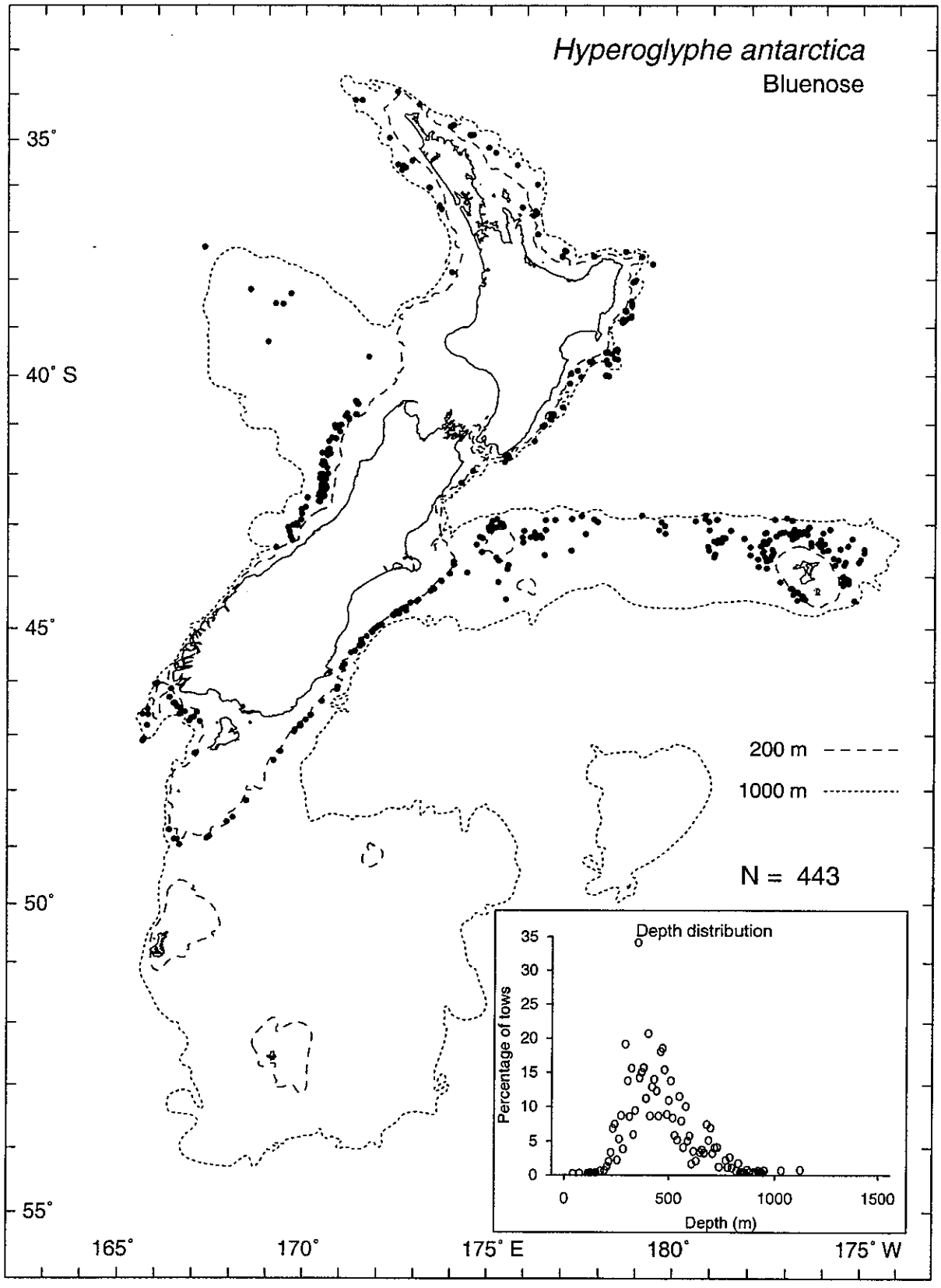
Some of the deeper records may be *Hydrolagus* sp. B2.

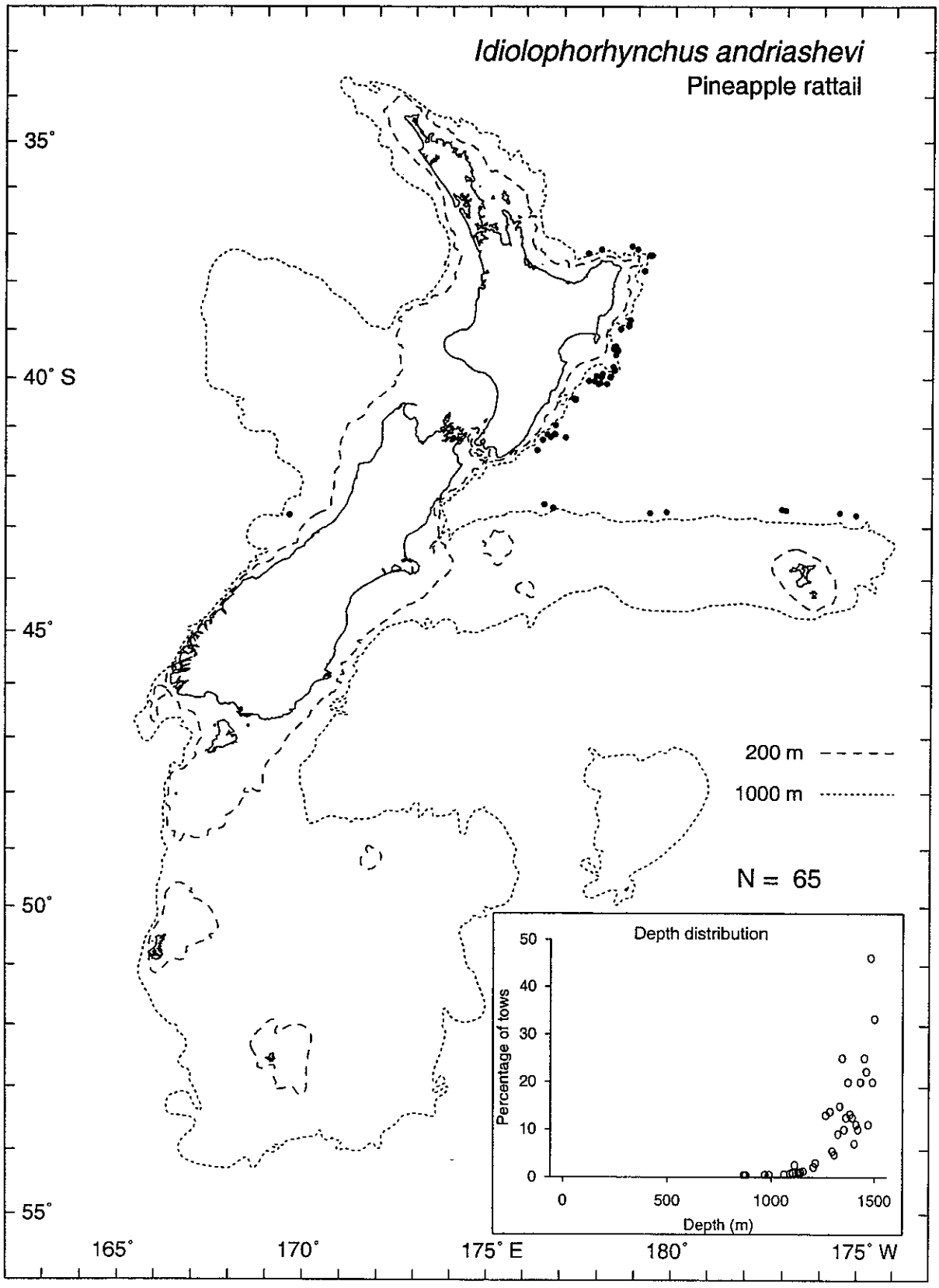

Hydrolagus sp. C
Pointynose blue ghost shark
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 106
Depth distribution
Percentage of tows
0
10
20
30
40
50
0
500
1000
1500
Depth (m)

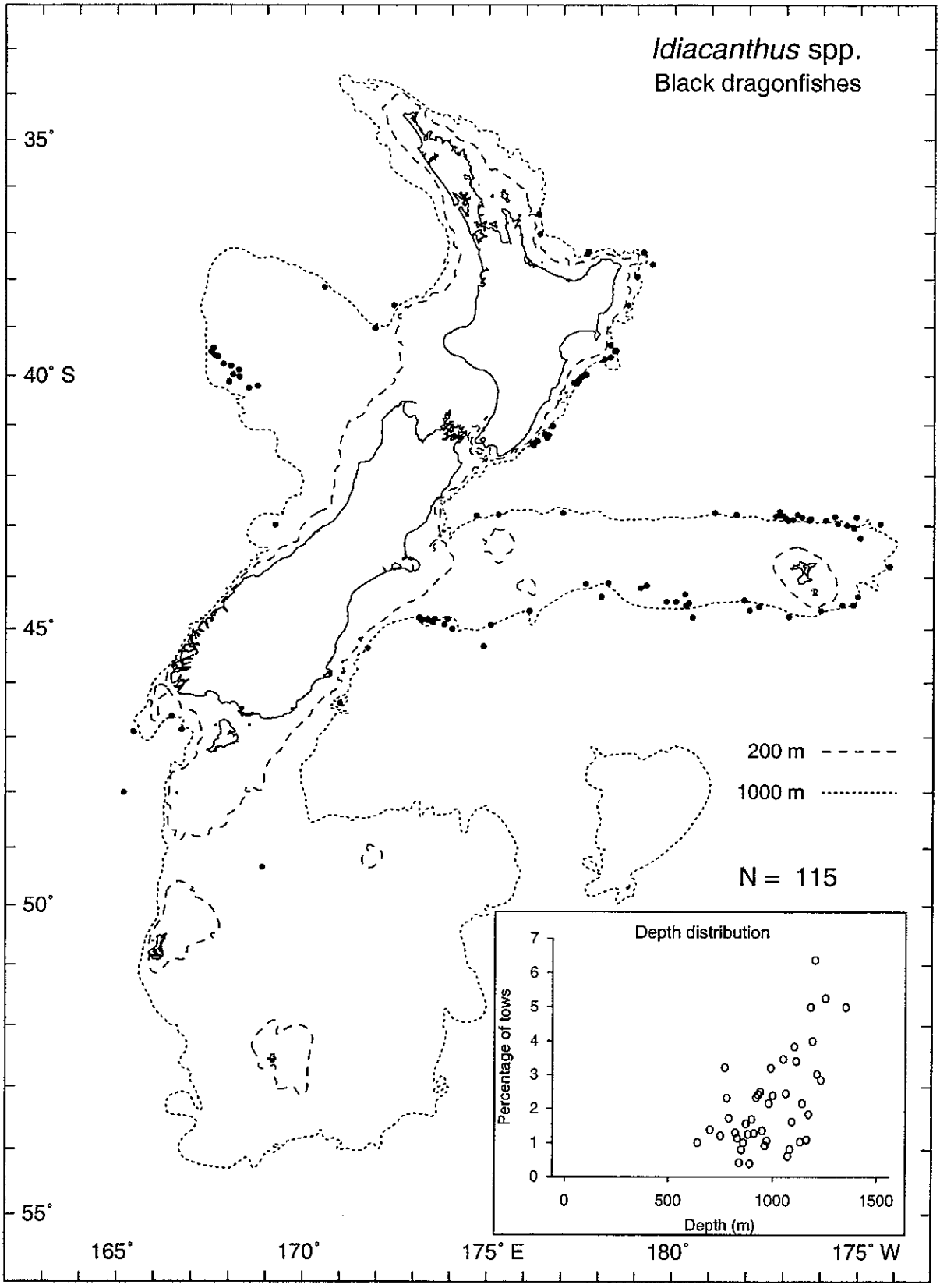


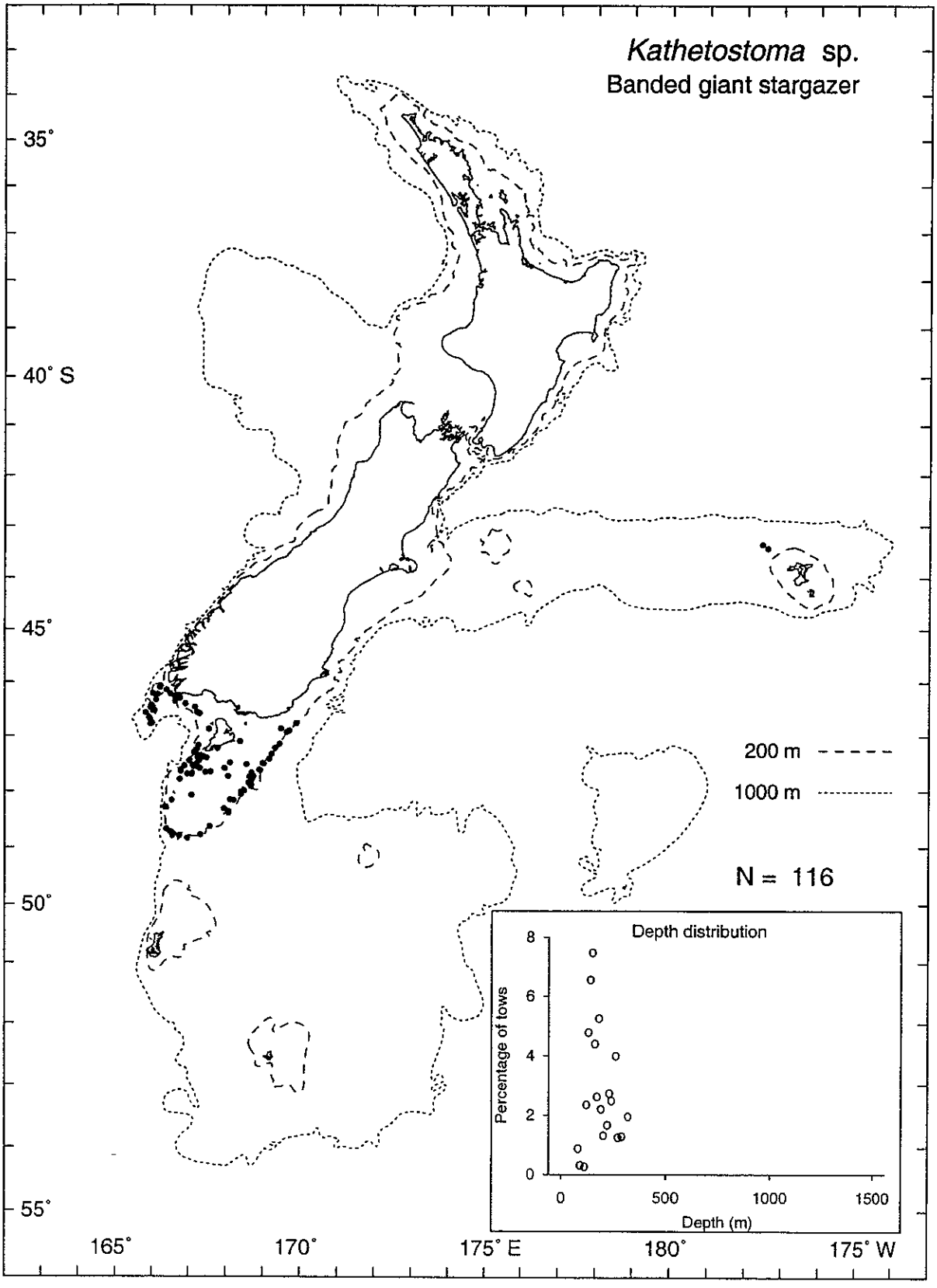
Some of the shallower records may be *H. novaezealandiae*.

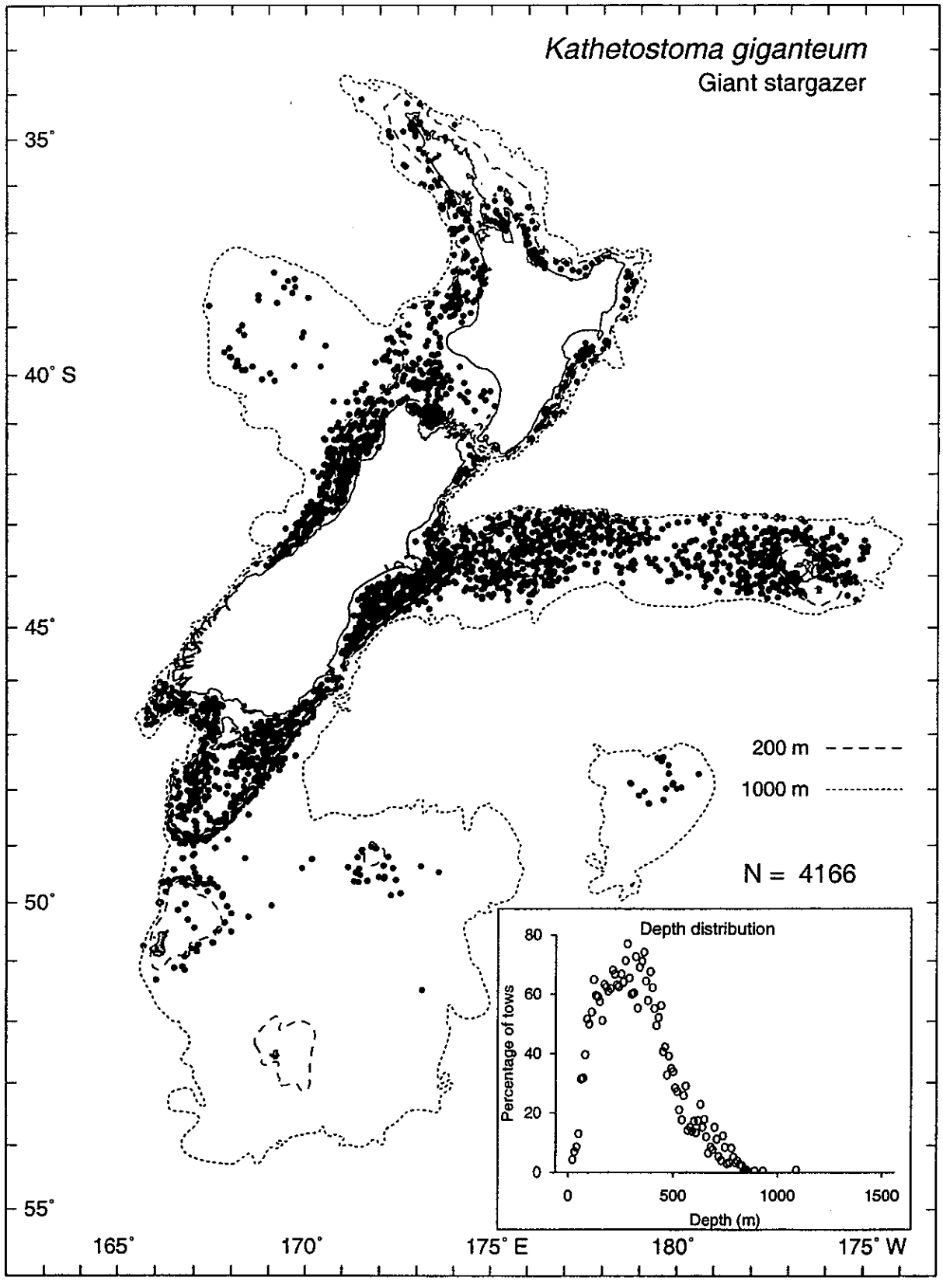

Icicthys australis
Ragfish
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 83
Depth distribution
Percentage of tows
25
20
15
10
5
0
0
500
1000
1500
Depth (m)


Hyperoglyphe antarctica
Bluenose
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 443
Depth distribution
Percentage of tows
Depth (m)
0
5
10
15
20
25
30
35
0
500
1000
1500

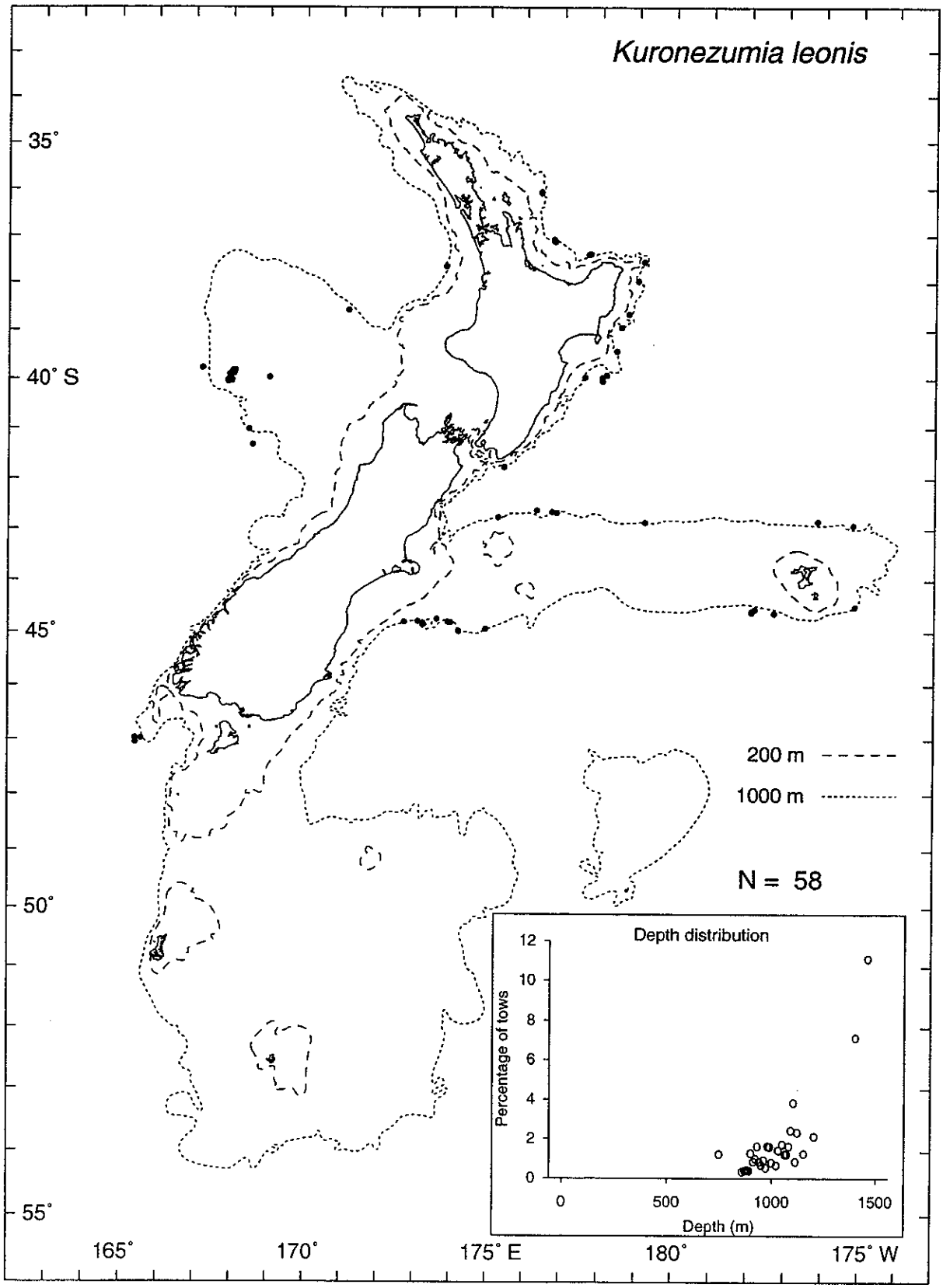

Idiolophorhynchus andriashevi
Pineapple rattail
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 65
Depth distribution
Percentage of tows
0
10
20
30
40
50
0
500
1000
1500
Depth (m)

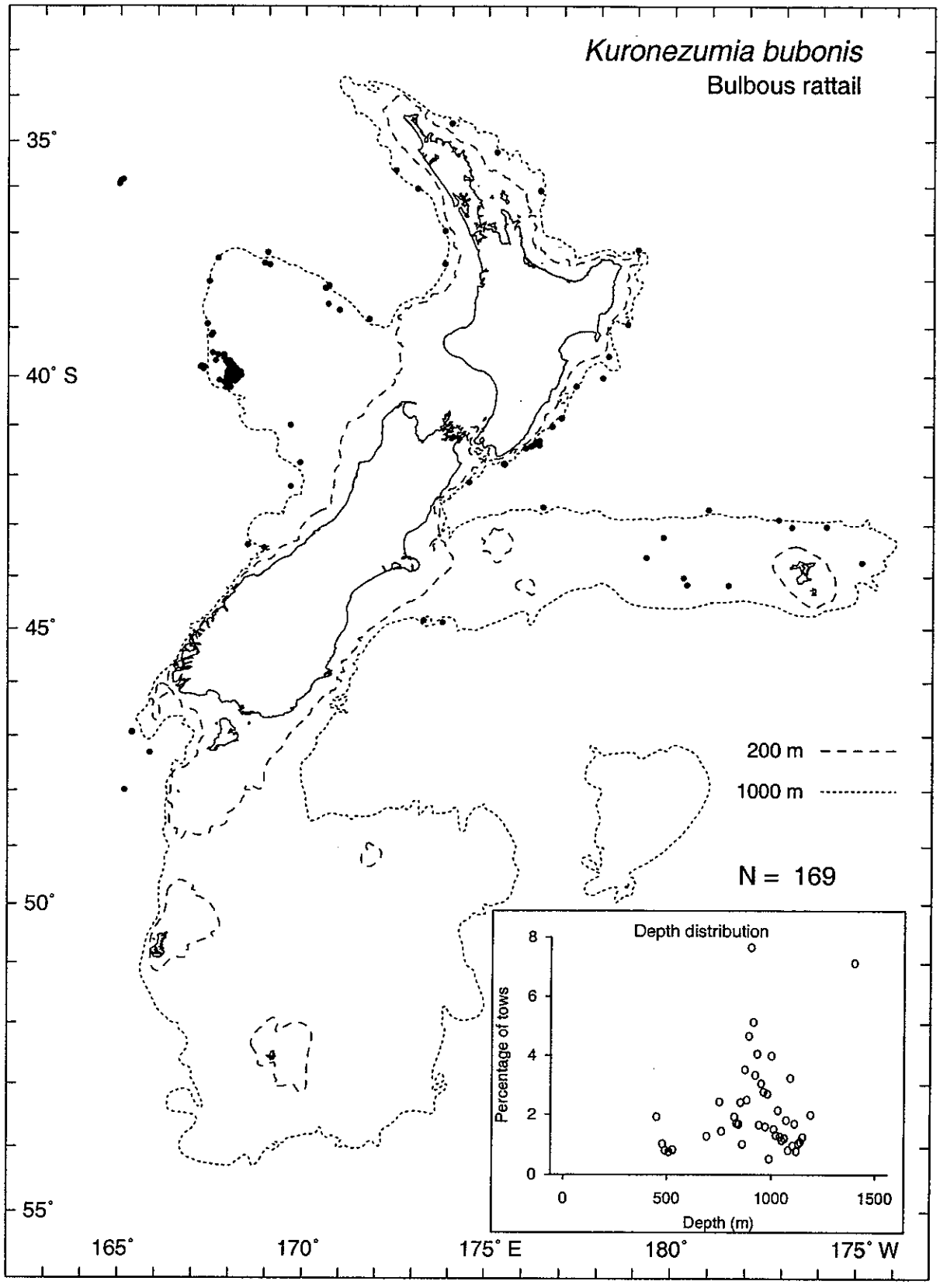

Idiacanthus spp.
Black dragonfishes
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 115
Depth distribution
Percentage of tows
0
1
2
3
4
5
6
7
0
500
1000
1500
Depth (m)

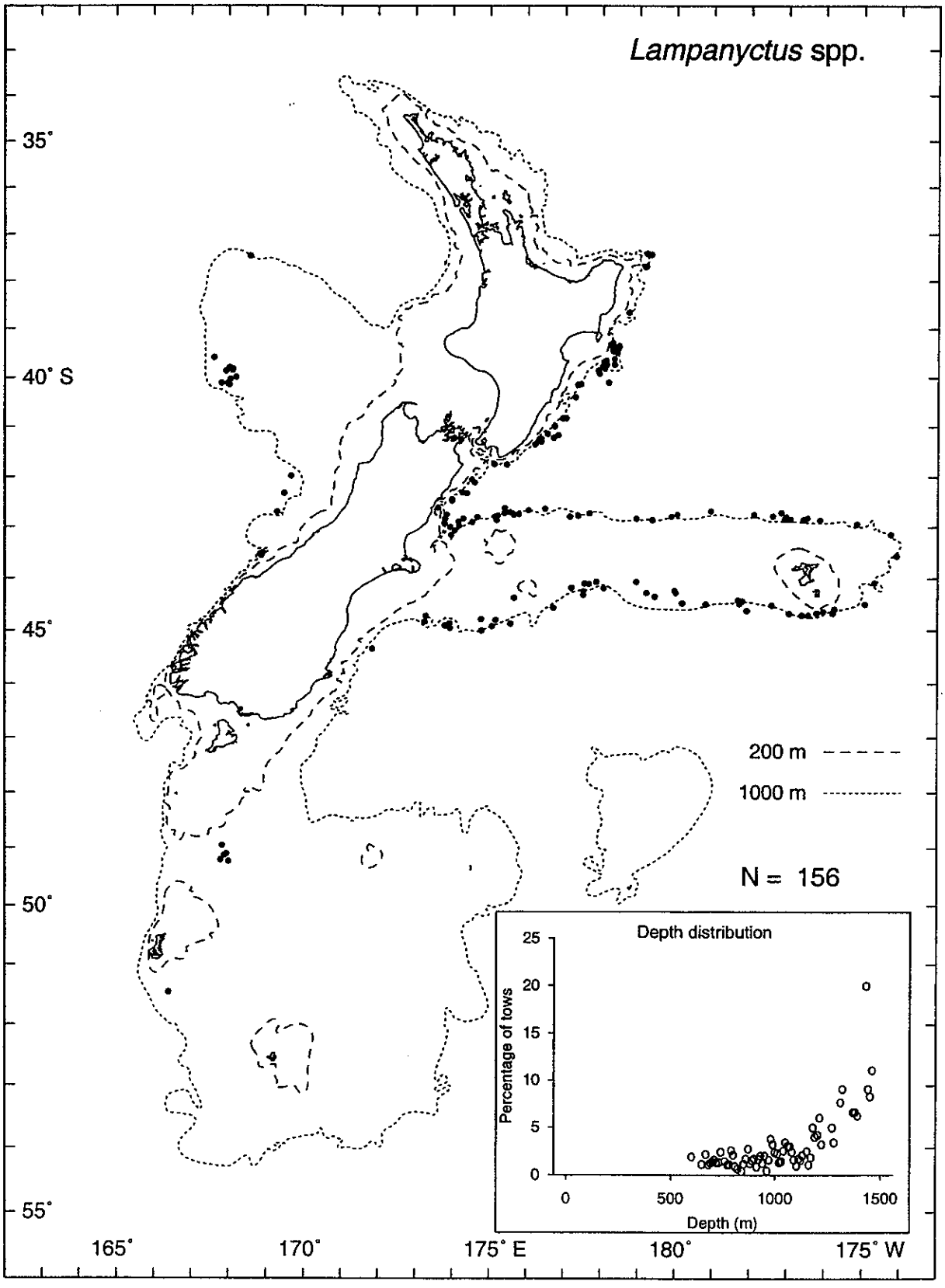

Kathetostoma sp.
Banded giant stargazer
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 116
Depth distribution
Percentage of tows
0
2
4
6
8
0
500
1000
1500
Depth (m)



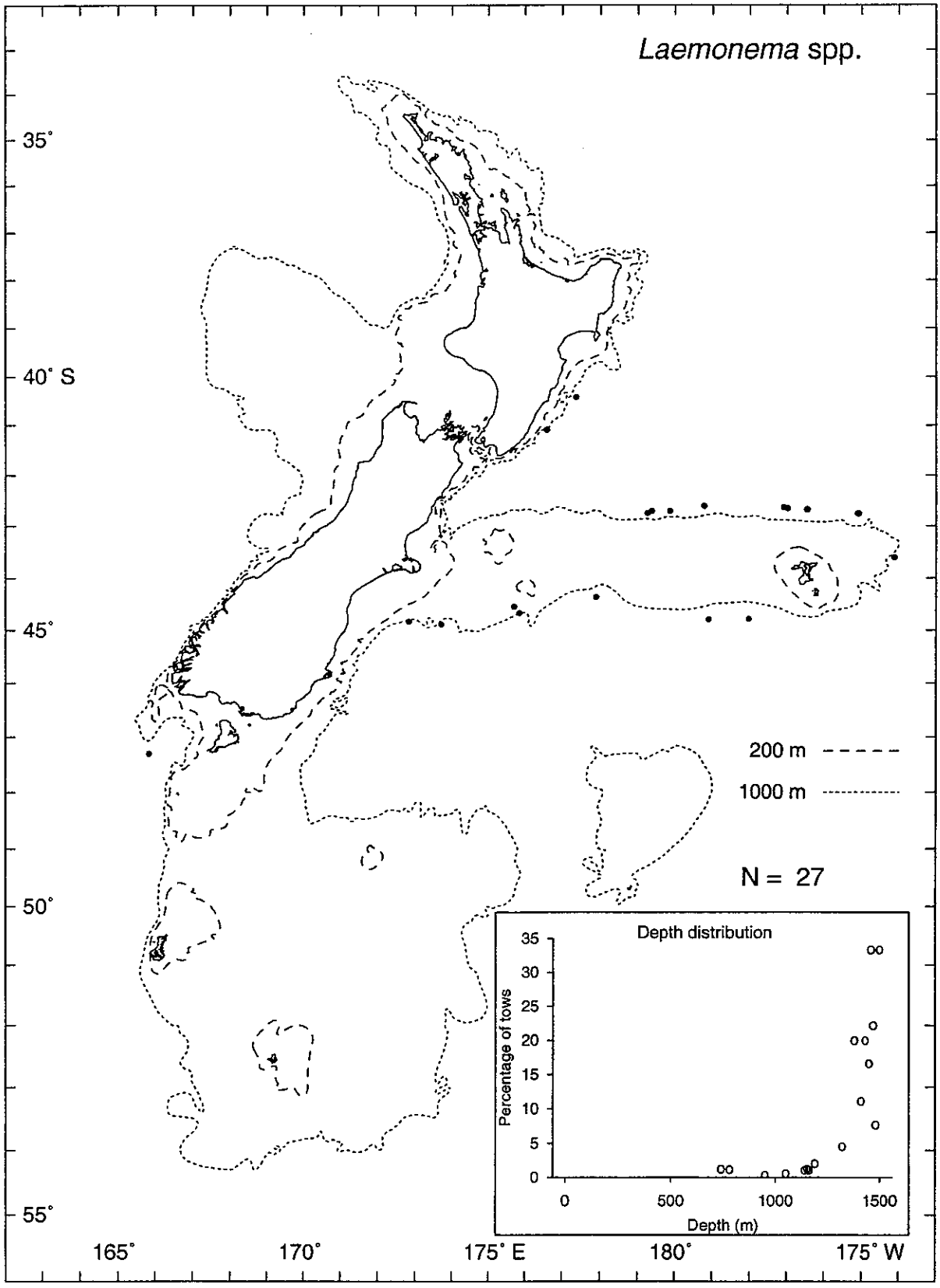
Some records represent other stargazer species particularly the banded stargazer *Kathetostoma* sp, which was not recorded separately until 1986.

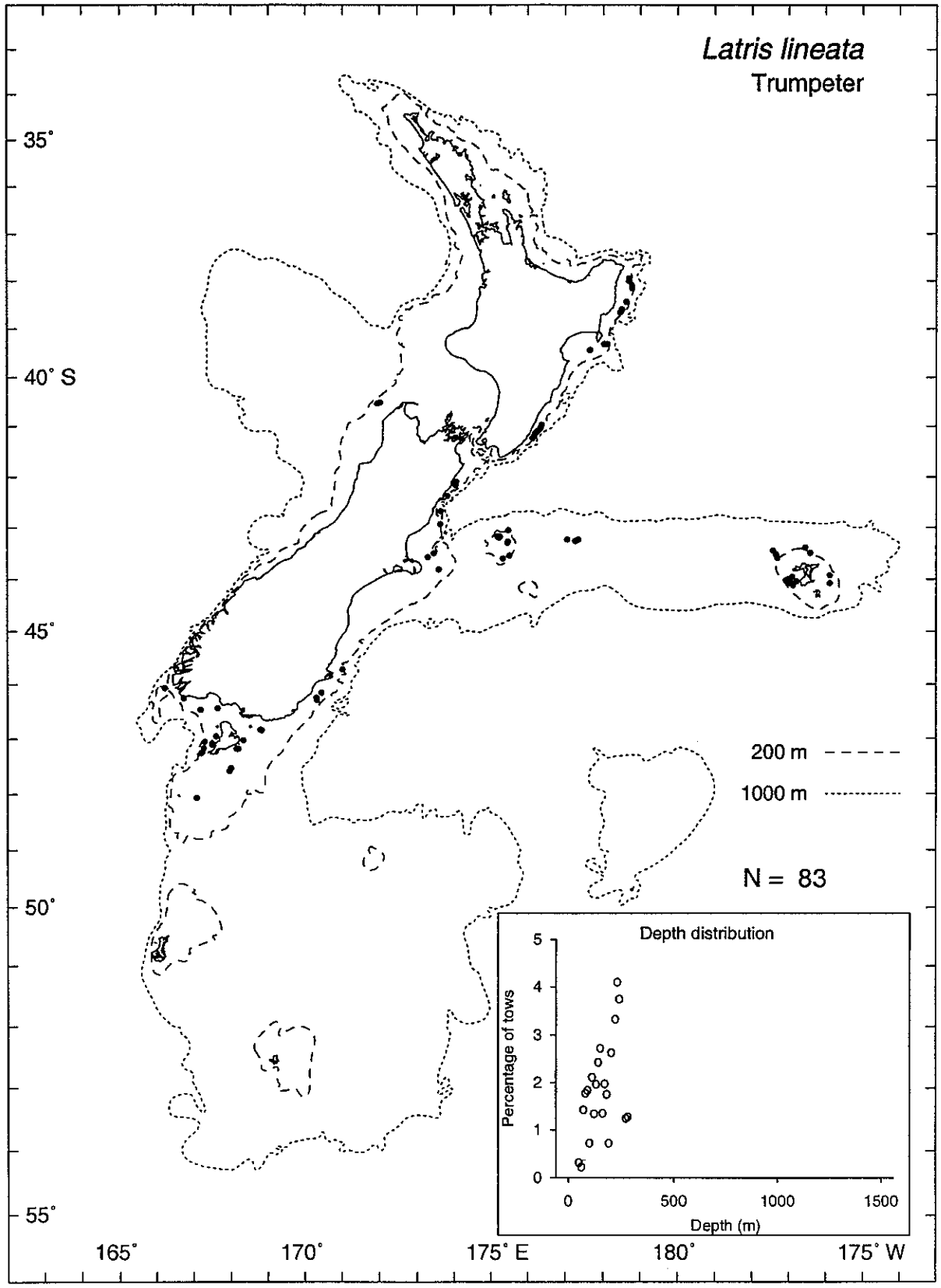

Kuronezumia leonis
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 58
Depth distribution
Percentage of tows
0
2
4
6
8
10
12
0
500
1000
1500
Depth (m)

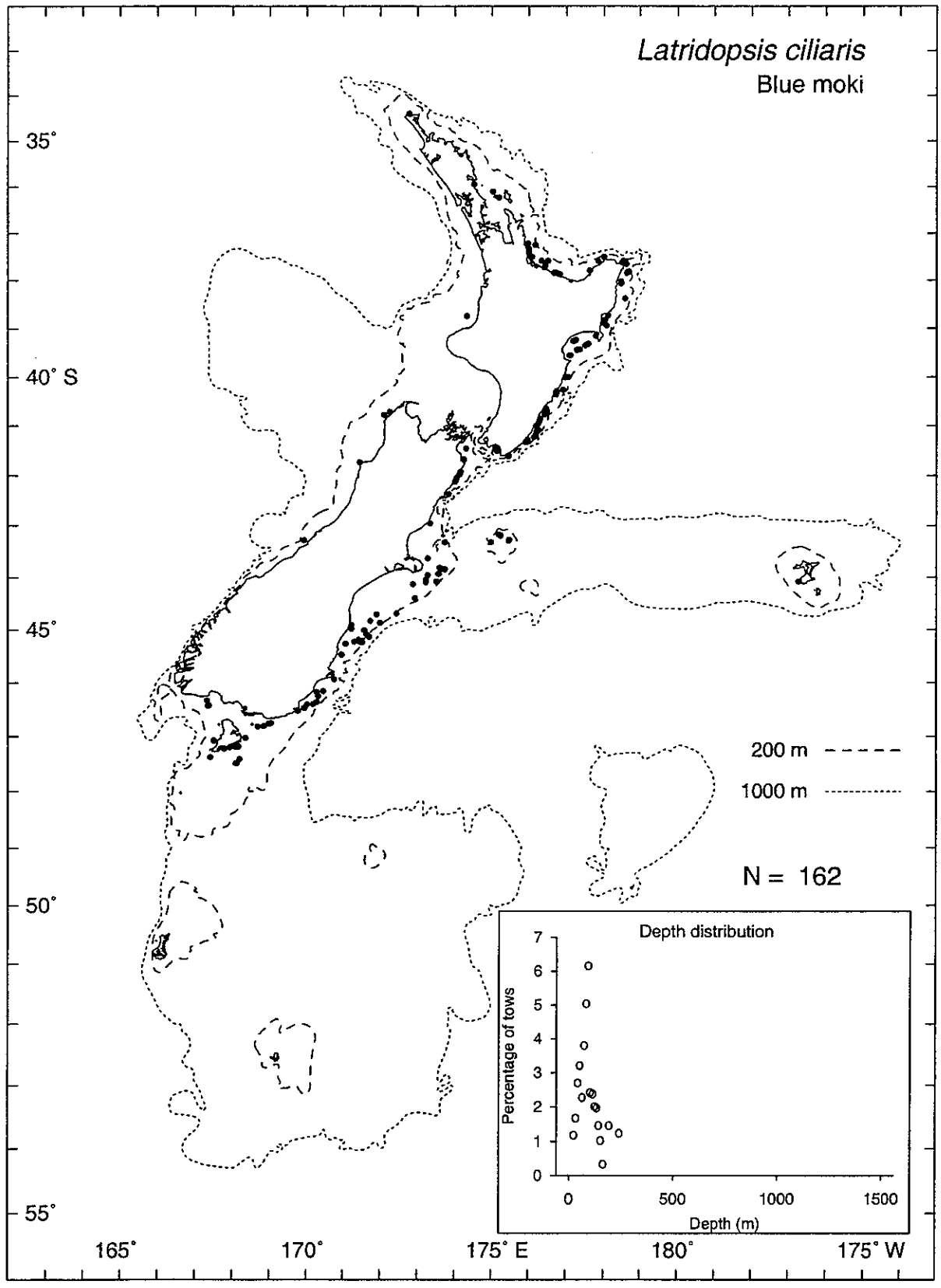

Kuronezumia bubonis
Bulbous rattail
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 169
Depth distribution
Percentage of tows
0
2
4
6
8
0
500
1000
1500
Depth (m)

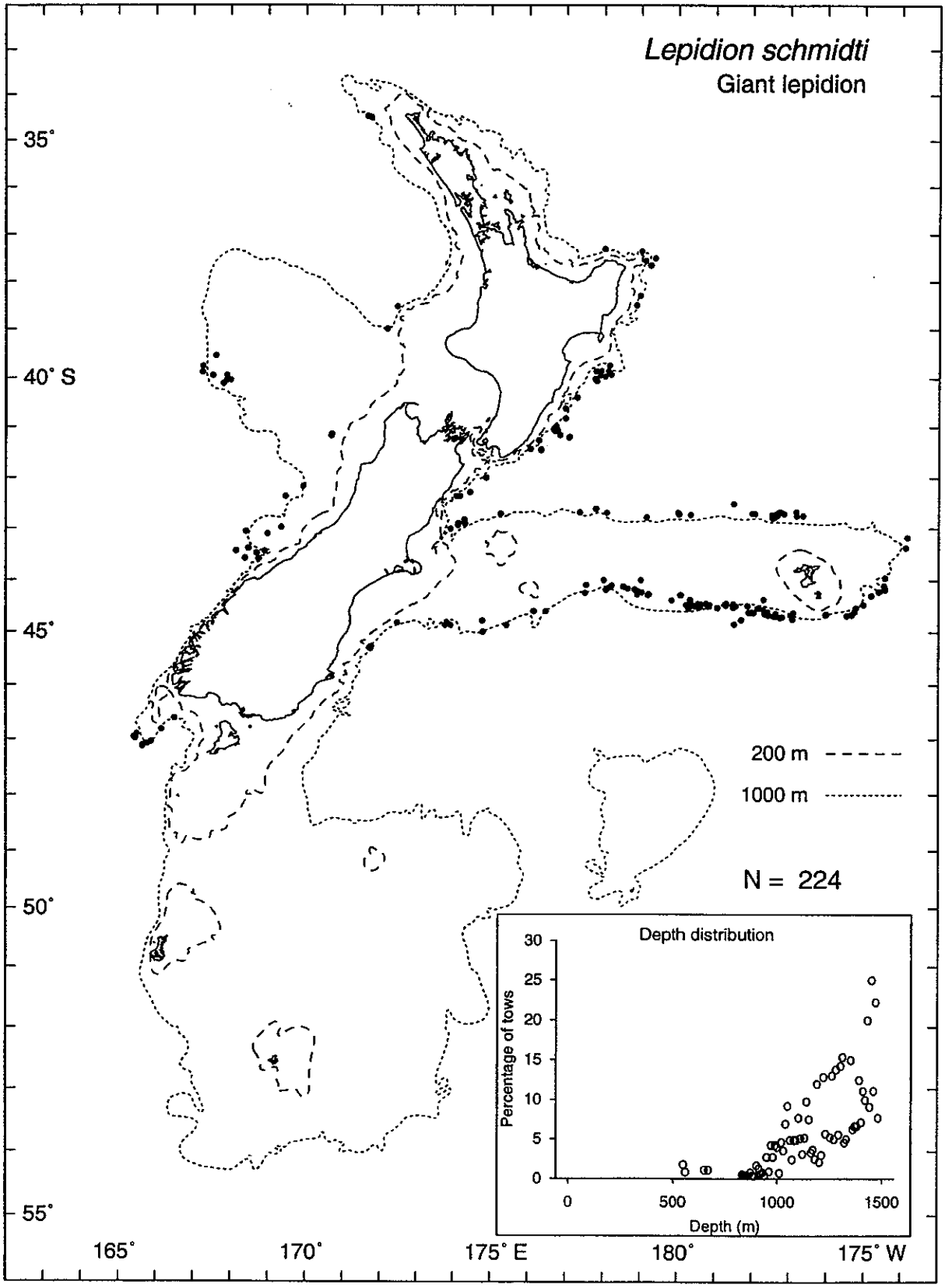


Twelve species are recognised in this genus.

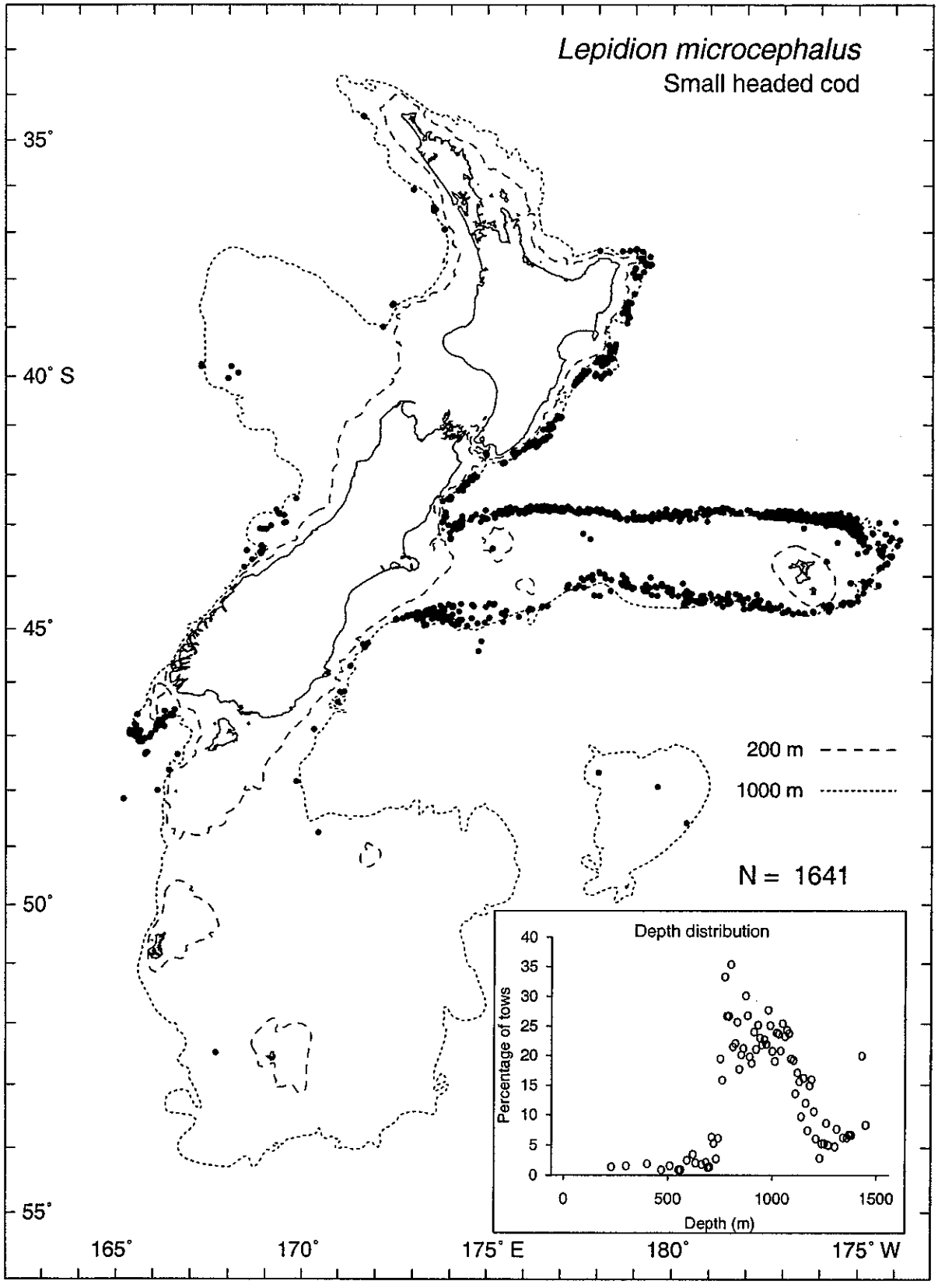

Laemonema spp.
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 27
Depth distribution
Percentage of tows
0
5
10
15
20
25
30
35
0
500
1000
1500
Depth (m)

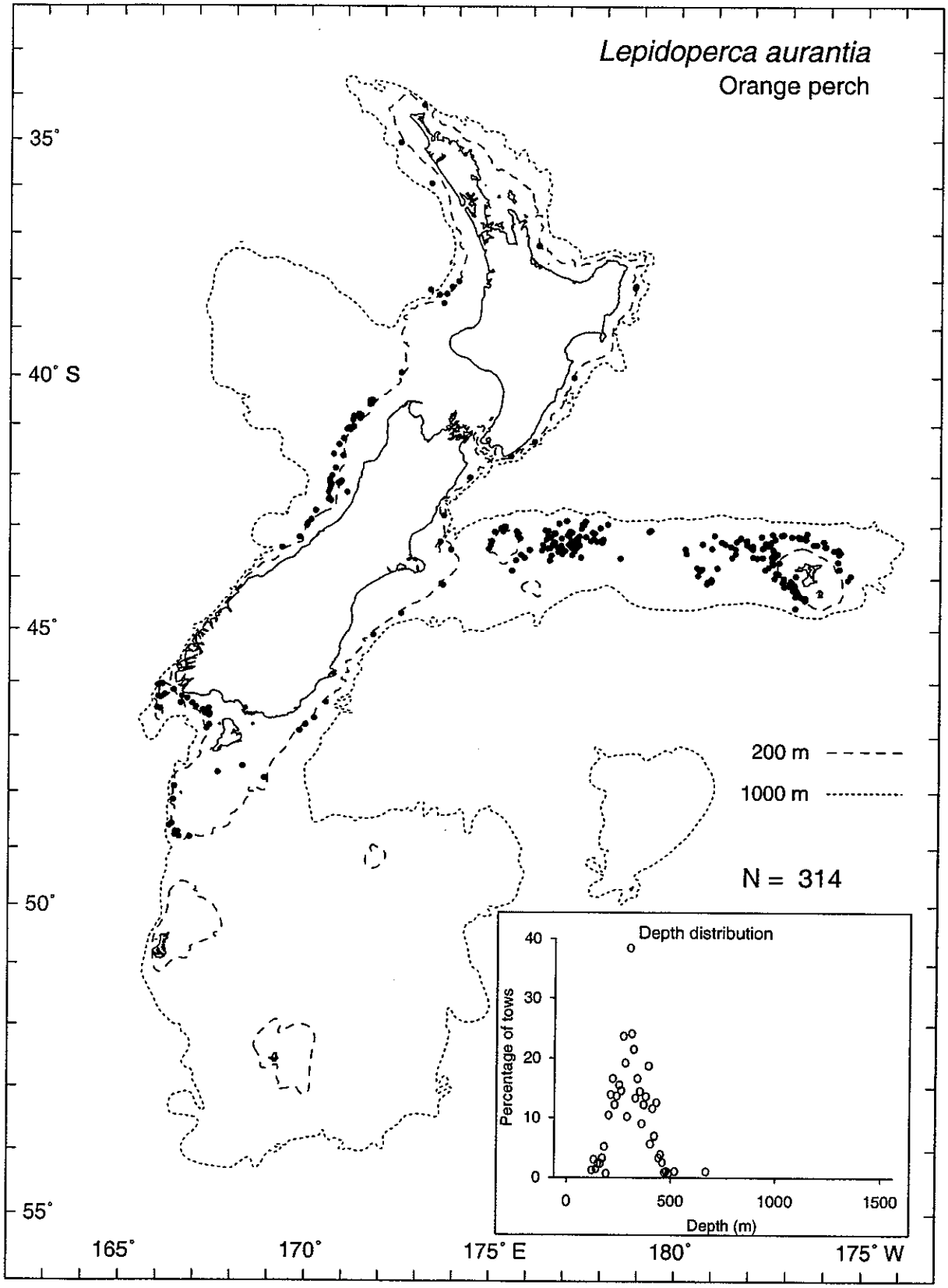

Latris lineata
Trumpeter
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 83
Depth distribution
Percentage of tows
0
1
2
3
4
5
0
500
1000
1500
Depth (m)

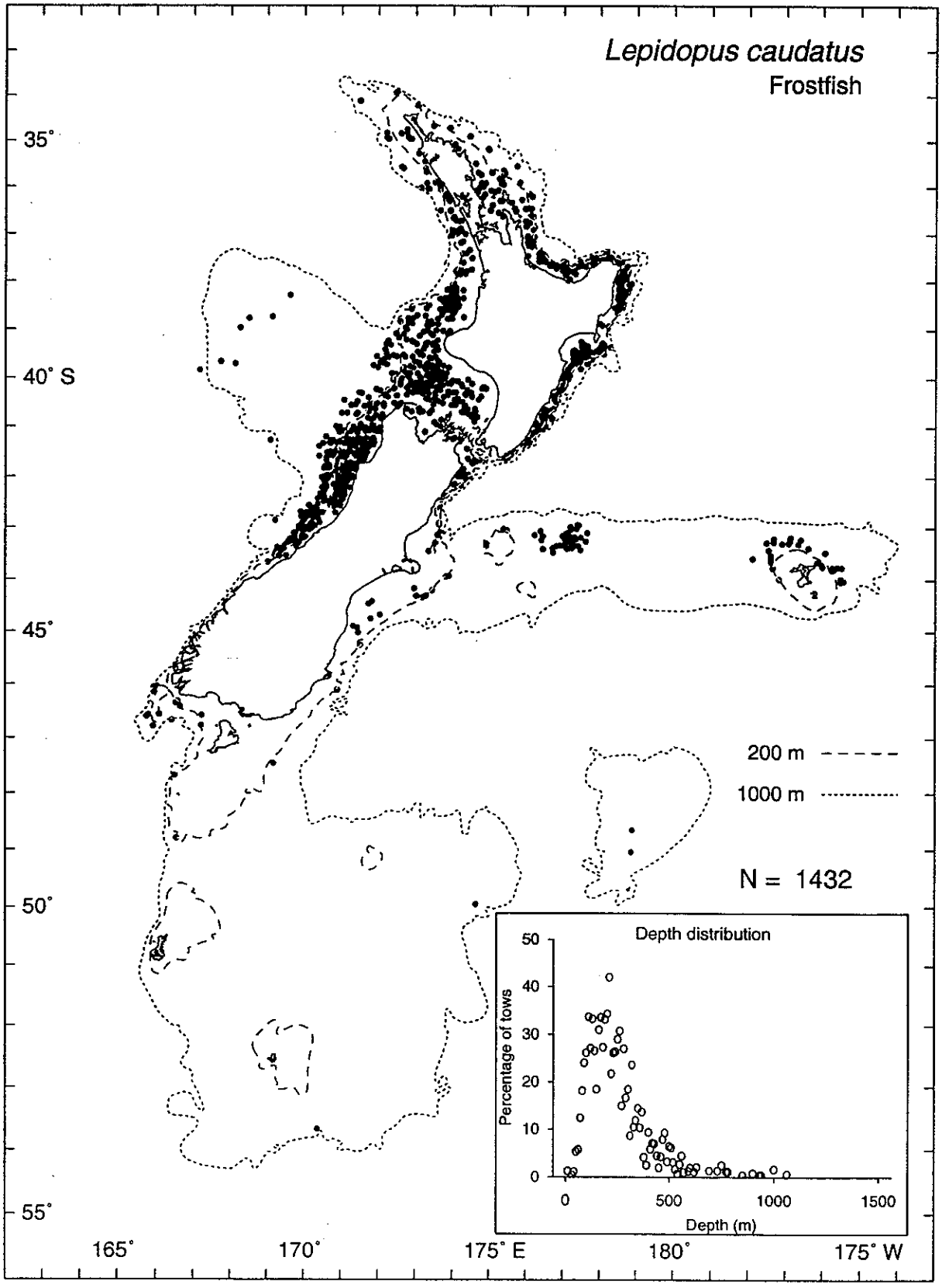

Latridopsis ciliaris
Blue moki
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 162
Depth distribution
Percentage of tows
0
1
2
3
4
5
6
7
0
500
1000
1500
Depth (m)



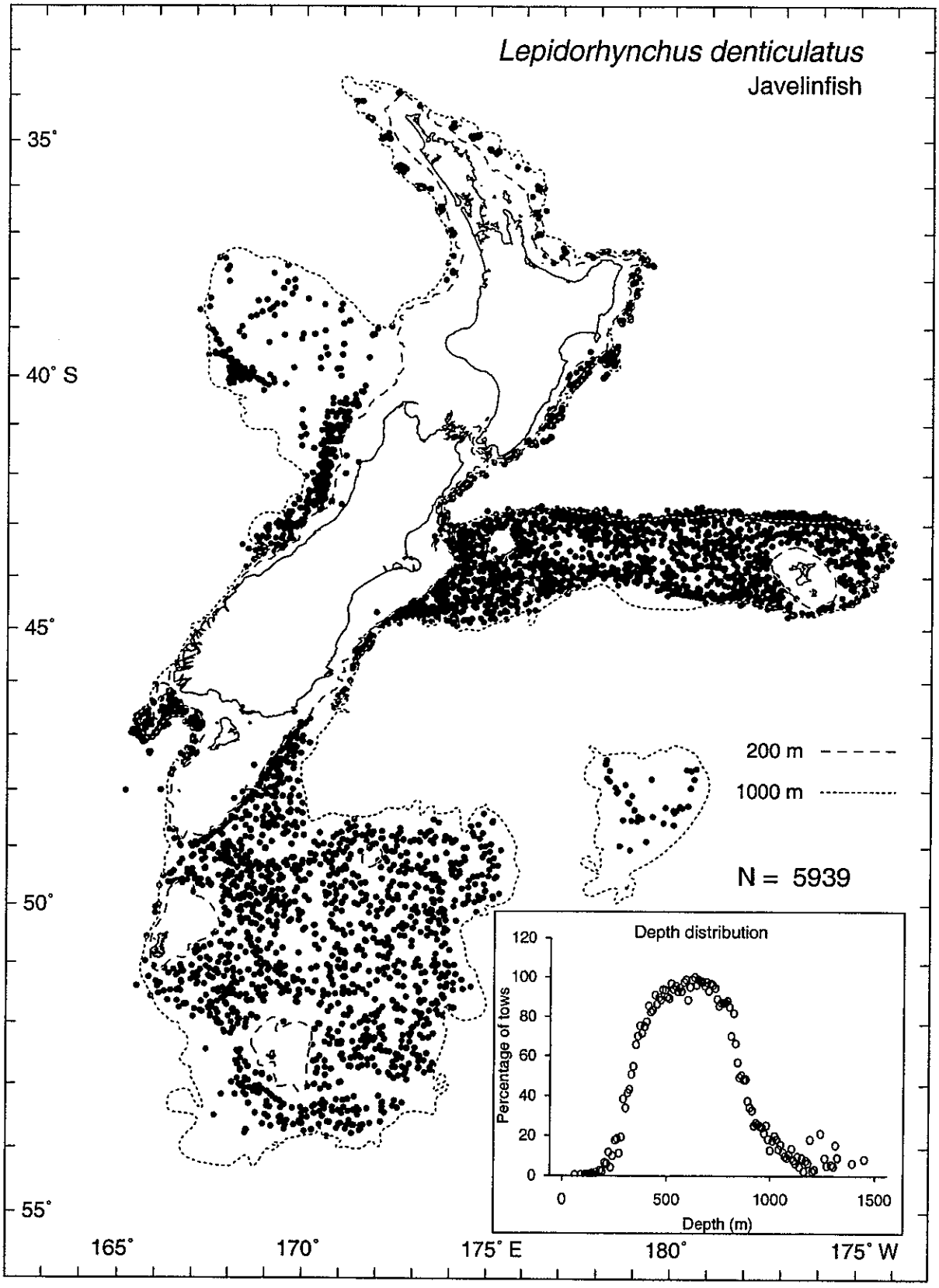
Includes some *L. inosimae.*

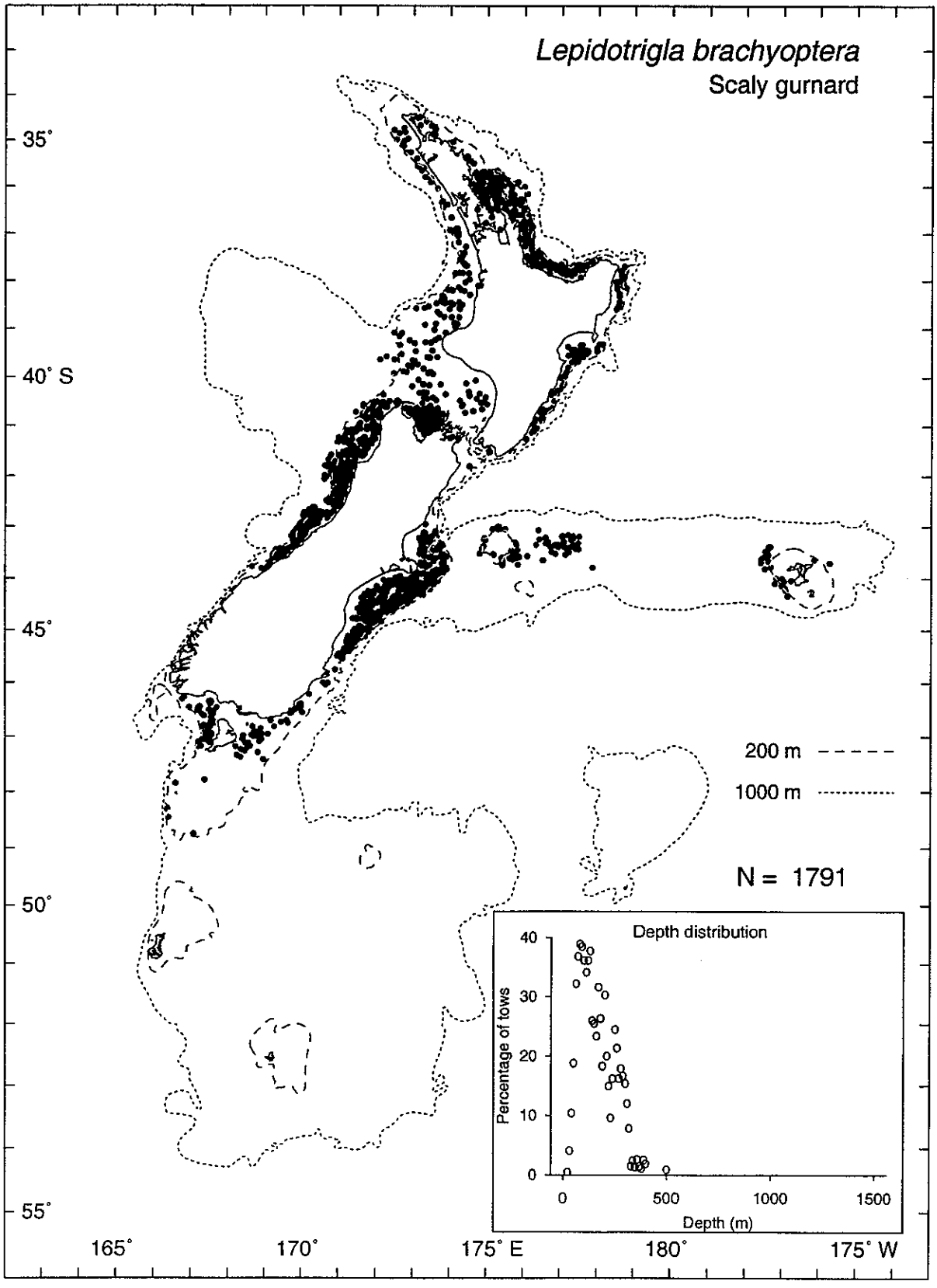

Lepidion microcephalus
Small headed cod
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 1641
Depth distribution
Percentage of tows
0
5
10
15
20
25
30
35
40
0
500
1000
1500
Depth (m)

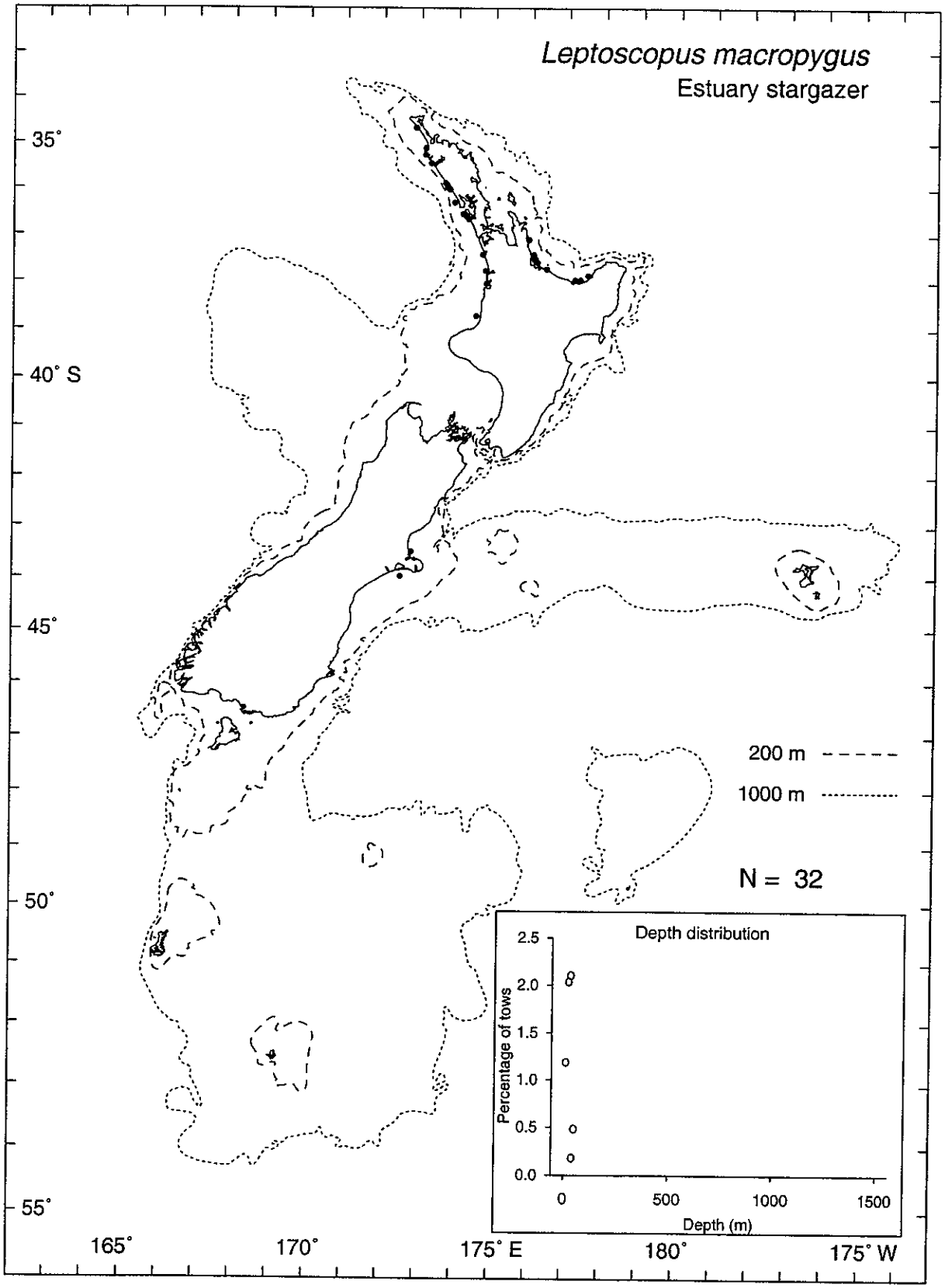

Lepidoperca aurantia
Orange perch
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 314
Depth distribution
Percentage of tows
Depth (m)
0
10
20
30
40
500
1000
1500

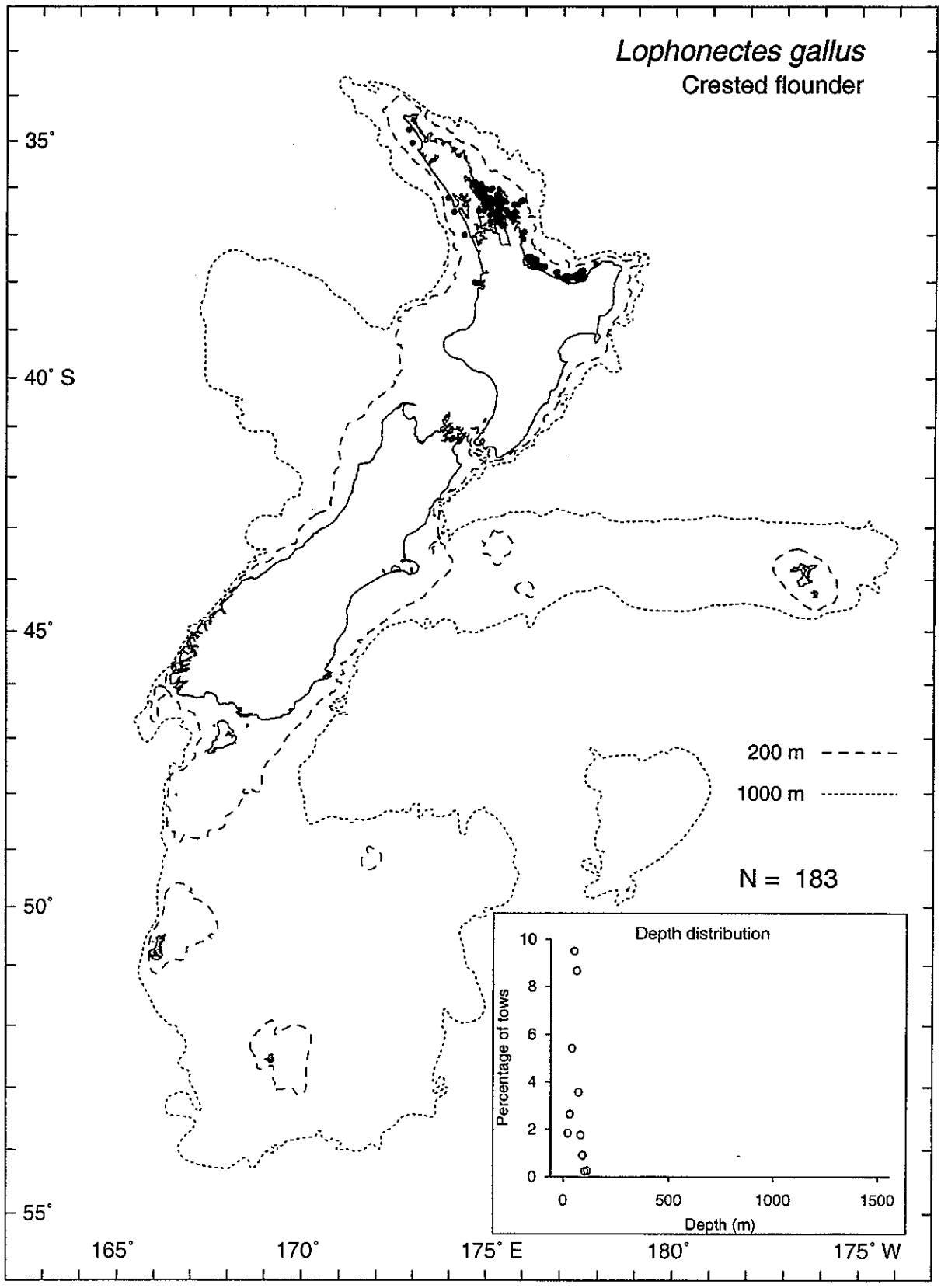


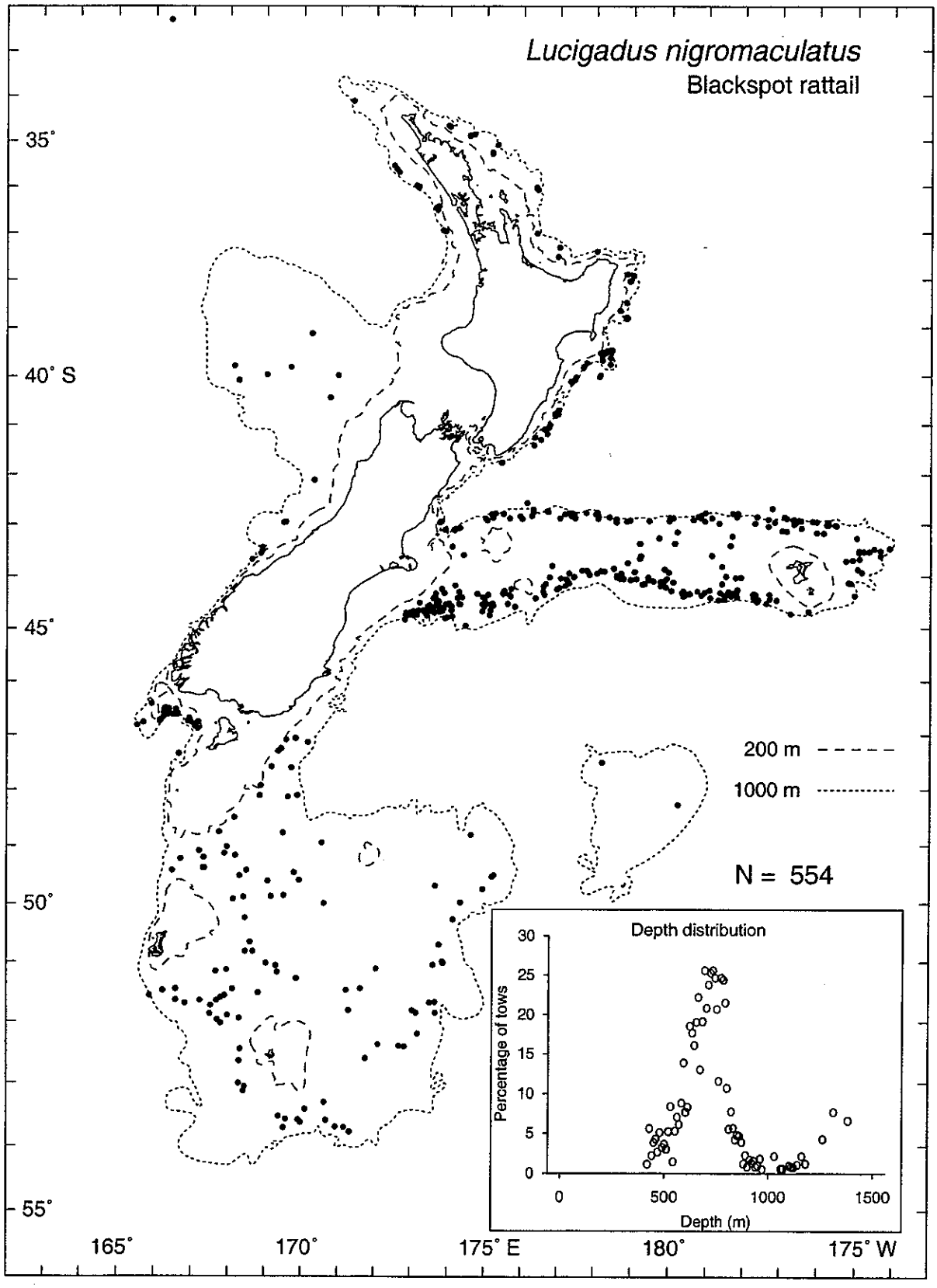
Probably includes some *Paradiplospinus gracilis* and *Benthodesmus* spp.. Subantarctic records of this species may have been misidentified.

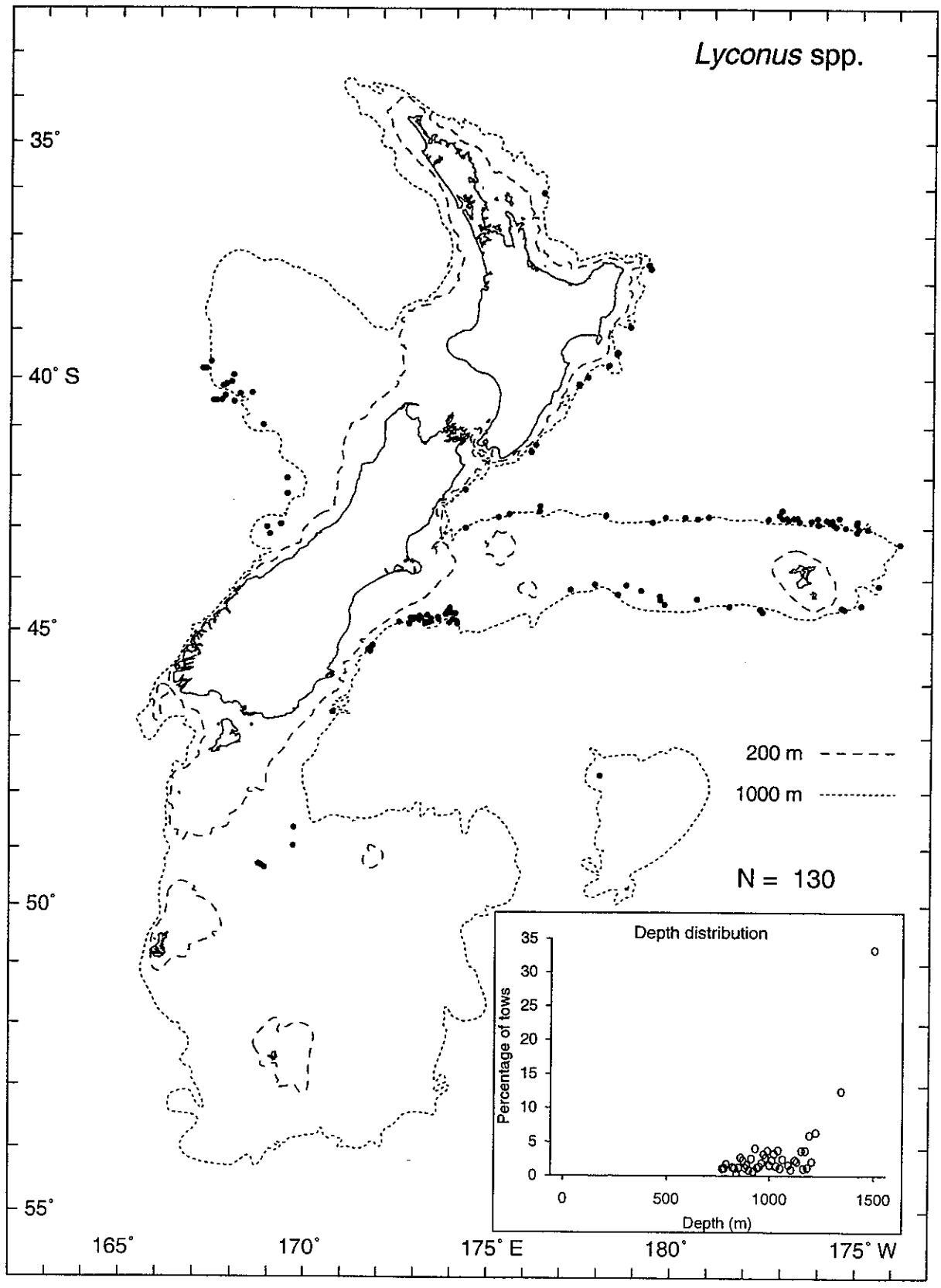

Lepidorhynchus denticulatus
Javelinfish
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 5939
Depth distribution
Percentage of tows
120
100
80
60
40
20
0
0
500
1000
1500
Depth (m)

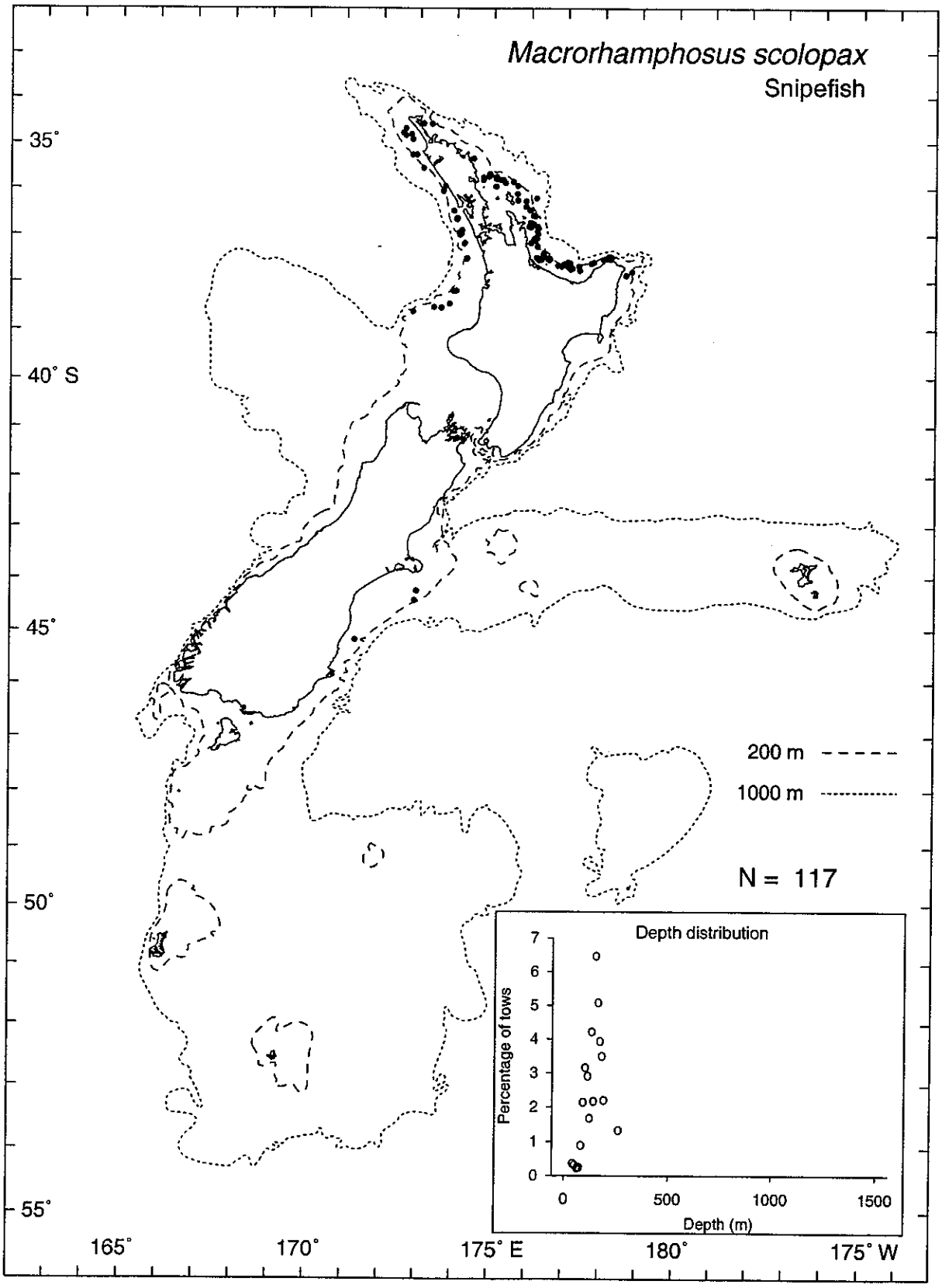

Lepidotrigla brachyoptera
Scaly gurnard
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 1791
Depth distribution
Percentage of tows
0
10
20
30
40
0
500
1000
1500
Depth (m)

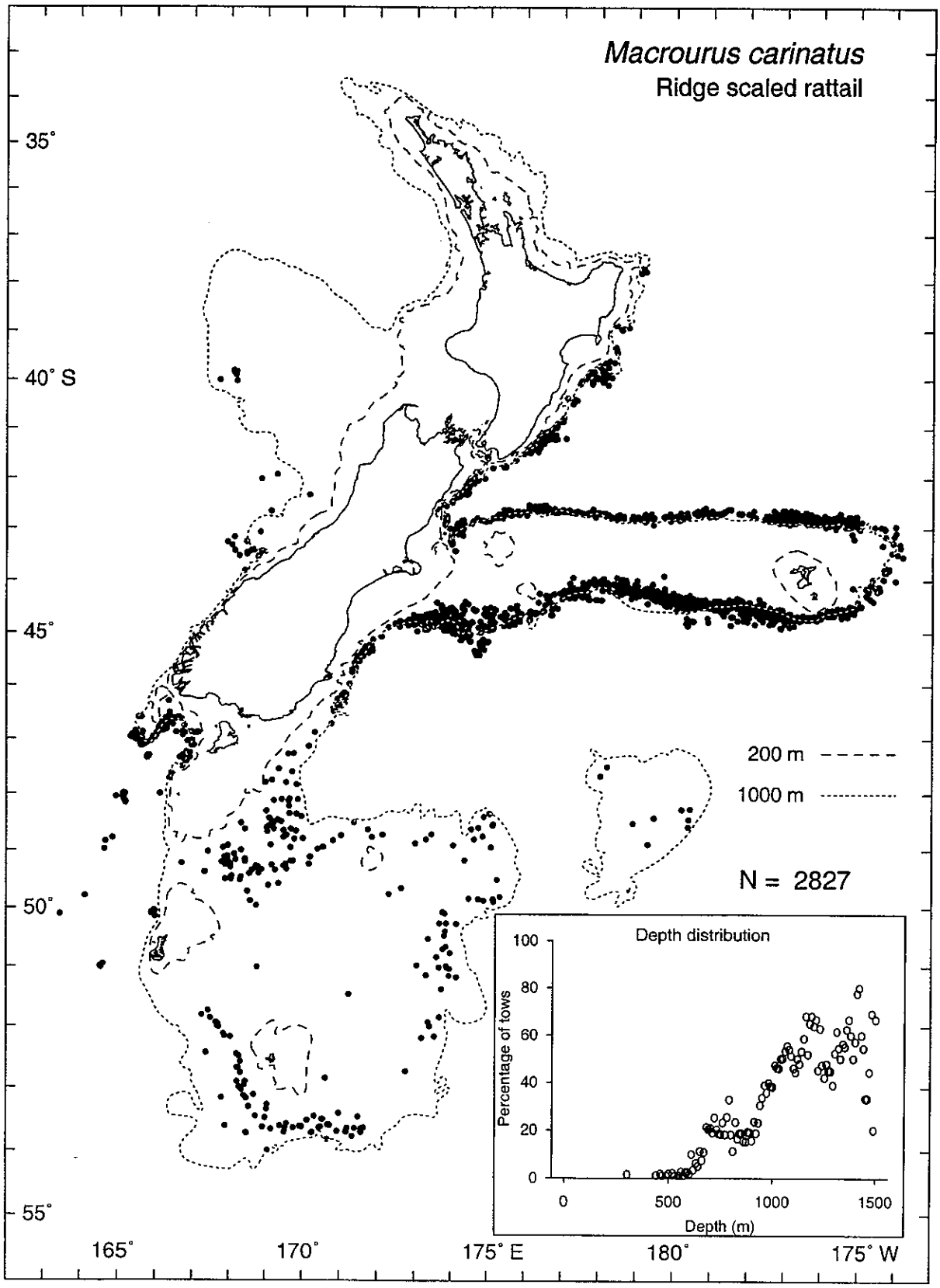

Leptoscopus macropygus
Estuary stargazer
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 32
Depth distribution
Percentage of tows
2.5
2.0
1.5
1.0
0.5
0.0
0
500
1000
1500
Depth (m)

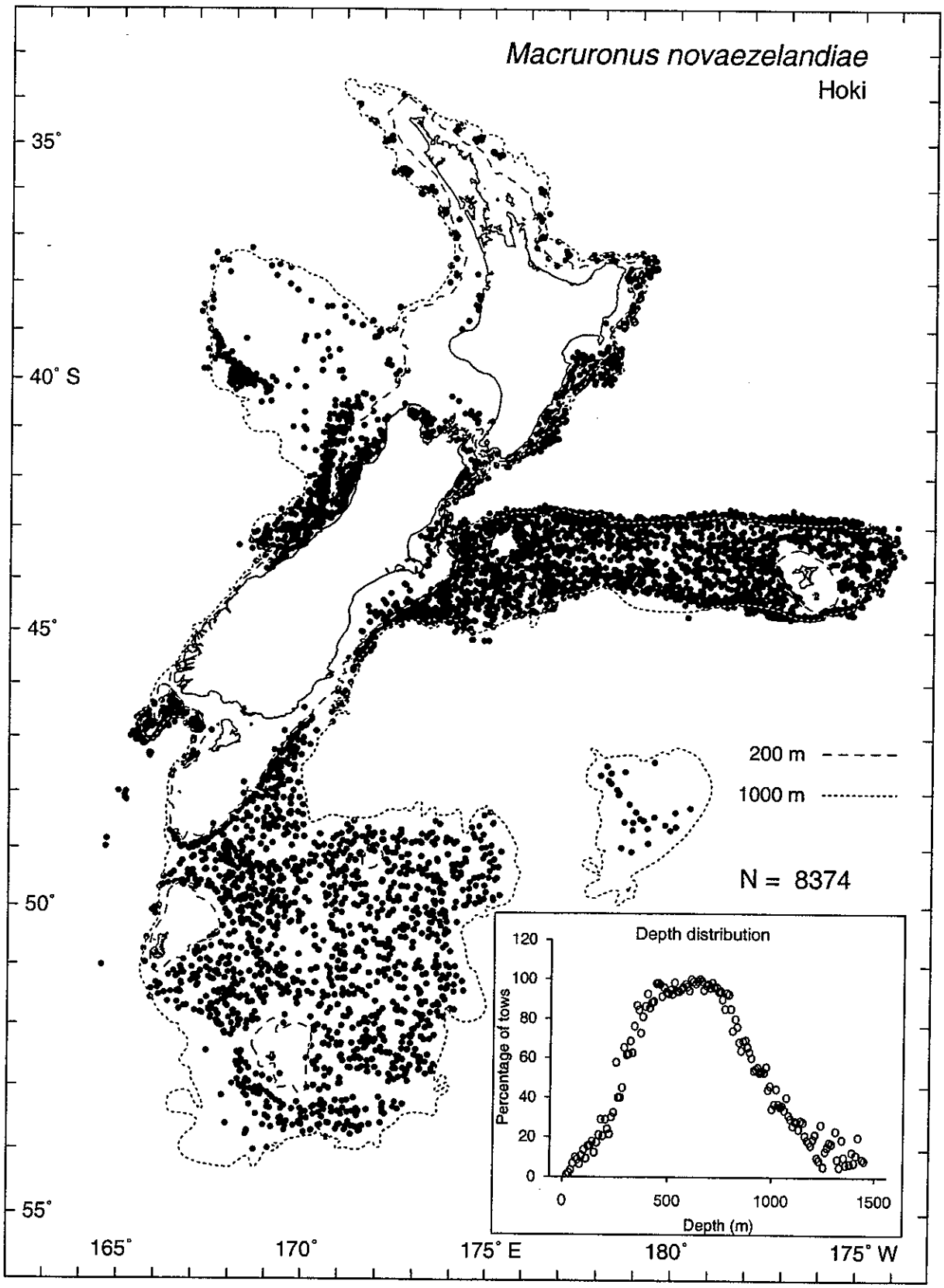

Lophonectes gallus
Crested flounder
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 183
Depth distribution
Percentage of tows
Depth (m)
0
2
4
6
8
10
0
500
1000
1500

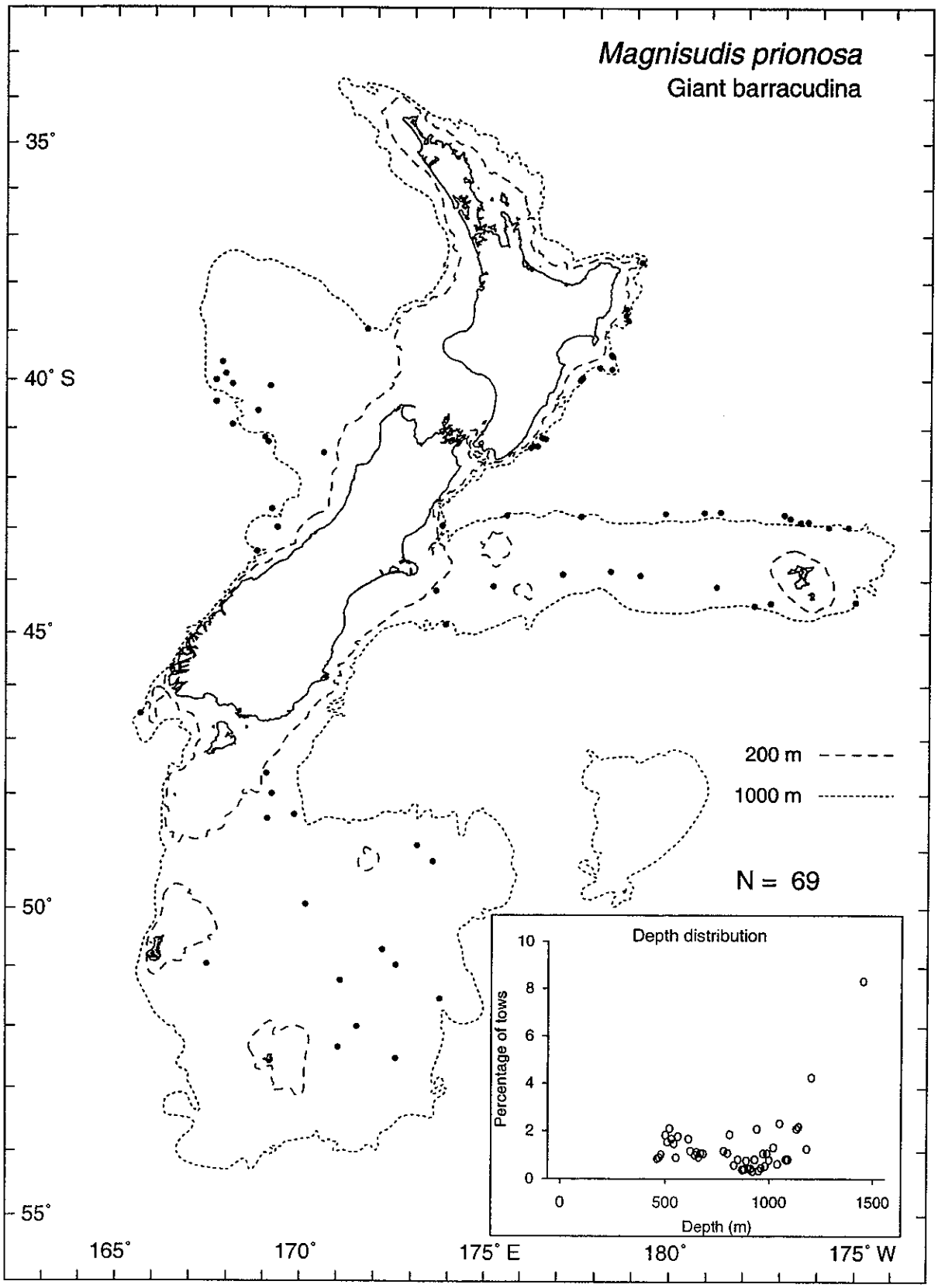

Lucigadus nigromaculatus
Blackspot rattail
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 554
Depth distribution
Percentage of tows
30
25
20
15
10
5
0
0
500
1000
1500
Depth (m)

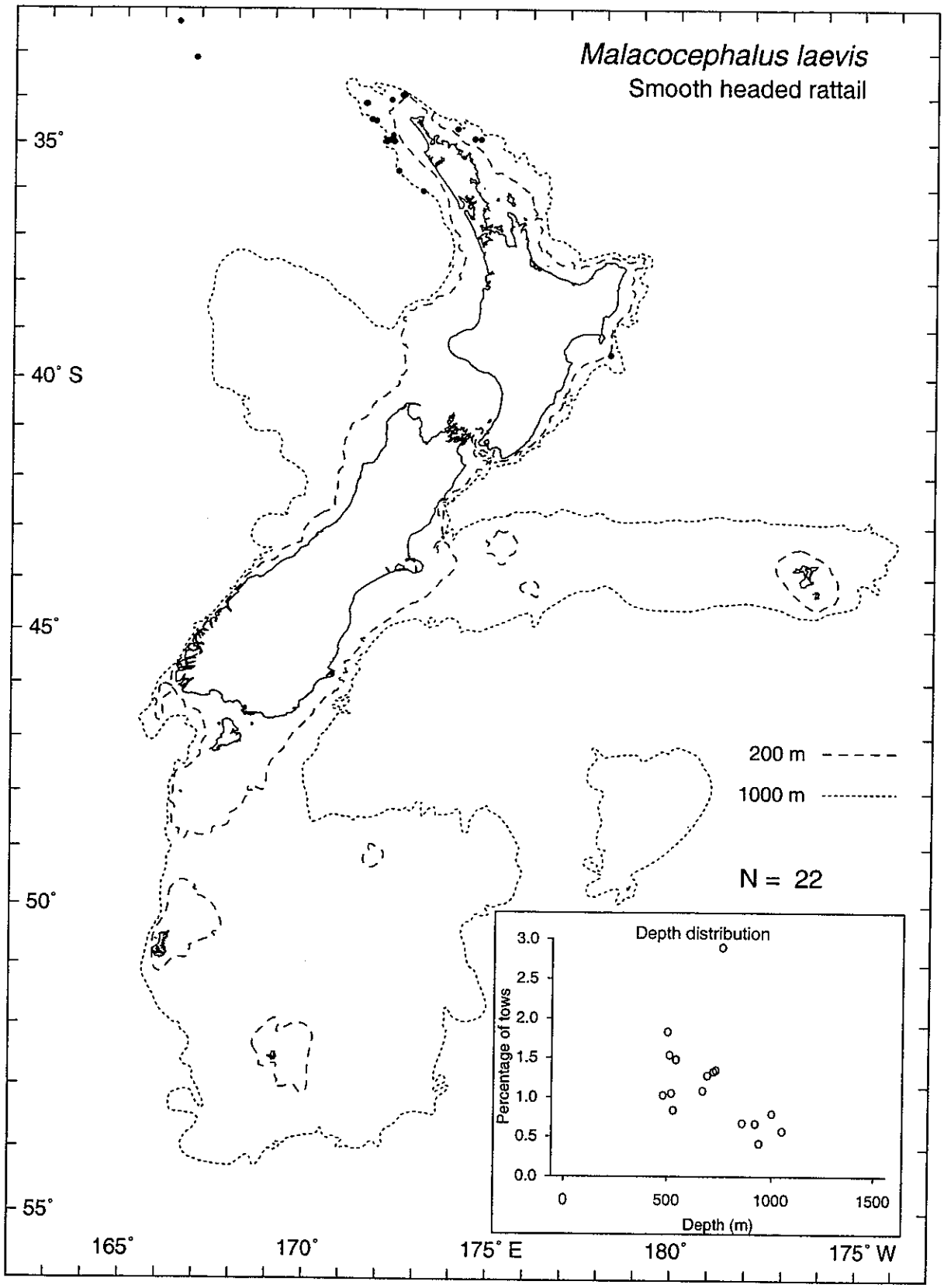

Lyconus spp.
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 130
Depth distribution
Percentage of tows
0
5
10
15
20
25
30
35
0
500
1000
1500
Depth (m)

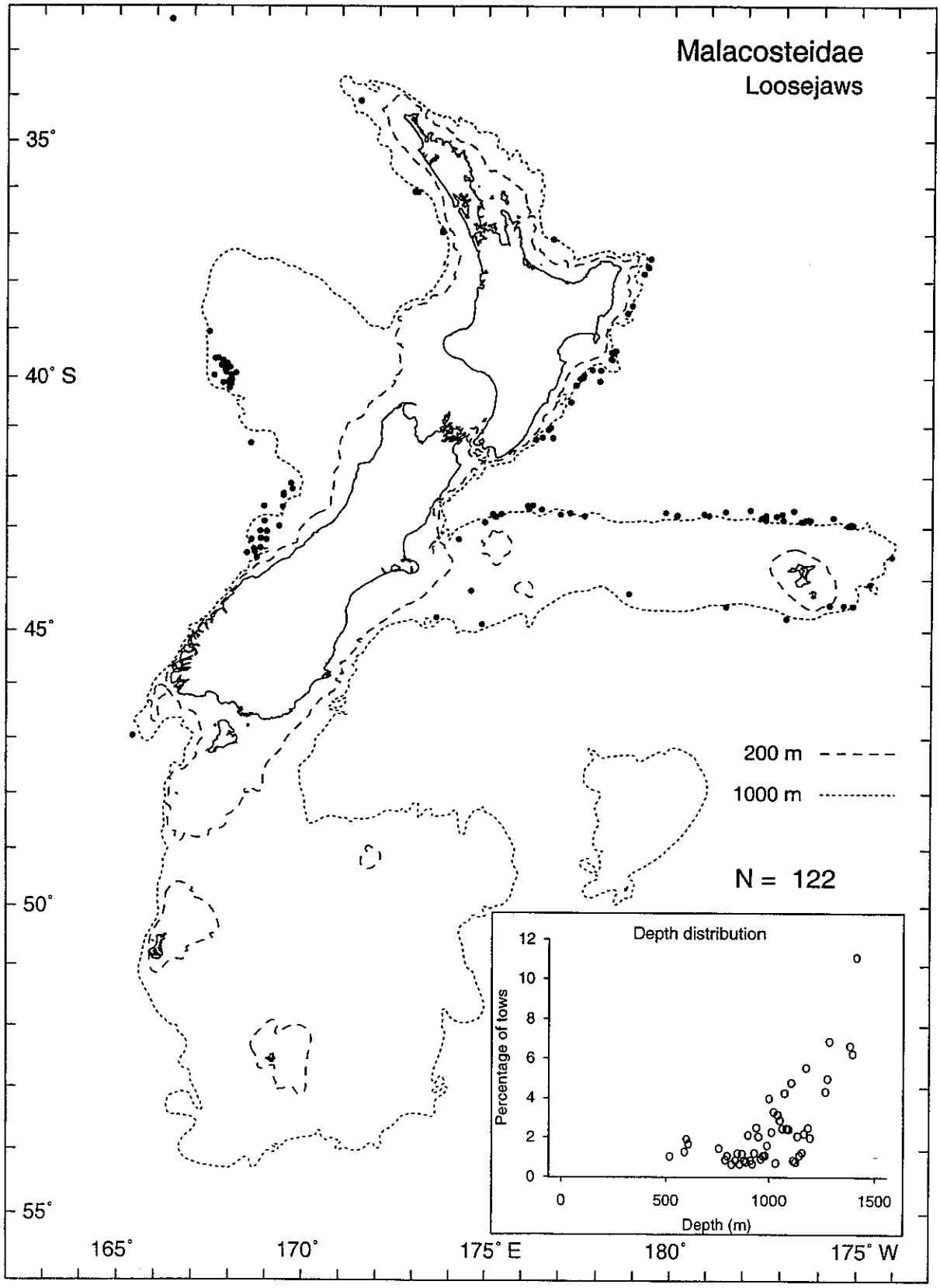

Macrorhamphosus scolopax
Snipefish
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 117
Depth distribution
Percentage of tows
0
1
2
3
4
5
6
7
0
500
1000
1500
Depth (m)

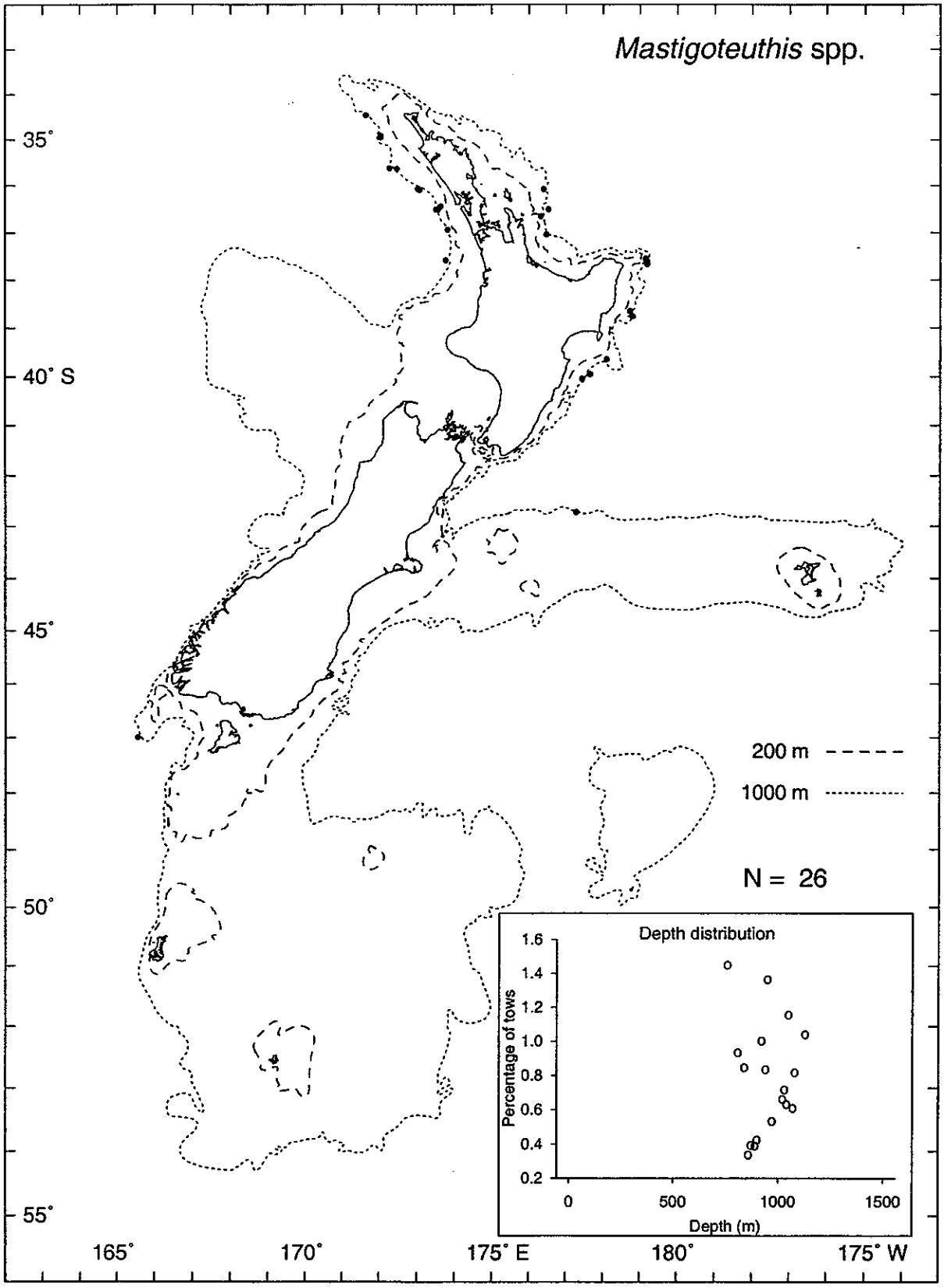

Macrourus carinatus
Ridge scaled rattail
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 2827
Depth distribution
Percentage of tows
Depth (m)
0
20
40
60
80
100
0
500
1000
1500


Macruronus novaezelandiae
Hoki
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 8374
Depth distribution
Percentage of tows
120
100
80
60
40
20
0
0
500
1000
1500
Depth (m)

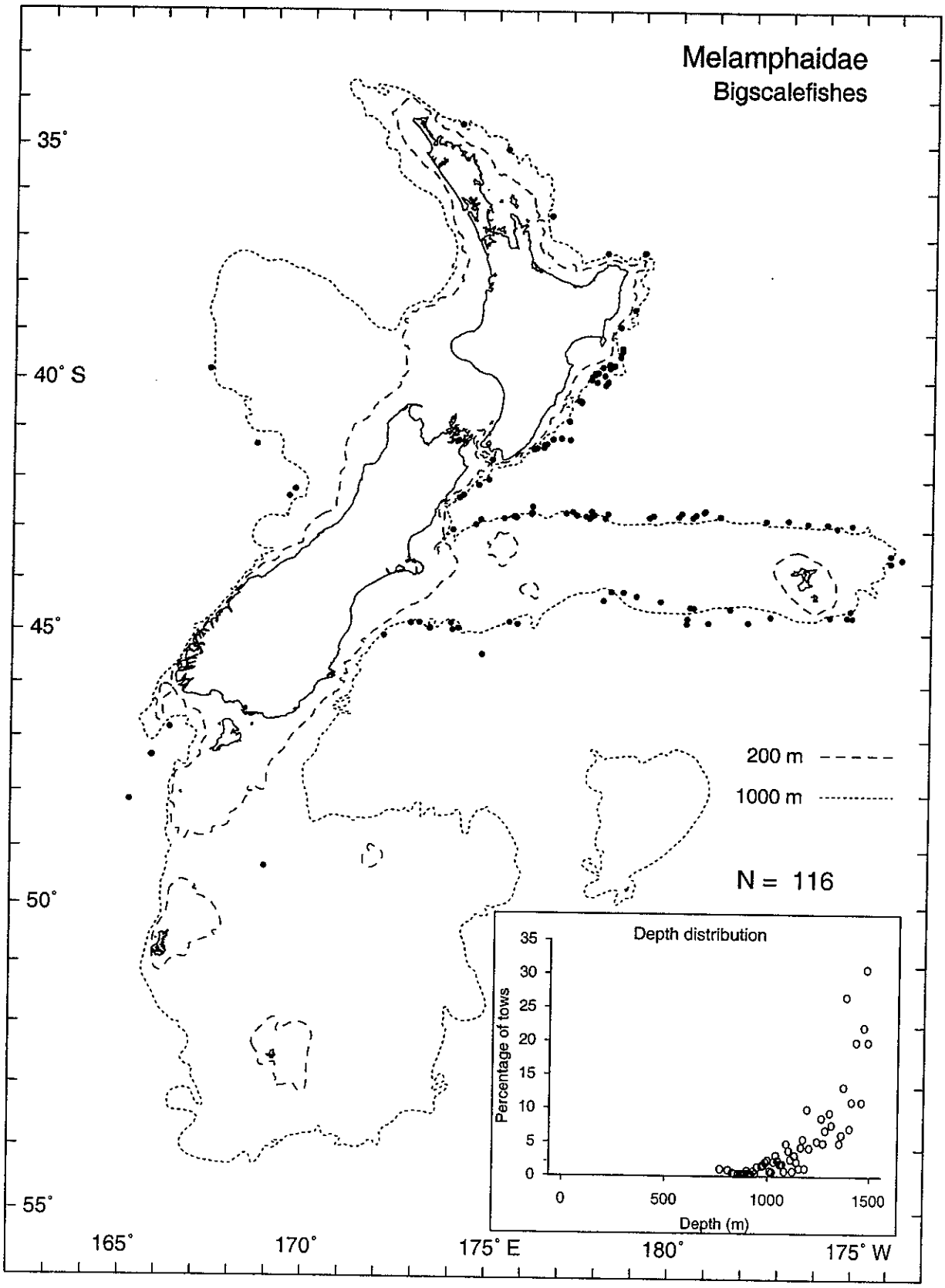

Magnisudis prionosa
Giant barracudina
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 69
Depth distribution
Percentage of tows
Depth (m)
0
2
4
6
8
10
0
500
1000
1500

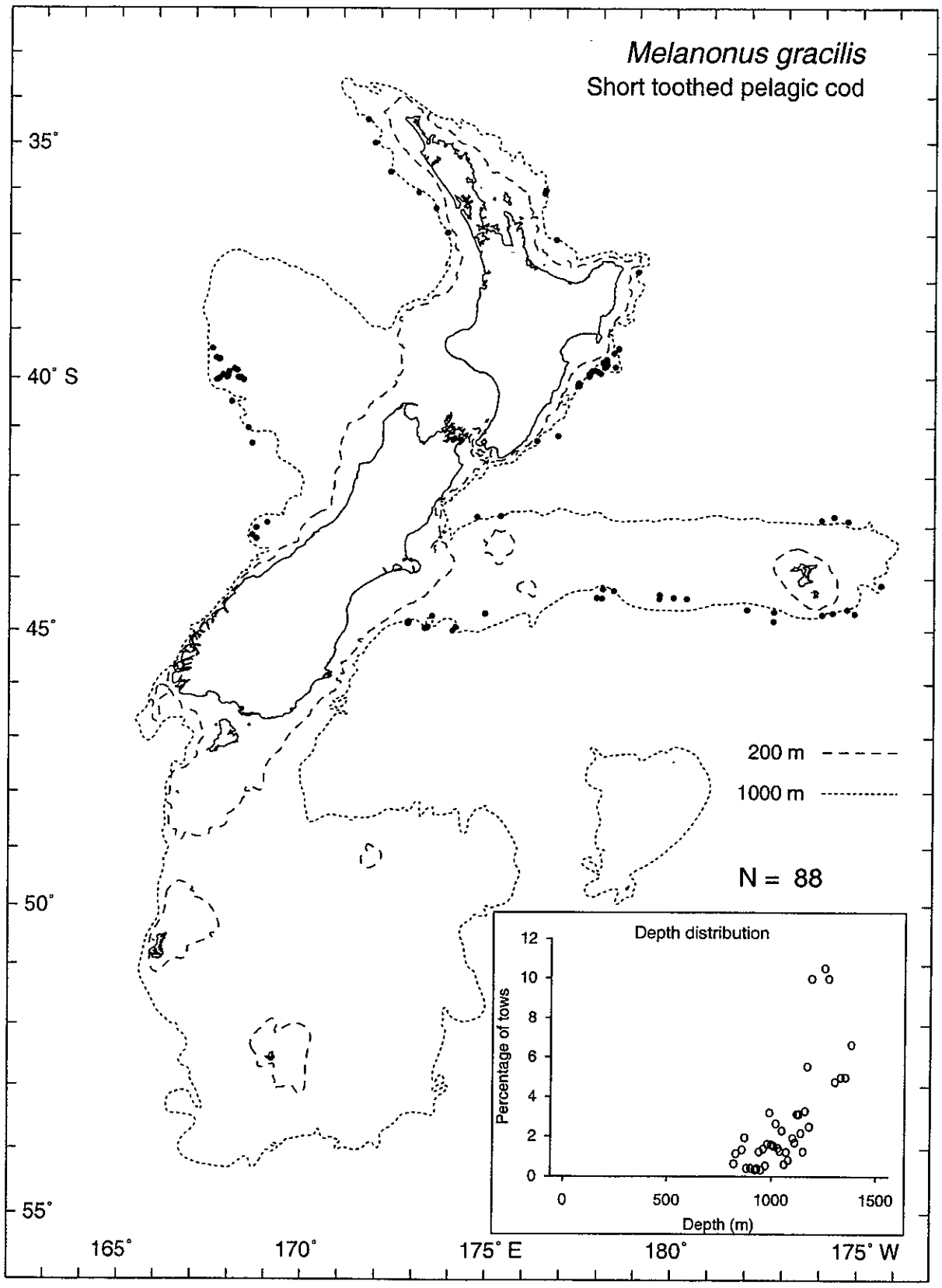

Malacocephalus laevis
Smooth headed rattail
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 22
Depth distribution
Percentage of tows
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0
500
1000
1500
Depth (m)

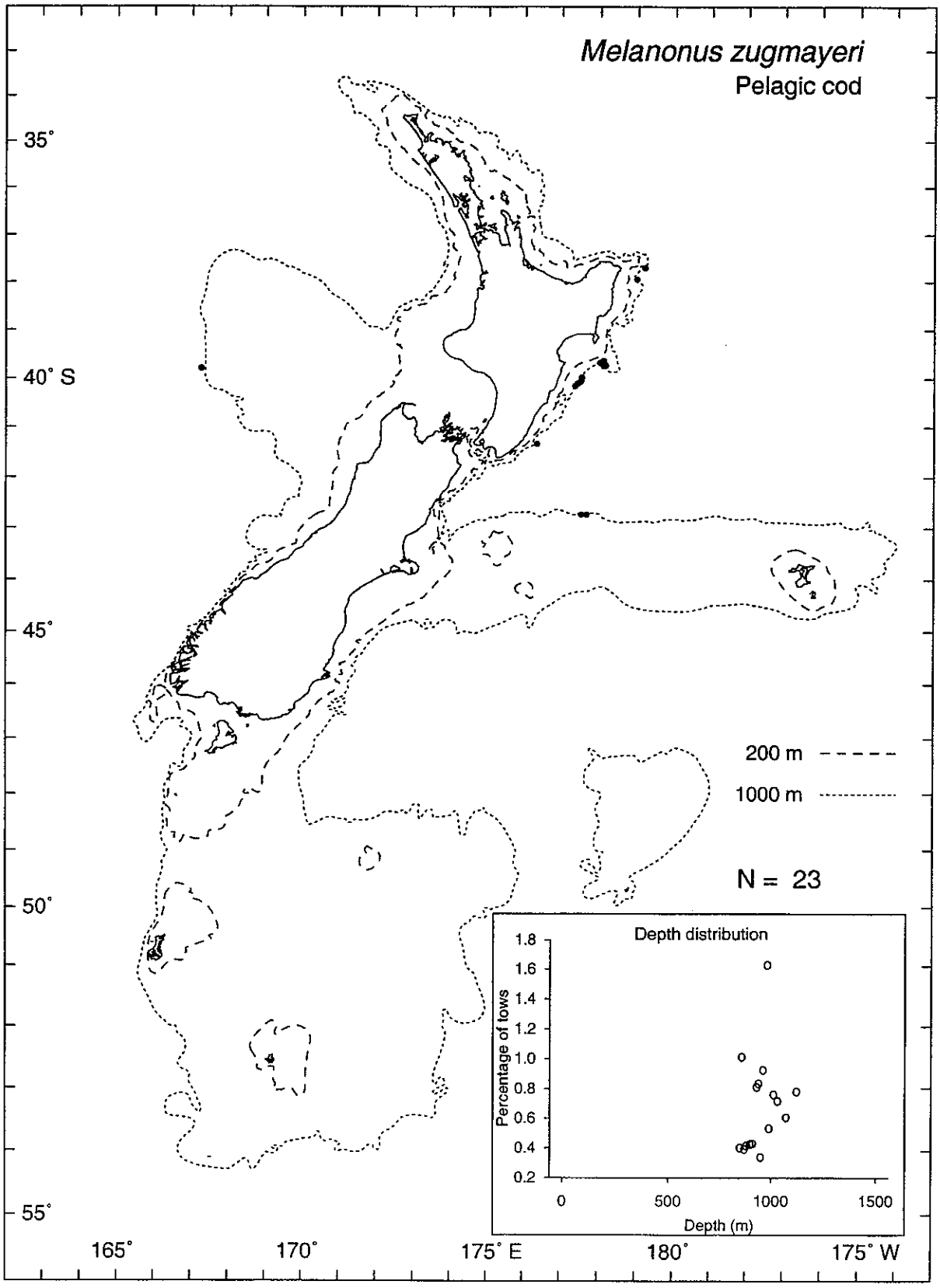

Malacosteidae
Loosejaws
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 122
Depth distribution
Percentage of tows
0
2
4
6
8
10
12
0
500
1000
1500
Depth (m)

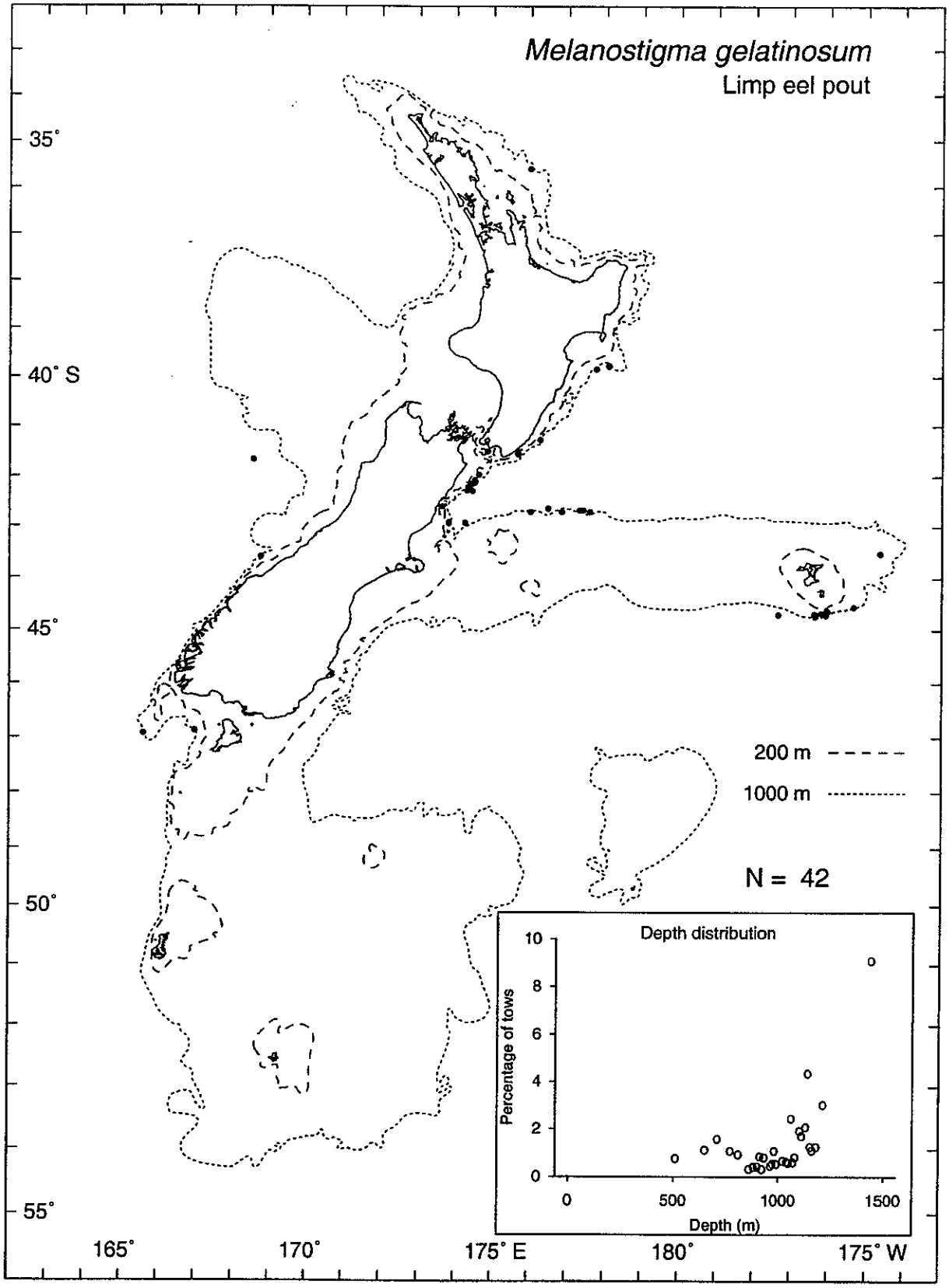


May include up to four species.

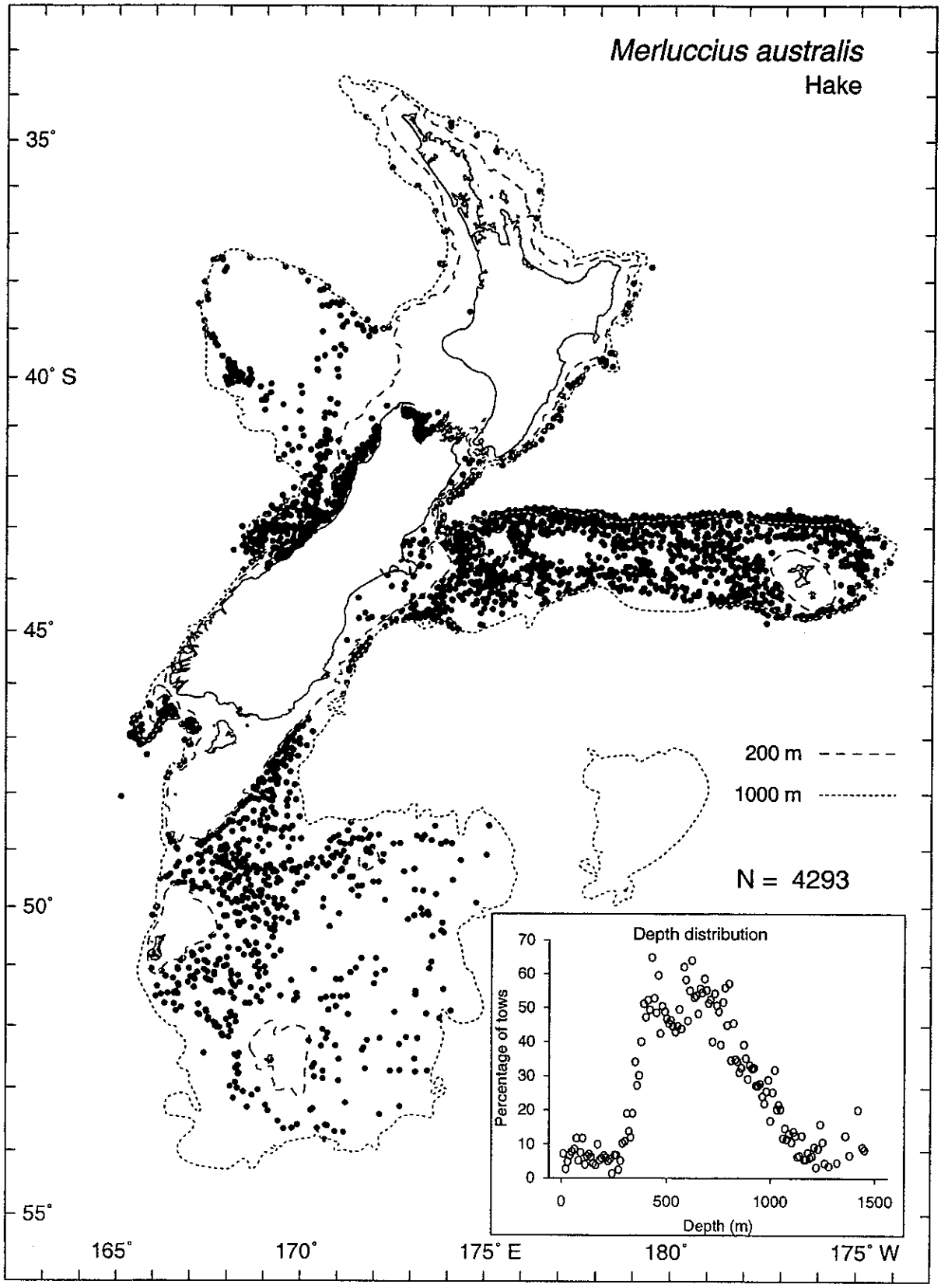

Melamphaidae
Bigscalefishes
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 116
Depth distribution
Percentage of tows
0
5
10
15
20
25
30
35
0
500
1000
1500
Depth (m)

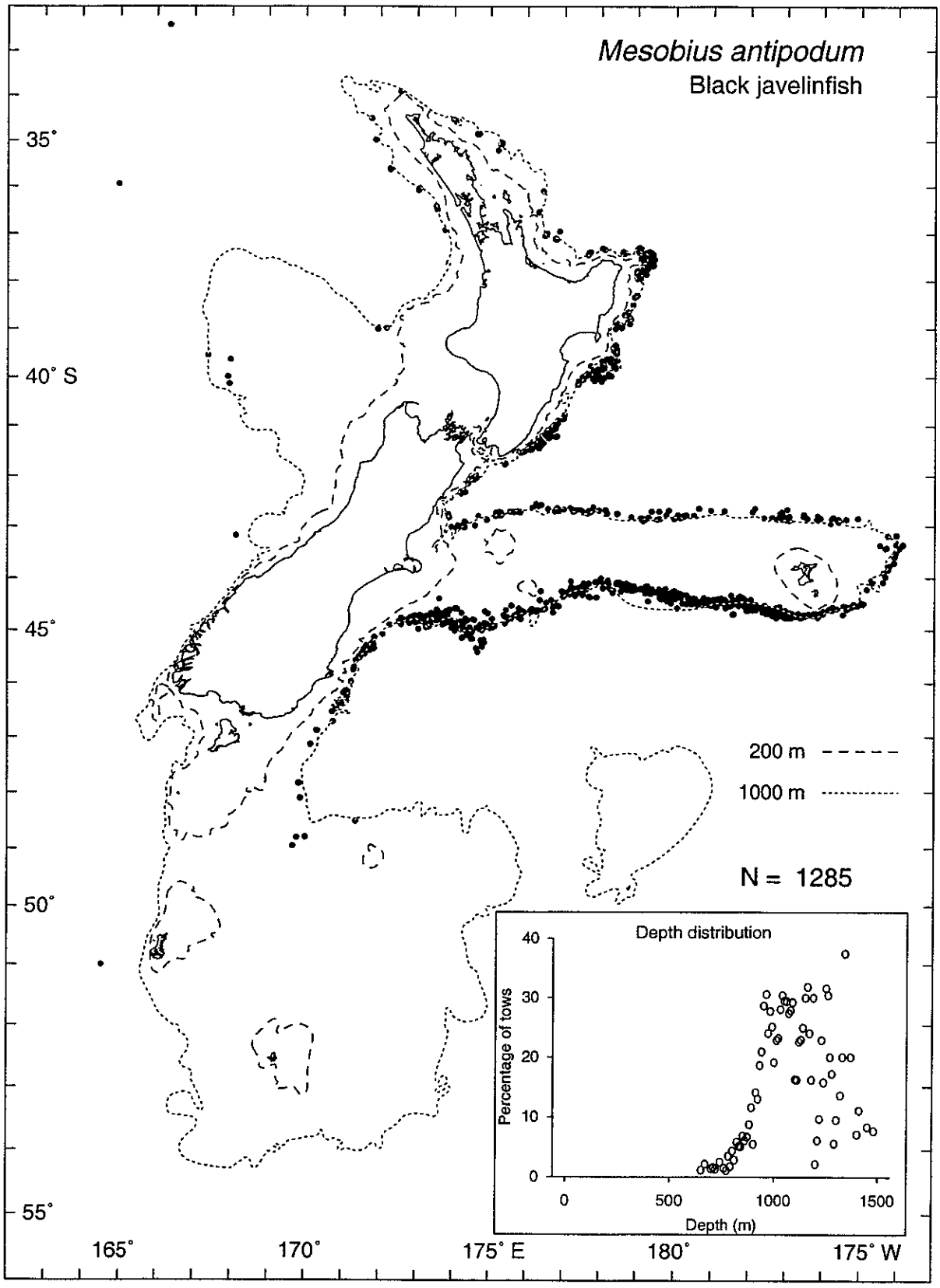

Melanonus gracilis
Short toothed pelagic cod
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 88
Depth distribution
Percentage of tows
Depth (m)
0
2
4
6
8
10
12
0
500
1000
1500

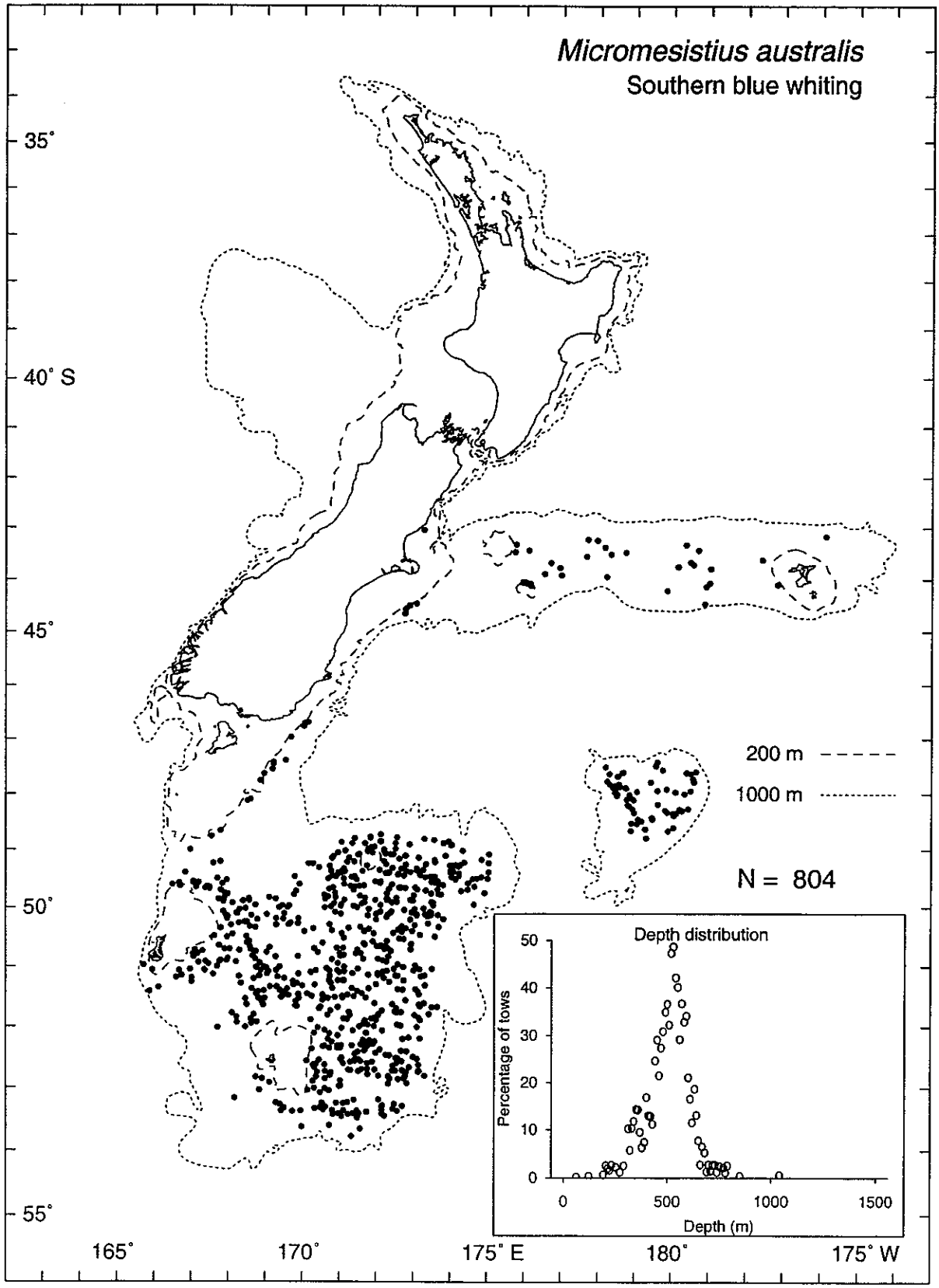

Melanonus zugmayeri
Pelagic cod
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 23
Depth distribution
Percentage of tows
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0
500
1000
1500
Depth (m)

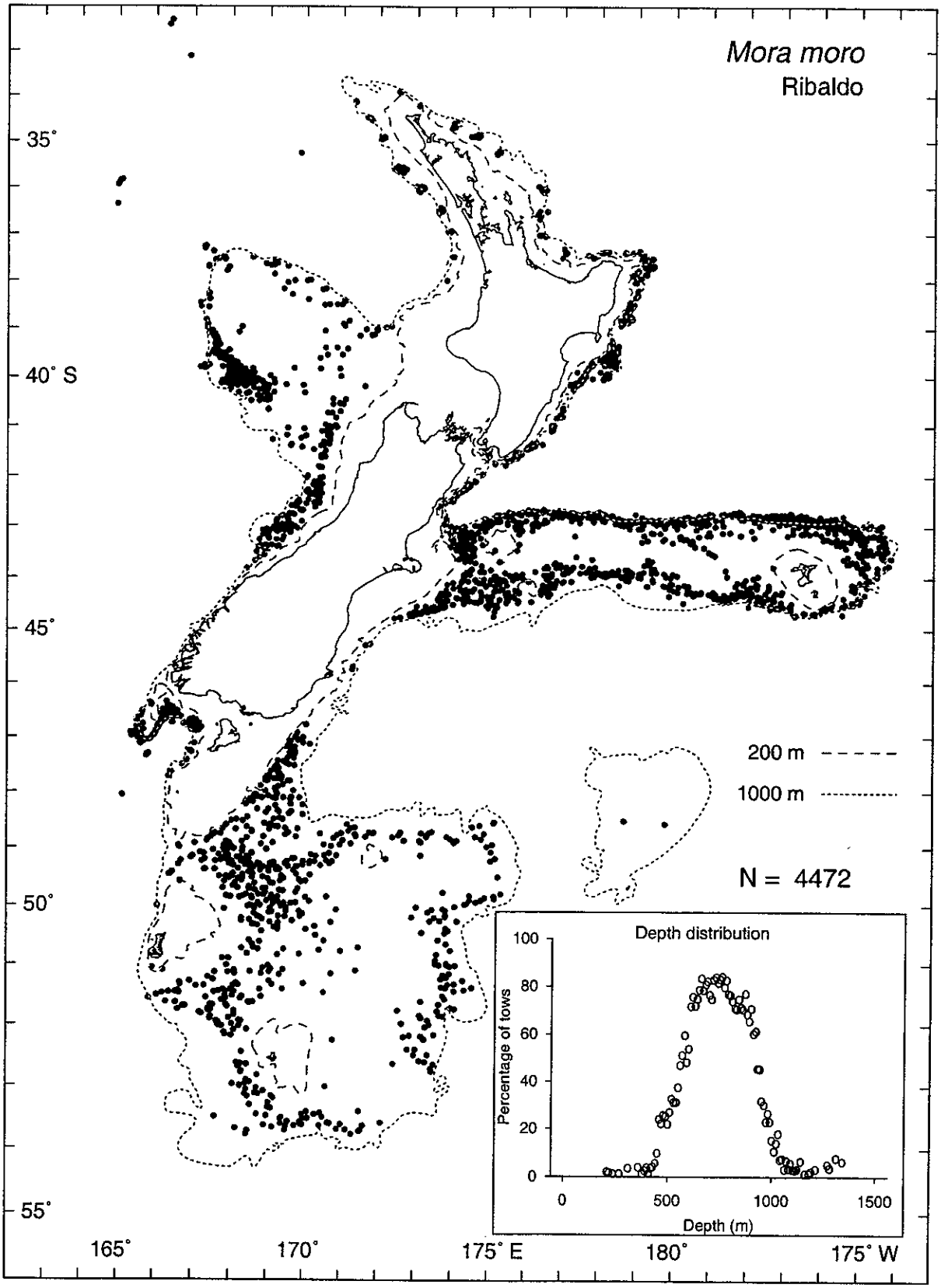


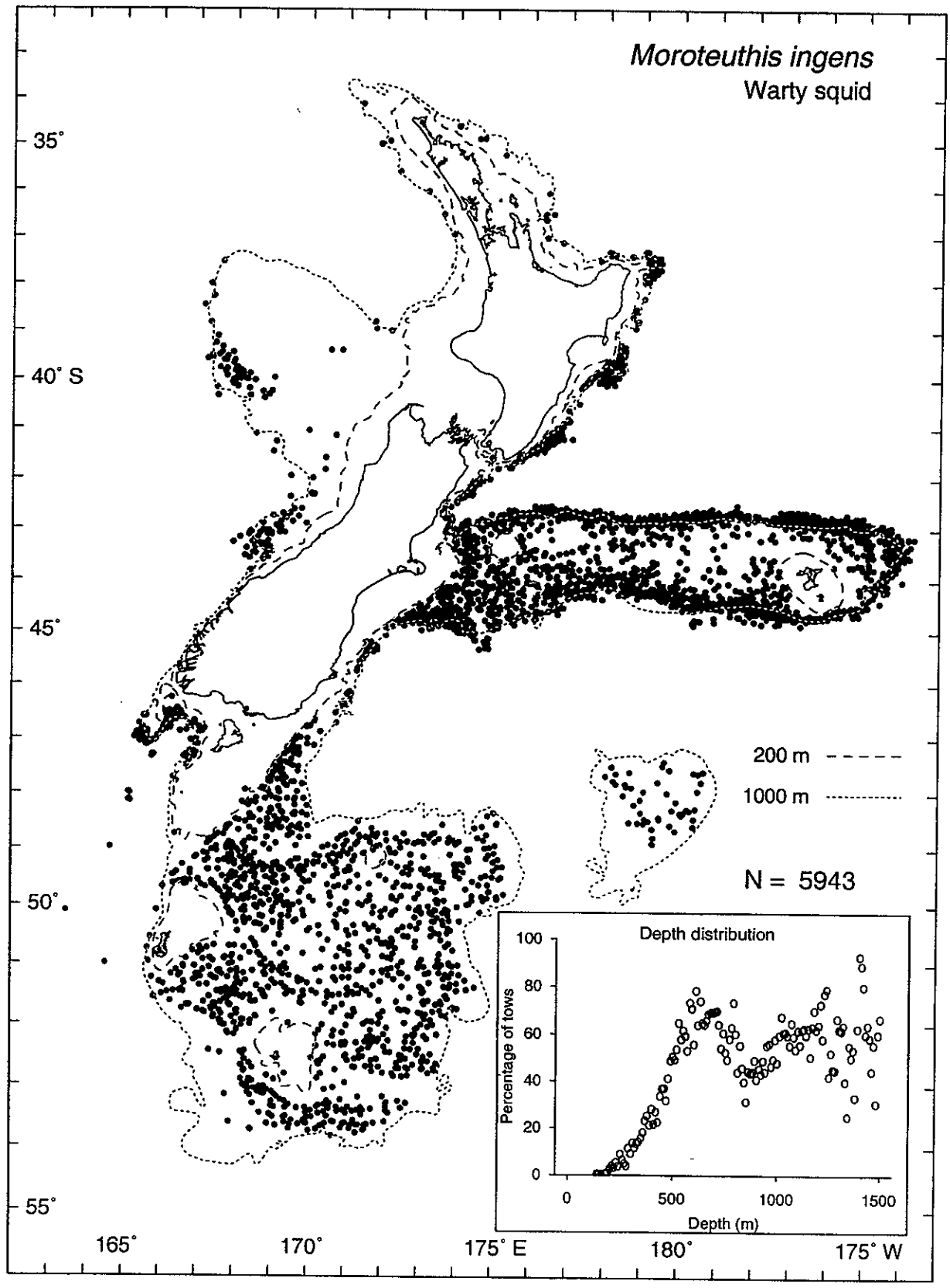
May include other *Melanostigma* spp.


Merluccius australis
Hake
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 4293
Depth distribution
Percentage of tows
0
10
20
30
40
50
60
70
0
500
1000
1500
Depth (m)

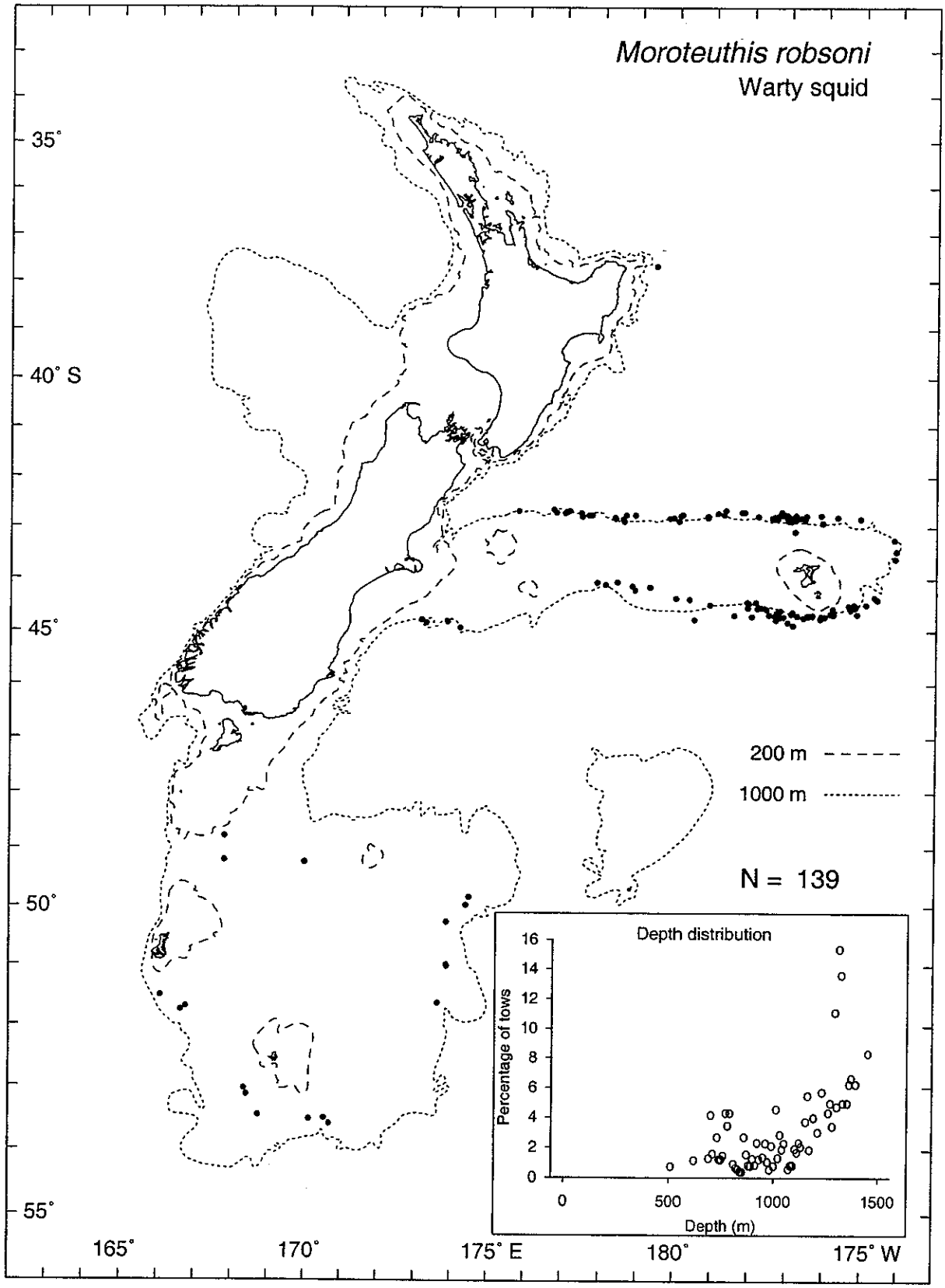

Mesobius antipodum
Black javelinfish
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 1285
Depth distribution
Percentage of tows
0
10
20
30
40
0
500
1000
1500
Depth (m)

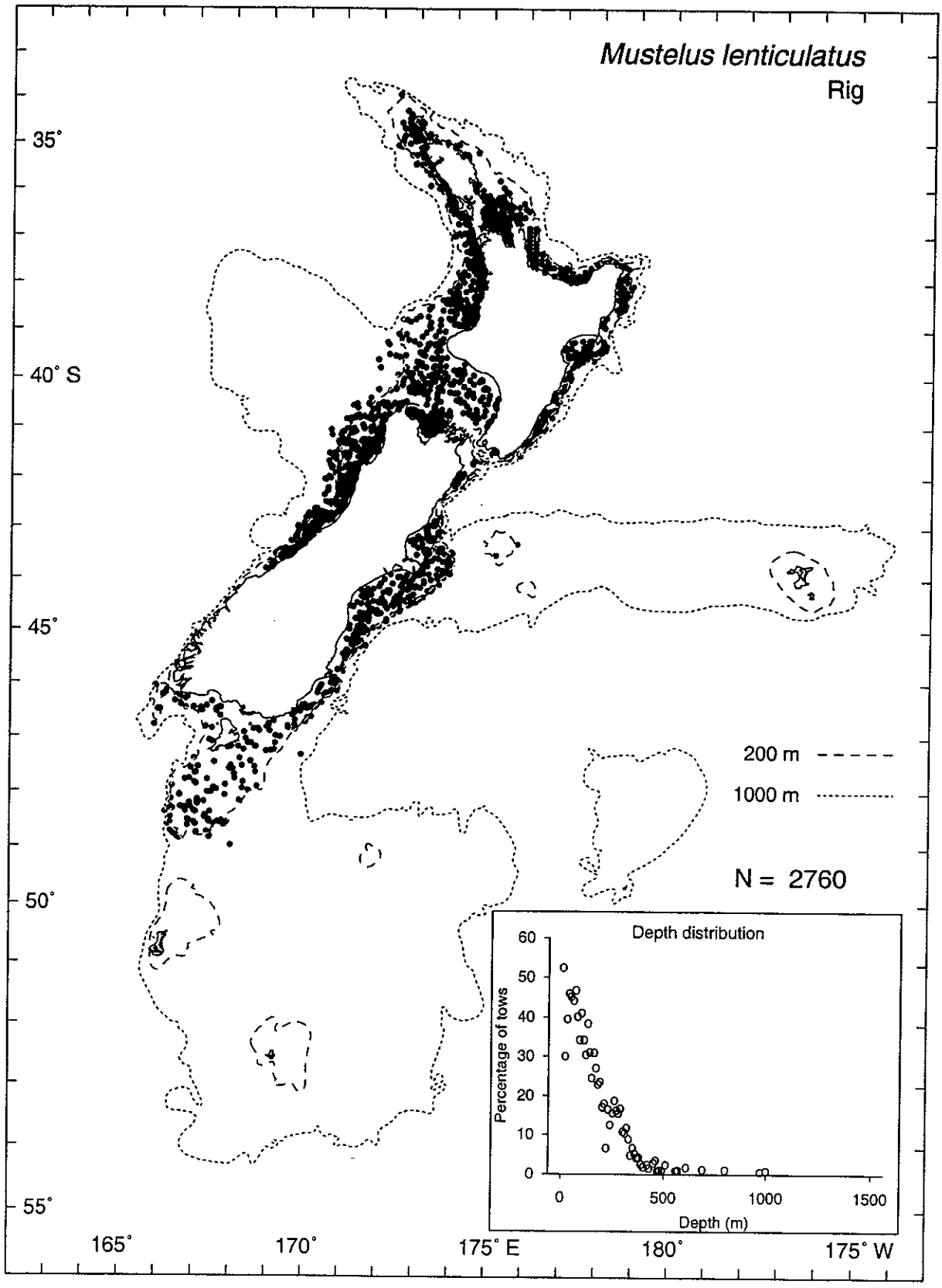

Micromesistius australis
Southern blue whiting
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 804
Depth distribution
Percentage of tows
0
10
20
30
40
50
0
500
1000
1500
Depth (m)

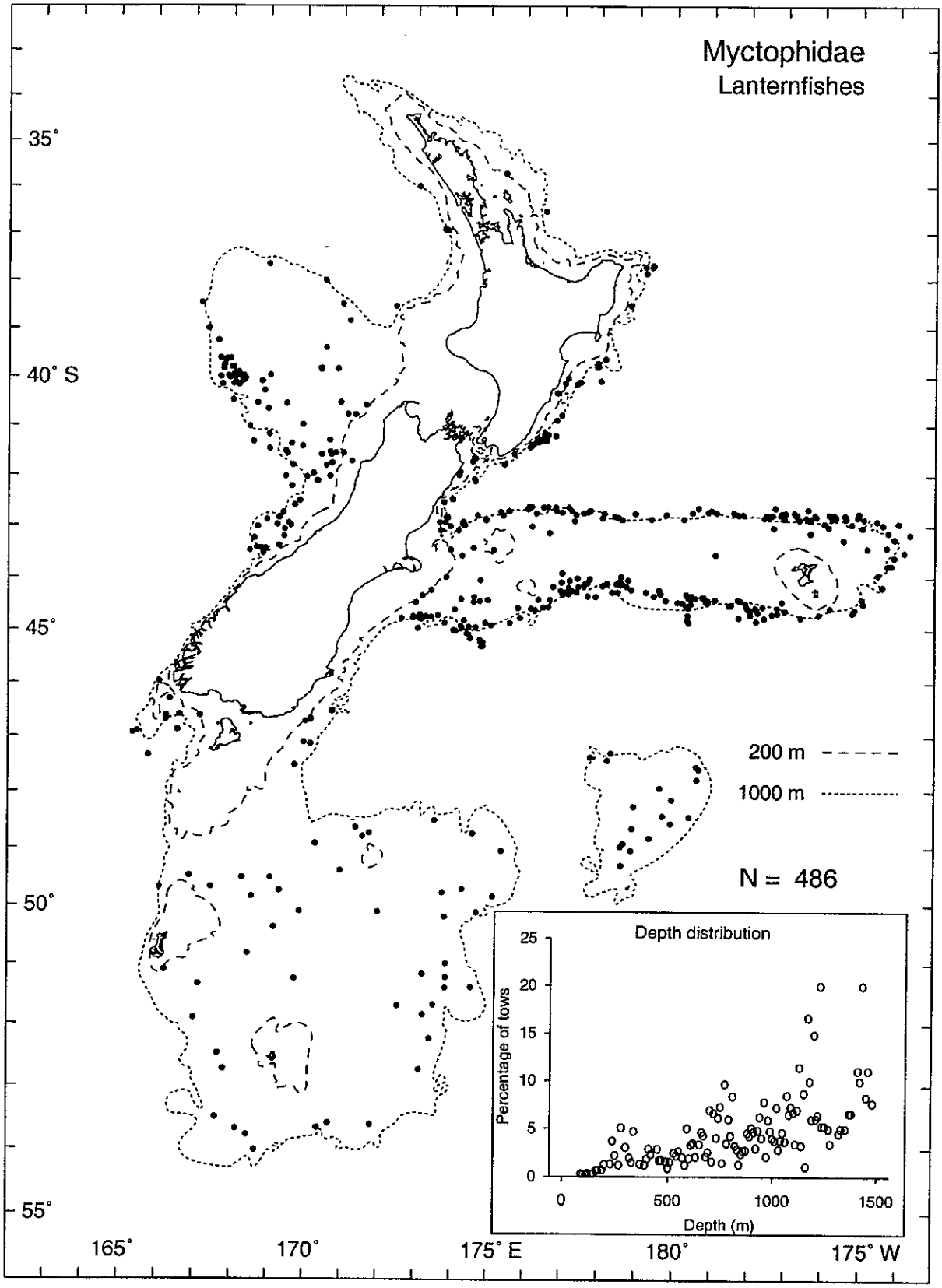

Mora moro
Ribaldo
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 4472
Depth distribution
Percentage of tows
100
80
60
40
20
0
0
500
1000
1500
Depth (m)

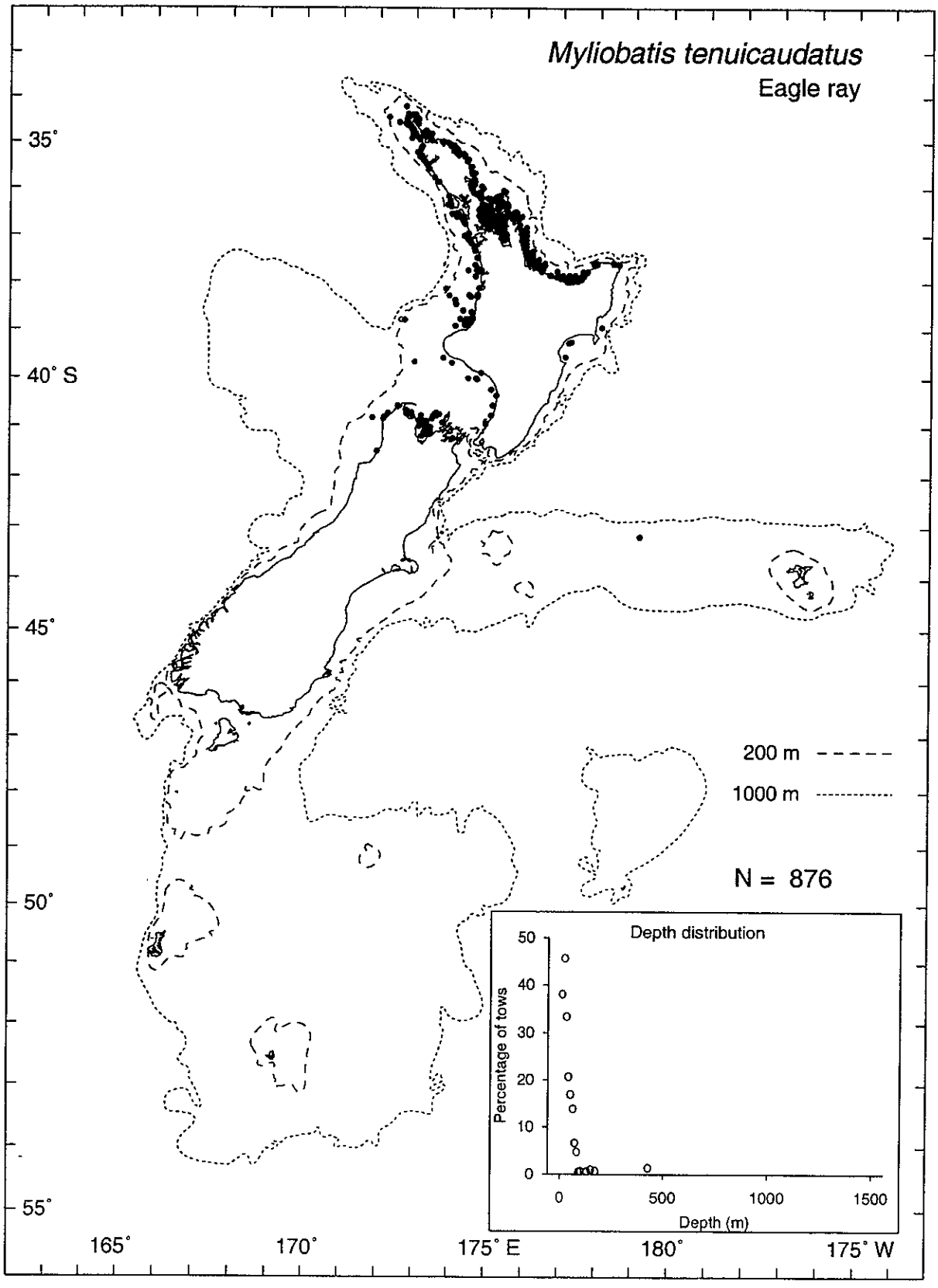


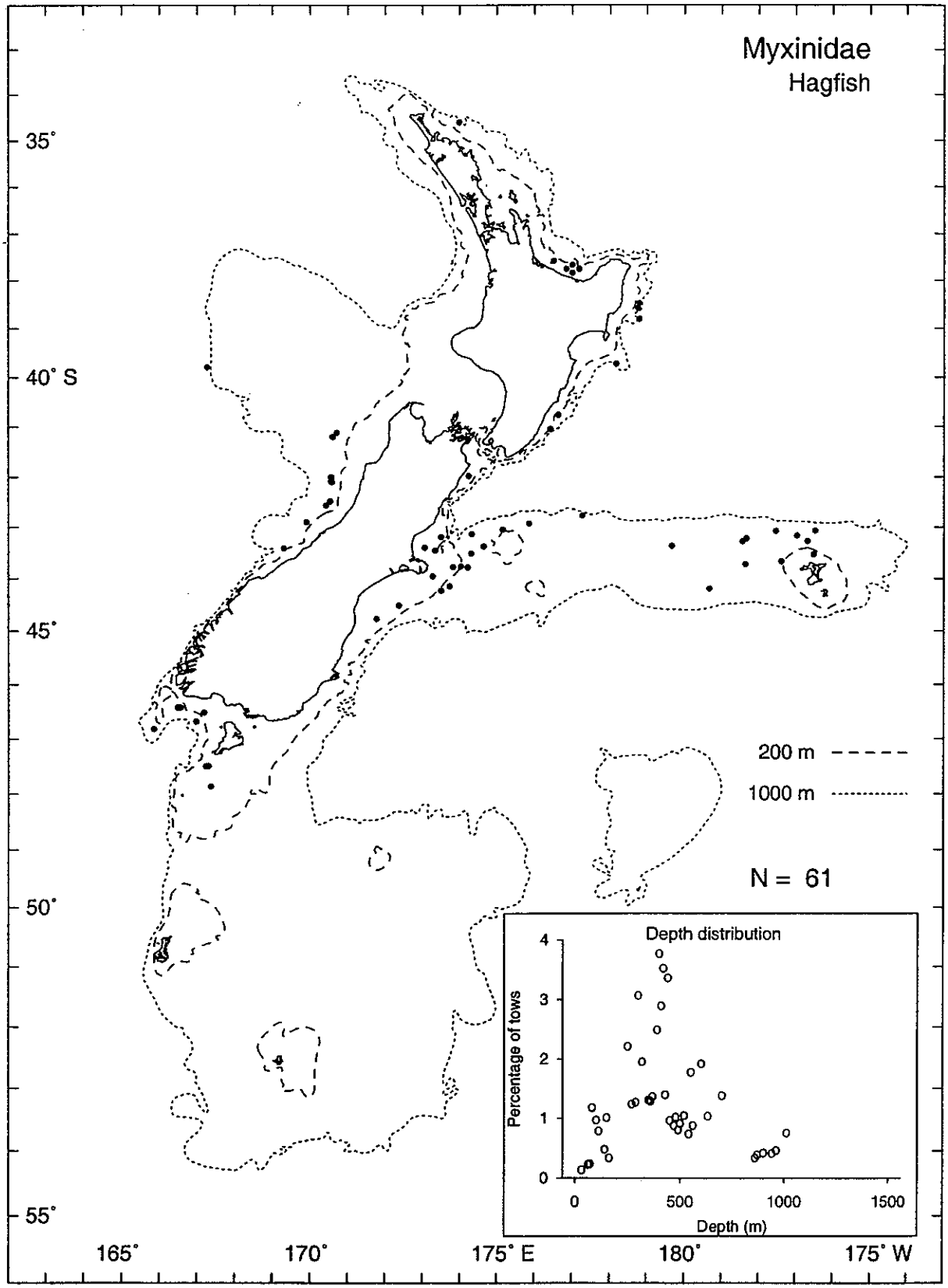
Includes some *M. robsoni*.


Moroteuthis robsoni
Warty squid
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 139
Depth distribution
Percentage of tows
Depth (m)
0
2
4
6
8
10
12
14
16
0
500
1000
1500

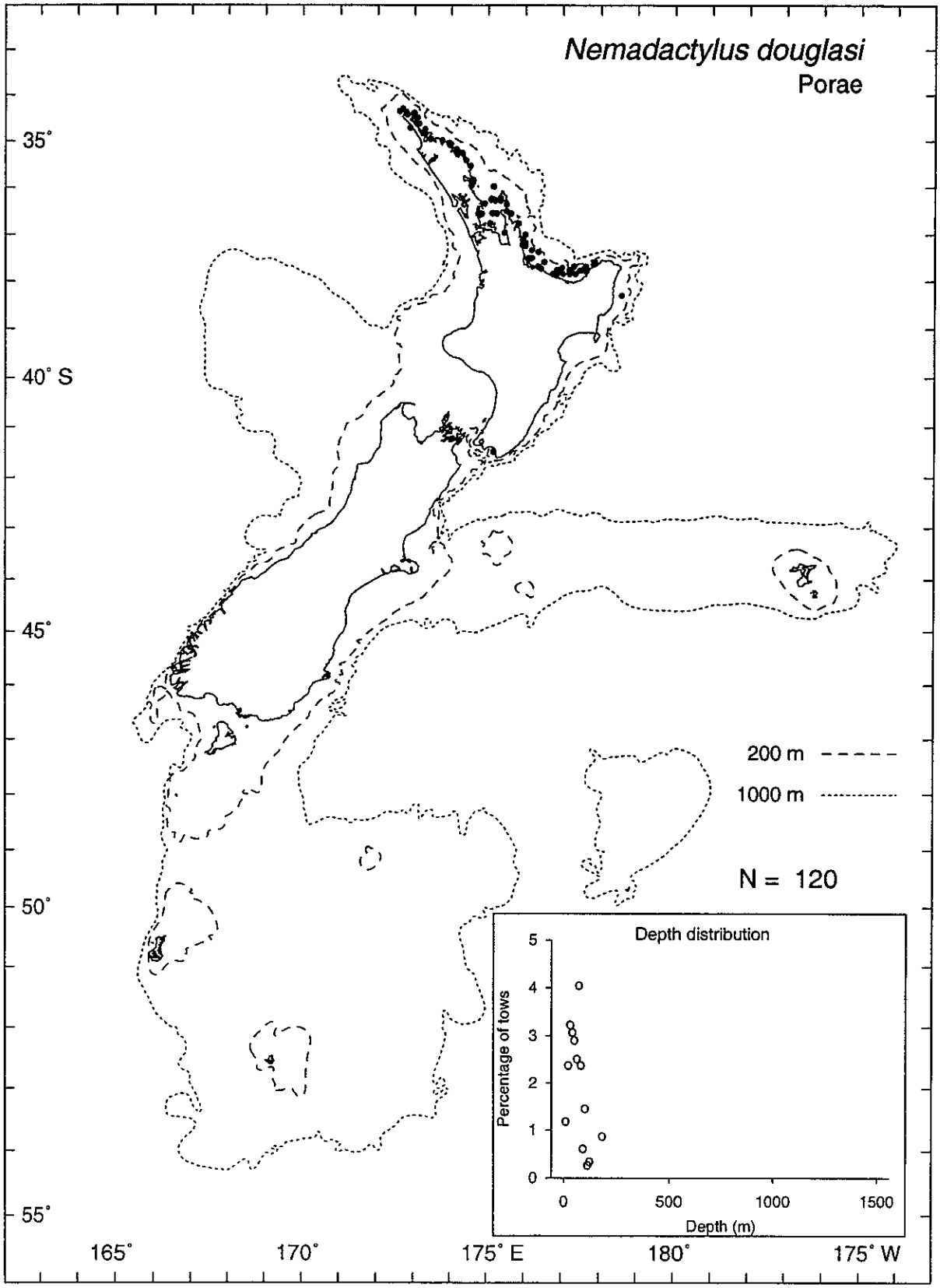

Mustelus lenticulatus
Rig
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 2760
Depth distribution
Percentage of tows
Depth (m)
0
10
20
30
40
50
60
0
500
1000
1500

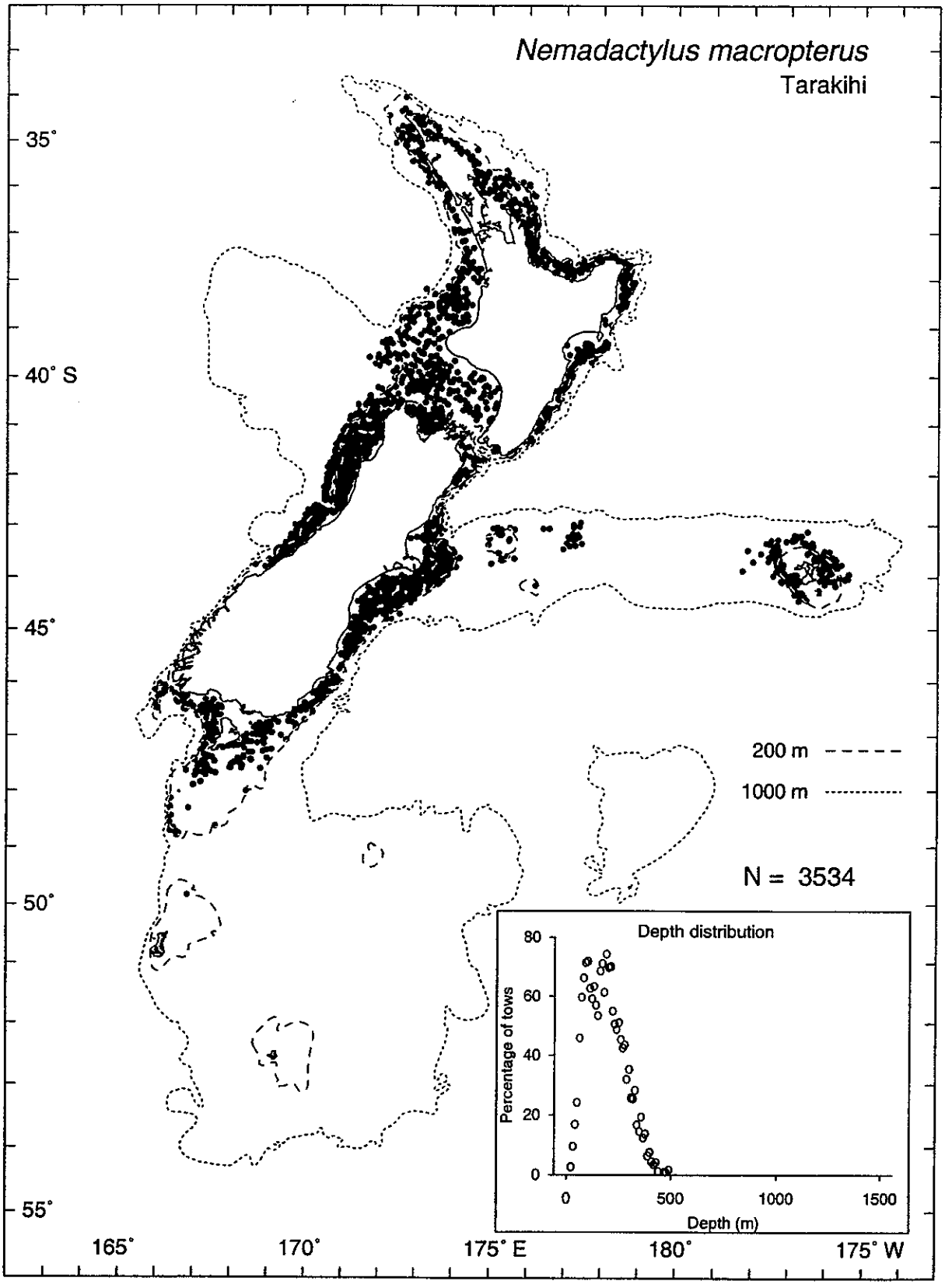

Myctophidae
Lanternfishes
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 486
Depth distribution
Percentage of tows
Depth (m)
0
5
10
15
20
25
0
500
1000
1500


Myliobatis tenuicaudatus
Eagle ray
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 876
Depth distribution
Percentage of tows
0
10
20
30
40
50
0
500
1000
1500
Depth (m)

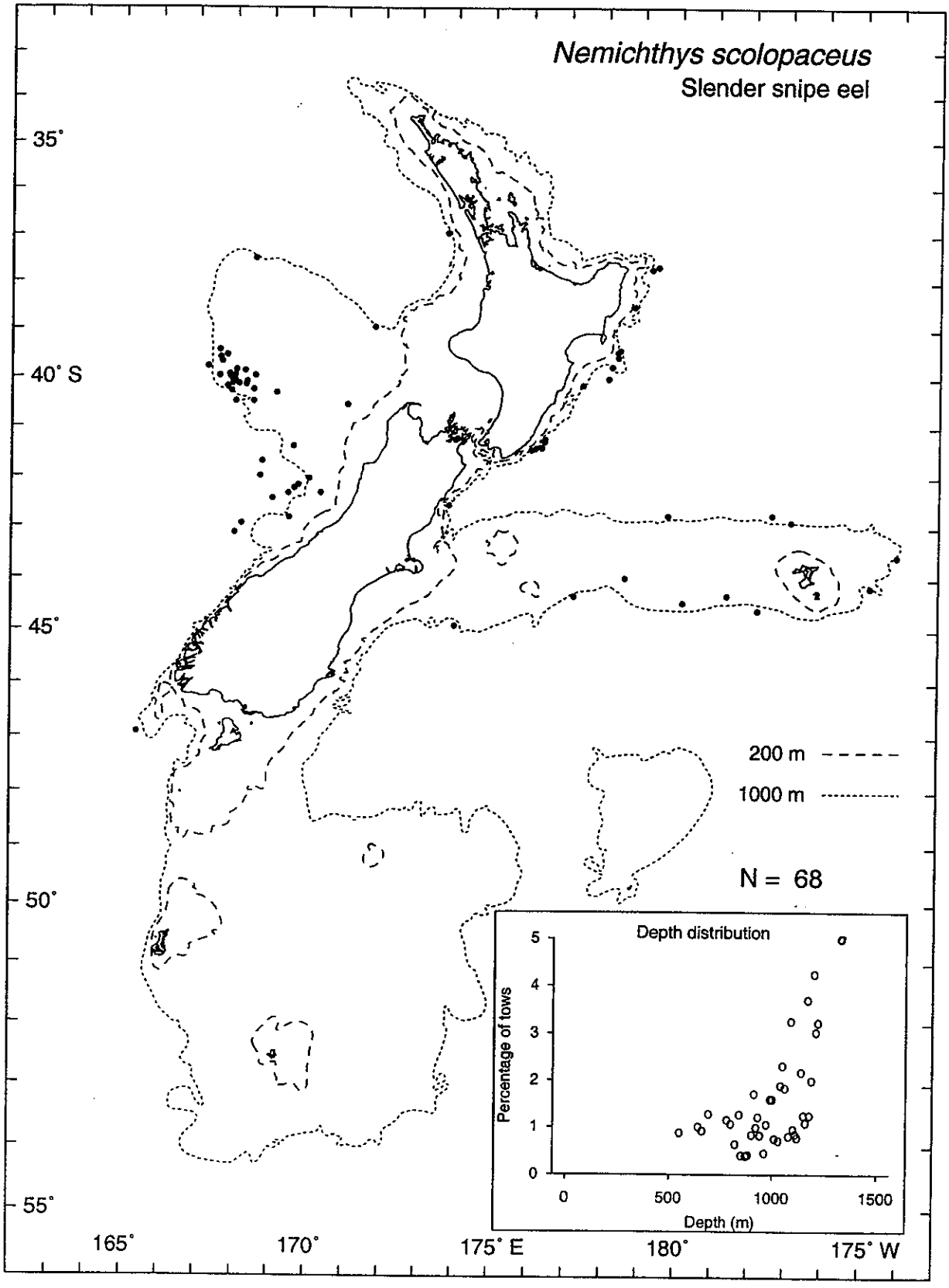


Most records are *Eptatretus cirrhatus.* Records deeper than 800 m may be *Neomyxine biniplicata* or *N. elongata.*

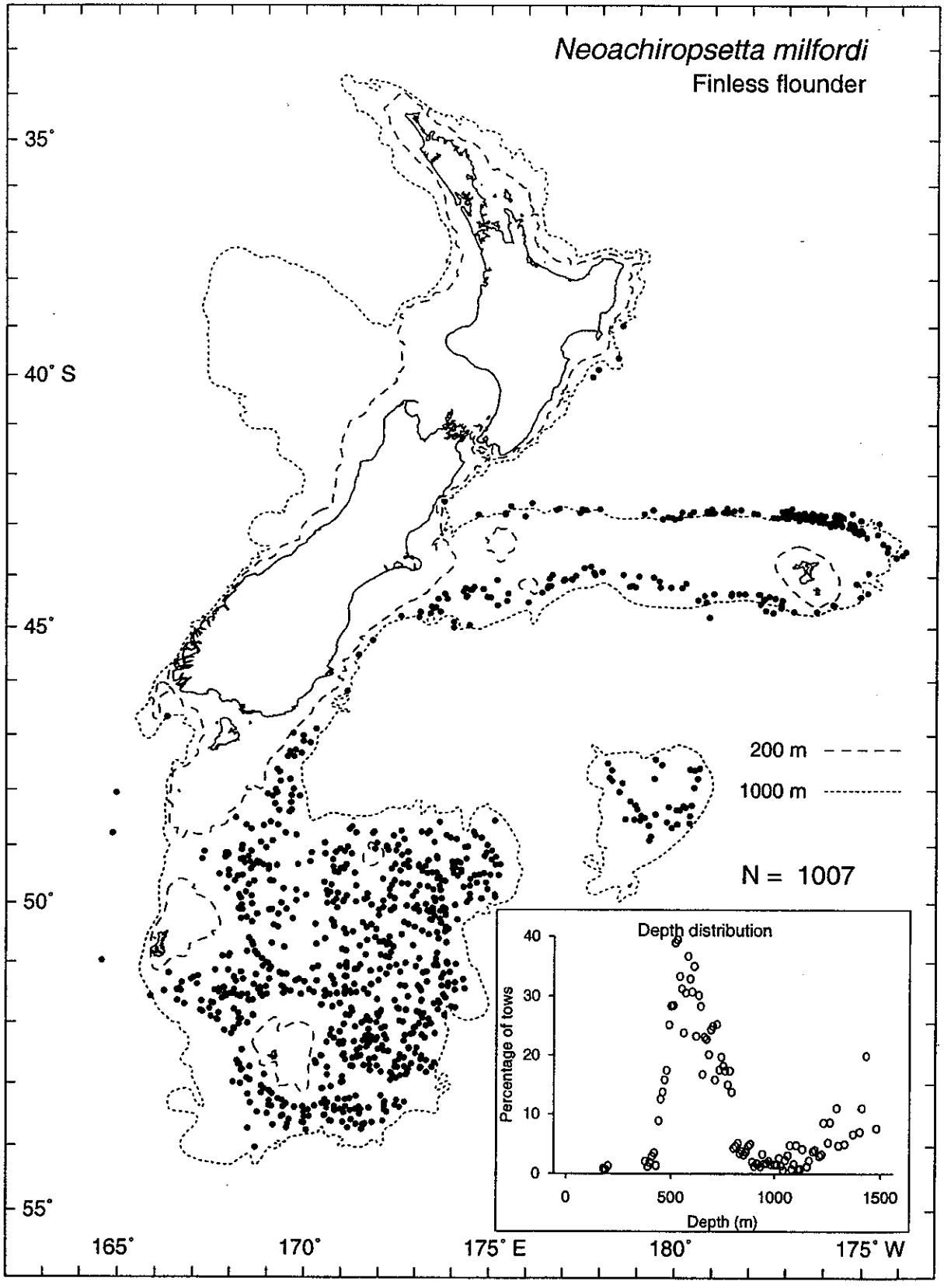

Nemadactylus douglasi
Porae
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 120
Depth distribution
Percentage of tows
0
1
2
3
4
5
0
500
1000
1500
Depth (m)



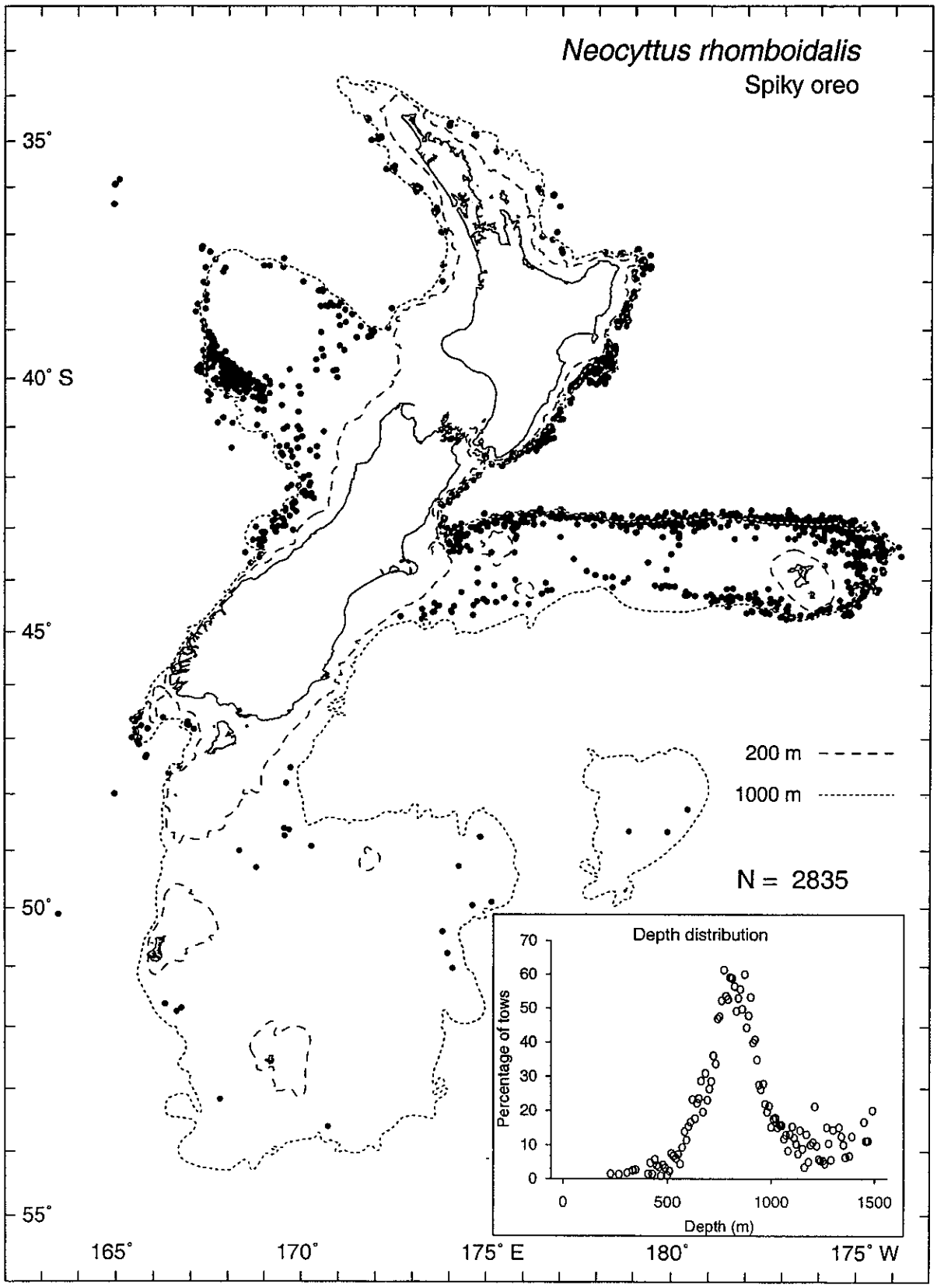
Northern records may include *Nemadactylus* sp.

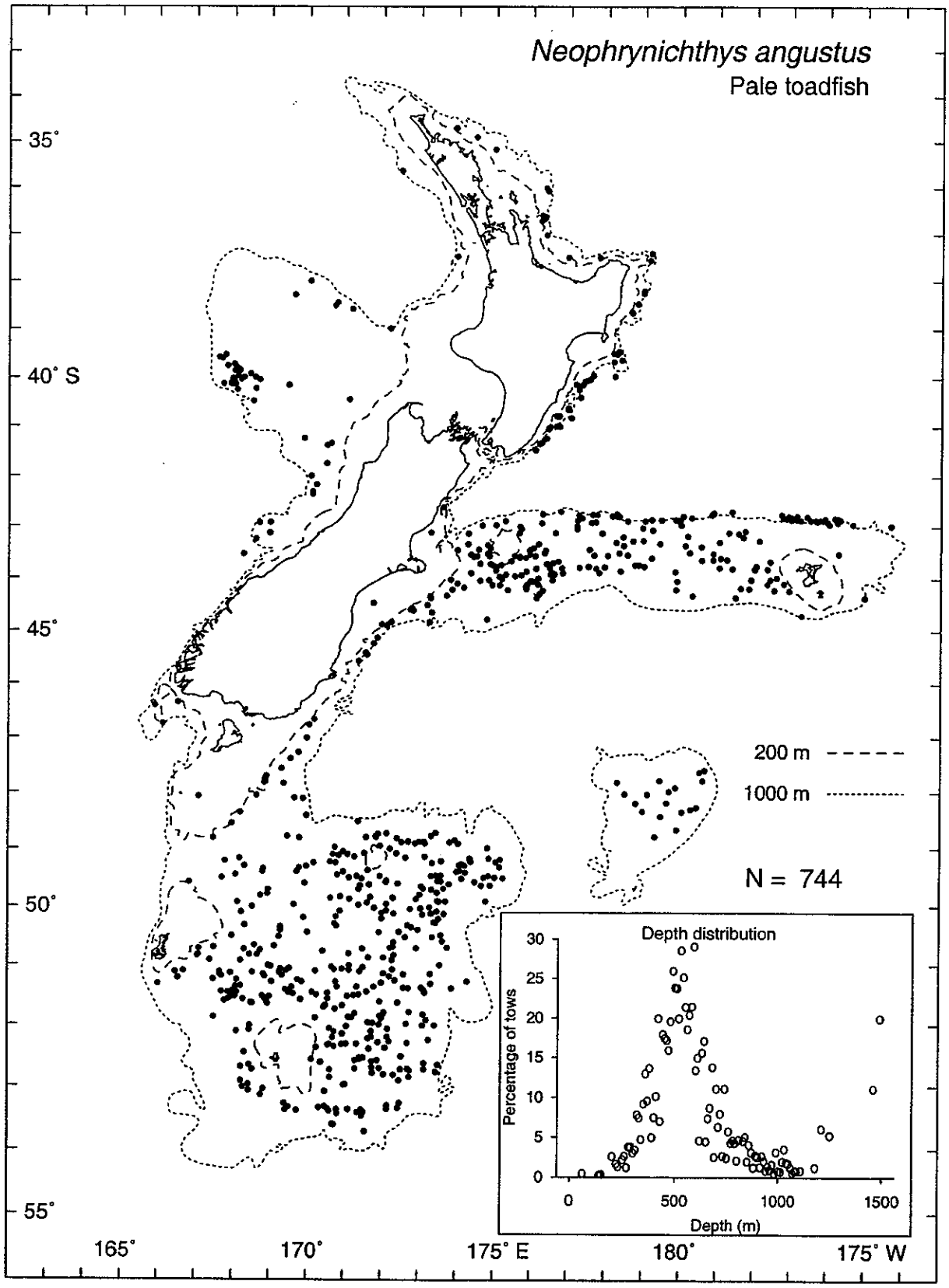


May include some *N. curvirostris*.

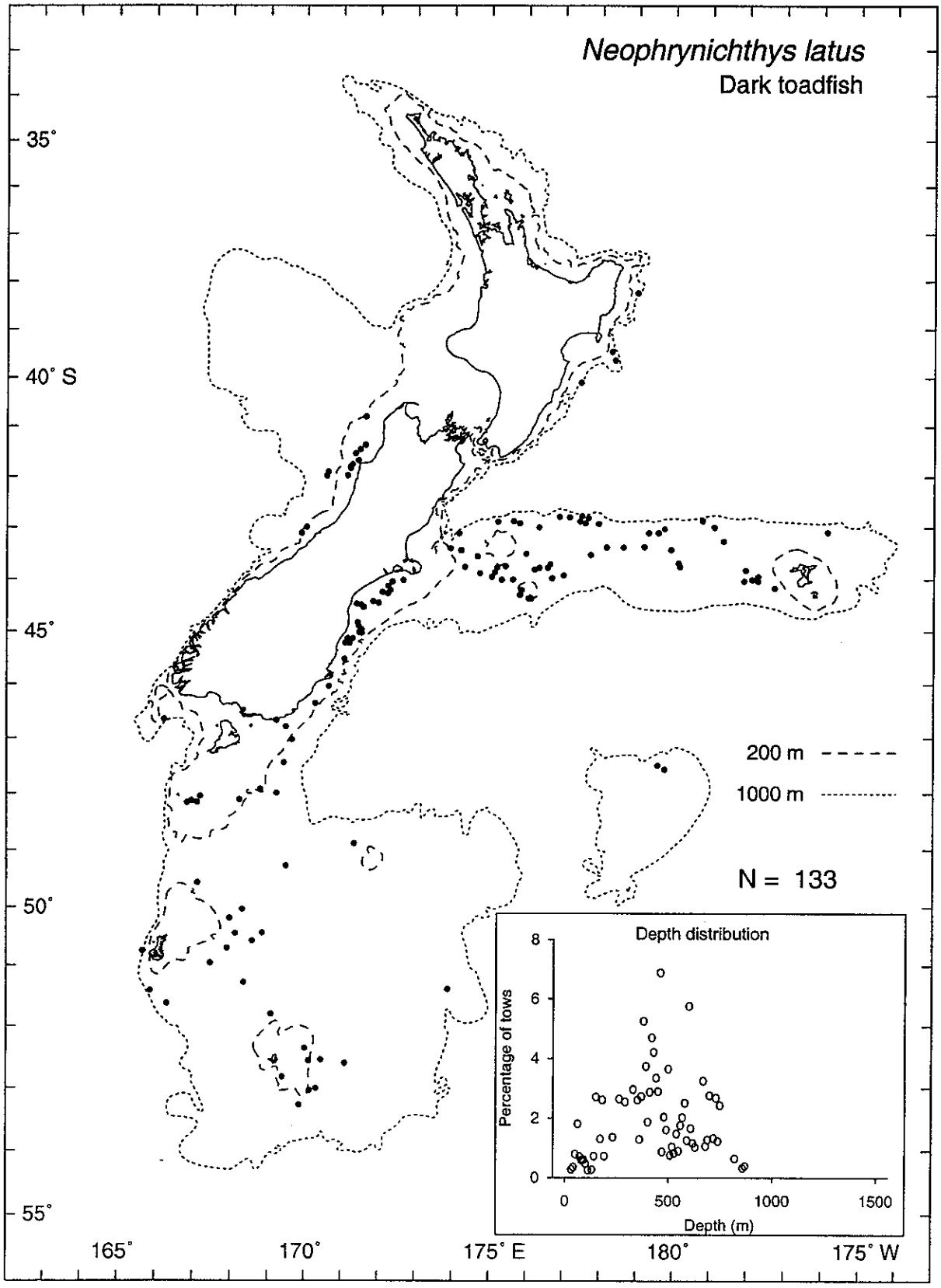


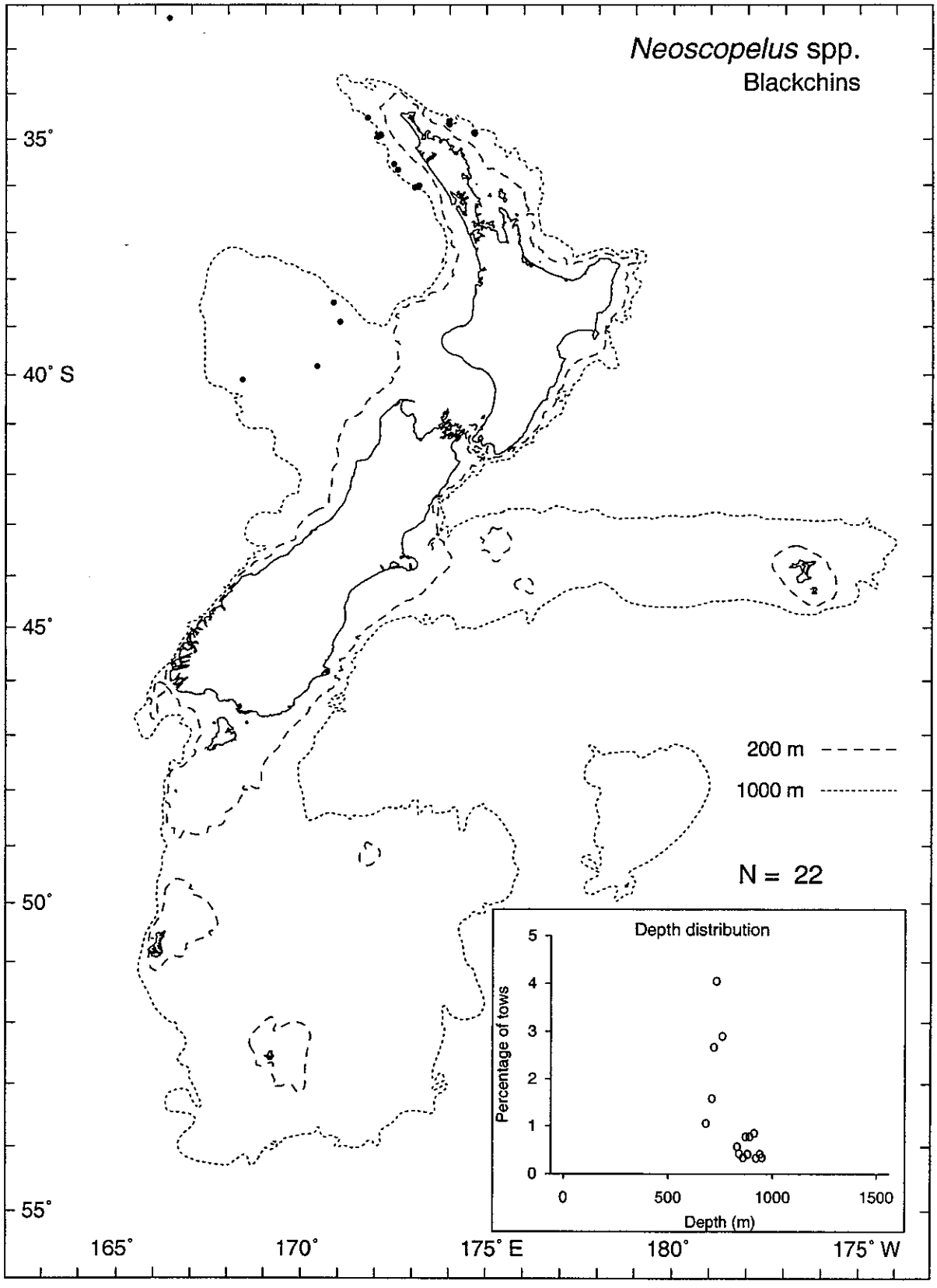
May include *Mancopsetta* sp. and *Achiropsetta* spp.

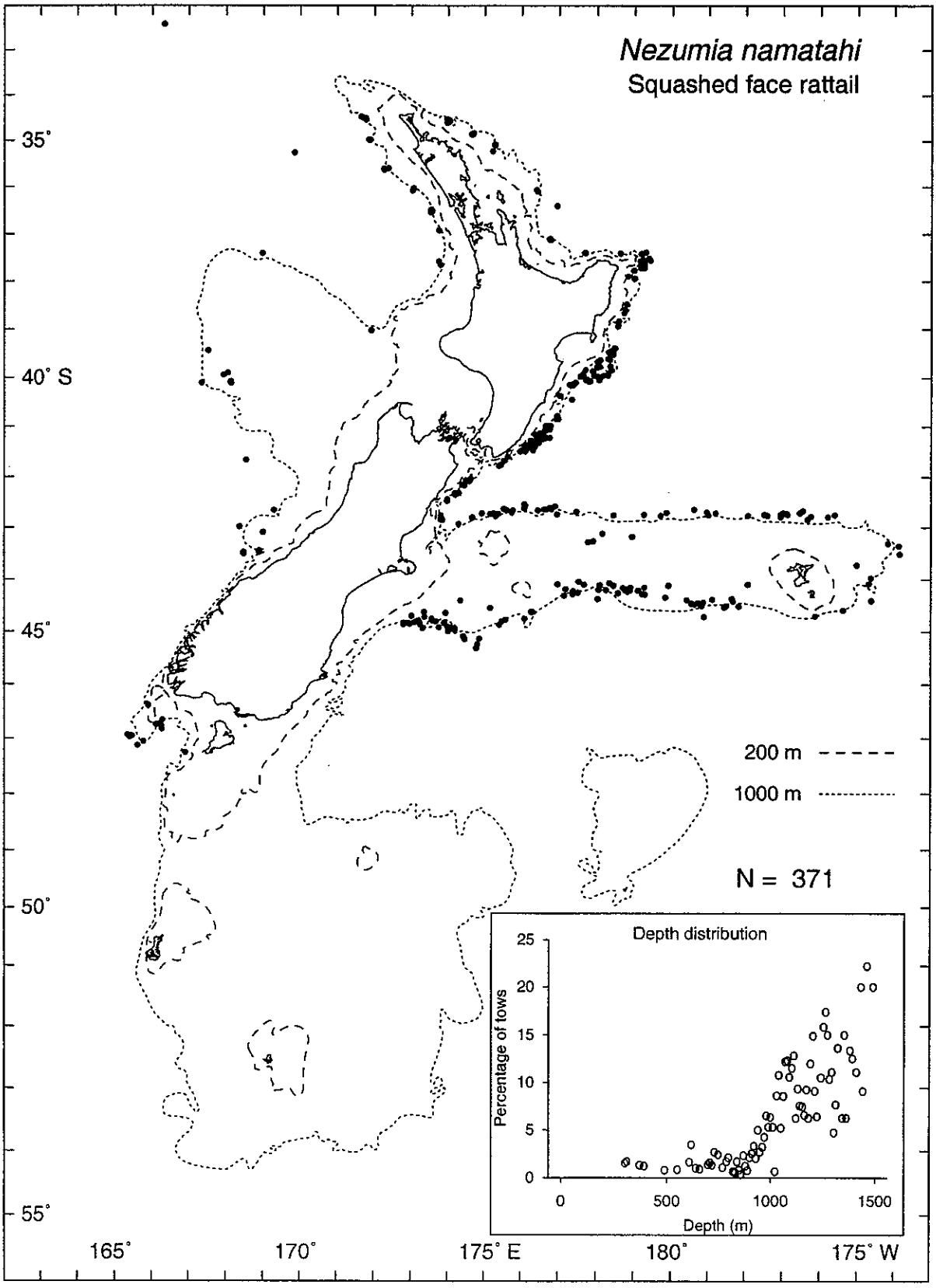

Neocyttus rhomboidalis
Spiky oreo
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 2835
Depth distribution
Percentage of tows
0
10
20
30
40
50
60
70
0
500
1000
1500
Depth (m)

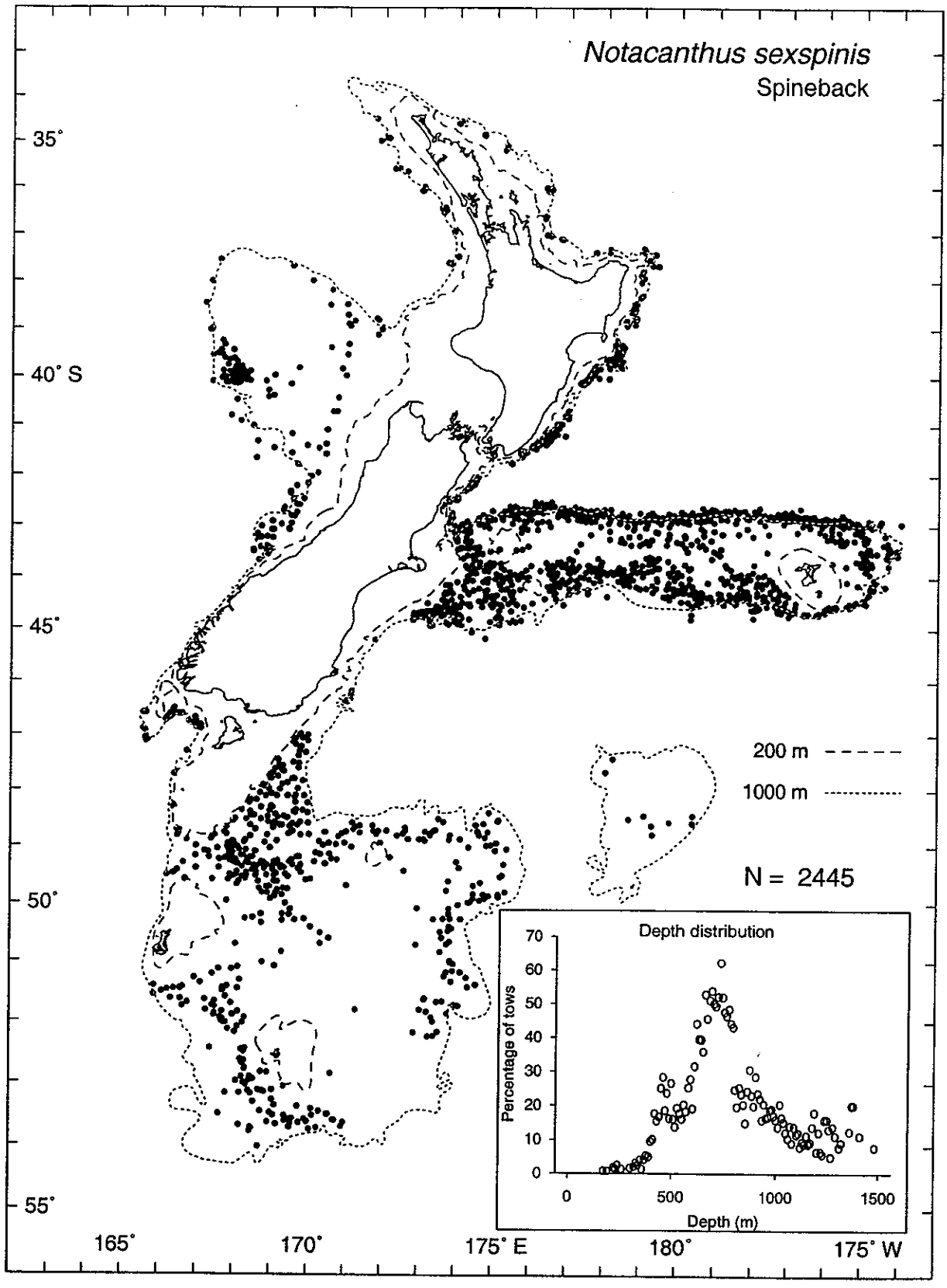


Early records, particulary those from > 1000 m may include *Psychrolutes microporos.*

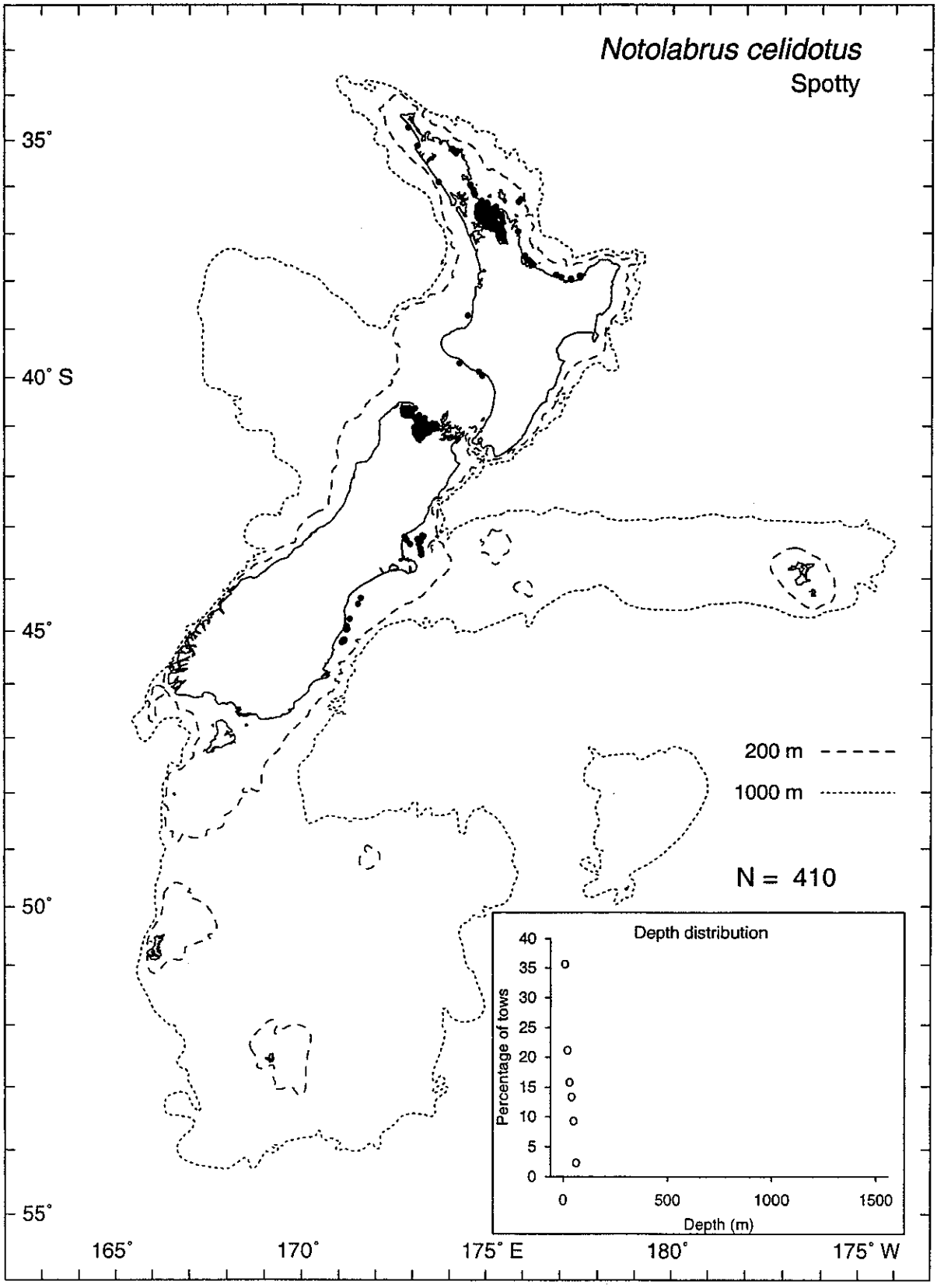

Neophrynichthys latus
Dark toadfish
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 133
Depth distribution
Percentage of tows
0
2
4
6
8
0
500
1000
1500
Depth (m)

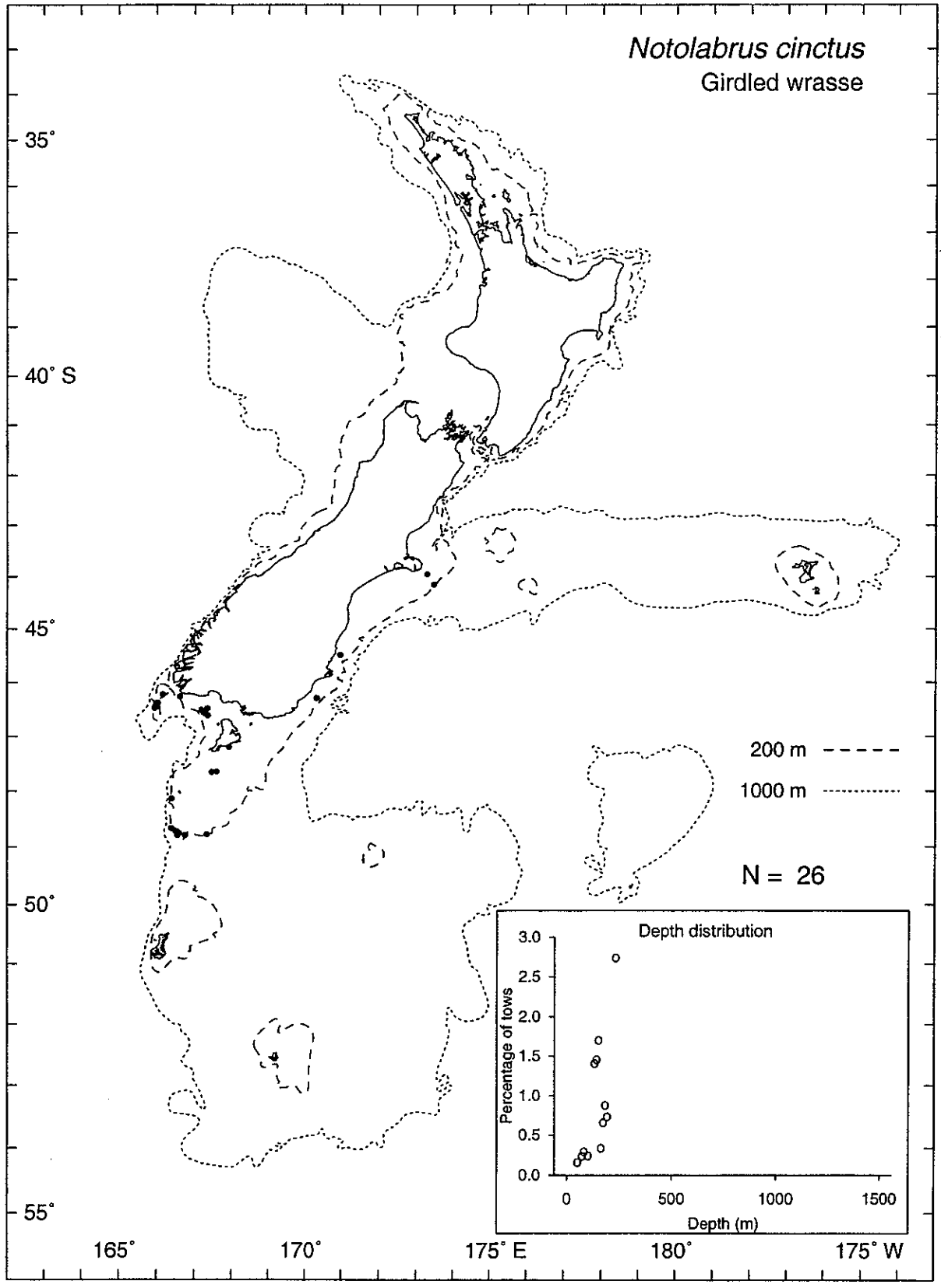

Neoscopelus spp.
Blackchins
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 22
Depth distribution
Percentage of tows
0
1
2
3
4
5
0
500
1000
1500
Depth (m)

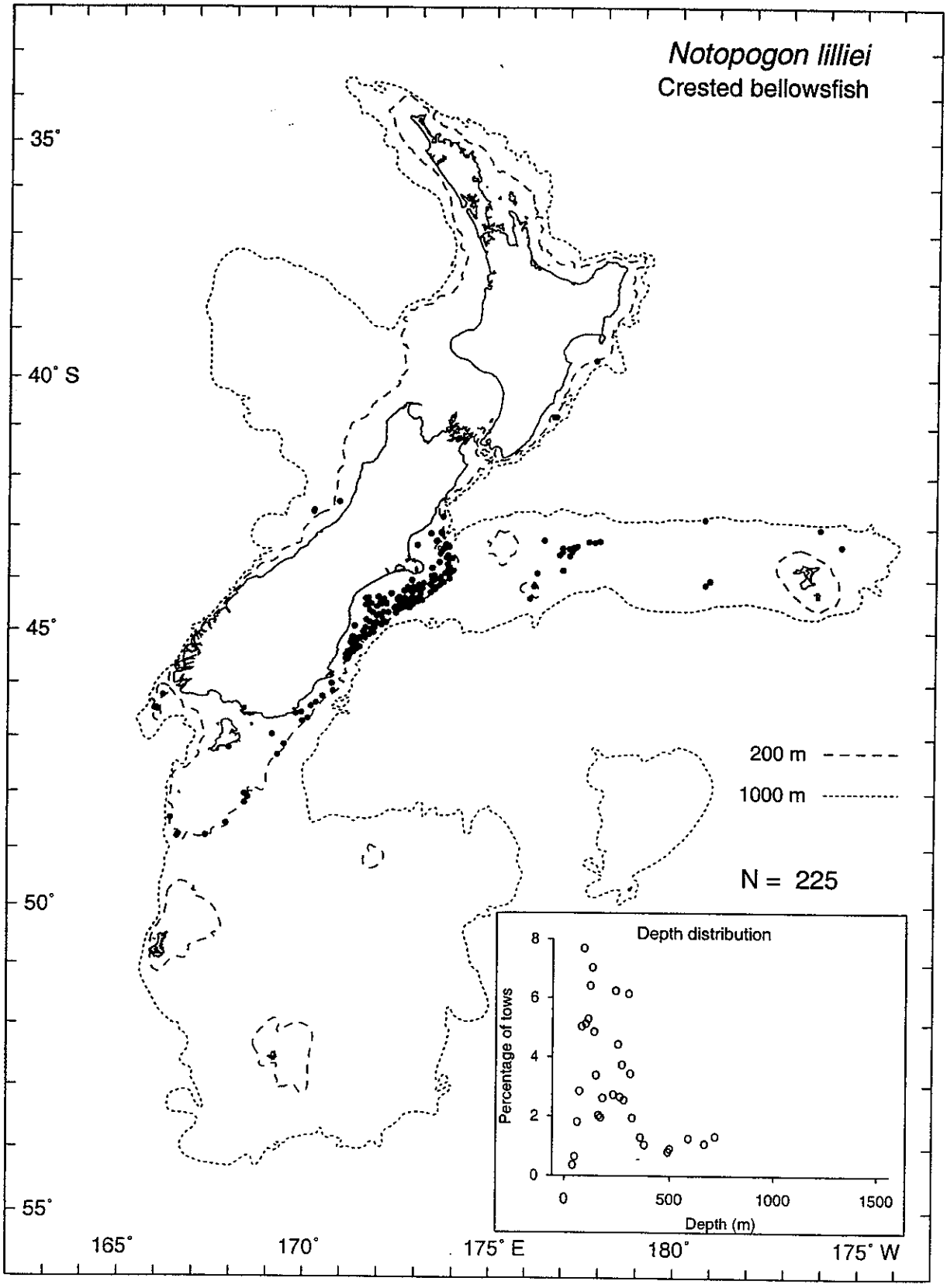

Nezumia namatahi
Squashed face rattail
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 371
Depth distribution
Percentage of tows
Depth (m)
0
5
10
15
20
25
0
500
1000
1500



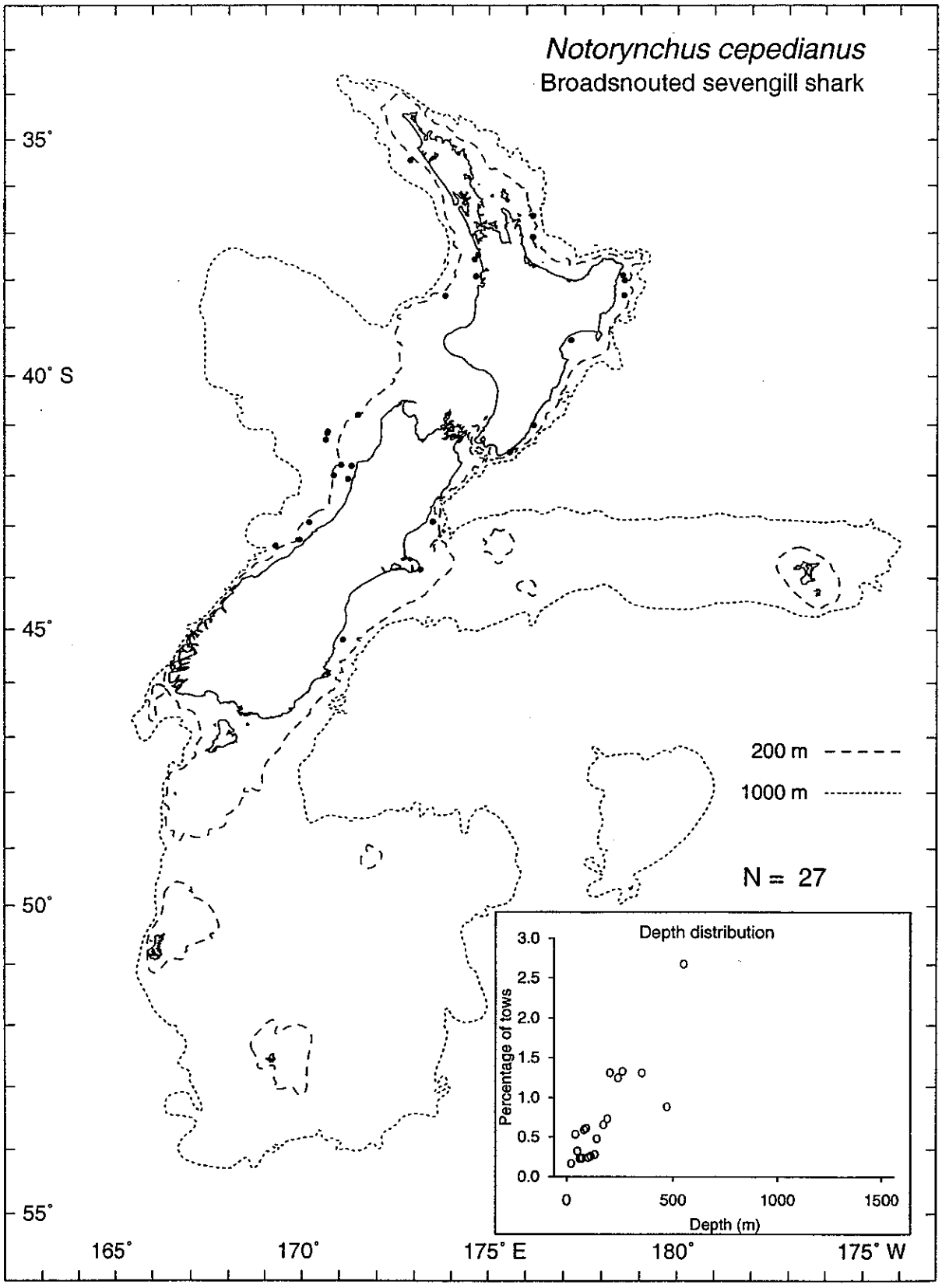
Some of the deeper records may be *N. chemnitzi.*


Notolabrus celidotus
Spotty
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 410
Depth distribution
Percentage of tows
Depth (m)
0
5
10
15
20
25
30
35
40
0
500
1000
1500

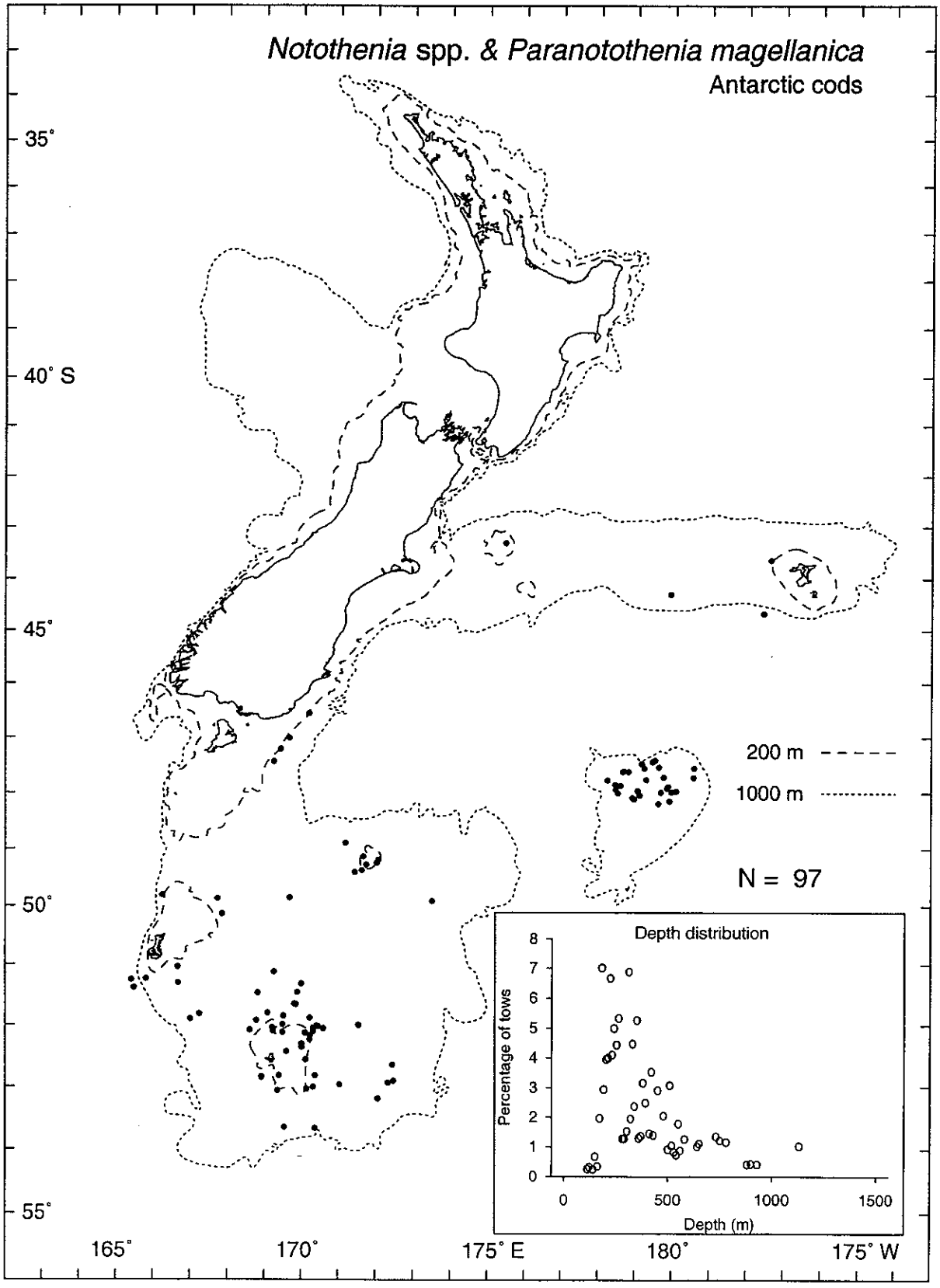

Notolabrus cinctus
Girdled wrasse
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 26
Depth distribution
Percentage of tows
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0
500
1000
1500
Depth (m)

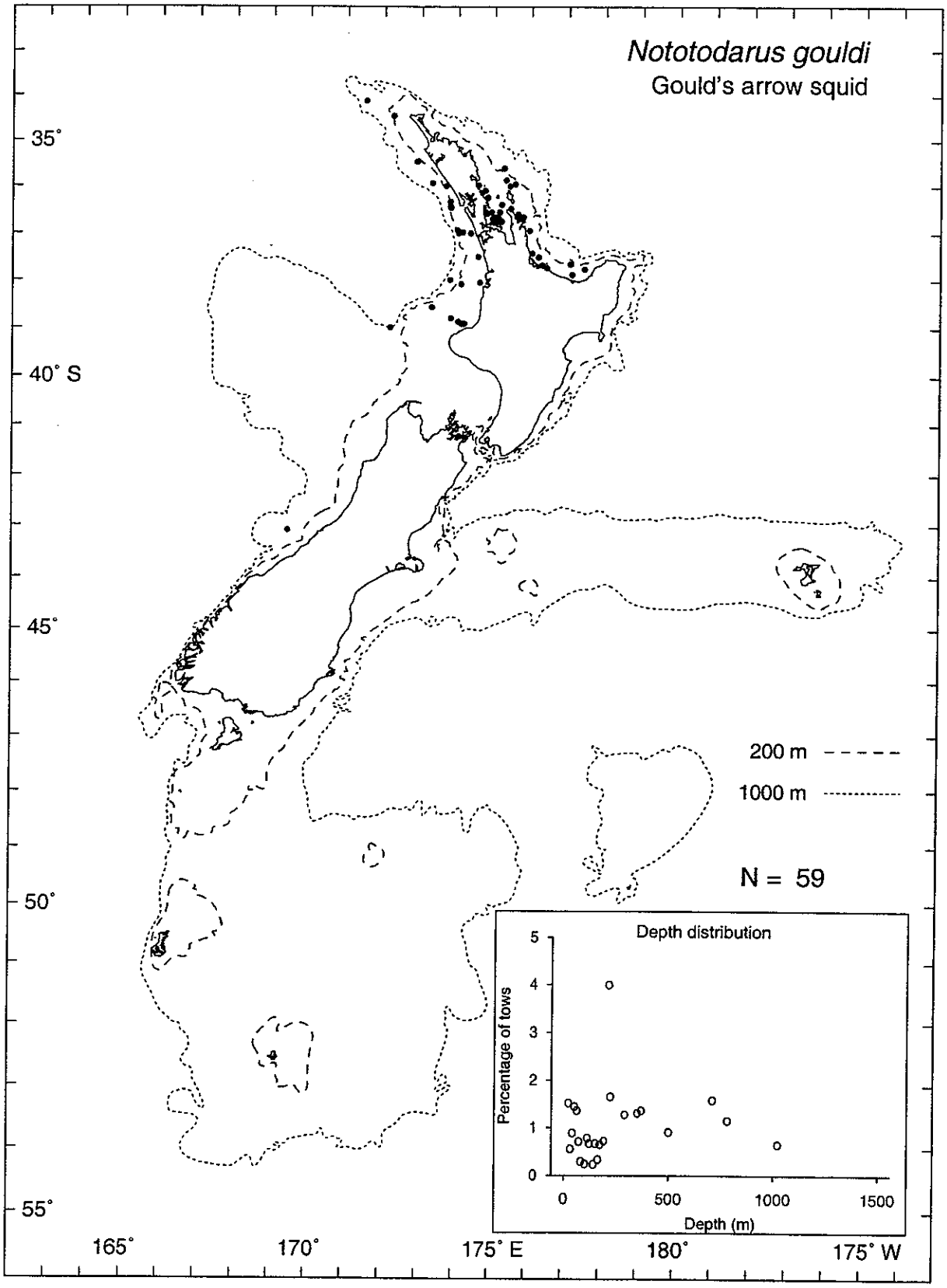


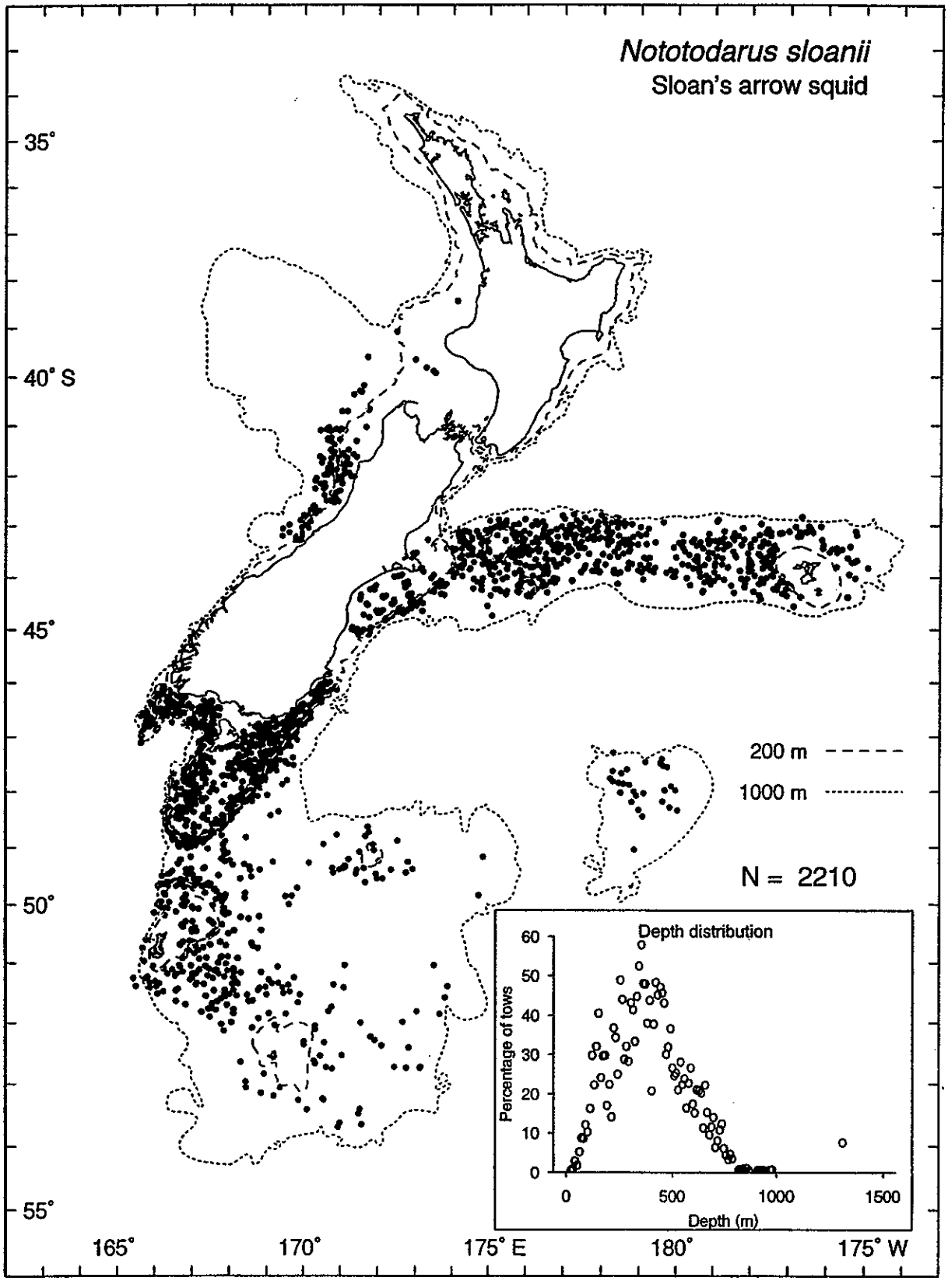
Records deeper than 500 m may be *Centriscops humerosus*.



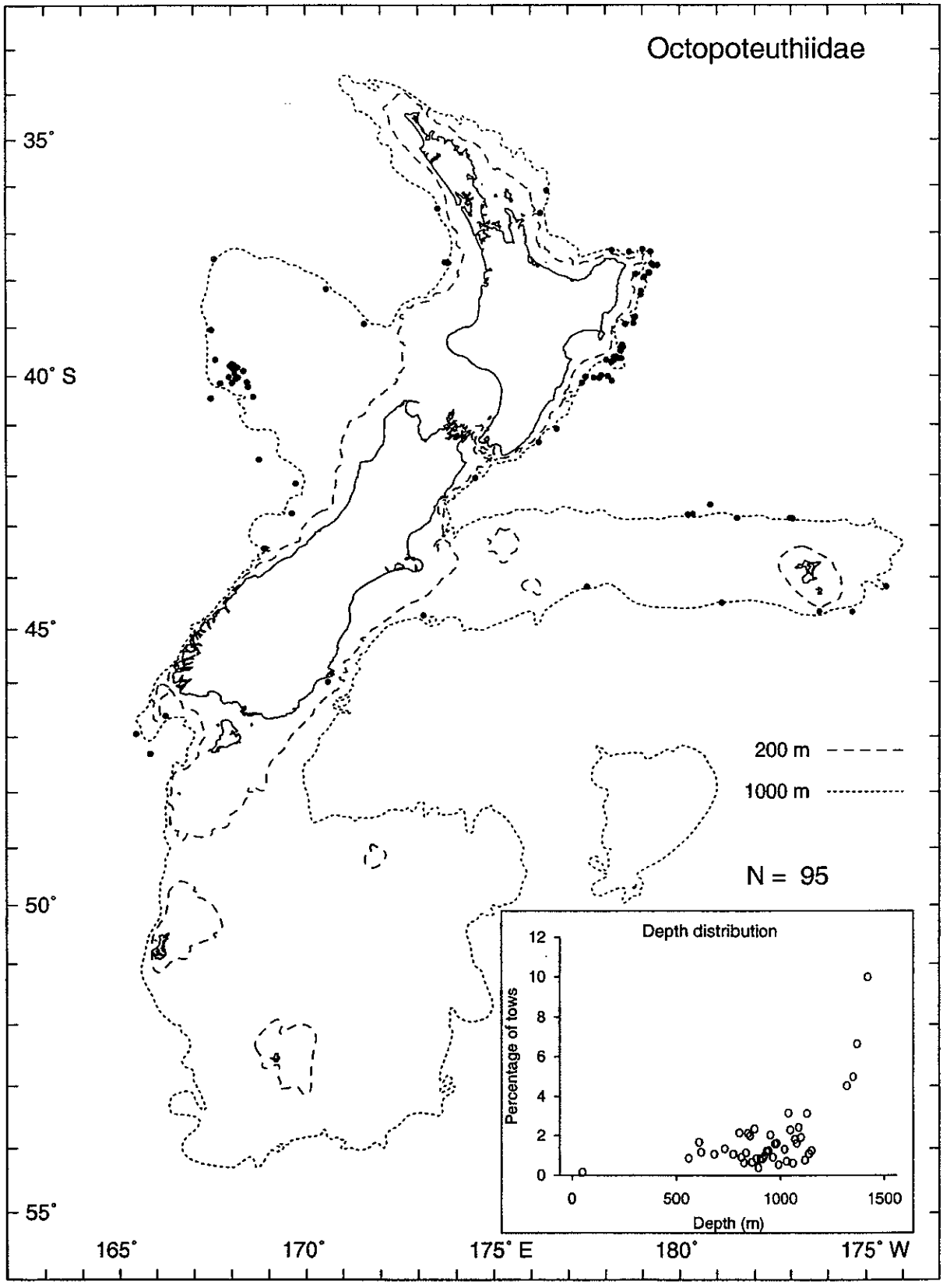
May include some *Heptranchias perlo.*


Notothenia spp. & *Paranotothenia magellanica*
Antarctic cods
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 97
Depth distribution
Percentage of tows
Depth (m)
0
1
2
3
4
5
6
7
8
0
500
1000
1500

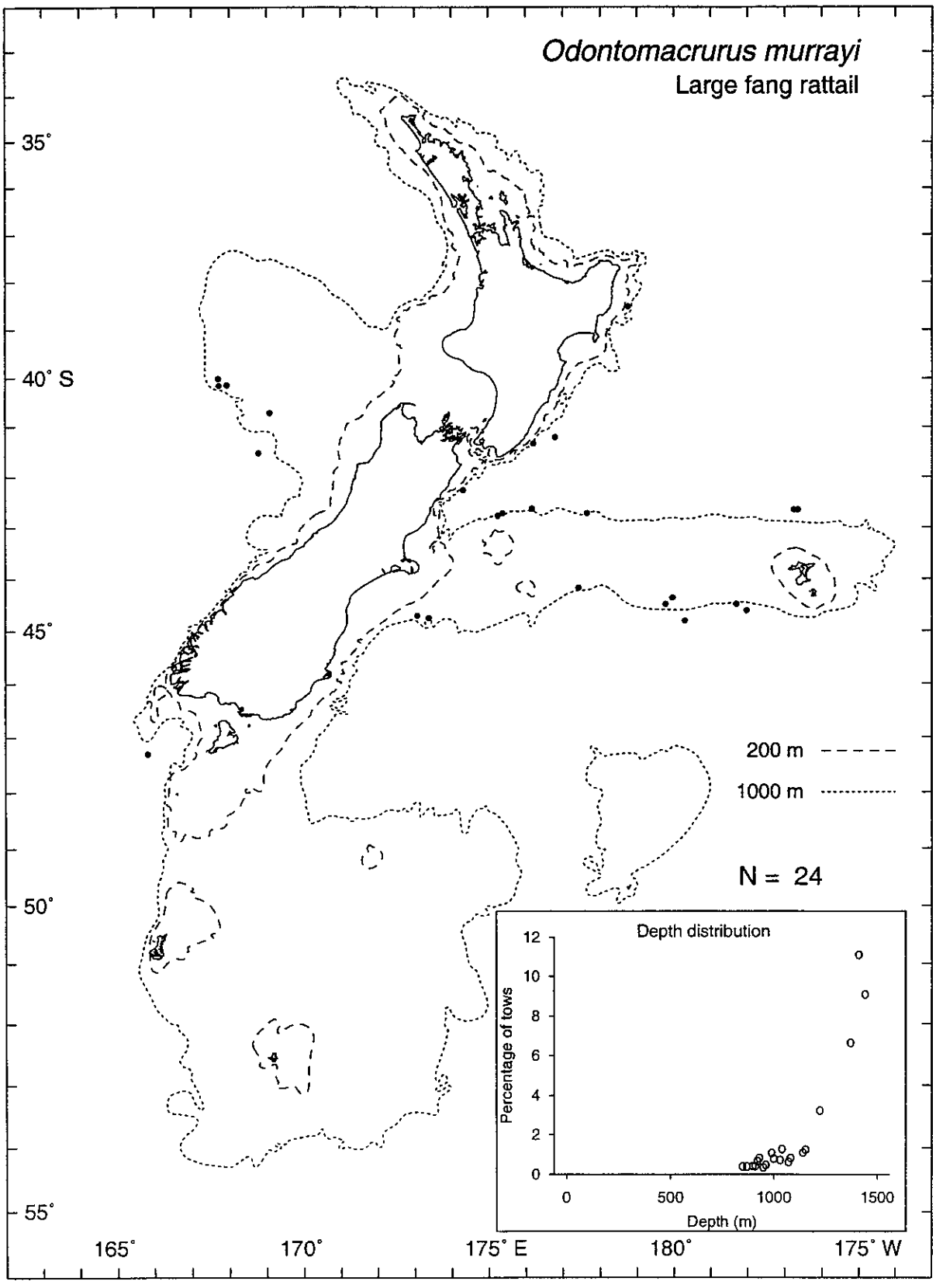

Nototodarus gouldi
Gould's arrow squid
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 59
Depth distribution
Percentage of tows
Depth (m)
0
500
1000
1500
1
2
3
4
5

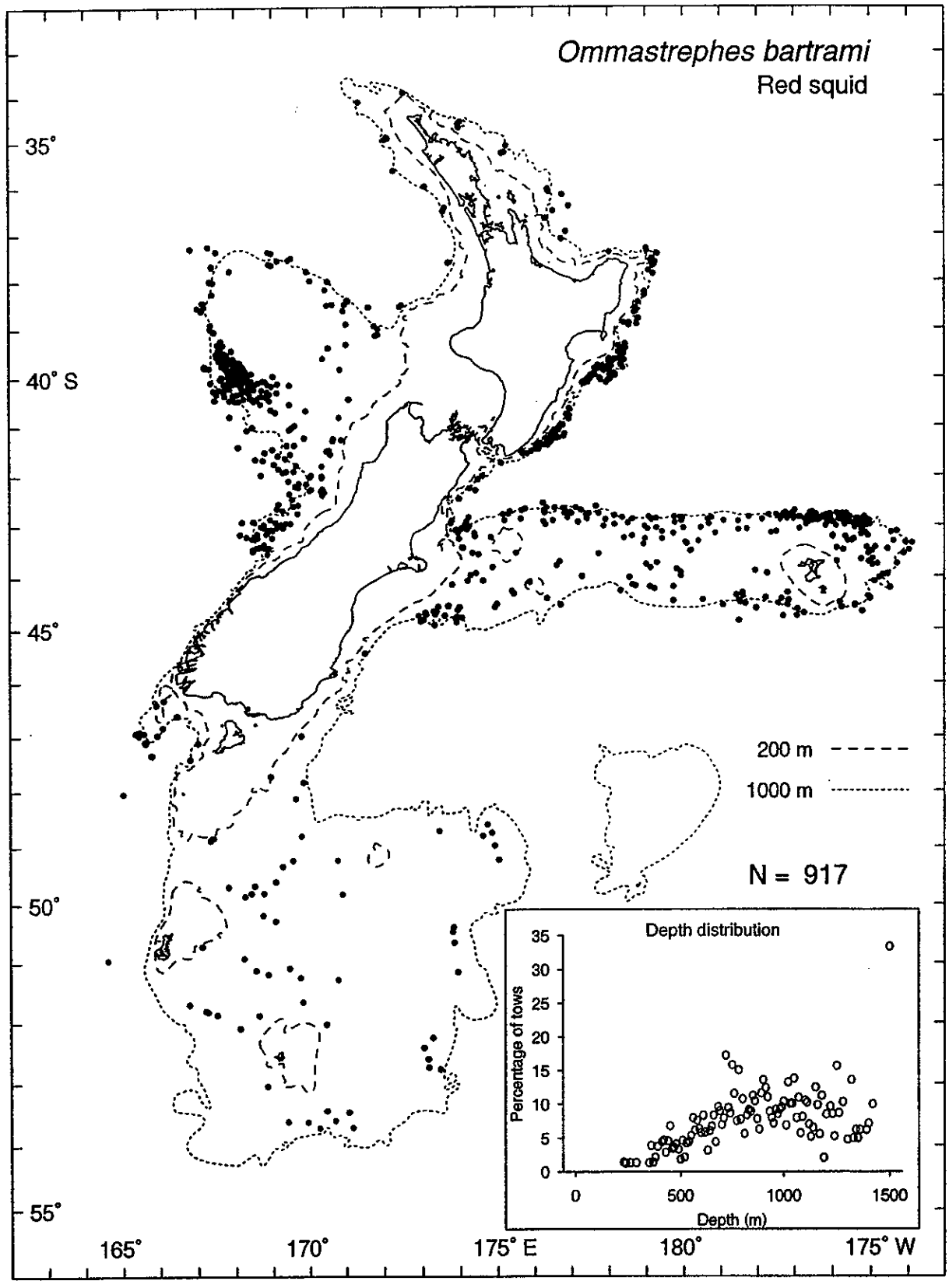


Deepest records may include other squids.

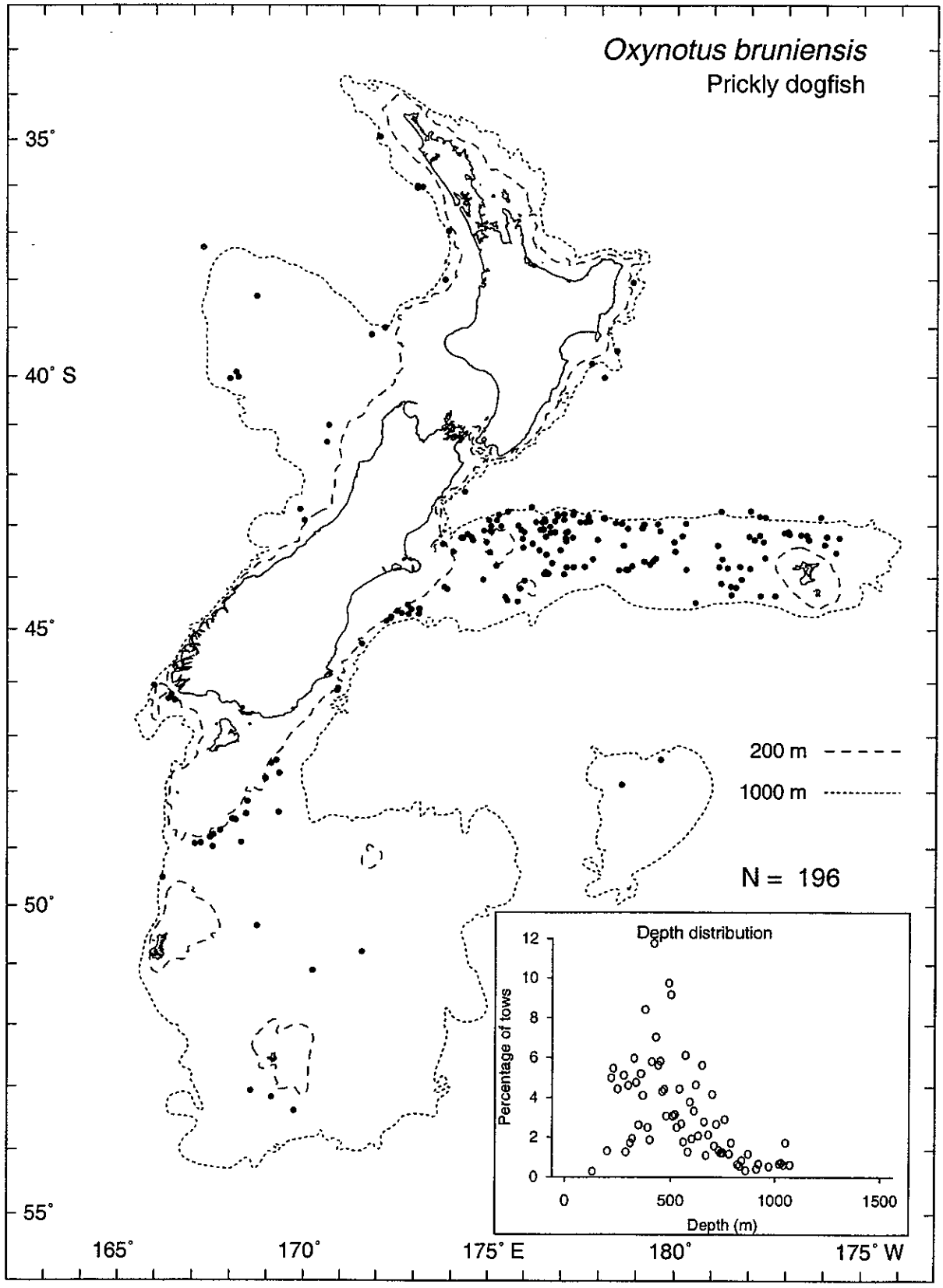


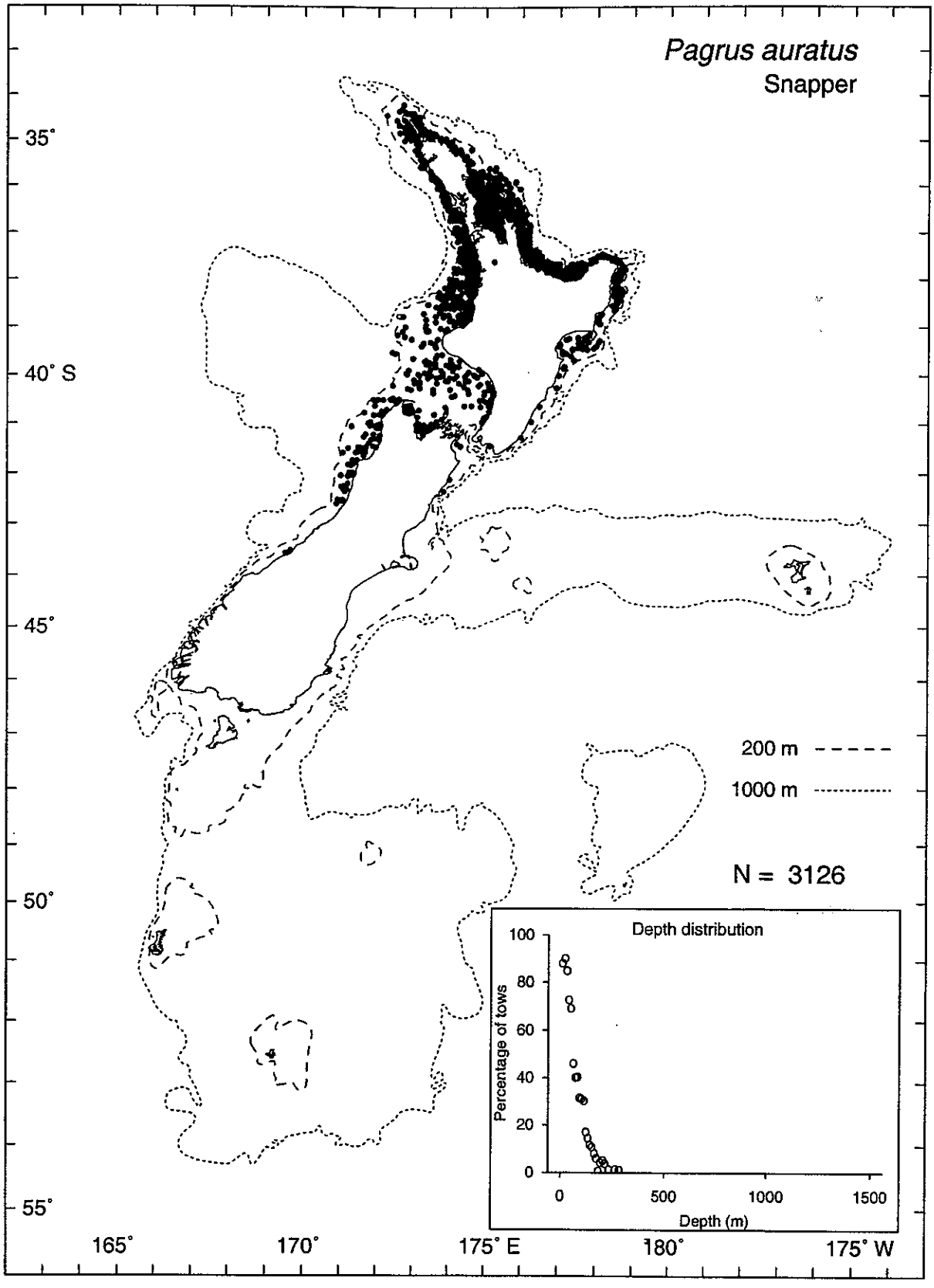
May include up to three species.

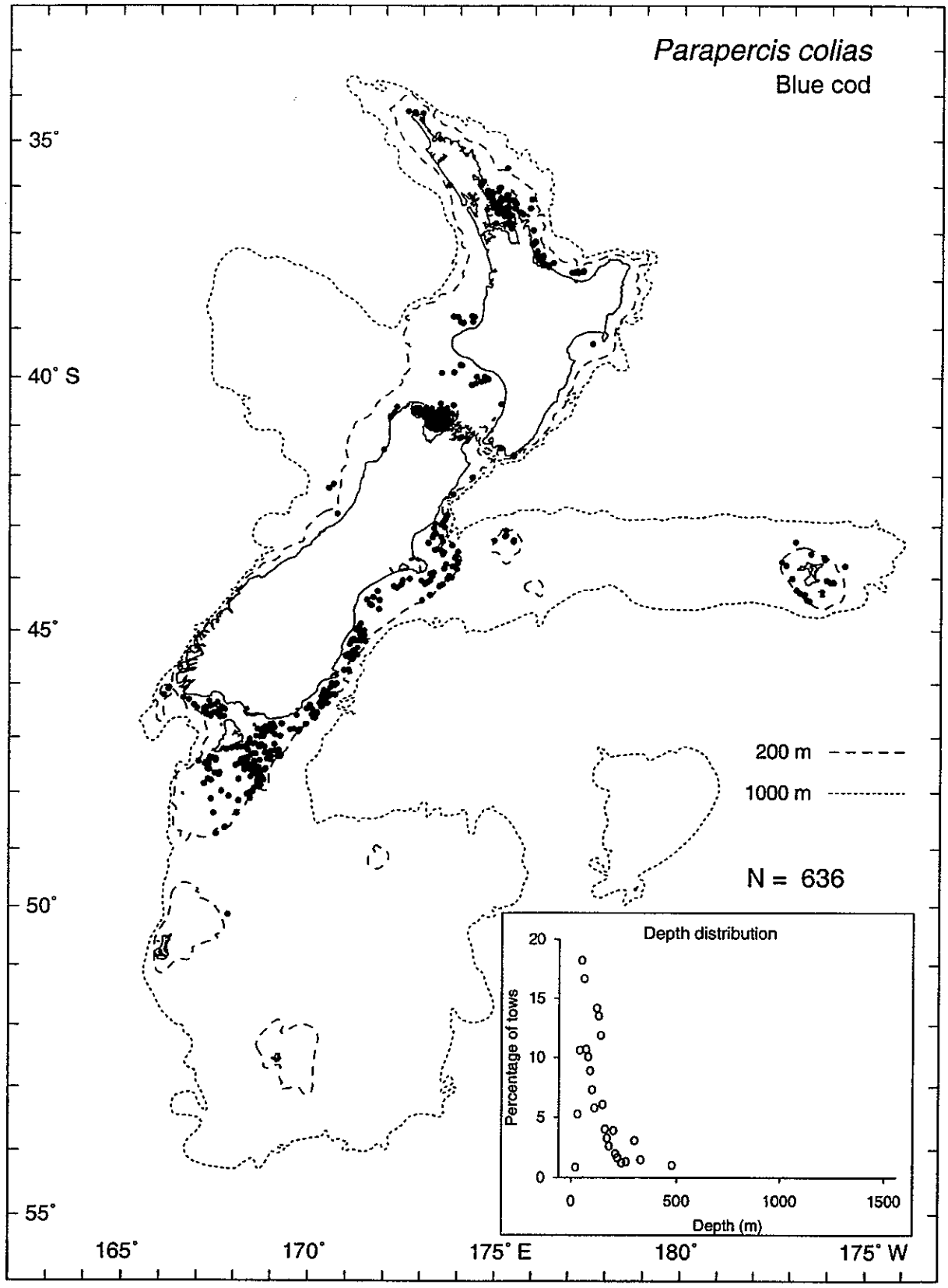

Odontomacrurus murrayi
Large fang rattail
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 24
Depth distribution
Percentage of tows
Depth (m)
0
2
4
6
8
10
12
0
500
1000
1500



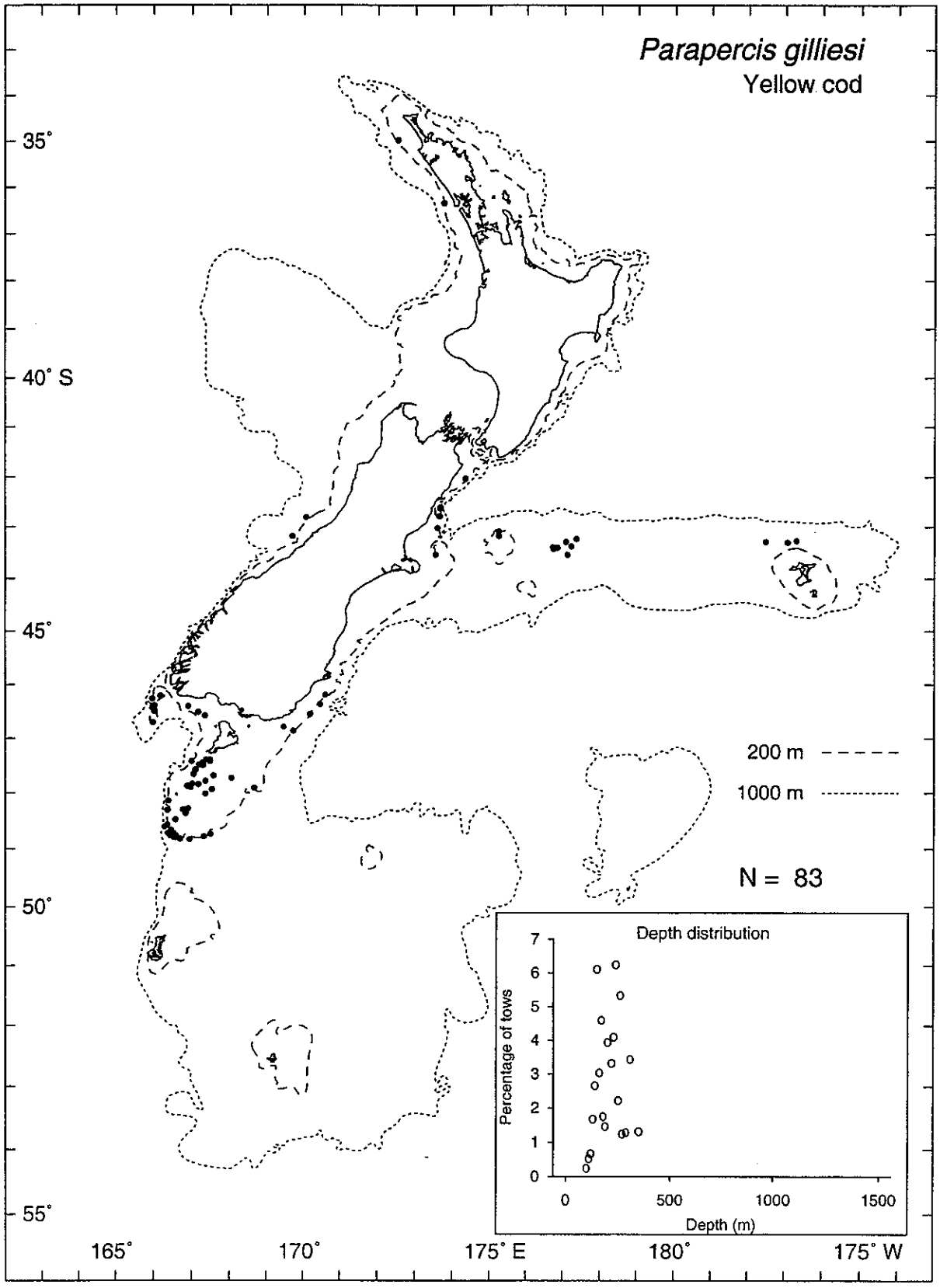
May include records of *Todarodes* spp.

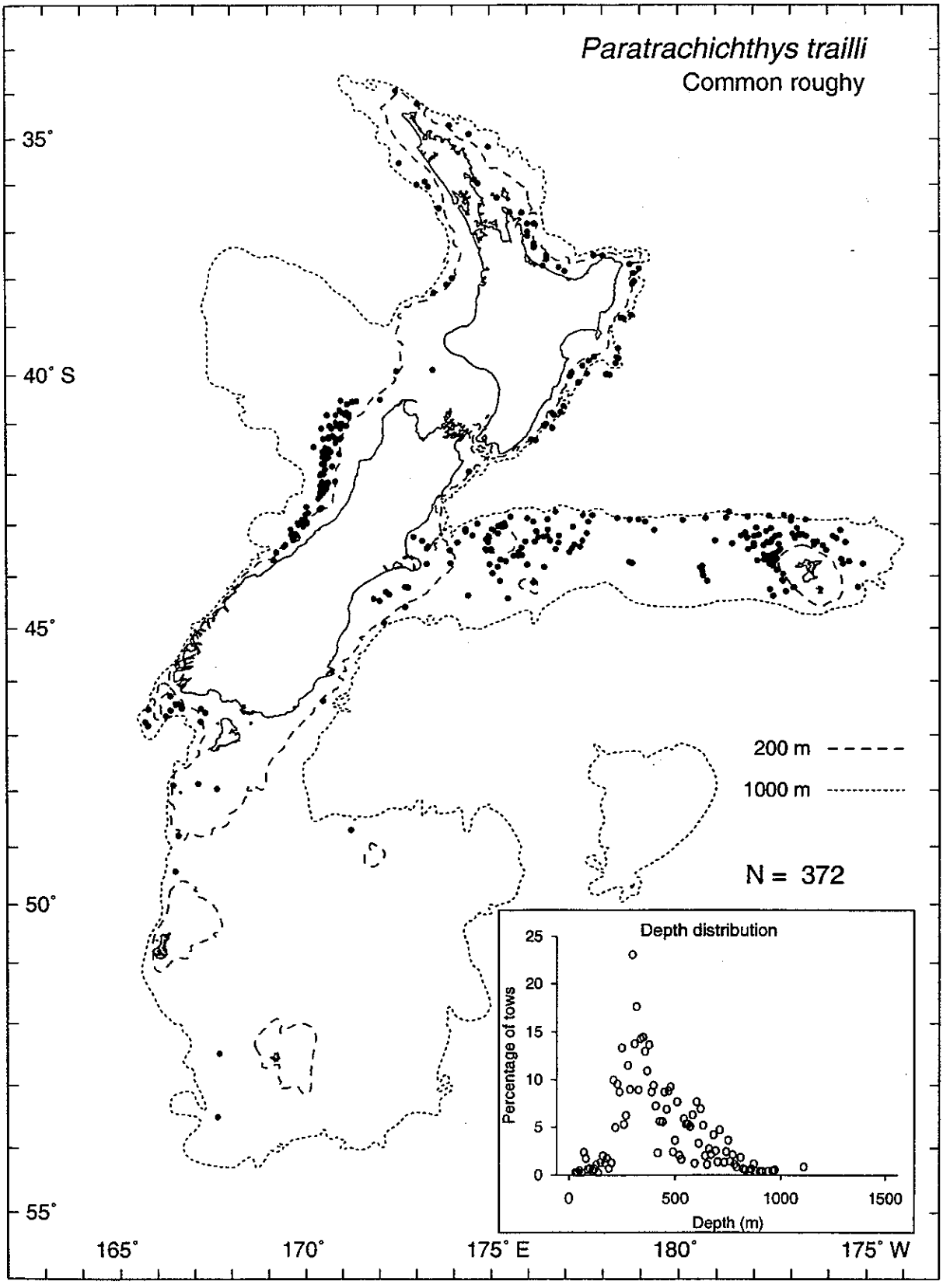

Oxynotus bruniensis
Prickly dogfish
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 196
Depth distribution
Percentage of tows
0
2
4
6
8
10
12
0
500
1000
1500
Depth (m)


Pagrus auratus
Snapper
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 3126
Depth distribution
Percentage of tows
100
80
60
40
20
0
0
500
1000
1500
Depth (m)

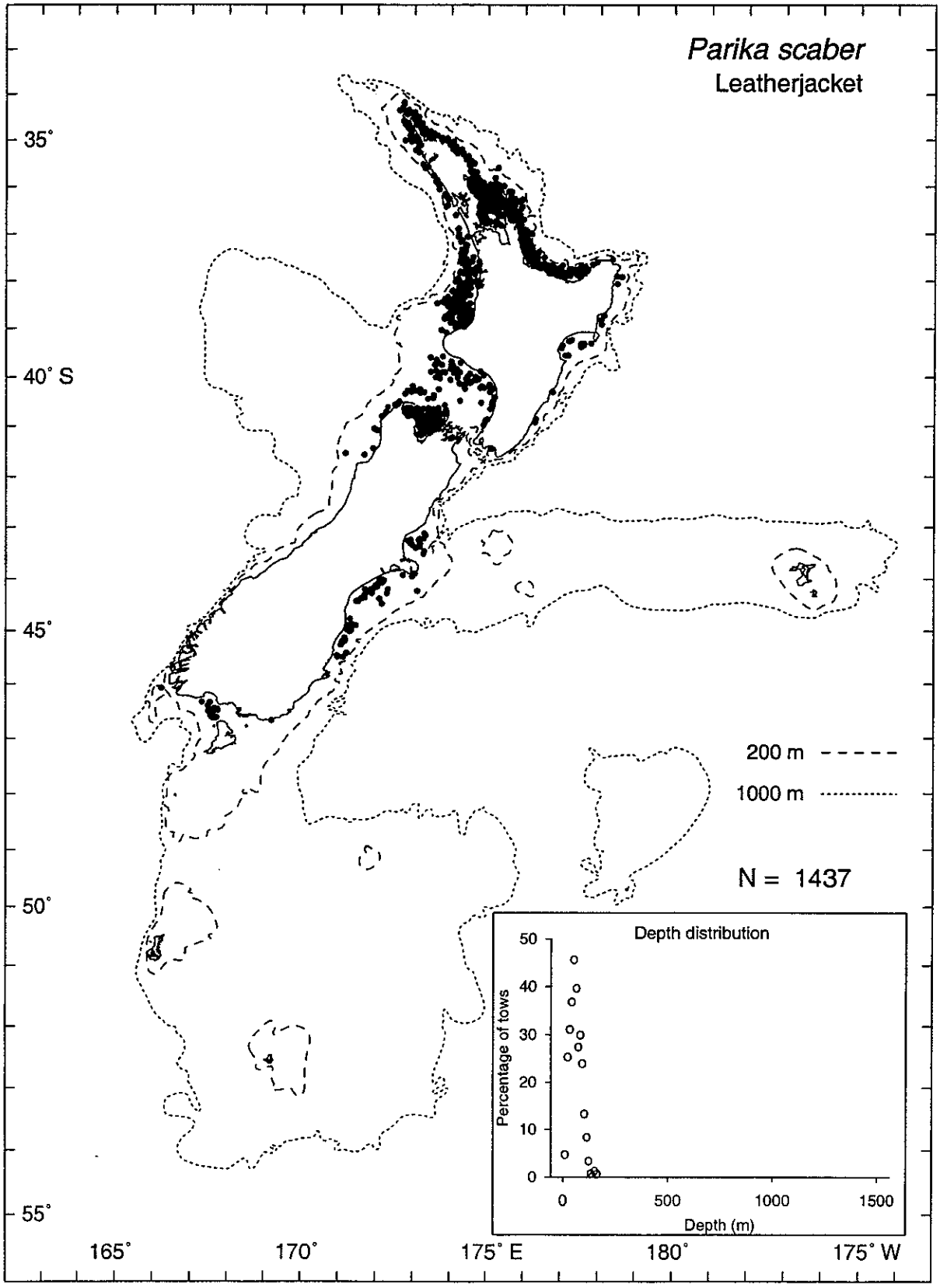


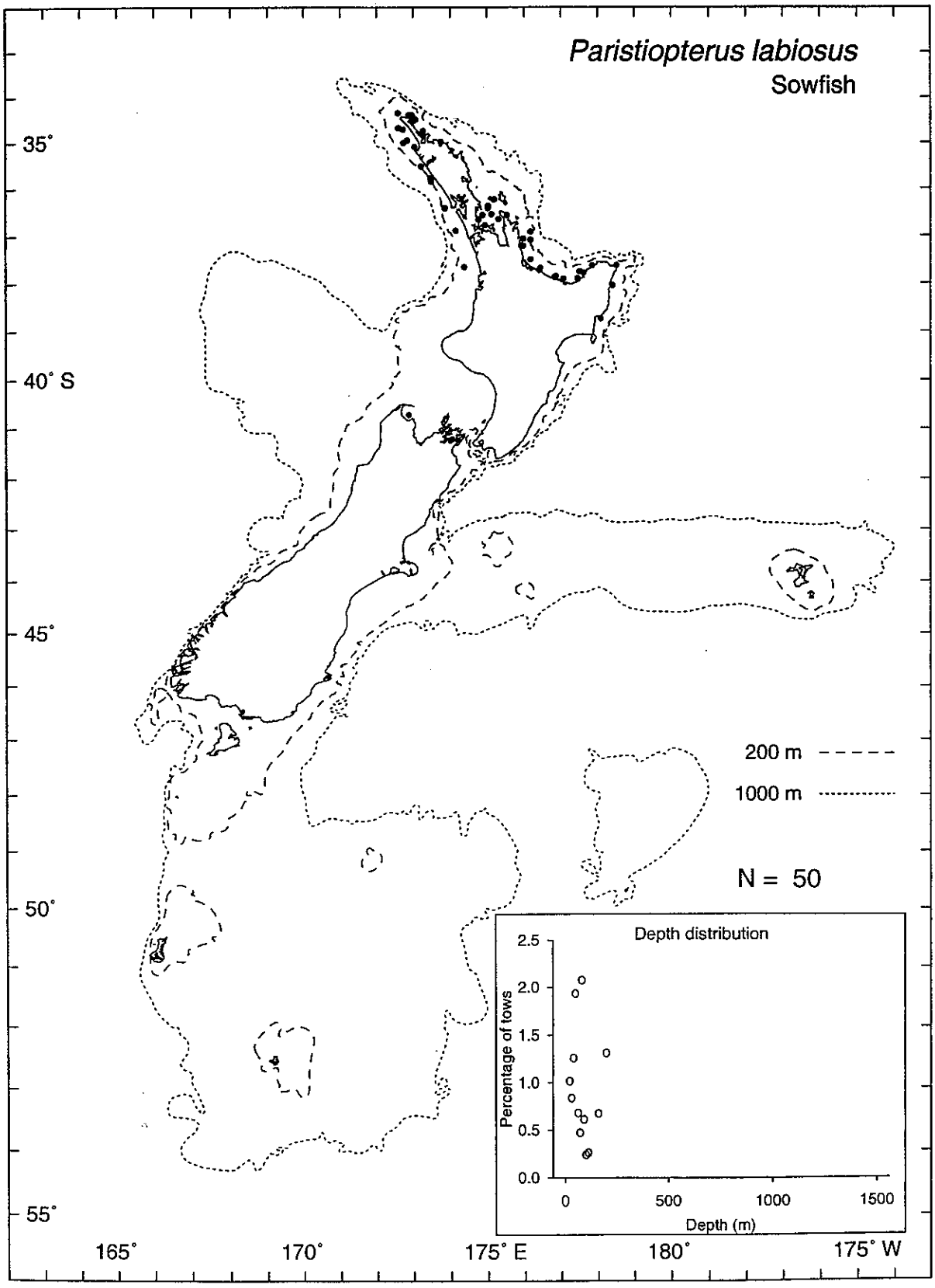
Some of the deeper records may be *Parapercis gilliesi*.

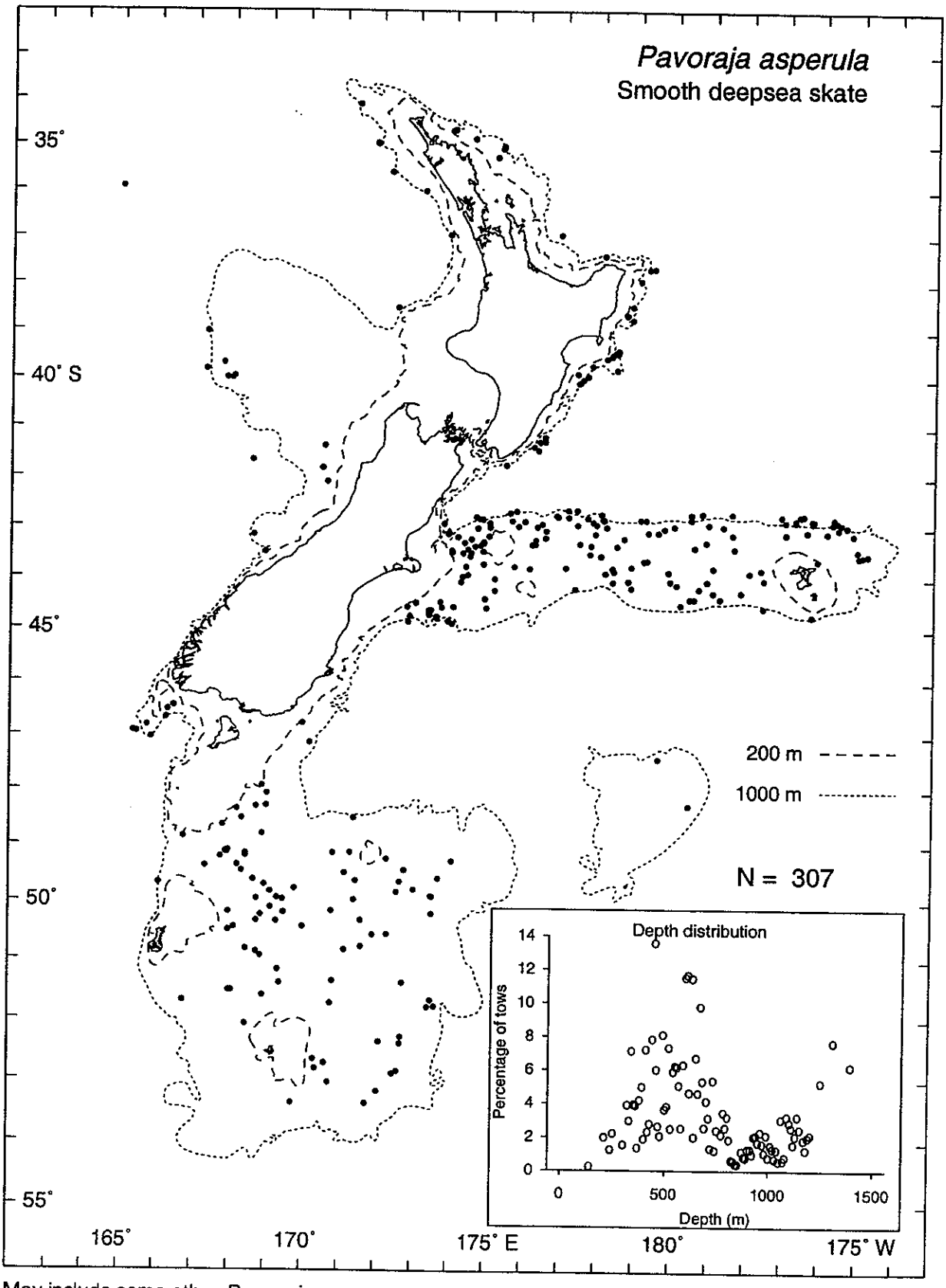

Parapercis gilliesi
Yellow cod
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 83
Depth distribution
Percentage of tows
0
1
2
3
4
5
6
7
0
500
1000
1500
Depth (m)



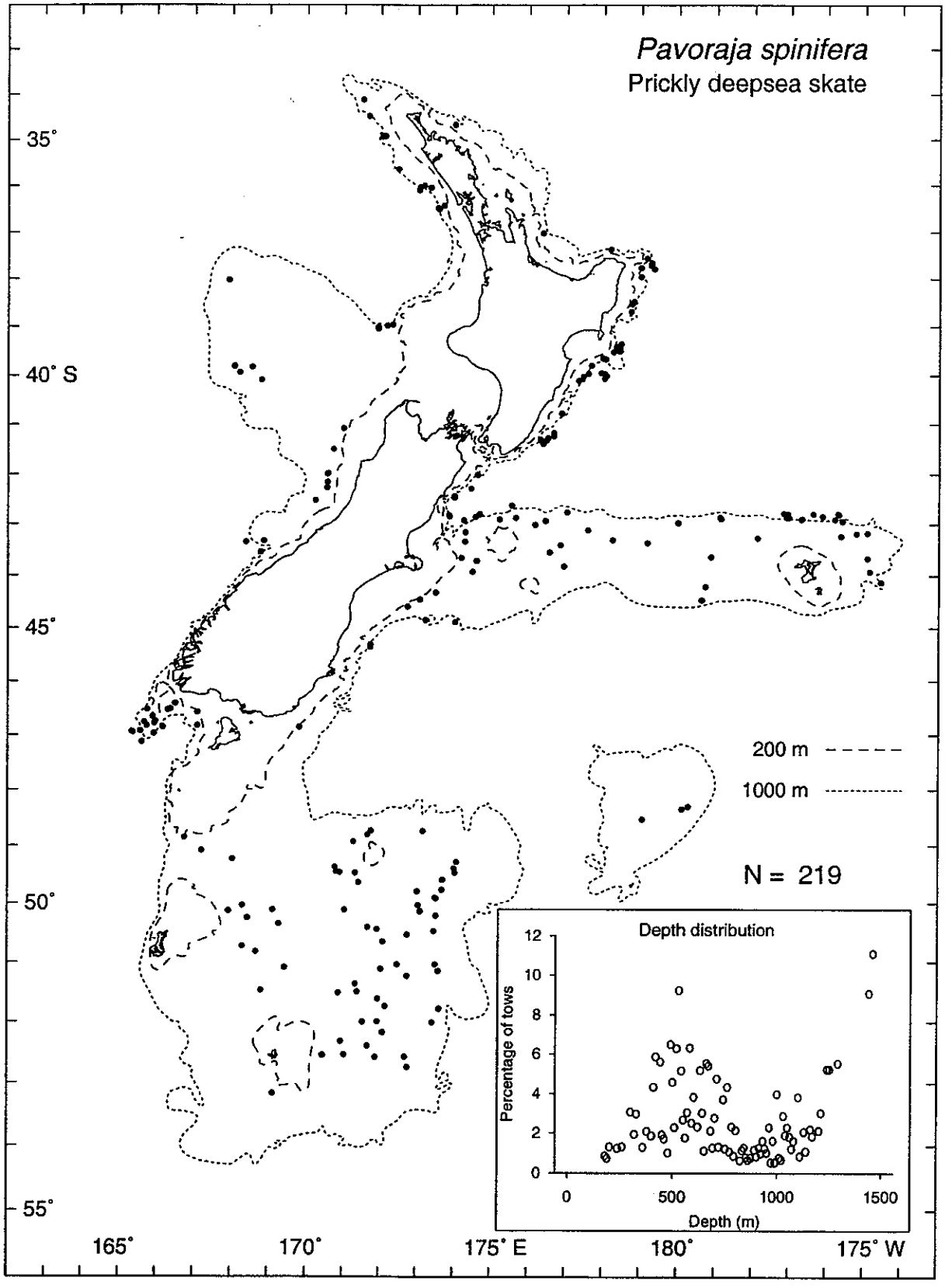
Subantarctic records may have been misidentified.


Parika scaber
Leatherjacket
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 1437
Depth distribution
Percentage of tows
0
10
20
30
40
50
0
500
1000
1500
Depth (m)

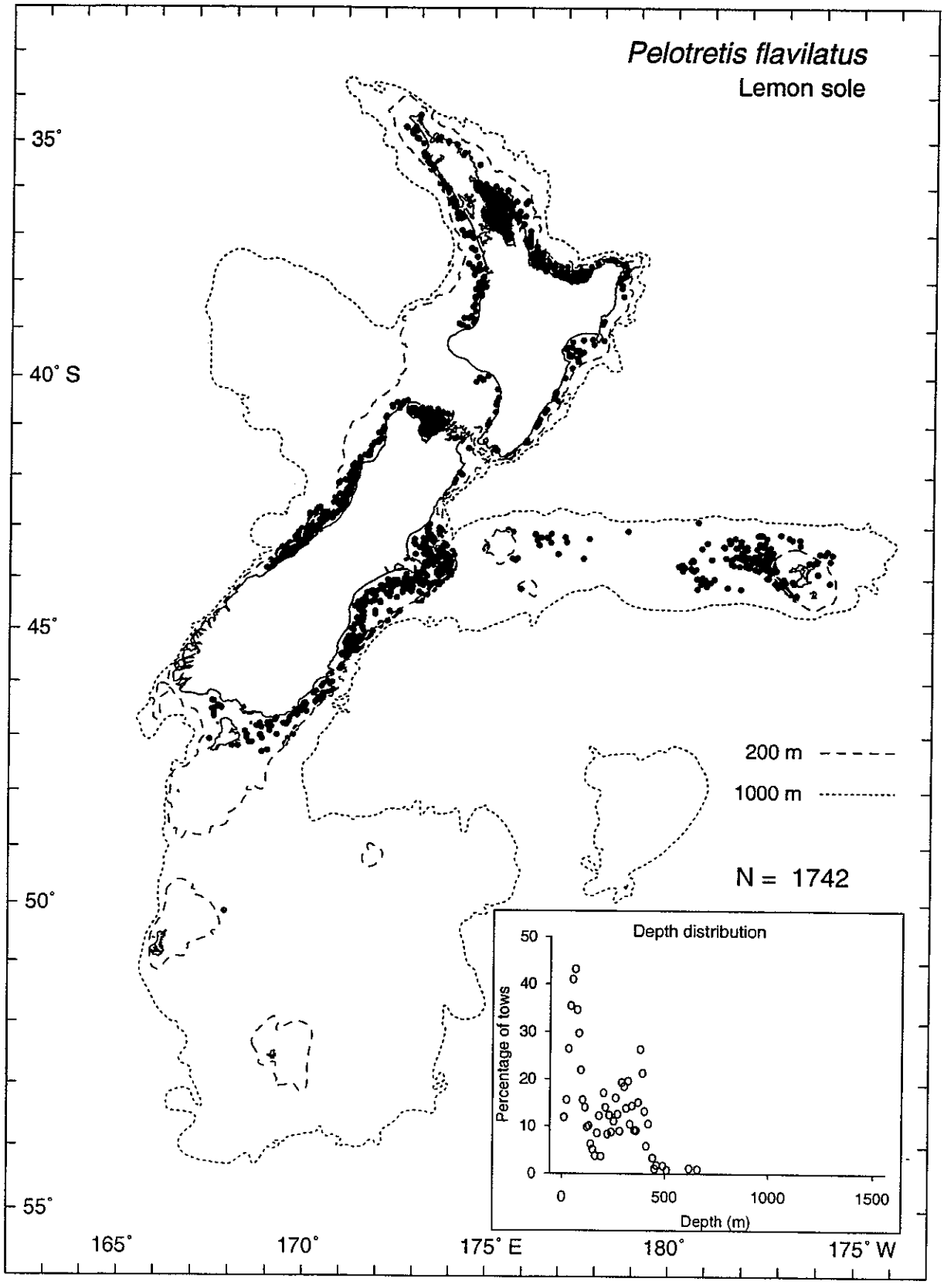

Paristiopterus labiosus
Sowfish
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 50
Depth distribution
Percentage of tows
2.5
2.0
1.5
1.0
0.5
0.0
0
500
1000
1500
Depth (m)

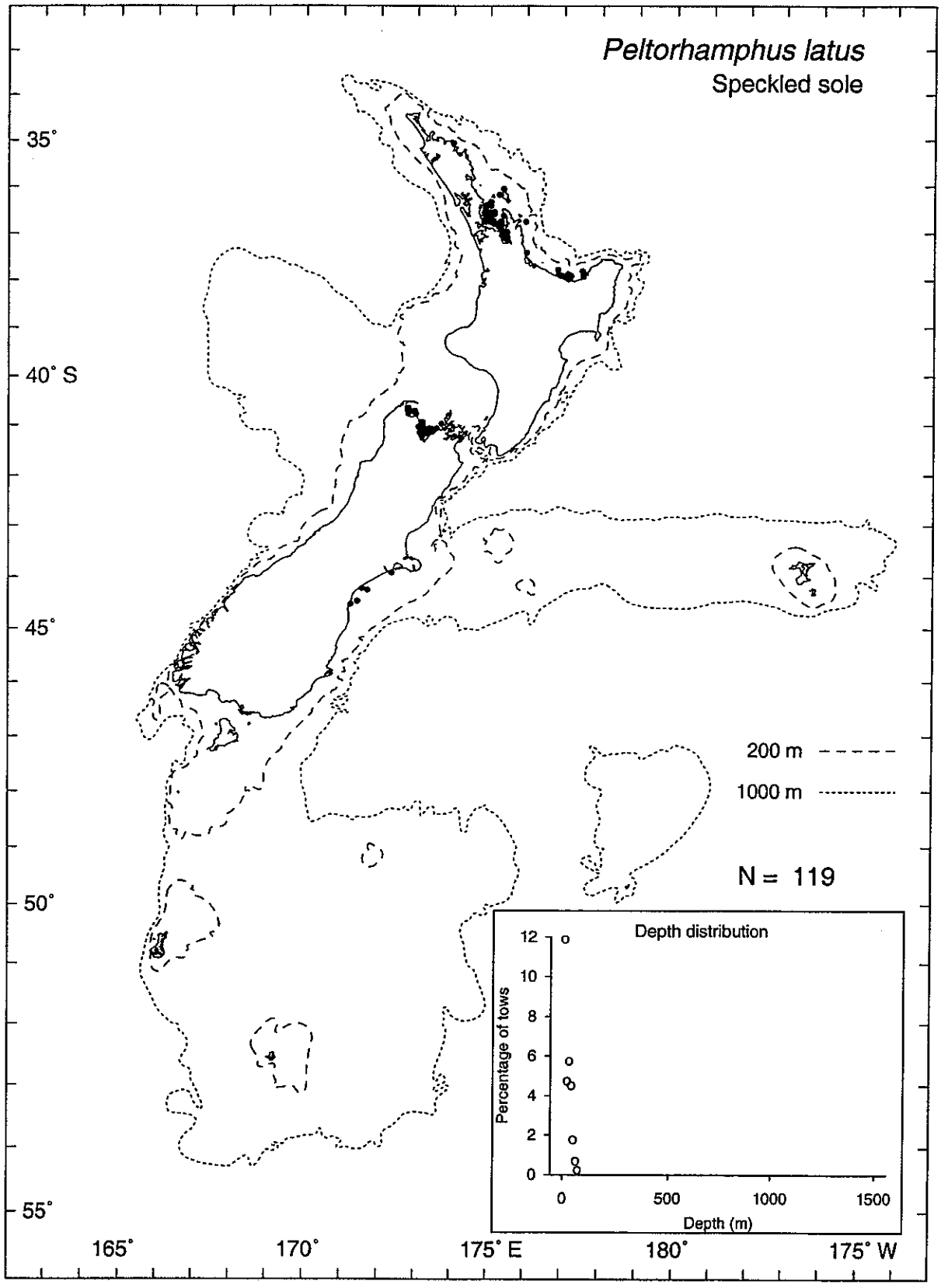


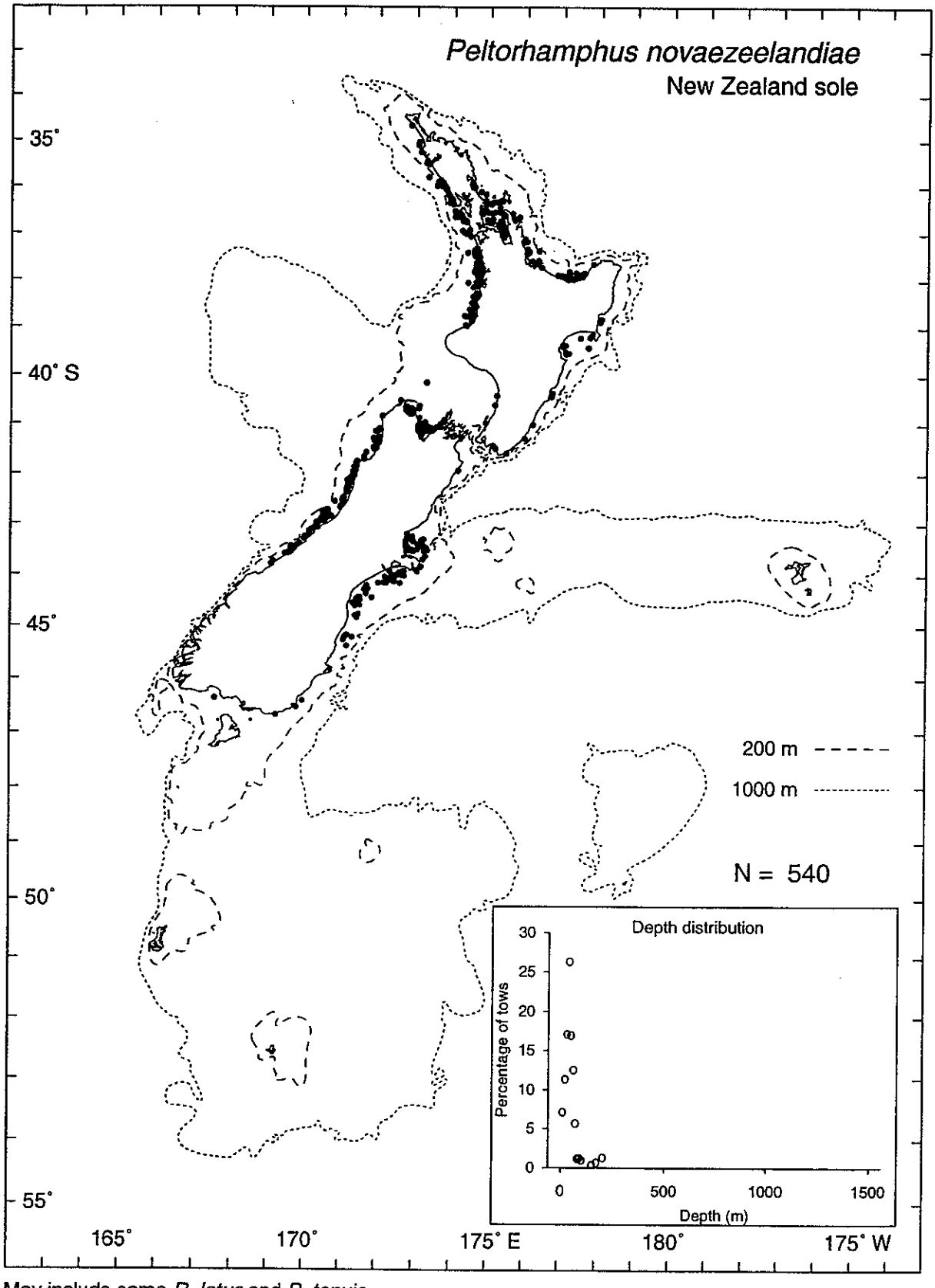
May include some other *Parvoraja* spp.



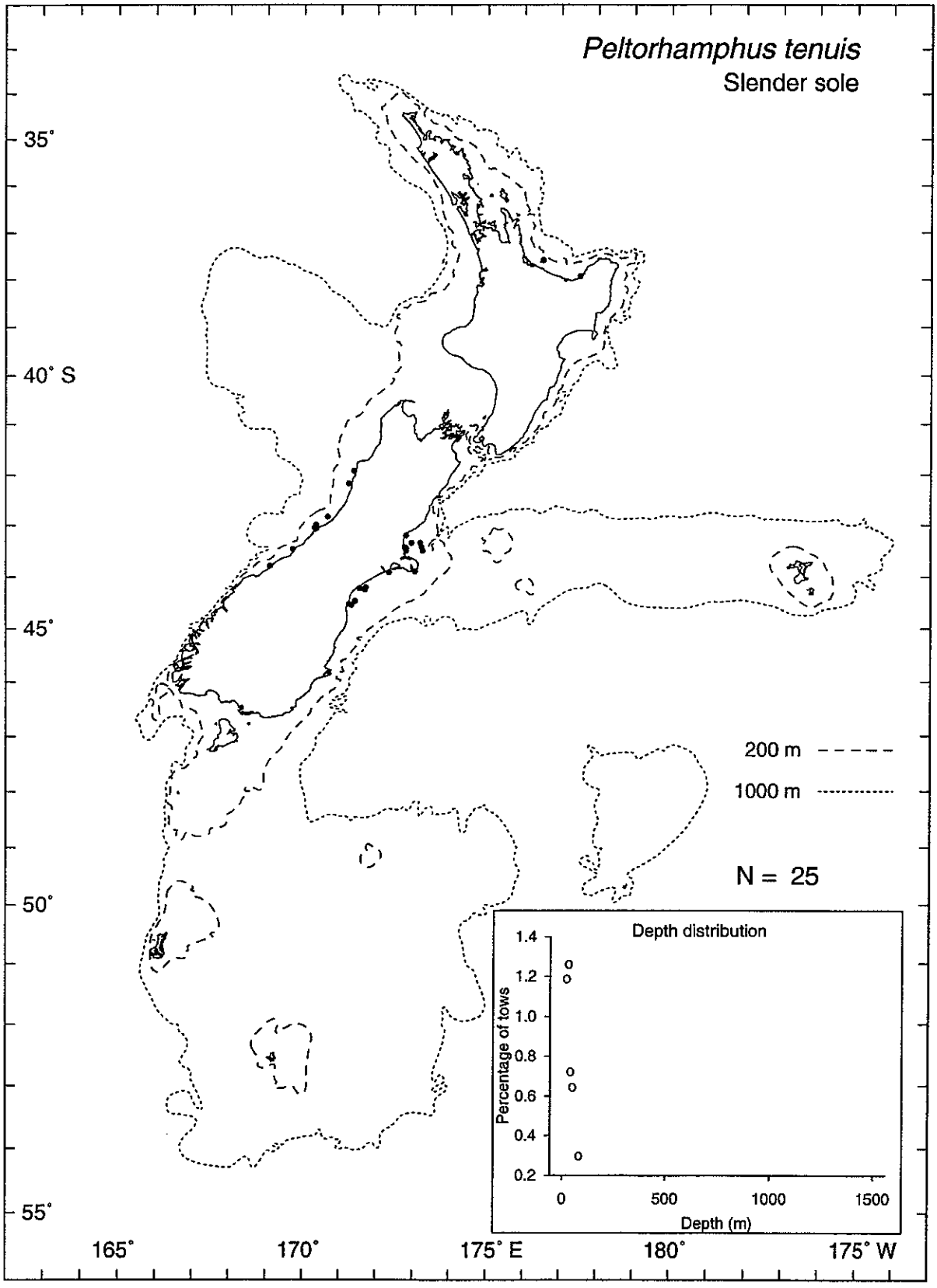
May include some other *Parvoraja* spp.

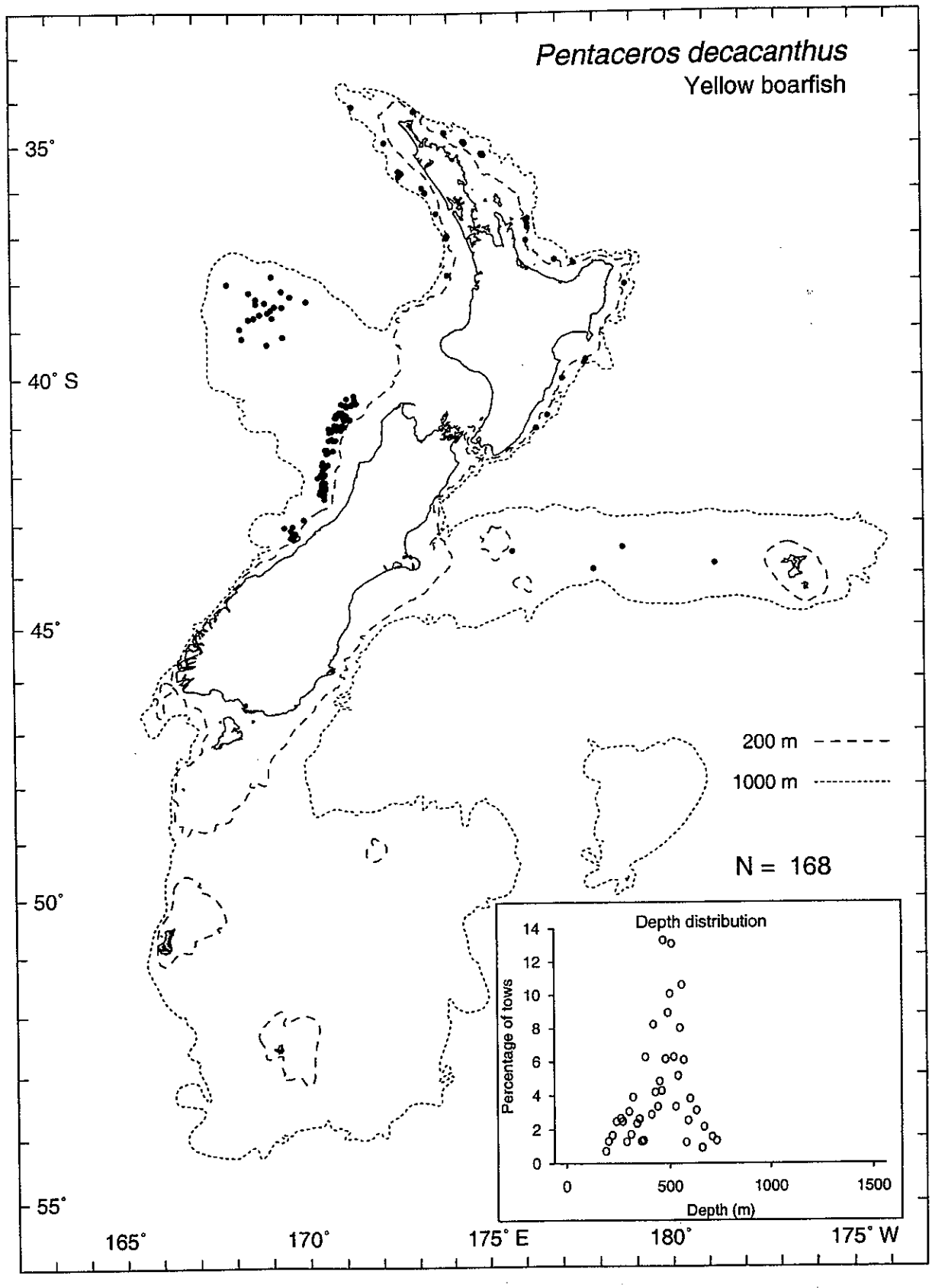

Pelotretis flavilatus
Lemon sole
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 1742
Depth distribution
Percentage of tows
Depth (m)
0
10
20
30
40
50
0
500
1000
1500

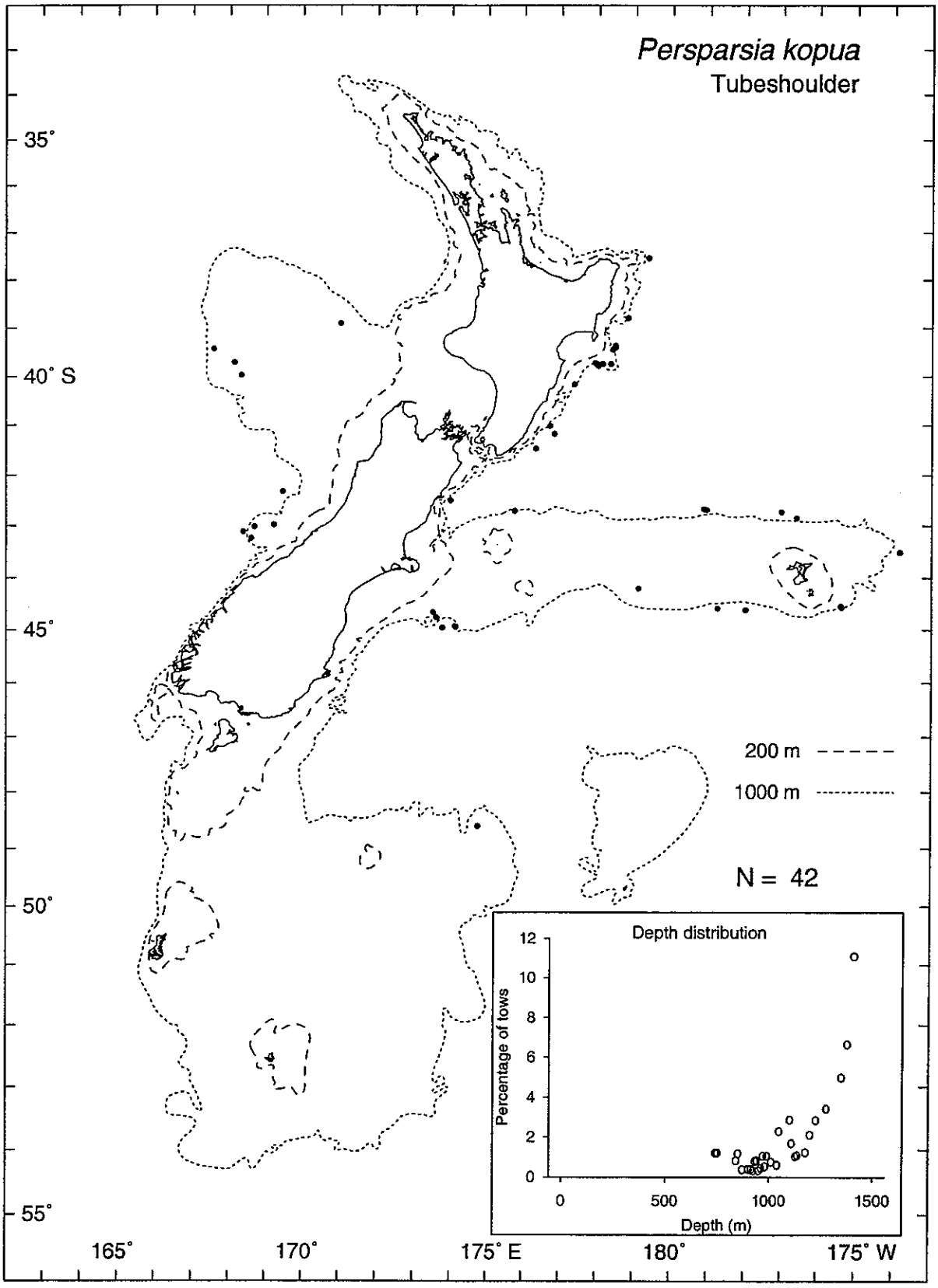

Peltorhamphus latus
Speckled sole
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 119
Depth distribution
Percentage of tows
0
2
4
6
8
10
12
0
500
1000
1500
Depth (m)

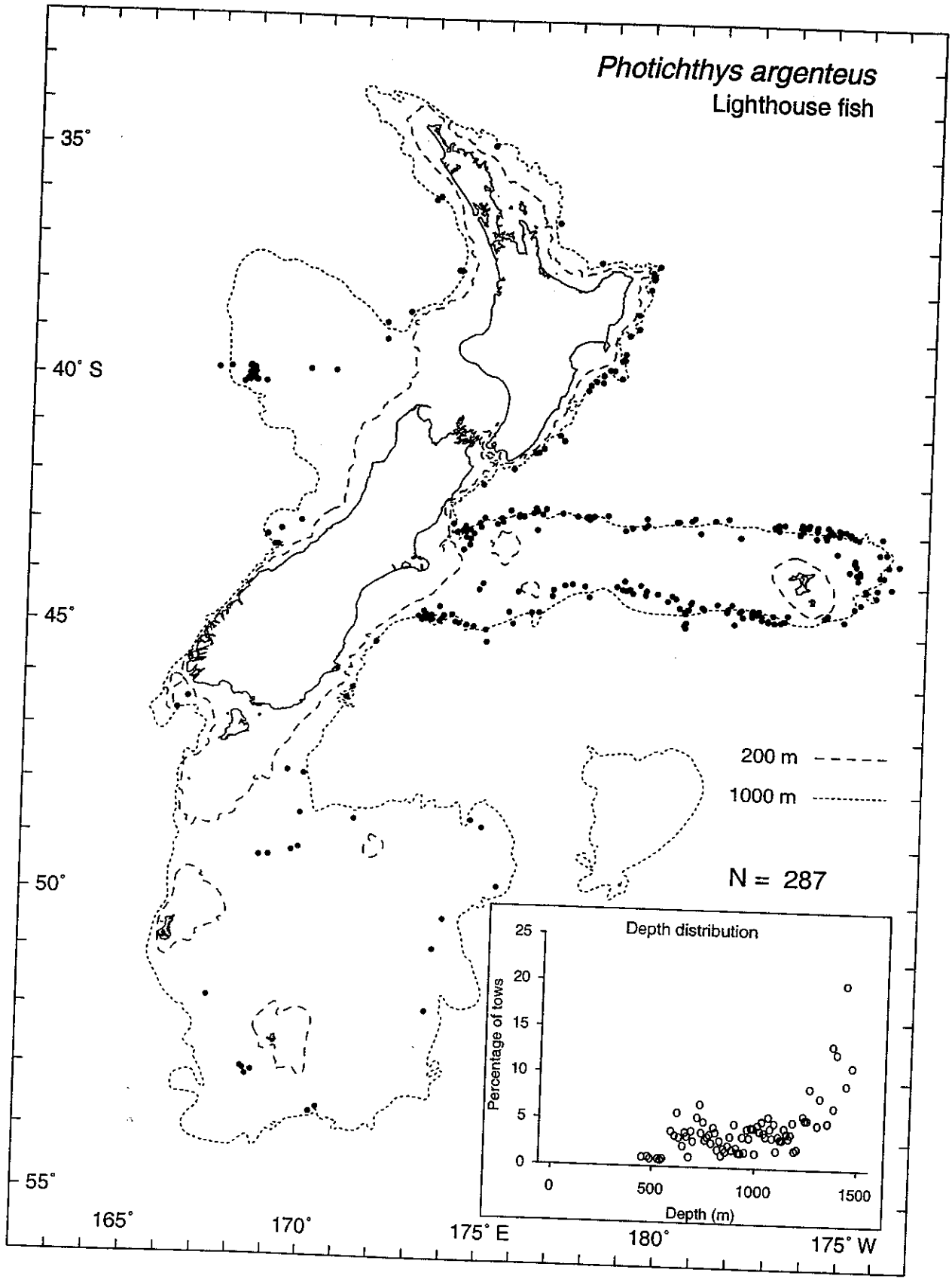


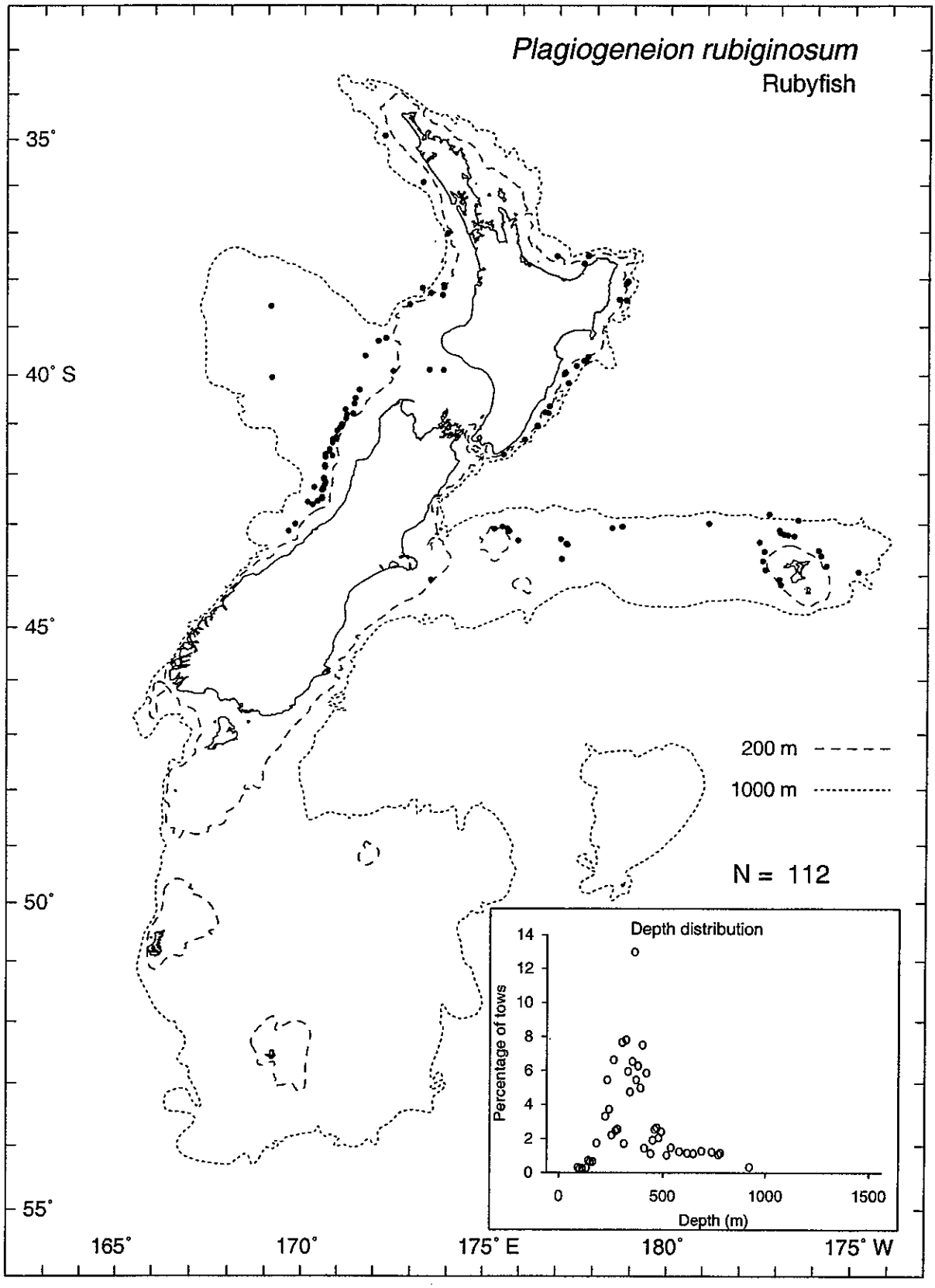
May include some *P. latus* and *P. tenuis.*

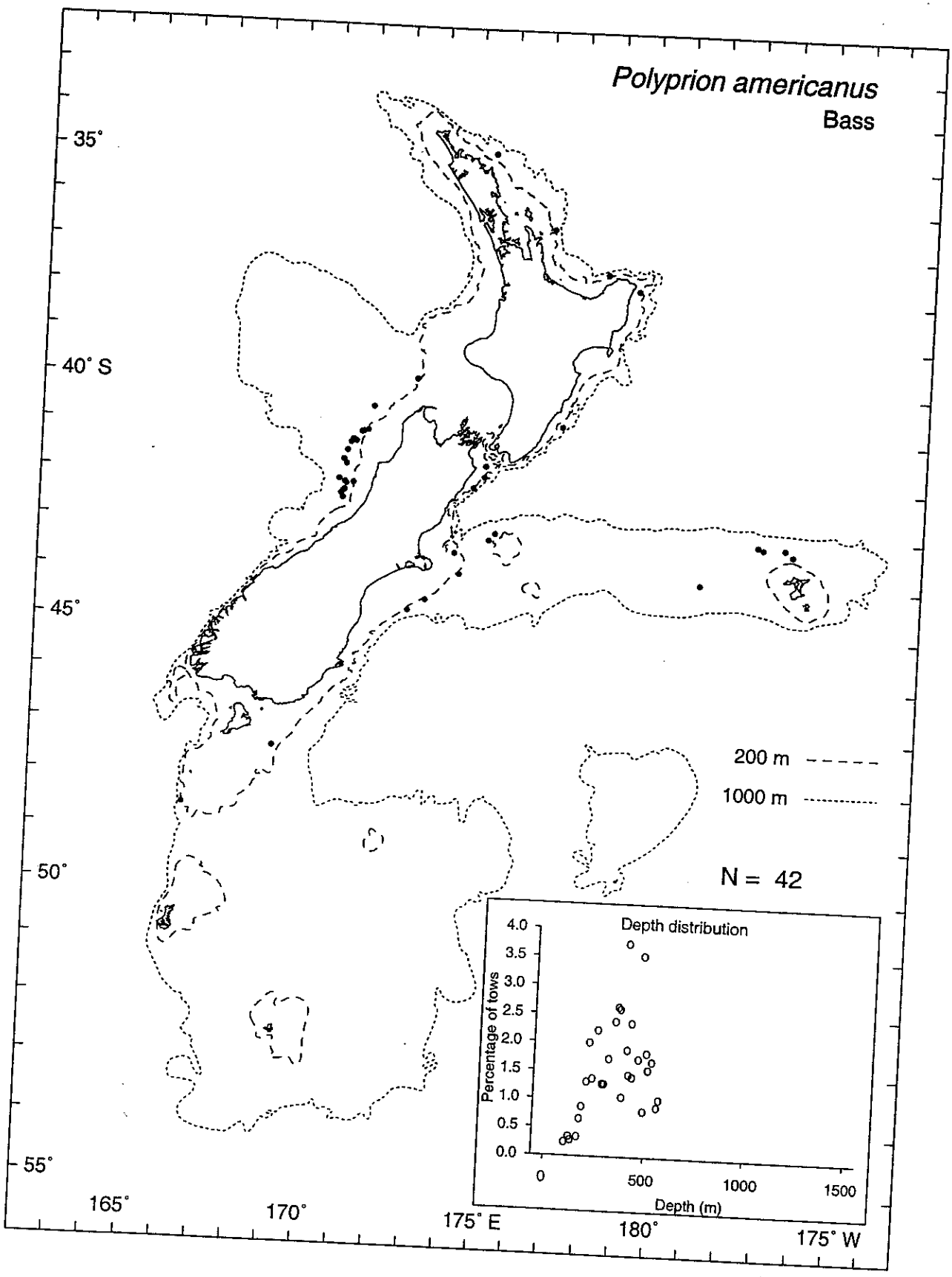

Peltorhamphus tenuis
Slender sole
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 25
Depth distribution
Percentage of tows
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0
500
1000
1500
Depth (m)

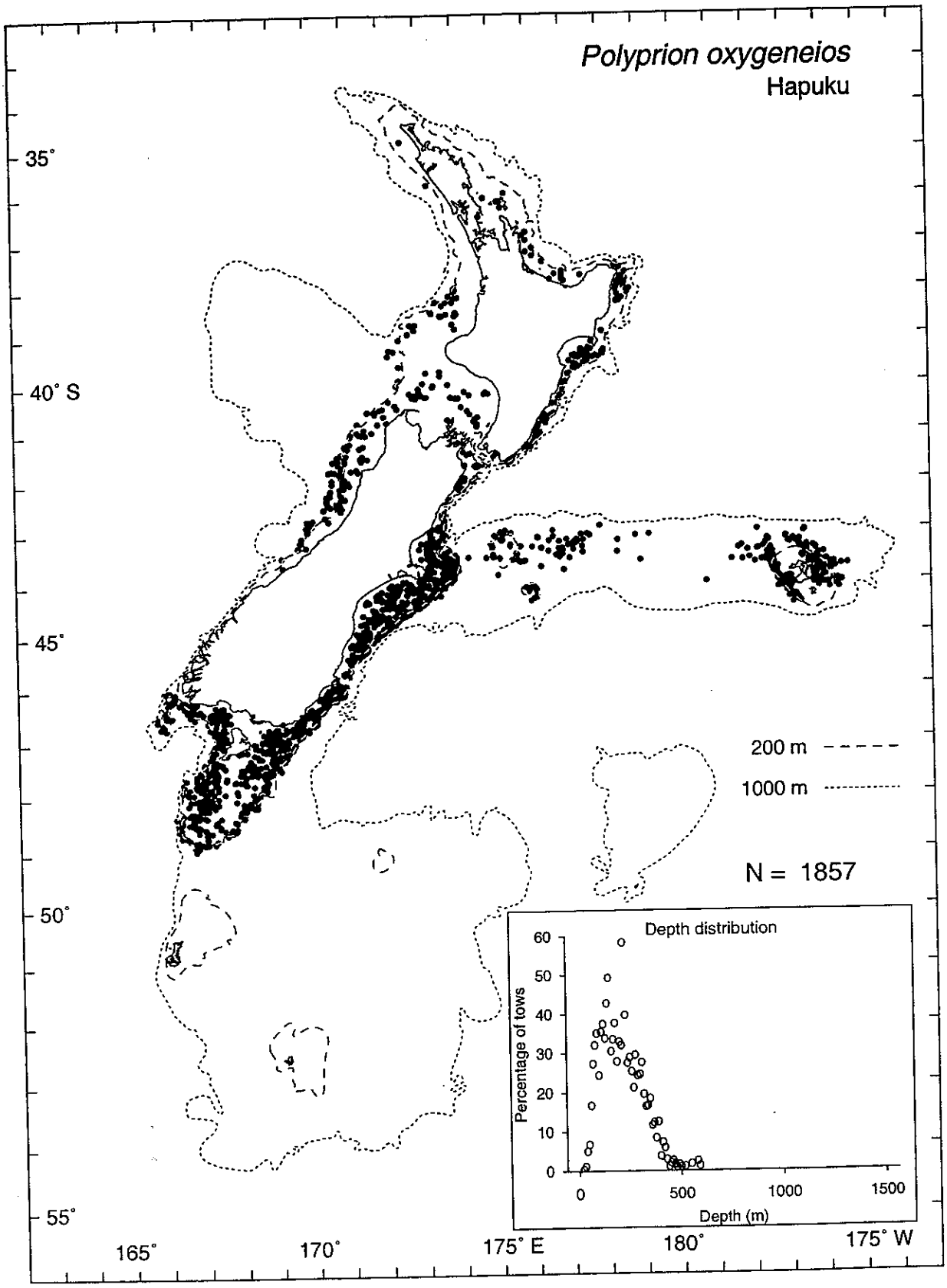

Pentaceros decacanthus
Yellow boarfish
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 168
Depth distribution
Percentage of tows
Depth (m)
0
2
4
6
8
10
12
14
0
500
1000
1500

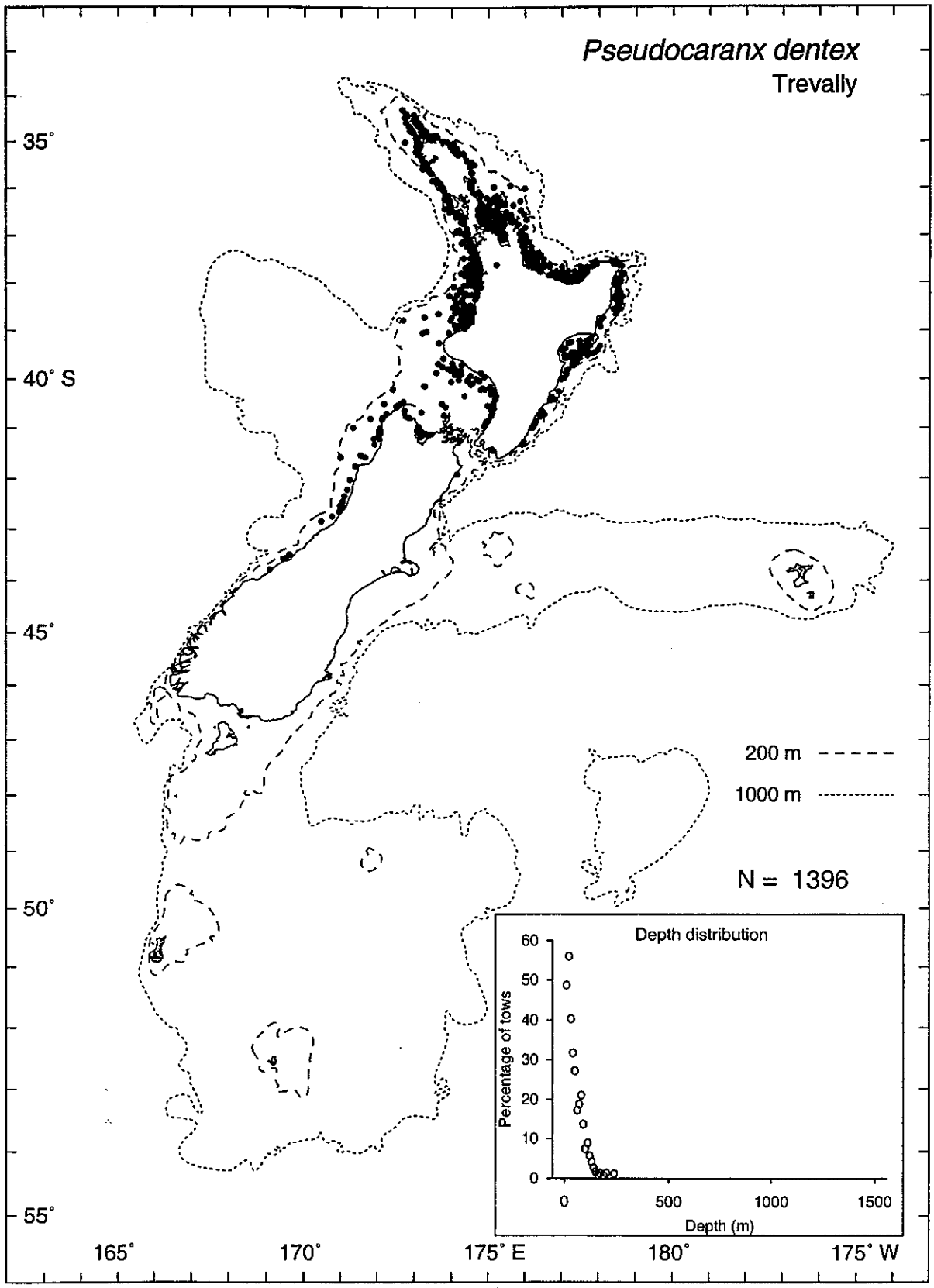

Persparsia kopua
Tubeshoulder
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 42
Depth distribution
Percentage of tows
Depth (m)
0
2
4
6
8
10
12
0
500
1000
1500

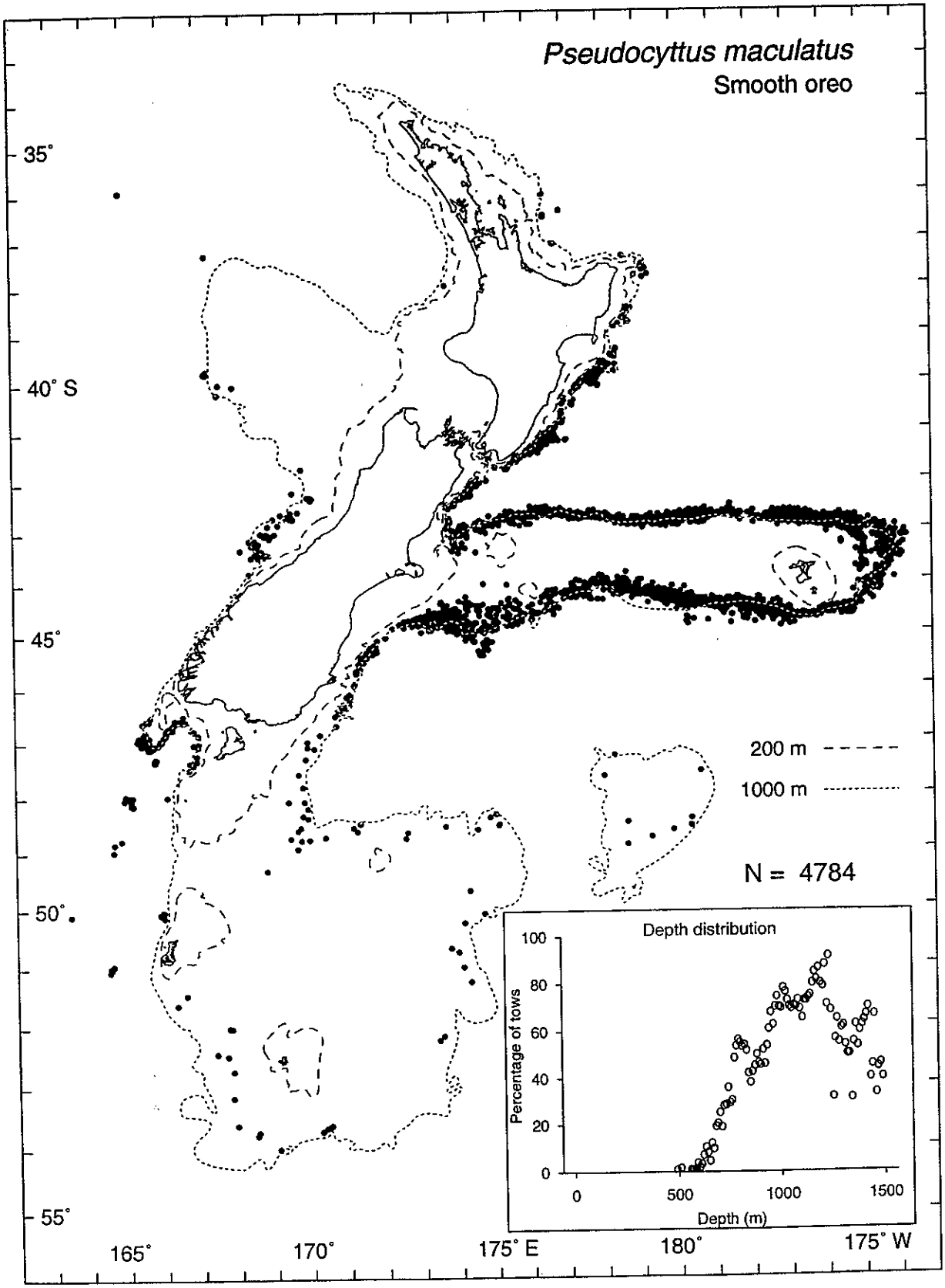

Photichthys argenteus
Lighthouse fish
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 287
Depth distribution
Percentage of tows
25
20
15
10
5
0
0
500
1000
1500
Depth (m)

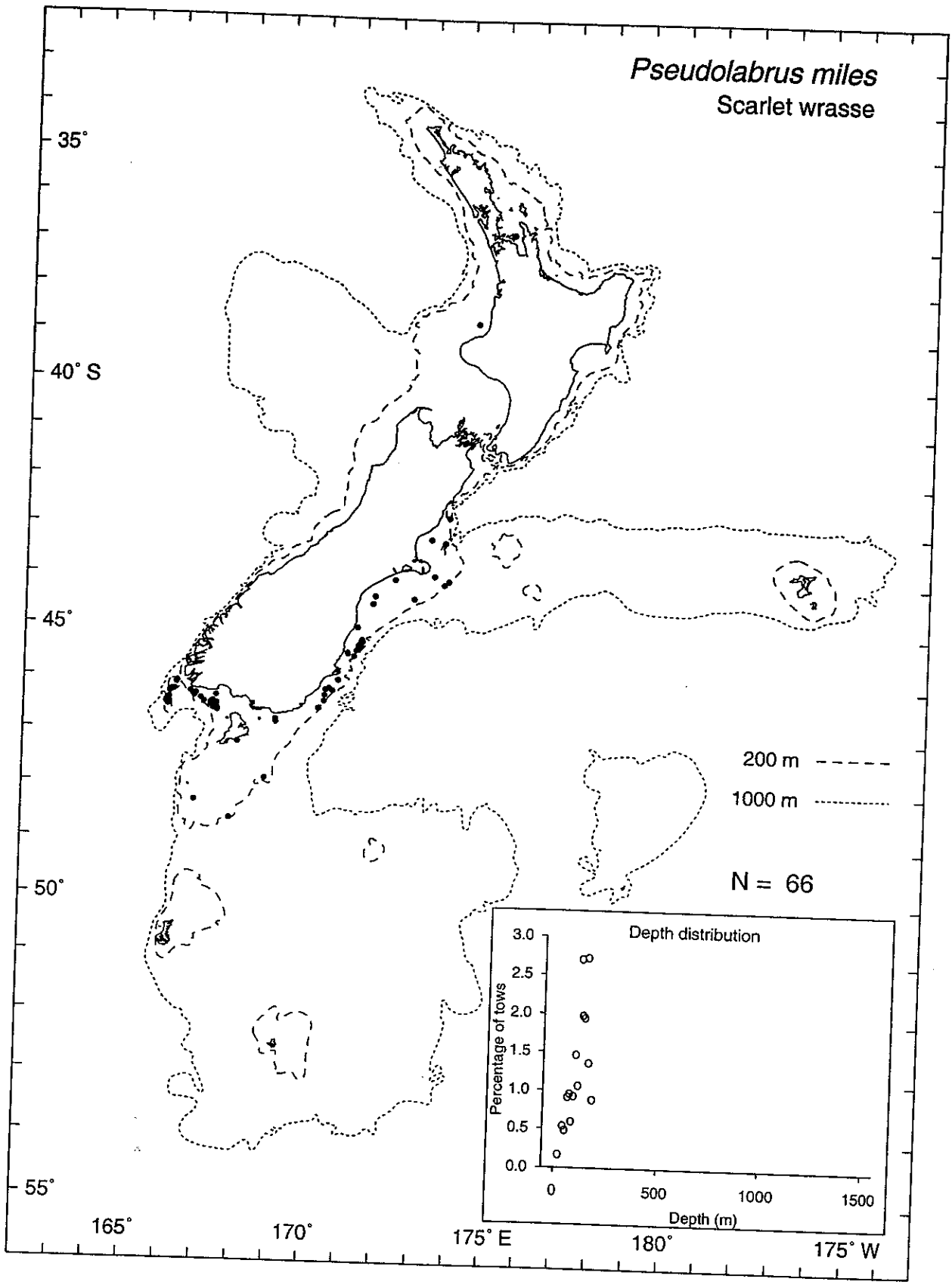

Plagiogeneion rubiginosum
Rubyfish
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 112
Depth distribution
Percentage of tows
0
2
4
6
8
10
12
14
0
500
1000
1500
Depth (m)

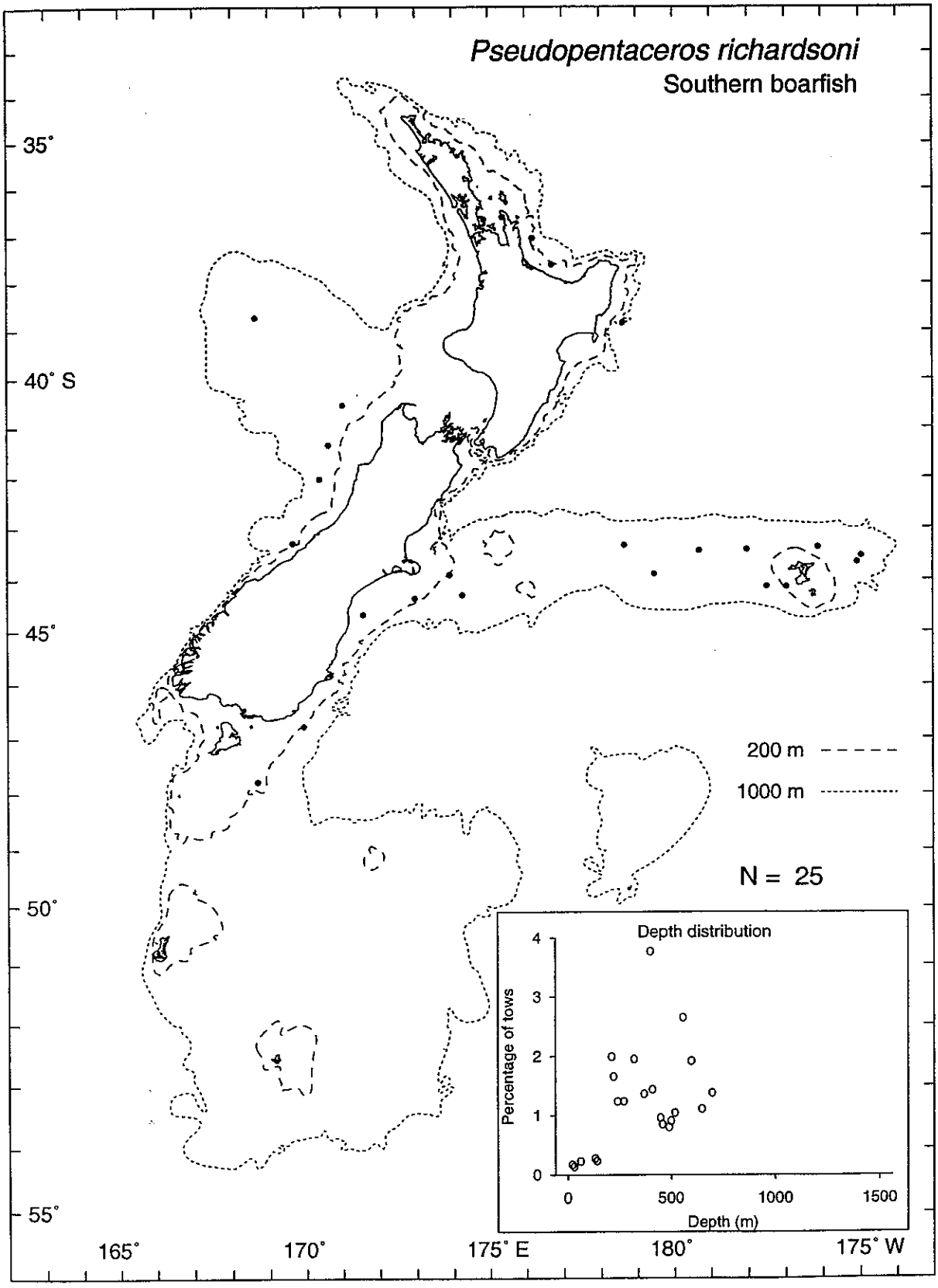

Polyprion americanus
Bass
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 42
Depth distribution
Percentage of tows
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0
500
1000
1500
Depth (m)

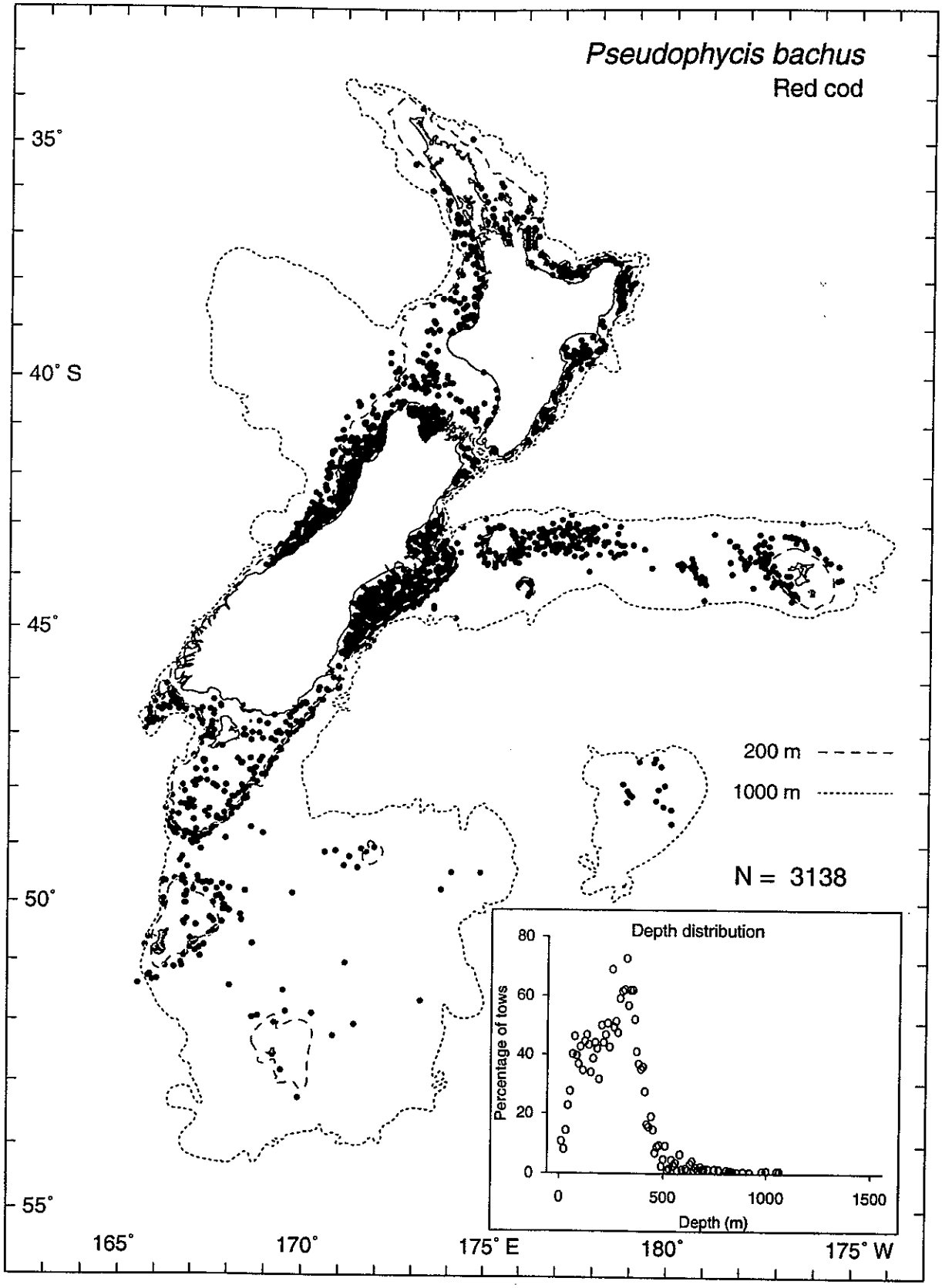

Polyprion oxygeneios
Hapuku
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 1857
Depth distribution
Percentage of tows
Depth (m)
0
10
20
30
40
50
60
0
500
1000
1500

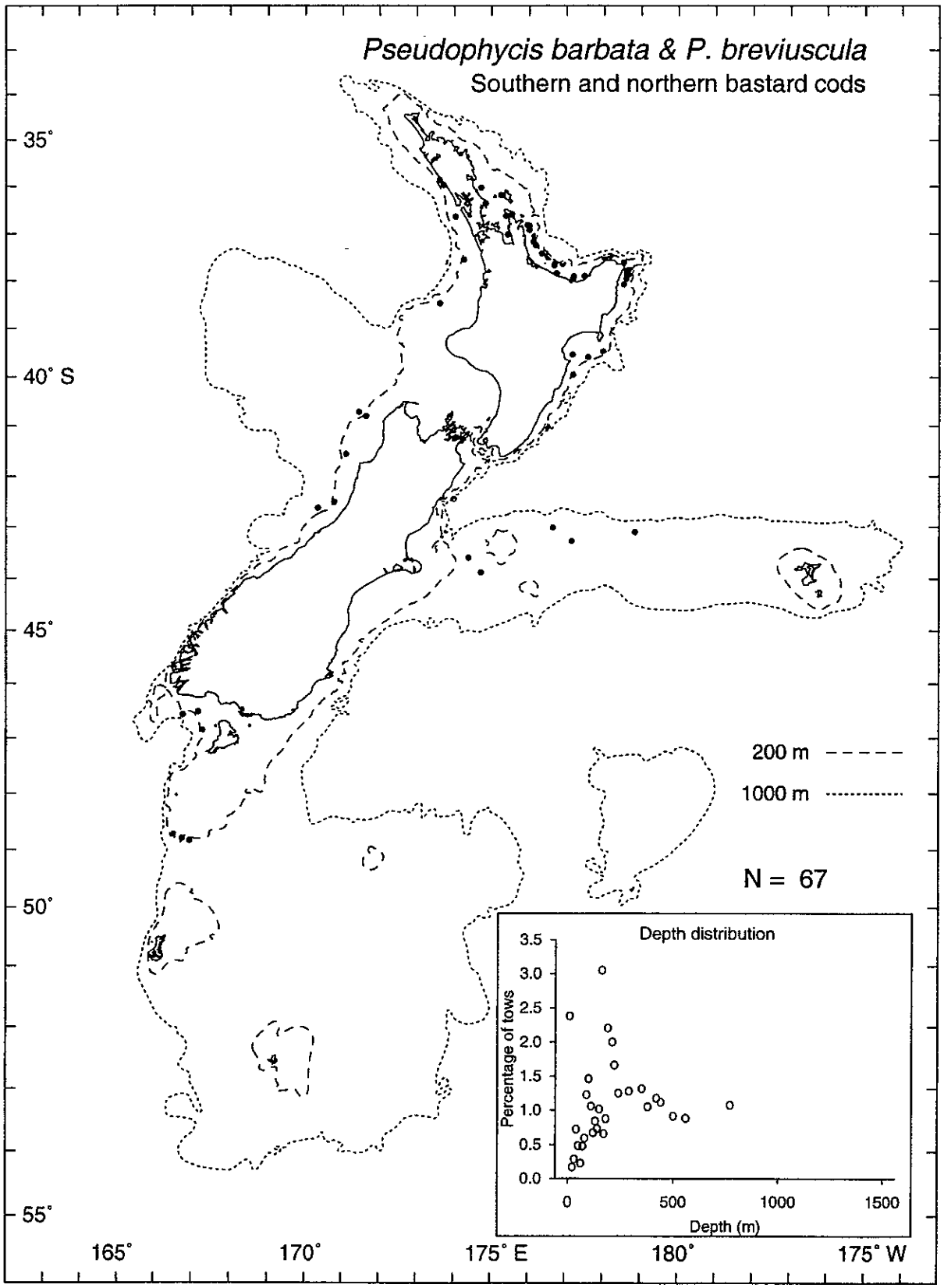

Pseudocaranx dentex
Trevally
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 1396
Depth distribution
Percentage of tows
0
10
20
30
40
50
60
0
500
1000
1500
Depth (m)

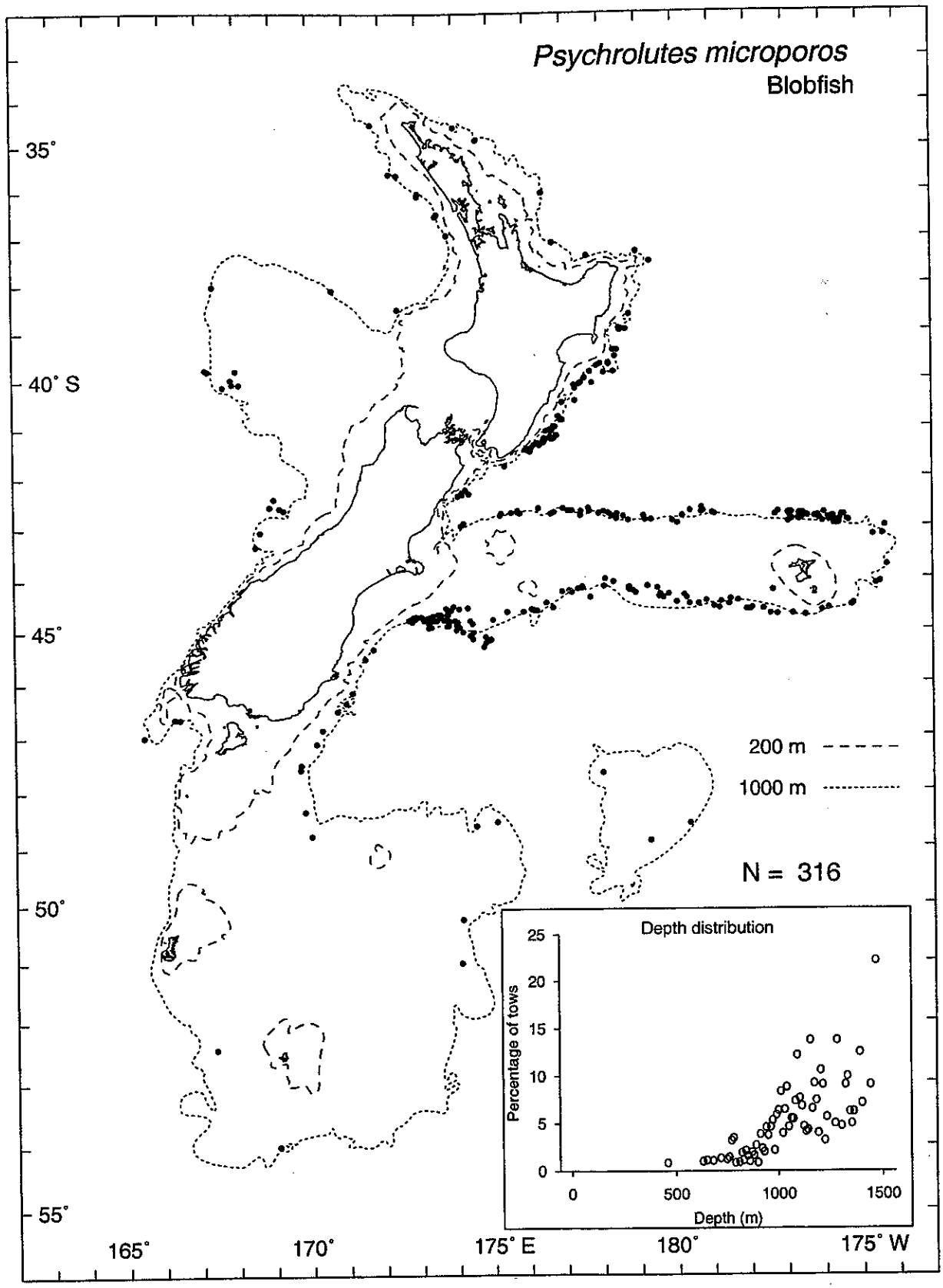

Pseudocyttus maculatus
Smooth oreo
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 4784
Depth distribution
Percentage of tows
100
80
60
40
20
0
0
500
1000
1500
Depth (m)

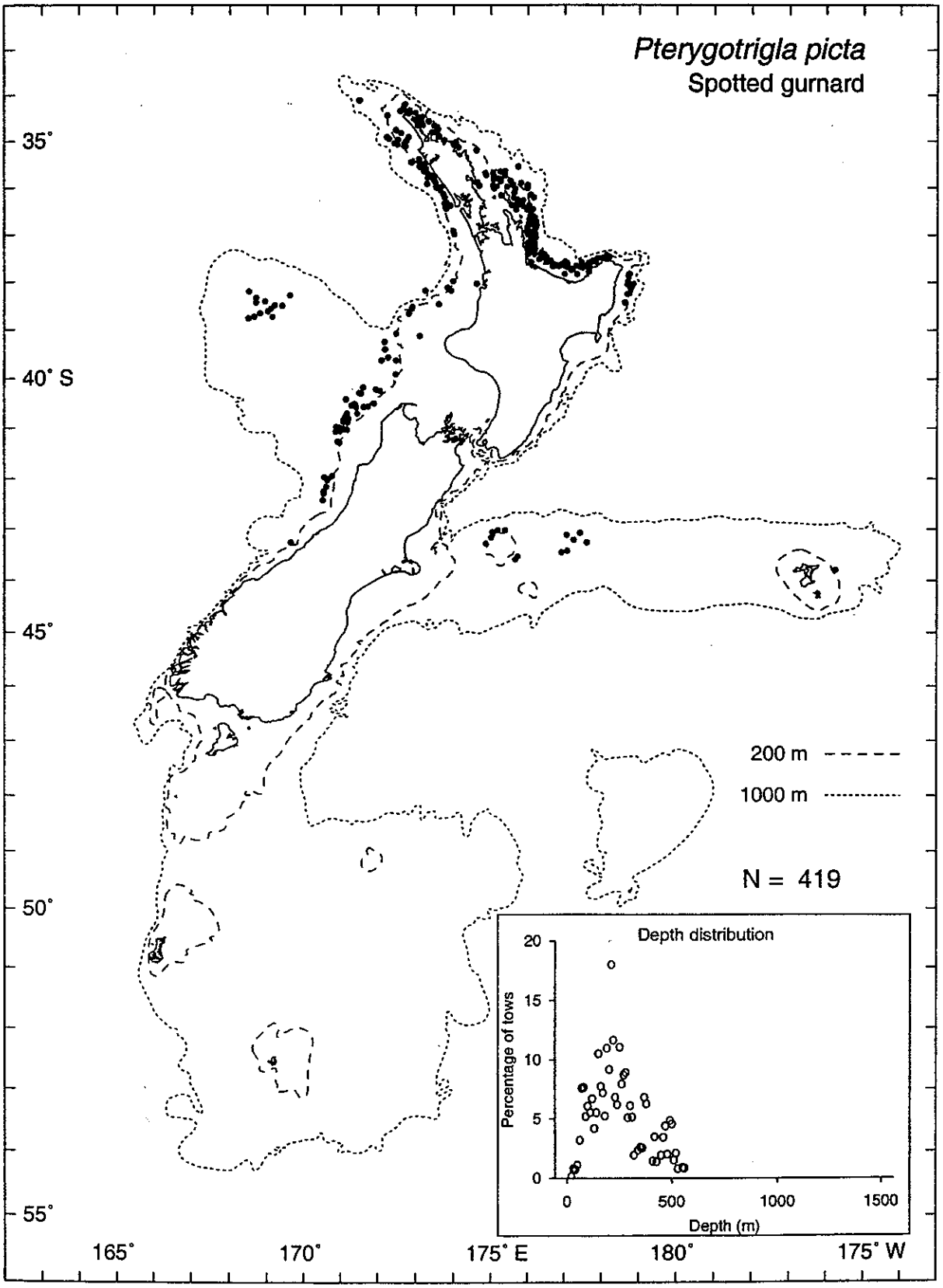

Pseudolabrus miles
Scarlet wrasse
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 66
Depth distribution
Percentage of tows
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0
500
1000
1500
Depth (m)


Pseudopentaceros richardsoni
Southern boarfish
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 25
Depth distribution
Percentage of tows
0
1
2
3
4
0
500
1000
1500
Depth (m)

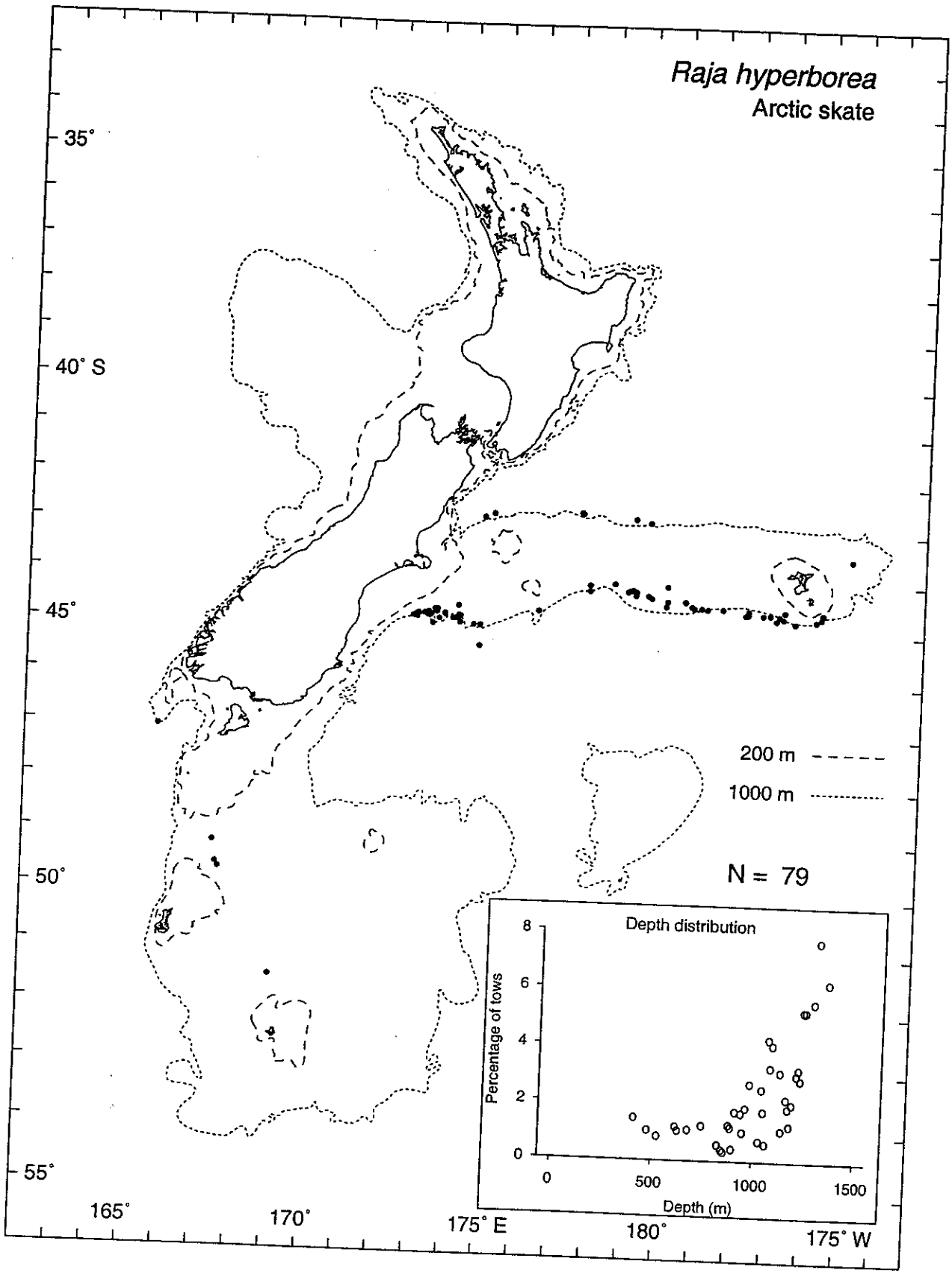

Pseudophycis bachus
Red cod
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 3138
Depth distribution
Percentage of tows
Depth (m)
0
20
40
60
80
0
500
1000
1500

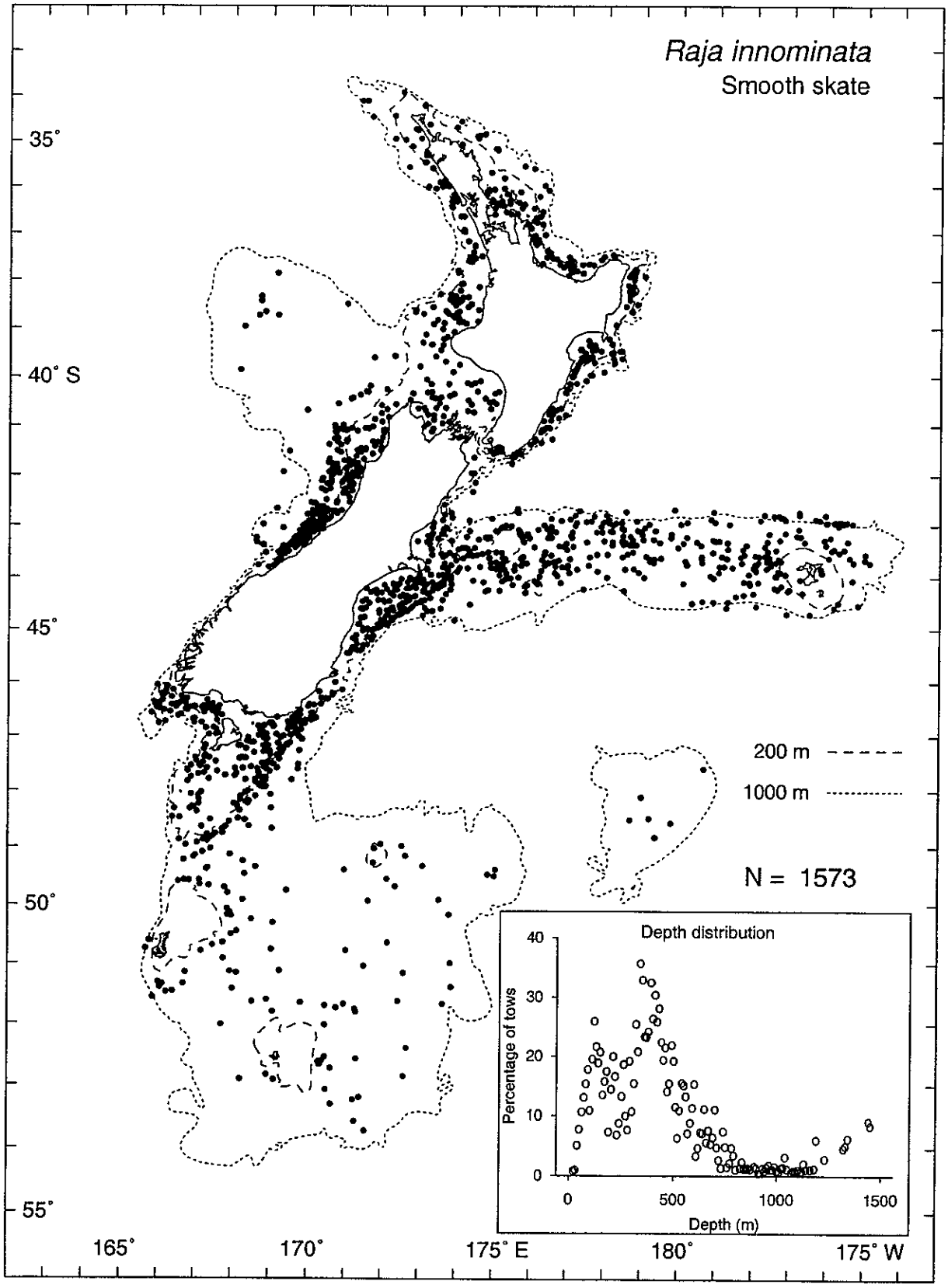

Pseudophycis barbata & P. breviuscula
Southern and northern bastard cods
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 67
Depth distribution
Percentage of tows
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0
500
1000
1500
Depth (m)

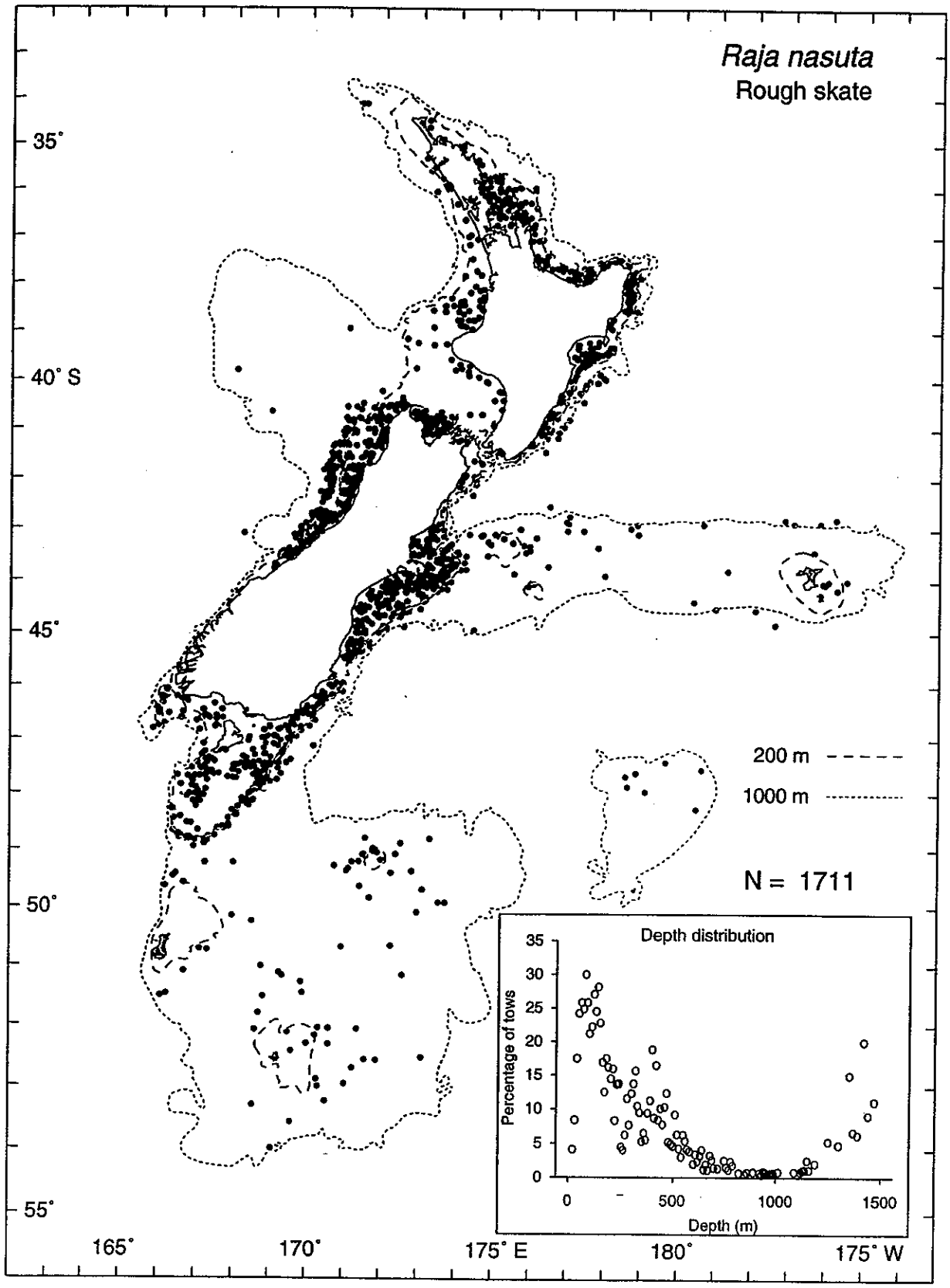

Psychrolutes microporos
Blobfish
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 316
Depth distribution
Percentage of tows
Depth (m)
0
5
10
15
20
25
0
500
1000
1500



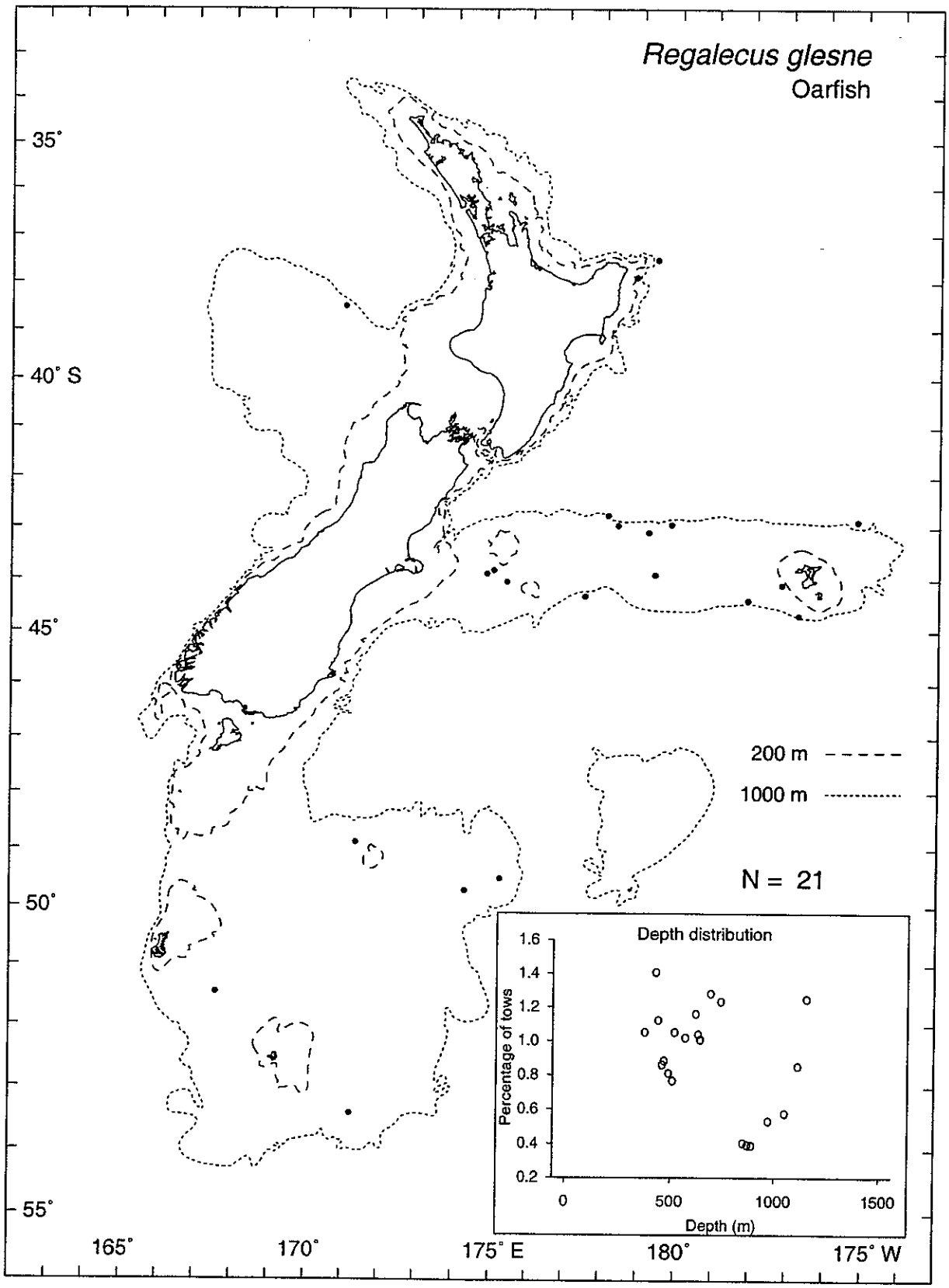
May include some specimens of *Pterygotrigla pauli* and *P. polyommata*.

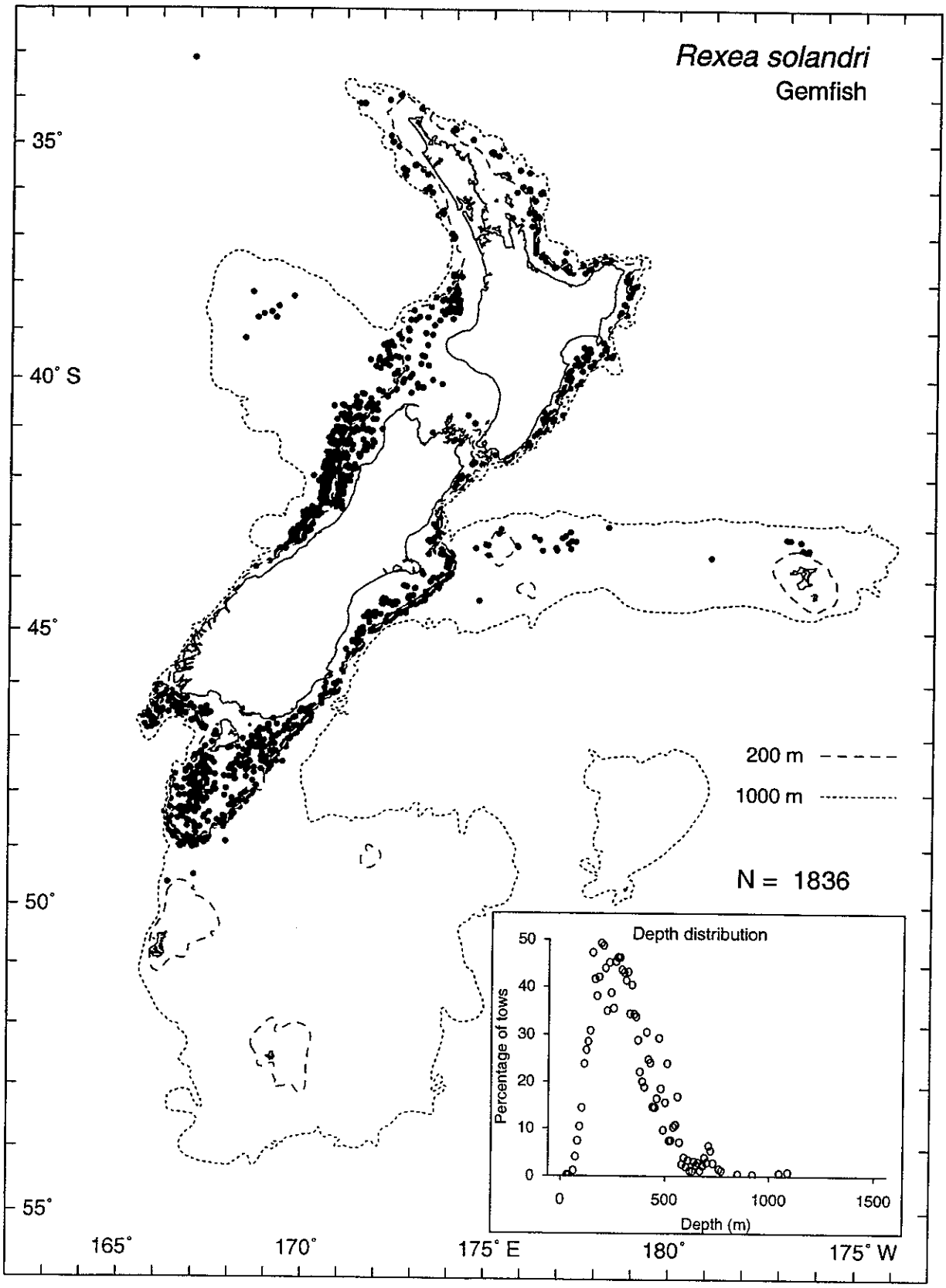

Raja hyperborea
Arctic skate
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 79
Depth distribution
Percentage of tows
0
2
4
6
8
0
500
1000
1500
Depth (m)

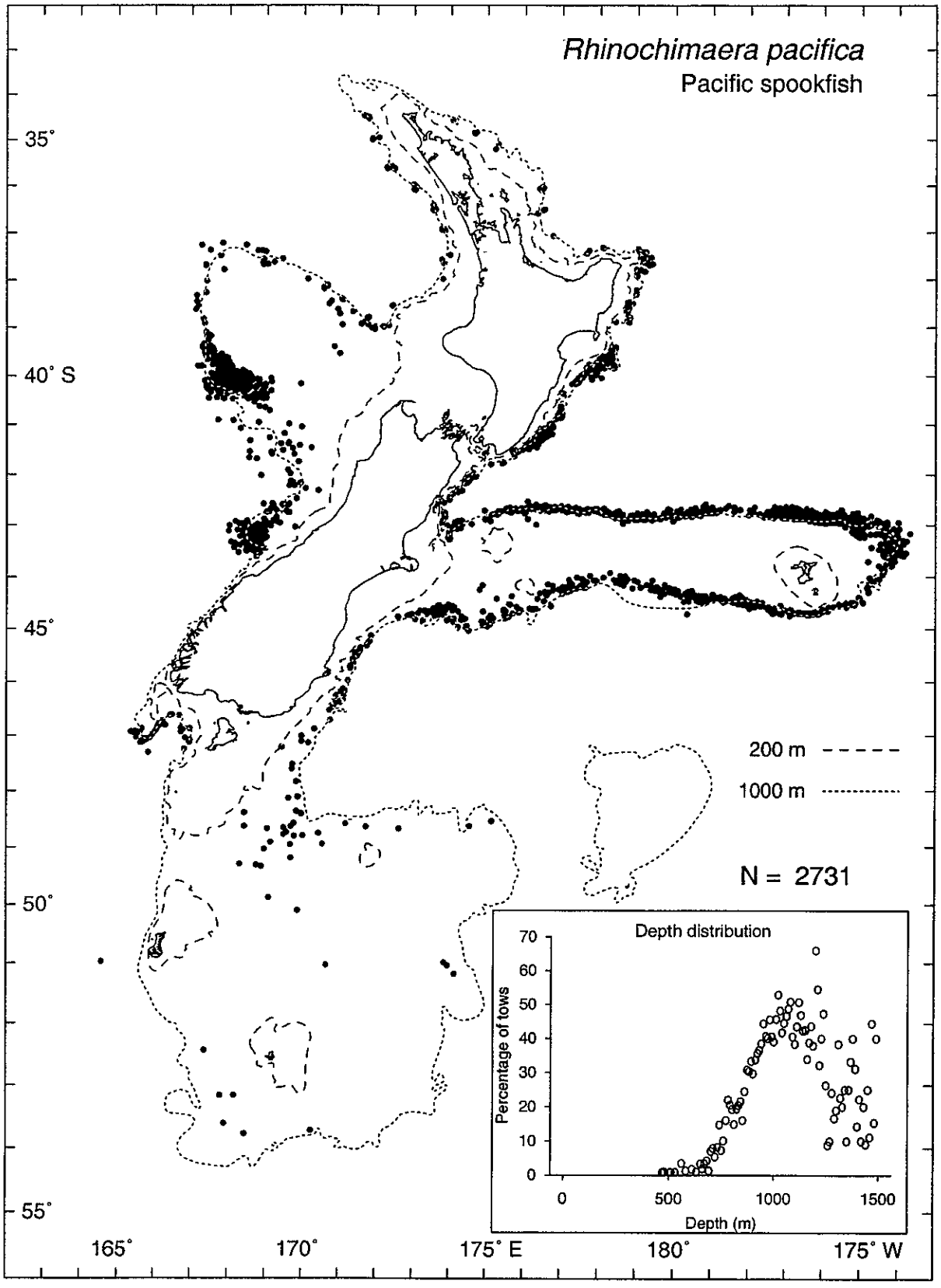

Raja innominata
Smooth skate
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 1573
Depth distribution
Percentage of tows
Depth (m)
0
10
20
30
40
0
500
1000
1500

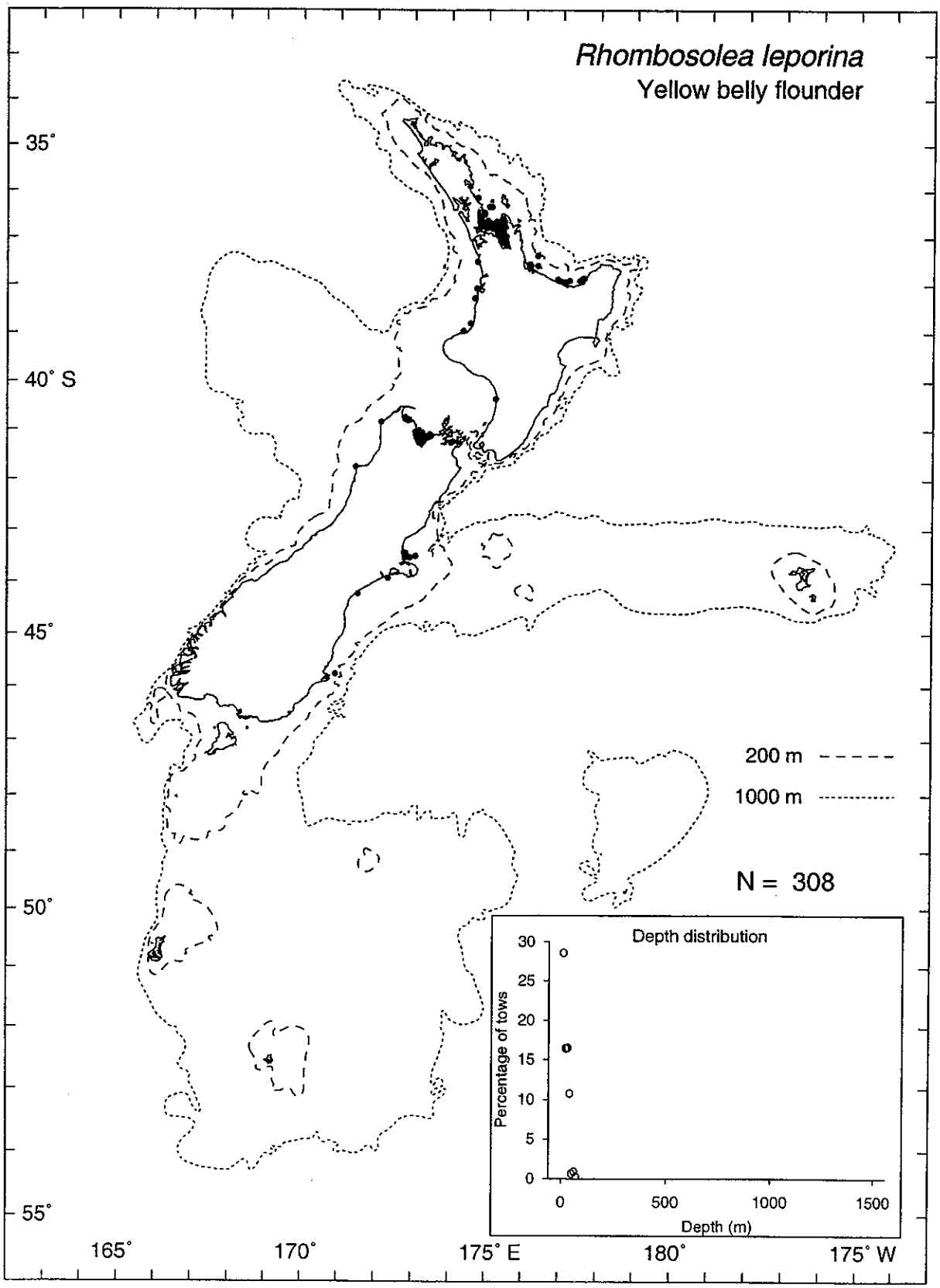


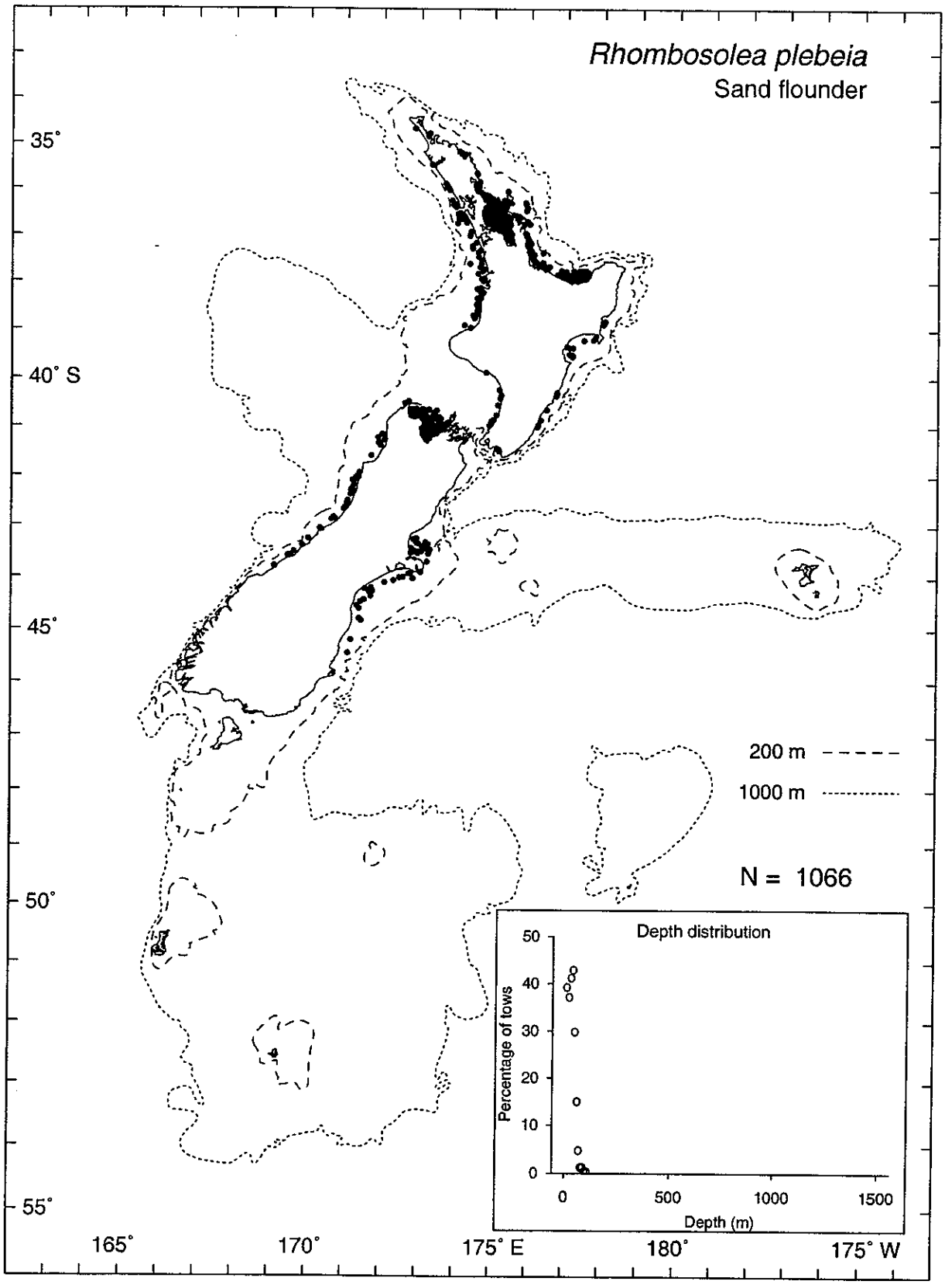
Deeper records may have been confused with *R. innominata, Bathyraja* spp., *or Pavoraja* spp.

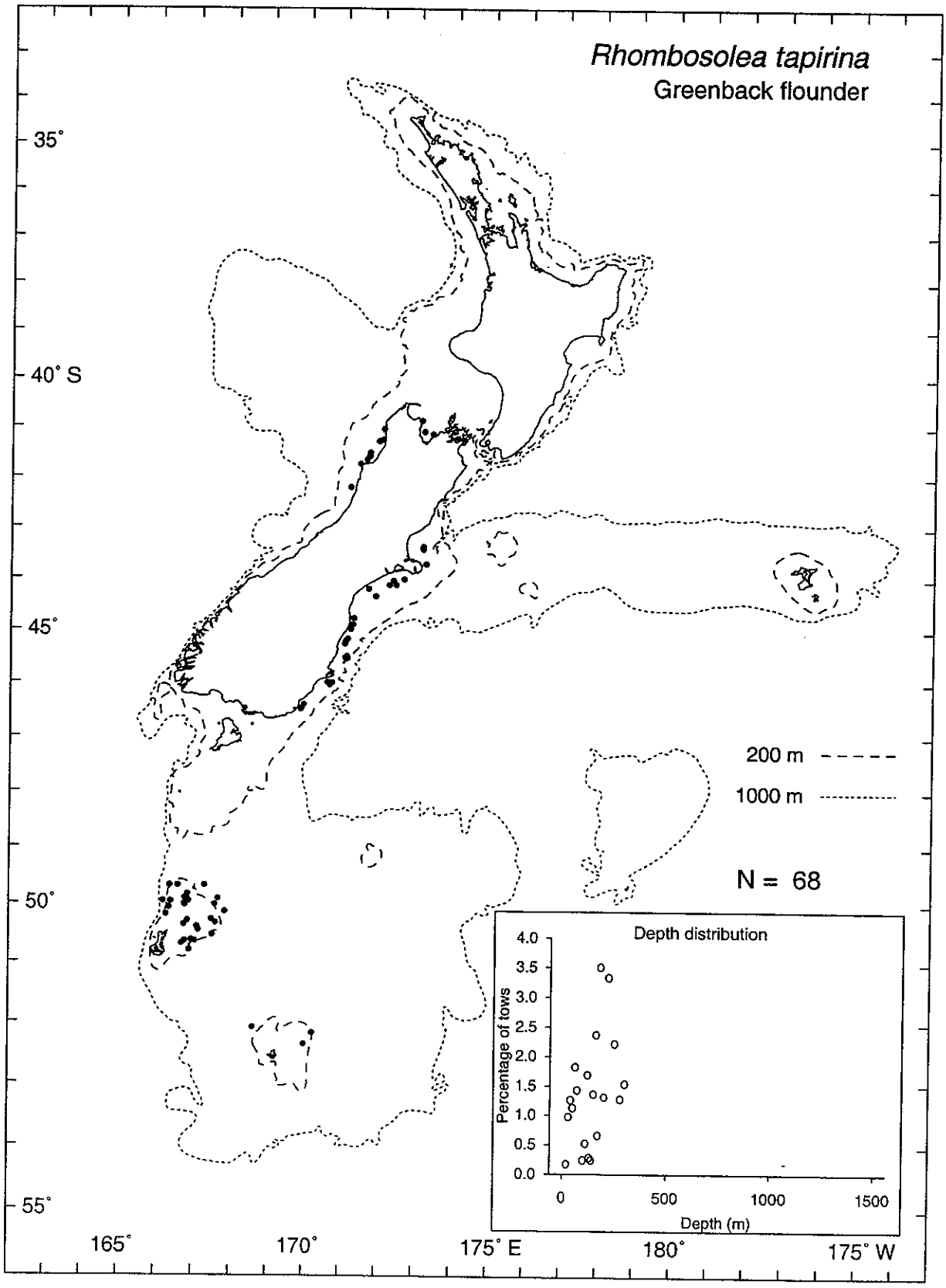

Regalecus glesne
Oarfish
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 21
Depth distribution
Percentage of tows
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0
500
1000
1500
Depth (m)

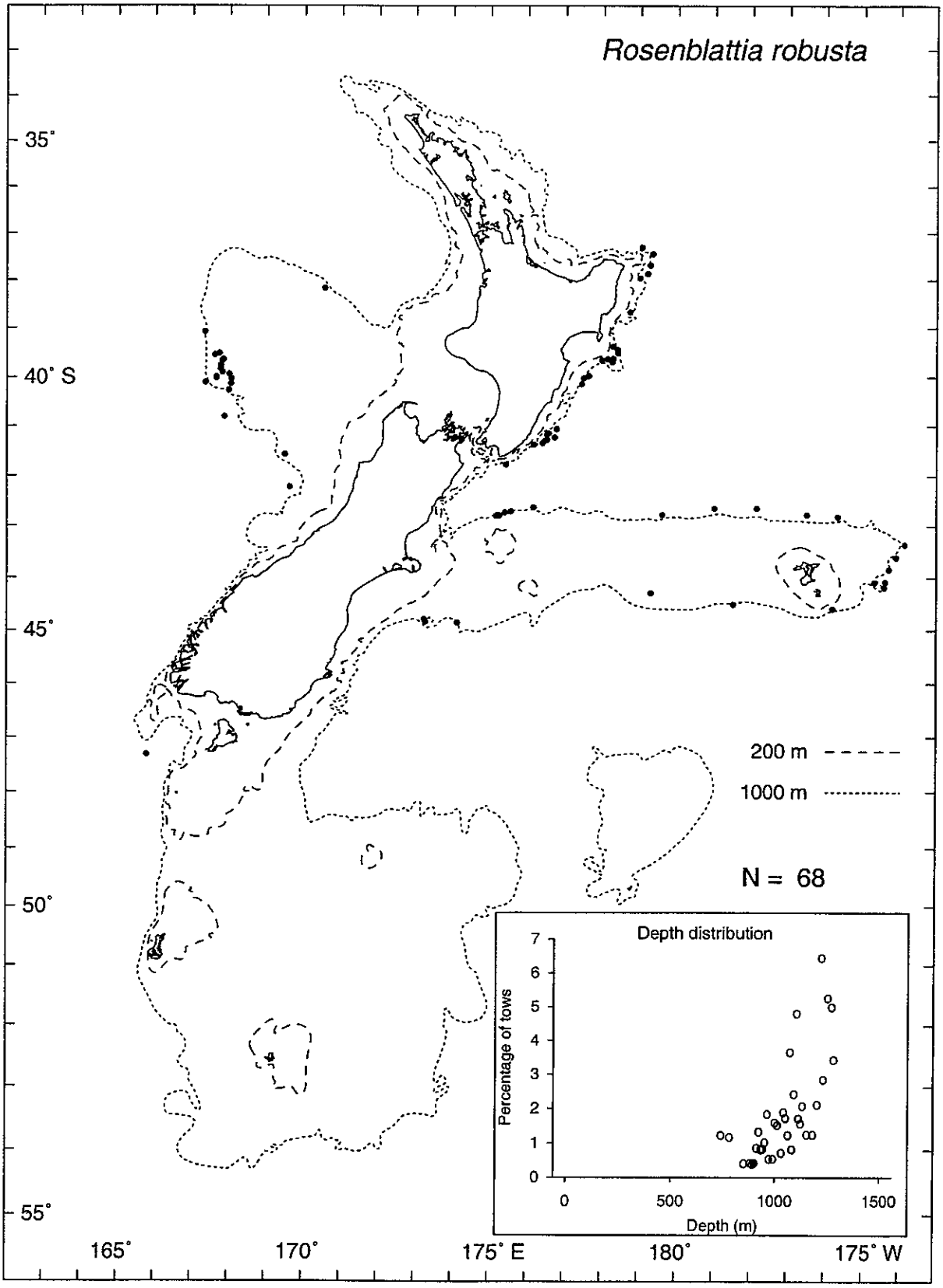

Rexea solandri
Gemfish
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 1836
Depth distribution
Percentage of tows
0
10
20
30
40
50
0
500
1000
1500
Depth (m)

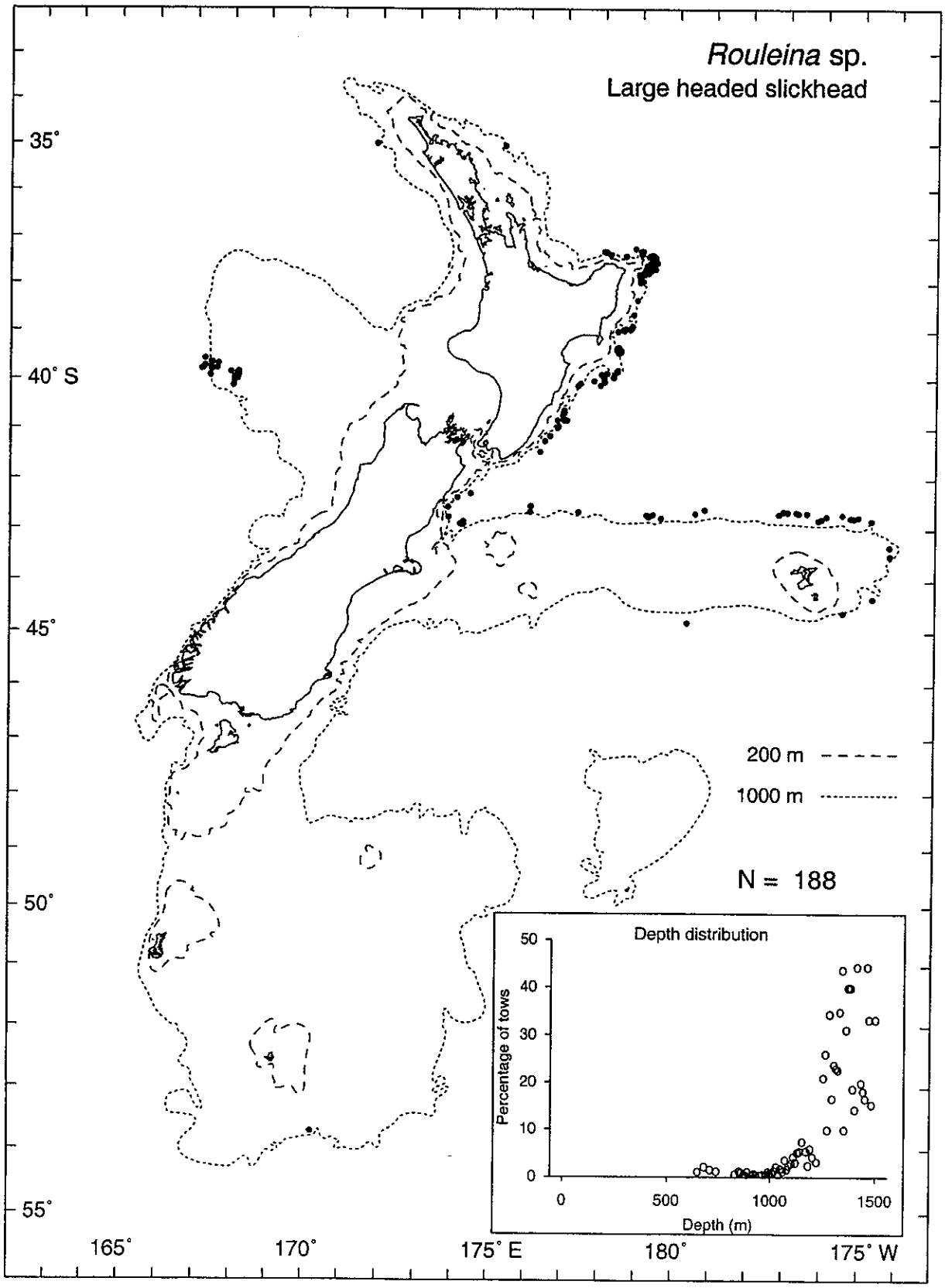

Rhinochimaera pacifica
Pacific spookfish
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 2731
Depth distribution
Percentage of tows
Depth (m)
0
10
20
30
40
50
60
70
0
500
1000
1500

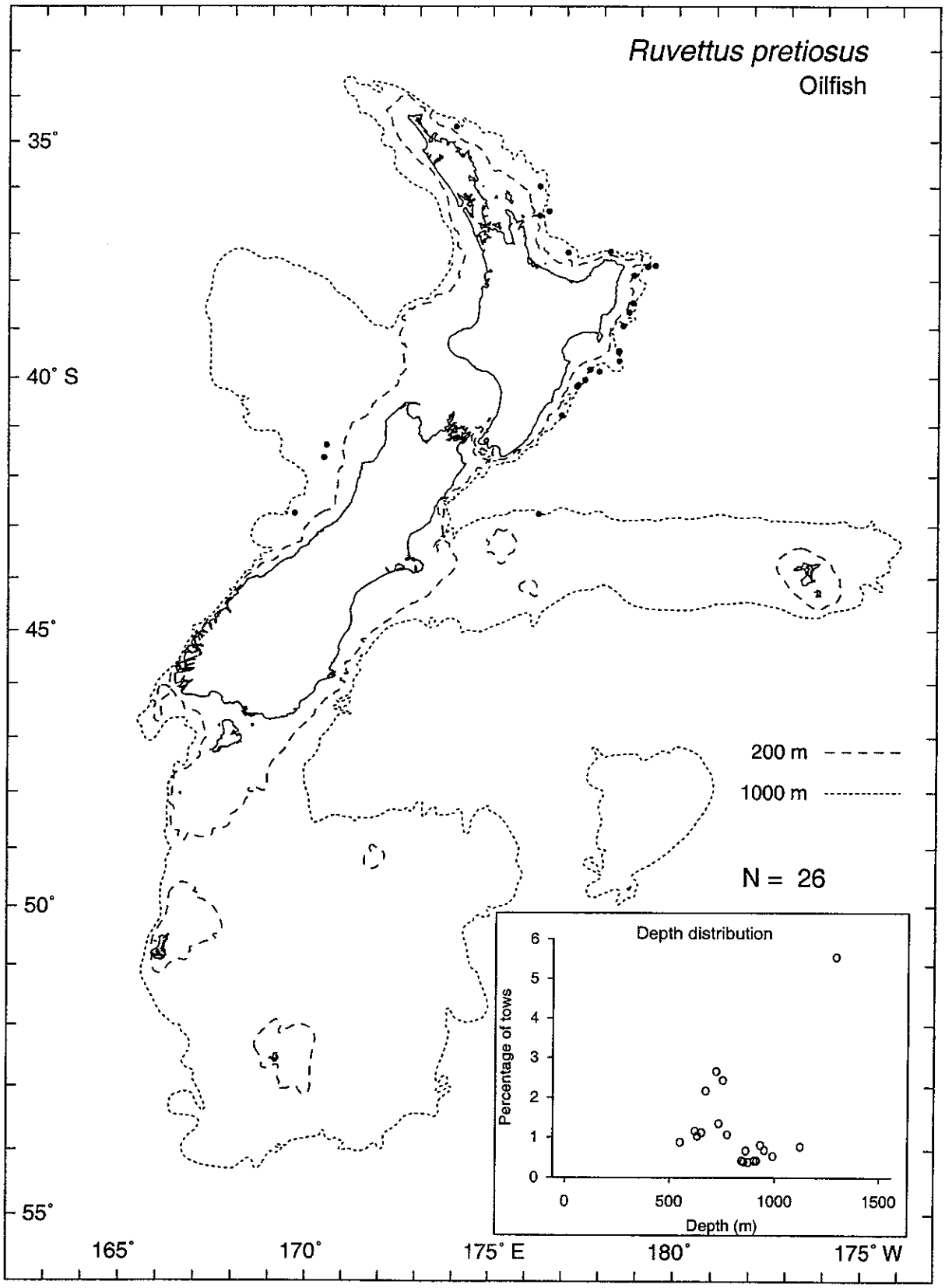

Rhombosolea leporina
Yellow belly flounder
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 308
Depth distribution
Percentage of tows
30
25
20
15
10
5
0
0
500
1000
1500
Depth (m)

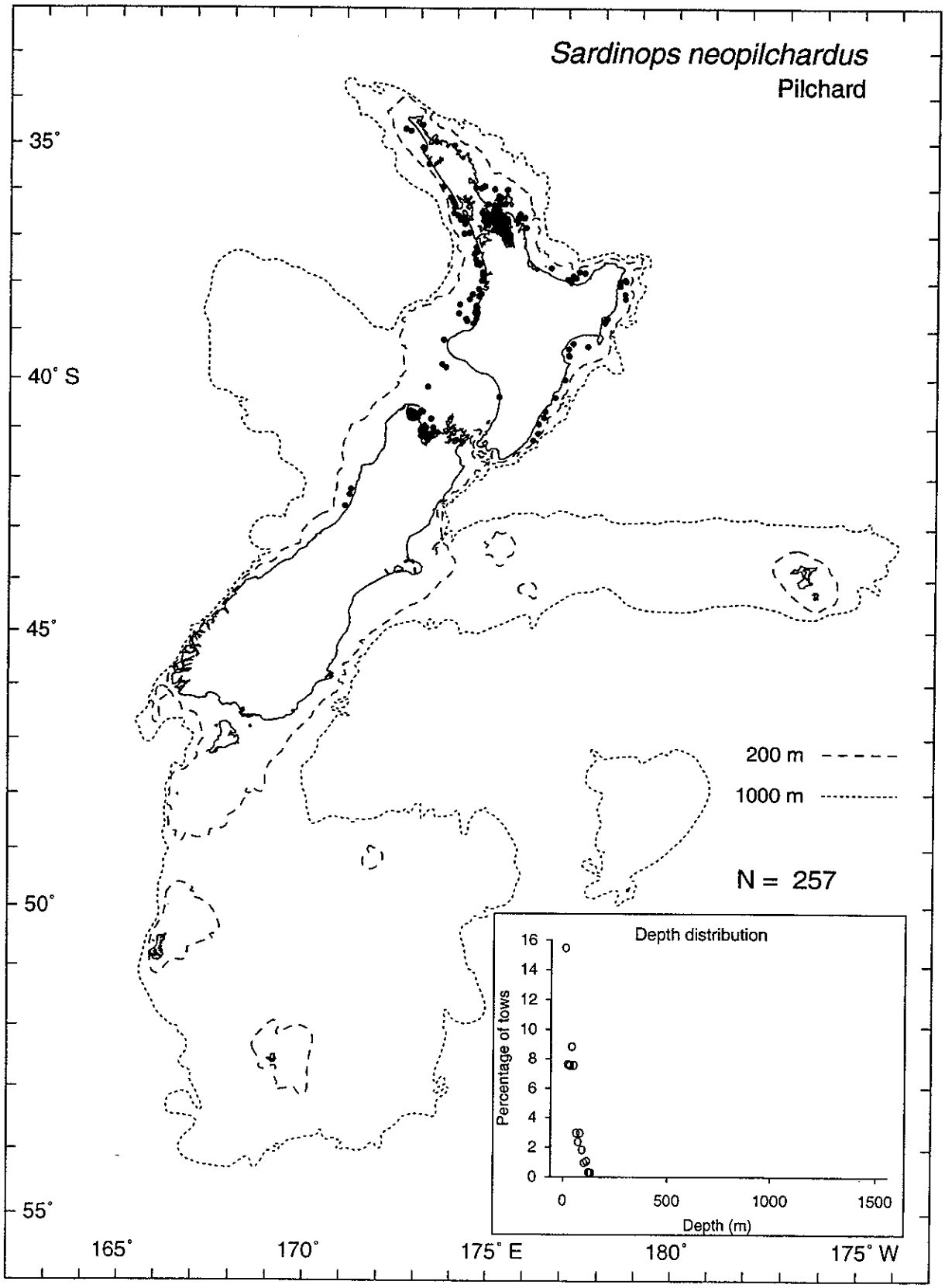

Rhombosolea plebeia
Sand flounder
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 1066
Depth distribution
Percentage of tows
Depth (m)
0
10
20
30
40
50
0
500
1000
1500

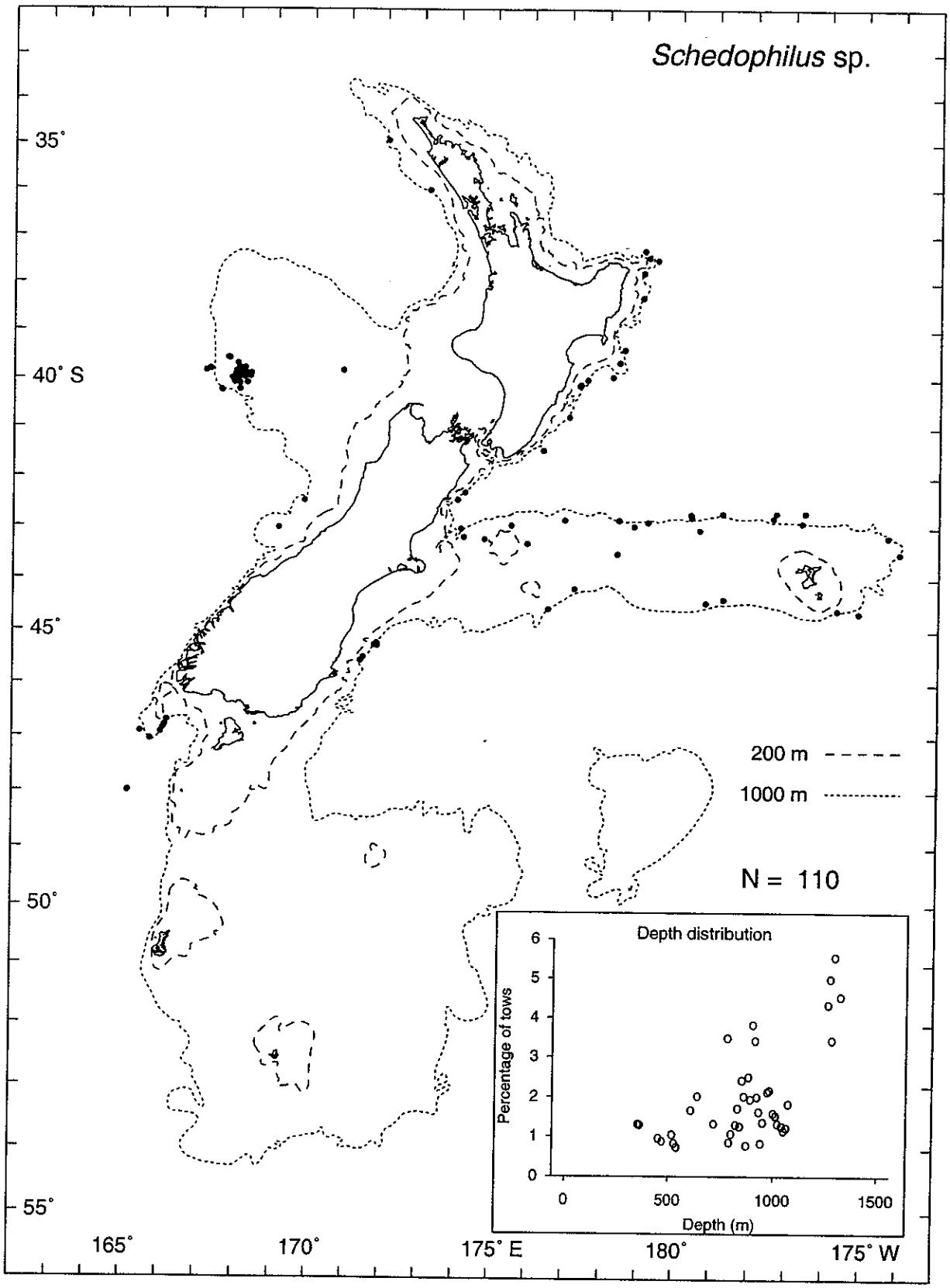

Rhombosolea tapirina
Greenback flounder
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 68
Depth distribution
Percentage of tows
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0
500
1000
1500
Depth (m)

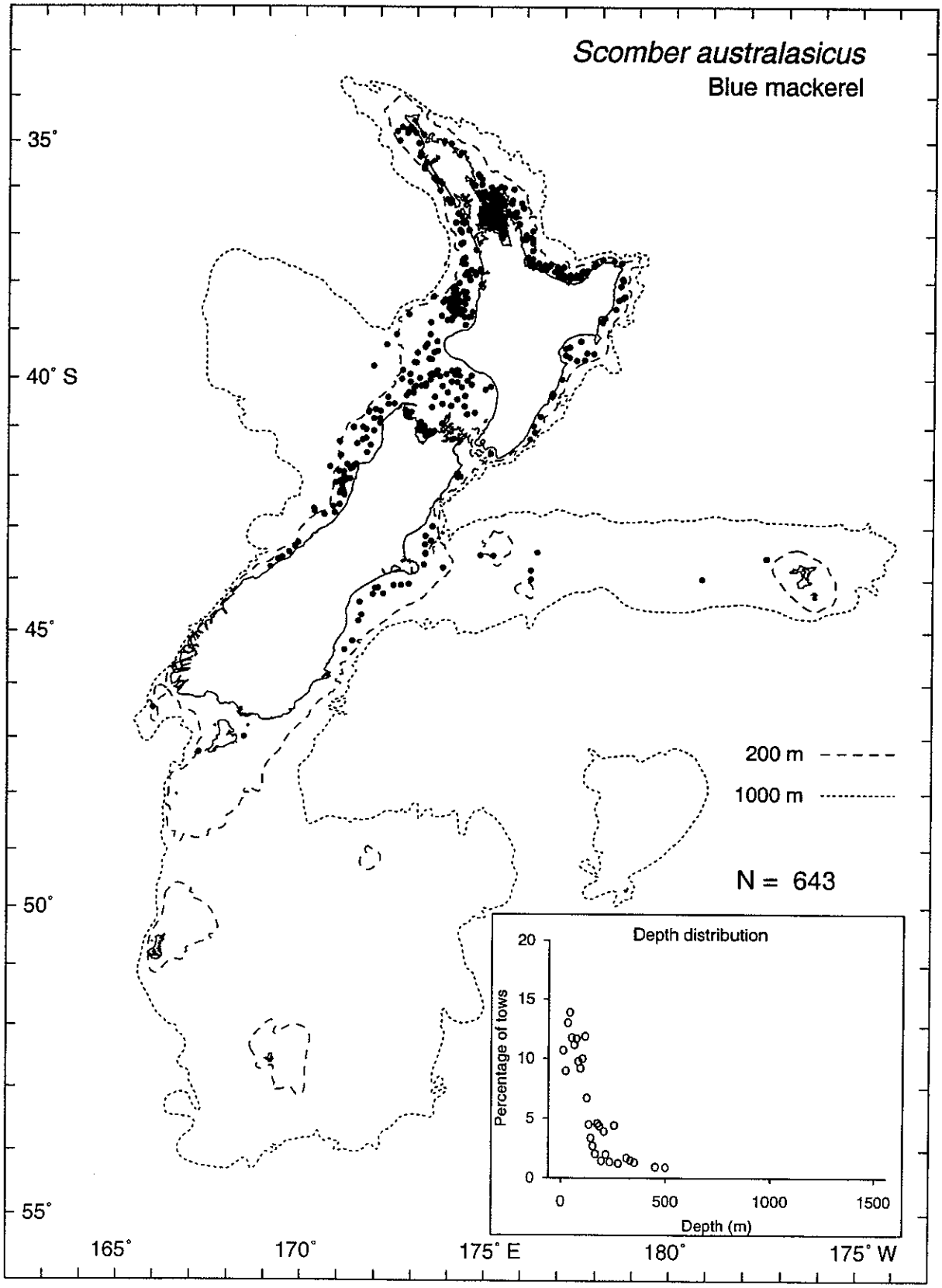

Rosenblattia robusta
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 68
Depth distribution
Percentage of tows
Depth (m)
0
1
2
3
4
5
6
7
0
500
1000
1500

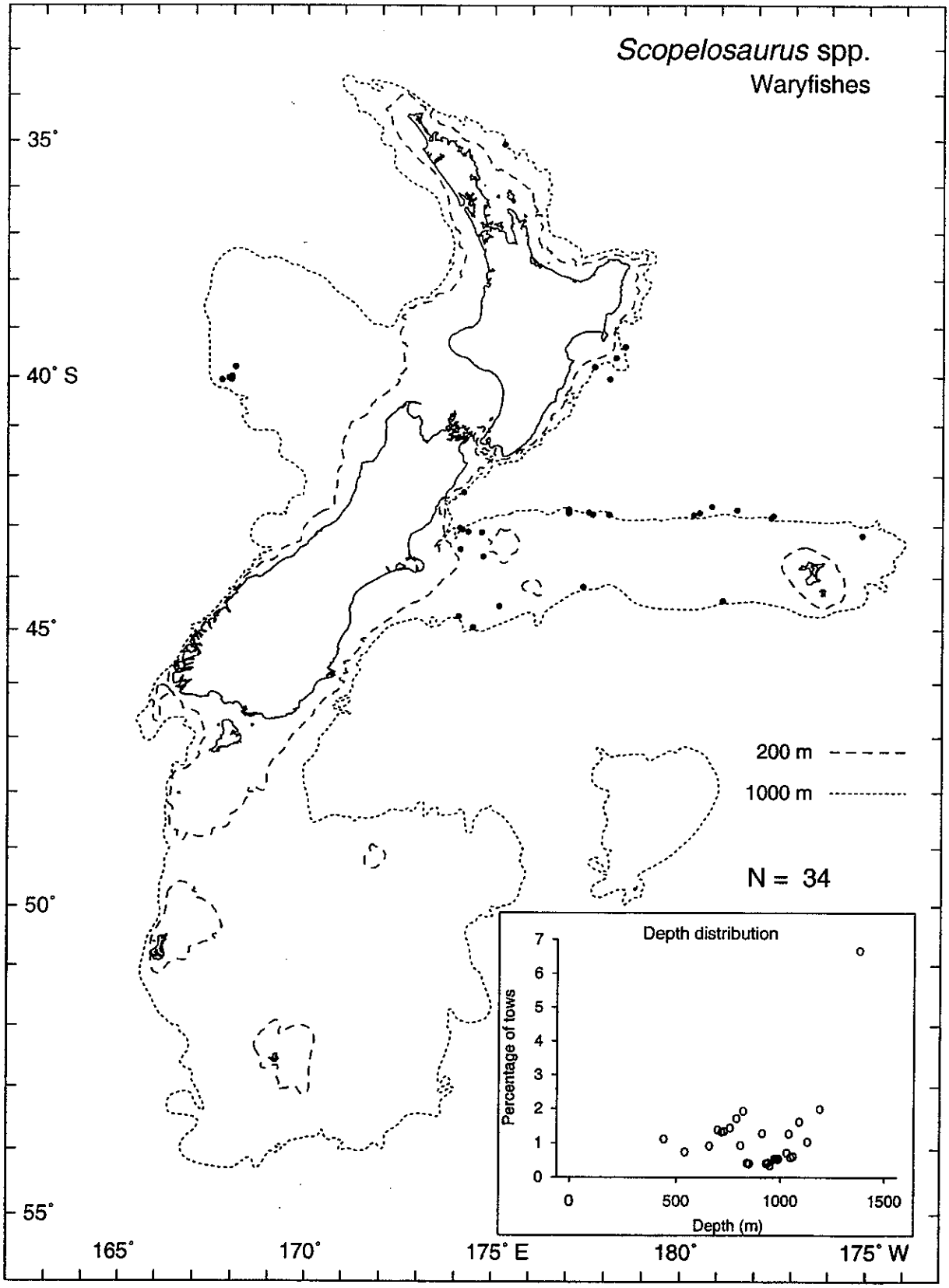

Rouleina sp.
Large headed slickhead
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 188
Depth distribution
Percentage of tows
0
10
20
30
40
50
0
500
1000
1500
Depth (m)


Ruvettus pretiosus
Oilfish
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 26
Depth distribution
Percentage of tows
0
1
2
3
4
5
6
0
500
1000
1500
Depth (m)

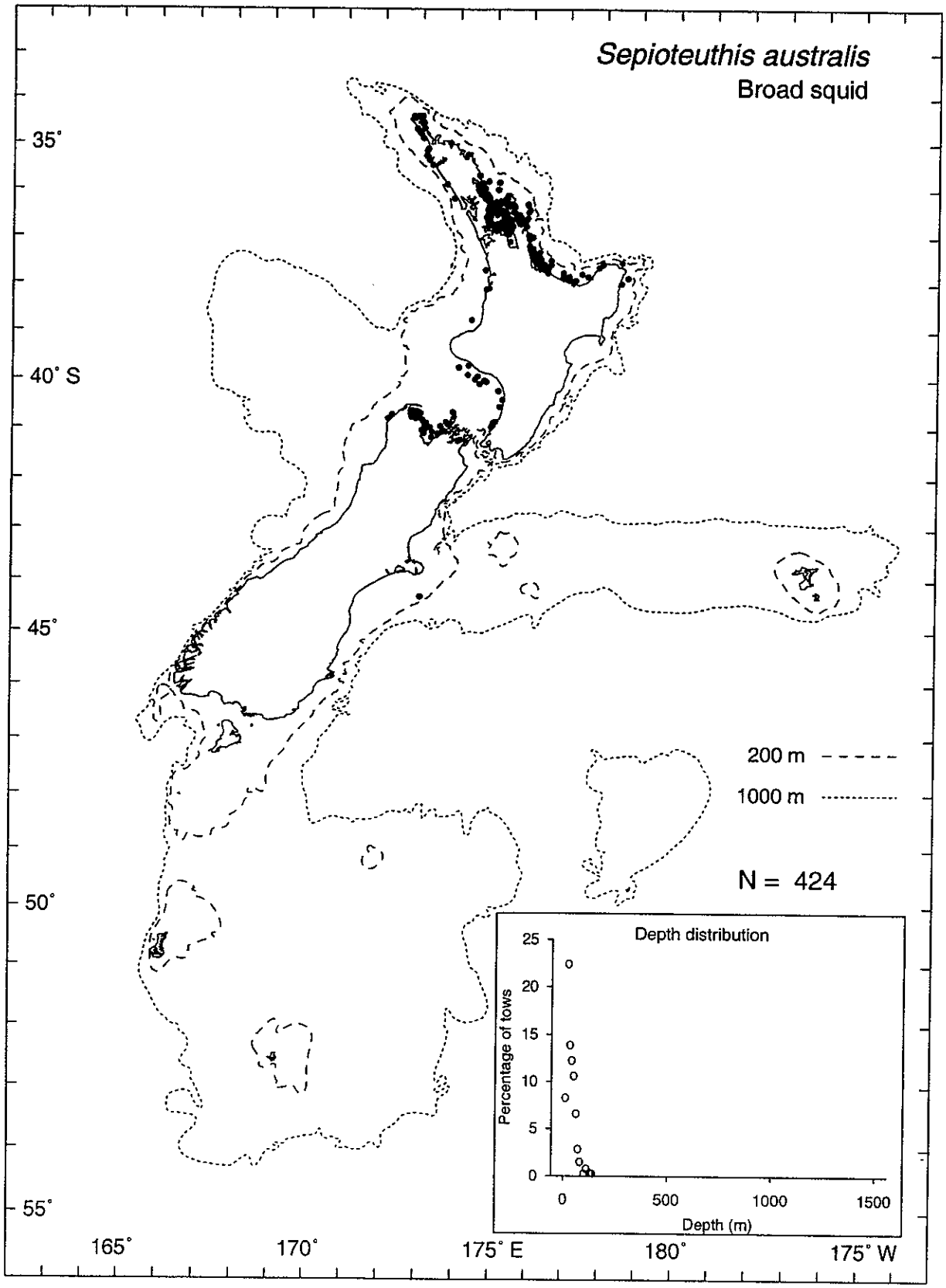

Sardinops neopilchardus
Pilchard
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 257
Depth distribution
Percentage of tows
Depth (m)
0
2
4
6
8
10
12
14
16
0
500
1000
1500

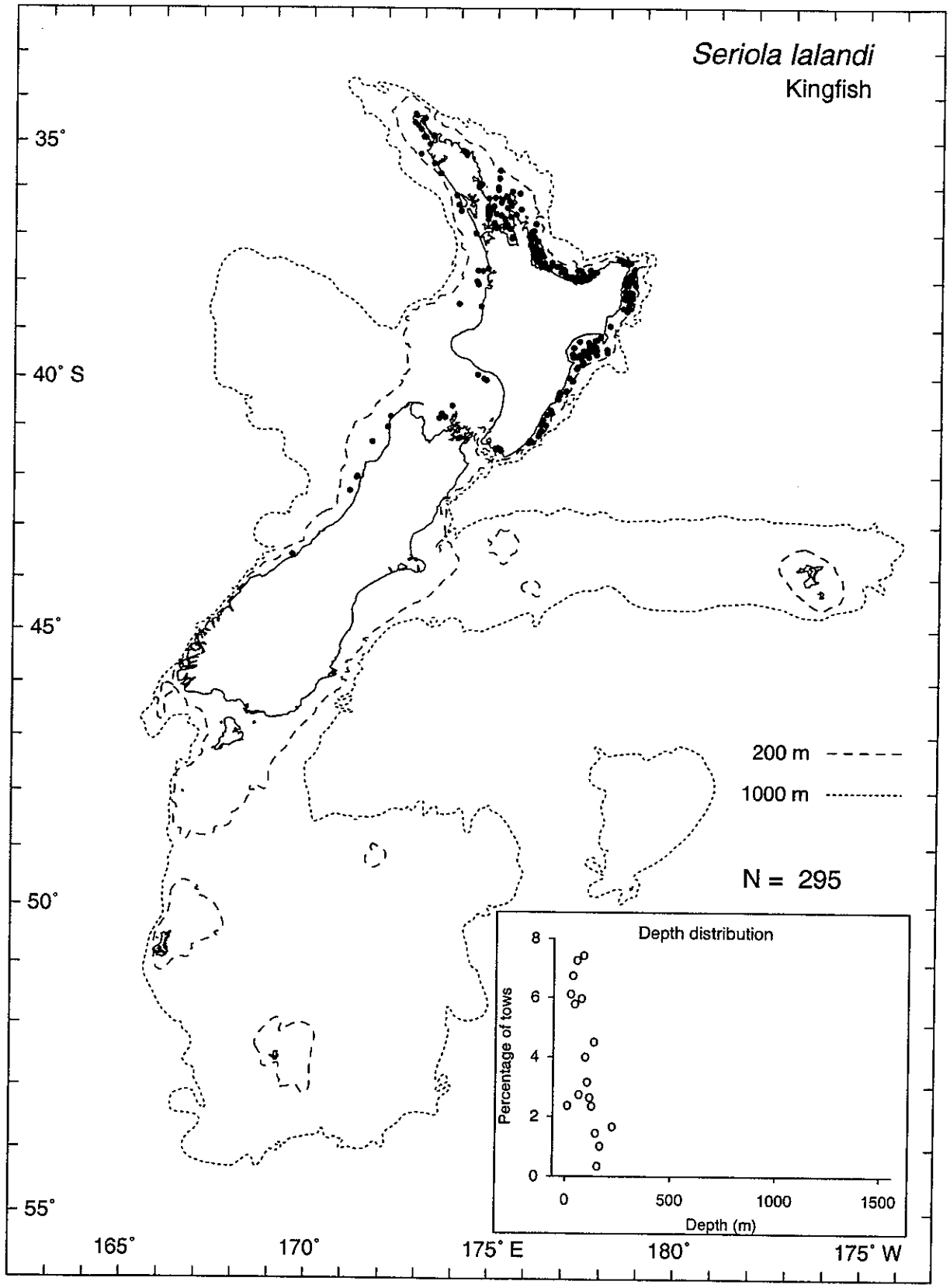

Schedophilus sp.
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 110
Depth distribution
Percentage of tows
0
1
2
3
4
5
6
0
500
1000
1500
Depth (m)

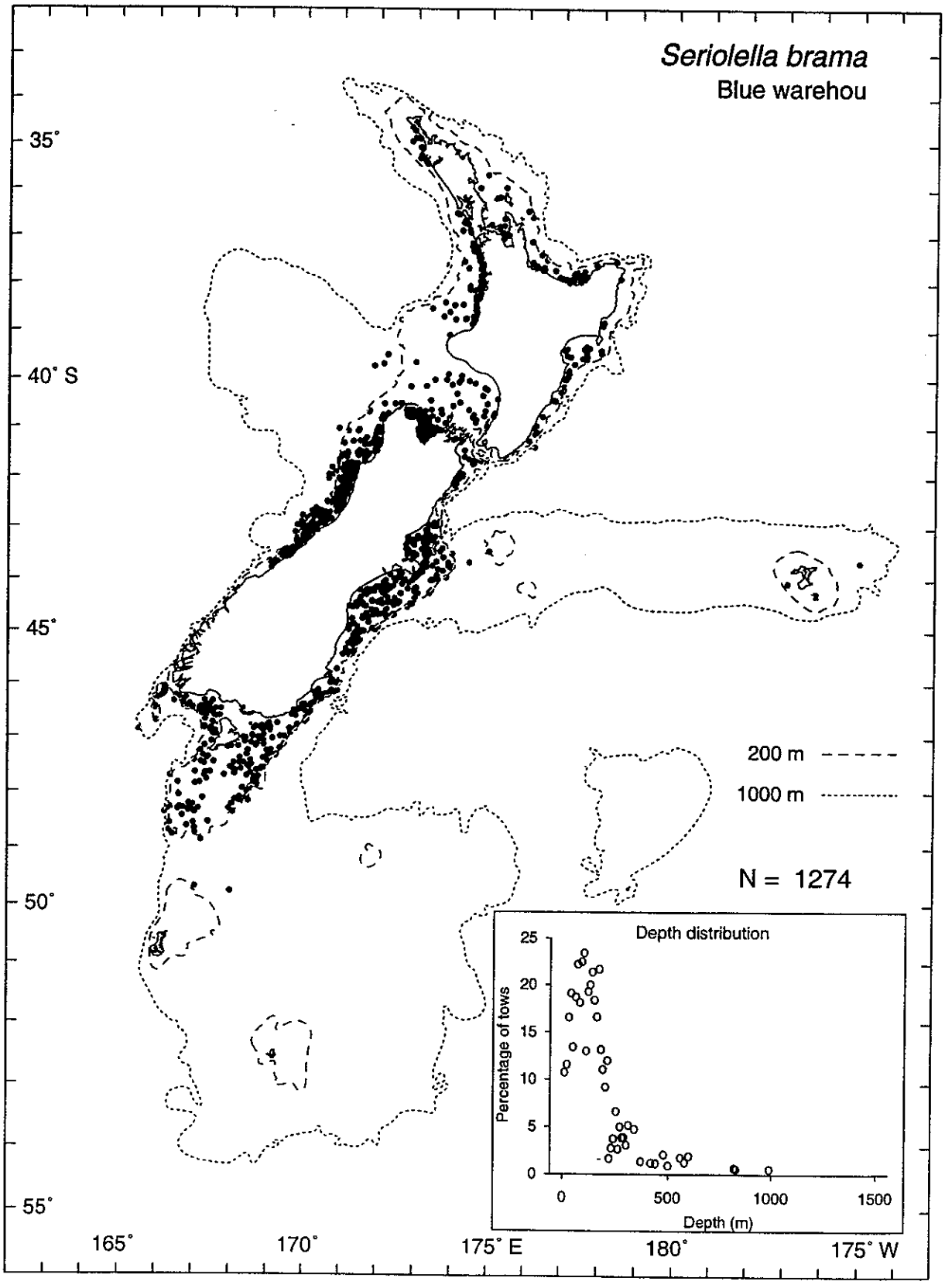

Scomber australasicus
Blue mackerel
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 643
Depth distribution
Percentage of tows
Depth (m)
0
5
10
15
20
0
500
1000
1500



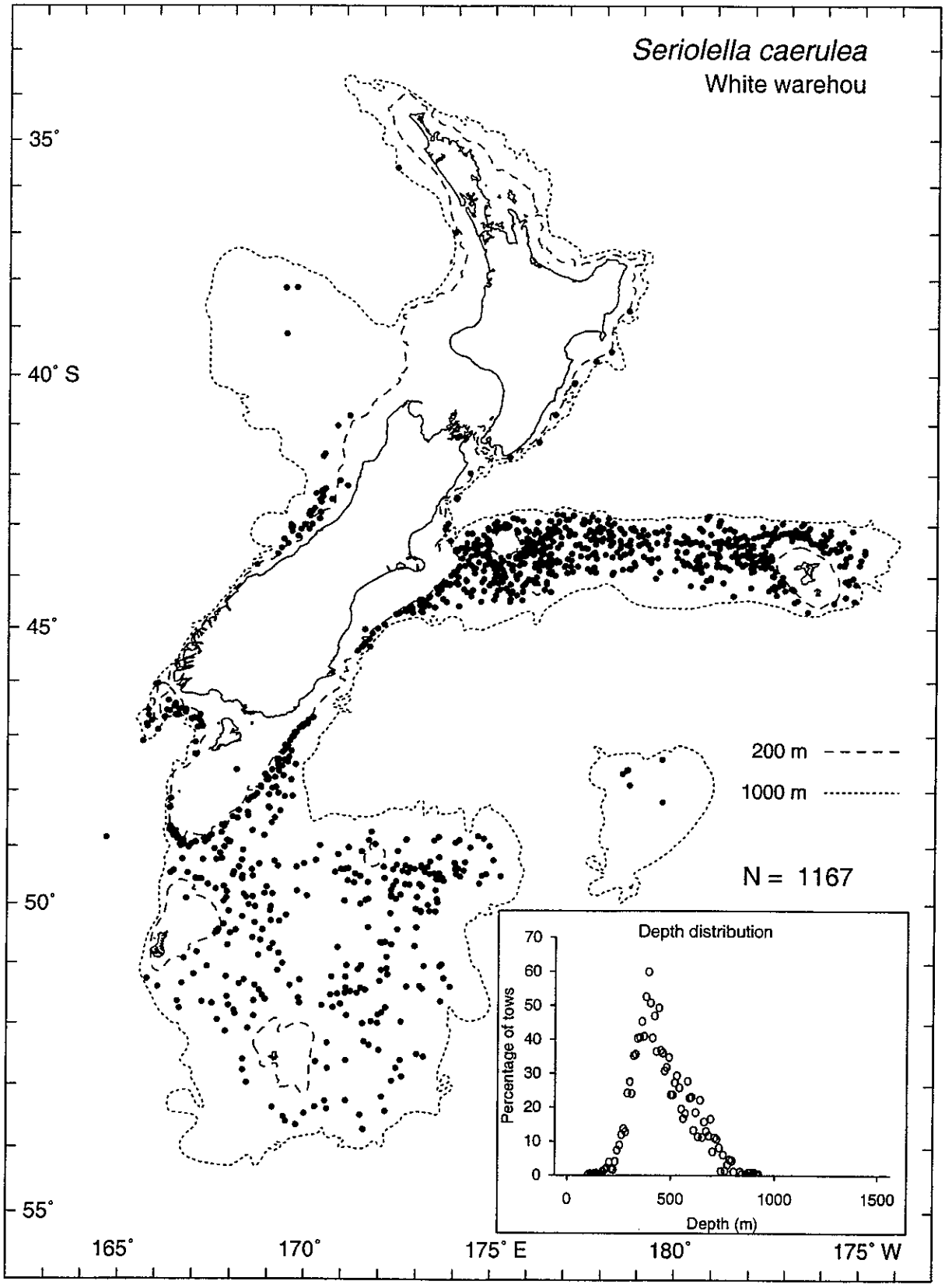
Includes up to five species.

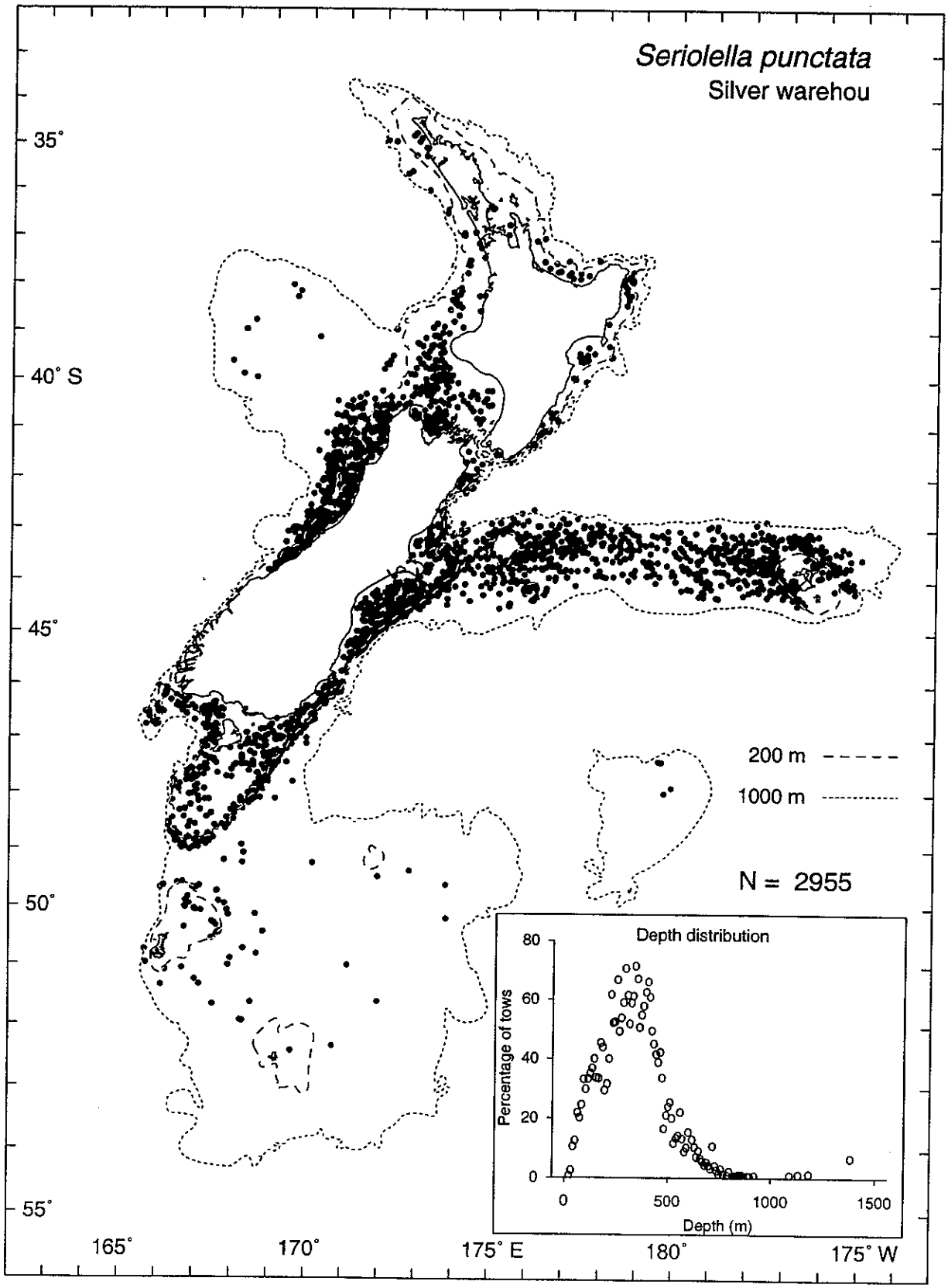

Sepioteuthis australis
Broad squid
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 424
Depth distribution
Percentage of tows
25
20
15
10
5
0
0
500
1000
1500
Depth (m)

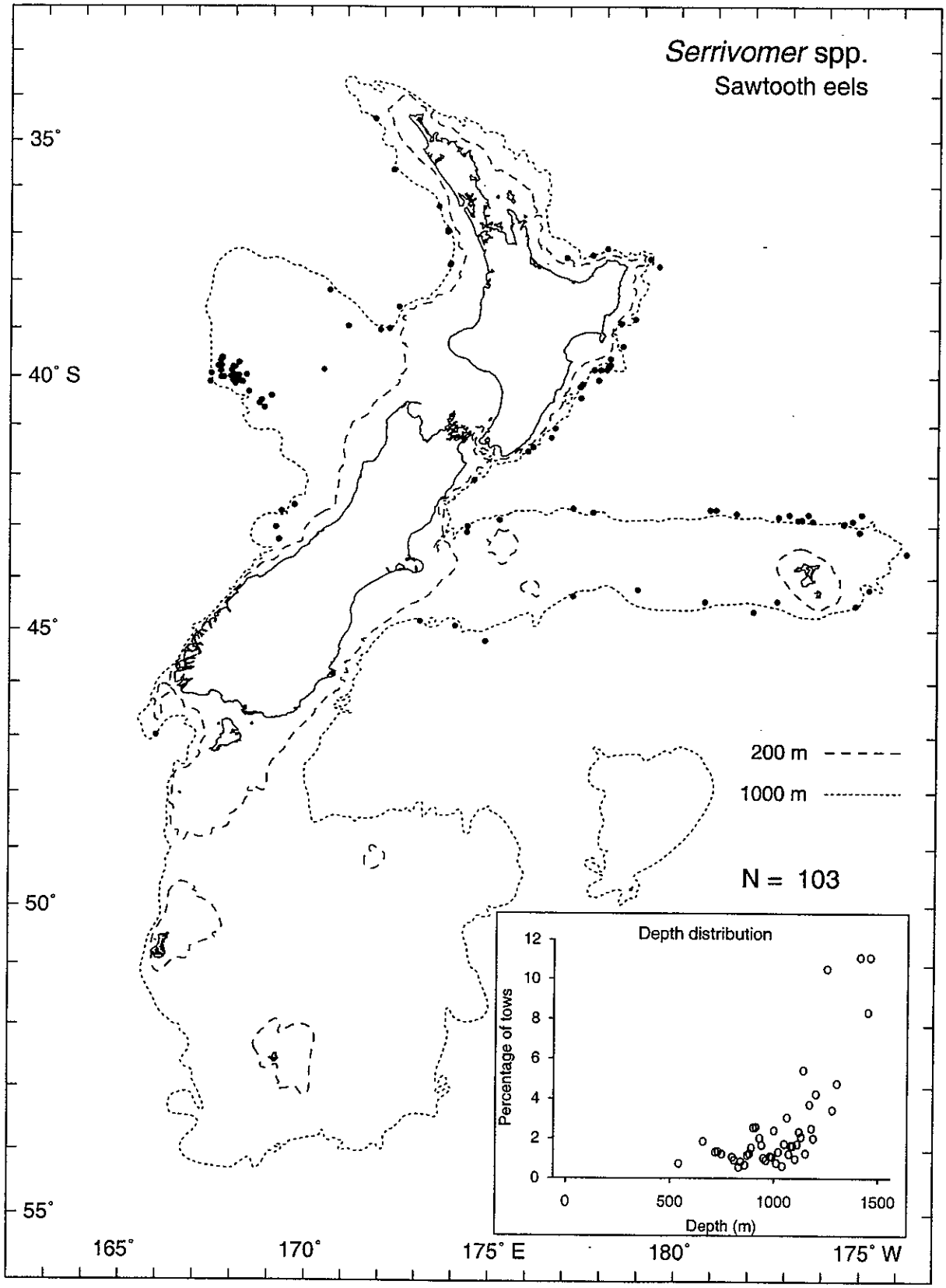

Seriola lalandi
Kingfish
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 295
Depth distribution
Percentage of tows
0
2
4
6
8
0
500
1000
1500
Depth (m)

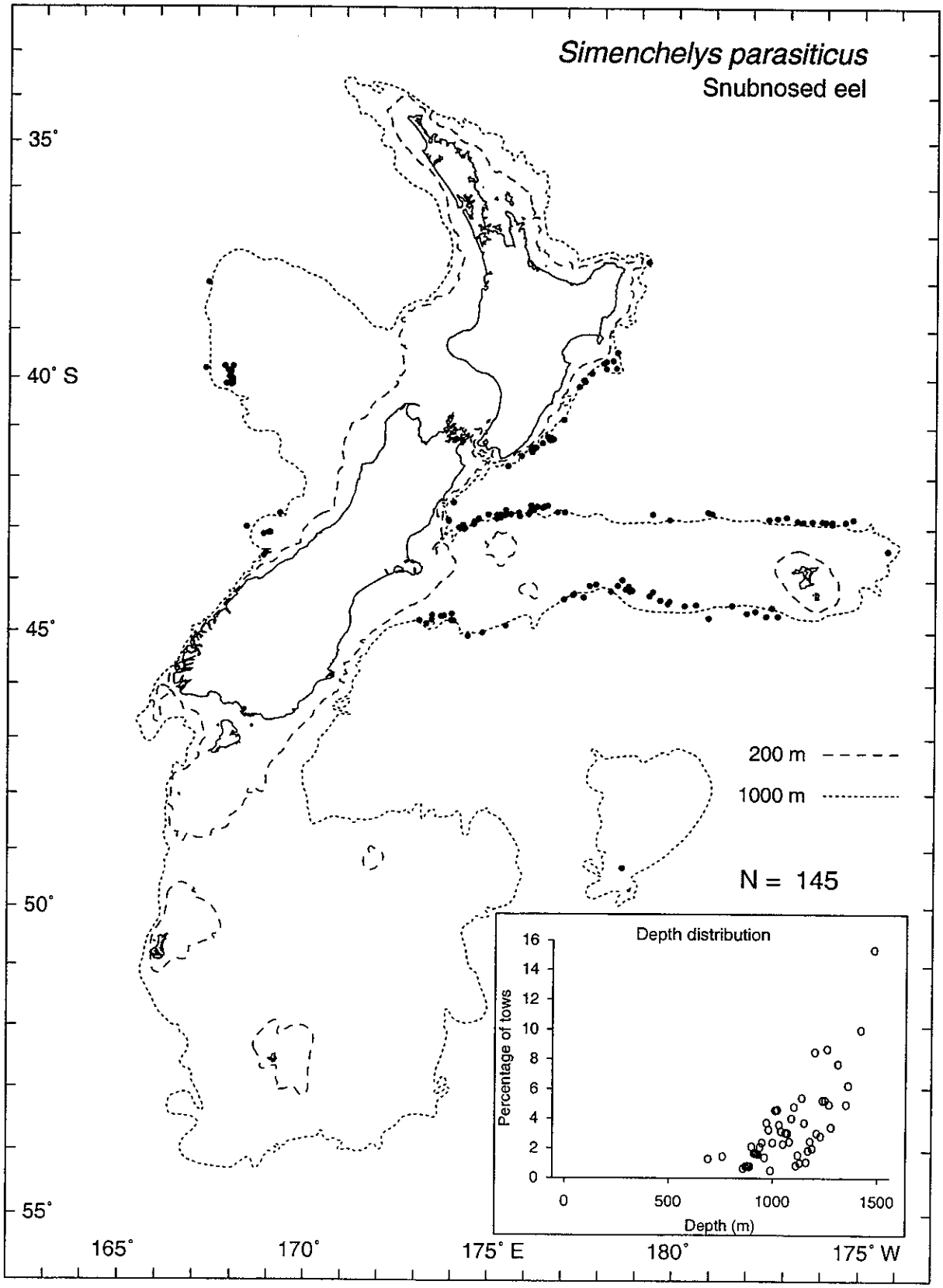


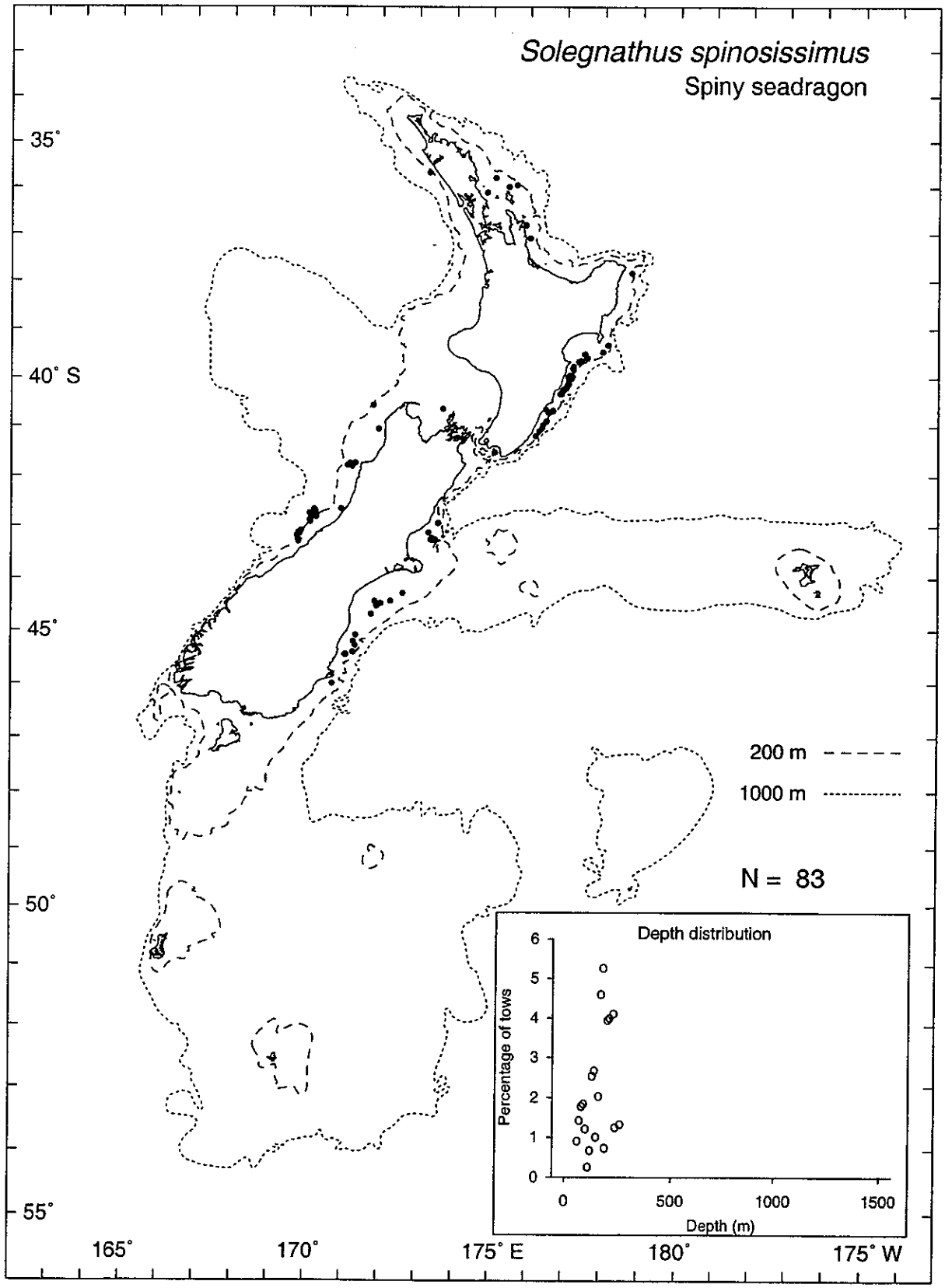
Records deeper than 400 m may be *S. punctata* or *S. caerulea*.

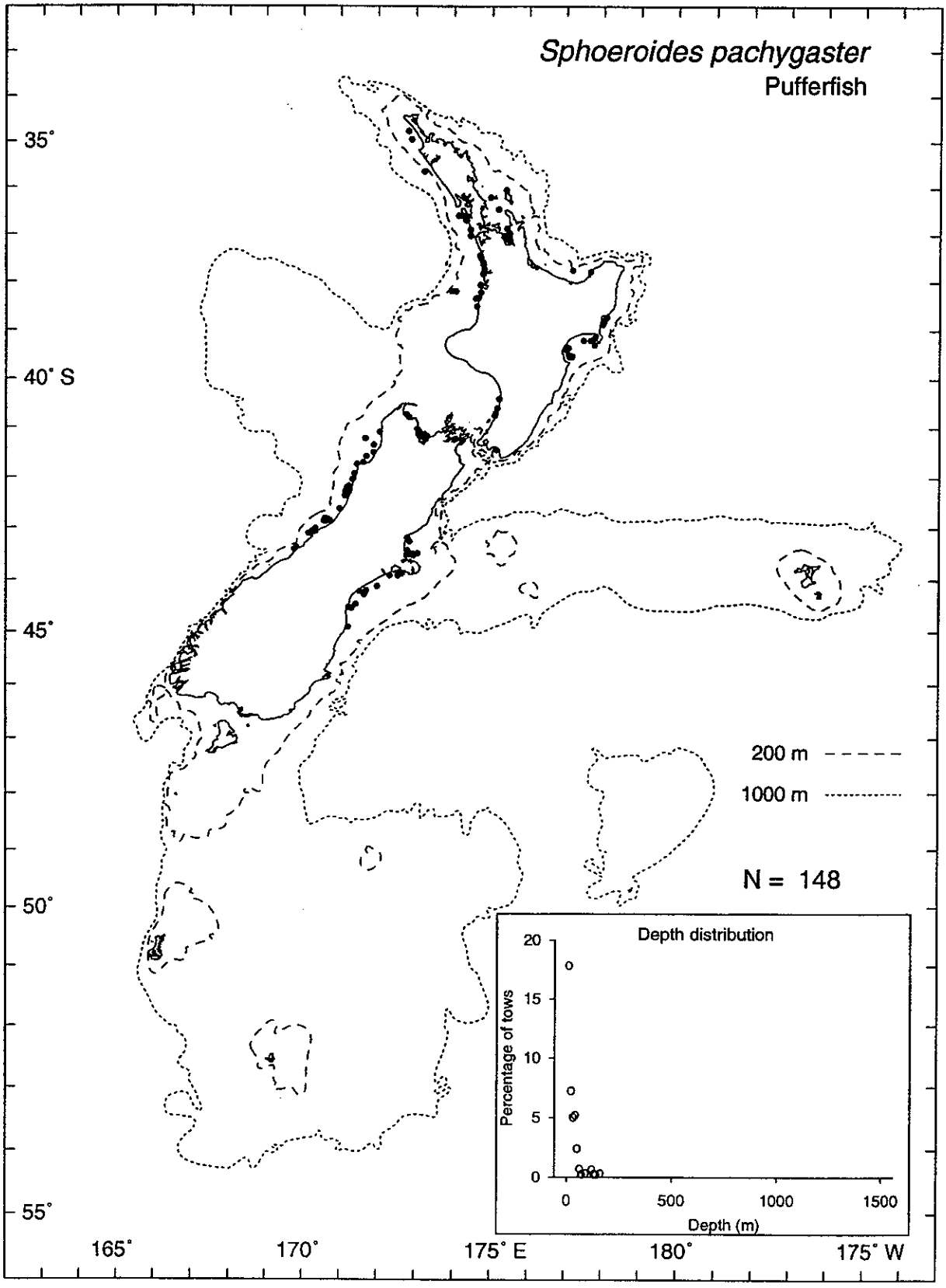

Seriolella caerulea
White warehou
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 1167
Depth distribution
Percentage of tows
Depth (m)
0
10
20
30
40
50
60
70
0
500
1000
1500


Seriolella punctata
Silver warehou
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 2955
Depth distribution
Percentage of tows
80
60
40
20
0
0
500
1000
1500
Depth (m)

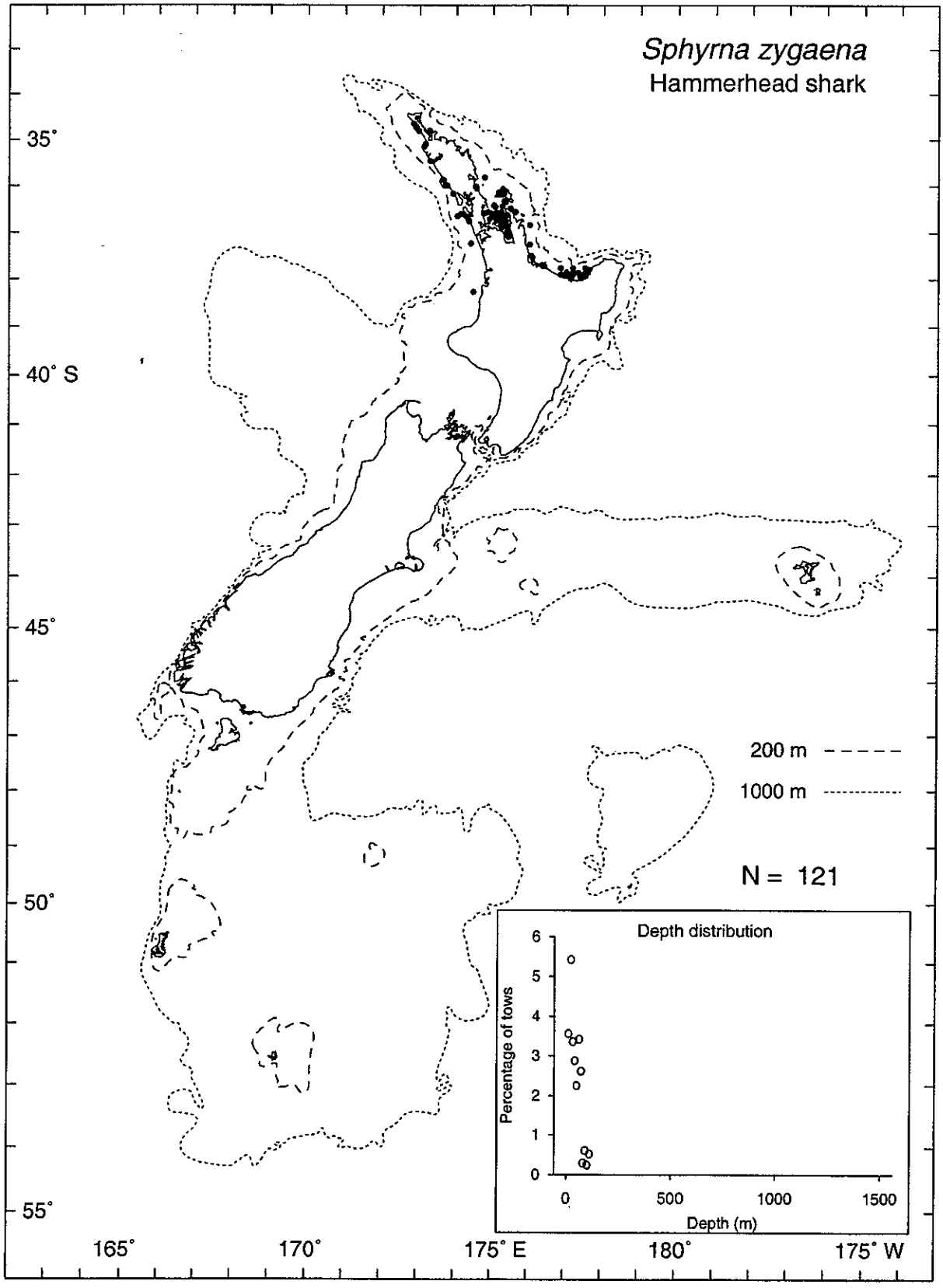

Serrivomer spp.
Sawtooth eels
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 103
Depth distribution
Percentage of tows
0
2
4
6
8
10
12
0
500
1000
1500
Depth (m)

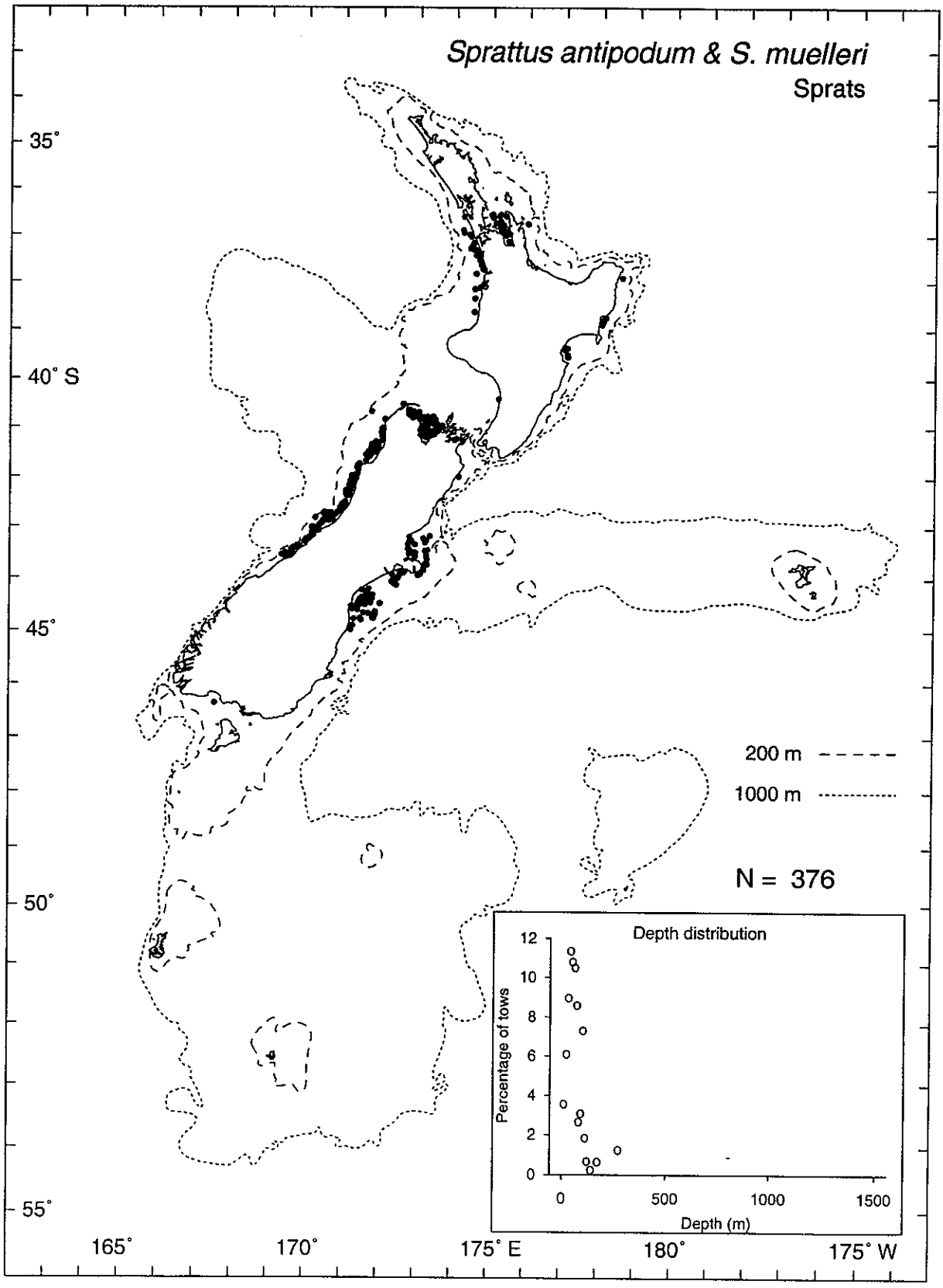

Simenchelys parasiticus
Snubnosed eel
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 145
Depth distribution
Percentage of tows
Depth (m)
0
2
4
6
8
10
12
14
16
0
500
1000
1500

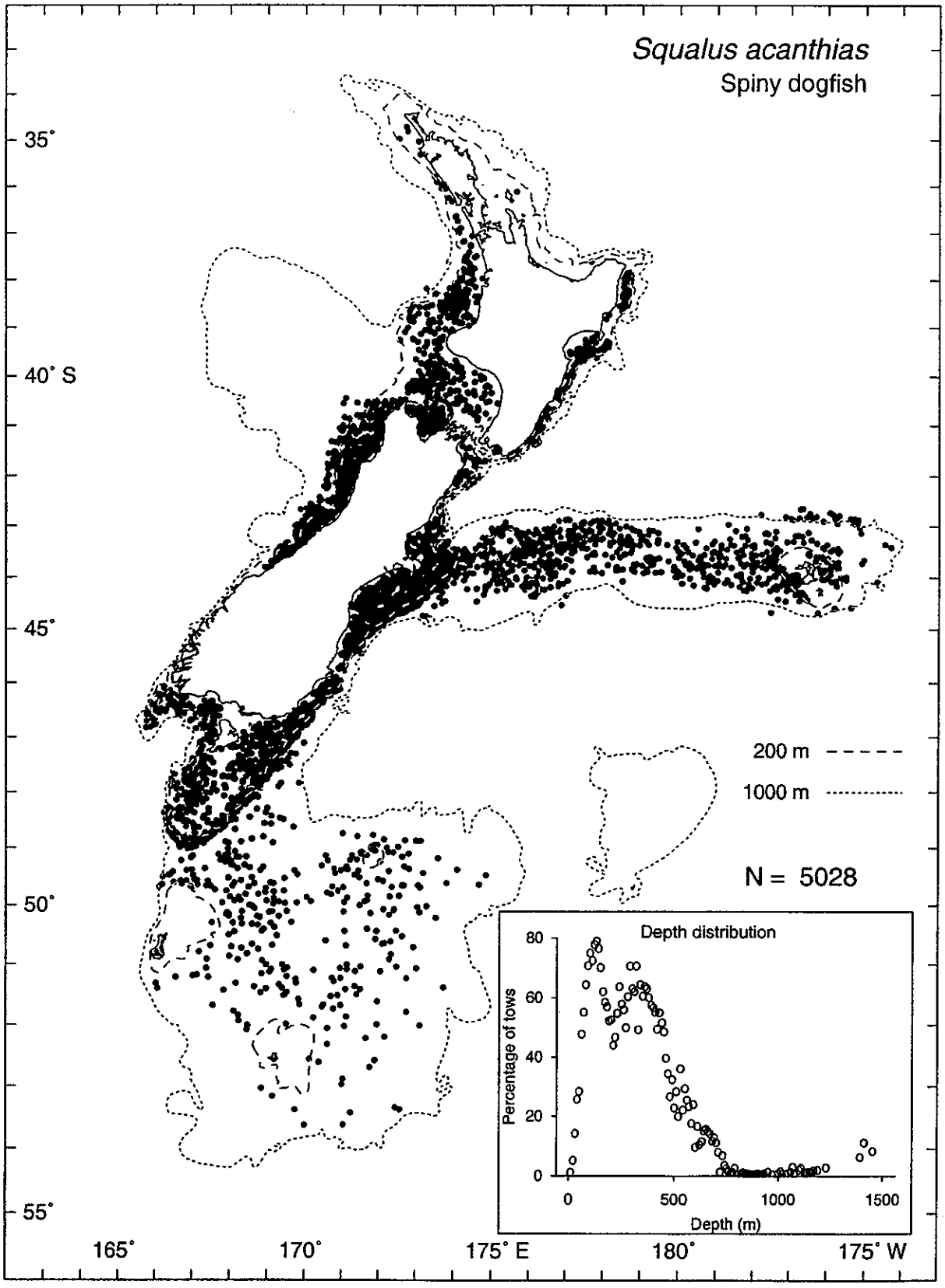

Solegnathus spinosissimus
Spiny seadragon
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 83
Depth distribution
Percentage of tows
Depth (m)
0
1
2
3
4
5
6
0
500
1000
1500



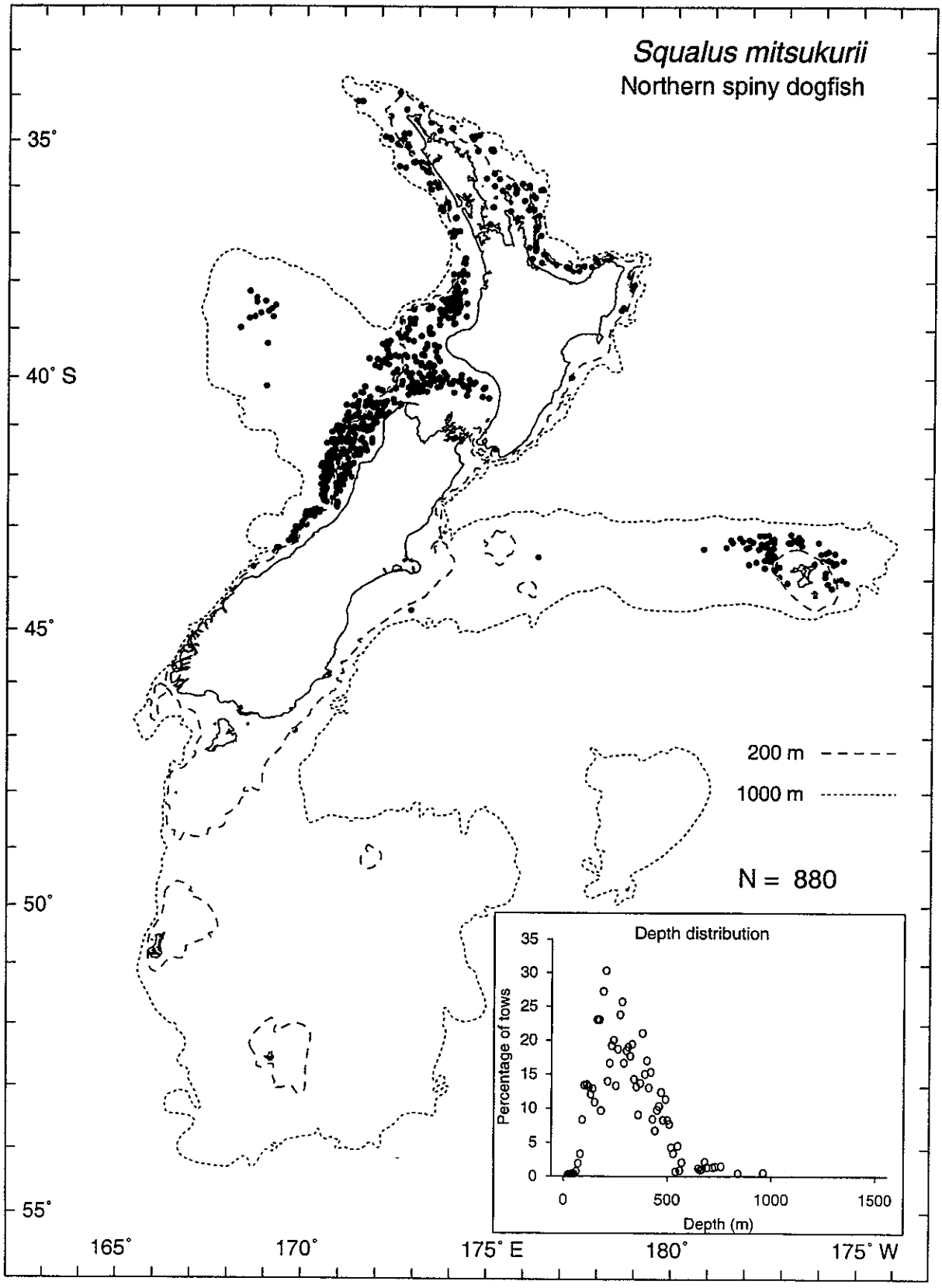
Deeper records may be *Allomycterus jaculiferus*.

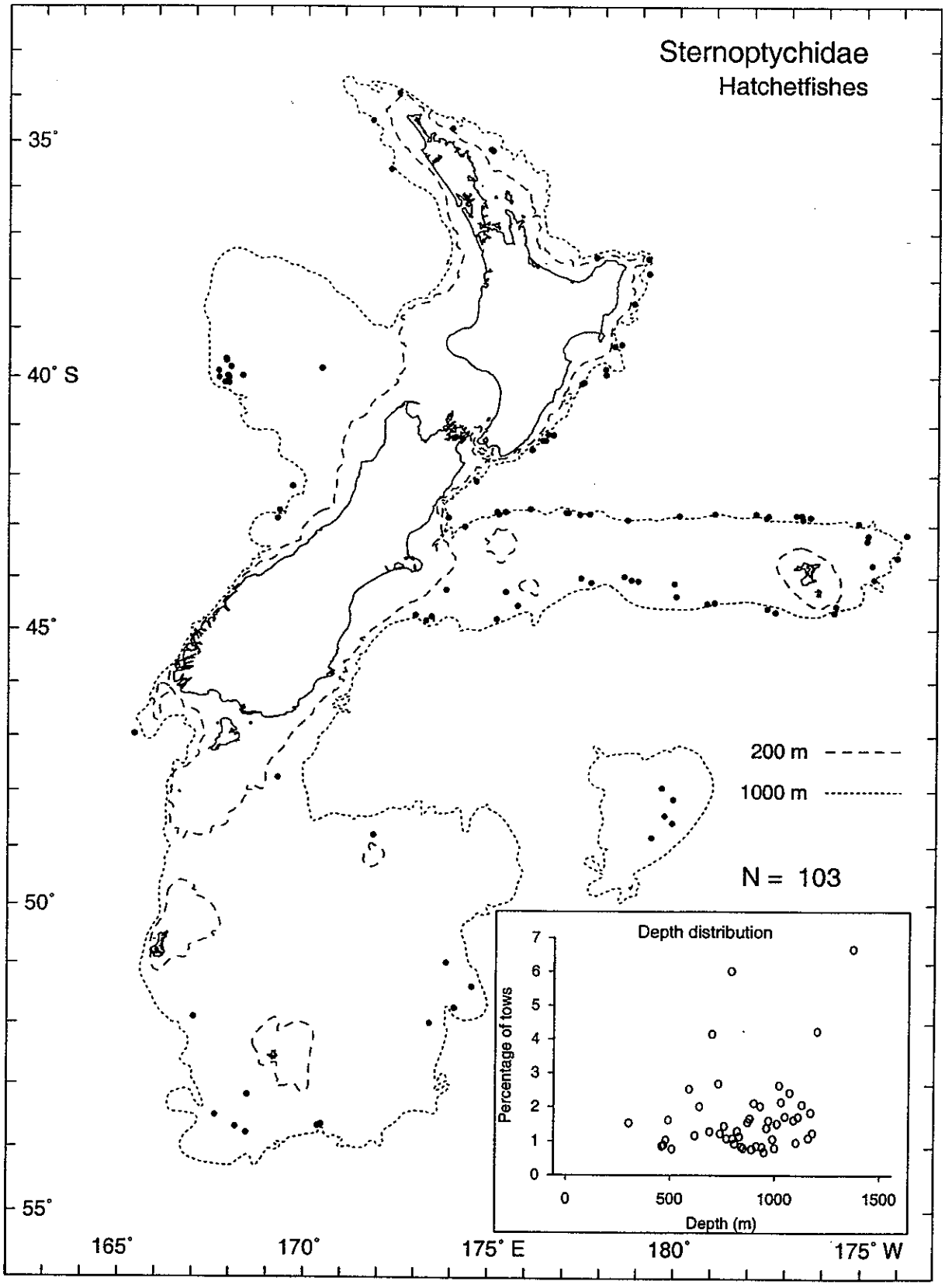

Sphyrna zygaena
Hammerhead shark
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 121
Depth distribution
Percentage of tows
0
1
2
3
4
5
6
0
500
1000
1500
Depth (m)


Sprattus antipodum & S. muelleri
Sprats
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 376
Depth distribution
Percentage of tows
0
2
4
6
8
10
12
0
500
1000
1500
Depth (m)

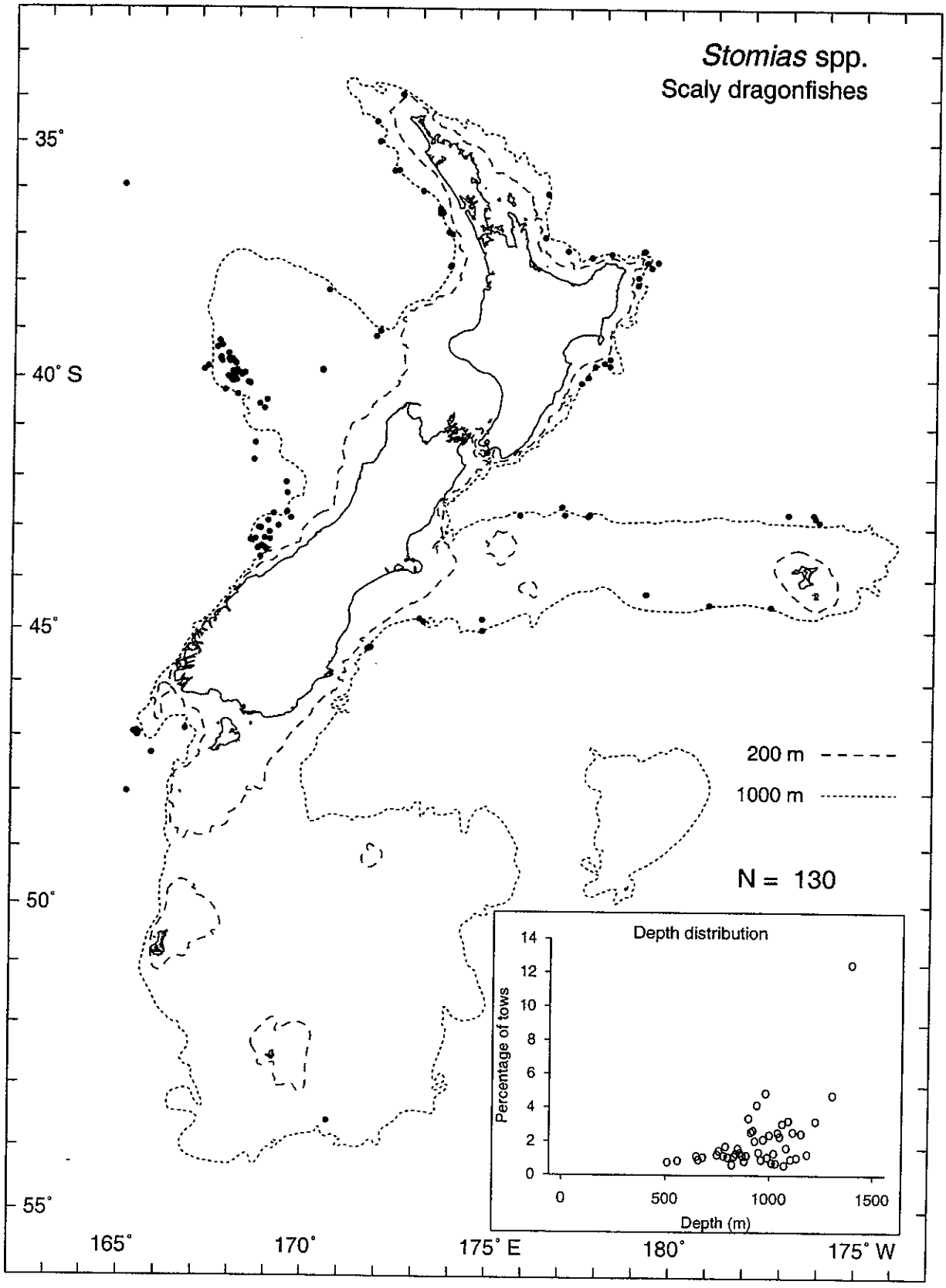


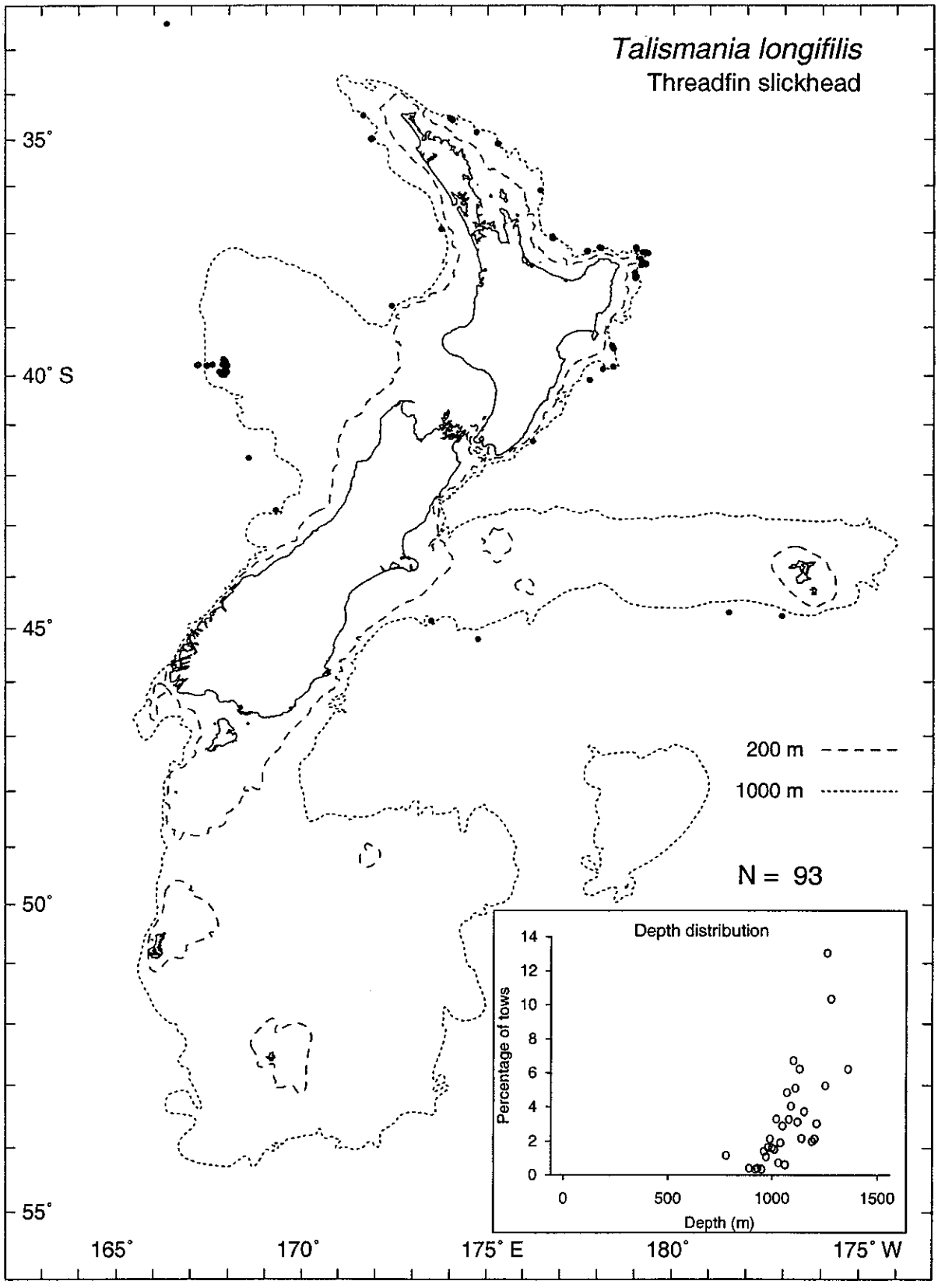
May include some *S. mitsukurii.*

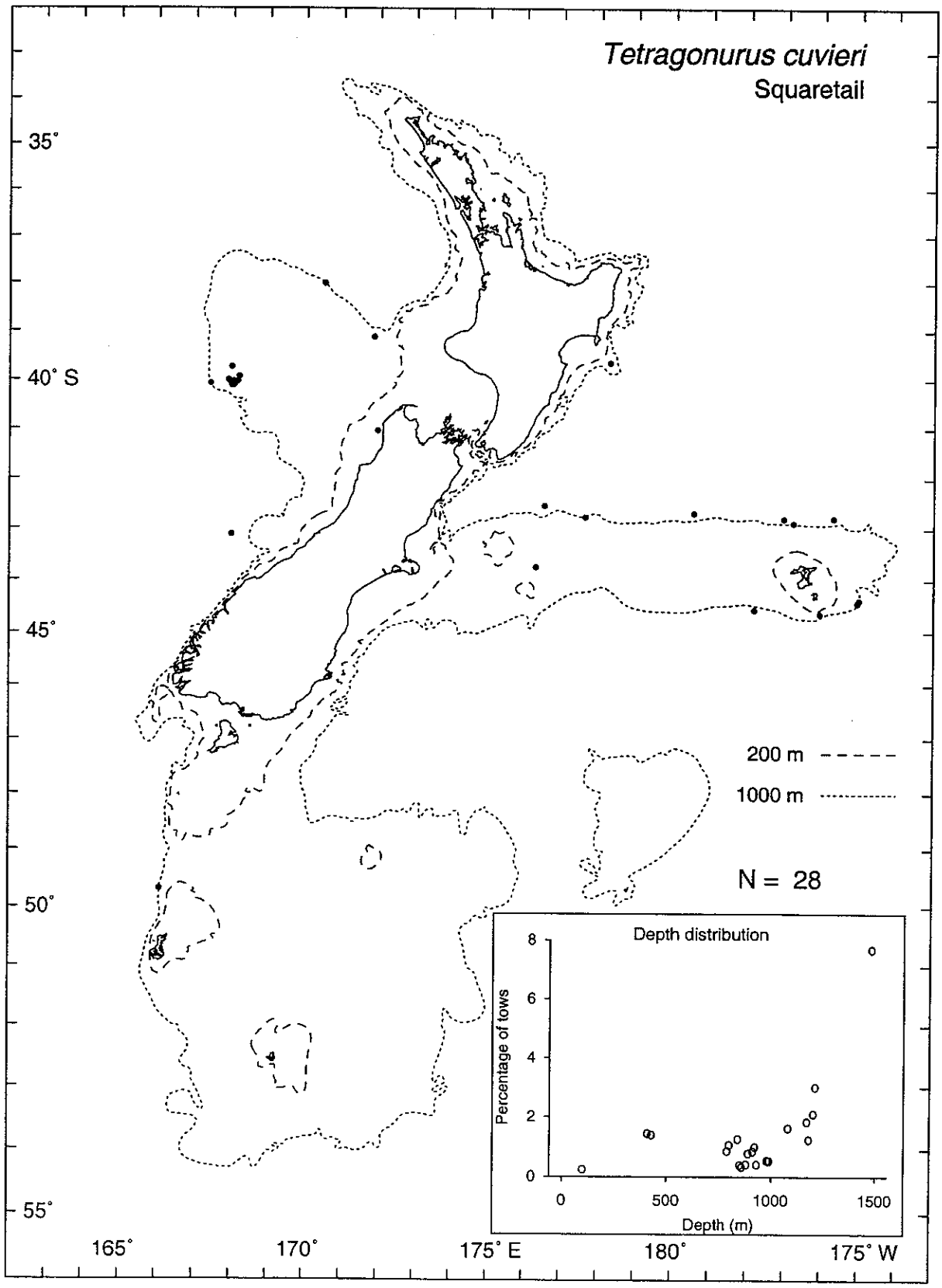

Squalus mitsukurii
Northern spiny dogfish
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 880
Depth distribution
Percentage of tows
0
5
10
15
20
25
30
35
0
500
1000
1500
Depth (m)

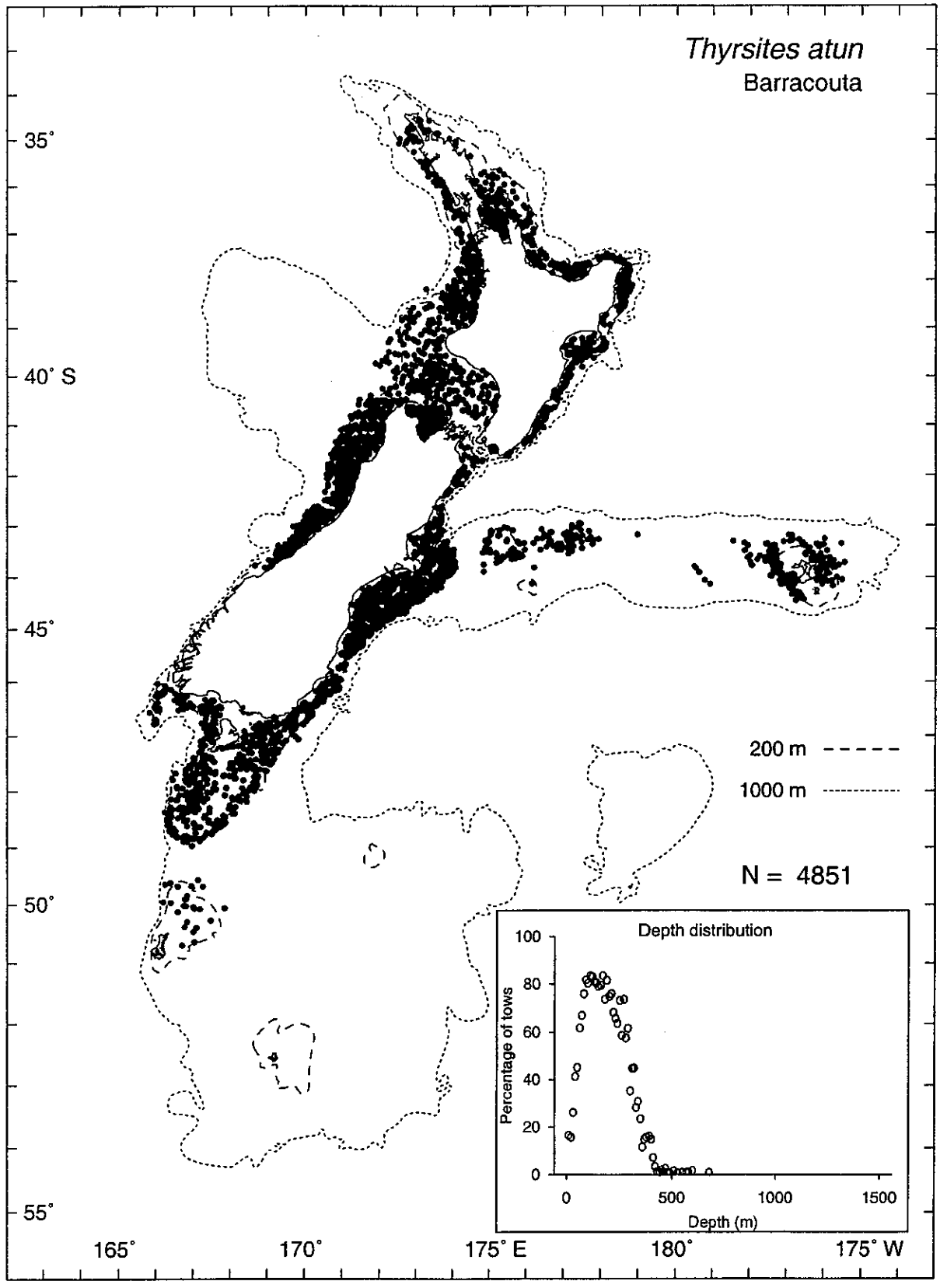


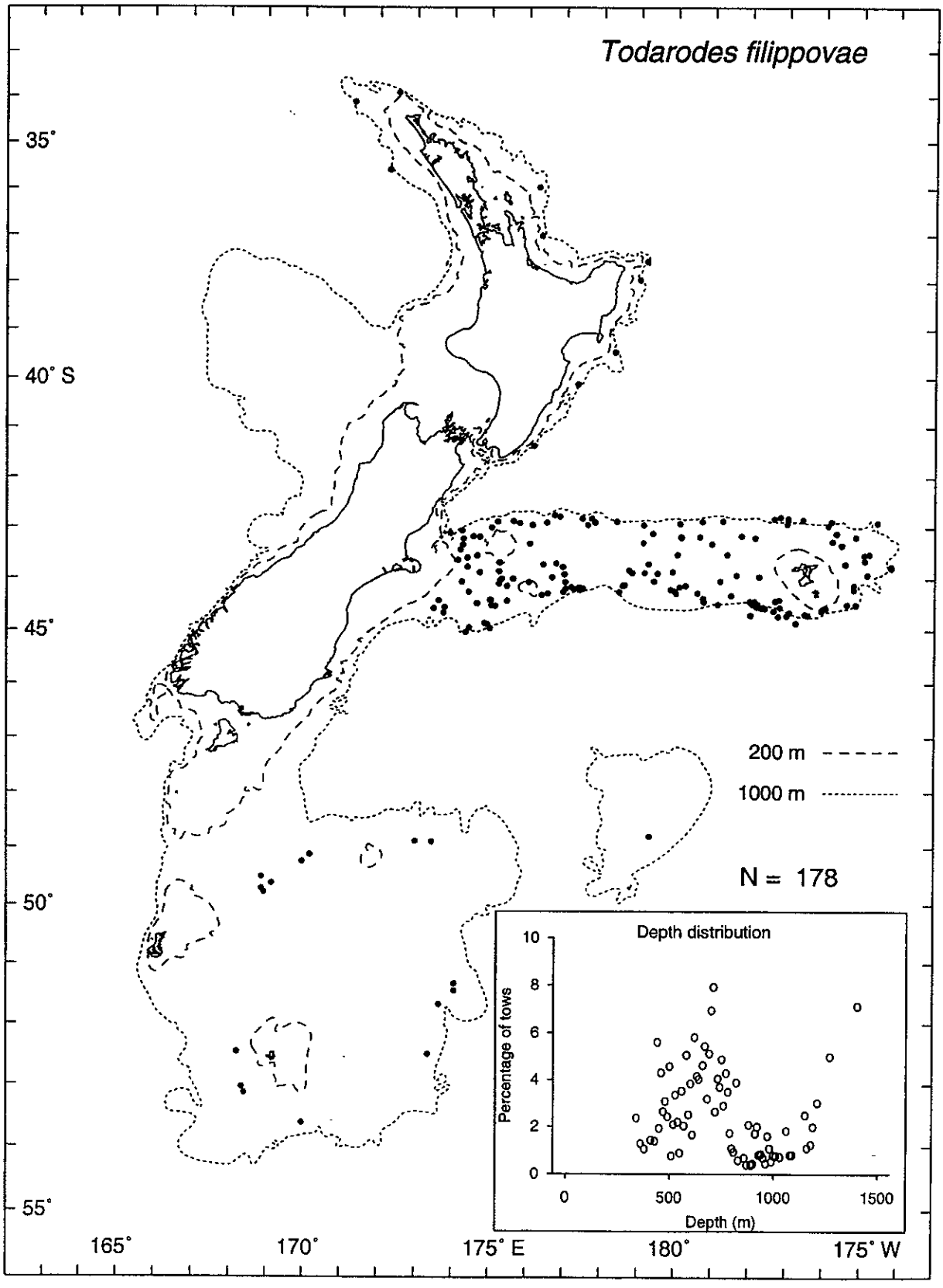
About 14 species, including *Argyropelecus* spp., *Polyipnus* spp., and *Sternoptyx* spp., occur in New Zealand.


Stomias spp.
Scaly dragonfishes
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 130
Depth distribution
Percentage of tows
0
2
4
6
8
10
12
14
0
500
1000
1500
Depth (m)

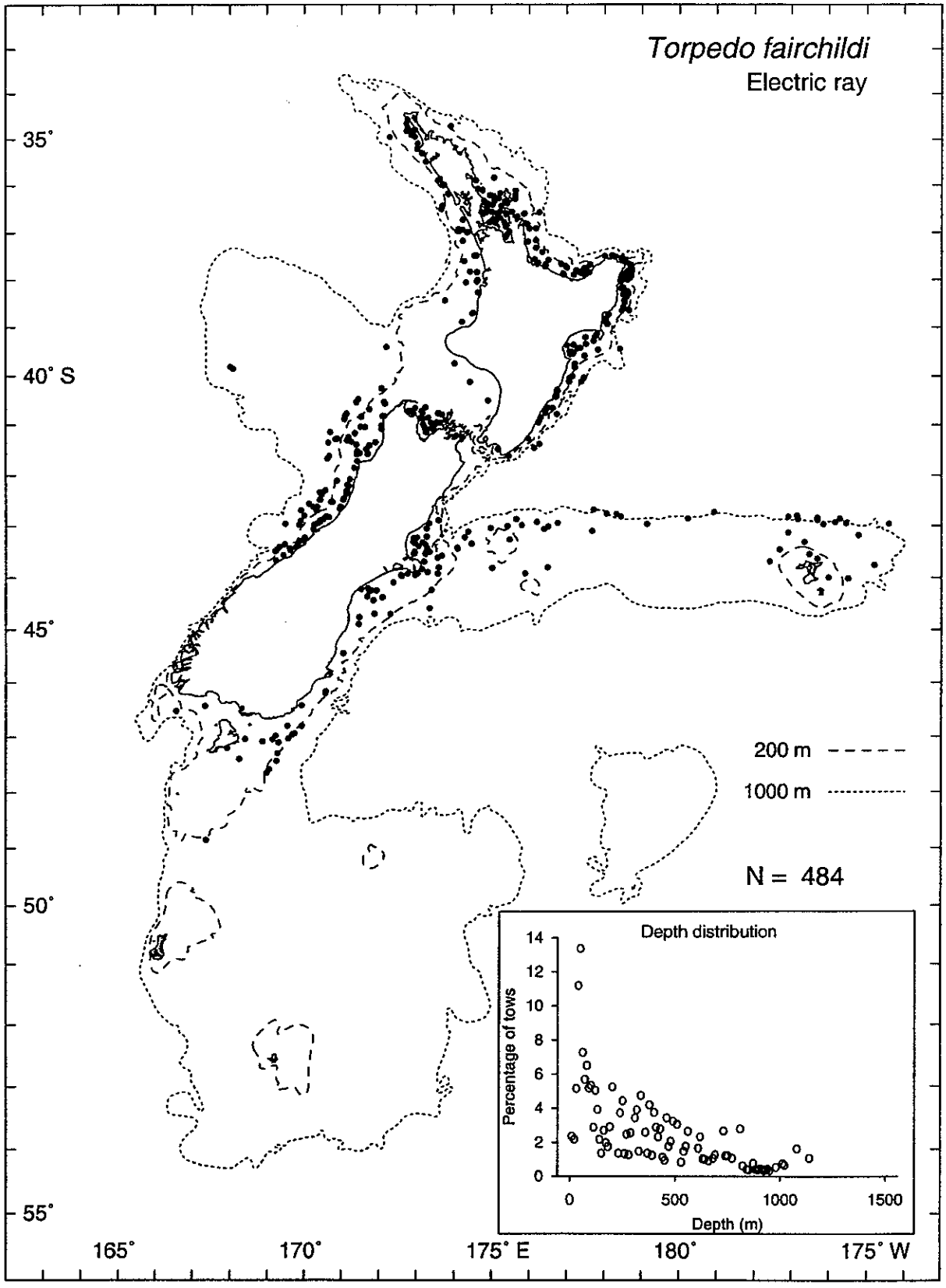

Talismania longifilis
Threadfin slickhead
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 93
Depth distribution
Percentage of tows
Depth (m)
0
2
4
6
8
10
12
14
0
500
1000
1500


Tetragonurus cuvieri
Squaretail
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 28
Depth distribution
Percentage of tows
Depth (m)
0
2
4
6
8
0
500
1000
1500

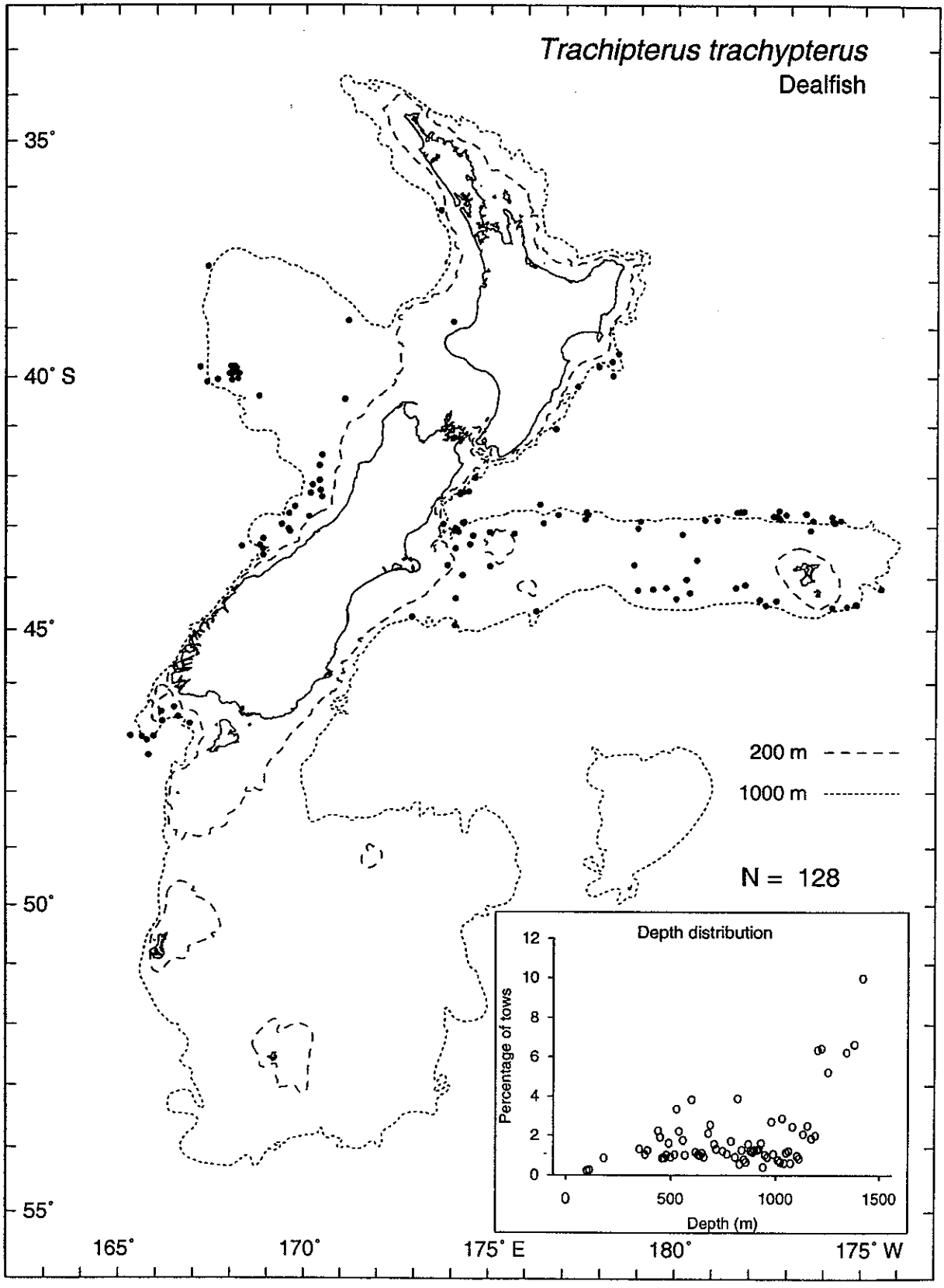

Thyrsites atun
Barracouta
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 4851
Depth distribution
Percentage of tows
100
80
60
40
20
0
0
500
1000
1500
Depth (m)



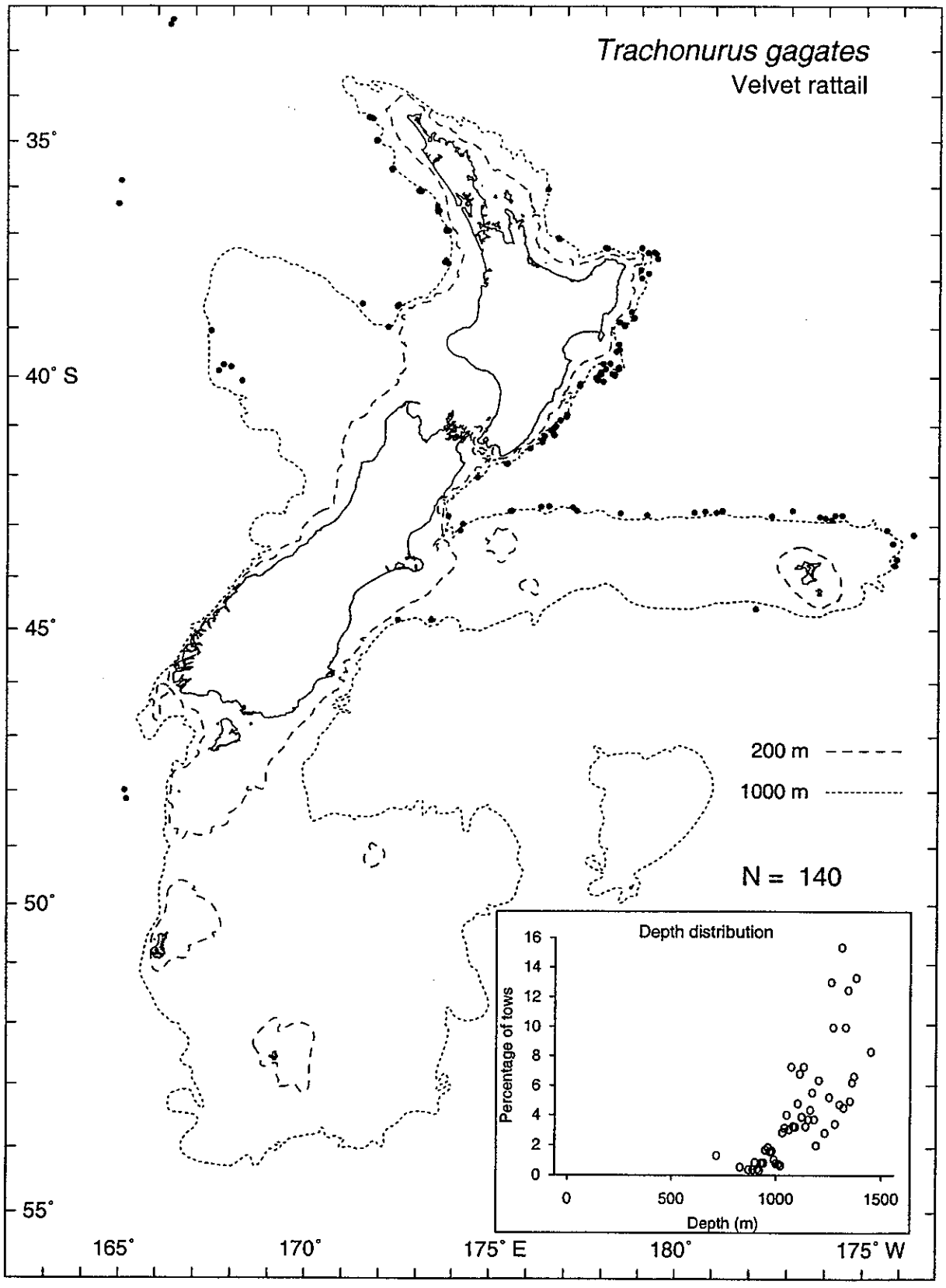
May include records of *Todarodes* sp.



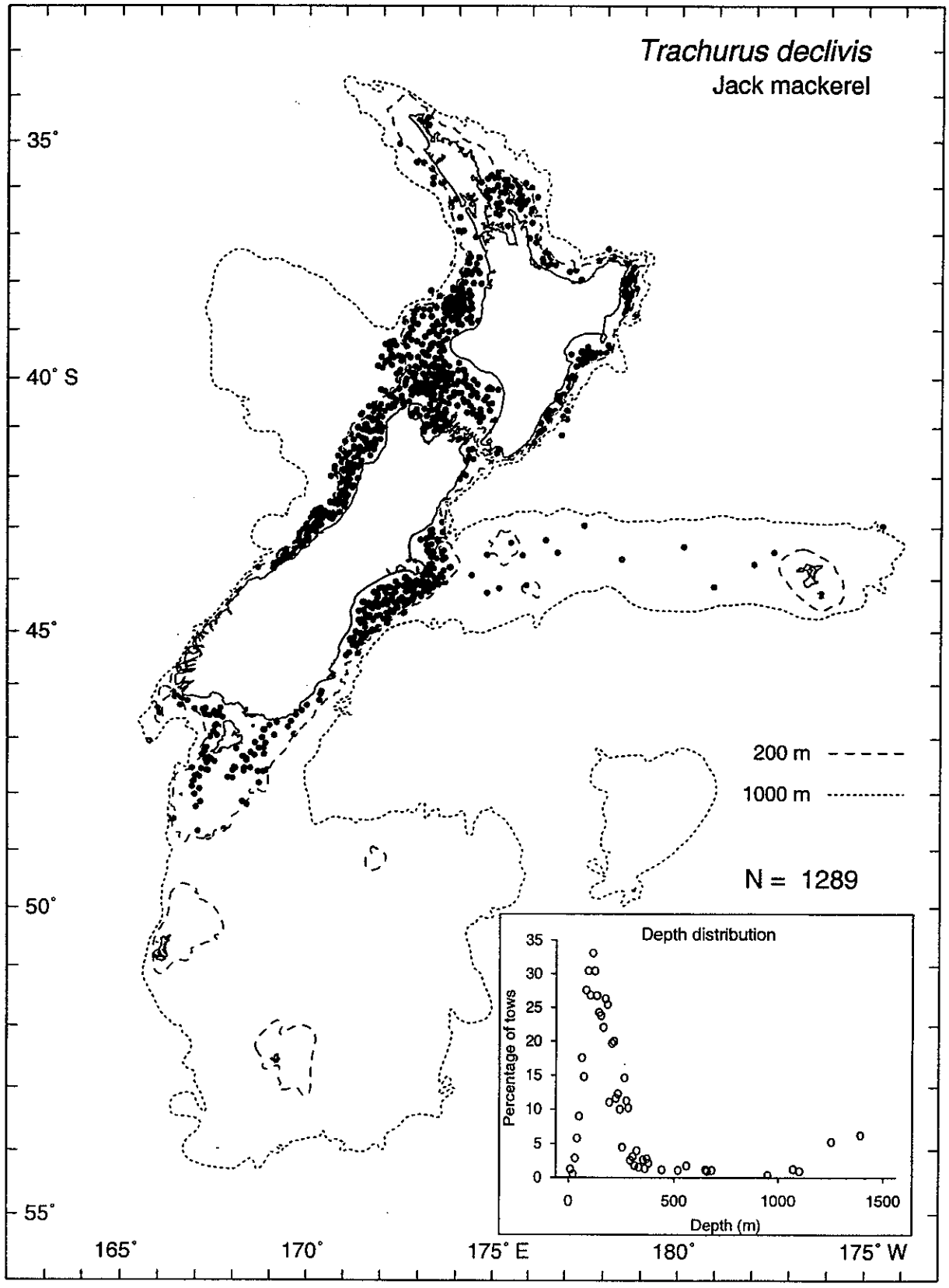
Probably includes some *Typhlonarke* spp.



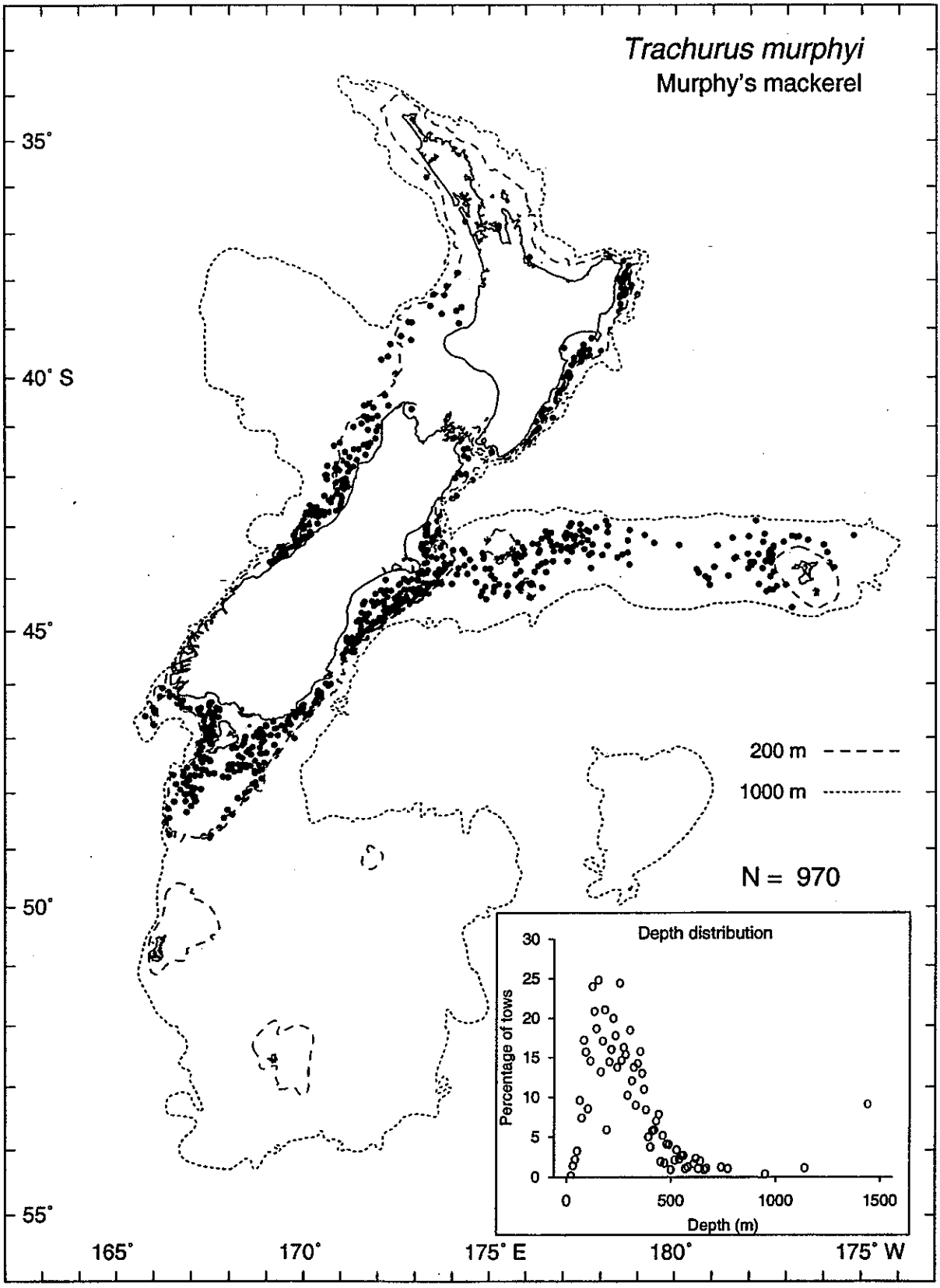
May include some *Trachipterus jacksonensis.*



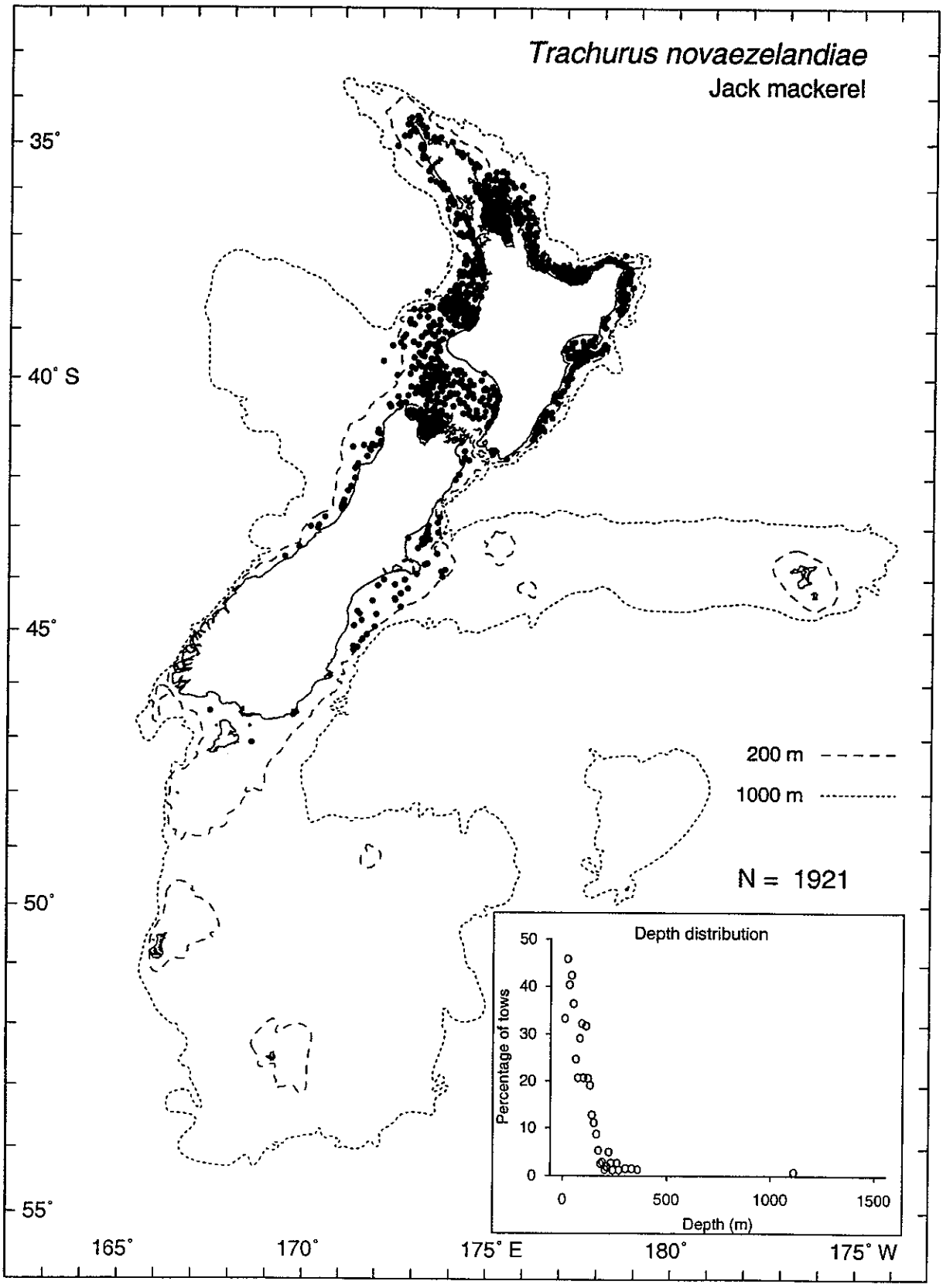
May include a few records of a second species of *Trachonurus*.

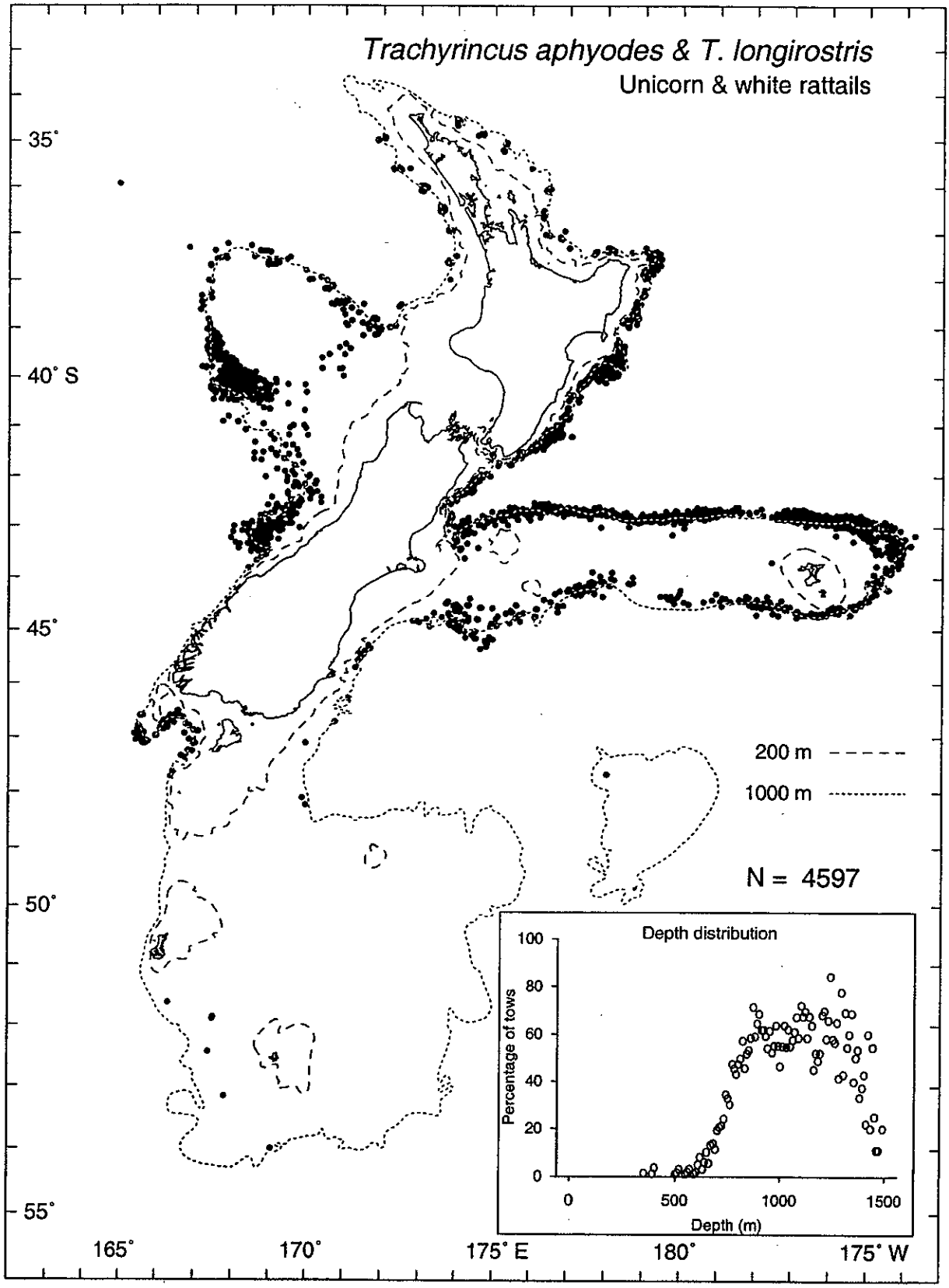


Deeper records may be *Trachurus murphyi*.

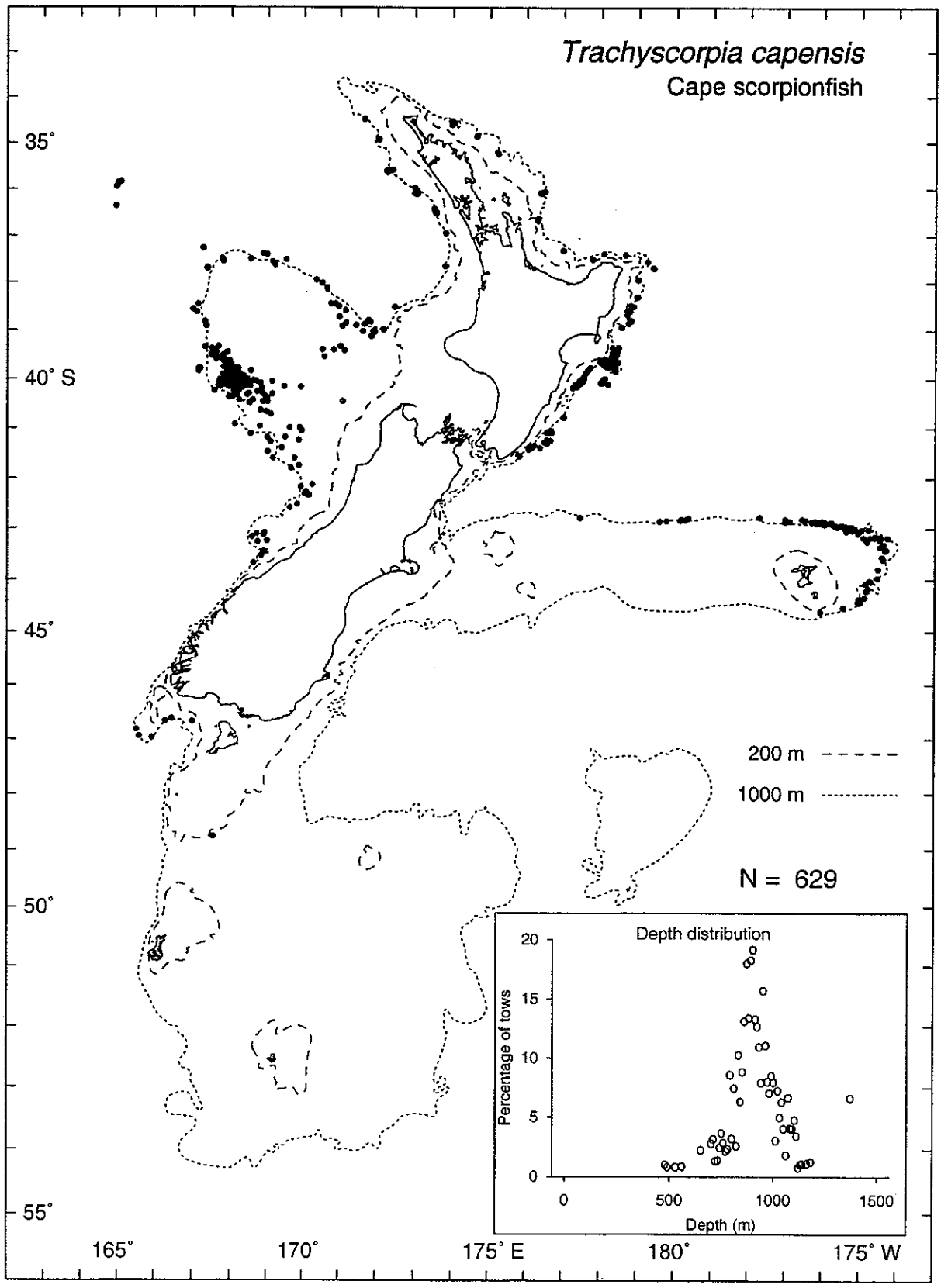


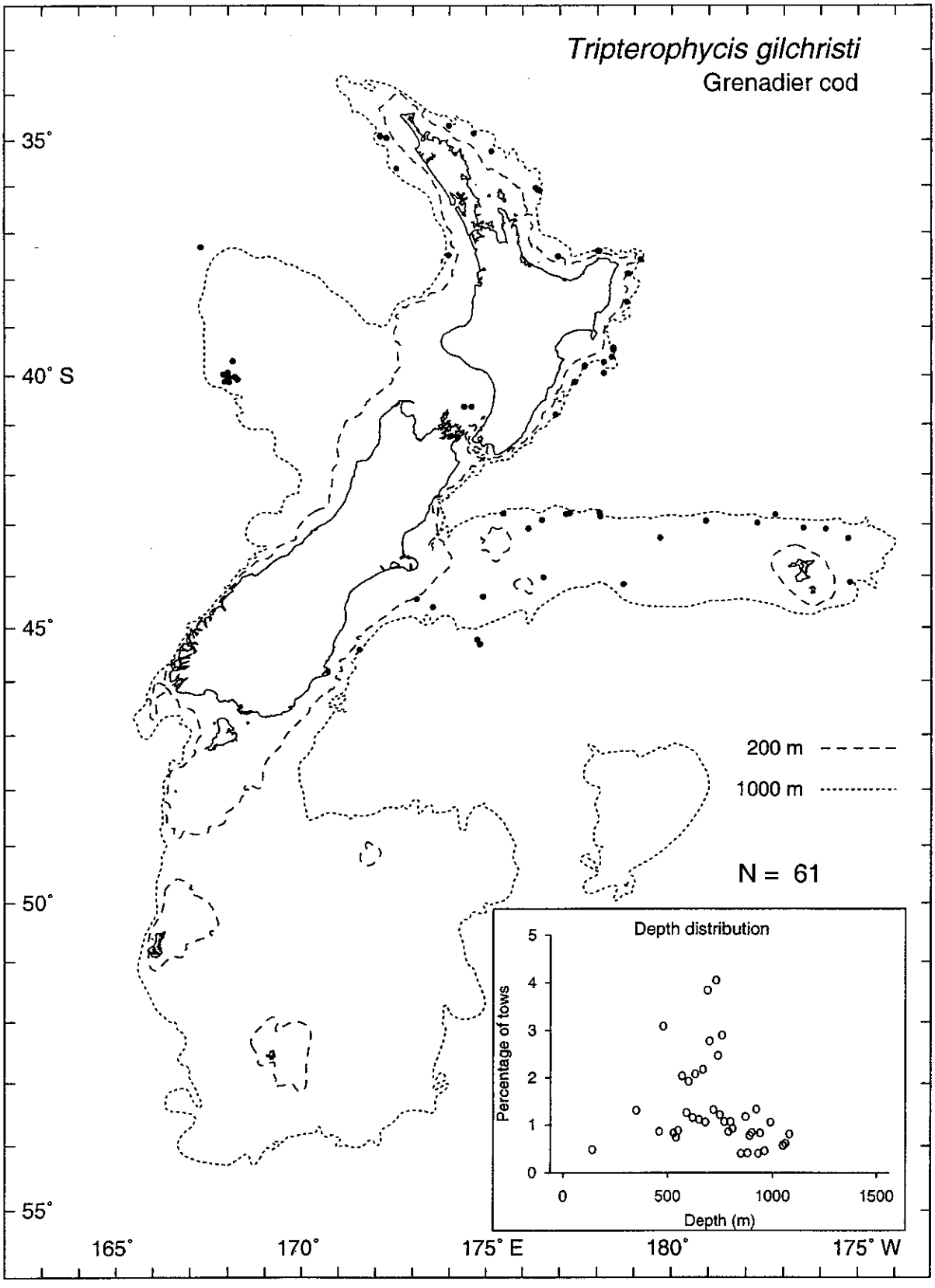
Some records may be *T. declivis*. Stepien & Rosenblatt (1996) suggest that *T. murphyi* may not be a separate species from *T. symmetricus*.

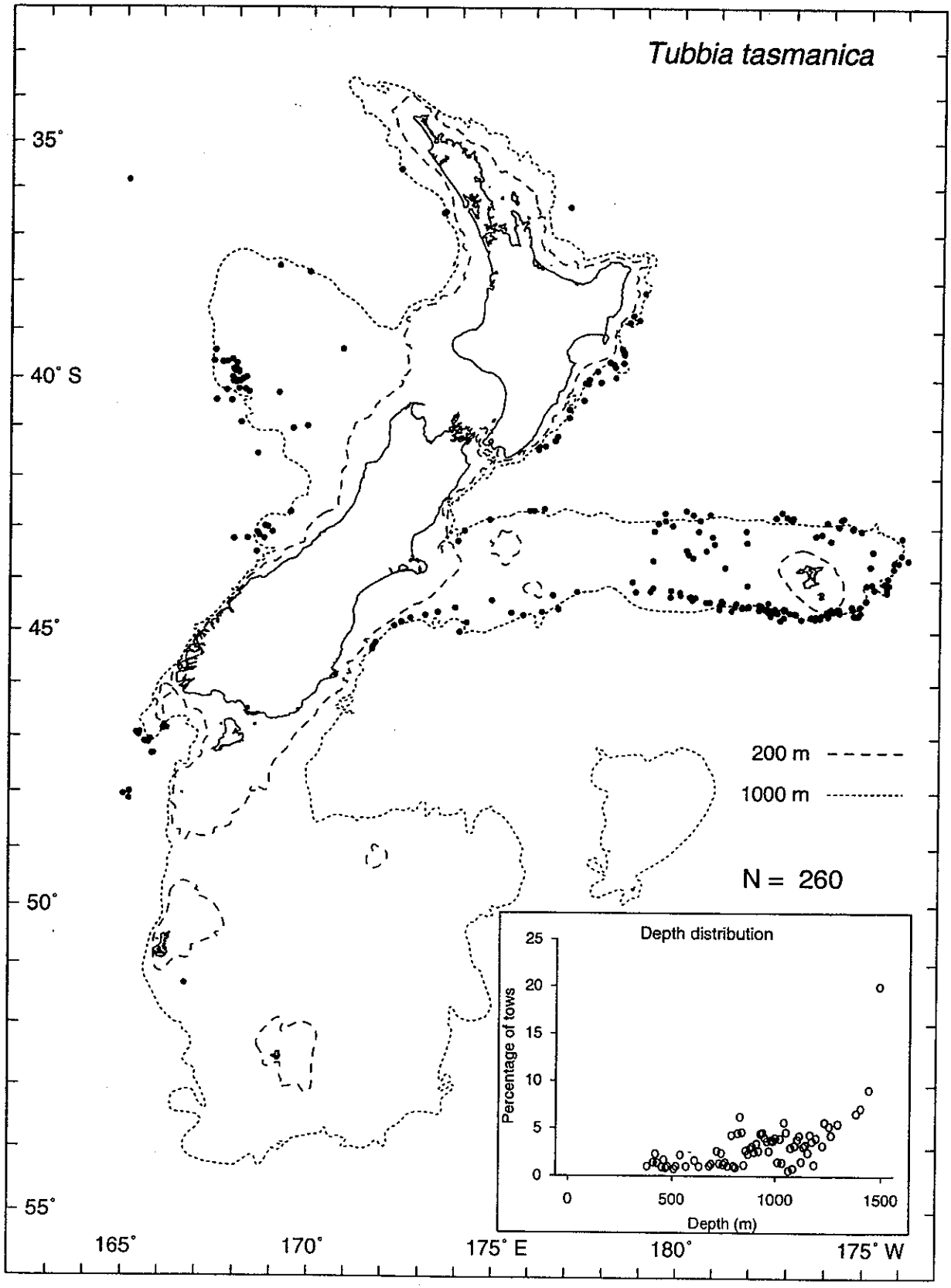

Trachurus novaezelandiae
Jack mackerel
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 1921
Depth distribution
Percentage of tows
0
10
20
30
40
50
0
500
1000
1500
Depth (m)



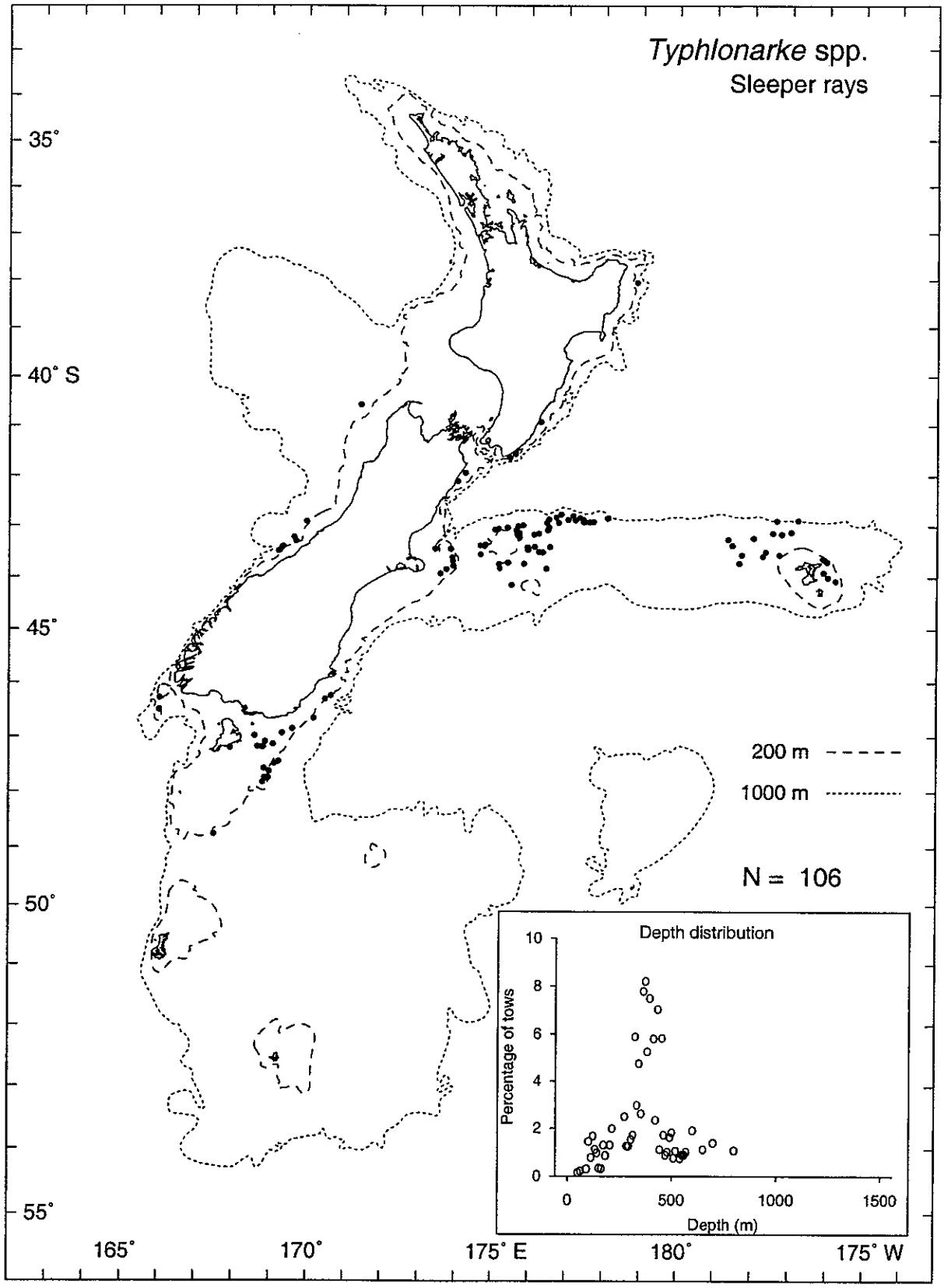
Most records are *Trachyrincus aphyodes*.

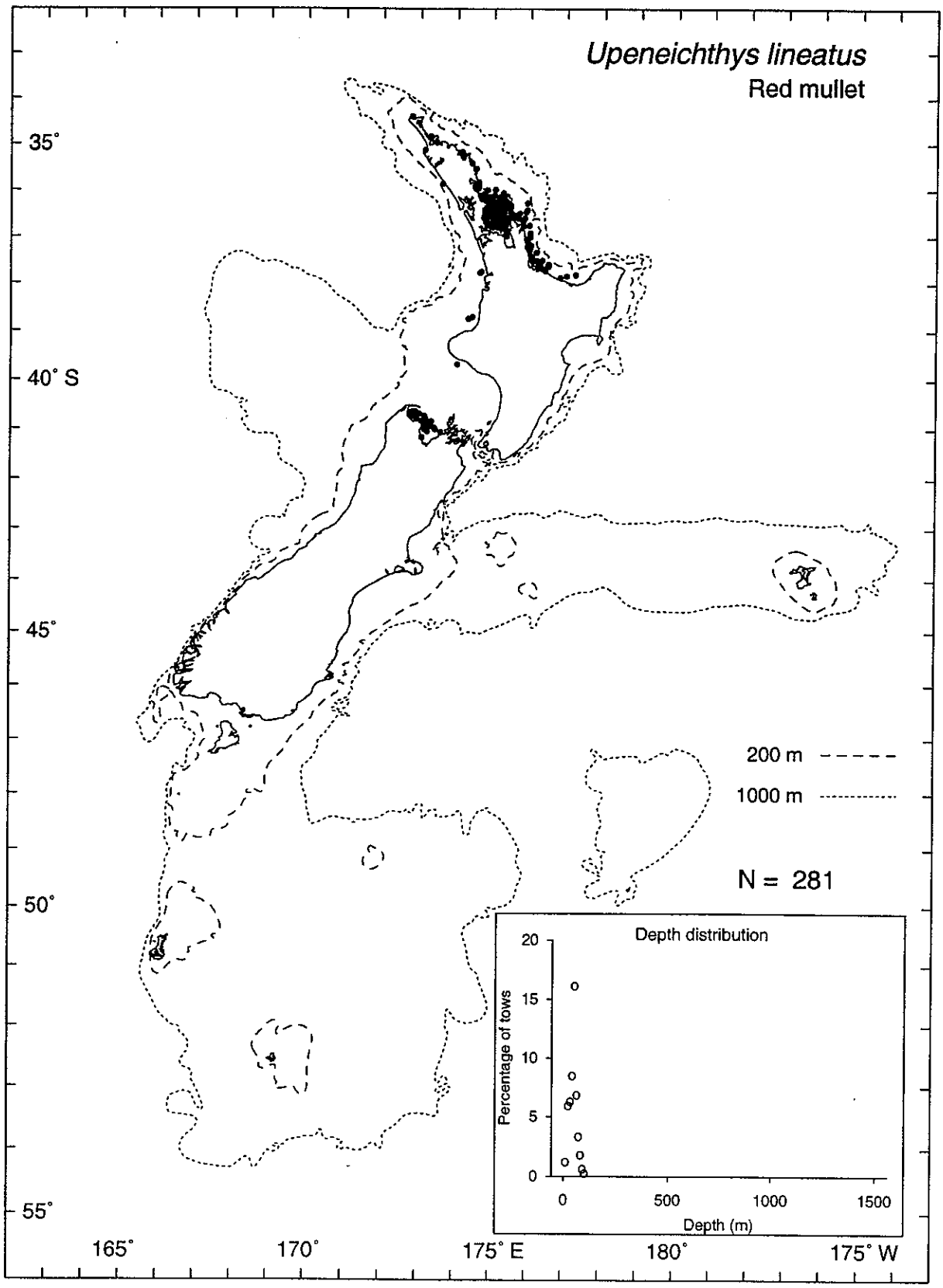

Trachyscorpia capensis
Cape scorpionfish
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 629
Depth distribution
Percentage of tows
0
5
10
15
20
0
500
1000
1500
Depth (m)

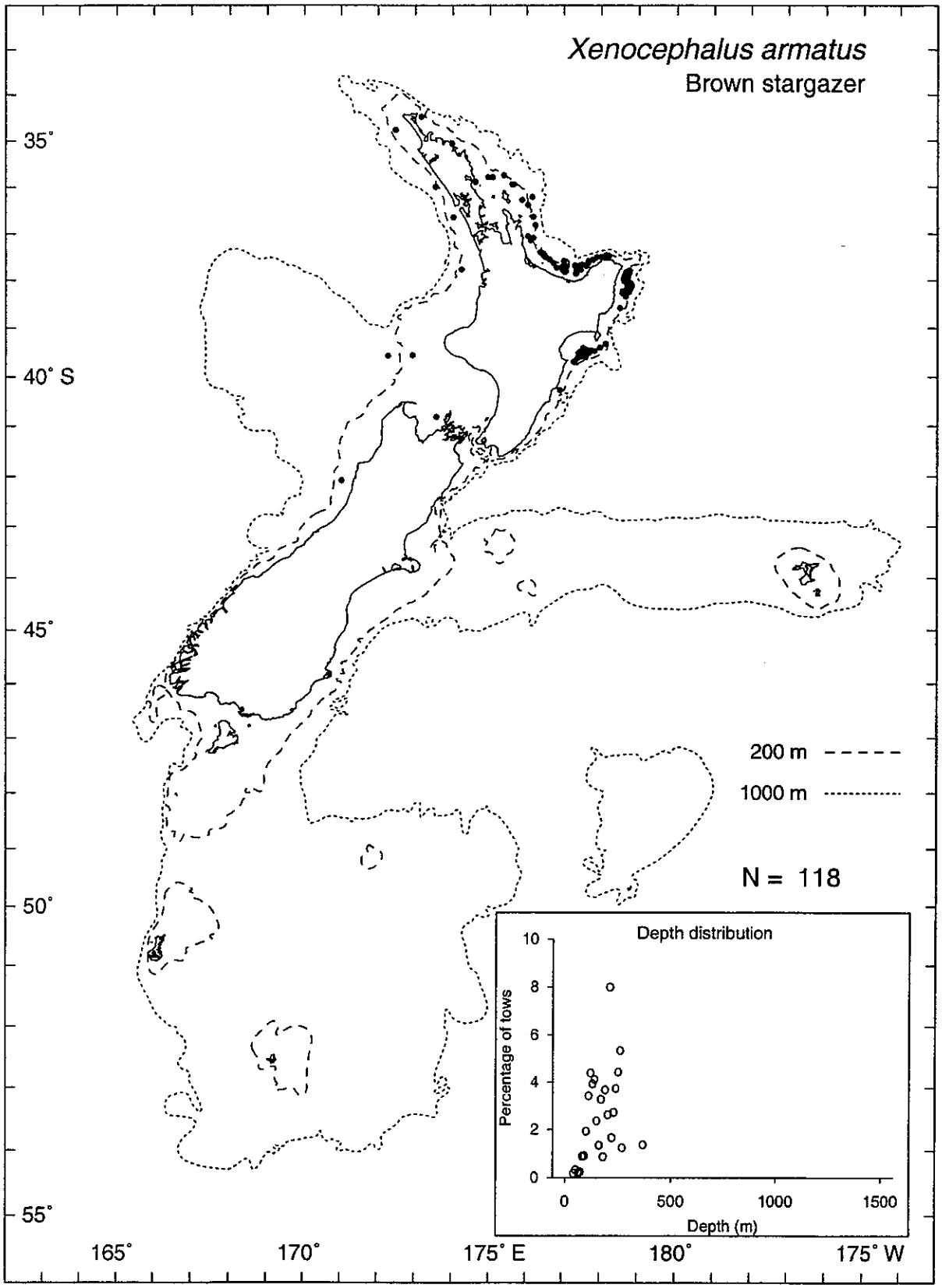

Tripterophycis gilchristi
Grenadier cod
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 61
Depth distribution
Percentage of tows
Depth (m)
0
1
2
3
4
5
0
500
1000
1500

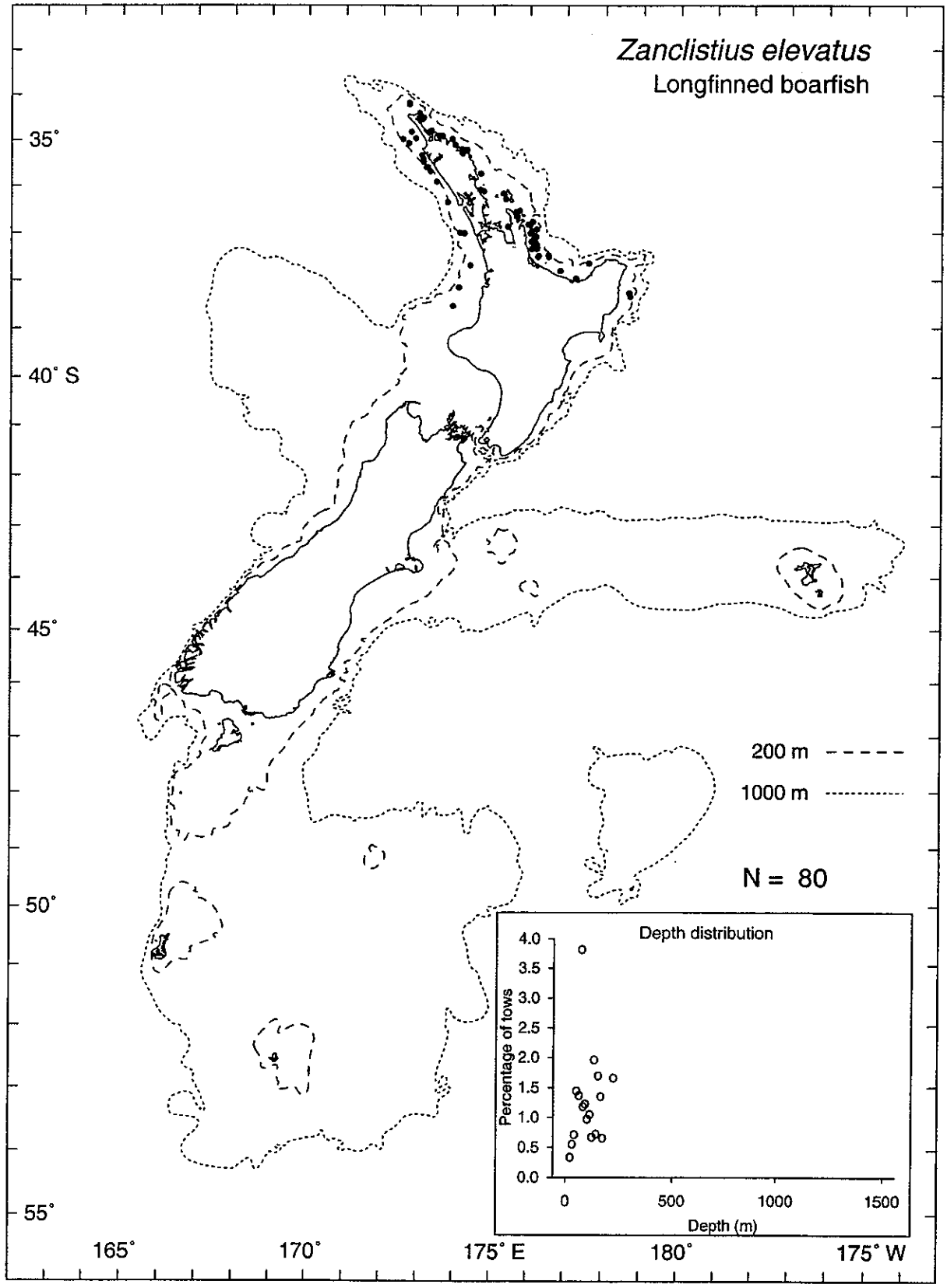


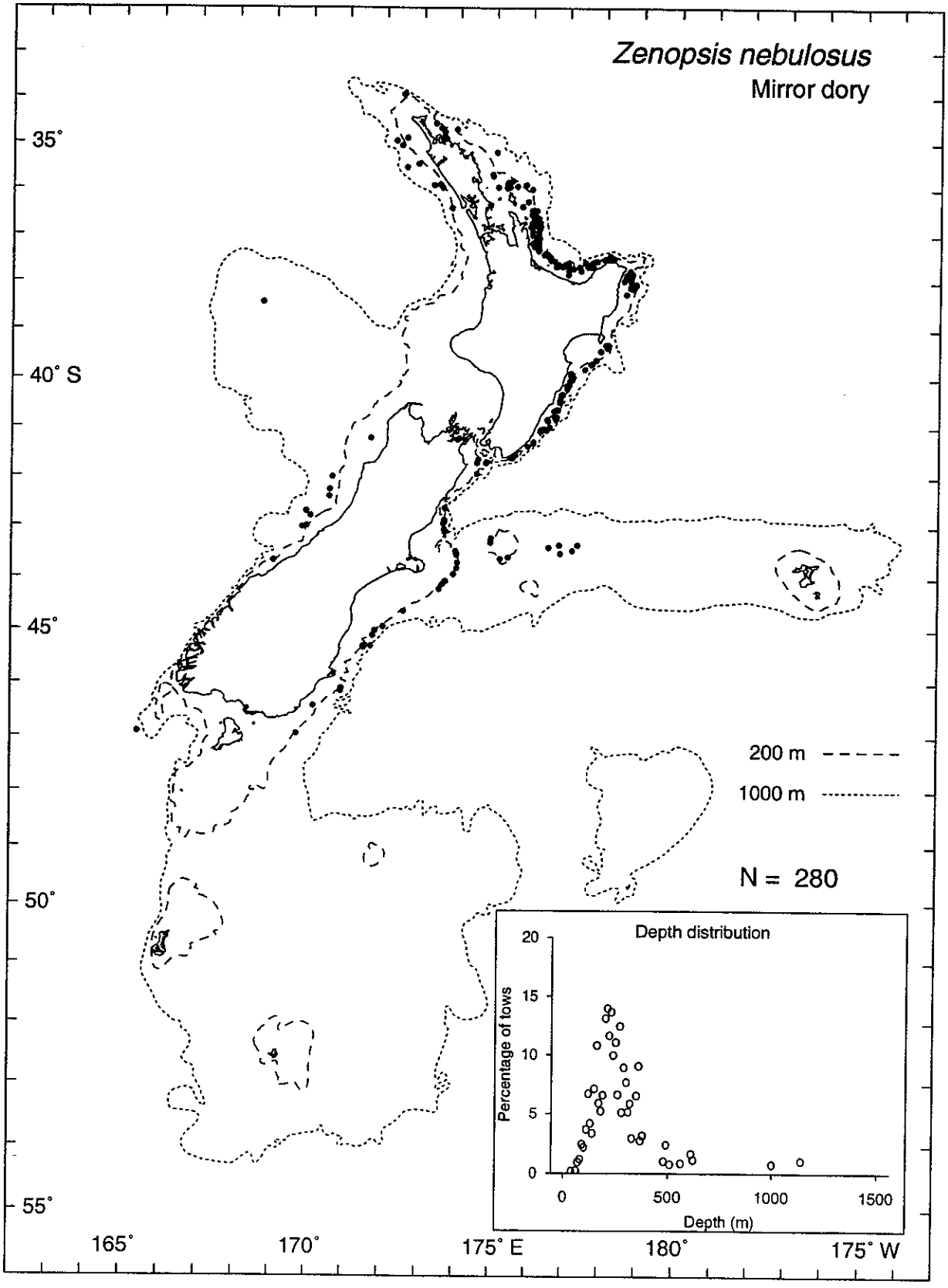
This species may have occasionally been confused with *Schedophilus* sp., particularly deeper records.

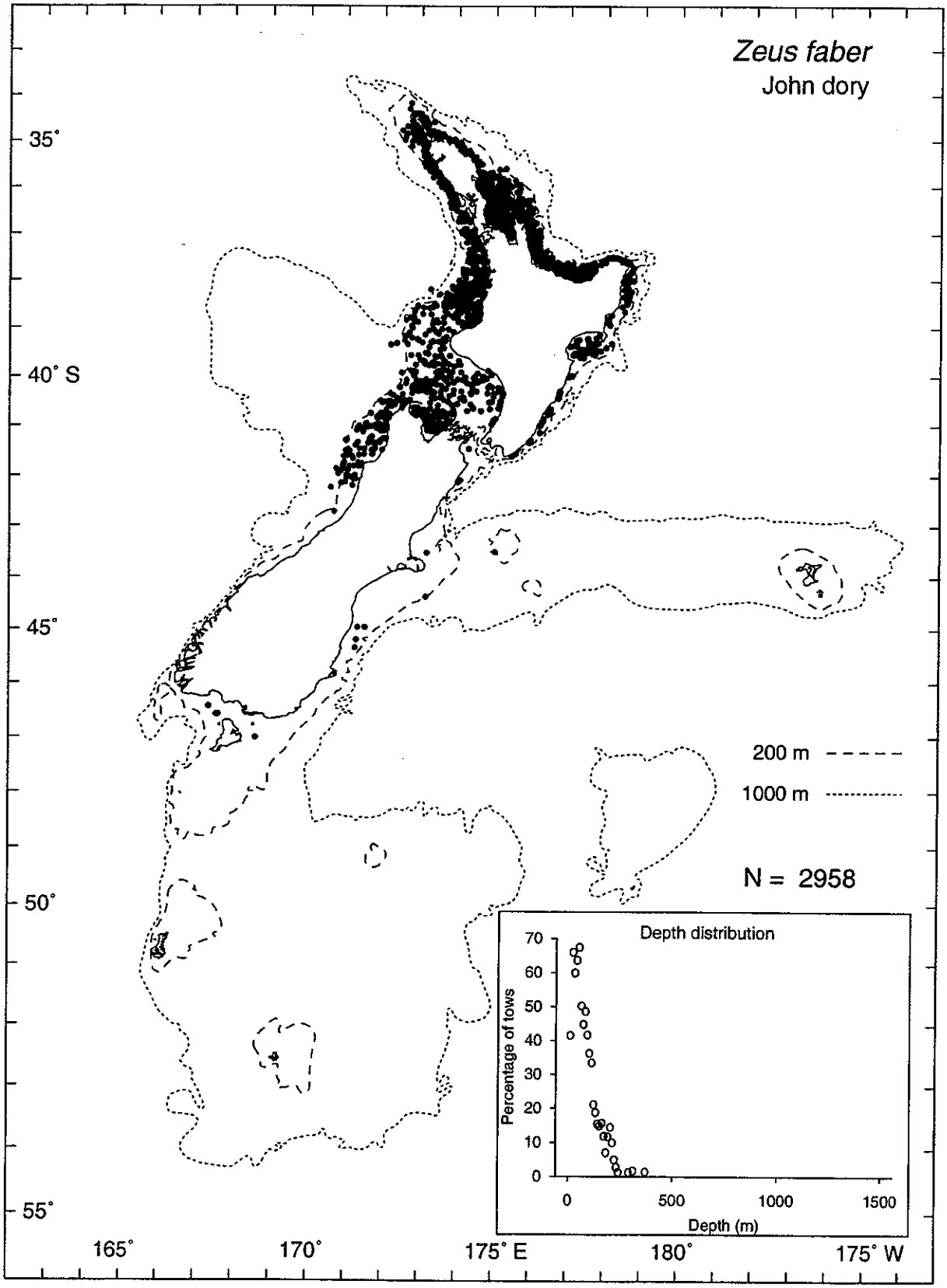

Typhlonarke spp.
Sleeper rays
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 106
Depth distribution
Percentage of tows
0
2
4
6
8
10
0
500
1000
1500
Depth (m)


Upeneichthys lineatus
Red mullet
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 281
Depth distribution
Percentage of tows
Depth (m)
0
5
10
15
20
0
500
1000
1500


Xenocephalus armatus
Brown stargazer
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 118
Depth distribution
Percentage of tows
Depth (m)
0
2
4
6
8
10
0
500
1000
1500


Zanclistius elevatus
Longfinned boarfish
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 80
Depth distribution
Percentage of tows
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0
500
1000
1500
Depth (m)


Zenopsis nebulosus
Mirror dory
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 280
Depth distribution
Percentage of tows
20
15
10
5
0
0
500
1000
1500
Depth (m)


Zeus faber
John dory
35°
40° S
45°
50°
55°
165°
170°
175° E
180°
175° W
200 m
1000 m
N = 2958
Depth distribution
Percentage of tows
70
60
50
40
30
20
10
0
0
500
1000
1500
Depth (m)

Appendix 1: Weighted mean depth and latitude, and ranges of depth (Min., Max.) and latitude (Nth., Sth.), by species or species group. Means are weighted by the proportion of tows within each 10 m depth interval or 0.1° of latitude. Although outliers have been removed where possible, minimum and maximum values should be treated with caution

	Depth (m)			Latitude (°S)		
Species or group	**Mean**	**Min.**	**Max.**	**Mean**	**Nth.**	**Sth.**
Aldrichetta forsteri	11	4	49	37.16	34.64	43.53
Alepisaurus ferox	1364	705	1586	41.76	37.41	47.68
Alepocephalus antipodianus	1272	610	1700	44.02	32.41	54.00
Alepocephalus australis	1292	560	1700	40.06	32.31	53.73
Alertichthys blacki	459	102	771	50.89	43.10	53.41
Allocyttus niger	924	461	1396	45.53	37.68	51.01
Allocyttus verrucosus	1224	607	1489	37.92	32.31	44.74
Allomycterus jaculiferus	90	12	366	36.74	34.18	46.41
Alopias vulpinus	104	10	394	39.59	36.06	46.46
Anoplogaster cornuta	1303	860	1484	41.07	35.21	44.93
Antimora rostrata	1322	435	1700	48.84	37.30	54.00
Apristurus spp.	1209	324	1516	42.43	32.41	53.73
Argentina elongata	421	23	1185	48.77	34.57	53.78
Arhynchobatis asperrimus	386	193	809	37.01	33.94	46.50
Arnoglossus scapha	226	11	826	42.99	34.57	51.19
Arripis trutta	36	4	154	38.02	34.52	45.10
Astronesthidae	1118	318	1480	47.38	36.04	52.63
Auchenoceros punctatus	107	4	789	40.42	35.82	52.86
Austrophycis marginata	631	134	1020	50.59	37.88	53.65
Avocettina spp.	1178	795	1377	40.86	36.94	49.30
Azygopus pinnifasciatus	413	148	803	48.33	42.45	53.41
Bassanago bulbiceps	638	215	1174	48.69	34.61	53.78
Bassanago hirsutus	622	292	1183	48.81	34.87	53.73
Bathylagus spp.	1163	571	1433	43.40	36.48	47.99
Bathypterois spp.	1019	694	1146	33.56	32.31	39.77
Bathyraja shuntovi	1134	345	1479	44.92	34.92	53.73
Bathysaurus ferox	1403	678	1610	39.54	35.08	43.52
Benthodesmus spp.	1183	157	1610	34.87	32.31	51.22
Beryx decadactylus	532	392	850	38.72	35.99	43.12
Beryx splendens	477	209	1379	42.56	37.68	44.69
Brama brama	525	24	1415	44.98	37.24	52.81
Brotulotaenia crassa	1138	639	1346	41.32	34.92	46.93
Caelorinchus aspercephalus	461	45	976	50.21	35.46	53.78
Caelorinchus biclinozonalis	296	19	722	37.68	33.94	47.55
Caelorinchus bollonsi	599	53	1489	43.01	33.91	53.59
Caelorinchus celaenostomus	786	490	1328	35.59	33.91	42.80
Caelorinchus cookianus	733	465	1093	35.01	33.91	47.72
Caelorinchus fasciatus	684	133	1271	49.29	34.22	54.00
Caelorinchus innotabilis	985	295	1490	40.83	32.31	53.78
Caelorinchus kaiyomaru	1029	347	1310	47.42	39.48	54.00
Caelorinchus matamua	852	358	1246	42.50	34.47	53.73
Caelorinchus maurofasciatus	599	345	1110	35.49	33.91	44.38
Caelorinchus mycterismus	1303	691	1490	42.18	39.59	46.66
Caelorinchus oliverianus	640	243	1357	48.34	34.66	54.00
Caelorinchus parvifasciatus	479	279	975	35.85	33.91	46.70
Caelorinchus sp.	1287	490	1586	38.14	32.31	48.80
Caelorinchus supernasutus	733	644	1043	33.96	33.12	40.02
Caesioperca lepidoptera	167	22	469	40.83	34.39	48.67
Callorhinchus milii	69	14	151	44.67	37.55	47.18
Capromimus abbreviatus	323	62	1088	39.52	33.94	47.63

Appendix 1 — *continued*

Species or group	Depth (m)			Latitude (°S)		
	Mean	Min.	Max.	Mean	Nth.	Sth.
Cataetyx sp.	1060	745	1216	40.12	36.08	42.97
Centriscops humerosus	499	32	1307	43.57	34.91	51.37
Centroberyx affinis	102	27	186	35.58	34.30	38.28
Centrolophus niger	600	276	1389	42.48	33.12	52.48
Centrophorus squamosus	865	263	1436	43.47	33.12	53.70
Centroscymnus coelolepis	972	431	1321	36.89	32.41	47.10
Centroscymnus crepidater	960	349	1480	43.31	32.31	54.00
Centroscymnus owstoni	1006	477	1459	40.28	32.31	53.71
Centroscymnus plunketi	828	426	1350	46.49	34.61	53.65
Cephaloscyllium isabellum	172	7	673	42.56	34.30	48.83
Cetonurus crassiceps	1341	849	1501	34.36	32.41	44.02
Chauliodus sloani	1069	412	1470	41.21	33.94	53.71
Chaunax pictus	958	683	1401	35.94	32.31	46.82
Chelidonichthys kumu	81	5	430	38.60	34.18	48.74
Chimaera sp. ?C	1226	578	1480	42.95	34.50	51.19
Chimaera sp. D	986	341	1489	40.60	32.41	53.54
Chlamydoselachus anguineus	950	647	1245	39.91	35.26	44.72
Chlorophthalmus nigripinnis	238	56	789	37.51	33.94	44.53
Colistium guntheri	40	11	105	39.29	34.69	45.20
Colistium nudipinnis	33	12	77	37.60	34.56	46.50
Conger verreauxi & *C. wilsoni*	70	9	407	40.41	36.02	47.49
Congiopodus coriaceus	271	51	572	48.84	43.83	53.04
Congiopodus leucopaecilus	231	18	774	47.64	37.25	53.43
Coryphaenoides mcmillani	1325	640	1484	40.20	34.61	46.99
Coryphaenoides murrayi	1373	544	1700	44.82	35.61	53.72
Coryphaenoides serrulatus	1036	295	1480	41.20	32.31	54.00
Coryphaenoides sp. B	1084	542	1495	44.05	34.47	53.78
Coryphaenoides striaturus	1386	842	1497	40.28	37.37	44.86
Coryphaenoides subserrulatus	1069	295	1497	43.41	34.47	54.00
Cottunculus nudus	966	411	1270	44.05	37.60	45.42
Cranchiidae	1177	574	1501	41.24	35.26	49.27
Crapatalus novaezelandiae	24	14	46	41.17	37.92	43.97
Cryptopsaras couesi	1054	635	1383	44.49	37.63	51.75
Cubiceps caeruleus & *C. baxteri*	872	299	1282	42.85	39.69	46.97
Cyttus novaezealandiae	271	24	886	43.77	35.07	50.97
Cyttus traversi	511	47	1189	47.28	33.91	53.73
Dalatias licha	735	99	1357	44.57	33.91	54.02
Dasyatis brevicaudata	30	4	156	36.04	34.30	40.57
Dasyatis thetidis	61	5	477	35.73	34.42	42.27
Deania calcea	881	107	1471	41.69	32.31	53.78
Diastobranchus capensis	1204	468	1610	43.38	32.41	54.02
Diretmoides parini	940	725	1355	37.87	34.47	44.55
Diretmus argenteus	865	435	1174	46.39	36.07	53.53
Echiodon cryomargarites	1223	678	1475	44.43	37.67	48.96
Emmelichthys nitidus	250	31	774	43.26	34.59	50.50
Engraulis australis	40	4	125	38.8	34.99	43.74
Epigonus lenimen & *E. robustus*	989	229	1497	42.17	33.91	53.65
Epigonus telescopus	781	258	1354	41.10	33.91	52.84
Etmopterus baxteri	1055	220	1700	46.03	34.47	54.00
Etmopterus lucifer	611	158	1357	45.95	33.91	53.82
Etmopterus pusillus	836	448	1066	35.86	33.91	44.55
Euclichthys polynemus	517	255	966	36.24	33.92	46.79
Gadomus aoteanus	1158	810	1469	35.87	32.31	47.02
Galeorhinus galeus	207	4	1057	42.00	33.94	53.59

Appendix 1 — *continued*

Species or group	Depth (m)			Latitude (°S)		
	Mean	Min.	Max.	Mean	Nth.	Sth.
Genyagnus monopterygius	32	8	154	36.92	34.67	44.47
Genypterus blacodes	481	16	1308	47.61	33.91	53.75
Girella tricuspidata	10	4	40	36.15	34.64	37.92
Gnathophis habenatus & G. umbrellabia	92	21	165	37.51	36.03	47.12
Gollum attenuatus	401	129	724	38.64	33.94	49.47
Gonorynchus gonorynchus	334	16	874	47.28	35.94	51.35
Gonostoma elongatum	994	655	1274	44.02	34.54	52.18
Halaelurus dawsoni	478	50	789	50.64	41.88	53.42
Halargyreus johnsonii	1174	295	1700	41.42	32.31	53.78
Halosauropsis macrochir	1509	733	1700	40.00	35.10	43.54
Halosaurus pectoralis	861	680	1269	38.11	34.61	44.10
Harriotta raleighana	782	229	1415	46.56	32.31	54.00
Helicolenus spp.	436	23	1271	41.61	33.12	49.15
Hemerocoetes spp.	190	11	550	41.02	34.49	53.24
Heptranchias perlo	365	73	647	40.41	35.60	46.45
Histioteuthis spp.	1017	455	1495	40.74	32.41	53.73
Hoplichthys haswelli	460	86	1098	40.75	33.91	50.79
Hoplostethus atlanticus	1112	409	1586	42.11	32.31	54.00
Hoplostethus mediterraneus	609	119	1324	37.36	32.31	53.04
Hydrolagus novaezealandiae	374	32	1282	45.75	34.22	54.02
Hydrolagus sp. A	1337	611	1516	39.98	34.98	48.15
Hydrolagus sp. B2	700	86	1410	47.39	32.31	53.73
Hydrolagus sp. C	1449	630	1700	45.78	36.16	53.17
Hyperoglyphe antarctica	442	35	1112	40.99	33.94	48.96
Icichthys australis	913	424	1428	51.13	37.31	53.82
Idiacanthus spp.	1045	634	1346	41.93	36.60	49.33
Idiolophorhynchus andriashevi	1438	864	1561	39.73	37.25	42.75
Kathetostoma giganteum	318	12	1082	44.31	34.12	51.48
Kathetostoma sp.	177	76	315	47.37	43.35	48.84
Kuronezumia bubonis	952	446	1393	39.54	34.61	47.99
Kuronezumia leonis	1161	742	1459	40.20	36.06	47.05
Laemonema spp.	1505	738	1586	43.23	40.42	47.31
Lampanyctus spp.	1165	600	1459	42.88	37.41	51.46
Latridopsis ciliaris	86	14	231	41.93	34.39	47.49
Latris lineata	167	42	275	43.99	37.95	48.07
Lepidion microcephalus	970	229	1444	42.67	34.47	52.48
Lepidion schmidti	1161	857	1308	43.61	37.51	44.75
Lepidoperca aurantia	302	111	667	43.17	34.22	48.80
Lepidopus caudatus	237	9	1057	39.42	33.92	53.67
Lepidorhynchus denticulatus	629	55	1444	47.68	33.91	53.82
Lepidotrigla brachyoptera	158	16	499	40.58	34.49	48.74
Leptoscopus macropygus	20	9	47	36.41	34.67	43.97
Lophonectes gallus	48	13	107	36.55	34.73	38.02
Lucigadus nigromaculatus	714	414	1372	45.03	32.31	53.78
Lyconus spp.	1171	769	1495	43.49	36.08	49.33
Macrorhamphosus scolopax	139	36	255	36.42	34.57	45.18
Macrourus carinatus	1164	295	1518	47.58	37.69	54.00
Macruronus novaezelandiae	651	15	1445	47.22	33.91	54.02
Magnisudis prionosa	905	453	1444	47.03	37.56	52.52
Malacocephalus laevis	671	480	1047	33.40	32.31	39.51
Malacosteidae	1109	511	1403	35.42	32.31	46.97
Mastigoteuthis spp.	946	755	1124	36.39	34.47	47.00
Melamphaidae	1316	769	1490	41.97	34.55	49.33

Appendix 1 — *continued*

Species or group	Depth (m)			Latitude (°S)		
	Mean	Min.	Max.	Mean	Nth.	Sth.
Melanonus gracilis	1162	812	1372	39.81	34.48	44.99
Melanonus zugmayeri	957	844	1116	39.76	37.69	42.73
Melanostigma gelatinosum	1107	501	1436	41.68	35.60	46.93
Merluccius australis	665	6	1445	46.83	34.48	53.82
Mesobius antipodum	1099	649	1475	41.40	32.41	51.00
Micromesistius australis	503	54	1033	51.10	43.03	53.78
Mora moro	742	204	1332	44.66	32.31	53.78
Moroteuthis ingens	962	213	1700	49.23	36.51	53.78
Moroteuthis robsoni	1141	502	1445	49.70	37.67	53.60
Mustelus lenticulatus	140	4	1000	40.24	33.94	48.97
Myctophidae	1166	88	1586	47.81	35.72	54.02
Myliobatis tenuicaudatus	31	4	422	36.15	34.21	43.18
Myxinidae	413	29	1002	42.57	34.61	47.86
Nemadactylus douglasi	54	9	178	35.30	34.30	41.49
Nemadactylus macropterus	182	11	486	40.95	34.04	49.84
Nemichthys scolopaceus	1057	546	1321	40.87	36.95	46.92
Neoachiropsetta milfordi	703	171	1475	51.30	38.97	54.02
Neocyttus rhomboidalis	877	229	1489	40.75	34.50	53.61
Neophrynichthys angustus	601	58	1489	49.98	34.71	53.71
Neophrynichthys latus	446	26	865	48.47	38.23	53.27
Neoscopelus spp.	771	680	945	33.33	32.31	40.10
Nezumia namatahi	1180	296	1490	37.97	32.41	47.26
Notacanthus sexspinis	789	168	1480	47.58	34.51	54.02
Notolabrus celidotus	20	4	56	38.72	34.71	45.22
Notolabrus cinctus	162	43	225	47.15	43.96	48.79
Notopogon lilliei	196	34	717	45.39	39.62	48.79
Notorynchus cepedianus	267	19	550	39.35	35.46	45.20
Notothenia spp. & *Paranotothenia magellanica*	342	106	1125	51.23	43.30	53.67
Nototodarus gouldi	260	14	1015	36.25	34.12	43.08
Nototodarus sloanii	383	19	1308	48.09	38.45	53.70
Octopoteuthiidae	1074	50	1419	40.06	36.10	47.31
Odontomacrurus murrayi	1281	846	1436	42.46	38.52	47.31
Ommastrephes bartrami	992	229	1518	43.17	33.91	53.71
Opostomias micripnus	1063	742	1322	43.76	36.52	47.99
Oxynotus bruniensis	485	126	1067	45.88	34.93	53.38
Pagrus auratus	56	4	277	36.89	34.21	43.57
Parapercis colias	104	14	471	43.72	34.35	50.13
Parapercis gilliesi	206	96	344	46.95	34.98	48.83
Paratrachichthys trailli	405	22	1101	41.08	33.94	53.51
Parika scaber	54	9	159	37.08	34.18	46.67
Paristiopterus labiosus	75	11	197	35.56	34.35	40.73
Pavoraja asperula	672	133	1390	47.40	34.12	53.39
Pavoraja spinifera	780	171	1459	46.51	34.12	53.17
Pelotretis flavilatus	187	5	653	40.76	34.41	50.13
Peltorhamphus latus	19	4	61	38.42	35.07	44.53
Peltorhamphus novaezeelandiae	40	6	192	39.34	34.67	46.67
Peltorhamphus tenuis	31	14	80	42.65	37.58	44.54
Pentaceros decacanthus	466	186	722	37.79	34.12	43.90
Persparsia kopua	1193	735	1403	41.81	37.54	48.60
Photichthys argenteus	1217	450	1612	45.99	34.85	53.72
Plagiogeneion rubiginosum	359	85	915	40.51	34.92	44.18
Polyprion americanus	366	93	564	42.07	34.90	48.57
Polyprion oxygeneios	205	14	582	45.30	34.83	48.96

Appendix 1 — *continued*

Species or group	Depth (m)			Latitude (°S)		
	Mean	Min.	Max.	Mean	Nth.	Sth.
Pseudocaranx dentex	45	4	240	37.09	34.30	43.79
Pseudocyttus maculatus	1101	483	1518	45.06	35.93	54.00
Pseudolabrus miles	113	19	174	46.07	36.80	48.62
Pseudopentaceros richardsoni	407	17	699	42.17	36.61	47.79
Pseudophycis bachus	250	4	1056	43.72	34.22	53.27
Pseudophycis barbata & *P. breviuscula*	216	9	767	39.64	35.86	48.83
Psychrolutes microporos	1147	452	1469	46.35	34.51	54.00
Pterygotrigla picta	238	17	557	36.31	34.12	43.80
Raja hyperborea	1103	406	1356	45.99	42.65	51.53
Raja innominata	412	13	1444	43.76	33.94	53.73
Raja nasuta	370	14	1465	44.11	34.12	54.00
Regalecus glesne	654	372	1149	48.25	37.51	53.43
Rexea solandri	298	30	1082	42.50	33.12	49.62
Rhinochimaera pacifica	1098	469	1490	42.32	34.47	53.78
Rhombosolea leporina	17	4	66	38.10	35.88	45.75
Rhombosolea plebeia	28	4	102	38.19	34.67	45.45
Rhombosolea tapirina	156	19	299	48.41	40.87	52.36
Rosenblattia robusta	1107	732	1278	40.62	37.30	47.32
Rouleina sp.	1379	648	1561	39.96	35.00	53.72
Ruvettus pretiosus	873	549	1286	38.27	34.67	42.75
Sardinops neopilchardus	34	4	128	37.97	34.59	42.55
Schedophilus sp.	956	344	1311	42.48	34.93	47.99
Scomber australasicus	94	8	493	38.05	34.67	47.26
Scopelosaurus spp.	974	434	1372	40.75	35.08	44.95
Sepioteuthis australis	75	5	1017	36.70	34.39	44.31
Seriola lalandi	67	4	217	37.57	34.38	43.55
Seriolella brama	135	6	987	43.24	34.64	49.77
Seriolella caerulea	452	100	915	48.43	35.60	53.71
Seriolella punctata	322	16	1377	44.44	34.77	52.43
Serrivomer spp.	1235	536	1503	39.65	34.50	46.98
Simenchelys parasiticus	1176	682	1480	42.38	37.54	49.30
Solegnathus spinosissimus	162	54	252	41.12	35.67	46.00
Sphoeroides pachygaster	22	4	160	39.45	34.77	44.91
Sphyrna zygaena	36	4	109	36.36	34.64	38.25
Sprattus antipodum & *S. muelleri*	55	4	268	41.21	36.56	46.36
Squalus acanthias	314	10	1446	45.10	34.71	53.63
Squalus mitsukurii	290	15	954	38.59	33.92	46.88
Sternoptychidae	1075	297	1501	45.21	33.94	53.78
Stomias spp.	1027	509	1390	39.94	33.94	53.60
Talismania longifilis	1372	773	1610	34.73	32.41	45.20
Tetragonurus cuvieri	1081	96	1480	41.62	38.00	49.68
Thyrsites atun	182	5	671	42.68	34.53	50.70
Todarodes filippovae	731	337	1398	44.49	33.91	53.62
Torpedo fairchildi	296	5	1135	39.70	34.57	48.85
Trachipterus trachypterus	940	91	1416	42.67	36.50	47.33
Trachonurus gagates	1216	715	1446	34.16	32.31	48.15
Trachurus declivis	186	10	1388	40.81	34.48	48.78
Trachurus murphyi	265	15	1434	44.44	35.79	48.79
Trachurus novaezelandiae	76	5	1102	38.07	34.40	47.08
Trachyrincus aphyodes & *T. longirostris*	1055	345	1481	42.64	34.95	54.00
Trachyscorpia capensis	916	474	1370	39.30	34.48	48.76
Tripterophycis gilchristi	699	131	1077	38.72	34.68	45.42

Appendix 1 — *continued*

	Depth (m)			Latitude (°S)		
Species or group	**Mean**	**Min.**	**Max.**	**Mean**	**Nth.**	**Sth.**
Tubbia tasmanica	1042	379	1490	43.22	35.60	51.34
Typhlonarke spp.	372	46	800	45.03	38.05	48.76
Upeneichthys lineatus	41	7	91	36.73	34.39	41.15
Xenocephalus armatus	182	40	366	37.49	34.48	42.09
Xenodermichthys copei	1037	611	1700	37.94	32.31	48.92
Zanclistius elevatus	101	18	216	35.57	34.18	38.53
Zenopsis nebulosus	246	32	1133	38.12	33.92	46.94
Zeus faber	75	5	366	37.23	34.18	47.01

Index 1: Common names. Names in bold are as used on the plots, those not bolded are other occasionally used New Zealand common names

Common name	Scientific name
Abyssal halosaur	*Halosauropsis macrochir*
Abyssal rattail	*Coryphaenoides striaturus*
Ahuru	*Auchenoceros punctatus*
Akaroa cod	*Pseudophycis bachus*
Alert pigfish	*Alertichthys blacki*
Alfonsino	*Beryx splendens*
Anchovy	*Engraulis australis*
Antarctic cods	*Notothenia* spp. & *Paranotothenia magellanica*
Arctic skate	*Raja hyperborea*
Argentine	*Argentina elongata*
Banded bellowsfish	*Centriscops humerosus*
Banded giant stargazer	*Kathetostoma* sp.
Banded rattail	*Caelorinchus fasciatus*
Barracouta	*Thyrsites atun*
Barracudina	*Magnisudis prionosa*
Basketwork eel	*Diastobranchus capensis*
Bass	*Polyprion americanus*
Baxter's dogfish	*Etmopterus baxteri*
Bigeye cardinalfish	*Epigonus lenimen*
Bigscaled brown slickhead	*Alepocephalus australis*
Bigscalefishes	Melamphaidae
Black bream	*Girella tricuspidata*
Black cardinalfish	*Epigonus telescopus*
Black dragonfishes	*Idiacanthus* spp.
Black ghost shark	*Hydrolagus* sp. A
Black javelinfish	*Mesobius antipodum*
Black lip rattail	*Caelorinchus celaenostomus*
Black oreo	*Allocyttus niger*
Black shark	*Dalatias licha*
Black slickhead	*Xenodermichthys copei*
Black snipe eels	*Avocettina* spp.
Blackchins	*Neoscopelus* spp.
Blackspot rattail	*Lucigadus nigromaculatus*
Blind eel	Myxinidae
Blind electric ray	*Typhlonarke* spp.
Blobfish	*Psychrolutes microporos*
Blue bream	*Hyperoglyphe antarctica*
Blue cod	*Parapercis colias*
Blue cusk eel	*Brotulotaenia crassa*
Blue grenadier	*Macruronus novaezelandiae*
Blue mackerel	*Scomber australasicus*
Blue moki	*Latridopsis ciliaris*
Blue warehou	*Seriolella brama*
Blue weaver	*Parapercis colias*
Bluenose	*Hyperoglyphe antarctica*
Bollons' rattail	*Caelorinchus bollonsi*
Bonita	*Hyperoglyphe antarctica*
Bonyskull toadfish	*Cottunculus nudus*
Box gurnard	*Lepidotrigla brachyoptera*
Brill	*Colistium guntheri*
Broad squid	*Sepioteuthis australis*
Broadnose sevengill shark	*Notorynchus cepedianus*
Brown chimaera	*Chimaera* sp. ?C

Index 1 — *continued*

Common name	Scientific name
Brown stargazer	*Xenocephalus armatus*
Bulbous rattail	*Kuronezumia bubonis*
Butterfly perch	*Caesioperca lepidoptera*
Cape scorpionfish	*Trachyscorpia capensis*
Capro dory	*Capromimus abbreviatus*
Carapid	*Echiodon cryomargarites*
Cardinalfish	*Epigonus telescopus*
Carpet shark	*Cephaloscyllium isabellum*
Cat sharks	*Apristurus* spp.
Chilean mackerel	*Trachurus murphyi*
Common halosaur	*Halosaurus pectoralis*
Common roughy	*Paratrachichthys trailli*
Common sole	*Peltorhamphus novaezeelandiae*
Common warehou	*Seriolella brama*
Conger eels	*Conger verreauxi & C. wilsoni*
Cook's rattail	*Caelorinchus cookianus*
Cranchiid squid	Cranchiidae
Creamfish	*Parika scaber*
Crested bellowsfish	*Notopogon lilliei*
Crested flounder	*Lophonectes gallus*
Cubeheads	*Cubiceps caeruleus & C. baxteri*
Cucumberfish	*Chlorophthalmus nigripinnis*
Cutlassfish	*Lepidopus caudatus*
Dab	*Rhombosolea plebeia*
Dark banded rattail	*Caelorinchus maurofasciatus*
Dark ghost shark	*Hydrolagus novaezealandiae*
Dark toadfish	*Neophrynichthys latus*
Dawson's cat shark	*Halaelurus dawsoni*
Dealfish	*Trachipterus trachypterus*
Deepsea cod	*Mora moro*
Deepsea flathead	*Hoplichthys haswelli*
Deepsea lizardfish	*Bathysaurus ferox*
Deepsea pigfish	*Congiopodus coriaceus*
Deepsea smelts	*Bathylagus* spp.
Discfish	*Diretmus argenteus*
Dwarf cod	*Austrophycis marginata*
Eagle ray	*Myliobatis tenuicaudatus*
Electric ray	*Torpedo fairchildi*
Elephantfish	*Callorhinchus milii*
Elongate lightfish	*Gonostoma elongatum*
English hake	*Merluccius australis*
English mackerel	*Scomber australasicus*
English sole	*Peltorhamphus novaezeelandiae*
Estuary stargazer	*Leptoscopus macropygus*
Eucla cod	*Euclichthys polynemus*
Fangtooth	*Anoplogaster cornuta*
Filamentous rattail	*Gadomus aoteanus*
Finless flounder	*Neoachiropsetta milfordi*
Four rayed rattail	*Coryphaenoides subserrulatus*
Frill shark	*Chlamydoselachus anguineus*
Frostfish	*Lepidopus caudatus*
Gemfish	*Rexea solandri*
Ghost shark	*Hydrolagus novaezealandiae*
Giant barracudina	*Magnisudis prionosa*

Index 1 — *continued*

Common name	Scientific name
Giant chimaera	*Chimaera* sp. D
Giant lepidion	*Lepidion schmidti*
Giant stargazer	*Kathetostoma giganteum*
Girdled wrasse	*Notolabrus cinctus*
Globosehead rattail	*Cetonurus crassiceps*
Golden snapper	*Centroberyx affinis*
Googly eyed cod	*Mora moro*
Gould's arrow squid	*Nototodarus gouldi*
Green eyed dogfish	*Squalus mitsukurii*
Greenback flounder	*Rhombosolea tapirina*
Grenadier cod	*Tripterophycis gilchristi*
Grey shark	*Galeorhinus galeus*
Grey spiny dogfish	*Squalus mitsukurii*
Groper	*Polyprion oxygeneios*
Gummy shark	*Mustelus lenticulatus*
Gurnard	*Chelidonichthys kumu*
Hagfish	Myxinidae
Hairy conger	*Bassanago hirsutus*
Hake	*Merluccius australis*
Hammerhead shark	*Sphyrna zygaena*
Hapuku	*Polyprion oxygeneios*
Hatchetfishes	Sternoptychidae
Hoki	*Macruronus novaezelandiae*
Horse mackerel	*Trachurus declivis*
Jack mackerel	*Trachurus declivis*
Jack mackerel	*Trachurus murphyi*
Jack mackerel	*Trachurus novaezelandiae*
Japanese gurnard	*Pterygotrigla picta*
Javelinfish	*Lepidorhynchus denticulatus*
Jock stewart	*Helicolenus* spp.
John dory	*Zeus faber*
Johnson's cod	*Halargyreus johnsonii*
Kahawai	*Arripis trutta*
Kaiyomaru rattail	*Caelorinchus kaiyomaru*
Kingfish	*Seriola lalandi*
Lancetfish	*Alepisaurus ferox*
Lanternfishes	Myctophidae
Large fang rattail	*Odontomacrurus murrayi*
Large headed slickhead	*Rouleina* sp.
Leafscale gulper shark	*Centrophorus squamosus*
Leatherjacket	*Parika scaber*
Lemon sole	*Pelotretis flavilatus*
Lighthouse fish	*Photichthys argenteus*
Limp eel pout	*Melanostigma gelatinosum*
Ling	*Genypterus blacodes*
Long barbel rattail	*Coryphaenoides* sp. B
Longfinned beryx	*Beryx decadactylus*
Longfinned boarfish	*Zanclistius elevatus*
Longnose chimaera	*Harriotta raleighana*
Longnose deepsea skate	*Bathyraja shuntovi*
Longnose spookfish	*Harriotta raleighana*
Longnose velvet dogfish	*Centroscymnus crepidater*
Longsnouted lancetfish	*Alepisaurus ferox*
Longtail skate	*Arhynchobatis asperrimus*

Index 1 — *continued*

Common name	Scientific name
Longtail stingray	*Dasyatis thetidis*
Lookdown dory	*Cyttus traversi*
Loosejaws	Malacosteidae
Lucifer dogfish	*Etmopterus lucifer*
Mahia rattail	*Caelorinchus matamua*
Megrim	*Arnoglossus scapha*
Messmate	*Echiodon cryomargarites*
Mirror dory	*Zenopsis nebulosus*
Moki	*Latridopsis ciliaris*
Monkfish	*Kathetostoma giganteum*
Murphy's mackerel	*Trachurus murphyi*
New Zealand hake	*Merluccius australis*
New Zealand sole	*Peltorhamphus novaezeelandiae*
Northern bastard cod	*Pseudophycis breviuscula*
Northern kingfish	*Seriola lalandi*
Northern spiny dogfish	*Squalus mitsukurii*
Notable rattail	*Caelorinchus innotabilis*
Notothenid cods	*Notothenia* spp. & *Paranotothenia magellanica*
Oarfish	*Regalecus glesne*
Oblique banded rattail	*Caelorinchus aspercephalus*
Oilfish	*Ruvettus pretiosus*
Oliver's rattail	*Caelorinchus oliverianus*
Opalfishes	*Hemerocoetes* spp.
Orange perch	*Lepidoperca aurantia*
Orange roughy	*Hoplostethus atlanticus*
Owston's dogfish	*Centroscymnus owstoni*
Pacific spookfish	*Rhinochimaera pacifica*
Pale ghost shark	*Hydrolagus* sp. B2
Pale toadfish	*Neophrynichthys angustus*
Parore	*Girella tricuspidata*
Pelagic cod	*Melanonus zugmayeri*
Peruvian mackerel	*Trachurus murphyi*
Pigfish	*Congiopodus leucopaecilus*
Pilchard	*Sardinops neopilchardus*
Pineapple rattail	*Idiolophorhynchus andriashevi*
Pink cod	*Auchenoceros punctatus*
Pink frogmouth	*Chaunax pictus*
Pioke	*Mustelus lenticulatus*
Plunket's shark	*Centroscymnus plunketi*
Pointynose blue ghost shark	*Hydrolagus* sp. C
Porae	*Nemadactylus douglasi*
Porcupine fish	*Allomycterus jaculiferus*
Portuguese dogfish	*Centroscymnus coelolepis*
Prickly deepsea skate	*Pavoraja spinifera*
Prickly dogfish	*Oxynotus bruniensis*
Pufferfish	*Sphoeroides pachygaster*
Purple chimaera	*Chimaera* sp. D
Ragfish	*Icichthys australis*
Ray's bream	*Brama brama*
Red cod	*Pseudophycis bachus*
Red goatfish	*Upeneichthys lineatus*
Red gurnard	*Chelidonichthys kumu*
Red mullet	*Upeneichthys lineatus*
Red snapper	*Centroberyx affinis*

Index 1 — *continued*

Common name	Scientific name
Red squid	*Ommastrephes bartrami*
Redbait	*Emmelichthys nitidus*
Ribaldo	*Mora moro*
Ridge scaled rattail	*Macrourus carinatus*
Rig	*Mustelus lenticulatus*
Rough head grenadier	*Caelorinchus* sp.
Rough skate	*Raja nasuta*
Rubyfish	*Plagiogeneion rubiginosum*
Rudderfish	*Centrolophus niger*
Sand flounder	*Rhombosolea plebeia*
Sand stargazer	*Crapatalus novaezelandiae*
Sandfish	*Gonorynchus gonorynchus*
Sandpaper fish	*Paratrachichthys trailli*
Sardine	*Sardinops neopilchardus*
Sawtooth eels	*Serrivomer* spp.
Scabbardfishes	*Benthodesmus* spp.
Scaleless black dragonfish	*Opostomias micripnus*
Scaly dragonfishes	*Stomias* spp.
Scaly gurnard	*Lepidotrigla brachyoptera*
Scarlet parrotfish	*Pseudolabrus miles*
Scarlet wrasse	*Pseudolabrus miles*
Scarpee	*Helicolenus* spp.
School shark	*Galeorhinus galeus*
Sea perch	*Helicolenus* spp.
Seadevil	*Cryptopsaras couesi*
Seal shark	*Dalatias licha*
Serrulate rattail	*Coryphaenoides serrulatus*
Sharpnose sevengill shark	*Heptranchias perlo*
Short toothed pelagic cod	*Melanonus gracilis*
Shorttail stingray	*Dasyatis brevicaudata*
Shovelnose dogfish	*Deania calcea*
Silver conger	*Gnathophis habenatus*
Silver dory	*Cyttus novaezealandiae*
Silver roughy	*Hoplostethus mediterraneus*
Silver trumpeter	*Callorhinchus milii*
Silver warehou	*Seriolella punctata*
Silverside	*Argentina elongata*
Sleeper ray	*Typhlonarke* spp.
Slender mackerel	*Trachurus murphyi*
Slender smoothhound	*Gollum attenuatus*
Slender snipe eel	*Nemichthys scolopaceus*
Slender sole	*Peltorhamphus tenuis*
Sloan's arrow squid	*Nototodarus sloanii*
Small banded rattail	*Caelorinchus parvifasciatus*
Small headed cod	*Lepidion microcephalus*
Smallscaled brown slickhead	*Alepocephalus antipodianus*
Smooth deepsea skate	*Pavoraja asperula*
Smooth dory	*Pseudocyttus maculatus*
Smooth hammerhead	*Sphyrna zygaena*
Smooth headed rattail	*Malacocephalus laevis*
Smooth lantern shark	*Etmopterus pusillus*
Smooth oreo	*Pseudocyttus maculatus*
Smooth skate	*Raja innominata*
Smoothhound	*Mustelus lenticulatus*

Index 1 — *continued*

Common name	Scientific name
Snaggletooths	Astronesthidae
Snapper	*Pagrus auratus*
Snipefish	*Macrorhamphosus scolopax*
Snoek	*Thyrsites atun*
Snotty	Myxinidae
Snubnosed eel	*Simenchelys parasiticus*
Softnose skate	*Arhynchobatis asperrimus*
Southern bastard cod	*Pseudophycis barbata*
Southern blue whiting	*Micromesistius australis*
Southern boarfish	*Pseudopentaceros richardsoni*
Southern kingfish	*Rexea solandri*
Southern pigfish	*Congiopodus leucopaecilus*
Southern spiny dogfish	*Squalus acanthias*
Sowfish	*Paristiopterus labiosus*
Speckled sole	*Peltorhamphus latus*
Spiky oreo	*Neocyttus rhomboidalis*
Spineback	*Notacanthus sexspinis*
Spiny dogfish	*Squalus acanthias*
Spiny flathead	*Hoplichthys haswelli*
Spiny seadragon	*Solegnathus spinosissimus*
Spinyfin	*Diretmoides parini*
Spotted dogfish	*Mustelus lenticulatus*
Spotted flounder	*Azygopus pinnifasciatus*
Spotted gurnard	*Pterygotrigla picta*
Spotted oreo	*Pseudocyttus maculatus*
Spotted smoothhound	*Mustelus lenticulatus*
Spotted stargazer	*Genyagnus monopterygius*
Spotted warehou	*Seriolella punctata*
Spotty	*Notolabrus celidotus*
Sprats	*Sprattus antipodum & S. muelleri*
Squaretail	*Tetragonurus cuvieri*
Squashed face rattail	*Nezumia namatahi*
Stargazer	*Kathetostoma giganteum*
Stargazer	*Kathetostoma* sp.
Supanose rattail	*Caelorinchus supernasutus*
Swell shark	*Cephaloscyllium isabellum*
Swollenhead conger	*Bassanago bulbiceps*
Tarakihi	*Nemadactylus macropterus*
Threadfin slickhead	*Talismania longifilis*
Thresher shark	*Alopias vulpinus*
Tope	*Galeorhinus galeus*
Trevally	*Pseudocaranx dentex*
Trumpeter	*Latris lineata*
Tubeshoulder	*Persparsia kopua*
Turbot	*Colistium nudipinnis*
Two saddle rattail	*Caelorinchus biclinozonalis*
Umbrella conger	*Gnathophis umbrellabia*
Unicorn rattail	*Trachyrincus aphyodes*
Upturned snout rattail	*Caelorinchus mycterismus*
Velvet rattail	*Trachonurus gagates*
Violet cod	*Antimora rostrata*
Violet squid	*Histioteuthis* spp.
Viper fish	*Chauliodus sloani*
Warty oreo	*Allocyttus verrucosus*

Index 1 — *continued*

Common name	Scientific name
Warty squid	*Moroteuthis ingens*
Warty squid	*Moroteuthis robsoni*
Waryfishes	*Scopelosaurus* spp.
Whiptail ray	*Dasyatis thetidis*
White brotula	*Cataetyx* sp.
White rattail	*Trachyrincus longirostris*
White warehou	*Seriolella caerulea*
Widenose chimaera	*Rhinochimaera pacifica*
Witch	*Arnoglossus scapha*
Yellow boarfish	*Pentaceros decacanthus*
Yellow cod	*Parapercis gilliesi*
Yellow flounder	*Rhombosolea leporina*
Yellow weaver	*Parapercis gilliesi*
Yellowbelly flounder	*Rhombosolea leporina*
Yelloweyed mullet	*Aldrichetta forsteri*
Yellowtail	*Trachurus novaezelandiae*
Yellowtail kingfish	*Seriola lalandi*

Index 2: Alphabetical list of families and species

Group	Family	Species or species group
Cephalopoda	Cranchiidae	Cranchiidae
	Histioteuthidae	*Histioteuthis* spp.
	Loliginidae	*Sepioteuthis australis*
	Mastigoteuthidae	*Mastigoteuthis* spp.
	Octopoteuthidae	Octopoteuthidae
	Ommastrephidae	*Nototodarus gouldi*
		Nototodarus sloanii
		Ommastrephes bartrami
		Todarodes filippovae
	Onychoteuthidae	*Moroteuthis ingens*
		Moroteuthis robsoni
Chondrichthyes	Alopiidae	*Alopias vulpinus*
	Arhynchobatidae	*Arhynchobatis asperrimus*
		Bathyraja shuntovi
		Pavoraja asperula
		Pavoraja spinifera
	Callorhynchidae	*Callorhinchus milii*
	Centrophoridae	*Centrophorus squamosus*
		Deania calcea
	Chimaeridae	*Chimaera* sp. ?C
		Chimaera sp. D
		Hydrolagus novaezealandiae
		Hydrolagus sp. A
		Hydrolagus sp. B2
		Hydrolagus sp. C
	Chlamydoselachidae	*Chlamydoselachus anguineus*
	Dalatiidae	*Dalatias licha*
	Dasyatidae	*Dasyatis brevicaudata*
		Dasyatis thetidis
	Etmopteridae	*Etmopterus baxteri*
		Etmopterus lucifer
		Etmopterus pusillus
	Hexanchidae	*Heptranchias perlo*
		Notorynchus cepedianus
	Myliobatidae	*Myliobatis tenuicaudatus*
	Narkidae	*Tylphlonarke* spp.
	Oxynotidae	*Oxynotus bruniensis*
	Pseudotriakidae	*Gollum attenuatus*
	Rajidae	*Raja hyperborea*
		Raja innominata
		Raja nasuta
	Rhinochimaeridae	*Harriotta raleighana*
		Rhinochimaera pacifica
	Scyliorhinidae	*Apristurus* spp.
		Cephaloscyllium isabellum
		Halaelurus dawsoni
	Somniosidae	*Centroscymnus plunketi*
		Centroscymnus coelolepis
		Centroscymnus crepidater
		Centroscymnus owstoni
	Sphyrnidae	*Sphyrna zygaena*
	Squalidae	*Squalus acanthias*
		Squalus mitsukurii
	Torpedinidae	*Torpedo fairchildi*
	Triakidae	*Galeorhinus galeus*

Index 2 — *continued*

Group	Family	Species or species group
Chondrichthyes (*cont.*)	Triakidae (*cont.*)	*Mustelus lenticulatus*
Cyclostomes	Myxinidae	Myxinidae
Teleostei	Alepisauridae	*Alepisaurus ferox*
	Alepocephalidae	*Alepocephalus antipodianus*
		Alepocephalus australis
		Rouleina sp.
		Talismania longifilis
		Xenodermichthys copei
	Anoplogastridae	*Anoplogaster cornuta*
	Argentinidae	*Argentina elongata*
	Arripidae	*Arripis trutta*
	Astronesthidae	Astronesthidae
	Bathylagidae	*Bathylagus* spp.
	Berycidae	*Beryx decadactylus*
		Beryx splendens
		Centroberyx affinis
	Bothidae	*Arnoglossus scapha*
		Lophonectes gallus
		Neoachiropsetta milfordi
	Bramidae	*Brama brama*
	Bythitidae	*Cataetyx* sp.
	Carangidae	*Pseudocaranx dentex*
		Seriola lalandi
		Trachurus declivis
		Trachurus murphyi
		Trachurus novaezelandiae
	Carapidae	*Echiodon cryomargarites*
	Centrolophidae	*Centrolophus niger*
		Hyperoglyphe antarctica
		Icichthys australis
		Schedophilus sp.
		Seriolella brama
		Seriolella caerulea
		Seriolella punctata
		Tubbia tasmanica
	Ceratiidae	*Cryptopsaras couesi*
	Chauliodontidae	*Chauliodus sloani*
	Chaunacidae	*Chaunax pictus*
	Cheilodactylidae	*Nemadactylus douglasi*
		Nemadactylus macropterus
	Chlorophthalmidae	*Bathypterois* spp.
		Chlorophthalmus nigripinnis
	Clupeidae	*Sardinops neopilchardus*
		Sprattus antipodum & S. muelleri
	Congiopodidae	*Alertichthys blacki*
		Congiopodus coriaceus
		Congiopodus leucopaecilus
	Congridae	*Bassanago bulbiceps*
		Bassanago hirsutus
		Conger verreauxi & C. wilsoni
		Gnathophis habenatus & G. umbrellabia
	Diodontidae	*Allomycterus jaculiferus*
	Diretmidae	*Diretmoides parini*
		Diretmus argenteus

Index 2 — *continued*

Group	Family	Species or species group
Teleostei (*cont.*)	Macrouridae (*cont.*)	*Lepidorhynchus denticulatus*
		Lucigadus nigromaculatus
		Macrourus carinatus
		Malacocephalus laevis
		Mesobius antipodum
		Nezumia namatahi
		Odontomacrurus murrayi
		Trachonurus gagates
		Trachyrincus aphyodes & T. longirostris
	Malacosteidae	Malacosteidae
	Melamphaidae	Melamphaidae
	Melanonidae	*Melanonus gracilis*
		Melanonus zugmayeri
	Melanostomiidae	*Opostomias micripnus*
	Merlucciidae	*Lyconus* spp.
		Maruronus novaezelandiae
		Merluccius australis
	Monacanthidae	*Parika scaber*
	Moridae	*Antimora rostrata*
		Auchenoceros punctatus
		Austrophycis marginata
		Halargyreus johnsonii
		Laemonema spp.
		Lepidion microcephalus
		Lepidion schmidti
		Mora moro
		Pseudophycis bachus
		Pseudophycis barbata & P. breviuscula
		Tripterophycis gilchristi
	Mugilidae	*Aldrichetta forsteri*
	Mullidae	*Upeneichthys lineatus*
	Myctophidae	*Lampanyctus* spp.
		Myctophidae
	Nemichthyidae	*Avocettina* spp.
		Nemichthys scolopaceus
	Neoscopelidae	*Neoscopelus* spp.
	Nomeidae	*Cubiceps caeruleus & C. baxteri*
	Notacanthidae	*Notacanthus sexspinis*
	Notosudidae	*Scopelosaurus* spp.
	Notothenidae	*Notothenia* spp. & *Paranotothenia magellanica*
	Ophidiidae	*Brotulotaenia crassa*
		Genypterus blacodes
	Oreosomatidae	*Allocyttus niger*
		Allocyttus verrucosus
		Neocyttus rhomboidalis
		Pseudocyttus maculatus
	Paralepidae	*Magnisudis prionosa*
	Pentacerotidae	*Paristiopterus labiosus*
		Pentaceros decacanthus
		Pseudopentaceros richardsoni
		Zanclistius elevatus
	Percophidae	*Hemerocoetes* spp.
	Photichthyidae	*Photichthys argenteus*

Index 2 — *continued*

Group	Family	Species or species group
Teleostei (*cont.*)	Pinguipedidae	*Parapercis colias*
		Parapercis gilliesi
	Platytroctidae	*Persparsia kopua*
	Pleuronectidae	*Azygopus pinnifasciatus*
		Colistium guntheri
		Colistium nudipinnis
		Pelotretis flavilatus
		Peltorhamphus latus
		Peltorhamphus novaezeelandiae
		Peltorhamphus tenuis
		Rhombosolea leporina
		Rhombosolea plebeia
		Rhombosolea tapirina
	Polyprionidae	*Polyprion americanus*
		Polyprion oxygeneios
	Psychrolutidae	*Cottunculus nudus*
		Neophrynichthys angustus
		Neophrynichthys latus
		Psychrolutes microporos
	Regalecidae	*Regalecus glesne*
	Scombridae	*Scomber australasicus*
	Scorpaenidae	*Helicolenus* spp.
		Trachyscorpia capensis
	Serranidae	*Caesioperca lepidoptera*
		Lepidoperca aurantia
	Serrivomeridae	*Serrivomer* spp.
	Sparidae	*Pagrus auratus*
	Sternoptychidae	Sternoptychidae
	Stomiidae	*Stomias* spp.
	Synaphobranchidae	*Diastobranchus capensis*
		Simenchelys parasiticus
	Syngnathidae	*Solegnathus spinosissimus*
	Synodontidae	*Bathysaurus ferox*
	Tetragonuridae	*Tetragonurus cuvieri*
	Tetraodontidae	*Sphoeroides pachygaster*
	Trachichthyidae	*Hoplostethus atlanticus*
		Hoplostethus mediterraneus
		Paratrachichthys trailli
	Trachipteridae	*Trachipterus trachypterus*
	Trichiuridae	*Benthodesmus* spp.
		Lepidopus caudatus
	Triglidae	*Chelidonichthys kumu*
		Lepidotrigla brachyoptera
		Pterygotrigla picta
	Uranoscopidae	*Genyagnus monopterygius*
		Kathetostoma giganteum
		Kathetostoma sp.
		Xenocephalus armatus
	Zeidae	*Capromimus abbreviatus*
		Cyttus novaezealandiae
		Cyttus traversi
		Zenopsis nebulosus
		Zeus faber
	Zoarcidae	*Melanostigma gelatinosum*