

## APPENDIX 1

### PRELIMINARY ANNOTATED CHECKLIST OF SEAMOUNT FISHES

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This checklist presents fishes that have been reported to occur on seamounts. It is preliminary in the sense that not all sources of such information have been used so far. Species are presented in phylogenetic order following the classification of Eschmeyer's (1998) Catalog of Fishes, online version of November 2003 (<http://www.calacademy.org/research/ichthyology/catalog/>). Scientific names, authors and English common names follow FishBase ([www.fishbase.org](http://www.fishbase.org)) version of March 2004. The additional information has been reviewed and updated for the purpose of this study and is now archived in FishBase. Reference numbers mentioned in the text are linked to standard citations in Appendix 5.

#### **Conventions and concepts used in the text:**

Trophic level gives a preliminary indication of the position of a species in the food web. Resilience describes the ability of a species to recover from low population densities: high resilience species need less than 1.4 years to double in numbers, whereas species with very low resilience need more than 14 years. Importance refers to the usage and interest of fisheries in the respective species. Not available means that in March 2004 the respective information was not available to us, which in most cases means that it did not exist.

**Abbreviations used in the text:** TL = total length; SL = standard length; FL = fork length; Fec = fecundity, i.e., number of eggs or offspring produced per female and year; K = von Bertalanffy growth coefficient; rm = intrinsic rate of population increase; tm = age at first maturity; tmax = maximum age.

## Myxini (hagfishes)

### Myxiniformes (hagfishes)

#### Myxinidae Hagfishes

*Eptatretus okinoseanus* (Dean, 1904)

Northwest Pacific: Taiwan (Ref. 5193) and southern Japan. Max. length 80 cm TL. Habitat: bathydemersal, depth range: 300-1020 m. Trophic level: 3.8. Resilience: not available. Importance: not available.

*Myxine garmani* Jordan & Snyder, 1901

Northwest Pacific: southern Japan. Max. length 54 cm TL. Habitat: bathydemersal, depth range: 500-800 m. Trophic level: 4.3. Resilience: not available. Importance: not available.

## Holocephali (chimaeras)

### Chimaeriformes (chimaeras)

#### Chimaeridae Shortnose chimaeras or ratfishes

*Chimaera monstrosa* Linnaeus, 1758 Rabbit fish

Eastern Atlantic: northern Norway and Iceland, Skagerrak and Kattegat south to Morocco including western Mediterranean (some isolated records from eastern part), Azores and Madeira Islands. Records from South Africa are questionable. Reported from Oshima, Japan (FMNH 89161) (Ref. 27954). Max. length 150 cm TL. Habitat: bathydemersal, depth range: 40-1000 m.

Bathydemersal to benthopelagic generally between 300 and 500 m depth. Found in the upper continental slope. Usually found in deeper waters in southern latitudes, while making a summer inshore migration up to 40-100 m in the northern areas. Sluggish, usually occurring in small groups. Feeds mainly on bottom-living invertebrates. The single dorsal spine is sharp and pointed, and although only mildly venomous can inflict a painful wound. Oviparous. Males have a clasper on the forehead that is probably used to hold on to the female during copulation. Egg capsules are about 17 cm long; young look alike adults and hatch when 10 cm long. Common by-catch when trawling for shrimps in the North Sea or Skagerrak. Trophic level: 3.5. Resilience: not available. Importance: minor commercial.

*Chimaera owstoni* Tanaka, 1905

Northwest Pacific: Sagami Bay, Japan. Max. length not available. Habitat: bathydemersal, depth range: not available. Trophic level: 3.3. Resilience: not available. Importance: not available.

*Chimaera phantasma* Jordan & Snyder, 1900 Silver chimaera

Western Pacific: Japan, Korea, China, Taiwan, and the Philippines. Max. length 100 cm TL. Habitat: bathydemersal, depth range: 90-540 m. Found in continental shelves and upper slopes (Ref. 9904, 11230); shelf edge, 60-550 m (Ref. 11230). Feeds mainly on small benthic animals (Ref. 637). Used in Chinese medicine (Ref. 12166). Caught with bottom trawls but utilization uncertain except as fish balls (kamaboko) in Japan (Ref. 9904). Trophic level: 3.5. Resilience: not available. Importance: commercial.

*Hydrolagus affinis* (Capello, 1868) Smalleyed rabbitfish

Northeast Atlantic: Rockall Trough along Ireland, northern Bay of Biscay and off Portugal. Reported from Iceland (Ref. 12462). Northwest Atlantic: Newfoundland in Canada to Cape Cod in USA. Probably has a much wider distribution. Possibly occurring off the Cape in South Africa and off Mozambique (Ref. 11228). Max. length 130 cm TL. Habitat: bathydemersal, depth range: 300-2400 m. Found on continental slopes and down to deep-sea plains. Feeds on small fishes and invertebrates (Ref. 6680). Trophic level: 4.0. Resilience: not available. Importance: of no interest.

## Elasmobranchii (sharks and rays)

### Hexanchiformes (frill and cow sharks)

#### Chlamydoselachidae Frilled sharks

*Chlamydoselachus anguineus* Garman, 1884 Frilled shark

Wide-ranging but with patchy distribution. Western Indian Ocean: off South Africa. Western Pacific: off Japan to New Zealand. Eastern Pacific: southern California, USA to northern Chile. Eastern Atlantic: northern Norway to northern Namibia, possibly the eastern Cape of Good Hope, South Africa. Three specimens have been recorded from the western Atlantic (Ref. 13608). Max. length 200 cm TL. Habitat: bathydemersal, depth range: 0-1570 m. An uncommon primitive shark (Ref. 26346) found on outer continental and insular shelves and upper slopes, usually between 120 and 1,280 m but occasionally caught at the surface (Ref. 247). Feeds on other sharks, squid and bony fish (Ref. 26346). Ovoviviparous (Ref. 50449). Not dangerous but teeth are sharp enough to inflict lacerations on the hands of the unwary scientist examining its mouth (Ref. 247). Incidental in bottom trawl catches and utilized as fishmeal and as food fish (Ref. 247). Trophic level: 4.2. Resilience: Very low (Fec=8). Importance: minor commercial.

#### Hexanchidae Cow sharks

*Heptranchias perlo* (Bonnaterre, 1788) Sharpnose sevengill shark

Circumglobal in tropical and temperate seas, excluding the northeast Pacific (Ref. 13573). Western Atlantic: North Carolina, USA and northern Gulf of Mexico to Cuba, then from Venezuela to Argentina (Ref. 6871). Eastern Atlantic: Morocco to Namibia, including the Mediterranean Sea. Indian Ocean: southwestern India, Aldabra Island, southern Mozambique, and South Africa. Western Pacific: Japan to China, Indonesia, Australia and New Zealand. Southeast Pacific: off northern Chile. Max. length 137 cm TL. Habitat: bathydemersal, depth range: 0-1000 m. Found on the outer continental and insular shelves and upper slopes in depths of 100 to 400 (Ref. 13573, 11230), also inshore and down to 1,000 m (Ref. 6871, 11230). Feeds on

small sharks and rays, small bony fish, shrimps, crabs, lobsters, squid, and cuttlefish (Ref. 5578). Very active and aggressive when captured and quick to bite but too small to be very dangerous to people (Ref. 247). Liver utilized as a source of oil. Maximum length may reach 214 cm, but this is uncertain. Trophic level: 4.2. Resilience: Very Low (Fec=9). Importance: minor commercial.

*Hexanchus griseus* (Bonnaterre, 1788) Bluntnose sixgill shark

Almost circumglobal in tropical and temperate seas (Ref. 13573). Western Atlantic: North Carolina to Florida (USA) and northern Gulf of Mexico to northern Argentina. Eastern Atlantic: Iceland and Norway to Namibia, including the Mediterranean. Indian Ocean: Madagascar, Mozambique, and South Africa. Western Pacific: eastern Japan to New Zealand and Hawaii. Eastern Pacific: Aleutian Islands, Alaska to Baja California, Mexico; also Chile. Highly migratory species, Annex I of the 1982 Convention on the Law of the Sea (Ref. 26139, 41819). Max. length 482 cm TL. Habitat: reef-associated, depth range: 0-2000 m. A deepwater species of the outer continental and insular shelves and upper slopes (Ref. 6871). Juveniles may be found close inshore (Ref. 6871). Found on the bottom by day, moving to the surface at night to feed, and where it may take longlines set for other species (Ref. 45445). Feeds on a wide range of marine organisms, including other sharks, rays, chimaeras, bony fish, squids, crabs, shrimps, carrion, and even seals. Marketed fresh, frozen, or dried salted; also utilized as a source of oil and fishmeal. Not known to have attacked people without provocation (Ref. 247). Give birth to almost 100 young (Ref. 35388). Trophic level: . Resilience: Low (Fec= 22-108). Importance: commercial.

## Lamniformes (mackerel sharks)

### Alopiidae Thresher sharks

*Alopias superciliosus* (Lowe, 1841) Bigeye thresher

Circumtropical. Western Atlantic: New York, USA southward to Bahamas and Cuba; Panama to Guyana (Ref. 6871). Eastern Atlantic: Portugal to Angola, including the Mediterranean. Indo-Pacific: Arabian Sea, Madagascar, South Africa, southern Japan, Taiwan, northern Viet Nam (Ref. 13570), New Caledonia, northwestern coast of Australia, New Zealand and north and south of the Hawaiian Islands Eastern Pacific: southern California (USA), Costa Rica and Panama (Ref. 9253), Galapagos Islands Highly migratory species, Annex I of the 1982 Convention on the Law of the Sea (Ref. 26139). Max. length 487.9848 cm TL. Habitat: pelagic, depth range: 0-500 m. Occurs in coastal waters over continental shelves, sometimes close inshore in shallow waters, and on the high seas far from land (Ref. 247). Depth range to at least 500 m (Ref. 247). Feeds on pelagic and bottom fishes and squids (Ref. 247). Ovoviviparous, embryos feeding on yolk sac and other ova produced by the mother (Ref. 50449). Stuns its prey with its long caudal fin (Ref. 247). Utilized for human consumption, liver oil for vitamins, skin for leather, and fins for shark-fin soup (Ref. 247). Marketed fresh and may be broiled, baked or grilled, but unsuitable for steaming, boiling or frying; meat may be salted and dried (Ref. 9987). Trophic level: 4.5. Resilience: Very low (Fec=2-4). Importance: commercial.

### Odontaspidae Sand tigers

*Odontaspis ferox* (Risso, 1810) Smalltooth sand tiger

Eastern Atlantic: Gulf of Gascony, Madeira, Morocco, Mediterranean; also Cape Verde (Ref. 27000). Western Atlantic: Yucatan Shelf, Mexico (Ref. 9939). Indo-West Pacific: off South Africa and Maldives, Madagascar, southern Japan, Australia, and New Zealand (Ref. 13568). Expected to occur in the Western Central Pacific (Ref. 13568). Central Pacific: off Hawaii (Ref. 13568). Eastern Pacific: off southern California, USA and Baja California, Mexico (Ref. 13568). Max. length 367 cm TL. Habitat: bathydemersal, depth range: 10-530 m. Found on or near the bottom of the continental and insular shelves and upper slopes (Ref. 6871). Sometimes in shallow water (Ref. 6871). Feeds on small bony fishes, squids, and crustaceans (Ref. 13568). Uses its long body cavity and large, oily liver to regulate buoyancy. Ovoviviparous, embryos feeding on yolk sac and other ova produced by the mother (Ref. 50449). Not implicated in attacks on people (Ref. 247). Flesh utilized for human consumption and liver for its high squalene content (Ref. 247). Trophic level: 4.2. Resilience: not available. Importance: commercial.

## **Carcharhiniformes (ground sharks)**

### **Carcharhinidae Requiem sharks**

*Prionace glauca* (Linnaeus, 1758) Blue shark

Circumglobal in temperate and tropical waters. Western Atlantic: Newfoundland, Canada to Argentina. Central Atlantic. Eastern Atlantic: Norway to South Africa, including the Mediterranean. Indo-West Pacific: East Africa to Indonesia, Japan, Australia, New Caledonia, and New Zealand. Eastern Pacific: Gulf of Alaska to Chile. Probably the widest ranging chondrichthyan. Highly migratory species, Annex I of the 1982 Convention on the Law of the Sea (Ref. 26139). Max. length 400 cm TL. Habitat: pelagic, depth range: 0-350 m. Oceanic, but may be found close inshore where the continental shelf is narrow (Ref. 6871). Usually found to at least 150 m (Ref. 26938). Reported from estuaries (Ref. 26340). Feeds on bony fishes, small sharks, squids, pelagic red crabs, cetacean carrion, occasional sea birds and garbage (Ref. 5578). Viviparous (Ref. 50449). May travel considerable distances (one specimen tagged in New Zealand was recaptured 1,200 km off the coast of Chile) (Ref. 26346). Potentially dangerous to humans (Ref. 6871, 13513). Marketed fresh, dried or salted, and frozen; meat utilized for consumption, hides for leather and fins for soup (Ref. 9987). Sexually mature at 250 cm long and 4-5 years old. The female gives birth up to 80 young measuring 40 cm long, gestation lasts almost a year (Ref. 35388). Produces from 4 to 135 young a litter (Ref. 26938). Trophic level: 4.5. Resilience: Very low (rm=0.031; K=0.16; tm=6; tmax=20; Fec=4- 135). Importance: minor commercial.

### **Proscylliidae Finback catsharks**

*Gollum attenuatus* (Garrick, 1954) Slender smooth-hound

Southwest Pacific: occurs off New Zealand and on rises between New Zealand and the east coast of Australia, New Caledonia, and Fiji just south of the Western Central Pacific. Placement in Proscylliidae provisional, probably will be relocated in Pseudotriakidae. Max. length 107 cm TL. Habitat: bathydemersal, depth range: 120-660 m. An uncommon to common deep-water bottom-dwelling shark found on the outermost continental shelf and upper slope of New Zealand and on adjacent seamounts and submarine banks (Ref. 13566). Seems adapted to waters of about 10°C and 34.8 ppt salinity (Ref. 6893). Feeds on a wide variety of fishes, cephalopods, and other invertebrates (Ref. 13566). Probably in schools (Ref. 13566). Females grow slightly larger than males (Ref. 13566). Ovoviviparous, embryos feeding on yolk sac and other ova produced by the mother, uterine milk is consumed additionally (Ref. 50449). Trophic level: 4.2. Resilience: Very low (Fec=2). Importance: of no interest.

### **Scyliorhinidae Cat sharks**

*Apristurus manis* (Springer, 1979) Ghost catshark

Northwest Atlantic: off Massachusetts, USA. Northeast Atlantic: Porcupine Bank west of Ireland. Nominal records of *Apristurus profundorum* from off Mauritania (Ref. 6479) possibly pertain to this species also. Max. length 85 cm TL. Habitat: bathydemersal, depth range: 658-1740 m. Found on the continental slopes. Oviparous (Ref. 50449). Trophic level: 3.8. Resilience: not available. Importance: of no interest.

*Apristurus profundorum* (Goode & Bean, 1896) Deepwater catshark

Western Atlantic: off Delaware Bay, USA and off Suriname (Ref. 13608). Eastern Atlantic: Morocco and northwest Africa (Ref. 40643). Max. length not available. Habitat: bathydemersal, depth range: down to 1492 m. Inhabits the continental slope. Maximum length unknown, adolescent at 51 cm TL. Oviparous (Ref. 50449). Trophic level: 3.1. Resilience: not available. Importance: of no interest.

*Galeus melastomus* Rafinesque, 1810 Blackmouth catshark  
 Northeast Atlantic: Faeroe Islands and Trondheim, Norway southward to Senegal. Mediterranean Sea. Max. length 75 cm TL. Habitat: bathydemersal, depth range: 55-1200 m. Found on the outer continental shelves and upper slopes. Feeds mainly on bottom invertebrates, including shrimps and cephalopods, but also on small pelagic bony fishes (lanternfishes) and other small elasmobranchs. Oviparous, with up to 13 eggs present in the oviducts at one time. Utilized fresh and dried-salted for human consumption, and for leather. Trophic level: 4.2. Resilience: not available. Importance: minor commercial.

## **Squaliformes (bramble, sleeper and dogfish sharks)**

### **Centrophoridae**

*Centrophorus moluccensis* Bleeker, 1860 Smallfin gulper shark  
 Western Indian Ocean: southern Mozambique and off Natal, South Africa (Ref. 5578); India (Ref. 31367). Western Pacific: Japan (Okinawa), Indonesia (Ambon), Philippines (Ref. 31367), Australia, New Hebrides, and New Caledonia. Max. length 100 cm TL. Habitat: bathydemersal, depth range: 125-823 m. Found on the outer continental shelves and upper slopes, on or near the bottom (Ref. 247). Feeds on bony fish, as well as other dogfish sharks, squid, octopus, shrimp, and tunicates (Ref. 247). Ovoviviparous (Ref. 50449). Utilized as fishmeal (Ref. 31367). Trophic level: 4.3. Resilience: Very low (Fec=2). Importance: minor commercial.

*Deania calcea* (Lowe, 1839) Birdbeak dogfish  
 Eastern Atlantic: Iceland along Atlantic slope to Algoa Bay, South Africa (Ref. 247, 5578). Western Pacific: southern Honshu in Japan, southern Australia, New Zealand. Occurrence in the Western Central Pacific uncertain (Ref. 31367). Eastern Pacific: southern Chile to northern Peru (Ref. 38549). Max. length 122 cm TL. Habitat: bathydemersal, depth range: 60-1490 m. Found on the outer continental and insular shelves and upper slopes (Ref. 247). Usually on or near the bottom but sometimes found well above it (Ref. 5578). Apparently in large schools (Ref. 5578). Feeds on pelagic bony fish, squid, octopus and shrimp (Ref. 5578). Ovoviviparous (Ref. 50449). Trophic level: 4.2. Resilience: Very low (K=0.077-0.135; Fec=6-12; tm=25). Importance: minor commercial.

### **Dalatiidae Sleeper sharks**

*Centroscyllium ritteri* Jordan & Fowler, 1903 Whitefin dogfish  
 Northwest Pacific: endemic to Japan. Max. length 43 cm TL. Habitat: demersal, depth range: not available. A little-known distinctive deepwater dogfish, biology almost totally unknown. Trophic level: 3.7. Resilience: not available. Importance: of no interest.

*Centroscymnus owstoni* Garman, 1906 Roughskin dogfish  
 Western Central Atlantic: northern Gulf of Mexico. Western Pacific: southeastern Honshu, Japan; Australia (including Western Australia) and New Zealand. Southeast Pacific: Amber Seamount, Nasca and Sala-y-Gomez. Max. length 121 cm TL. Habitat: bathydemersal, depth range: 100-1470 m. Found on upper continental slopes, on or near the bottom (Ref. 247). Feeds on fish and cephalopods (Ref. 6871). Flesh is high in mercury (Ref. 6871). Utilized as fishmeal and source of squalene (liver oil) (Ref. 6871). Trophic level: 4.5. Resilience: not available. Importance: minor commercial.

*Dalatias licha* (Bonnaterre, 1788) Kitefin shark  
 Western Atlantic: Georges Bank and northern Gulf of Mexico. Eastern Atlantic: Iceland (Ref. 12462), Scotland, and Irish Atlantic slope to Morocco, western Mediterranean, Madeira to Cameroon. Western Indian Ocean: Mozambique and South Africa. Western Pacific: Japan, Australia, and New Zealand. Central Pacific: Hawaii. Max. length 182 cm TL. Habitat: bathydemersal, depth range: 37-1800 m. Found on outer continental and insular shelves and slopes (Ref. 247). Mainly found on or near the bottom but readily occurs well off the substrate (Ref. 247). Found singly or in small schools (Ref. 6871). Feeds mainly on deepwater bony fish, but also skates, other sharks, cephalopods and crustaceans (Ref. 5578). Used for its squalene liver oil, leather and meat, as well as for fishmeal (Ref. 6871). Trophic level: 4.2. Resilience: Low (Fec=10-20). Importance: minor commercial.

- Etmopterus gracilispinis* Krefft, 1968 Broadbanded lanternshark  
Western Atlantic: Virginia and Florida (USA), Uruguay and Argentina; reported off Suriname (Ref. 13608). Southeast Atlantic: off the eastern Cape and northern Natal in South Africa (Ref. 11228). Reports of this species are attributable to the recently described *Etmopterus compagnoi* (Ref. 36731). Max. length 35 cm TL. Habitat: bathypelagic, depth range: 70-1000 m. Found on outer continental shelves and upper slopes on or near the bottom at depths of 100 to 1,000 m; also pelagic at depths of 70 to 480 m over water 2,240 m deep off Argentina (Ref. 247). Feeds on bony fish, octopus, squid and deep-water shrimp (Ref. 5578). Trophic level: 4.3. Resilience: not available. Importance: of no interest.
- Etmopterus litvinovi* Parin & Kotlyar, 1990 Smalleye lantern shark  
Southeast Pacific. Max. length not available. Habitat: bathydemersal, depth range: down to 1050 m. Better reference needed. Holotype taken from a depth of 1,050 m (Ref. 26282). Trophic level: 4.0. Resilience: not available. Importance: not available.
- Etmopterus lucifer* Jordan & Snyder, 1902 Blackbelly lanternshark  
Southwest Atlantic: Uruguay and Argentina. Western Indian Ocean: Tanzania to South Africa. Western Pacific: Japan to New Zealand. Southeast Pacific: Amber Seamount. A small specimen from off the Kerguelen Islands needs to be verified. Some records probably based on *Etmopterus molleri* and *Etmopterus brachyurus* (Ref. 31367). Max. length 47 cm TL. Habitat: bathydemersal, depth range: 150-1250 m. Found on the outer continental and insular shelves and upper slopes (Ref. 247). Its luminescent belly may attract prey (Ref. 26346), which consists mainly of squid (reported to bite squid bigger than itself), small bony fishes, and shrimps (Ref. 247). Often caught in large schools which may suggest that the luminescence may also be used to keep the group together in the dark deep ocean (Ref. 26346). Trophic level: 4.2. Resilience: not available. Importance: of no interest.
- Etmopterus molleri* (Whitley, 1939) Slendertail lanternshark  
Western Indian Ocean: recently reported off southern Mozambique (Ref. 11228). Western Pacific: Japan, Australia, and New Zealand (Ref. 6871). Only recently recognized as distinct from *Etmopterus lucifer* (Ref. 31367). Max. length 46 cm TL. Habitat: bathydemersal, depth range: 250-860 m. Probably demersal (Ref. 31367) on upper continental slopes (Ref. 6871). Trophic level: 4.0. Resilience: not available. Importance: of no interest.
- Etmopterus princeps* Collett, 1904 Great lanternshark  
Northwest Atlantic: Nova Scotia, Canada to New Jersey, USA. Northeast Atlantic: southern Iceland along Atlantic slope to Faeroes, Hebrides, UK, English Channel, Bay of Biscay and Gibraltar, Mauritania. Nominally recorded from New Caledonia in the Western Central Pacific, but its status there needs clarification - other large species of lanternsharks (*Etmopterus baxteri* and *Etmopterus unicolor*) may be involved (Ref. 31367). Max. length 75 cm TL. Habitat: bathydemersal, depth range: 300-2213 m. Found on the continental slopes. Probably fished in the eastern Atlantic but details not known. Trophic level: 4.2. Resilience: not available. Importance: of no interest.
- Etmopterus pusillus* (Lowe, 1839) Smooth lanternshark  
Western Atlantic: northern Gulf of Mexico; southern Brazil to Argentina (Ref. 247, 6871). One specimen collected off the Guianas (Ref. 13608). Eastern Atlantic: Portugal to Namibia. Also occurs in oceanic waters between Argentina and South Africa. Western Indian Ocean: South Africa. Western Pacific: Australia (Ref. 6871), New Zealand (Ref. 26346), and Japan. Southeast Pacific: Amber Seamount, Nasca and Sala-y-Gomez. Max. length 50 cm TL. Habitat: bathydemersal, depth range: 0-1070 m. Found on or near the bottom of continental and insular slopes at depths from 275 to 1,000 m (possibly to 2,000 m); also oceanic in the south Atlantic from the surface to 710 m (Ref. 6871). Feeds on fish eggs, lanternfish, squid, and other small dogfish (Ref. 5578). Utilized dried salted for human consumption and for fishmeal (Ref. 247). Trophic level: 4.2. Resilience: not available. Importance: minor commercial.
- Etmopterus pycnolepis* Kotlyar, 1990 Dense-scale lantern shark  
Southeast Pacific. Max. length not available. Habitat: bathydemersal, depth range: down to 350 m. Holotype taken from a depth of 350 m (Ref. 26282). Trophic level: 4.0. Resilience: not available. Importance: not available.

*Mollisquama parini* Dolganov, 1984 Pocket shark  
 Southeast Pacific: Chile. Max. length not available. Habitat: bathypelagic, depth range: not available. Type specimen taken from a depth of 330 (Ref. 33021). Trophic level: 4.1. Resilience: not available. Importance: not available.

*Scymnodon ringens* Bocage & Capello, 1864 Knifetooth dogfish  
 Eastern Atlantic: along the slope from Scotland to Spain, Portugal, Senegal. Southwest Pacific: New Zealand (Ref. 26346). Max. length 110 cm TL. Habitat: bathypelagic, depth range: 200-1600 m. A rare species (Ref. 26346) inhabiting continental slopes (Ref. 247). Usually mesopelagic although taken most often near the bottom (Ref. 10717). Its razor-edged lower teeth is used to attack and dismember large prey (Ref. 247). Utilized dried salted for human consumption and for fishmeal (Ref. 247). Trophic level: 3.9. Resilience: not available. Importance: minor commercial.

*Somniosus pacificus* Bigelow & Schroeder, 1944 Pacific sleeper shark  
 North Pacific: Japan and along the Siberian coast to the Bering Sea, southern California (USA), and Baja California, Mexico. Sporadic records from the South Pacific (assignment of large southern hemisphere *Somniosus* to the North Pacific *Somniosus pacificus* is tentative) (Ref. 31367). In Australasian waters, it occurs from the seamounts south of Tasmania, the Challenger Plateau (off eastern New Zealand) and possibly from Macquarie Island (Ref. 6871). Southwest Atlantic: off Uruguay (Ref. 35864). Max. length 440 cm TL. Habitat: benthopelagic, depth range: 0-2000 m. Found on continental shelves and slopes (Ref. 247). At high latitudes, it occurs in littoral and even intertidal areas; in lower latitudes it may never come to the surface and ranges down to at least 2,000 m (Ref. 247). Feeds on bottom animals such as fishes, octopi, squids, crabs and tritons; also harbor seals and carrion (Ref. 247). The flesh contains a type of toxin which, when eaten, produces symptoms of drunkenness (Ref. 583). Possibly reaches lengths greater than 700 cm (Ref. 247). Trophic level: 4.3. Resilience: not available. Importance: of no interest.

#### **Echinorhinidae Bramble sharks**

*Echinorhinus cookei* Pietschmann, 1928 Prickly shark  
 Western Pacific: Japan (Ref. 6871), Taiwan, Palau, Australia (Ref. 6871) and New Zealand. Eastern Pacific: Hawaii, USA, Gulf of California, and from Costa Rica to Peru and Chile (Ref. 13564). Also reported in Nicaragua (Ref. 13613). Max. length 400 cm TL. Habitat: demersal, depth range: 11-1100 m. A large, sluggish shark occurring on continental and insular shelves and upper slopes (Ref. 247). Feeds on a variety of fishes, other sharks, octopi and squids (Ref. 13564). Trophic level: 4.4. Resilience: not available. Importance: minor commercial.

#### **Squalidae Dogfish sharks**

*Squalus acanthias* Linnaeus, 1758 Piked dogfish  
 Western Atlantic: Greenland to Argentina. Eastern Atlantic: Iceland and Murmansk Coast (Russia) to South Africa, including the Mediterranean and Black Sea. Western Pacific: Bering Sea to New Zealand. Reports from off New Guinea are doubtful (Ref. 6871). Eastern Pacific: Bering Sea to Chile. Max. length 160 cm TL. Habitat: benthopelagic, depth range: 0-1460 m. Possibly the most abundant living shark (Ref. 247). An inshore and offshore dogfish of the continental and insular shelf and upper slopes (Ref. 247, 11230). Usually near the bottom, but also in midwater and at the surface (Ref. 26346). Often found in enclosed bays and estuaries (Ref. 247). Reported to enter freshwater (Ref. 11980) but cannot survive there for more than a few hours (Ref. 247). Schools mainly segregated by size and sex; mixed schools also reported (Ref. 247). Feeds primarily on bony fishes, also mollusks, crustaceans and other invertebrates (Ref. 247). The only species of horned sharks that can inflict toxins with its tail. Utilized for human consumption, liver oil, vitamins, sand paper, leather, fertilizer, etc. (Ref. 247, 27436). Eaten fried, broiled, and baked (Ref. 9988). Growth is slow. At sexual maturity, males are 60-70 cm long, females 75-90cm (Ref. 35388). Gestation period is 2 years (Ref. 36731). Trophic level: 4.3. Resilience: Very low (rm=0.034; K=0.03-0.07; tm=10-30; tmax=75; Fec=1). Importance: commercial.

*Squalus blainville* (Risso, 1827) Longnose spurdog

Eastern Atlantic: Bay of Biscay to Mediterranean, Morocco, Senegal to Namibia (these records may include other species in addition to *Squalus blainville*). Although reported from the Canary Islands (e.g. Ref. 247), it is most likely based on misidentifications of *Squalus megalops* (Ref. 6808). Western Pacific: southern Japan and Taiwan. Nominal records of *Squalus blainvillei* or *Squalus fernandinus* from the western Atlantic (North Carolina, USA to northern Gulf of Mexico; Argentina), Indian Ocean (South Africa, Mozambique, Madagascar, Tanzania and India) and the Pacific (Australia, New Zealand, New Caledonia, Hawaii and northern Chile), as well as some records from the northwest Pacific and eastern Atlantic are based at least in part on *Squalus mitsukurii* and possibly other species. Whether *Squalus blainvillei* itself is as wide-ranging as reported for *blainvillei*-group dogfishes (including *Squalus mitsukurii*) remains to be determined. Max. length 100 cm TL. Habitat: demersal, depth range: 16-440 m. Found on the continental shelves and upper slopes to at least 440 m. Forms schools. Off West Africa, water temperature and salinity where this species is often found ranges from 11-18°C and 36 ppt. (at 16 to 255 m depth), respectively. Feeds on bony fishes, like denticids, mackerel and percichthyids, as well as crabs, lobsters, and octopi. Ovoviviparous, with 3 to 4 young per litter. Utilized fresh, dried salted and smoked for human consumption. Trophic level: 4.0. Resilience: Very Low (K=0.10-0.14; Fec=3). Importance: commercial.

*Squalus megalops* (Macleay, 1881) Shortnose spurdog

Eastern Indian Ocean: appears to be an Australian endemic. Dogfishes presently referred to in current literature as *Squalus megalops* appear to belong to a complex of similar species. Specimens from the different regions still need to be compared carefully (Ref. 6871). Max. length 71 cm TL. Habitat: bathydemersal, depth range: 30-750 m. Found on the outer continental shelves and upper slopes, on or near the bottom (Ref. 31367); sublittoral below 130 m (Ref. 11230). Young mostly pelagic off the outer shelves (Ref. 5578). Aggregations by sex are regularly observed (Ref. 6871). Feeds on bony fishes, shrimps and other crustaceans, cephalopods and other elasmobranchs (Ref. 247). Utilized for human consumption, the flesh most appealing dried salted or smoked (Ref. 6871). Also consumed fresh (Ref. 31367). Minimum depth reported from Ref. 6808. Gestation period is 2 years (Ref. 36731). Trophic level: 4.3. Resilience: Very low (Fec=2). Importance: commercial.

**Torpediniformes (electric rays)**

**Torpedinidae Electric rays**

*Torpedo microdiscus* Parin & Kotlyar, 1985 Smalldisk torpedo

Southeast Pacific: Chile. Max. length not available. Habitat: demersal, depth range: not available. Ovoviviparous (Ref. 50449). Trophic level: 3.7. Resilience: not available. Importance: not available.

*Torpedo nobiliana* Bonaparte, 1835 Atlantic torpedo

Eastern Atlantic: Scotland (rare in North Sea) to Morocco, whole of Mediterranean, but not Black Sea; Cap Blanc in Mauritania to Gulf of Guinea, São Tomé Island; Walvis Bay, Namibia to Mossel Bay, South Africa (Ref. 5578). Western Atlantic: Nova Scotia, Canada south to Brazil (Ref. 26340). Max. length 180 cm TL. Habitat: benthopelagic, depth range: 2-800 m. Juveniles benthic over soft bottoms or near coral reefs (Ref. 12951) from 10-150 m; adults are semi-pelagic to pelagic, swimming in the water column and have been reported to migrate over long distances (Ref. 2803). Feeds mainly on pelagic and benthic bony fishes and small sharks (Ref. 5578). Ovoviviparous (Ref. 50449). Packs a powerful electric shock of up to 220 volts (Ref. 9710). Trophic level: 4.5. Resilience: Low (up to 60 offspring only). Importance: of no interest.

*Torpedo semipelagica* Parin & Kotlyar, 1985 Semipelagic torpedo

Southeast Pacific: Chile. Max. length not available. Habitat: demersal, depth range: not available. Ovoviviparous (Ref. 50449). Trophic level: 3.7. Resilience: not available. Importance: not available.

## Rajiformes (skates and rays)

### Rajidae Skates

- Dipturus oxyrinchus* (Linnaeus, 1758) Longnosed skate  
 Eastern Atlantic: central Norway to Senegal, including the Faeroes, Skagerrak, Mediterranean, and the Canary and Madeira islands. Max. length 150 cm TL. Habitat: bathydemersal, depth range: 15-900 m. Found in deeper slope waters (Ref. 4426), but mainly around 200 m (Ref. 3167). Found on sand and sand- rock bottoms (Ref. 6808). Feed on all kinds of bottom animals (Ref. 3167). Minimum depth reported taken from Ref. 6808. Become sexually mature at a length of about 120 cm (Ref. 35388). Oviparous. Distinct pairing with embrace. Young may tend to follow large objects, such as their mother (Ref. 205). Eggs are oblong capsules with stiff pointed horns at the corners deposited in sandy or muddy flats (Ref. 205). Egg capsules are 14.0-23.5 cm long and 11.0-12.0 cm wide (Ref. 41251, 41304). Trophic level: 3.5. Resilience: not available. Importance: minor commercial.
- Raja maderensis* Lowe, 1838 Madeiran ray  
 Eastern Atlantic: endemic to Madeira; possibly Azores. Nominal records from western Africa and the Canary Islands could not be verified and are probably misidentifications. Max. length 85 cm TL. Habitat: bathydemersal, depth range: down to 500 m. Feeds on all kinds of benthic animals (Ref. 3167). Oviparous (Ref. 50449). Eggs have horn-like projections on the shell (Ref. 205). Trophic level: 3.5. Resilience: not available. Importance: commercial.
- Rajella bigelowi* (Stehmann, 1978) Bigelow's ray  
 Eastern Atlantic: Rockall Trough along Ireland, northern Bay of Biscay, northern Morocco and Azores, off Rio de Oro (Western Sahara) and Conakry (Guinea). Western Atlantic: Grand Banks off Newfoundland in Canada southward to northeastern Gulf of Mexico. Distribution probably much wider in deep water. Max. length 55 cm TL. Habitat: bathydemersal, depth range: 650-4156 m. Found on continental slopes and deepwater rises (Ref. 3167). Oviparous. Distinct pairing with embrace. Young may tend to follow large objects, such as their mother (Ref. 205). Eggs are oblong capsules with stiff pointed horns at the corners deposited in sandy or muddy flats (Ref. 205). Egg capsules are 5.3 cm long and 3.0 cm wide (Ref. 41249). Trophic level: 3.3. Resilience: not available. Importance: not available.
- Rostroraja alba* (Lacepède, 1803) Bottlenosed skate  
 Eastern Atlantic: Ireland and England southward round the Cape (South Africa) to central Mozambique (Ref. 5578), including western Mediterranean (to Tunisia and western Greece). Max. length 230 cm TL. Habitat: demersal, depth range: 30-600 m. Inhabit shelf and slope waters (Ref. 4426). Found on sand and rock-sand bottom (Ref. 6808). A bottom-predator of bony fishes, other elasmobranchs, fish offal, crabs, shrimps, mysids, octopi, and cuttlefish (Ref. 5578). Minimum depth reported taken from Ref. 4426. Maximum length for female is 202 cm (Ref. 41333). Oviparous. Distinct pairing with embrace. Young may tend to follow large objects, such as their mother (Ref. 205). Eggs are oblong capsules with stiff pointed horns at the corners deposited in sandy or muddy flats (Ref. 205). Egg capsules are 12.5-18.3 cm long and 10.0-13.9 cm wide (Ref. 41250). About 55-156 eggs are produced per individual annually (Ref. 41250). Trophic level: 4.4. Resilience: Low (Fec=55). Importance: minor commercial.

## Actinopterygii (ray-finned fishes)

### Notacanthiformes (halosaurs and deep-sea spiny eels)

#### Halosauridae Halosaurs

- Aldrovandia affinis* (Günther, 1877) Gilbert's halosaurid fish  
 Circumglobal. Eastern Atlantic: Madeira to Western Sahara, off South Africa. Western Atlantic: Gulf of Mexico and South America. Indo-Pacific: Zanzibar and Maldives; near Japan (Ref. 26165). Probably Somalia (Ref. 30573). Eastern Central Pacific (Ref. 9305). Max. length 55 cm TL. Habitat: bathydemersal, depth range: 730-2560 m. Occurs on the middle and lower slope primarily above the 4°C isotherm. Hovers within a few meters of substrate, parallel to it or inclined at varying angles. Feeds on polychaetes, pelecypods, amphipods and other benthic prey (Ref. 6727). Trophic level: 3.3. Resilience: not available. Importance: not available.

*Aldrovandia oleosa* Sulak, 1977

Eastern Atlantic: Gulf of Guinea region. Western Atlantic: off Virginia, USA to Bahamas, Venezuela and the Guianas. Eastern Central Pacific (Ref. 9305) and Chile (Ref. 9068). Max. length 52 cm TL. Habitat: bathypelagic, depth range: 1200-1900 m. Found at bathyal depths. Feeds on polychaetes. Males exhibits black tubular anterior nostrils and enlarged posterior nostrils when approaching breeding condition. Trophic level: 3.1. Resilience: not available. Importance: not available.

*Aldrovandia phalacra* (Vaillant, 1888) Hawaiian halosaurid fish

Probably circumglobal. Western Atlantic: New England, USA to Bahamas and off southern Brazil. Eastern Atlantic: northern Portugal to Guinea and off South Africa. Eastern Pacific: Hawaii and Chile (Ref. 9068). Western Indian Ocean: southern India. Max. length 50 cm TL. Habitat: bathydemersal, depth range: 500- 2300 m. Found at bathyal to abyssal depths. Feeds on amphipods, mysids, copepods and polychaetes. Sexually dimorphic, maturing males have enlarged nostrils, anterior nostrils are black and tubular. Females outnumber males 4:1 in western North Atlantic. Trophic level: 3.2. Resilience: not available. Importance: not

*Aldrovandia rostrata* (Günther, 1878)

Eastern Atlantic: Western Sahara and along the eastern slope of the Mid-Atlantic Ridge from 7°-5°N. Western Atlantic: off Bahamas and west of the Mid-Atlantic Ridge. Max. length 50.8 cm TL. Habitat: bathypelagic, depth range: 2690-5029 m. Inhabits the abyssal depths (Ref. 4448). Trophic level: 3.5. Resilience: not available. Importance: not available.

*Halosauropsis macrochir* (Günther, 1878) Abyssal halosaur

Eastern Atlantic: Ireland to Mauritania and South Africa. Western Atlantic: Canada to 25°N, and off southern Brazil. Western Pacific: Australia (Ref. 7300), New Zealand and Japan (Ref. 37335). Also known from Western Indian Ocean. Max. length 90 cm TL. Habitat: bathydemersal, depth range: 1100-3300 m. Found on the lower slope, continental rise and upper abyss, primarily between 4° and 2°C isotherms. Feeds on polychaetes, crustaceans, echinoderms and echiurids. Hovers above or rests on bottom. Long slender pectorals are commonly held erect pointing upward and forward, these may serve a sensory function (Ref. 6727). Trophic level: 3.3. Resilience: not available. Importance: not available.

**Notacanthidae Deep-sea spiny eels**

*Notacanthus chemnitzii* Bloch, 1788 Spiny eel

Worldwide except in tropical waters (Ref. 27363). North Atlantic: Gulf of Mexico and Cape Blanc, Mauritania north to Davis Strait, Canada and Iceland. South Atlantic: off South Africa. Southeast Pacific: off Chile. Eastern Indian Ocean: Australia (Ref. 7300). Southwest Pacific: New Zealand (Ref. 5755). Max. length 120 cm TL. Habitat: benthopelagic, depth range: 125-2500 m. Not uncommon in depths around 180 m off Iceland and Greenland. Individuals with nearly ripe eggs have been found in late autumn off Iceland. Mostly found at depths well below 200 m, but enters slightly shallower water on Grand Banks in Canada (Ref. 7251). Feeds primarily on sea anemones (Ref. 4449). Trophic level: 3.5. Resilience: not available. Importance: of no interest.

*Polyacanthonotus challengerii* (Vaillant, 1888) Longnose tapirfish

North Pacific: Japan, Bering Sea and British Columbia, Canada (Ref. 6885), also south to Oregon, USA (Ref. 35578). South Pacific: known form one specimen collected near New Zealand. Southeast Atlantic: South Africa. Southern Ocean: known from one specimen collected near the Kerguelen Islands. Mainly antitropical (Ref. 5165) but reported from Azores, Canary Islands and Morocco (Ref. 6728). Max. length 60 cm TL. Habitat: bathypelagic, depth range: 1300-3700 m. Feeds on benthic invertebrates, especially amphipods, polychaetes and mysids (Ref. 6728). Trophic level: 3.2. Resilience: not available. Importance: not available.

**Anguilliformes (eels and morays)****Chlopsidae False morays**

*Chlopsis bicolor* Rafinesque, 1810 Bicoloured false moray  
 Western Atlantic: southern Florida in USA and Mexico to southern Brazil. Eastern Atlantic: Morocco to Mauritania including northern Mediterranean. Max. length 42 cm TL. Habitat: demersal, depth range: 80- 365 m. Occurs on shelf and upper slope, burrowing on muddy bottoms (Ref. 3250). Trophic level: 3.1. Resilience: not available. Importance: not available.

**Colocongridae**

*Coloconger scholesi* Chan, 1967 Indo-Pacific shorttail conger  
 Indo-Pacific: southern Mozambique and Natal, South Africa, but probably much more widespread, also South China Sea and east Australia. Max. length 51 cm TL. Habitat: bathydemersal, depth range: not available. Inhabits deep waters (Ref. 5213). Trophic level: 3.5. Resilience: not available. Importance: not available.

**Congridae Conger and garden eels**

*Ariosoma marginatum* (Vaillant & Sauvage, 1875) Large-eye conger  
 Eastern Central Pacific: Hawaii. Northwestern Pacific: Ladd Seamount. Max. length 38 cm TL. Habitat: demersal, depth range: down to 490 m. Sand-dwelling in the shallows to 490 m and can be seen at night with head protruding obliquely from the sand (Ref. 26145). Trophic level: 3.1. Resilience: not available. Importance: not available.

*Conger conger* (Linnaeus, 1758) European conger  
 Eastern Atlantic: Norway and Iceland to Senegal. Also in the Mediterranean and Black Sea. Max. length 300 cm TL. Habitat: demersal, depth range: 0-500 m. Found on rocky and sandy bottoms (Ref. 12382). It stays near the coast when young and moves toward deeper waters upon reaching adulthood (Ref. 5377). A nocturnal (Ref. 12382) predator of fish, crustaceans, and cephalopods (Ref. 6521). Marketed fresh and frozen. Eaten fried and baked (Ref. 9988). Like other species of the group, it reproduces only once in its life (Ref. 5377). Sexually mature at an age of 5-15 years. Spawn in summer in the Atlantic off Portugal and in the Mediterranean. Produces 3-8 million of eggs (Ref. 35388). Trophic level: 4.3. Resilience: Low (K=0.06; tm=5-15; Fec=3,000,000). Importance: commercial.

*Conger oligoporus* Kanazawa, 1958  
 Eastern Central Pacific: Hawaii. Max. length not available. Habitat: reef-associated, depth range: 2-305 m. Trophic level: 3.6. Resilience: not available. Importance: not available.

*Gnathophis andriashevi* Karmovskaya, 1990  
 Southeast Pacific: western part of the Sala y Gomez Ridge. Max. length not available. Habitat: bathydemersal, depth range: 260-330 m. Trophic level: 3.1. Resilience: not available. Importance: not available.

*Gnathophis cinctus* (Garman, 1899) Hardtail conger  
 Eastern Pacific: southern California, USA to Peru. Max. length 42 cm TL. Habitat: demersal, depth range: 9-336 m. A soft bottom inhabitant. Reported to burrow into loose sand, and appears to be fairly resistant to chemical preparations used for collecting fish (Ref. 2850). Bottom feeding predators devour conger eels when encountered in the open (Ref. 4525). Trophic level: 4.5. Resilience: not available. Importance: not available.

*Gnathophis codoniphorus* Maul, 1972  
 Northeast Atlantic: Azorean slope (Meteor Seamount). Max. length not available. Habitat: demersal, depth range: not available. Trophic level: 3.1. Resilience: not available. Importance: of no interest.

*Gnathophis mystax* (Delaroche, 1809) Thinlip conger

Eastern Atlantic: southern Portugal to Morocco, including the Mediterranean. Max. length 60 cm TL. Habitat: demersal, depth range: 80-800 m. Found on muddy or sandy bottoms of the continental slope. Feeds on benthic invertebrates and probably small fishes. Trophic level: 3.6. Resilience: not available. Importance: minor commercial.

*Gnathophis parini* Karmovskaya, 1990

Southeast Pacific: Sala y Gomez Ridge. Max. length 13.7 cm TL. Habitat: bathydemersal, depth range: 540- 560 m. Maximum length based on a juvenile specimen. Trophic level: 3.0. Resilience: not available. Importance: not available.

*Gnathophis smithi* Karmovskaya, 1990

Southeast Pacific: seamount located at the junction of the Nazca and Sala y Gomez ridges. Max. length 41.1 cm TL. Habitat: demersal, depth range: 145-250 m. Trophic level: 3.9. Resilience: not available. Importance: not available.

**Derichthyidae Longneck eels**

*Nessorhamphus ingolfianus* (Schmidt, 1912) Duckbill oceanic eel

Eastern Atlantic: France to Morocco; off the Cape, South Africa (Ref. 6592). Also known from temperate and subtropical latitudes of the western Atlantic, southwestern Indian, and southwest Pacific. Max. length 59.8 cm TL. Habitat: bathypelagic, depth range: down to 1800 m. Feeds mainly on crustaceans. Trophic level: 3.5. Resilience: not available. Importance: not available.

**Muraenidae Moray eels**

*Gymnothorax maderensis* (Johnson, 1862) Sharktooth moray

Eastern Atlantic: Madeira and Benin. Western Atlantic: Bermuda and the West Indies. North Carolina, USA (Ref. 26938). Max. length 100 cm TL. Habitat: demersal, depth range: 85-200 m. Occurs on shelf, rocks and deep coral zones (Ref. 3256). Trophic level: 4.1. Resilience: not available. Importance: commercial.

*Gymnothorax punctatofasciatus* Bleeker, 1863

Indo-West Pacific: Philippines, Malaysia, and Indonesia. Reported from India (Ref. 45255). Max. length 50.5 cm TL. Habitat: reef-associated, depth range: not available. Trophic level: 3.5. Resilience: not available. Importance: not available.

**Nemichthyidae Snipe eels**

*Nemichthys scolopaceus* Richardson, 1848 Slender snipe eel

Worldwide in tropical and temperate seas. Western Atlantic: Nova Scotia, Canada and northern Gulf of Mexico to Brazil. Eastern Atlantic: Spain to South Africa, including western Mediterranean (Ref. 3247); reported from Iceland (Ref. 12462). Regularly found in the Skagerrak (Ref. 35387). Northwest Pacific: Japan (Ref. 6885) and Arafura Sea (Ref. 9819). Eastern Pacific: Alaska (Ref. 6885) to Chile (Ref. 9068), including the Gulf of California (Ref. 32364). Max. length 130 cm TL. Habitat: bathypelagic, depth range: 91-2000 m. Occur in midwater, usually below 400 m and occasionally in shallow water in the northern part of its range. Feed on crustaceans while swimming with its mouth open (Ref. 5377). Oviparous, with planktonic leptocephali (Ref. 32364). Degenerative changes in males and females suggest semelparity (Ref. 32364). Trophic level: 3.5. Resilience: not available. Importance: of no interest.

**Nettastomatidae Duckbill eels**

*Facciolella castlei* Parin & Karmovskaya, 1985

Southeast Pacific: Chile. Max. length not available. Habitat: demersal, depth range: down to 230 m. Type specimen collected at 230 m depth. Trophic level: 3.5. Resilience: not available. Importance: not available.

*Nettastoma falcinaris* Parin & Karmovskaya, 1985

Southeast Pacific: Chile. Max. length not available. Habitat: bathydemersal, depth range: not available. Type specimen taken from 1070-1100 m depth (Ref. 33021). Trophic level: 3.5. Resilience: not available. Importance: not available.

*Nettastoma parviceps* Günther, 1877 Duck-billed eel

Indo-Pacific: bitemperate distribution, recorded from Japan, Hawaii, eastern Australia, and southeastern Africa. Southeast Pacific: Chile (Ref. 9068). Rare or absent in equatorial waters. Max. length 82 cm TL. Habitat: bathydemersal, depth range: 60-1190 m. Inhabits the continental slope (Ref. 7300). Trophic level: 3.5. Resilience: not available. Importance: of no interest.

**Ophichthidae Snake eels***Scolecenchelys profundorum* (McCosker & Parin, 1995)

Southeast Pacific: known only from the Nazca Ridge. Max. length 33.43 cm TL. Habitat: bathydemersal, depth range: down to 310 m. Trophic level: 3.8. Resilience: not available. Importance: not available.

**Serrivomeridae Sawtooth eels***Serrivomer beanii* Gill & Ryder, 1883 Bean's sawtoothed eel

Atlantic Ocean: on both sides, between 60°N and 20°S (Ref. 5237); in the eastern Atlantic, reported to range further north to Iceland (Ref. 12462) and further south to off the Cape and Natal in South Africa (Ref. 5236). Indian Ocean: Reunion (Ref. 33390). Western Pacific: Australia (Ref. 7300). Max. length 78 cm TL. Habitat: bathypelagic, depth range: 10-4550 m. Exhibits vertical migrations during the night. Feeds on shrimps, other crustaceans and small fishes (Ref. 6722). Trophic level: 3.9. Resilience: not available. Importance: of no interest.

**Synaphobranchidae Cutthroat eels***Ilyophis brunneus* Gilbert, 1891 Muddy arrowtooth eel

Atlantic, Indian and Pacific (Ref. 5235). Circumtropical, except the Northeast Pacific (Ref. 26895). Max. length 58 cm TL. Habitat: bathypelagic, depth range: 450-3120 m. Found along the slope and upper abyssal zone. Feeds on annelids and crustaceans. Trophic level: 3.2. Resilience: not available. Importance: of no interest.

*Synaphobranchus affinis* Günther, 1877 Grey cutthroat

Circumglobal, except the northeast Pacific (Ref. 26895). Eastern Atlantic: Liberia to northern Angola (Ref. 5235). Max. length 160 cm TL. Habitat: bathydemersal, depth range: 290-2334 m. Found on the upper continental slope. Trophic level: 4.0. Resilience: not available. Importance: of no interest.

*Synaphobranchus brevidorsalis* Günther, 1887 Shortdorsal cutthroat eel

Circumtropical, except the northeast Pacific (Ref. 26895). Indo-Pacific: Zanzibar and Maldives, Japan and Australia (Ref. 7300). Western Central Atlantic: Gulf of Mexico and off Suriname (Ref. 13608). Max. length 111 cm TL. Habitat: bathydemersal, depth range: 900-3000 m. Occurs on the continental slope (Ref. 7300). Trophic level: 4.0. Resilience: not available. Importance: not available.

*Synaphobranchus kaupii* Johnson, 1862 Kaup's arrowtooth eel

Eastern Atlantic: Faroes and Iceland to Cape Verde, Nigeria, Namibia (Ref. 27121), and South Africa. Western Atlantic: Greenland to Bahamas; also Brazil. Indo-West Pacific: Japan and Australia (Ref. 7300); Hawaii and the Indian Ocean. Max. length 100 cm TL. Habitat: bathydemersal, depth range: 236-3200 m. Found on the continental slope near the upper limit of abyssal zone (Ref. 6726). Probably most common in 800 to 2,000 m (Ref. 5235). Feeds mainly on Decapoda, Natantia, amphipods, but also fishes and cephalopods (Ref. 6726). Trophic level: 4.1. Resilience: not available. Importance: of no interest.

## Saccopharyngiformes (swallowers and gulpers)

### Eurypharyngidae      Gulpers

*Eurypharynx pelecyanoides*      Vaillant, 1882      Pelican eel

All temperate and tropical seas. Eastern Pacific: ranges from northern California to Peru (Ref. 35600). Max. length 100 cm TL. Habitat: bathypelagic, depth range: 500-7500 m. Feed mainly on crustaceans, but also take fishes, cephalopods, and other invertebrates (Ref. 2850, 11041). Oviparous, planktonic eggs hatch into planktonic leptocephalus larvae (Ref. 6719, 35600). Degenerative changes in males and females suggest semelparity (Ref. 35600). Trophic level: 4.5. Resilience: not available. Importance: of no interest.

### Saccopharyngidae      Swallowers

*Saccopharynx ampullaceus*      (Harwood, 1827)      Gulper eel

Eastern Atlantic: scattered records from Greenland to Cape Verde. Also known from Western Atlantic. Max. length 161 cm TL. Habitat: bathypelagic, depth range: 1000-3000 m. Feeds on fishes. Oviparous, reduction of jaws and complete loss of teeth in sexually mature specimens of both sexes. Mature males with greatly enlarged olfactory organs (Ref. 6718). Trophic level: 4.5. Resilience: not available. Importance: not available.

## Osmeriformes (smelts)

### Alepocephalidae      Slickheads

*Alepocephalus agassizii*      Goode & Bean, 1883      Agassiz' slickhead

Eastern Atlantic: Iceland and Greenland, west of British Isles, Morocco south to Mauritania. Western Atlantic: Davis Strait south to Honduras. Max. length 79 cm SL. Habitat: bathydemersal, depth range: 600- 2500 m. Found over sand and clay bottoms. Gregarious. Feeds mostly on ctenophores, but also crustaceans, echinoderms and polychaetes. Trophic level: 3.4. Resilience: not available. Importance: of potential interest.

*Alepocephalus australis*      Barnard, 1923      Small scaled brown slickhead

Almost circumglobal in temperate waters of the southern hemisphere. Eastern Atlantic: possibly widely distributed from the Gulf of Guinea to South Africa. Western Atlantic: at about 39° to 10°N. Max. length 60 cm SL. Habitat: bathydemersal, depth range: 1000-2600 m. Trophic level: 3.2. Resilience: not available. Importance: of potential interest.

*Alepocephalus bairdii*      Goode & Bean, 1879      Baird's smooth-head

Eastern Atlantic: Greenland and Iceland southward to 17°N. Western Atlantic: Greenland to Grand Banks, Canada and 29°52'N, 77°09'W. Max. length 100 cm SL. Habitat: bathydemersal, depth range: 365-1700 m. Found over ooze and sand bottoms (Ref. 4736). Feeds mostly on coelenterates, but also decapods, tunicates and fishes (Ref. 4736). Trophic level: 3.7. Resilience: Low (K=0.077; tmax=38). Importance: minor commercial.

*Alepocephalus tenebrosus*      Gilbert, 1892      California slickhead

North Pacific: Bering Sea to at least California, USA. Southeast Pacific: Chile (Ref. 35724). Max. length 61 cm TL. Habitat: bathydemersal, depth range: 46-5500 m. Found near or on bottoms (Ref. 2850). Feed on small crustaceans. Regarded as inferior food because of its soft, fleshy texture (Ref. 4525). Oviparous, with mesopelagic and bathypelagic larvae (Ref. 35724). Trophic level: 3.5. Resilience: Medium (K=0.30). Importance: not available.

*Bajacalifornia megalops*      (Lütken, 1898)      Bigeye smooth-head

Eastern Atlantic: southern Greenland and Iceland to Azores and 22°S. Western Atlantic: 40°N to the equator. Southeast Pacific: Chile (Ref. 9068). Indian Ocean. Max. length 40 cm SL. Habitat: bathypelagic, depth range: 250-3200 m. Mesopelagic to benthopelagic (Ref. 2711). Adults usually in 820-1,425 m (Ref. 2711). Trophic level: 3.5. Resilience: not available. Importance: of no interest.

*Bathytroctes oligolepis* (Krefft, 1970)

Eastern Central Atlantic: 7°32'N to 10°57'S. Indian Ocean: Mascareigne Plateau. Max. length 32.3 cm SL. Habitat: bathypelagic, depth range: 1300-2100 m. Trophic level: 3.1. Resilience: not available. Importance: not available.

*Narctetes stomias* (Gilbert, 1890) Blackhead salmon

North and South Atlantic, continental slope of southern Africa, Indian Ocean including Arabian Sea, Gulf of Oman, Mascarene Plateau, Ninety East Ridge, Broken Ridge, Exmouth Plateau and some other seamounts, eastern and western Pacific Ocean (north and south). Max. length 57.5 cm SL. Habitat: bathypelagic, depth range: 1500-2300 m. Trophic level: 3.4. Resilience: not available. Importance: of no interest.

*Photostylus pycnopterus* Beebe, 1933 Starry smooth-head

Circumglobal. Eastern Atlantic: Iceland, and from France south to Morocco including Madeira and Azores Islands; Mauritania south to Guinea Bissau (Ref. 4460). Reported from Western Australia and New South Wales (Ref. 7300). Max. length 11 cm SL. Habitat: bathypelagic, depth range: 1000-2000 m. Found in areas with steeply inclined slopes. Ovarian eggs relatively large (1.8 mm in diameter) and few (96 in a female of 10 cm). Trophic level: 3.0. Resilience: Low (Fec=96). Importance: of no interest.

*Rouleina attrita* (Vaillant, 1888) Softskin smooth-head

Circumglobal, widely distributed in the Atlantic, most Indian Ocean submarine ridges, Subantarctic, North Pacific and tropical western and eastern Pacific. Max. length 48 cm SL. Habitat: bathypelagic, depth range: 1400-2100 m. Found between 1,400-2,100 m in the Atlantic Ocean; 1,120-1,650 m in the Indian Ocean; and 800-1,400 m in the Pacific Ocean (Ref. 5003). Trophic level: 3.3. Resilience: not available. Importance: not available.

*Rouleina maderensis* Maul, 1948 Madeiran smooth-head

Eastern Atlantic: off western Scotland, Madeira and the Azores southward to Liberia. Indian Ocean: off South Africa and Mascarene Plateau. Southeast Pacific: Chile (Ref. 9068). Elsewhere, Northwest Atlantic and western tropical Pacific. Max. length 32 cm SL. Habitat: bathypelagic, depth range: 595-1450 m. Trophic level: 3.1. Resilience: not available. Importance: of no interest.

*Talifornia antillarum* (Goode & Bean, 1896) Antillean smooth-head

Circumglobal, tropical and subtropical. Western Atlantic: Gulf of Mexico and Caribbean. Eastern Atlantic: Morocco south to Angola. Northwest Pacific: Ryukyu Trough (Ref. 559). Southeast Pacific: Chile (Ref. 9068). Max. length 16 cm SL. Habitat: bathypelagic, depth range: 455-1460 m. Trophic level: 3.2. Resilience: not available. Importance: of no interest.

*Talifornia bussingi* Sazonov, 1989

Southeast Pacific: Chile. Max. length 18.6 cm SL. Habitat: bathydemersal, depth range: 250-780 m. Trophic level: 3.3. Resilience: not available. Importance: not available.

**Argentinidae Argentines or herring smelts***Argentina sphyraena* Linnaeus, 1758 Argentine

Eastern Atlantic: northern Norway to Western Sahara including southern Iceland, Faroe Islands, Shetlands and western Mediterranean. Max. length 35 cm SL. Habitat: bathydemersal, depth range: 50-500 m. Relatively common on the continental shelf and upper slope, probably schools near the bottom. Feeds on bottom-living polychaetes, mollusks and crustaceans, also pelagic invertebrates and fishes. Spawns from winter to spring in the Mediterranean and from March to July off the British coasts. Its eggs and larvae are pelagic (Ref. 4773). They become sexually mature at a length of 12-13cm. With a smell like cucumber (Ref. 35388). Trophic level: 3.6. Resilience: not available. Importance: minor commercial.

*Glossanodon danieli* Parin & Shcherbachev, 1982

Southeast Pacific: Chile. Max. length 12.3 cm SL. Habitat: bathydemersal, depth range: 310-420 m. Trophic level: 3.0. Resilience: not available. Importance: not available.

*Glossanodon leioglossus* (Valenciennes, 1848) Small-toothed argentine  
Eastern Atlantic: southern Spain to Cape Blanc in Mauritania including western Mediterranean. Max. length 20 cm TL. Habitat: bathydemersal, depth range: not available. Found on the outer continental shelf and upper slope, probably near the bottom. Feeds on pelagic crustaceans. Spawns from winter to spring in the Mediterranean (Ref. 4773). Trophic level: 3.5. Resilience: not available. Importance: not available.

*Glossanodon nazca* Parin & Shcherbachev, 1982  
Southeast Pacific: Chile. Max. length not available. Habitat: bathydemersal, depth range: down to 330 m. Trophic level: 3.2. Resilience: not available. Importance: not available.

### **Bathylagidae Deep-sea smelts**

*Bathylagus euryops* Goode & Bean, 1896 Goiter blacksmelt  
Eastern Atlantic: Iceland, Faeroes and Shetlands to Portugal. Probably antitropical and present in other oceans. Max. length not available. Habitat: bathypelagic, depth range: 500-1500 m. Sometimes caught in large aggregations. Feeds on plankton. Eggs and larvae are pelagic (Ref. 6345). Trophic level: 3.0. Resilience: not available. Importance: not available.

*Lipolagus ochotensis* (Schmidt, 1938) Eared blacksmelt  
Northwest Pacific: Suruga Bay in Japan, Sea of Okhotsk (Ref. 6885) and the Bering Sea. Northeast Pacific: off British Columbia, Canada to northern Baja California, Mexico (Ref. 6885). Southwest Pacific: Australia (Ref. 7300). Max. length 16 cm SL. Habitat: bathypelagic, depth range: 0-6100 m. Oviparous. With planktonic eggs and larvae (Ref. 35604). Trophic level: 3.4. Resilience: not available. Importance: not available.

*Melanolagus bericoides* (Borodin, 1929)  
Atlantic, Indian and Pacific: widely distributed in tropical and subtropical waters. Eastern Pacific: California Current region (Ref. 35604). Max. length 20 cm SL. Habitat: bathypelagic, depth range: 730-850 m. Usually caught singly, but also in small aggregations (Ref. 6345). Feed on plankton (Ref. 6345). Oviparous, with planktonic eggs and larvae (Ref. 35604). Trophic level: 3.4. Resilience: not available. Importance: of no interest.

### **Microstomatidae**

*Nansenia ardesiaca* Jordan & Thompson, 1914  
Indo-West Pacific. Max. length 20 cm SL. Habitat: bathydemersal, depth range: 260-553 m. Trophic level: 3.3. Resilience: not available. Importance: of no interest.

### **Platyroctidae Tubeshoulders**

*Normichthys operosus* Parr, 1951 Multipore searsid  
Eastern Atlantic: Iceland and western part of British Isles to Portugal including Azores Island (northern and western boundaries apparently following the 1,000 m isotherm for 4°C and the southern boundary for 5°C); and from the Canary Islands to Senegal, Gulf of Guinea and Angola (Ref. 4461). Max. length 16 cm SL. Habitat: bathypelagic, depth range: down to 1000 m. Trophic level: 3.2. Resilience: not available. Importance: not available.

*Sagamichthys abei* Parr, 1953 Shining tubeshoulder  
Western Pacific: Japan. Eastern Pacific: British Columbia, Canada (52°N) to Baja California (27°N), and from Peru (16°S) to Chile (39°S). Also from the southeast Pacific (Ref. 2850). Max. length 33 cm TL. Habitat: bathypelagic, depth range: 300-915 m. Young migrate in association with *Cyclothone signata* to within 200 m of the surface at night and feed extensively on small crustaceans (Ref. 4525). Oviparous, with large mesopelagic larvae (Ref. 35760). Trophic level: 3.1. Resilience: not available. Importance: not available.

**Stomiiformes (lightfishes and dragonfishes)****Gonostomatidae      Bristlemouths***Bonapartia pedaliota*      Goode & Bean, 1896

Eastern Atlantic: Rockall Trough, rare north of Gulf of Cadiz, Spain (Ref. 4769); Canary Islands to Gulf of Guinea (Ref. 4463). Western Atlantic: in tropical waters. Indian Ocean: in tropical waters. Max. length 7.2 cm SL. Habitat: bathypelagic, depth range: 100-700 m. Mesopelagic species, showing marked stratification of size with depth, with the largest individuals deepest (Ref. 4869). Exhibits diel color change, darkening slightly at night (Ref. 4769). Feeds on zooplankton. Trophic level: 3.4. Resilience: not available. Importance: of no interest.

*Cyclothone braueri*      Jespersen & Tåning, 1926      Garrick

Atlantic, Indian and South Pacific: in tropical and subtropical waters, including the Mediterranean. Also known from the temperate North Atlantic as far as 66°N and in the sub-Antarctic water south of Australia. Max. length 2.6 cm SL. Habitat: bathypelagic, depth range: 10-2000 m. Oceanic, precise depth range dependent upon developmental stage, latitude, season (Ref. 4769). Generally horizontally oriented (Ref. 4769). Feeds on small zooplankton, mostly copepods (Ref. 5162). Sexually dimorphic with large females and small males (Ref. 9503). Sex ratio vary with size groups but is about 1:1 around spawning. Trophic level: 3.0. Resilience: Medium (tmax=1; Fec=200). Importance: of no interest.

*Cyclothone microdon*      (Günther, 1878)      Veiled anglemouth

Circumglobal. Atlantic Ocean: widely distributed throughout the area (Ref. 4463), including the Gulf of Mexico (Ref. 27768). Indian and Pacific: in tropical and austral regions (Ref. 4463). Southern Ocean: probably circum-Antarctic between the Antarctic Polar Front and the Antarctic continental shelf (Ref. 5162). Max. length 7.6 cm TL. Habitat: bathypelagic, depth range: 200-2700 m. An oceanic, deep mesopelagic to bathypelagic species (Ref. 4769). Precise depth range dependent upon developmental stage, latitude, season (Ref. 4769). Does not exhibit diel vertical migrations (Ref. 4769). Feeds mainly on copepods (Ref. 4769). Trophic level: 3.0. Resilience: not available. Importance: of no interest.

*Cyclothone pallida*      Brauer, 1902      Tan bristlemouth

Atlantic, Indian and Pacific: in tropical to temperate waters. Southern Ocean: Indian Ocean sector south of Australia. Max. length 4.8 cm SL. Habitat: bathypelagic, depth range: 400-1500 m. Oceanic, precise depth range dependent upon developmental stage, latitude, season (Ref. 4769). Does not exhibit diel vertical migrations (Ref. 4769). Lipid content is 2.3 % in fresh body weight and wax ester is 34.0 % in total lipids (Ref. 9193). Trophic level: 3.2. Resilience: Medium (tm=3.5). Importance: of no interest.

*Gonostoma bathyphilum*      (Vaillant, 1884)

Eastern Atlantic: scattered records from 65°30'N, 30°30'W (Ref. 4769) to Namibia; also off Cape Point, South Africa (Ref. 3991). Western Central Atlantic: between 20°N and 5°S. Austral Atlantic and Pacific: between 30° to 35°S. Max. length 15 cm SL. Habitat: bathypelagic, depth range: 700-3000 m. There is marked stratification of size with depth and no diel vertical migrations (Ref. 4769). Initial photophore develops at about 1.1 cm SL (Ref. 4769). Trophic level: 4.5. Resilience: not available. Importance: of no interest.

*Gonostoma denudatum*      Rafinesque, 1810

Eastern Atlantic: Portugal south to Angola including the Azores and the Mediterranean. Also off southern Africa extending from the Atlantic slopes area to about 8°W, southern limit to about 37°S (Ref. 3991). Western Central Atlantic: 20°N - 5°S. Max. length 14 cm SL. Habitat: bathypelagic, depth range: 100-700 m. Exhibits diel vertical migrations, juveniles and adults in 400-700 m by day and 100-200 m by night (Ref. 4769). Photophores developing in fishes over 18-35 mm SL (Ref. 4769). Trophic level: 3.3. Resilience: not available. Importance: of no interest.

*Gonostoma elongatum* Günther, 1878 Elongated bristlemouth fish

Worldwide. Eastern Atlantic: scattered records from Iceland (Ref. 4769) south to Cape Verde and Gulf of Guinea; also between 30°S-35°S. Western Atlantic: Gulf of Mexico (Ref. 27768). North Atlantic: 65°- 30°N. Indo-Pacific: in tropical and subtropical waters. Eastern Pacific: found in California and Baja California (Ref. 35800), and Chile (Ref. 9068). Indian Ocean, tropical and subtropical waters (Ref. 47377). Max. length 27.5 cm TL. Habitat: bathypelagic, depth range: 25-3385 m. Occur between 100-200 m and 500-800 m at night and 25-600 m and 1,250-1,500 m during the day (Ref. 4463). Feed on crustaceans and small fishes (Ref. 4769). Photophores develop in fishes over 6-22 mm SL (Ref. 4769). Protandric hermaphrodite, oviparous with planktonic eggs and larvae (Ref. 35800). Trophic level: 4.0. Resilience: not available. Importance: of no interest.

*Manducus maderensis* (Johnson, 1890)

Eastern Atlantic: Senegal, Madeira, and Cape Verde; off southern Africa, ca. 19°S, 5°W (Ref. 3991). Western Atlantic: eastern coast of the United States, Bahamas, Straits of Florida, Gulf of Mexico, Suriname, and Brazil (Ref. 37039). Max. length 27.9 cm SL. Habitat: bathypelagic, depth range: down to 850 m. Exhibits diel vertical migrations (Ref. 4769); found between 400-800 m during the day and near the surface at night (Ref. 3991). Trophic level: 3.5. Resilience: not available. Importance: of no interest.

**Phosichthyidae Lightfishes**

*Polymetme andriashevi* Parin & Borodulina, 1990

Southeast Pacific: known only from two seamounts of the Sala y Gomez Ridge and southeastern Pacific. Max. length 20.9 cm SL. Habitat: bathydemersal, depth range: 545-600 m. Trophic level: 4.5. Resilience: not available. Importance: not available.

*Polymetme corythaeola* (Alcock, 1898)

Indo-West Pacific: Gulf of Aden and East Africa to Japan and the Tasman Sea (Ref. 41740). Also Atlantic and eastern Pacific. Max. length 26 cm SL. Habitat: benthopelagic, depth range: 165-800 m. Benthopelagic off continental and island slopes and sea-mounts (Ref. 4778). Probably does not exhibit diel vertical migrations (Ref. 4778). Minimum depth reported from Ref. 4778. Trophic level: 4.5. Resilience: not available. Importance: not available.

**Sternoptychidae**

*Argyripnus electronus* Parin, 1992

Southeast Pacific: seamounts of the Sala y Gomez submarine ridge. Max. length not available. Habitat: bathydemersal, depth range: 545-600 m. Collected from seamounts (Ref. 31826). Trophic level: 3.1. Resilience: not available. Importance: of no interest.

*Argyripnus iridescens* McCulloch, 1926

Southwest Pacific. Max. length 14 cm TL. Habitat: bathypelagic, depth range: not available. Found in the continental slope (Ref. 7300). Trophic level: 3.1. Resilience: not available. Importance: not available.

*Argyropelecus aculeatus* Valenciennes, 1850 Lovely hatchetfish

Eastern Atlantic: Portugal to Senegal; reported from Namibia (Ref. 27121). Western Atlantic: 40°N-10°N and 15°S-35°S; specimens taken off the Guianas (Ref. 13608). Indian Ocean: 0°-35°S. Western Pacific: 35°N-35°S. Southeast Pacific: 30°S-35°S. Max. length 7.5 cm SL. Habitat: bathypelagic, depth range: 100- 600 m. An oceanic and mesopelagic species concentrated at 300-600 m by day and 100-300 by night (Ref. 4462, 4739). A selective dusk-time feeder mainly on conchoecid ostracods, to lesser extent on copepods, decapod larvae, fish larvae, etc (Ref. 4739). Adult photophore developing at about 15 mm SL (Ref. 4739). Trophic level: 3.5. Resilience: not available. Importance: of no interest.

- Argyrolepecus gigas* Norman, 1930 Hatchetfish  
 Eastern Atlantic: Portugal to South Africa; northern record from south Iceland (Ref. 4739). Western Atlantic: 40°N-40°S, including the Gulf of Mexico (Ref. 27768). One record from the Patagonian region of Argentina (Ref. 27363). Indian Ocean: 0°- 40°S. Eastern Pacific: 15°S-40°S. Western Pacific: 20°N- 40°S. Max. length 12 cm SL. Habitat: bathypelagic, depth range: 300-650 m. An oceanic and mesopelagic species (Ref. 4739). No indication of diel migration (Ref. 4739). Adult complement of photophores acquired at about 1.4 cm SL (Ref. 4739). Trophic level: 3.1. Resilience: not available. Importance: of no interest.
- Argyrolepecus hemigymnus* Cocco, 1829 Half-naked hatchetfish  
 Eastern Atlantic: north of British Isles to South Africa, including western Mediterranean. Western Atlantic: New Jersey, USA to Argentina (Ref. 26340). Eastern Pacific: throughout the California Current area, seaward of the continental shelf (Ref. 35838). Tropical and subtropical waters of all oceans (Ref. 47377). Max. length 3.9 cm SL. Habitat: bathypelagic, depth range: 100-700 m. Oceanic (Ref. 4739) and mesopelagic, mainly at 250-650 m (Ref. 4054). Adults make marked vertical migrations (Ref. 4739). Found singly or in small groups (Ref. 4739). An opportunistic feeder at dusk on calanoid copepods, small fishes, etc (Ref. 4739). Sexual dimorphism with regard to body size (Ref. 5168), the males being slightly smaller than the females (Ref. 8966). Oviparous, with planktonic eggs and larvae (Ref. 35838). Occurs between 200 and 700 m depth during the day, concentrated between 350 and 550 m, and between 100 and 650 m at night, preferring a depth between 150 and 380 m (Ref. 47377). Trophic level: 3.3. Resilience: High (tm=1; tmax=1). Importance: of no interest.
- Argyrolepecus sladeni* Regan, 1908 Sladen's hatchet fish  
 Atlantic, Indian and Pacific: in tropical waters. Eastern Atlantic: Cape Blanc, Mauritania to Namibia. Eastern Pacific: Oregon to southern California in the USA (Ref. 265). Southeast Pacific: Chile (Ref. 9068). Max. length 7 cm TL. Habitat: bathypelagic, depth range: 0-2926 m. Found in 50-600 m during the day and 100-375 m at night (Ref. 4054). Feed on copepods (Ref. 6885). Oviparous, with planktonic eggs and larvae (Ref. 35838). Trophic level: 3.1. Resilience: not available. Importance: of no interest.
- Maurolicus muelleri* (Gmelin, 1789) Pearlsides  
 Eastern Atlantic: Iceland and Norway to Senegal, including the western Mediterranean; also from Democratic Republic of the Congo to Namibia. Western Atlantic: Gulf of Maine to the Gulf of Mexico, Caribbean Sea and the Straits of Magellan. Southeast Pacific: Chile (Ref. 9068). Western Pacific. Max. length 8 cm TL. Habitat: bathypelagic, depth range: 0-1524 m. Oceanic, found to depths of at least 1,524 m. A cyclic selective feeder of copepods and euphausiids (Ref. 4739). Lipid content is 5.5 % in fresh body weight and wax ester is 15.3 % in total lipids (Ref. 8966). They become sexually mature when 1 year old. Spawning takes place in March - September, producing 200-500 eggs, floating in the surface (Ref. 35388). Trophic level: 3.0. Resilience: Medium (K=0.88; Fec=200-500). Importance: minor commercial.
- Maurolicus rudjakovi* Parin & Kobylansky, 1993  
 Southeast Pacific: Nasca Ridge seamounts. Max. length 5.9 cm SL. Habitat: bathypelagic, depth range: not available. Trophic level: 3.1. Resilience: not available. Importance: not available.
- Maurolicus weitzmani* Parin & Kobylansky, 1993  
 Western Atlantic: Fundy Bay, Canada to Gulf of Mexico. Eastern tropical Atlantic: Along the slope of Africa, between 11°N and 6°S, also at seamounts of Vavilov Ridge. Midwater records are also known the Equatorial Atlantic westward to 45°W. Max. length 5.2 cm SL. Habitat: bathypelagic, depth range: not available. Trophic level: 3.4. Resilience: not available. Importance: not available.
- Polyipnus aquavitus* Baird, 1971  
 Western Pacific: Australia, New Zealand (Ref. 7300) and Papua New Guinea (Ref. 6771). Max. length 3.53 cm SL. Habitat: benthopelagic, depth range: 120-1150 m. Trophic level: 3.2. Resilience: not available. Importance: not available.

- Polyipnus clarus* Harold, 1994  
 Western Atlantic: Gulf of Mexico and the Caribbean Sea, in the Gulf Stream as far north as the Scotian Shelf and in the Gulf of Maine. Max. length 6 cm SL. Habitat: bathydemersal, depth range: down to 833 m. Trophic level: 3.1. Resilience: not available. Importance: not available.
- Polyipnus inermis* Borodulina, 1981  
 Southeast Pacific: in the vicinity of Sala y Gomez Submarine Ridge. Max. length 6.35 cm SL. Habitat: bathypelagic, depth range: 0-575 m. Trophic level: 3.1. Resilience: not available. Importance: not available.
- Polyipnus kiwiensis* Baird, 1971  
 Southwest Pacific: restricted to the Tasman Sea off the east coast of Australia and continental slope areas of New Zealand. Max. length 8.2 cm SL. Habitat: benthopelagic, depth range: not available. Occurs in the continental shelf and slope (Ref. 7300). Trophic level: 3.3. Resilience: not available. Importance: not available.
- Polyipnus matsubarae* Schultz, 1961  
 Northwest Pacific: Japan, Philippine Sea and near the Hawaiian-Emperor Seamounts. Max. length 9.67 cm SL. Habitat: benthopelagic, depth range: 80-130 m. Trophic level: 3.4. Resilience: not available. Importance: not available.
- Polyipnus tridentifer* McCulloch, 1914 Three-spined hatchetfish  
 Eastern Indian Ocean: endemic to the seas off southern Australia. Max. length 7.16 cm SL. Habitat: bathydemersal, depth range: 640-825 m. Occurs in the continental slope (Ref. 7300). Trophic level: 3.3. Resilience: not available. Importance: not available.
- Sternoptyx diaphana* Hermann, 1781 Diaphanous hatchet fish  
 Atlantic, Indian and Pacific: mainly tropical regions (Ref. 47377). Eastern Atlantic: scattered records southwest of Ireland, also from Spain south to Angola. Max. length 5.5 cm SL. Habitat: bathypelagic, depth range: 400-3676 m. Oceanic and non-vertical migrant (Ref. 4739). Commonly found in 500-800 m both day and night (Ref. 4054). Possibly a cyclic feeder of copepods, ostracods, euphausiids, amphipods, fishes and other taxa (Ref. 4739). Adult photophore complement acquired at 11-13 mm SL (Ref. 4739). Lipid content 1.4 % in fresh body weight and wax ester is 4.2 % in total lipids (Ref. 9193). Trophic level: 3.5. Resilience: not available. Importance: of no interest.
- Sternoptyx pseudobscura* Baird, 1971 Highlight hatchetfish  
 Widely distributed in the three major oceans. Eastern Atlantic: Portugal south to South Africa. Eastern Pacific: British Columbia, Canada (Ref. 11980). Max. length 6 cm SL. Habitat: bathypelagic, depth range: 760-1500 m. Oceanic (Ref. 4739). Does not exhibit vertical migration (Ref. 4462). Feeds on copepods, ostracods, euphausiids, amphipods, decapods (Ref. 4739). Photophores develop in adults over 16-18 mm SL (Ref. 4739). Trophic level: 3.4. Resilience: not available. Importance: of no interest.
- Valenciennellus tripunctulatus* (Esmark, 1871) Constellationfish  
 Eastern Atlantic: scattered records in Iceland, Ireland, Mediterranean Sea, also from Portugal southward to Namibia. Western Atlantic: Gulf of Mexico (Ref. 27768). Eastern Pacific: California Current region (Ref. 35838). Tropical Indian, Atlantic and Pacific (Ref. 47377). Max. length 3.1 cm SL. Habitat: bathypelagic, depth range: 100-700 m. Oceanic and mesopelagic, with marked stratification of size with depth (Ref. 4739). Generally non-migrant or only short diel vertical migrations (Ref. 4739). A selective daytime feeder on copepods (mainly *Pleuromamma* and ostracods, *Conchoecia*) (Ref. 4739). Trophic level: 3.3. Resilience: not available. Importance: not available.

## **Stomiidae Barbeled dragonfishes**

- Aristostomias tittmanni* Welsh, 1923 Loosejaw  
 Eastern Atlantic: Azores. Western Atlantic: Canada to the Gulf of Mexico and the Caribbean Sea. Southeast Pacific: off Chile. Max. length 21.5 cm SL. Habitat: pelagic, depth range: not available. Trophic level: 4.5. Resilience: not available. Importance: not available.

*Astronesthes ijimai* Tanaka, 1908

Indo-West Pacific: Japan and adjacent waters of Indonesia, Indian Ocean. Max. length 15 cm SL. Habitat: bathypelagic, depth range: not available. Found on continental slopes and seamounts (Ref. 41299). Trophic level: 3.8. Resilience: not available. Importance: not available.

*Borostomias antarcticus* (Lönnerberg, 1905)

Eastern Atlantic: Greenland south to Bay of Biscay including western Mediterranean. Elsewhere, Southern Ocean from 35°S to 65°S. Max. length 30 cm SL. Habitat: bathydemersal, depth range: 300-2630 m. An oceanic and mesopelagic species usually found deeper than 500 m during the day (Ref. 2802). Feeds on midwater fishes and crustaceans (Ref. 2802). Trophic level: 4.0. Resilience: not available. Importance: not available.

*Chauliodus macouni* Bean, 1890 Pacific viperfish

Northwest Pacific: Navarin Canyon in the Bering Sea to Japan. Eastern Pacific: Gulf of Alaska to central Baja California (Ref. 35898) and the Gulf of California. Max. length 25 cm TL. Habitat: bathypelagic, depth range: 250-4390 m. Migrate upward at night (Ref. 28499). Feed on small planktonic crustaceans, arrow worms and fish (Ref. 28499). Has photophores on belly arranged in a row (Ref. 2850). Oviparous, with planktonic eggs and larvae (Ref. 35898). Also caught with bottom trawls. Trophic level: 4.0. Resilience: Medium ( $K=0.35$ ;  $t_{max}=8$ ). Importance: not available.

*Chauliodus sloani* Bloch & Schneider, 1801 Sloane's viperfish

Warm and temperate parts of all oceans but with several distributional gaps in the southern central Atlantic, northern Indian Ocean, eastern Pacific north of the equator, etc. Also found in the western Mediterranean (Ref. 4759). Max. length 35 cm SL. Habitat: bathypelagic, depth range: down to 1800 m. Inhabits deep oceanic waters to more than 1,000 m depth; may migrate to near-surface waters at night (Ref. 4759). Feeds on midwater fishes and crustaceans (Ref. 4759). Lipid content is 2.4 % in fresh body weight and wax ester is 7.2 % in total lipids (Ref. 9193). Trophic level: 4.1. Resilience: not available. Importance: not available.

*Chirostomias pliopterus* Regan & Trewavas, 1930

Eastern Atlantic: Spain south to Mauritania. Western Atlantic: USA to Cuba. Max. length 20.5 cm SL. Habitat: bathypelagic, depth range: not available. Mesopelagic species. Trophic level: 3.3. Resilience: not available. Importance: not available.

*Echiostoma barbatum* Lowe, 1843

Eastern Atlantic: Portugal to South Africa except the Gulf of Guinea. Western Atlantic: USA south to Argentina, including the Gulf of Mexico and the Caribbean Sea. Also Indian and Pacific oceans. Max. length 36.8 cm SL. Habitat: bathypelagic, depth range: not available. Trophic level: 4.1. Resilience: not available. Importance: not available.

*Eustomias schmidtii* Regan & Trewavas, 1930

Atlantic and Pacific: between 35-40°N and 30-35°S, primarily in boundary currents or equatorial waters; generally absent from gyres. Max. length 21.2 cm SL. Habitat: bathypelagic, depth range: not available. Trophic level: 4.5. Resilience: not available. Importance: of no interest.

*Flagellostomias boureei* (Zugmayer, 1913)

Eastern Atlantic: Spain southward to South Africa. Western Atlantic: USA to the Gulf of Mexico (no records between 10°N to 20°S), and from southern Brazil to Argentina. Also found in the Indian and Pacific oceans. Max. length 32.2 cm SL. Habitat: bathypelagic, depth range: down to 474 m. Mesopelagic species (Ref. 4468). Trophic level: 3.6. Resilience: not available. Importance: not available.

*Idiacanthus fasciola* Peters, 1877 Ribbon sawtail fish  
 North Atlantic: north of 10°N. South Atlantic: southern tip of Africa. Also recorded from the Patagonian region of Argentina (Ref. 27363). Indo-Pacific: across the Indian Ocean north of about 23°S to west and central Pacific between 27°N and 23°S. Max. length 48.9 cm SL. Habitat: bathypelagic, depth range: not available. Mesopelagic in depths exceeding 500 m (Ref. 7249). Females undergo diel vertical migrations (Ref. 7249). Trophic level: 3.9. Resilience: not available. Importance: not available.

*Malacosteus niger* Ayres, 1848 Stoplight loosejaw  
 Atlantic Ocean: between 66°N and 16°S (Ref. 4469), between Greenland and Iceland and between Iceland and Scotland (Ref. 6684). Indian Ocean: between 8°N and 32°S and in the Gulf of Aden and the eastern part of Bay of Bengal. Pacific Ocean: South China Sea and Indo-Australian Archipelago; also New Zealand (Ref. 5755), in the Pacific between 10°N-15°S, near the Hawaiian Islands, off California at 33°N and along the coast of South America to 34°S; reported from British Columbia, Canada (Ref. 11980). Max. length 24 cm SL. Habitat: bathypelagic, depth range: 0-2500 m. Trophic level: 3.7. Resilience: not available. Importance: of no interest.

*Melanostomias bartonbeani* Parr, 1927  
 Eastern Atlantic: from 56°N east of 40°W south to Guinea Bissau, also from Namibia to South Africa. Western Atlantic: west of 40°W between 45°N-25°N, and from Brazil to Argentina. Also Indian and Pacific Oceans. Max. length 26.2 cm SL. Habitat: bathypelagic, depth range: 25-2000 m. Mesopelagic species (Ref. 4468). Trophic level: 3.9. Resilience: not available. Importance: not available.

*Photostomias guernei* Collett, 1889  
 Western Atlantic: USA to the Gulf of Mexico (Ref. 4429); reported from the Antilles (Ref. 26340). Eastern Atlantic: southern Portugal to Mauritania. Indo-Pacific: in tropical and temperate areas (Ref. 559). Southeast Pacific: Chile (Ref. 9068). Max. length 16 cm TL. Habitat: bathypelagic, depth range: not available. Mesopelagic species (Ref. 4469). Trophic level: 3.4. Resilience: not available. Importance: not available.

*Stomias boa ferox* Reinhardt, 1842 Boa dragonfish  
 Eastern Atlantic: Iceland to the Canary Islands. Western Atlantic: Greenland to USA. Max. length 30 cm SL. Habitat: bathypelagic, depth range: not available. Large photophores in ventral series to tail. Occurs in deep oceanic waters to more than 1,000 m depth; may migrate to surface waters at night. Feeds on midwater fishes and crustaceans. Oviparous. Trophic level: 4.0. Resilience: not available. Importance: not available.

## **Aulopiformes (grinners)**

### **Aulopidae Aulopus**

*Aulopus filamentosus* (Bloch, 1792) Royal flagfin  
 Eastern Atlantic: Canary Islands south to Cape Verde and Senegal. Also recorded from the Mediterranean. Western Central Atlantic: Gulf of Mexico and Caribbean (Ref. 3814). Max. length 44 cm SL. Habitat: demersal, depth range: 50-1000 m. Found on continental shelf and upper slope (Ref. 6687). Trophic level: 4.2. Resilience: not available. Importance: commercial.

*Aulopus japonicus* Günther, 1877 Japanese thread-sail fish  
 Pacific Ocean: Japan, Philippines, and the Hawaiian Islands. Reported more recently from Taiwan (Ref. 5193) and the Chesterfield Islands (Ref. 11897). Max. length 22.3 cm SL. Habitat: demersal, depth range: 85-330 m. In sandy or muddle areas (Ref. 9137). Can also be found at 30 m depths (Ref. 11230). A carnivore that feeds on fish and crabs (Ref. 9137). Trophic level: 4.0. Resilience: not available. Importance: commercial.

**Chlorophthalmidae Greeneyes***Chlorophthalmus agassizi* Bonaparte, 1840 Shortnose greeneye

Circumglobal in temperate and tropical regions. Eastern Atlantic: Spain to at least 19°S, including the Mediterranean, Canary Islands and Cape Verde. Western Atlantic: southern New England, USA and northern Gulf of Mexico to northern South America (Ref. 7251). Also Western Australia (Ref. 7300). Max. length 40 cm TL. Habitat: bathydemersal, depth range: 50-1000 m. Found on the continental shelf and upper slope over mud and clay bottom. Catch data indicate a schooling habit. Feeds mainly on bottom-living invertebrates. Also known to feed on pelagic crustaceans like euphausiids, decapods and mysids (Ref. 27637). A hermaphroditic species. Marketed fresh and sometimes made into fishmeal (Ref. 6688). Young are pelagic, living near the surface, the adults are demersal, living between 50 and 1000 m depth (Ref. 47377). Trophic level: 3.7. Resilience: not available. Importance: not available.

*Chlorophthalmus albatrossis* Jordan & Starks, 1904

Indo-West Pacific: southern Japan to the Philippines. Recorded from the Chesterfield Islands (Ref. 11897) and the Indian Ocean waters of Indonesia (Ref. 5978). Max. length 15 cm SL. Habitat: demersal, depth range: not available. Carnivorous. Trophic level: 4.0. Resilience: not available. Importance: commercial.

*Chlorophthalmus ichthyandri* Kotlyar & Parin, 1986

Southeast Pacific: Chile. Max. length not available. Habitat: bathydemersal, depth range: not available. Type specimen taken from a depth of 350 m (Ref. 33021). Trophic level: 4.0. Resilience: not available. Importance: not available.

*Chlorophthalmus zvezdae* Kotlyar & Parin, 1986

Southeast Pacific: Chile. Max. length not available. Habitat: bathydemersal, depth range: not available. Presumably a deep-water species. Better reference needed. Trophic level: 4.0. Resilience: not available. Importance: not available.

**Ipnopidae***Bathymicrops regis* Hjort & Koefoed, 1912

Eastern Atlantic: east of the Mid-Atlantic Ridge between 30° to 0°N; also off Port Elizabeth, South Africa. Western Atlantic: west of the Mid-Atlantic Ridge in the Guiana Basin. Max. length 11.7 cm SL. Habitat: bathydemersal, depth range: 4250-5700 m. Rare, probably solitary. Feeds on small benthopelagic crustaceans (Ref. 6688). Trophic level: 3.5. Resilience: not available. Importance: not available.

*Bathypterois atricolor* Alcock, 1896 Attenuated spider fish

Circumglobal, excluding the western Atlantic. Eastern Atlantic: Liberia to Nigeria. Max. length 20.4 cm SL. Habitat: bathydemersal, depth range: 250-5150 m. Occurs on the continental slope, rise and abyss. Extremely eurybathic (250-5,150 m) and eurythermic (10-5°C) (Ref. 3590). Trophic level: 3.2. Resilience: not available. Importance: not available.

*Bathypterois dubius* Vaillant, 1888 Spiderfish

Eastern Atlantic: northeast Atlantic to off Sierra Leone; one record from the Mediterranean. One record from the northwest Atlantic. Max. length 20.5 cm SL. Habitat: bathydemersal, depth range: 260-2800 m. Found on continental slope and rise between temperatures of 12°C to 4°C (Ref. 3590). Usually solitary; probably forms occasional aggregates. Feeds on mysids and benthopelagic copepods. Synchronously hermaphroditic (Ref. 6688). Trophic level: 3.4. Resilience: not available. Importance: not available.

*Bathypterois longipes* Günther, 1878 Abyssal spiderfish

Atlantic Ocean: Off northwestern (south of Cape Verde; off Cape Blanc) and southwestern Africa, both sides of North Atlantic, off Uruguay in the South Atlantic. Elsewhere, widely scattered localities in the Pacific. Max. length 24.9 cm SL. Habitat: bathydemersal, depth range: 2615-5610 m. Solitary. Occurs in waters with a temperature range of 4.5-0.4°C (Ref. 3590). Uses its specialized fin rays (tripod) to elevate body into water column. Specialized sensory pectoral fins are spread facing anteriorly, probably to detect prey. Feeds on planktonic crustaceans. Synchronously hermaphroditic (Ref. 6688). Trophic level: 3.1. Resilience: not available. Importance: not available.

*Bathypterois phenax* Parr, 1928 Blackfin spiderfish

Eastern Atlantic: Off Sierra Leone and Liberia and off South Africa (as *Bathypterois ater*). Western Atlantic: at bathyal depths between latitude 40°N-5°N including Gulf of Mexico and Caribbean Sea, and off southern Brazil. Max. length 18 cm SL. Habitat: bathydemersal, depth range: 800-2657 m. Common on mid and lower continental slope. Rests on the bottom with the use of elongated, stiffened outer pelvic and lower caudal fin rays (tripod). Sensory pectoral fins are thrown forward in front of its head, facing the current. Feeds on benthopelagic plankton. Synchronously hermaphroditic (Ref. 6688). Spawning is seasonal with peak during fall in the Bahamas (Ref. 3590). Trophic level: 3.4. Resilience: not available. Importance: not available.

*Bathypterois quadrifilis* Günther, 1878

Eastern Atlantic: Gulf of Guinea region. Western Atlantic: between 35° and 10°S, including the Gulf of Mexico and the Caribbean. Max. length 18 cm SL. Habitat: bathydemersal, depth range: 402-1408 m. Synchronously hermaphroditic. Fecundity of 4,500 eggs for one specimen. Trophic level: 3.4. Resilience: not available. Importance: not available.

*Bathytrophops marionae* Mead, 1958

Eastern Atlantic: off west Africa at 9°N. Western Atlantic: off Virginia, USA to off Guyana, including Gulf of Mexico and the Caribbean. Indian Ocean: Mozambique Channel. Max. length 38 cm SL. Habitat: bathydemersal, depth range: 869-1920 m. Adults bathybenthic on continental slope and rise at temperatures generally warmer than 4°C while larvae are pelagic near the surface. Feeds on mysids and decapods. Synchronously hermaphroditic (Ref. 3590). Trophic level: 3.3. Resilience: not available. Importance: not available.

**Notosudidae Waryfishes**

*Ahliesaurus berryi* Bertelsen, Krefft & Marshall, 1976

Tropical and subtropical Atlantic, southwestern Indian and central South Pacific oceans. Max. length 26.9 cm SL. Habitat: bathypelagic, depth range: 0-2000 m. Mesopelagic to bathypelagic (Ref. 6602). Sometimes taken at depths greater than 500 m (Ref. 6602). Feeds on smaller plankton, mainly copepods. Hermaphrodite, spawning probably occurs in the North Atlantic in a belt stretching across the ocean in subtropical latitudes. Specimens approaching sexual maturity lose their teeth and gillrakers completely (Ref. 6689) suggesting semelparity (RF). Trophic level: 3.0. Resilience: not available. Importance: of no interest.

**Omosudidae**

*Omosudis lowii* Günther, 1887 Hammerjaw

Worldwide in tropical and temperate waters. Max. length 23 cm SL. Habitat: bathypelagic, depth range: 0- 4000 m. Probably swift swimmers, which can avoid nets, captured singly or in small groups (Ref. 6692). Carnivorous, feeds on squids and pelagic fishes (Ref. 6692). Trophic level: 4.5. Resilience: not available. Importance: of no interest.

**Paralepididae Barracudinas**

*Arctozenus risso* (Bonaparte, 1840) Ribbon barracudina

Worldwide distribution from the Arctic to Antarctic. Eastern Pacific: British Columbia (55°N) to at least north central Baja California (28°N) (Ref. 35950). Northwest Pacific: Bering Sea, Kamchatka, Kuril Islands (Ref. 41668). Max. length 30 cm SL. Habitat: bathypelagic, depth range: 200-2200 m. Pseudoceanic and mesopelagic, occurring singly or in small schools (Ref. 5759). Feed mainly on fishes and shrimps (Ref. 5759). Spawn in continental slopes and in oceanic banks from northern through tropical to southern temperate waters. Oviparous, with planktonic larvae (Ref. 35950). Trophic level: 3.2. Resilience: not available. Importance: of no interest.

*Lestidiops ringens* (Jordan & Gilbert, 1880) Slender barracudina

Eastern Pacific: British Columbia in Canada to central Baja California in Mexico. Max. length 21 cm TL. Habitat: bathypelagic, depth range: 29-3290 m. Occur from near surface to bathypelagic depths. Feed mainly on small fishes but also takes small crustaceans and cephalopods (Ref. 6885). Predators include albacore, salmon, swordfish and lancetfish (Ref. 4525). Oviparous, with planktonic larvae (Ref. 35950). Trophic level: 4.1. Resilience: not available. Importance: not available.

*Magnisudis atlantica* (Krøyer, 1868) Duckbill barracudina

All oceans and polar seas from the Arctic to Antarctic. More common in northern Atlantic and Pacific. Eastern Pacific: southeast Alaska (59°N) to Chile (Ref. 35950). Northwest Pacific: Bering Sea, Kamchatka and Kuril Islands (Ref. 41668). Max. length 56 cm SL. Habitat: pelagic, depth range: 50-2000 m. Oceanic species of medium depth range. Large adults approach the coasts in temperate and polar zones (Ref. 35950). Spawns throughout the year in tropical and subtropical seas (Ref. 35388). Seems to spawn in the Sargasso Sea. Feed on small fishes and shrimps. Preyed upon by sharks, tuna, and whales. Trophic level: 4.1. Resilience: not available. Importance: not available.

*Paralepis coregonoides* Risso, 1820 Sharpchin barracudina

Atlantic Ocean: restricted to the North Atlantic and adjacent seas. Max. length 50 cm SL. Habitat: pelagic, depth range: 50-1000 m. Feeds on fishes, crustaceans and occasionally planktonic organisms (Ref. 5759). Spawns from March to September, larvae near the surface (Ref. 35388). Trophic level: 4.5. Resilience: not available. Importance: of no interest.

**Paraulopidae***Paraulopus filamentosus* (Okamura, 1982)

Northwest Pacific: Kyushu-Palau Ridge and the Emperor Seamounts. Max. length 12.51 cm SL. Habitat: bathydemersal, depth range: 322-375 m. Trophic level: 3.3. Resilience: not available. Importance: not available.

**Synodontidae Lizardfishes***Bathysaurus ferox* Günther, 1878 Deepsea lizardfish

Eastern Atlantic: northern British Isles to Guinea; also off South Africa. Reported from Iceland (Ref. 12462). Western Atlantic: Davis Strait to Rio Grande Rise, Brazil. Southwest Pacific: New Zealand and Australia (Ref. 7300). Southeast Pacific: Nazca and Sala-y-Gomez. *Macristium chavesi* (pelagic larvae) known from Dominican Republic, Bay of Biscay, Azores, and in the Indian Ocean. Max. length 64 cm SL. Habitat: bathydemersal, depth range: 600-3500 m. Usually occurs below the 4°C isotherm. Rests stationary on the bottom with head slightly elevated in typical lizardfish fashion. Feeds primarily on fish and decapods (Ref. 4964). Synchronously hermaphroditic. Minimum depth reported from Ref. 5755. Trophic level: 4.3. Resilience: not available. Importance: not available.

**Myctophiformes (lanternfishes)****Myctophidae Lanternfishes***Benthosema glaciale* (Reinhardt, 1837) Glacier lanternfish

Eastern Atlantic: Norway and Greenland south to Morocco, and from Mauritania to Guinea (Mauritanian Upwelling Region). Seasonally present from Morocco to Mauritania along the edge of the continental shelf. Also known from the Mediterranean Sea. Western Atlantic: Baffin Bay to northern edge of Gulf Stream. Max. length 10.3 cm SL. Habitat: pelagic, depth range: 0-850 m. High-oceanic, mesopelagic at depths between 375-800 m during daytime and 12-200 m during night. Photophores present. Feeds mainly on calanoid copepods, also euphausiids and copepodites. Feeding occurs at night in Norwegian fjords (Ref. 9209) and in northwest Africa (Ref. 9194). Mature from about 3 cm onward. Spawning peaks in the Mediterranean in late spring with east-to-west progression. Female produces 160-2,000 eggs depending on her size (Ref. 35388). Trophic level: 3.1. Resilience: Medium (K=0.20-0.45; tm=2-3; tmax=8). Importance: of potential interest.

*Bolinichthys photothorax* (Parr, 1928)

Eastern Atlantic: Mauritania to Angola. Western Atlantic: USA to Brazil, with extensions to Argentina. Indian Ocean: between 10°N and 30°S. Pacific Ocean: between 30°N and 25°S (Ref. 4066); New Zealand (Ref. 5755). Max. length 7.3 cm SL. Habitat: bathypelagic, depth range: 40-750 m. High-oceanic species (Ref. 4066). Found between 425-750 m during the day and at 40-500 m at night, with maximum abundance at 75 m (Ref. 4479). Specimens reach sexual maturity at a length of 5.4 cm. Off southern Brazil found between 500-900 m during the day and 25-300 m at night. (Ref. 47377). Trophic level: 3.0. Resilience: not available. Importance: not available.

*Ceratoscopelus maderensis* (Lowe, 1839)

Eastern Atlantic: France to Mauritania, including the Mediterranean. Reported from Iceland (Ref. 12462). Western Atlantic: Slope Water and Gulf Streams regions from 50°N to 30°N. Max. length 8.1 cm SL. Habitat: bathypelagic, depth range: 51-700 m. High-oceanic, schooling, found between 650-700 m during the day and between 51-250 m at night with size stratification with depth (Ref. 4479). Juveniles are nyctoepipelagic at the surface. Feeds on copepods and adult or larval forms of other planktonic crustaceans (Ref. 4775). Trophic level: 3.1. Resilience: not available. Importance: not available.

*Ceratoscopelus warmingii* (Lütken, 1892) Warming's lantern fish

Atlantic Ocean: 35°N (eastern limit) and 42°N (western limit) south to the Subtropical Convergence. Pacific Ocean: tropical and subtropical waters (Ref. 4066). Indian Ocean: 20°N-45°S (Ref. 4066). Reported to be common in southern Africa (Ref. 4066). Max. length 8.1 cm SL. Habitat: bathypelagic, depth range: 25-1500 m. Oceanic species found between 700 and 1,500 m during the day; between 20 and 200 m at night (Ref. 4775) with maximum abundance between 50 and 100 m (Ref. 47377). Size stratification with depth both day and night (Ref. 4775). Small juveniles (1.5-1.9 cm) are apparently non-migratory. Known to feed on zooplankton but appears to be adapted for occasional herbivory (Ref. 28809). Trophic level: 3.4. Resilience: not available. Importance: not available.

*Diaphus adenomus* Gilbert, 1905 Gilbert's large lantern fish

Western Pacific: Sagami Bay, Suruga Bay, off Shionomisaki, and the Kyushu-Palau Ridge in Japan. Eastern Pacific: Hawaii. Western Atlantic: off Bahamas and Gulf of Mexico. Eastern Atlantic: off Casablanca, Morocco to Western Sahara. Max. length 18 cm SL. Habitat: bathypelagic, depth range: 180- 600 m. Pseudoceanic, epibenthic species (Ref. 4479 & 4775). Trophic level: 3.1. Resilience: not available. Importance: not available.

*Diaphus brachycephalus* Tåning, 1928 Short-headed lantern fish

Eastern Atlantic: Morocco to Angola. Western Atlantic: USA to Uruguay. Western Pacific: warmer waters and in Kuroshio (Japan Current). Elsewhere, eastern Pacific, Indian Ocean, Mozambique Channel and in Agulhas Current. All oceans in tropical and subtropical waters; Southeast Atlantic to south of Brazil (Ref. 47377). Max. length 6 cm SL. Habitat: bathypelagic, depth range: down to 600 m. High-oceanic (Ref. 4479). Found between 175- 550 m during the day and near the surface to about 225 m at night (Ref. 4066). Large males partially or non-migratory (Ref. 4066). Exhibits dwarfing in minimum region off Brazil with a maximum length of about 3.6 cm SL and sexual maturity from about 2.7 cm SL (Ref. 4479). Trophic level: 3.1. Resilience: not available. Importance: not available.

*Diaphus coeruleus* (Klunzinger, 1871) Blue lantern fish

Indo-West Pacific: Papua New Guinea (Ref. 6993), Indonesia (Ref. 5978), Taiwan (Ref. 39633), Chesterfield Islands (Ref. 11897) and Australia (Ref. 7300). Max. length 13.7 cm SL. Habitat: bathypelagic, depth range: 457-549 m. Mesopelagic species (Ref. 7300). Lipid content is 10.2-17.2 % in fresh body weight (Ref. 9195). Trophic level: 3.8. Resilience: not available. Importance: not available.

*Diaphus confusus* Becker, 1992

Southeast Pacific: known from the type locality, 24°58'S, 88°29'W. Max. length not available. Habitat: bathydemersal, depth range: 545-562 m. Trophic level: 3.1. Resilience: not available. Importance: not available.

*Diaphus dumerilii* (Bleeker, 1856)

Eastern Atlantic: Canary Islands (Ref. 6808), 20°N (inshore from 29°N) to about 10°S west of 0°, with disjunct distribution between 14°N and 8°N, but to 23°S east of 0°. Isolates north to off south-west Ireland (Ref. 4775). Western Atlantic: tropical areas but with expatriate extensions to 51°N and 45°S in western boundary currents [(apparently absent over the minimum region off Brazil) according to Ref. 4479 or 4775] (Ref. 4479, 4775). Very rare or absent in the Indo-Pacific. Tropical Indian and Atlantic; east coast of South America (Ref. 47377). Max. length 8.7 cm SL. Habitat: pelagic, depth range: 0-805 m. High-oceanic and mesopelagic populations are found between 225-750 m during the day (maximum abundance at 450-500 m) and is nyctoepipelagic at surface down to 125 m at night (Ref. 4479). Pseudoceanic and pelagic populations are found in the upper 50 m at night (Ref. 4066). Feeding is acyclic in northwest Africa (Ref. 9198). Trophic level: 3.2. Resilience: High (K=1.83-3.81; tm=0.7; tmax=1.2). Importance: not available.

*Diaphus kuroshio* Kawaguchi & Nafpaktitis, 1978

Northwest Pacific: Kuroshio waters off Japan. Max. length 4.94 cm SL. Habitat: bathypelagic, depth range: 100-300 m. Mesopelagic species. Trophic level: 3.1. Resilience: not available. Importance: not available.

*Diaphus lucidus* (Goode & Bean, 1896)

Eastern Atlantic: disjunct distribution from Morocco-Angola (gap in 17°N-11°N). Western Atlantic: USA to Brazil with isolated specimens to Argentina. Indian Ocean: equatorial waters and west of 70°E to 36°S in Agulhas Current. Indo-west-central Pacific: Southeast Asian seas and north to 8°N and eastwards to 126°W (Ref. 4775). Max. length 11.8 cm SL. Habitat: bathypelagic, depth range: 40-750 m. Oceanic and mesopelagic, found between 425-750 m during the day and between 40-550 m at night (most abundant below 200 m at night) (Ref. 4066, 4775). There is size stratification with depth both day and night (Ref. 4775). Trophic level: 3.2. Resilience: not available. Importance: not available.

*Diaphus parini* Becker, 1992

Southeast Pacific: known from the type locality, 24°41'S, 85°29'E. Max. length not available. Habitat: benthopelagic, depth range: down to 320 m. Trophic level: 3.1. Resilience: not available. Importance: not available.

*Diaphus perspicillatus* (Ogilby, 1898) Transparent lantern fish

Eastern Atlantic: Western Sahara to Cape of Good Hope, South Africa (Agulhas Water pockets). Western Atlantic: USA to Argentina; between 27°30'N and 35°56'S (Ref. 47377). Eastern Pacific: Near Hawaii. Western Pacific: 36°N and 1°S southwards to East Australian Current. Western Indian Ocean: west of 70°E between 7°N-25°S, and in Agulhas Current to 37°S. Max. length 7.1 cm SL. Habitat: bathypelagic, depth range: 0-750 m. Oceanic, found between 375-750 m during the day and nyctoepipelagic at surface down to 125 m (Ref. 4479). Seem to reach sexual maturity at a length between 5 and 5.5 cm (Ref. 47377). Trophic level: 3.1. Resilience: not available. Importance: not available.

*Diaphus termophilus* Tåning, 1928 Taaning's lantern fish

Eastern Atlantic: Morocco to Mauritania. Western Atlantic: USA to 10°N including Caribbean, Lesser Antilles (Ref. 4775). Western Central Pacific: southeast Asian seas between 8°N and 7°S, New Caledonia and New Zealand. Also known from the Eastern Central Pacific (Ref. 9325). Max. length 8 cm SL. Habitat: bathypelagic, depth range: 40-850 m. High-oceanic, found between 325-850 m during the day (most abundant at 400-500 m) and between 40-225 m at night (most abundant 100 m) (Ref. 4479). Trophic level: 3.1. Resilience: not available. Importance: not available.

*Diaphus theta* Eigenmann & Eigenmann, 1890 California headlightfish

Eastern Pacific: common in California Current region to 20°S (Ref. 31442), including Hawaii (Ref. 4925). Northwest Pacific: throughout subarctic-transitional waters to northern Japan (Ref. 31442). Max. length 11.4 cm TL. Habitat: bathypelagic, depth range: 0-3400 m. Epipelagic to mesopelagic (Ref. 31442). Feed at night or in the morning (Ref. 9199), on euphausiids, copepods, and amphipods (Ref. 11712). Oviparous, with planktonic eggs and larvae (Ref. 31442). Lipid content is 15.8 % in fresh body weight while wax ester is present in trace amounts (Ref. 9197). Minimum depth reported from Ref. 6885. Trophic level: 3.2. Resilience: not available. Importance: not available.

*Hygophum hygomii* (Lütken, 1892)

Eastern Atlantic: Portugal to Mauritania including the Mediterranean, and from Angola to South Africa. Western Atlantic: Canada to 20°N and from Brazil to Subtropical Convergence. Also Indian (24°S-40°S) and Pacific (15°S-20°S) Oceans (Ref. 4066). Max. length 6.8 cm SL. Habitat: bathypelagic, depth range: 0- 800 m. Oceanic and mesopelagic (Ref. 4066), found between 600-800 m during the day, nyctoepipelagic at surface and down to 300 m (Ref. 4479). Reach sexual maturity at 5.8 cm (Ref. 47377). Trophic level: 3.2. Resilience: not available. Importance: not available.

*Idiolychnus urolampus* (Gilbert & Cramer, 1897)

Indo-Pacific: Kyushu-Palau Ridge, off the Hawaiian Islands, and off Madagascar. Southeast Pacific: Nazca and Sala-y-Gomez. Max. length 11 cm SL. Habitat: pelagic, depth range: not available. Trophic level: 3.0. Resilience: not available. Importance: not available.

*Lampadena luminosa* (Garman, 1899)

Atlantic, Indian and Pacific: between 20°N and 20°S but extensions into higher latitudes in western boundary currents (Gulf Stream to 43°N; Brazil to 36°S; Agulhas to 39°S; Kuroshio to 34°N). Abundant in the Tungsha Islands in South China Sea (Ref. 39633). Max. length 20 cm SL. Habitat: bathypelagic, depth range: 50-850 m. Oceanic and mesopelagic. Found between 425-850 m during the day and in the upper 100 m at night. Small specimens found in the upper 50 m (night). Trophic level: 3.2. Resilience: not available. Importance: not available.

*Lampadena urophaos atlantica* Maul, 1969

Eastern Atlantic: from 30°N to about 24°N. North Atlantic: between 42°N and 21°N. Max. length 20 cm SL. Habitat: bathypelagic, depth range: 60-1000 m. High-oceanic, found between 550-1,000 m during the day and between 60-225 m at night ( maximum abundance between 100-150 m at night) (Ref. 4479). Trophic level: 3.2. Resilience: not available. Importance: not available.

*Lampadena urophaos* Paxton, 1963 Sunbeam lampfish

Western Pacific: Suruga Bay, Japan and near the Ogasawara and Ryukyu islands. Also New South Wales, Australia (Ref. 7300) and New Zealand (Ref. 5755). Eastern Pacific: between 42°N and 25°N from the California coast to Hawaii (Ref. 4479). Recorded off British Columbia, Canada (Ref. 11980) and from Chile (Ref. 9068). Max. length 14 cm SL. Habitat: pelagic, depth range: not available. Epipelagic to mesopelagic (Ref. 31442). Oviparous, with planktonic eggs and larvae (Ref. 31442). Trophic level: 3.0. Resilience: not available. Importance: not available.

*Lampanyctus festivus* Tåning, 1928

Atlantic Ocean: north to about 40°N, with isolates to 50°N and from about 13°S to the subtropical convergence. Indian Ocean: two specimens recorded between 25° and 36°S. Pacific Ocean: Japan (Ref. 559), Australia (Ref. 7300), New Zealand (Ref. 5755) and Chile (Ref. 9068). Max. length 13.8 cm SL. Habitat: bathypelagic, depth range: 40-1000 m. Oceanic and mesopelagic, found between 475-1,000 m during the day and between 40-325 m at night (Ref. 4479). Some small juveniles may be non-migratory (Ref. 4775). Trophic level: 3.0. Resilience: not available. Importance: not available.

*Lampanyctus photonotus* Parr, 1928

Atlantic Ocean: 55°N-30°S but absent in the Benguela Upwelling Region (Ref. 4066). Western Pacific. Max. length 8.5 cm SL. Habitat: bathypelagic, depth range: 40-1100 m. High-oceanic and mesopelagic species (Ref. 4066), found between 550-1,000 m during the day and at 40-250 m by night (maximum abundance in equatorial waters at 50-100 m) (Ref. 4479). Small juveniles non-migratory (Ref. 4479). Trophic level: 3.3. Resilience: not available. Importance: not available.

*Lepidophanes guentheri* (Goode & Bean, 1896)

Atlantic Ocean: between about 45°N and 50°S, but apparently absent from Benguela Upwelling Region and seasonally absent from off northeast Brazil. Max. length 7.8 cm SL. Habitat: pelagic, depth range: 40-750 m. High-oceanic (Ref. 4066). Found between 425-750 m during the day and between 40-125 m at night (maximum abundance in the upper 50 m) (Ref. 4479). Feeding is acyclic in northwest Africa (Ref. 9198). Reach sexual maturity at 4.7 cm (Ref. 47377). Trophic level: 3.0. Resilience: High (K=1.83; tm=0.5; tmax=1.20). Importance: not available.

*Lobianchia dofleini* (Zugmayer, 1911)

Atlantic Ocean: between 50°N and 40°S including the Mediterranean but with a distributional gap between 8°S and 13°S in the eastern Atlantic, absent in the South Sargasso Sea and minimum region off Brazil. Southern circumglobal (Ref. 7300). Western Atlantic between Santa Catarina and the Subtropical Convergence (Ref. 47377). Max. length 5 cm SL. Habitat: bathypelagic, depth range: 20-750 m. High-oceanic, found between 300-750 m during the day and between 20-400 m at night (Ref. 4066). Size stratification observed with depth (Ref. 4479). Feeds nocturnally or during vertical migration, mainly on copepods and ostracods (Ref. 4775). Trophic level: 3.1. Resilience: High (K=1.39; tmax=1). Importance: not available.

*Lobianchia gemellarii* (Cocco, 1838) Cocco's lantern fish

Eastern Atlantic: southwest of Ireland and Bay of Biscay to Mauritania and from Gabon to Namibia including some records in the Mediterranean. Western Atlantic: USA to the Antilles (Ref. 26340) and Argentina, but absent between 17°-3°N east of 30°W. Indian Ocean: 2°N - 25°S, east of 75°E. Western Pacific: between Japan and Australia (Ref. 4775); also New Zealand (Ref. 5755). Eastern Pacific: Nazca ridge, Peru (Ref. 45845). Max. length 6 cm SL. Habitat: bathypelagic, depth range: 25-800 m. High-oceanic and mesopelagic (Ref. 4066), found between 300-800 m during the day and between 25-100 m (juveniles 14-22 mm) and 200-300 (adults 50-56 mm) at night (Ref. 4479). Size stratification with depth both day and night (Ref. 4775). Oviparous, with planktonic eggs and larvae (Ref. 31442). Reach sexual maturity between 40 and 45 cm (Ref. 47377). Trophic level: 3.0. Resilience: not available. Importance: not available.

*Myctophum affine* (Lütken, 1892) Metallic lantern fish

Eastern Atlantic: Mauritania to the Angola Current. Western Atlantic: 45°N in the Gulf Stream to tropical waters. Also, recorded off La Plata river mouth. Western Atlantic: Bermuda, southern Canada to Florida (USA), Gulf of Mexico and southern Caribbean (Ref. 26938), round the Subtropical Convergence (Ref. 47377). Max. length 7.9 cm SL. Habitat: bathypelagic, depth range: 0-600 m. High-oceanic, nyctoepipelagic at the surface and down to 275 m and found between 300-600 m during the day (Ref. 4479). Feeds on plankton (Ref. 26938). Females reach sexual maturity at 4.2 cm (Ref. 47377). Trophic level: 3.4. Resilience: not available. Importance: not available.

*Myctophum asperum* Richardson, 1845 Prickly lanternfish

Western Atlantic: 20°N to Brazil including the Gulf of Mexico, with expatriates in the slope water region. Eastern Atlantic: Mauritania to South Africa (Agulhas water pockets). Indo-Pacific: north and south equatorial currents and equatorial countercurrents, and in the east Australian and Agulhas currents. Also in the Eastern Central Pacific (Ref. 9325). Larvae found in Taiwan Strait (Ref. 43570). Max. length 7.2 cm SL. Habitat: bathypelagic, depth range: 0-750 m. High-oceanic, nyctoepipelagic at the surface and down to 125 m. Found between 425-750 m during the day. Sexually mature from about 65 mm (Ref. 4479). Proximate analysis (excluding head) reveals that lipid content is 2.0 % in fresh body weight and wax ester is 17.2 % in total lipids (Ref. 9193). Trophic level: 3.4. Resilience: not available. Importance: not available.

- Myctophum nitidulum* Garman, 1899 Pearly lanternfish  
Circumglobal (Ref. 7300) in all tropical and subtropical waters (Ref. 47377). Eastern Atlantic: Morocco to South Africa (as expatriates in Agulhas water pockets). Western Atlantic: between about 42°N and 34°S. Indian Ocean: between 7°N and 24°S. Pacific Ocean: between 32°N and 31°S, but extends northward to 40°N in the Kuroshio Current. Max. length 8.3 cm SL. Habitat: bathypelagic, depth range: 0-950 m. High-oceanic, nyctoepipelagic at the surface and to 950 m and generally found between 475-850 m during the day (Ref. 4479). Oviparous, with planktonic eggs and larvae (Ref. 31442). Lipid content is 3.8 % in fresh body weight and wax ester is 10.6 % in total lipids (Ref. 9193). Females reach sexual maturity at 4.8 cm, males at 3.5 cm (Ref. 47377). Trophic level: 3.4. Resilience: Medium (K=0.42; tm=3). Importance: not available.
- Myctophum selenops* Tåning, 1928 Wisner's lantern fish  
Eastern Atlantic: Morocco to Mauritania and also in Angola; west of the Cape Peninsula, South Africa (Ref. 4066). Western Atlantic: USA to Argentina but with lower abundance in the South Sargasso Sea and absent in the minimum region off Brazil. Also known in the equatorial waters of the Indian and Pacific Oceans. Tropical regions of the Atlantic up to 38°S (Ref. 47377). Max. length 7.5 cm TL. Habitat: bathypelagic, depth range: 40-450 m. High-oceanic, mesopelagic (Ref. 4479). Found between 225-450 m during the day and between 40-225 m at night (Ref. 4479). Reach sexual maturity at 5 cm (Ref. 47377). Trophic level: 3.4. Resilience: not available. Importance: not available.
- Myctophum spinosum* (Steindachner, 1867) Spiny lantern fish  
Atlantic, Indian and Pacific: in tropical and subtropical waters. Max. length 9 cm SL. Habitat: bathypelagic, depth range: not available. High-oceanic and mesopelagic; nyctoepipelagic at the surface. Trophic level: 3.4. Resilience: not available. Importance: not available.
- Nannobranchium atrum* (Tåning, 1928)  
Most widely distributed species of *Nannobranchium* (Ref. 36121). Atlantic Ocean: bipolar, generally between 17°N-58°N and 15°S-40°S. Indian Ocean: 12°S-44°S. Southwest Pacific: between Australia and New Zealand, and in the Tasman Sea. Southern Ocean: 45°10'S, 69°12'E (Ref. 5182). Max. length 14 cm SL. Habitat: bathypelagic, depth range: 60-1100 m. Oceanic and mesopelagic (Ref. 4066), found between 550-850 m during the day; between 60-850 m at night with maximum abundance between 100-150 m (Ref. 4479). Size stratification with depth during the day (Ref. 4066). Trophic level: 3.0. Resilience: not available. Importance: not available.
- Nannobranchium cuprarium* (Tåning, 1928)  
Atlantic Ocean: bipolar in subtropical waters. Max. length 7.9 cm SL. Habitat: bathypelagic, depth range: 40-1000 m. High-oceanic, mesopelagic species, found at 650-1,000 m during daytime, at 40-278 during the night (maximum abundance at 100 m at night) (Ref. 4479). Feeds on amphipods, calanoid copepods, conchoecid ostracods, and euphausiid larvae and adults (Ref. 4775). There are larger specimens reported for this species (11 cm by Gibbs et al. (1972) and 12.8 cm from the southwest Atlantic by Parin et al. (1974)) but these may be misidentifications (Ref. 36121). Trophic level: 3.3. Resilience: not available. Importance: not available.
- Nannobranchium lineatum* (Tåning, 1928)  
Tropical and subtropical waters of the Atlantic, Indian and Pacific oceans. Eastern Atlantic: disjunct distribution between 35°N-27°S and in Agulhas Water pockets (absent over the upwelling region between 17°N-9°N, east of 30°W). Western Atlantic: disjunct distribution between 42°N-10°S. Indian Ocean: between 8°N-0°. Western Central Pacific: Philippines. Considerable differences between Atlantic and Indo-Pacific material suggests that there may be more than one species involved (Ref. 36121). Max. length 23.7 cm SL. Habitat: bathypelagic, depth range: 60-1150 m. Oceanic (Ref. 4066), found between 650-1,000 m during the day; between 60-225 m at night (maximum abundance (mainly juveniles) at 100 m) (Ref. 4479). Uncommon species (Ref. 36121). Trophic level: 3.0. Resilience: not available. Importance: not available.

- Nannobranchium regale* (Gilbert, 1892) Pinpoint lampfish  
North Pacific: Bering Sea to the region east of Hokkaido, Japan in the western Pacific; Gulf of Alaska to off Bahia Magdalena, Baja California. Max. length 18.3 cm SL. Habitat: bathypelagic, depth range: 50-1630 m. Epipelagic to mesopelagic (Ref. 31442). Feed on euphausiids (Ref. 6885). Oviparous, with planktonic eggs and larvae (Ref. 31442). Trophic level: 3.2. Resilience: not available. Importance: not available.
- Notoscopelus caudispinosus* (Johnson, 1863) Lobisomem  
Eastern Atlantic: Morocco to Namibia. Western Atlantic: USA to Argentina (up to 38°39'S (Ref. 47377)) including the Gulf of Mexico and Caribbean. Indo-West Pacific. Max. length 14 cm SL. Habitat: bathypelagic, depth range: below 0 m. High-oceanic, mesopelagic species (Ref. 4479). Occurs deeper than 1,000 m during the day and nyctoepipelagic at the surface and down to 175 m (Ref. 4479). Probably spawns in autumn-winter in the western North Atlantic (Ref. 4775). Trophic level: 3.0. Resilience: not available. Importance: not available.
- Notoscopelus japonicus* (Tanaka, 1908) Japanese lanternfish  
Northwest Pacific: Japan. Max. length not available. Habitat: bathypelagic, depth range: not available. Mesopelagic species. Trophic level: 3.2. Resilience: not available. Importance: not available.
- Notoscopelus resplendens* (Richardson, 1845) Patchwork lampfish  
Atlantic Ocean: about 35°N (east of 40°W) and 47°N (west of 40°W) to the southern Subtropical Convergence at 40°S, but with discontinuity in the region of the cyclonic gyre 2°S - 11°S, in the eastern Atlantic and in the minimum region off Brazil (5°-9°S to 21°S). Indian Ocean: between 24° and 30°S. Western Pacific: northwest Pacific to off Australia and New Zealand (absent from western tropical Pacific and southeast Asian seas, Ref. 5182). Eastern Pacific: south of 55°N (Ref. 265) to 34°S, west of 80°W but to 20°S in Peruvian Transitional Zone. Southern Ocean: at 60°58'S, 48°05'W (Ref. 5182). Max. length 9.5 cm SL. Habitat: bathypelagic, depth range: 0-2000 m. High-oceanic, epipelagic to mesopelagic (Ref. 31442). Nyctoepipelagic at the surface and down to 300 m and found between 651-2,000 m during the day (Ref. 4479). Oviparous, with planktonic eggs and larvae (Ref. 31442). Trophic level: 3.0. Resilience: not available. Importance: not available.
- Stenobranchius leucopsarus* (Eigenmann & Eigenmann, 1890) Northern lampfish  
North Pacific: Japan to Bering Sea and to northern Baja California, Mexico. Max. length 13 cm TL. Habitat: bathypelagic, depth range: 0-3400 m. Epipelagic to mesopelagic (Ref. 31442). Adults move upward in large numbers at night (Ref. 28499). Feed on fishes, copepods and euphausiids (Ref. 11712). Oviparous, with planktonic eggs and larvae (Ref. 31442). Lipid content is 15.6 % in fresh body weight and wax ester is 90.9 % in total lipids (Ref. 9197). Trophic level: 3.2. Resilience: Medium (K=0.24-0.34; tm=4; tmax=8). Importance: not available.
- Symbolophorus californiensis* (Eigenmann & Eigenmann, 1889) Bigfin lanternfish  
North Pacific: Japan, and from Alaska to Baja California, Mexico. Max. length 11 cm SL. Habitat: pelagic, depth range: not available. Epipelagic to mesopelagic, at surface at night (Ref. 31442). Adults feed on small crustaceans (Ref. 11712). Oviparous, with planktonic eggs and larvae (Ref. 31442). Lipid content is 4.3 % in fresh body weight, while wax ester is present in trace amounts (Ref. 9197). Preyed upon by fishes, cephalopods, birds and marine mammals. Easily attracted to a light suspended above the water at night and many are captured in dipnets (Ref. 4525). Trophic level: 3.1. Resilience: not available. Importance: not available.
- Tarletonbeania crenularis* (Jordan & Gilbert, 1880) Blue lanternfish  
Eastern Pacific: southeastern Alaska to off Mexico, including the Gulf of Alaska and Bering Sea (Ref. 31442). Max. length 12.7 cm TL. Habitat: bathypelagic, depth range: 0-710 m. Epipelagic to mesopelagic, found at the surface at night (Ref. 31442). Feed on euphausiids (Ref. 6885). Oviparous, with planktonic eggs and larvae (Ref. 31442). Lipid content is 2.1 % in fresh body weight and wax ester is, at the most, 5 % in total lipids (Ref. 9197). Trophic level: 3.2. Resilience: not available. Importance: not available.

## Neoscopelidae

*Neoscopelus macrolepidotus* Johnson, 1863 Large-scaled lantern fish  
Eastern Atlantic: Morocco to Western Sahara; reported from Namibia (Ref. 27121). Western Atlantic: off Suriname and Nicaragua, and off southern Brazil. Indian Ocean: off Natal, South Africa and in the Great Australian Bight in the eastern side. Western Pacific: Australia (Ref. 7300). Eastern Pacific: British Columbia, Canada (Ref. 11980) and the Hawaiian Islands. Max. length 25 cm SL. Habitat: bathypelagic, depth range: 300-800 m. Found over continental and island slopes. No evidence of vertical migrations (Ref. 6690). Trophic level: 3.1. Resilience: not available. Importance: of no interest.

*Neoscopelus microchir* Matsubara, 1943  
Eastern Atlantic: Morocco to Western Sahara. Western Atlantic: Straits of Florida to off the Virgin Islands. Western Indian Ocean: Arabian Sea to about 28°S; one record off Natal, South Africa (Ref. 6604). Western Pacific: off southern Japan to northeastern New Zealand. Max. length 30.5 cm SL. Habitat: bathypelagic, depth range: 250-700 m. Found over continental and island slopes (Ref. 4481). Sexual mature at 12 cm (Ref. 47377). Trophic level: 3.3. Resilience: not available. Importance: of no interest.

## Lampriformes (velifers, tube-eyes and ribbonfishes)

### Trachipteridae Ribbonfishes

*Trachipterus altivelis* Kner, 1859 King-of-the-salmon  
Eastern Pacific: Alaska to Chile. Max. length 183 cm TL. Habitat: pelagic, depth range: 0-900 m. Oceanic (Ref. 2850). Also found near shore, but large adults sometimes feed on the bottom (Ref. 2850). Small individuals feed on copepods, annelid worms, and fish larvae; larger individuals feed on copepods, euphausiids, small pelagic fishes, young rockfishes, squid, and Octopoda (Ref. 6885). Oviparous, with planktonic eggs and larvae (Ref. 36610). Trophic level: 3.9. Resilience: not available. Importance: not available.

*Trachipterus trachipterus* (Gmelin, 1789) Ribbon fish  
Eastern Atlantic: western Mediterranean and from Morocco to Namibia; also off Table Bay, South Africa (Ref. 2713). Western Pacific: Japan and New Zealand. Southeast Pacific: Chile (Ref. 27363). Max. length 300 cm TL. Habitat: bathypelagic, depth range: down to 500 m. A rare (Ref. 2713), mesopelagic species. Feeds on squid and midwater fishes (Ref. 6392). Swims with head up (Ref. 36731). Trophic level: 4.5. Resilience: not available. Importance: not available.

### Veliferidae Velifers

*Metavelifer multiradiatus* (Regan, 1907) Spinyfin velifer  
Indo-Pacific: off Maputo in Mozambique; also from Australia, New Zealand and Hawaii. Reported from Japan (Ref. 559). Max. length 28 cm TL. Habitat: benthopelagic, depth range: 40-240 m. Found on the continental shelf (Ref. 9563) and slope (Ref. 559); also on seamounts (Ref. 559). Trophic level: 3.0. Resilience: not available. Importance: not available.

## Polymixiiformes (Beardfishes)

### Polymixiidae Beardfishes

*Polymixia berndti* Gilbert, 1905 Pacific beardfish  
Indo-Pacific: East Africa to the Hawaiian Islands, north to Japan, south to Australia. Max. length 47.5 cm SL. Habitat: reef-associated, depth range: 18-520 m. Trophic level: 4.0. Resilience: not available. Importance: of potential interest.

*Polymixia japonica* Günther, 1877 Silver eye  
Western Pacific: Sagami Bay, Japan to the East China Sea; Chesterfield Islands (Ref. 11897). Max. length 30 cm SL. Habitat: bathypelagic, depth range: 160-628 m. Found in middle to benthic zone with sandy mud bottom (Ref. 11230). Trophic level: 4.0. Resilience: not available. Importance: commercial.

*Polymixia lowei* Günther, 1859 Beardfish  
 Western Atlantic: New York, USA and northern Gulf of Mexico to the Antilles (Ref. 26340) and French Guiana. Max. length 20 cm TL. Habitat: bathydemersal, depth range: 50-600 m. Found on soft bottoms (Ref. 5217). Trophic level: 4.5. Resilience: not available. Importance: minor commercial.

*Polymixia nobilis* Lowe, 1838 Stout beardfish  
 Eastern Atlantic: Azores, Madeira, the Canary Islands, Cape Verde and St. Helena Islands. Western Atlantic: West Indies, Saba Bank, Leeward Islands, off northern coast of Cuba and west of the Bahamas. Reported to occur in the northern coast of South America (Ref. 5217). Max. length 48 cm TL. Habitat: bathydemersal, depth range: 100-770 m. Found on semi-hard and soft bottoms on the continental shelf and slope. Marketed fresh and frozen. Trophic level: 4.0. Resilience: not available. Importance: commercial.

*Polymixia salagomeziensis* Kotlyar, 1991  
 Southeast Pacific: Known from a single specimen from one of the breaks in the western part of the Sala y Gomez Ridge. Max. length 19.7 cm SL. Habitat: bathydemersal, depth range: down to 300 m. Trophic level: 3.6. Resilience: not available. Importance: not available.

*Polymixia yuri* Kotlyar, 1982  
 Southeast Pacific: near the junction of the Nasca and Sala y Gomez ridges. Max. length 18.8 cm SL. Habitat: bathydemersal, depth range: 180-250 m. Trophic level: 4.6. Resilience: Medium (K=0.20; tmax=9). Importance: not available.

## Gadiformes (cods)

### Euclichthyidae Eucla cods

*Euclichthys polynemus* McCulloch, 1926 Eucla cod  
 Southwest Pacific: off New Zealand and around Australia, from Queensland to the northwest shelf. Max. length 35 cm TL. Habitat: bathydemersal, depth range: 250-920 m. Occurs on the upper continental slope (Ref. 9563). Trophic level: 3.0. Resilience: not available. Importance: not available.

### Lotidae Hakes and burbots

*Gaidropsarus argentatus* (Reinhardt, 1837) Arctic rockling  
 North Atlantic: off southeastern coasts of Greenland, all but southern coast of Iceland, the Faroe-Shetland ridge to Norwegian coasts north from Bergen. Max. length 35 cm SL. Habitat: bathydemersal, depth range: 150-2000 m. Found offshore in deep water, always on soft bottoms of gravel, sand, mud, shells, and stones. Occurs in water temperatures close to or below 0°C. Feeds on decapod, amphipod, and euphausiid crustaceans, sometimes fishes are included in the diet. Trophic level: 3.6. Resilience: not available. Importance: commercial.

*Gaidropsarus ensis* (Reinhardt, 1837) Threadfin rockling  
 Northwest Atlantic: Baffin Bay, Greenland, and from deep waters off the east coast of North America from near Browns Bank (Canada) to off Cape Hatteras, North Carolina (USA). Max. length 40 cm TL. Habitat: benthopelagic, depth range: not available. Trophic level: 3.3. Resilience: not available. Importance: of no interest.

*Gaidropsarus parini* Svetovidov, 1986  
 Southeast Pacific and possibly South Atlantic. Max. length not available. Habitat: demersal, depth range: below 310 m. Little known species. Trophic level: 3.6. Resilience: not available. Importance: not available.

**Macrouridae Grenadiers or rattails**

- Albatrossia pectoralis* (Gilbert, 1892) Giant grenadier  
 North Pacific: northern Japan to the Okhotsk and Bering seas, east to the Gulf of Alaska, south to northern Baja California in Mexico. Max. length 150 cm TL. Habitat: bathydemersal, depth range: 140-3500 m. Young apparently bathypelagic to some degree but become bathydemersal at a size of 50-60 cm (Ref. 1371). Adults feed mainly on cephalopods, fish and shrimps; other food items include ctenophores, echinoderms, worms, crabs, and amphipods (Ref. 1371). Oviparous, with planktonic larvae (Ref. 36385). Trophic level: 4.3. Resilience: not available. Importance: commercial.
- Bathygadus favosus* Goode & Bean, 1886  
 Eastern Atlantic: off Mauritania, Gulf of Guinea, off Morocco and Madeira; also off Cape Town, South Africa (Ref. 11953). Western Atlantic: Straits of Florida, Gulf of Mexico, and Caribbean Sea. Max. length 46.5 cm TL. Habitat: bathydemersal, depth range: 770-2745 m. Trophic level: 3.0. Resilience: not available. Importance: of potential interest.
- Caelorinchus caelorhincus caelorhincus* (Risso, 1810) Hollowsnout grenadier  
 Northeast Atlantic and Mediterranean Sea. A loose sort of southern limit for *Caelorinchus caelorhincus caelorhincus* is probably around Cape Verde; most specimens south and to the east into the Gulf of Guinea are likely to be *Caelorinchus caelorhincus geronimoi* (Iwamoto 1997, pers. comm.). Max. length 40 cm TL. Habitat: benthopelagic, depth range: 90-1250 m. Found commonly in about 200-500 m. Feeds on a variety of benthic organisms, such as polychaetes, gastropods, cephalopods, numerous crustacean groups (copepods, gammarians, isopods, cumaceans, Natantia) and fish. Minimum depth range taken from Ref. 1371. Trophic level: 3.6. Resilience: Low ( $K=0.13-0.15$ ;  $t_{max}=8$ ). Importance: minor commercial.
- Caelorinchus cylindricus* Iwamoto & Merrett, 1997  
 Southwest Pacific: New Caledonia. Max. length 19 cm TL. Habitat: bathydemersal, depth range: not available. Trophic level: 3.3. Resilience: not available. Importance: not available.
- Caelorinchus immaculatus* Sazonov & Iwamoto, 1992  
 Southeast Pacific: Nazca and Sala y Gomez ridges and off central Chile. Max. length 32 cm TL. Habitat: bathydemersal, depth range: 340-780 m. Trophic level: 3.4. Resilience: not available. Importance: not available.
- Caelorinchus multifasciatus* Sazonov & Iwamoto, 1992  
 Southeast Pacific: known from a single specimen taken from the Sala y Gomez Ridge. Max. length 14 cm TL. Habitat: bathydemersal, depth range: 439-500 m. Trophic level: 3.1. Resilience: not available. Importance: not available.
- Caelorinchus nazcaensis* Sazonov & Iwamoto, 1992  
 Southeast Pacific: known only from type specimens taken from the Nazca Ridge. Max. length 40 cm TL. Habitat: bathypelagic, depth range: 225-530 m. Feeds on pelagic food items including shrimps (*Gennadas*, *Sergestes*, *Plesionika*), the mysid *Paralophogaster glaber*, the copepod *Pleuromamma*, squid, and fish (*Chauliodus* sp., *Lampanyctus* sp., and Myctophidae gen., sp. (Ref. 9949). Trophic level: 3.9. Resilience: not available. Importance: not available.
- Caelorinchus occa* (Goode & Bean, 1885) Swordsnout grenadier  
 Western Central Atlantic: Florida Straits to northeastern South America. One record from Bermuda. Eastern Atlantic: Faroe Channel to Cape Verde (Ref. 3587); southern Africa. Max. length 50 cm TL. Habitat: bathydemersal, depth range: 400-2220 m. Size may exceed 50 cm TL. Feeds primarily on small fish (myctophids), polychaete worms and crustaceans (pagurids, crabs, shrimps, ostracods, and copepods (Ref. 6187). Trophic level: 3.6. Resilience: not available. Importance: subsistence fisheries.
- Caelorinchus spilonotus* Sazonov & Iwamoto, 1992  
 Eastern Pacific: known only from Sala y Gomez Ridge and the Hawaiian Islands. Max. length 20 cm TL. Habitat: bathydemersal, depth range: 330-600 m. One specimen with a large squid beak in its stomach (Ref. 9949). Trophic level: 3.1. Resilience: not available. Importance: not available.

- Cetonus crassiceps* (Günther, 1878) Globosehead rattail  
Pacific and Atlantic. Nazca and Sala y Gomez ridges. Max. length 44 cm TL. Habitat: bathydemersal, depth range: 940-1100 m. Inhabits the continental slope (Ref. 7300). Trophic level: 3.0. Resilience: not available. Importance: not available.
- Coryphaenoides acrolepis* (Bean, 1884) Pacific grenadier  
North Pacific: northern Japan to Okhotsk and Bering seas, south along North American coasts to northern Mexico. Max. length 87 cm TL. Habitat: bathydemersal, depth range: 300-3700 m. A benthopelagic mid- slope species, that appears to wander off slope bottoms into midwater (Ref. 1371). Adults feed on small fish, euphausiids, prawns, amphipods and cephalopods (Ref. 1371). Oviparous, with planktonic larvae (Ref. 36385). Trophic level: 3.8. Resilience: Very low (K=0.02-0.04; tmax=73). Importance: commercial.
- Coryphaenoides carapinus* Goode & Bean, 1883 Carapine grenadier  
Atlantic Ocean: both sides of the North Atlantic and from the southeast Atlantic. Also known from the southern Indian Ocean. Max. length 45 cm TL. Habitat: bathydemersal, depth range: 903-5610 m. Feeds on polychaete worms, copepods, amphipods, isopods and mysids (Ref. 6187). Trophic level: 3.1. Resilience: not available. Importance: not available.
- Coryphaenoides cinereus* (Gilbert, 1896) Popeye grenadier  
North Pacific: northern Japan to Sea of Okhotsk, Bering Sea and south to Oregon, USA. Max. length 56 cm TL. Habitat: bathydemersal, depth range: 150-3500 m. Feeds mainly on pelagic forms (Ref. 1371). Too small for fresh consumption (Ref. 1371). Trophic level: 3.1. Resilience: not available. Importance: minor commercial.
- Coryphaenoides longifilis* Günther, 1877 Longfin grenadier  
North Pacific: southern Japan to Bering Sea. Max. length 70 cm TL. Habitat: bathydemersal, depth range: 550-3000 m. Trophic level: 3.3. Resilience: not available. Importance: minor commercial.
- Coryphaenoides rudis* Günther, 1878 Rudis rattail  
Pacific Ocean: Kermadec Islands, Philippines, Darwin Seamount in central Pacific, Tasman Sea, Nazca Ridge. Indian Ocean: off Socotra Island and Western Australian Ridge. Subtropical and tropical Atlantic, including the Gulf of Mexico and Caribbean Sea. Max. length 111 cm TL. Habitat: bathypelagic, depth range: 600-2380 m. Feeds on cephalopods, at least at larger sizes. Trophic level: 4.5. Resilience: not available. Importance: of potential interest.
- Coryphaenoides rupestris* Gunnerus, 1765 Roundnose grenadier  
North Atlantic: from about 37°N to Baffin Island and Greenland in the western Atlantic, and off Iceland and Norway south to North Africa in the eastern Atlantic. Reported to occur from the tongue of the Ocean east of Andros Islands (about 24°N, 77°W) in the Bahamas. Max. length 110 cm TL. Habitat: bathypelagic, depth range: 180-2200 m. Benthopelagic to bathypelagic in about 400 and 1200 m depth. Form large schools at 600 to 900 m depth (Ref. 9988). Feed on a variety of fish and invertebrates, but primarily on pelagic crustaceans such as shrimps, amphipods and cumaceans; cephalopods and lantern fishes constitute a lesser portion of the diet. This species is currently facing overexploitation in the North Atlantic. Utilized frozen and for fishmeal; can be fried and baked (Ref. 9988). Trophic level: 3.7. Resilience: Low (K=0.1; tm=9-11; tmax=54; Fec=10,000). Importance: commercial.
- Gadomus melanopterus* Gilbert, 1905  
Eastern Central Pacific: Hawaiian Islands. Southeast Pacific: Nazca and Sala-y-Gomez. Max. length not available. Habitat: bathydemersal, depth range: 812-875 m. Trophic level: 3.3. Resilience: not available. Importance: not available.
- Haplomacrourus nudirostris* Trunov, 1980 Naked snout rattail  
Western Indian Ocean: off Natal, Walters Shoal, Mascarene Ridge, Broken Ridge, southeastern coast of Australia. Southwest Pacific: off New Zealand. Southeast Atlantic. Max. length 57.5 cm TL. Habitat: bathypelagic, depth range: 690-1590 m. Trophic level: 3.8. Resilience: not available. Importance: not available.

*Hymenocephalus aterrimus* Gilbert, 1905

Eastern Central Pacific: Hawaiian Islands. Northwest Atlantic. Max. length 20 cm TL. Habitat: bathypelagic, depth range: 460-920 m. Trophic level: 3.1. Resilience: not available. Importance: not available.

*Hymenocephalus gracilis* Gilbert & Hubbs, 1920 Graceful grenadier

Indo-Pacific: off Zanzibar; South China Sea off Luzon (Philippines), Japan, East China Sea, southeastern Pacific. Tropical western North Atlantic and eastern Atlantic off Morocco. Max. length 13 cm TL. Habitat: bathypelagic, depth range: 160-345 m. Feeds on planktonic crustaceans (Ref. 6187). Trophic level: 3.1. Resilience: not available. Importance: not available.

*Hymenocephalus italicus* Giglioli, 1884 Glasshead grenadier

Eastern Atlantic: Portugal to Angola, including the Mediterranean. Western Atlantic: Florida Straits through the Gulf of Mexico and Caribbean Sea to northern Brazil. Indian Ocean: Gulf of Aden, Zanzibar and Maldives (Ref. 26165). Max. length 25 cm TL. Habitat: benthopelagic, depth range: 100-1400 m. Most common at depths less than 500 m (Ref. 1371). Feeds predominantly on pelagic copepods, to a lesser extent on euphausiids and gammarian amphipods, and to a minor extent on shrimps, ostracods, cumaceans, other small crustaceans, and small fish (Ref. 1371). Due to its small size, it is not of significant interest to fisheries (Ref. 1371). Trophic level: 3.4. Resilience: Medium ( $K=0.18$ ;  $t_{max}=9$ ). Importance: not available.

*Hymenocephalus longibarbis* (Günther, 1887)

Indo-West Pacific: northwestern Australia. Max. length not available. Habitat: benthopelagic, depth range: not available. Trophic level: 3.1. Resilience: not available. Importance: not available.

*Hymenocephalus longiceps* Smith & Radcliffe, 1912

Indo-West Pacific. Max. length not available. Habitat: benthopelagic, depth range: not available. Found on the continental slope. Trophic level: 3.1. Resilience: not available. Importance: not available.

*Hymenocephalus neglectissimus* Sazonov & Iwamoto, 1992

Southeast Pacific: known only from Sala y Gomez Ridge. Max. length 13 cm TL. Habitat: bathydemersal, depth range: 525-600 m. Trophic level: 3.4. Resilience: not available. Importance: not available.

*Hymenocephalus semipellucidus* Sazonov & Iwamoto, 1992

Southeast Pacific: known only from the Sala y Gomez Ridge. Max. length 16.5 cm TL. Habitat: bathydemersal, depth range: 550-800 m. Trophic level: 3.1. Resilience: not available. Importance: not available.

*Hymenocephalus striatulus* Gilbert, 1905

Eastern Central Pacific: known only from the Hawaiian Islands and Sala y Gomez Ridge. Max. length 18 cm TL. Habitat: bathypelagic, depth range: 350-640 m. Feeds mainly on pelagic organisms, copepods (*Pleuromamma* sp., *Oncaea conifera*, *Xanthocalanus* sp., Aetideidae spp.); also on small fish, chaetognaths, gammarids (Lysianassidae), shrimp (*Bentheogennema pasithea*), and mysids (*Paralophogaster glaber*); benthic polychaetes, including family Polinoidea (Ref. 9949). Trophic level: 3.3. Resilience: not available. Importance: not available.

*Kumba punctulata* Iwamoto & Sazonov, 1994

Western Pacific: Coral Sea off New Caledonia and off northeastern New Guinea. Max. length 15 cm TL. Habitat: bathypelagic, depth range: 530-1000 m. Trophic level: 3.5. Resilience: not available. Importance: not available.

*Kuronezumia pallida* Sazonov & Iwamoto, 1992

Southeast Pacific: known only from Sala y Gomez Ridge. Max. length 55 cm TL. Habitat: bathydemersal, depth range: 540-800 m. Trophic level: 3.0. Resilience: not available. Importance: not available.

*Lucigadus microlepis* (Günther, 1878)

Western Pacific: North Fiji Basin, Wallis and Futuna Islands, Norfolk Ridge, New Caledonia and Arafura and Madura seas. Max. length 16 cm TL. Habitat: bathydemersal, depth range: 204-600 m. Trophic level: 3.3. Resilience: not available. Importance: not available.

*Macrouroides inflaticeps* Smith & Radcliffe, 1912

Western Central Pacific: Philippines. Eastern Pacific: Nazca Ridge. Atlantic Ocean: in tropical waters. Also in the Indian Ocean. Max. length 48 cm TL. Habitat: bathypelagic, depth range: 747-4000 m. Trophic level: 3.0. Resilience: not available. Importance: not available.

*Macrourus berglax* Lacepède, 1801 Onion-eye grenadier

North Atlantic: Norfolk Canyon and George Bank north to Labrador, Davis Strait, eastern and western Greenland, Iceland, and from the Irish Atlantic slope north to Faeroe Islands, Norwegian coast, to Spitzbergen, and to the Barents Sea. Max. length 110 cm TL. Habitat: benthopelagic, depth range: 100-1000 m. Commonly found in about 300-500 m depth. Temperature preferences appear to range from about 1- 4°C, although bottom temperatures below 0°C have been recorded at capture depths. Amphipods predominate in the diet, although polychaetes and various natant crustaceans are also important. Also feeds on bivalves, isopods, echinoderms (notably ophiuroids), and ctenophores. Trophic level: 3.6. Resilience: Very low (tm=15; tmax=25; Fec=15,000). Importance: commercial.

*Malacocephalus laevis* (Lowe, 1843) Softhead grenadier

Western Atlantic: Strait of Florida to Brazil, Gulf of Mexico and Caribbean Sea. Eastern Atlantic: Iceland (Ref. 12462) and Faroes to South Africa. Indian Ocean: Arabian Sea, Bay of Bengal, off Maldives and off East African coast. Western Pacific: Indonesian area and Australia. Eastern Central Pacific (Ref. 9315). *Malacocephalus hawaiiensis*, *Malacocephalus luzonensis*, and *Malacocephalus nipponensis* are closely related to *Malacocephalus laevis* and may eventually prove to represent populations of this species, if a comprehensive comparison of material from the Atlantic, Indian and Pacific oceans is done (Ref. 1371). Max. length 60 cm TL. Habitat: bathydemersal, depth range: 200-1000 m. Found on continental slopes (Ref. 1371). Utilized mainly for fishmeal and oil (Ref. 1371). In the past, fishers in the North Atlantic were reported to have used the luminescent excretion from the ventral light organ to enhance baits used for cod fishing (Ref. 1371). Trophic level: 4.2. Resilience: not available. Importance: minor commercial.

*Mataeocephalus acipenseirinus* (Gilbert & Cramer, 1897) Sturgeon grenadier

Eastern Central Pacific: Hawaiian Islands and Sala y Gomez Ridge. Max. length 20 cm TL. Habitat: bathypelagic, depth range: 400-730 m. Trophic level: 3.1. Resilience: not available. Importance: of no interest.

*Nezumia convergens* (Garman, 1899) Peruvian grenadier

Eastern Pacific: Gulf of California south to Chile, including the Cocos and Galapagos islands. Max. length 30 cm TL. Habitat: bathydemersal, depth range: 600-1870 m. Most common grenadier in the Eastern central Pacific but occurs in very deep waters that it is not regularly taken by trawlers (Ref. 9315). Maximum TL of at least 30 cm (Ref. 9315). Trophic level: 3.3. Resilience: not available. Importance: subsistence fisheries.

*Nezumia longebarbata* (Roule & Angel, 1933) Bluntnose grenadier

Atlantic Ocean: Madeira and Gulf of Mexico. Max. length 40.5 cm TL. Habitat: bathypelagic, depth range: 1440-1710 m. Trophic level: 3.1. Resilience: not available. Importance: not available.

*Nezumia propinqua* (Gilbert & Cramer, 1897) Aloha grenadier

Indo-Pacific: off Mozambique, Kyushu-Palau Ridge, and Hawaii. Southeast Pacific: Sala y Gomez Ridge. Very close to *Nezumia condylura*. Max. length 27 cm TL. Habitat: bathydemersal, depth range: 523-900 m. Off Hawaii, individuals reportedly taken in June by the ALBATROSS had been feeding exclusively on small eggs. Mature eggs were found in a specimen taken in August (Ref. 1690). Trophic level: 3.3. Resilience: not available. Importance: subsistence fisheries.

*Pseudocetonurus septifer* Sazonov & Shcherbachev, 1982

Eastern Pacific: Nazca and Sala y Gomez ridges and Hawaiian Islands. Max. length 39 cm TL. Habitat: bathydemersal, depth range: 340-950 m. Trophic level: 3.0. Resilience: not available. Importance: not available.

*Sphagemacrurus grenadae* (Parr, 1946) Pugnose grenadier

Western Central Atlantic: Gulf of Mexico and Caribbean Sea. One record from Hudson Canyon. Max. length 25 cm TL. Habitat: bathypelagic, depth range: 1000-1500 m. Closely related to *S. hirundo* (eastern Atlantic) and *S. pumiliceps* (Indian Ocean). A more thorough study using adequate numbers of specimens should be done to distinguish the three. Trophic level: 3.1. Resilience: not available. Importance: subsistence fisheries.

*Squalogadus modificatus* Gilbert & Hubbs, 1916

Eastern Atlantic: off Gabon. Western Atlantic: Gulf of Mexico. Western Pacific: off Japan; New Zealand (Ref. 5755). Southeast Pacific: Nazca and Sala-y-Gomez. Max. length 35 cm TL. Habitat: bathypelagic, depth range: 600-1400 m. Live at midwater as well as bathypelagic levels (Ref. 37108). Trophic level: 3.0. Resilience: not available. Importance: not available.

*Trachonurus villosus* (Günther, 1877)

Eastern Atlantic: Azores and Madeira Islands and off Morocco. Western Atlantic: Gulf of Mexico and Caribbean Sea. Western Pacific: southern Japan to the Philippine and Indonesian seas. Eastern Pacific: Hawaii. Reported from off South Australia (Ref. 2800). Max. length 60 cm TL. Habitat: bathypelagic, depth range: 514-1590 m. Trophic level: 3.1. Resilience: not available. Importance: of no interest.

*Ventrifossa johnboborum* Iwamoto, 1982

Indo-Pacific: Western Indian Ocean, the Bismarck Sea and the Sala y Gomez Ridge (Ref. 9949); also in Papua New Guinea (Ref. 6993). Max. length 47.5 cm TL. Habitat: bathydemersal, depth range: 540-810 m. Trophic level: 3.0. Resilience: not available. Importance: not available.

*Ventrifossa macrodon* Sazonov & Iwamoto, 1992

Southeast Pacific: known only from the Sala y Gomez Ridge. Max. length 40 cm TL. Habitat: bathydemersal, depth range: 345-770 m. Trophic level: 3.4. Resilience: not available. Importance: not available.

*Ventrifossa nigrodorsalis* Gilbert & Hubbs, 1920 Spinkaker grenadier

Western Pacific: southern Japan, Taiwan, Philippines, and parts of Indonesia (Borneo, Halmahera). Slight morphological variation seen in specimens from Japan and Indonesia, but not sufficient to recognize additional taxa. Max. length 34 cm TL. Habitat: bathydemersal, depth range: 270-700 m. Trophic level: 3.3. Resilience: not available. Importance: minor commercial.

*Ventrifossa obtusirostris* Sazonov & Iwamoto, 1992

Southeast Pacific: Sala y Gomez Ridge. Max. length 30 cm TL. Habitat: bathydemersal, depth range: 750- 800 m. Trophic level: 3.0. Resilience: not available. Importance: not available.

*Ventrifossa teres* Sazonov & Iwamoto, 1992

Southeast Pacific: Sala y Gomez Ridge. Max. length 24 cm TL. Habitat: bathydemersal, depth range: 345- 610 m. Trophic level: 3.3. Resilience: not available. Importance: not available.

## **Merlucciidae Merluccid hakes**

*Macruronus magellanicus* Lönnberg, 1907 Patagonian grenadier

Southeast Pacific and Southwest Atlantic: off southern Chile and Argentina. Max. length 115 cm TL. Habitat: bathypelagic, depth range: 30-500 m. Schooling species which are concentrated on the outer part of the continental shelf (Ref. 1371). Feeds mainly on fish (herring, anchovies, lantern fishes), also on mysids, cephalopods, euphausiids and amphipods (Ref. 1371). Migrates southward in spring and summer and northward in winter (Ref. 1371). Utilized fresh, frozen and for fishmeal (Ref. 1371). Trophic level: 3.9. Resilience: Low (K=0.09-0.1). Importance: highly commercial.

**Moridae** **Morid cods**

- Antimora microlepis* Bean, 1890 Finescale mora  
 North Pacific: Shikoku Island, Japan to Navarin Canyon in the Bering Sea, the Gulf of California and Johnston Island. Max. length 75 cm TL. Habitat: bathypelagic, depth range: 175-3048 m. Inhabits the lower regions of the continental slope between 800 m and 1, 800 m. It appears that sex segregation is also basic to this species, but whether or not the species migrates extensively or uses the North American west coast slopes only as feeding areas is not known (Ref. 1371). Feeds on benthic invertebrates (Ref. 9319). Taken frequently by deep slope water trawlers fishing for *Microstomus pacificus* and deepwater *Sebastes* species (Ref. 1371). Trophic level: 3.5. Resilience: not available. Importance: subsistence fisheries.
- Antimora rostrata* (Günther, 1878) Blue antimora  
 All oceans except the North Pacific north of 10°N. Max. length 75 cm SL. Habitat: bathypelagic, depth range: 350-3000 m. Found on the continental slope and upper rise (Ref. 6606). May move offshore with age and spawn in the deep parts of its range. Off the eastern coast of United States, it is speculated that the population use the area only as feeding grounds with spawning taking place to the north. Feeds on benthic invertebrates (Ref. 9319). Trophic level: 3.7. Resilience: Medium (K=0.3). Importance: not available.
- Gadella brocca* Paulin & Roberts, 1997  
 Western Pacific: New Caledonia and Norfolk Ridge. Max. length 17.25 cm SL. Habitat: bathypelagic, depth range: 425-790 m. Trophic level: 3.4. Resilience: not available. Importance: not available.
- Gadella maraldi* (Risso, 1810) Gadella  
 Eastern Atlantic: off Portugal, Madeira, the Azores and the Great Meteor Bank. Its southern distribution along the west coast of Africa is not clear. Also known from the Mediterranean. Max. length 30 cm TL. Habitat: benthopelagic, depth range: 150-700 m. Occurs on the upper slope, over hard bottom (Ref. 4495, 4774). Possibly a spring spawner with pelagic larvae (Ref. 4774). Trophic level: 3.5. Resilience: not available. Importance: minor commercial.
- Gadella norops* Paulin, 1987  
 Indo-West Pacific: Mascarene Ridge, Australia, New Caledonia and New Zealand. Max. length 26.8 cm SL. Habitat: benthopelagic, depth range: 200-750 m. Inhabits the outer shelf to mid-slope depths. Trophic level: 3.2. Resilience: not available. Importance: not available.
- Gadella obscurus* (Parin, 1984)  
 Southeast Pacific: seamounts of the southern part of the Nazca Ridge. Max. length 20.8 cm SL. Habitat: benthopelagic, depth range: 175-240 m. Trophic level: 3.2. Resilience: not available. Importance: not available.
- Halargyreus johnsonii* Günther, 1862 Slender codling  
 Spotty records from the subarctic and subantarctic to temperate waters of the Atlantic Ocean, as well as the Pacific. Northern Pacific: Northwestern Bering Sea; Pacific Ocean south of the Gulf of Alaska to California and to Japan and the Sea of Okhotsk. Max. length 56 cm TL. Habitat: bathypelagic, depth range: 450-3000 m. Food consists of free-living small animals, such as crustaceans and squids. This species is reportedly being caught by trawl in temperate waters of Australia (Ref. 9563). Trophic level: 3.3. Resilience: not available. Importance: not available.
- Laemonema filodorsale* Okamura, 1982  
 Western Pacific: anti-equatorial, Kyushu-Palau Ridge and off New Caledonia. Max. length 29 cm SL. Habitat: bathydemersal, depth range: 336-710 m. Trophic level: 3.5. Resilience: not available. Importance: not available.
- Laemonema longipes* Schmidt, 1938 Longfin codling  
 North Pacific: central Japan to the Okhotsk and Bering seas. Max. length 60 cm TL. Habitat: bathydemersal, depth range: 80-1830 m. Found in the continental slope (Ref. 1371). Many specimens taken from a whale stomach (Ref. 1371). Trophic level: 3.2. Resilience: not available. Importance: of potential interest.

*Laemonema palauense* Okamura, 1982

Western Pacific: anti-equatorial, Kyushu-Palau Ridge and off New Caledonia. Max. length 27.6 cm SL. Habitat: bathydemersal, depth range: 210-753 m. Trophic level: 3.2. Resilience: not available. Importance: not available.

*Laemonema rhodochir* Gilbert, 1905

Pacific Ocean: Kyushu-Palau Ridge, off south coast of Oahu Island, and Sala y Gomez Ridge. Max. length 21.2 cm SL. Habitat: benthopelagic, depth range: 95-550 m. Trophic level: 3.4. Resilience: not available. Importance: not available.

*Laemonema yarrellii* (Lowe, 1838)

Eastern Atlantic: Great Meteor Bank and from West Sahara to Senegal. Also in Madeira. Max. length 18 cm SL. Habitat: bathydemersal, depth range: 220-550 m. Found in the outer shelf and upper slope (Ref. 4495). Known to feed on shrimps in the Great Meteor Bank Area (Ref. 4774). Trophic level: 3.6. Resilience: not available. Importance: of no interest.

*Laemonema yuwo* Parin & Sazonov, 1990

Southeast Pacific: Sala y Gomez Ridge. Max. length not available. Habitat: bathydemersal, depth range: 545-600 m. Trophic level: 3.2. Resilience: not available. Importance: not available.

*Lepidion inosimae* (Günther, 1887) Morid cod

Western Pacific: in temperate waters; Sagami Bay, Ramapo Bank and Emperor Seamounts (Japan); southeastern Australia, New Zealand north of Clatham Rise and off New Caledonia. Max. length 60.5 cm SL. Habitat: bathydemersal, depth range: 797-805 m. Found on the continental slope (Ref. 7300). The species is the largest in the family, an exceed 2 m in length (Ref. 31777). Trophic level: 3.2. Resilience: not available. Importance: not available.

*Lepidion schmidtii* Svetovidov, 1936

Southwest Pacific: Australia and New Zealand. Northwest Pacific: Japan and the Sea of Okhotsk (Ref. 559). North Atlantic. Max. length 85 cm SL. Habitat: bathydemersal, depth range: not available. Found on the continental slope. Trophic level: 3.4. Resilience: not available. Importance: not available.

*Mora moro* (Risso, 1810) Common mora

Eastern Atlantic: Iceland and Faeroes to Cape Bojador, West Africa, and including Azores, Madeira, and western Mediterranean. Also known from the Walvis and Vavilov ridges (Ref. 45011). Western Indian Ocean: in the region south of Madagascar. Pacific Ocean: temperate Australia, New Zealand, and between Valparaiso, Chile and the Juan Fernandez Islands. Max. length 80 cm TL. Habitat: bathypelagic, depth range: 450-2500 m. Recorded from the upper continental slope (Ref. 9563). Occasionally found at 50 m. Feeds on fishes, crustaceans, mollusks and other invertebrates as well as food of terrestrial origin, including garbage. Probably a winter and early spring spawner (Ref. 4774). Trophic level: 3.8. Resilience: not available. Importance: minor commercial.

*Physiculus dalwigki* Kaup, 1858 Black codling

Eastern Atlantic: western Mediterranean, Madeira, Great Meteor Bank and south along the African coast to about 25°N. Max. length 30 cm TL. Habitat: benthopelagic, depth range: 100-300 m. Occurs on the continental slope (Ref. 4774). Trophic level: 3.2. Resilience: not available. Importance: subsistence fisheries.

*Physiculus hexacytus* Parin, 1984

Southeast Pacific: submarine seamounts of the central and southern part of the Nazca Ridge. Max. length 18.9 cm SL. Habitat: bathydemersal, depth range: 230-340 m. Type specimen taken from 330 m depth (Ref. 9068). Trophic level: 3.4. Resilience: not available. Importance: not available.

*Physiculus japonicus* Hilgendorf, 1879 Japanese codling

Northwest Pacific: Japan and the East China Sea. Max. length 35 cm TL. Habitat: bathydemersal, depth range: 150-350 m. Found on rough, rocky bottom along the continental shelf and upper slope (Ref. 1371). Trophic level: 3.5. Resilience: not available. Importance: subsistence fisheries.

*Physiculus longicavis* Parin, 1984

Southeast Pacific: seamounts in the southern part of the Nazca Ridge and the Sala y Gomez Ridge. Max. length 20.8 cm SL. Habitat: benthopelagic, depth range: 160-290 m. Trophic level: 3.2. Resilience: not available. Importance: not available.

*Physiculus luminosus* Paulin, 1983 Luminescent cod

South Pacific: off South America on the Nasca (Nazca) Ridge, Austral Ridge in central South Pacific, and southwestern Pacific off northern New Zealand and eastern Australia (Queensland and New South Wales). Reported from off New Caledonia. Max. length 30 cm TL. Habitat: bathydemersal, depth range: 130-640 m. A temperate species (Ref. 7300) recorded from the upper continental slope (Ref. 9563). Trophic level: 3.2. Resilience: not available. Importance: not available.

*Physiculus parini* Paulin, 1991

Southeast Pacific: seamounts of the western part of the Sala y Gomez Ridge. Max. length 11 cm SL. Habitat: bathypelagic, depth range: 326-356 m. Trophic level: 3.4. Resilience: not available. Importance: not available.

*Physiculus sazónovi* Paulin, 1991

Southeast Pacific: seamounts on the western part of the Sala y Gomez Ridge. Max. length 10.85 cm SL. Habitat: bathypelagic, depth range: 260-272 m. Trophic level: 3.4. Resilience: not available. Importance: not available.

*Physiculus therosideros* Paulin, 1987

Southwest Pacific: Australia, Bellona Plateau, New Caledonia, Kermadec Islands, New Zealand. Max. length 16.8 cm SL. Habitat: bathypelagic, depth range: 83-610 m. Trophic level: 3.4. Resilience: not available. Importance: not available.

*Tripterophycis svetovidovi* Sazonov & Shcherbachev, 1986

South Atlantic: Kit Range and Rui-Grande Peak. Indian Ocean: Madagascar Ridge. Western Central Pacific: Australia and New Caledonia. Southeast Pacific: Sala y Gomez Ridge. Max. length 23.4 cm SL. Habitat: bathypelagic, depth range: 385-950 m. Trophic level: 3.2. Resilience: not available. Importance: not available.

**Phycidae Phycid hakes**

*Phycis phycis* (Linnaeus, 1766) Forkbeard

Northeast Atlantic : Bay of Biscay to Morocco, south to Cape Verde, and including off-lying islands. Also in the Mediterranean and the Azores. Max. length 65 cm TL. Habitat: benthopelagic, depth range: 13-614 m. Found on hard and sandy-muddy bottoms near rocks at 100-650 m, but sometimes taken at greater depths (Ref. 1371). Nocturnal, hiding between rocks during the day (Ref. 1371). Feeds on small fish and various invertebrates (Ref. 1371). Trophic level: 4.3. Resilience: Medium (K=0.19). Importance: minor commercial.

**Ophidiiformes (cusk eels)**

**Bythitidae Viviparous brotulas**

*Bellottia apoda* Giglioli, 1883

Mediterranean Sea and subtropical Eastern Atlantic: Greece, Adriatic Sea, Tyrrhenian Sea, south Portugal and off Madeira (Ref. 4758, Ref. 13359). Also one specimen from 29°50.2'N, 28°29.8'W (Ref. 4758). Subtropical western Atlantic specimens may be this species (Ref. 34024). Max. length 6.5 cm SL. Habitat: bathydemersal, depth range: 30-500 m. The food of *Bellottia apoda* appears to be a mixture of planktonic and benthic preys (Ref. 13359). Viviparous (Ref. 6526). Uncommon species (Ref. 34024), but it is not so rare as it seemed in the Adriatic Sea (Ref. 13359). Trophic level: 3.2. Resilience: Low (Fec=30-180). Importance: of no interest.

## **Carapidae      Pearlfishes**

### *Echiodon dentatus* (Cuvier, 1829)

Eastern Atlantic: including the Mediterranean and Adriatic Sea (Ref. 4741). Max. length 17 cm TL. Habitat: demersal, depth range: down to 3250 m. Uncommon species (Ref. 34024). Adults are benthic, juveniles are free-swimming (Ref. 6491). Trophic level: 3.5. Resilience: not available. Importance: of no interest.

### *Eurypleuron owasianum* (Matsubara, 1953)      Eel pearlfish

Indo-Pacific and Southeast Pacific: off South Africa, Japan, Australia, New Zealand, Chile. The widely separated Japanese and South African populations need to be evaluated to see if they are the one species. Max. length 23.6 cm TL. Habitat: bathydemersal, depth range: 1-455 m. Uncommon species (Ref. 34024). Presumably free-living (Ref. 34024). Trophic level: 3.9. Resilience: not available. Importance: of no interest.

### *Pyramodon parini* Markle & Olney, 1990

Southeast Pacific: Nazca Ridge. Max. length 30.5 cm TL. Habitat: benthopelagic, depth range: 185-443 m. Rare species (Ref. 34024). Trophic level: 3.5. Resilience: not available. Importance: of no interest.

### *Pyramodon ventralis* Smith & Radcliffe, 1913

Indo-West Pacific: Japan, Indonesia, Australia and New Zealand (Ref. 559) and New Caledonia (Ref. 31524). Max. length 18.1 cm TL. Habitat: benthopelagic, depth range: 184-364 m. Trophic level: 3.1. Resilience: not available. Importance: of no interest.

## **Ophidiidae      Cusk-eels**

### *Bassogigas gillii* Goode & Bean, 1896

Western Indian Ocean: between Madagascar and Cape Town, South Africa. Western Atlantic: from 40°N to 23°S. Western Pacific: off New Caledonia. Max. length 85 cm TL. Habitat: bathydemersal, depth range: 1060-2150 m. Uncommon species (Ref. 34024). Trophic level: 3.4. Resilience: not available. Importance: of no interest.

### *Brotula multibarbata* Temminck & Schlegel, 1846      Goatsbeard brotula

Indo-Pacific: Red Sea and East Africa to Pitcairn, north to southern Japan, south to Lord Howe Island. Max. length 100 cm TL. Habitat: reef-associated, depth range: down to 650 m. Benthopelagic on shelf and upper slope (Ref. 34024). Larvae found in the epipelagic far offshore (Ref. 34024). Found in shallow lagoon and seaward reefs and occurs at depths of at least 220 m. A nocturnal species, rarely seen for it lives in caves and crevices during the day and periodically emerges from cover at night to feed on crustaceans, mainly crabs, and fishes. Utilized fresh and eaten steamed, pan-fried and baked (Ref. 9987). Trophic level: 3.7. Resilience: not available. Importance: minor commercial.

### *Dicrolene introniger* Goode & Bean, 1883      Digitate cusk eel

Eastern Atlantic: continental slope all along West Africa. Western Atlantic: warmer parts of the area including the Gulf of Mexico. Max. length 35 cm TL. Habitat: bathydemersal, depth range: 700-1785 m. Common species (Ref. 34024). Trophic level: 3.5. Resilience: not available. Importance: not available.

### *Dicrolene nigra* Garman, 1899

Southeast Pacific: Chile. Max. length 40.3 cm TL. Habitat: bathydemersal, depth range: 600-1865 m. Uncommon species (Ref. 34024). Trophic level: 3.2. Resilience: not available. Importance: of no interest.

### *Neobythites neocaledoniensis* Nielsen, 1997

Western Pacific: off New Caledonia and on Norfolk Ridge. Max. length 24.5 cm SL. Habitat: bathydemersal, depth range: 470-670 m. Rare species (Ref. 34024). Feeds on gastropods and crustaceans (Ref. 31524). Trophic level: 3.4. Resilience: not available. Importance: not available.

*Neobythites zonatus* Nielsen, 1997

Western Pacific: Caroline Islands to New Caledonia and a few neighboring islands. Max. length 17.4 cm SL. Habitat: bathydemersal, depth range: 275-950 m. Uncommon species (Ref. 34024). Feeds on gastropods (Ref. 31524). Trophic level: 3.4. Resilience: not available. Importance: not available.

*Penopus microphthalmus* (Vaillant, 1888)

Eastern Atlantic: off Northwest Africa, one specimen off Angola and one specimen off South Africa. Western Central Atlantic: including the Gulf of Mexico. Max. length 35 cm TL. Habitat: bathydemersal, depth range: 1320-3535 m. Rare species (Ref. 34024). Trophic level: 3.5. Resilience: not available. Importance: of no interest.

*Porogadus miles* Goode & Bean, 1885 Slender cuskeel

Cosmopolitan. Max. length 30 cm TL. Habitat: bathydemersal, depth range: 1000-5055 m. Common species (Ref. 34024). Trophic level: 3.3. Resilience: not available. Importance: of no interest.

*Pycnocraspedum armatum* Gosline, 1954

Eastern Central Pacific: off the Mauna Loa lava flow, Hawaii Island, Hawaiian Islands. Max. length not available. Habitat: benthopelagic, depth range: not available. Rare species (Ref. 34024). Trophic level: 3.5. Resilience: not available. Importance: of no interest.

**Parabrotulidae False brotulas***Parabrotula plagiophthalmus* Zugmayer, 1911

Northeast Atlantic: most of the known specimens from the area (Ref. 36126). Eastern Atlantic: Gulf of Guinea, one specimen 0°42'S, 7°E (Ref. 10800). Southeast Atlantic: off East London, South Africa. Western Pacific: Japan and Australia (Ref. 11228). Max. length 5 cm TL. Habitat: bathypelagic, depth range: 800-2000 m. Viviparous (Ref. 10800). Trophic level: 3.0. Resilience: not available. Importance: not available.

**Lophiiformes (anglerfishes)****Ceratiidae Seadevils***Cryptopsaras couesii* Gill, 1883 Triplewart seadevil

Tropical and subtropical parts of all oceans. Max. length 7.3 cm TL. Habitat: bathypelagic, depth range: 0- 2091 m. Males dwarfed, becoming parasitic on females. Maximum size of free-living males is 1.05 cm (Ref. 4494). Females are oviparous, with planktonic larvae (Ref. 36494). Eggs are presumably contained in floating gelatinous rafts (Ref. 36494 ). Trophic level: 4.4. Resilience: Medium (tm=5). Importance: of no interest.

**Chaunacidae Sea toads***Chaunax abei* Le Danois, 1978

Western Pacific: southern Japan. More recent works report its occurrence in Taiwan (Ref. 5193) and Malaysia (Ref. 5756). Max. length 30 cm SL. Habitat: demersal, depth range: 90-500 m. Found in the sublittoral to upper bathyal zone (Ref. 11230). Trophic level: 3.3. Resilience: not available. Importance: not available.

*Chaunax fimbriatus* Hilgendorf, 1879

Indo-West Pacific: Chôshi, Japan to the Kyushu-Palau Ridge; Indonesia and Australia (Ref. 7300); Chesterfield Islands (Ref. 11897). Max. length 14 cm SL. Habitat: bathydemersal, depth range: 500-1985 m. Edible (Ref. 637). Trophic level: 3.3. Resilience: not available. Importance: not available.

*Chaunax latipunctatus* Le Danois, 1984

Southeast Pacific: Galapagos Islands. Max. length 12 cm SL. Habitat: bathydemersal, depth range: 345-800 m. Trophic level: 3.2. Resilience: not available. Importance: not available.

*Chaunax pictus* Lowe, 1846 Pink frogmouth  
 Circumglobal in tropical to temperate waters. Reported from the Arafura Sea (Ref. 9819). Absent from the Mediterranean (Ref. 36129). Max. length 40 cm TL. Habitat: bathydemersal, depth range: 200-658 m. Found on continental shelves and slopes, from approximately 200 m and below (Ref. 10756). A solitary species (Ref. 26340). Trophic level: 4.4. Resilience: not available. Importance: of no interest.

*Chaunax umbrinus* Gilbert, 1905  
 Worldwide in tropical and subtropical regions. Max. length 35 cm SL. Habitat: demersal, depth range: 183- 400 m. Trophic level: 3.2. Resilience: not available. Importance: not available.

**Lophiidae Goosefishes**

*Lophiodes miacanthus* (Gilbert, 1905)  
 Pacific Ocean: Kyushu-Palau Ridge and Hawaii. Max. length 15 cm SL. Habitat: bathydemersal, depth range: 300-500 m. Trophic level: 3.3. Resilience: not available. Importance: not available.

*Lophius piscatorius* Linnaeus, 1758 Angler  
 Eastern Atlantic: south-western Barents Sea to Strait of Gibraltar including the Mediterranean and Black Sea. Reported from Iceland (Ref. 4712) and Mauritania (Ref. 5377). North Atlantic specimens attain larger sizes than those collected off West Africa and they also occur in shallower depths. Max. length 200 cm SL. Habitat: bathydemersal, depth range: 20-1000 m. Occurs on sandy and muddy bottoms from the coast (below 20 m, Ref. 12382) down to depths of 1,000 m. May also be found on rocky bottoms (Ref. 12382). It lies half-buried in the sediment waiting for its prey. It attracts prey by means of its fishing filament (Ref. 5377). Feeds mainly on fishes, occasionally sea-birds. Marketed fresh and frozen; eaten steamed, sautéed, broiled, boiled, fried, microwaved and baked (Ref. 9988). It is a well-studied species in Europe and is sold without the skin and the head under the name 'queue de Lotto' (Ref. 5377). Does not adapt well in home aquariums due to its large size (Ref. 12382). Trophic level: 4.5. Resilience: Low (K=0.08-0.16; tm=4.5; tmax=9; Fec=1 million). Importance: highly commercial.

*Sladenia remiger* Smith & Radcliffe, 1912 Celebes monkfish  
 Western Central Pacific: known from a single specimen collected in the Gulf of Tomini in the Celebes. Reported in Cross Seamount (Ref. 7460). Max. length 40 cm TL. Habitat: bathydemersal, depth range: down to 1294 m. Found on the continental slope. Biology unknown. Trophic level: 4.4. Resilience: not available. Importance: not available.

**Ogocephalidae Batfishes**

*Haliutaea stellata* (Vahl, 1797) Starry handfish  
 Indo-West Pacific: Papua New Guinea (Ref. 6993), Indonesia, Australia (Ref. 5978) and the Arafura Sea (Ref. 9819). Max. length 30 cm TL. Habitat: demersal, depth range: down to 230 m. Found in the shelf and shelf edge, 50-400m (Ref. 11230). Used in Chinese medicine (Ref. 12166). Trophic level: 4.4. Resilience: not available. Importance: not available.

*Malthopsis annulifera* Tanaka, 1908  
 Western Pacific: Pacific coast of southern Japan to the Philippines; Chesterfield Islands (Ref. 11897). Max. length 9 cm SL. Habitat: bathydemersal, depth range: 305-590 m. Trophic level: 4.0. Resilience: not available. Importance: not available.

*Malthopsis lutea* Alcock, 1891 Longnose seabat  
 Indo-West Pacific: off Kenya and likely to occur off southern Africa (Ref. 6612); Pacific coast of southern Japan to the Philippines and the Andaman Sea (Ref. 559); Chesterfield Islands (Ref. 11897). Max. length 10 cm TL. Habitat: bathydemersal, depth range: 100-500 m. Found on the continental slope. Trophic level: 3.6. Resilience: not available. Importance: not available.

*Malthopsis tiarella* Jordan, 1902 Spearnose seabat  
 Indo-West Pacific: Natal, South Africa and Japan. Max. length 6 cm TL. Habitat: demersal, depth range: 80-200 m. Trophic level: 4.0. Resilience: not available. Importance: not available.

## Stephanoberyciformes (Pricklefishes, bigscales and gibberfishes)

### Melamphaidae Bigscale fishes or ridgeheads

*Melamphaes microps* (Günther, 1878)

Antitropical. The holotype was caught in the sub-Antarctic Indian Ocean east of the Kara Dag Seamount. North Atlantic: 32°N-58°N. Max. length 10 cm SL. Habitat: bathypelagic, depth range: below 300 m. Rare species. May be a species complex (J.A. Moore, pers. comm.). Trawled below 300 m off South Africa and New Zealand (Ref. 4241). Trophic level: 3.1. Resilience: not available. Importance: of no interest.

*Melamphaes suborbitalis* (Gill, 1883)

North Atlantic: including 7 specimens recorded between about 18° and 29°N and 15° and 25°W. Southwest Pacific: New South Wales, Australia (Ref. 7300) and New Zealand (Ref. 5755). Max. length 10 cm SL. Habitat: bathypelagic, depth range: 500-1000 m. Adults occur below 500 m (Ref. 6747). Trophic level: 3.1. Resilience: not available. Importance: not available.

*Scopelogadus beanii* (Günther, 1887)

Southwest Pacific: New South Wales, Australia (Ref. 7300) and New Zealand (Ref. 5755). Southeast Pacific: Chile (Ref. 9068). Also in the Atlantic and southern Indian Oceans. Max. length not available. Habitat: bathypelagic, depth range: 800-2500 m. One of the largest and deepest-dwelling melamphid species. Feeds mainly on pelagic prey. Captured by bottom and midwater trawls (Ref. 26478). Trophic level: 3.8. Resilience: not available. Importance: of no interest.

## Beryciformes (sawbellies)

### Anoplogastridae Fangtooth

*Anoplogaster cornuta* (Valenciennes, 1833) Common fangtooth

Worldwide in temperate and warm waters. Western Atlantic: off northern Argentina (Ref. 27363) and the Falkland Islands to Flemish Cap (Ref. 5951). Eastern Atlantic: Iceland and British Isles to Madeira and southward. Western Pacific: Papua New Guinea (Ref. 6771) and New Zealand (Ref. 5755). Eastern Pacific: Oregon, USA to Panama (Ref. 2850). Reported from Chile (Ref. 9068). Max. length 15.2 cm SL. Habitat: bathypelagic, depth range: 50-4900 m. Adults occur mainly between 500 and 2,000 m, but ranging from near the surface (young) to 5,000 m. Form schools, swim in small groups or solitary. Carnivorous (Ref. 27155), feeding on crustaceans when young and on fish mainly when adults (Ref. 4737). Serve as food for pelagic fishes such as tuna, albacore, and marlin (Ref. 5951). Oviparous, with planktonic larvae (Ref. 36624). Trophic level: 4.0. Resilience: not available. Importance: of no interest.

### Berycidae Alfonsinos

*Beryx decadactylus* Cuvier, 1829 Alfonsino

Worldwide in temperate and tropical latitudes, except the eastern Pacific. Eastern Atlantic: Greenland, Iceland, and Norway to Western Sahara and South Africa, including western Mediterranean. Western Atlantic: south to Brazil. Indo-Pacific: East Africa (including the Madagascar Ridge and Saya de Malha Bank, Ref. 33390) to Japan, Australia, and New Zealand (Ref. 5755). The limited number of records in the western Pacific is doubtless the result of limited fishing effort below 200 m (Ref. 9833). Max. length 100 cm TL. Habitat: bathydemersal, depth range: 180-800 m. Found in ca. 500 m on mud or sandy mud bottom (Ref. 11230). Occurs on the continental slope; adults demersal, young pelagic (Ref. 9563). Feeds on crustaceans, small fishes and cephalopods (Ref. 3321). Young have heavy spines on the head (Ref. 35388). Trophic level: 4.3. Resilience: not available. Importance: commercial.

*Beryx splendens* Lowe, 1834 Splendid alfonsino  
Circumglobal, excluding the northeast Pacific and Mediterranean Sea (Ref. 9833). Western Atlantic: Gulf of Maine to the Gulf of Mexico (Ref. 6743). Eastern Atlantic: off southwestern Europe and the Canary Islands (Ref. 7413) to South Africa (Ref. 4179). Indo-Pacific: East Africa (including Saya de Malha Bank, Ref. 33390) to Japan, Hawaii, Australia, and New Zealand (Ref. 5755). The limited number of records in the western Pacific is doubtless the result of limited fishing effort below 200 m (Ref. 9833). Eastern Pacific: Chile (Ref. 27363). Max. length 70 cm TL. Habitat: benthopelagic, depth range: 25-1300 m. Inhabits the outer shelf (180 m) and slope to at least 1,300 m depth, probably moving further from the bottom at night; often found over seamounts (Ref. 9833) and underwater ridges (Ref. 33648). Juveniles are pelagic (Ref. 9072). Feeds mainly on fish, crustaceans and cephalopods (Ref. 33648). Marketed frozen and eaten steamed, fried, broiled, boiled, microwaved and baked (Ref. 9988). Trophic level: 4.4. Resilience: Low ( $K=0.09-0.18$ ;  $tm=2-7.5$ ;  $tmax=23$ ). Importance: commercial.

*Centroberyx affinis* (Günther, 1859) Redfish  
Western Pacific: eastern Australia from western Bass Strait and northeastern Tasmania to Moreton Bay, Queensland. Also found in New Zealand; recently recorded from the Chesterfield Islands and New Caledonia (Ref. 9833). Max. length 51 cm SL. Habitat: benthopelagic, depth range: 10-450 m. Occur on rocky reefs and muddy substrates of the continental shelf and upper slope, forming dense schools close to the bottom at dawn and dusk and dispersing throughout the water column at night to feed (Ref. 9563). Juveniles also aggregate in schools (Ref. 33987) and are found in estuaries and shallow coastal waters (Ref. 9833). Feed on small fish, crustaceans and mollusks (Ref. 27111). Trophic level: 3.8. Resilience: Medium ( $K=0.25$ ;  $tm=4$ ;  $tmax=16$ ). Importance: commercial.

*Centroberyx druzhinini* (Busakhin, 1981)  
Western Indian Ocean. Western Pacific: recently recorded Japan and New Caledonia. Max. length 23 cm TL. Habitat: benthopelagic, depth range: not available. A benthic or benthopelagic species trawled in 128- 200 m depth. Trophic level: 3.5. Resilience: not available. Importance: of no interest.

### **Diretmidae Spinyfins**

*Diretmus argenteus* Johnson, 1864 Silver spinyfin  
All oceans from temperate to tropical waters (Ref. 6744). Eastern Atlantic: Iceland and British Isles to South Africa including Canary Islands and Ascension Island Not recorded from the Mediterranean (Ref. 6744). Max. length 26.25 cm SL. Habitat: bathypelagic, depth range: 0-2000 m. Juveniles are found from near surface to about 250 m to more than 1,000 m (Ref. 6536). Largest adults may be benthopelagic (Ref. 9851). Adults are plankton-eaters like the other members of the family (Ref. 6744). Oviparous, with planktonic larvae (Ref. 36622). Trophic level: 3.0. Resilience: not available. Importance: of potential interest.

### **Holocentridae Squirrelfishes, soldierfishes**

*Ostichthys kaianus* (Günther, 1880)  
Deepwater soldier Indian Ocean: Reunion and northwestern Australia (Ref. 5978). Western Pacific: Indonesia and New Guinea, north to the Ryukyu Islands, south to northern Australia. Max. length 36 cm TL. Habitat: bathydemersal, depth range: 310-640 m. Trophic level: 4.0. Resilience: not available. Importance: commercial.

### **Monocentridae Pinecone fishes**

*Monocentris reedi* Schultz, 1956 Pinecone fish  
Southeast Pacific: Chile. Also off southwestern South America (Moore, pers. comm.). Max. length 9.9 cm SL. Habitat: demersal, depth range: 200-250 m. Trophic level: 3.3. Resilience: Medium ( $K=0.20$ ;  $tm=5$ ;  $tmax=8$ ). Importance: not available.

**Trachichthyidae      Slimeheads**

*Gephyroberyx darwinii*      (Johnson, 1866)      Darwin's slimehead

Eastern Atlantic: Madeira and the Canary Islands to Senegal, Gulf of Guinea and South Africa. Western Atlantic: southern Scotian Shelf, Canada to Greater Antilles, western Caribbean, Panama and northern Gulf of Mexico (Ref. 7334). Indo-Pacific: off Natal (South Africa), Bay of Bengal, southern Australia, Chatham Plateau around New Zealand, and the Philippines (Ref. 4181). Also in northern South America (Moore, pers. comm.). Max. length 60 cm TL. Habitat: benthopelagic, depth range: 9-1210 m. Lives close to or on the bottom of the upper continental slope. Prefers hard substrates. Young specimens feed on small shrimps and fish (Ref. 4784). A deep sea species, nonetheless, the young are often found near the coast (Ref. 9137). Utilized as fishmeal and source of oil in eastern central Atlantic (Ref. 3695). Trophic level: 3.9. Resilience: not available. Importance: commercial.

*Gephyroberyx japonicus*      (Döderlein, 1883)

Northwest Pacific: Japan. Max. length 20 cm SL. Habitat: benthopelagic, depth range: not available. Inhabits deep waters. Trophic level: 3.0. Resilience: not available. Importance: not available.

*Hoplostethus crassispinus*      Kotlyar, 1980

Northwest Pacific: Kyushu-Palau Ridge and Hawaii. Could possibly be off Viet Nam (Moore, pers. comm.). Max. length 25.4 cm SL. Habitat: bathypelagic, depth range: 280-600 m. Trophic level: 3.0. Resilience: not available. Importance: of no interest.

*Hoplostethus mediterraneus mediterraneus*      Cuvier, 1829      Mediterranean slimehead

Generally cosmopolitan. Eastern Atlantic: Ireland to Senegal, Canary Islands, and the Gulf of Guinea, including the Mediterranean; also Namibia and South Africa (Ref. 4181). Reported from Iceland (Ref. 12462). Western Indian Ocean: Red Sea (Ref. 9942) and South Africa (Ref. 4181). Western Atlantic: Georges Bank to northern Gulf of Mexico, Great Antilles, and Venezuela to southern Brazil (Moore, pers. comm.). Max. length 42 cm SL. Habitat: benthopelagic, depth range: 100-1175 m. Ref. 3583 and 3474 state the species is pelagic but Ref. 2683 indicates the species is demersal. Found over muddy bottom (Ref. 26999). Trophic level: 3.5. Resilience: Low (K=0.11; tmax=11). Importance: of no interest.

**Cetomimiformes (whalefishes)****Barbourisiidae      Velvet whalefishes**

*Barbourisia rufa*      Parr, 1945      Velvet whalefish

Throughout the world ocean in tropical and temperate latitudes (Ref. 9842). Eastern Atlantic: one specimen from off Cape Bojador south of the Canary Islands; unrecorded specimens taken between Guinea and Angola. Western Atlantic: Gulf of Mexico (Ref. 29076). Western Indian Ocean: off Madagascar. Eastern Pacific: one specimen captured off northern central California, USA (Ref. 2850). Western Pacific: Japan to New Caledonia and New Zealand (Ref. 5755). Australia (Ref. 7300). Max. length 34.5 cm SL. Habitat: bathydemersal, depth range: 300-2000 m. Juveniles mesopelagic, adults benthopelagic. Presumably feeds on crustaceans. Trophic level: 3.3. Resilience: not available. Importance: of no interest.

**Rondeletiidae      Redmouth whalefishes**

*Rondeletia loricata*      Abe & Hotta, 1963      Redmouth whalefish

Worldwide in tropical to temperate seas. Atlantic Ocean: between 38°N and 40°S; reported from Iceland (Ref. 12462). Indian Ocean: between 20°N and 39°S. Pacific Ocean: between 45°N and 42°S. Max. length 11 cm SL. Habitat: bathypelagic, depth range: 100-1130 m. Diurnal depths from 750 m, migrating to 100 m at night. Feeds on amphipod and crustacean remains (Ref. 6716). Trophic level: 3.4. Resilience: not available. Importance: of no interest.

## Zeiformes (dorids)

### Caproidae Boarfishes

*Antigonia aurorosea* Parin & Borodulina, 1986  
 Southeast Pacific: Sala y Gomez submarine ridge. Max. length not available. Habitat: bathydemersal, depth range: 280-310 m. Trophic level: 3.7. Resilience: not available. Importance: not available.

*Antigonia capros* Lowe, 1843 Deepbody boarfish  
 Worldwide in subtropical and tropical oceans. Eastern Atlantic: France to Namibia, including Azores and Madeira. Western Atlantic: southern New England, USA and Gulf of Mexico to [Brazil according to Ref. 7251]Uruguay (Ref. 47377). Pacific Ocean: Hawaii (Ref. 7490), Japan (Ref. 559) and Nazca and Sala-y- Gomez (Ref. 50546). Max. length 30.5 cm TL. Habitat: demersal, depth range: 50-900 m. Juveniles occur in mid water (Ref. 4952). Feeds on small mollusks and crustaceans (Ref. 5288). Not regularly marketed (Ref. 5217). Trophic level: 4.1. Resilience: not available. Importance: minor commercial.

*Antigonia eos* Gilbert, 1905  
 Eastern Central Pacific: Hawaiian Islands. Max. length 12.4 cm SL. Habitat: bathydemersal, depth range: 0- 311 m. Trophic level: 3.7. Resilience: not available. Importance: not available.

*Antigonia malayana* Weber, 1913  
 Indo-West Pacific: Indonesia and northwestern Australia. Max. length not available. Habitat: demersal, depth range: not available. Found on the continental shelf and slope. Trophic level: 3.7. Resilience: not available. Importance: not available.

*Antigonia rubescens* (Günther, 1860) Indo-Pacific boarfish  
 Indo-West Pacific: Japan to Australia. Max. length 15 cm SL. Habitat: bathydemersal, depth range: not available. Trophic level: 3.8. Resilience: not available. Importance: not available.

*Capros aper* (Linnaeus, 1758) Boarfish  
 Eastern Atlantic: western Norway, Skagerrak, Shetlands and western Scotland to Senegal. Also in the Mediterranean (mainly western part). Max. length 30 cm TL. Habitat: demersal, depth range: 40-600 m. Gregarious. Forms schools. Found over rock or coral, but also trawled over sandy ground. Feeds on crustaceans or worms, mollusks (Ref. 4952). Males are smaller than females (Ref. 5377). Trophic level: 3.1. Resilience: not available. Importance: of no interest.

### Grammicolepididae Grammicolepidids

*Grammicolepis brachiusculus* Poey, 1873 Thorny tinselfish  
 Eastern Atlantic: Spain to the Gulf of Guinea and southward to Durban, South Africa. Western Atlantic: Georges Bank to off Suriname. North Pacific: Japan and Hawaii. Max. length 64 cm TL. Habitat: bathypelagic, depth range: 400-1026 m. Found in deep midwater or near bottom (Ref. 6749). Trophic level: 3.4. Resilience: not available. Importance: of no interest.

*Xenolepidichthys dalgleishi* Gilchrist, 1922 Spotted tinselfish  
 Eastern Atlantic: Gulf of Guinea, off Senegal, and off South Africa; reported from Namibia (Ref. 4255). Western Atlantic: Virginia, USA to northern South America (Ref. 7251). Western Pacific: Japan, Philippines, New Caledonia, between Fiji and Tonga Islands, Australia (Ref. 7300), New Zealand (Ref. 5755). Indian Ocean (Ref. 47377). Max. length 15 cm TL. Habitat: benthopelagic, depth range: 200-885 m. Trophic level: 3.7. Resilience: not available. Importance: of no interest.

### Oreosomatidae Oreos

*Allocyttus folletti* Myers, 1960 Oxeye oreo  
 North Pacific: Japan to Bering Sea and to southern central California, USA. Karrer 1990 (Ref. 6545) notes that records of *Allocyttus verrucosus* from the North Pacific belong to *Allocyttus folletti* (Ref. 6545). Max. length 38 cm TL. Habitat: bathydemersal, depth range: 366-732 m. Young oceanic; adults near bottom (Ref. 2850). Trophic level: 3.9. Resilience: not available. Importance: not available.

*Neocyttus rhomboidalis* Gilchrist, 1906 Spiky oreo

Southeast Atlantic: off Walvis Bay, Namibia to Cape Province, South Africa. Southwest Atlantic: off Argentina. Eastern Indian Ocean: southern Australia, from about 26°S in Western Australia to Broken Bay (Ref. 7300), New South Wales. Southwest Pacific: New Zealand. Max. length 40 cm SL. Habitat: bathypelagic, depth range: 200-1240 m. Inhabit continental slopes (Ref. 9563), forming large shoals over rough ground near pinnacles and canyons (Ref. 6390). Juveniles are pelagic and tend to be dispersed over smooth grounds (Ref. 6390). Feed on salps, fish, crustaceans and squid (Ref. 27230). Eggs float near the surface and larvae also inhabit surface waters (Ref. 6390). Trophic level: 3.9. Resilience: not available. Importance: minor commercial.

**Parazenidae Parazen***Cyttopsis rosea* (Lowe, 1843) Rosy dory

Western Atlantic: southeastern USA and northern Gulf of Mexico to western Caribbean (Ref. 7251); northern coast of South America (Ref. 5217). Eastern Atlantic: Bay of Biscay round the South African coast to Natal. Indian Ocean: Somalia (Ref. 30573) and off the south-west coast of India. Western Pacific: off Japan, eastern Australia (Ref. 7300) and New Zealand (Ref. 5755). Max. length 31 cm TL. Habitat: bathypelagic, depth range: 150-730 m. Forms schools. Feeds on other fishes and swimming decapod crustaceans (Ref. 4968). Trophic level: 4.0. Resilience: not available. Importance: commercial.

*Parazen pacificus* Kamohara, 1935 Parazen

Western Central Atlantic: northern Cuba (Ref. 26340). Indo-West Pacific: Natal (South Africa), Japan, and Taiwan (Ref. 11228); Chesterfield Island (Ref. 11897). Max. length 14 cm TL. Habitat: bathydemersal, depth range: 145-500 m. Trophic level: 3.6. Resilience: not available. Importance: not available.

*Stethopristes eos* Gilbert, 1905

Southeast Pacific: Chile. Max. length not available. Habitat: bathypelagic, depth range: not available. Trophic level: 3.4. Resilience: not available. Importance: not available.

**Zeidae Dories***Zenopsis conchifera* (Lowe, 1852) Silvery John dory

Western Indian Ocean: Somalia (Ref. 30573) and India to South Africa, but not in the Red Sea. Eastern Atlantic: Bay of Biscay to South Africa. Western Atlantic: Sable Island, Canada to northern North Carolina, USA (Ref. 7251) to northern Argentina (Ref. 27363). Reported from Indonesia (Ref. 5978) but not in the Pacific Ocean. Max. length 80 cm TL. Habitat: benthopelagic, depth range: 50-600 m. Frequently encountered in coastal waters (Ref. 27000). Occurs near the bottom or in midwater, over muddy substrates (Ref. 5377). Found in small schools (Ref. 4968). Feeds on fishes (Ref. 5213). Minimum depth reported taken from Ref. 27363. Trophic level: 4.5. Resilience: not available. Importance: commercial.

*Zenopsis nebulosa* (Temminck & Schlegel, 1845) Mirror dory

Indo-Pacific: Japan, northwest shelf of Australia to Broken Bay in New South Wales, New Zealand (Ref. 6390), and elsewhere in the region. Eastern Pacific: off central and southern California, USA (Ref. 2850); and on the seamounts of the Nazca Ridge in the Peru area (Ref. 27131). Max. length 70 cm TL. Habitat: bathydemersal, depth range: 30-800 m. Occurs in deeper trawling grounds of the continental shelf and slope, close to the sea bed. Nothing is known about larval development or early life history for this species, and no studies on ageing and growth rates have been undertaken. Caught by Japanese trawlers during winter (Ref. 559). An excellent food fish. Trophic level: 4.0. Resilience: Medium (K=0.20; tm=3; tmax=13; Fec=52,000). Importance: commercial.

*Zenopsis oblongus* Parin, 1989

Eastern Pacific. Max. length not available. Habitat: demersal, depth range: not available. Trophic level: 3.7. Resilience: not available. Importance: not available.

*Zeus faber* Linnaeus, 1758 John dory

Worldwide in distribution. Eastern Atlantic: Norway to South Africa, also the Mediterranean and Black Sea. Western Pacific: Japan, Korea, Australia and New Zealand. Also known from the Indian Ocean. Max. length 90 cm TL. Habitat: benthopelagic, depth range: 5-400 m. Found in areas close to the sea bed (Ref. 6390). Generally solitary. Feeds mainly on schooling bony fishes, occasionally on cephalopods and crustaceans (Ref. 27121). Sold fresh (Ref. 9563) and frozen (Ref. 9988). Can be steamed, fried, broiled, boiled, microwaved and baked (Ref. 9988). Reproduction takes place at the end of winter and at the start of spring in the northeastern Atlantic, earlier in the Mediterranean. The flesh is excellent but is utilized little in West Africa (Ref. 5377). Eggs pelagic, maturity reached at 4 years (Ref. 36731). Trophic level: 4.5. Resilience: Low (K=0.15; tm=3-4; tmax=12). Importance: commercial.

**Zenionidae Zeniontids**

*Cyttomimus stelgis* Gilbert, 1905

Eastern Pacific: Hawaii (Ref. 33021) and Chile (Ref. 9068). Max. length not available. Habitat: bathydemersal, depth range: 351-644 m. Trophic level: 3.4. Resilience: not available. Importance: not available.

*Zenion hololepis* (Goode & Bean, 1896)

Western Indian Ocean: Tanzania and off Delagoa Bay, Mozambique. Western Central Pacific (Ref. 40499). Southeast Pacific: Nazca and Sala-y-Gomez. Western Atlantic: Antilles and Venezuela (Ref. 26340). Eastern Atlantic. Max. length 12 cm TL. Habitat: bathydemersal, depth range: 200-500 m. Found over mud or sand-mud bottom (Ref. 26999). Trophic level: 3.6. Resilience: not available. Importance: not available.

*Zenion leptolepis* (Gilchrist & von Bonde, 1924) Elongate dory

Western Indian Ocean: Natal (South Africa), Delagoa Bay (Mozambique), and Kenya. Southwest Pacific: New Zealand (Ref. 5755). Max. length 16 cm TL. Habitat: bathypelagic, depth range: 330-700 m. Trophic level: 3.7. Resilience: not available. Importance: not available.

**Syngnathiformes (pipefishes and seahorses)**

**Centriscidae Snipefishes and shrimpfishes**

*Macroramphosus gracilis* (Lowe, 1839) Slender snipefish

Indo-Pacific: Africa through the tropical Pacific to Hawaii. Eastern Central Pacific: California, USA. Western Central Atlantic: Florida, USA and Bahamas to Cuba (Ref. 7251). Max. length 15 cm TL. Habitat: pelagic, depth range: down to 350 m. Found in a wide range of habitats, from near surface to near bottom and sometimes in huge schools (Ref. 2850). May range into coastal waters (Ref. 36711). Oviparous, with planktonic eggs and larvae (Ref. 36711). Trophic level: 3.4. Resilience: High (K=0.55-1.18; tmax=2). Importance: not available.

*Macroramphosus scolopax* (Linnaeus, 1758) Longspine snipefish

Western Atlantic: off the east coast of the USA and the Greater Antilles; also northern South America (Ref. 5217) and Argentina (Ref. 7251). Eastern Atlantic and Mediterranean. Indo-West Pacific. Mainly in temperate latitudes between 20° and 40°N. Presence in Somalia to be confirmed (Ref. 30573). Max. length 20 cm TL. Habitat: demersal, depth range: 25-600 m. Found between the seabed and midwater on the lower continental shelf, over sand. Juveniles found in oceanic surface waters (Ref. 2683); adults normally live close to the bottom (normally in 50-350 m depth (Ref. 47377)). Gregarious. Juveniles feed mainly on pelagic invertebrates, mainly copepods, while adults feed on bottom invertebrates (Ref. 6732). Trophic level: 3.5. Resilience: Medium (K=0.36-0.46; tmax=6). Importance: commercial.

*Notopogon fernandezianus* (Delfin, 1899) Orange bellowsfish

Southwest Pacific: New South Wales and Victoria (Australia) and New Zealand (Ref. 5755). Southeast Pacific: Nazca and Sala-y-Gomez. Southwest Atlantic: Uruguay to northern Argentina (Ref. 27363). Max. length 18 cm TL. Habitat: bathydemersal, depth range: 150-580 m. Occurs on the continental shelf and slope. Identification of *Notopogon* species are difficult because body shape and development change with age and perhaps sex (Ref. 9563). Trophic level: 3.3. Resilience: not available. Importance: not available.

*Notopogon lilliei* Regan, 1914 Crested bellowfish  
 Southwest Pacific: Australia and New Zealand. Western Indian Ocean: one specimen from off Natal, South Africa (Ref. 5382). Southeast Atlantic: Tristan da Cunha and Gough Island (Ref. 11228). Max. length 27 cm TL. Habitat: demersal, depth range: 80-600 m. Occurs on the continental shelf and slope (Ref. 9563). Trophic level: 3.0. Resilience: not available. Importance: not available.

*Notopogon xenosoma* Regan, 1914 Longspine bellowfish  
 Indo-Pacific: Mozambique (Ref. 5213) to Algoa Bay, South Africa; New Zealand (Ref. 5382). Also reported from New Caledonia and Madagascar (Ref. 33324). Max. length 17 cm TL. Habitat: bathydemersal, depth range: 255-610 m. Found throughout the continental shelf (Ref. 5213). Trophic level: 3.3. Resilience: not available. Importance: not available.

## Scorpaeniformes (scorpionfishes and flatheads)

### Anoplopomatidae Sablefishes

*Anoplopoma fimbria* (Pallas, 1814) Sablefish  
 North Pacific: Bering Sea coasts of Kamchatka, Russia and Alaska southward to Hatsu Shima Island, southern Japan and Cedros Island, central Baja California, Mexico. Max. length 120 cm TL. Habitat: bathydemersal, depth range: 0-2740 m. Adults found on mud bottoms, from 305 (Ref. 2850) to 2,740 m depth (Ref. 2850). Young-of-the-year juveniles are pelagic and found on the surface and near-shore waters (Ref. 28499). Generally localized, but some juveniles have been found to migrate over 2,000 miles in 6 or 7 years (Ref. 28499). Feed on crustaceans, worms and small fishes (Ref. 4925). Most of the catch is marketed in Japan (Ref. 28499). Utilized fresh, dried or salted and smoked (Ref. 9988), can be steamed, pan-fried, broiled, boiled, microwaved and baked (Ref. 9988). The liver oil is rich in vitamin A and D (Ref. 4925). Trophic level: 3.9. Resilience: Very low (K=0.2; tm=6; Fec=100,000; tmax=114). Importance: highly commercial.

*Erilepis zonifer* (Lockington, 1880) Skilfish  
 North Pacific: Japan and Bering Sea to Monterey Bay in California, USA. Max. length 183 cm TL. Habitat: bathydemersal, depth range: 0-439 m. Adults inhabit deep rocky bottoms offshore (Ref. 6885). Juveniles associated with drifting seaweed (Ref. 12114, 12115). Trophic level: 4.3. Resilience: not available. Importance: commercial.

### Bembridae Deepwater flatheads

*Bembradium furici* Fourmanoir & Rivaton, 1979  
 Western Pacific. Max. length not available. Habitat: bathydemersal, depth range: not available. Trophic level: 3.0. Resilience: not available. Importance: not available.

*Bembradium roseum* Gilbert, 1905  
 Pacific Ocean: Japan (Ref. 559), Indonesia (Ref. 5978), Hawaiian Islands (Ref. 559), Chile (Ref. 9068). Max. length 11 cm SL. Habitat: bathydemersal, depth range: 138-800 m. A deep sea species (Ref. 559). Trophic level: 3.0. Resilience: not available. Importance: not available.

### Cottidae Sculpins

*Hemilepidotus spinosus* Ayres, 1854 Brown Irish lord  
 Eastern Pacific: Puffin Bay, southeastern Alaska to Santa Barbara Island, southern California, USA. Max. length 29 cm TL. Habitat: demersal, depth range: 0-780 m. Occurs in intertidal areas and down to at least 130 or 780 m depth (Ref. 5515). Usually found in subtidal areas of exposed coasts (Ref. 2850). Feeds on crustaceans (Ref. 6885). Trophic level: 3.3. Resilience: not available. Importance: not available.

### Ereuniidae

*Marukawichthys ambulator* Sakamoto, 1931  
 Northwest Pacific: Japan. Max. length 20 cm SL. Habitat: bathydemersal, depth range: not available. Deep- water species. Trophic level: 3.4. Resilience: not available. Importance: not available.

*Marukawichthys pacificus* Yabe, 1983

Northwest Pacific: Emperor Seamount Chain. Max. length 23.29 cm SL. Habitat: bathydemersal, depth range: down to 570 m. Trophic level: 3.0. Resilience: not available. Importance: not available.

**Hoplichthyidae**      **Ghost flatheads**

*Hoplichthys citrinus* Gilbert, 1905

Western Central Pacific: Australia. Southeast Pacific: Nazca and Sala-y-Gomez. Max. length not available. Habitat: demersal, depth range: not available. Occurs in the continental shelf and in the continental slope (Ref. 7300). Trophic level: 3.4. Resilience: not available. Importance: not available.

*Hoplichthys gilberti* Jordan & Richardson, 1908

Indo-West Pacific: in the region northwards to southern Japan. Max. length 20 cm SL. Habitat: demersal, depth range: not available. Found in the sublittoral zone; inhabits sandy mud bottom (Ref. 11230). Trophic level: 3.4. Resilience: not available. Importance: not available.

**Peristediidae**      **Armored searobins or armored gurnards**

*Satyrichthys engyceros* (Günther, 1872)

Western Pacific: southern Japan and the South China Sea (Ref. 41529). Eastern Pacific: Hawaii. Max. length 32 cm TL. Habitat: demersal, depth range: 200-388 m. Trophic level: 3.5. Resilience: not available. Importance: not available.

*Satyrichthys quadratorostratus* (Fourmanoir & Rivaton, 1979)

Western Pacific: New Caledonia and Norfolk Ridge. Max. length 14.9 cm SL. Habitat: bathydemersal, depth range: 360-515 m. Trophic level: 3.0. Resilience: not available. Importance: not available.

**Plectrogenidae**

*Plectrogenium barsukovi* Mandrytsa, 1992

Southeast Pacific: Nasca Ridge. Max. length not available. Habitat: bathydemersal, depth range: 290-310 m. Trophic level: 3.4. Resilience: not available. Importance: of no interest.

*Plectrogenium nanum* Gilbert, 1905

Indo-Pacific. Max. length 6.8 cm SL. Habitat: bathydemersal, depth range: 250-650 m. Trophic level: 3.5. Resilience: not available. Importance: not available.

**Psychrolutidae**      **Fatheads**

*Cottunculus thomsonii* (Günther, 1882)      Pallid sculpin

Atlantic Ocean: east coast of North America, and from North Atlantic (Iceland and northern Scotland) south to northwest Africa (off Mauritania) (Ref. 6940). Max. length 35 cm SL. Habitat: bathydemersal, depth range: 100-1600 m. Feeds on small benthic invertebrates (Ref. 6696). Trophic level: 3.5. Resilience: not available. Importance: not available.

**Scorpaenidae**      **Scorpionfishes or rockfishes**

*Neomerinthe procurva* Chen, 1981

Western Pacific: Indonesia. Max. length not available. Habitat: demersal, depth range: not available. Trophic level: 3.7. Resilience: not available. Importance: not available.

*Phenacoscorpius eschmeyeri* Parin & Mandrytsa, 1992

Southeast Pacific: Sala y Gomez Ridge. Max. length 13.3 cm SL. Habitat: demersal, depth range: down to 630 m. Trophic level: 3.6. Resilience: not available. Importance: not available.

*Phenacoscorpius megalops* Fowler, 1938

Western Pacific: Philippines, the East Indies and Hawaii (Ref. 10482) and New Zealand (Ref. 5755) Max. length 5.1 cm SL. Habitat: bathydemersal, depth range: 68-622 m. Feeds on small fishes and crustaceans. Trophic level: 4.0. Resilience: not available. Importance: not available.

- Pontinus kuhlii* (Bowdich, 1825) Offshore rockfish  
 Eastern Atlantic: Portugal, Madeira, the Azores and Mediterranean (Sicily and from the Spanish coast) (Ref. 4570) south to 8°30'S, including Canary Islands and Cape Verde. Reported from São Tomé Island (Ref. 34088). Max. length 52 cm TL. Habitat: bathydemersal, depth range: 100-600 m. Occurs on hard bottoms (Ref. 4510). Feeds on fishes and shrimps (Ref. 5377). Trophic level: 4.1. Resilience: not available. Importance: commercial.
- Pontinus macrocephalus* (Sauvage, 1882)  
 Indo-West Pacific: southern Japan to Micronesia and the Hawaiian Islands. Reported from Malaysia (Ref. 5756) and from Bali Strait to Timor Sea in Indonesia (Ref. 5978). Max. length 36.5 cm SL. Habitat: demersal, depth range: 174-278 m. An upper slope species (Ref. 10482). Trophic level: 3.9. Resilience: not available. Importance: not available.
- Pontinus tentacularis* (Fowler, 1938)  
 Indo-West Pacific: Mauritius and Reunion to the Philippines. Max. length not available. Habitat: demersal, depth range: not available. Trophic level: 3.9. Resilience: not available. Importance: not available.
- Scorpaena loppei* Cadenat, 1943 Cadenat's rockfish  
 Eastern Atlantic: Morocco, Mauritania, Portugal, Atlantic coast of Spain, Cyprus and the Mediterranean. Max. length 15 cm TL. Habitat: demersal, depth range: 50-200 m. Usually measures less than 10 cm TL (Ref. 4510). Occurs on muddy sand and gravel. Feeds mainly on crustaceans (Ref. 4570). Trophic level: 3.5. Resilience: not available. Importance: not available.
- Scorpaena neglecta* Temminck & Schlegel, 1843  
 Indo-West Pacific. Max. length 37.5 cm TL. Habitat: demersal, depth range: 100-150 m. Found on the continental shelf. Trophic level: 3.9. Resilience: not available. Importance: minor commercial.
- Scorpaena uncinata* de Buen, 1961  
 Southeast Pacific: Chile. Max. length not available. Habitat: demersal, depth range: down to 137 m. Trophic level: 3.4. Resilience: not available. Importance: not available.
- Scorpaenopsis oxycephala* (Bleeker, 1849) Tassled scorpionfish  
 Indo-West Pacific: Red Sea and Sodwana Bay, South Africa (Ref. 4313) to the Mariana Islands (Ref. 9710), north to Taiwan; Palau and Guam in Micronesia; probably more widespread. Max. length 36cm TL. Habitat: reef-associated, depth range: 1-250 m. Inhabits clear-water outer reef slopes and channels from depths of 1 to at least 35 m, in areas with mixed rock and coral substrates. Venomous spines. Trophic level: 3.3. Resilience: not available. Importance: not available.

**Sebastidae Rockfishes, rockcods and thornyheads**

- Adelosebastes latens* Eschmeyer, Abe & Nakano, 1979  
 Northwest Pacific: Emperor Seamounts. Max. length 30 cm SL. Habitat: bathydemersal, depth range: 900- 1200 m. Trophic level: 3.6. Resilience: not available. Importance: not available.
- Helicolenus avius* Abe & Eschmeyer, 1972  
 Northwest Pacific: Emperor Seamounts. Likely to occur in Japan. Max. length not available. Habitat: bathydemersal, depth range: 450-600 m. Viviparous (Ref. 34817). Trophic level: 3.7. Resilience: not available. Importance: commercial.
- Helicolenus dactylopterus dactylopterus* (Delaroche, 1809) Blackbelly rosefish  
 Western Atlantic: Nova Scotia, Canada to Venezuela. Eastern Atlantic: Iceland (Ref. 12462) and Norway to the Mediterranean and the Gulf of Guinea, including Madeira, the Azores, and the Canary Islands; also Walvis Bay, Namibia to Natal, South Africa (Ref. 4313). Max. length 47 cm TL. Habitat: bathydemersal, depth range: 50-1100 m. Found in soft bottom areas of the continental shelf and upper slope. Feed on both benthic and pelagic organisms (crustaceans, fishes, cephalopods, and echinoderms) (Ref. 4570). Viviparous, breed in March - July (Ref. 35388). Larvae and juveniles are pelagic (Ref. 4570). Sold fresh (Ref. 27121). Trophic level: 3.8. Resilience: Very low (K=0.06-0.2; tm=13-16; tmax=43). Importance: commercial.

- Helicolenus fedorovi* Barsukov, 1973  
Northwest Pacific: Emperor Seamounts. Max. length 27 cm SL. Habitat: bathydemersal, depth range: 350- 650 m. Found on seamounts (Ref. 559). Viviparous (Ref. 34817). Trophic level: 3.5. Resilience: not available. Importance: not available.
- Helicolenus lengerichi* Norman, 1937  
Southeast Pacific: Peru and Chile (including the Juan Fernandez Islands). Southwest Atlantic: Argentina. Max. length 30.7 cm SL. Habitat: bathydemersal, depth range: not available. Viviparous (Ref. 34817). Trophic level: 3.7. Resilience: not available. Importance: not available.
- Hozukius guyotensis* Barsukov & Fedorov, 1975  
Northwest Pacific: Emperor Seamounts. Max. length 50 cm SL. Habitat: bathydemersal, depth range: 500- 1000 m. Occur near seamounts. Viviparous (Ref. 34817). Trophic level: 3.1. Resilience: not available. Importance: not available.
- Sebastes entomelas* (Jordan & Gilbert, 1880) Widow rockfish  
Northeast Pacific: middle Albatross Bank in the Gulf of Alaska to Todos Santos Bay, Baja California, Mexico. Max. length 60 cm TL. Habitat: pelagic, depth range: 0-549 m. A generally active and free- swimming rockfish found in midwater above a rocky reef or steep shoreline; occasionally huddling motionless among caves and crevices (Ref. 27436). Young are found in shallow water (Ref. 2850). Form schools (Ref. 2850). Feed mostly on small pelagic crustaceans and fishes (Ref. 2850). Viviparous (Ref. 34817). Marketed fresh and frozen; eaten pan-fried, boiled, microwaved and baked (Ref. 9988). Trophic level: 4.3. Resilience: Very low (Musick et al. 2000 (Ref. 36717)). Importance: commercial.
- Sebastes flammeus* (Jordan & Starks, 1904)  
Northwest Pacific: northern Japan. Max. length 50 cm SL. Habitat: bathydemersal, depth range: 300-500 m. Found near the bottom. Viviparous (Ref. 34817). Trophic level: 3.1. Resilience: not available. Importance: commercial.
- Sebastes helvomaculatus* Ayres, 1859 Rosethorn rockfish  
Eastern Pacific: Kodiak Island, Alaska to Guadalupe Island, Baja California, Mexico. Rare south of San Francisco, California. Max. length 41 cm TL. Habitat: demersal, depth range: 25-549 m. Found on soft bottoms (Ref. 2850). Often caught on commercial longlines set below 108 m (Ref. 27437). Viviparous (Ref. 34817). Trophic level: 3.1. Resilience: not available. Importance: not available.
- Sebastes iracundus* (Jordan & Starks, 1904)  
Northwest Pacific. Max. length 60 cm SL. Habitat: bathydemersal, depth range: 450-1000 m. Viviparous (Ref. 34817). Trophic level: 3.1. Resilience: not available. Importance: commercial.
- Sebastes paucispinis* Ayres, 1854 Bocaccio  
Eastern Pacific: Stepovak Bay, Alaskan Peninsula to Punta Blanca, Baja California, Mexico. Max. length 91 cm TL. Habitat: reef-associated, depth range: 0-476 m. Adults found over rocky reefs, but also common on open bottoms to about 320 m (Ref. 2850). Juveniles are pelagic and settle in near shore nursery areas, then move to deeper habitats (Ref. 36715). Young form schools (Ref. 2850). Feed mainly on fishes, including other rockfishes (Ref. 2850). Ovoviviparous, with planktonic larvae (Ref. 36715, 6885, 34817). A famous sport fish throughout its range (Ref. 2850). Flesh is of excellent quality when kept chilled (Ref. 27436). Sold with other rockfish species (Ref. 27436). Trophic level: 3.5. Resilience: Very low (Musick et al. 2000 (Ref. 36717)). Importance: minor commercial.
- Sebastes ruberrimus* (Jordan & Gilbert, 1883) Yelloweye rockfish  
Eastern Pacific: Gulf of Alaska to northern Baja California, Mexico. Max. length 104 cm TL. Habitat: reef- associated, depth range: 15-549 m. Occur in rocky reefs and boulder fields (Ref. 27437), the young found in shallower regions (Ref. 27436). Feed on fishes and crustaceans (Ref. 28499). Viviparous (Ref. 34817). Sold as fillets (Ref. 6885). Trophic level: 4.4. Resilience: Very low (tm=12-15; tmax=118). Importance: commercial.

**Setarchidae**

*Setarches guentheri* Johnson, 1862 Deepwater scorpionfish  
 Eastern Atlantic: Morocco, Madeira and Cape Verde to South Africa. Western Atlantic: USA to Brazil. Indo-West Pacific: Tanzania to South Africa, then India and Sri Lanka to the Bay of Bengal, Andaman Sea, north to Japan, Fiji and Hawaii, south to the Philippines, Indonesia and western Australia. Eastern Pacific: Chile (Ref. 9068). Max. length 25 cm TL. Habitat: bathydemersal, depth range: 150-732 m. Found on soft bottom, at a bottom temperature range of about 5.5°-12.5°C and usually at a depth of about 400 m. They live on or near the bottom but feed in the water column (Ref. 47377). Specimens usually brought to the surface with the stomach everted. Stomach contents included parts of bathypelagic crustaceans of family Opolophoridae, *Oplophorus* sp., and an amphipod (Ref. 11015). Sold in small quantities in markets. Minimum depth range taken from Ref. 27000. Trophic level: 3.4. Resilience: not available. Importance: minor commercial.

*Setarches longimanus* (Alcock, 1894)  
 Indo-West Pacific: Indian Ocean east to Fukushima Prefecture, Japan (Ref. 559), south to Australia (Ref. 5978). Reported from the Arafura Sea (Ref. 9819). Max. length 18 cm SL. Habitat: bathydemersal, depth range: 180-704 m. The dorsal spine contains poison glands which can inflict painful wounds. Trophic level: 3.4. Resilience: not available. Importance: not available.

**Triglidae Searobins**

*Pterygotrigla picta* (Günther, 1880) Spotted gurnard  
 Indo-Pacific: southern Australia, New Caledonia (Ref. 9771) and New Zealand (Ref. 5755). Southeast Pacific: Chile. Max. length 34.4 cm SL. Habitat: bathydemersal, depth range: 200-500 m. Occurs on the continental shelf and slope (Ref.9563). Trophic level: 3.2. Resilience: not available. Importance: subsistence fisheries.

*Pterygotrigla robertsi* del Cerro & Lloris, 1997  
 Western Pacific: Norfolk Ridge. Max. length 15.2 cm SL. Habitat: bathydemersal, depth range: 420-460 m. Trophic level: 3.2. Resilience: not available. Importance: not available.

**Perciformes (perch-likes)****Acropomatidae Lanternbellies, temperate ocean-basses**

*Synagrops japonicus* (Döderlein, 1883) Japanese splitfin  
 Indo-Pacific: East Africa to Hawaii. Max. length 35 cm SL. Habitat: bathydemersal, depth range: 100-800 m. Found on the continental slope (Ref. 7300). Marketed fresh or made into fishmeal (Ref. 3288). Trophic level: 3.5. Resilience: not available. Importance: commercial.

*Synagrops philippinensis* (Günther, 1880)  
 Indo-West Pacific: India east to Japan and south to the Philippines, the Arafura Sea (Ref. 9819) and northern Australia. Max. length 13 cm TL. Habitat: bathydemersal, depth range: 186-220 m. Occurs in the continental shelf and slope (Ref. 7300). Trophic level: 3.0. Resilience: not available. Importance: not available.

**Ariommatidae Ariommatids**

*Ariomma bondi* Fowler, 1930 Silver-rag driftfish  
 Western Atlantic: Maine, USA and northern Gulf of Mexico to Uruguay. Eastern Atlantic: Senegal to Angola (Ref. 5512). Max. length 30 cm TL. Habitat: demersal, depth range: 50-500 m. Occurs chiefly on the continental shelf, mostly on muddy bottoms (Ref. 2683). Juveniles occur in surface waters. Feeds mainly on small crustaceans. Forms large schools (Ref. 36543). Adults are demersal or bathypelagic (Ref. 47377). Trophic level: 3.5. Resilience: not available. Importance: minor commercial.

*Ariomma lurida* Jordan & Snyder, 1904 Ariommid  
 Pacific Ocean: southern Japan and the Hawaiian Islands to New Zealand. Max. length 35 cm SL. Habitat: bathypelagic, depth range: below 350 m. Trophic level: 3.5. Resilience: not available. Importance: not available.

*Ariomma melanum* (Ginsburg, 1954) Brown driftfish

Eastern Atlantic: Mauritania to Angola; possibly straying to southern Africa (Ref. 4412). Western Atlantic: New York and northern Gulf of Mexico in USA to Panama (Ref. 7251), [extending to the northern coast of South America according to Ref. 13628], up to Uruguay (Ref. 47377). Not occurring in the West Indies (Ref. 7251). Max. length 30 cm TL. Habitat: bathydemersal, depth range: 180-600 m. Inhabits deep waters, usually on soft bottoms (Ref. 2683). Feeds mainly on small crustaceans (Ref. 3547). Larvae and young are epipelagic, adults demersal or benthopelagic (Ref. 47377). Trophic level: 3.5. Resilience: not available. Importance: minor commercial.

**Banjosidae**

*Banjos banjos* (Richardson, 1846)

Western Pacific: southern Japan to the East China Sea. Reported from Indonesia (Ref. 5978) and the Chesterfield Island (Ref. 11897). Max. length 20 cm SL. Habitat: demersal, depth range: 50-400 m. Occurs inshore (Ref. 7300, 11230). Trophic level: 4.0. Resilience: not available. Importance: minor commercial.

**Bathyclupeidae**

*Bathyclupea malayana* Weber, 1913

Western Central Pacific: Flores Sea (Ref. 46206). Max. length not available. Habitat: bathypelagic, depth range: 538-694 m. Trophic level: 3.4. Resilience: not available. Importance: of no interest.

**Bramidae Pomfrets**

*Brama brama* (Bonnaterre, 1788) Atlantic pomfret

Atlantic, Indian and South Pacific (Ref. 47377). Western Atlantic: Nova Scotia, Canada and Bermuda (Ref. 7251) to Belize and the Antilles (Ref. 26340). Eastern Atlantic: central Norway (Ref. 6697) southward to Algoa Bay, South Africa (Ref. 4388). Highly migratory species, Annex I of the 1982 Convention on the Law of the Sea (Ref. 26139). Max. length 100 cm TL. Habitat: bathypelagic, depth range: 0-1000 m. An oceanic and epipelagic species, also found to 1,000 m depth (Ref. 27121). Occasionally comes close to shore (Ref. 9563). Seasonal migrant occurring in small schools, movements apparently temperature-related. Opportunistic feeder on small fishes, cephalopods, amphipods, and euphausiids. Sold fresh and frozen; eaten steamed, fried, broiled and baked (Ref. 9988). Trophic level: 4.1. Resilience: not available. Importance: commercial.

*Pterycombus brama* Fries, 1837 Atlantic fanfish

Western Atlantic: Newfoundland in Canada and northern Gulf of Mexico in USA to Jamaica. Eastern Atlantic: Norway and south of Cap Lopez, west of Mayumba (Gulf of Guinea) (Ref. 4936); reported from Iceland (Ref. 12462). Max. length 46 cm TL. Habitat: pelagic, depth range: 25-400 m. Lives down to a depth of 400 m (Ref. 35388). Seasonal migrant (Ref. 6697). Trophic level: 3.5. Resilience: not available. Importance: minor commercial.

**Callanthiidae Splendid perches**

*Callanthias parini* Anderson & Johnson, 1984

Southeast Pacific: Chile. Max. length 17.9 cm SL. Habitat: bathydemersal, depth range: not available. Type specimen taken from a depth of 325 m (Ref. 33021). Trophic level: 3.4. Resilience: not available. Importance: not available.

*Callanthias ruber* (Rafinesque, 1810) Parrot seaperch

Eastern Atlantic: English Channel (occasional) to Mauritania including Madeira, Azores, Canary Islands. Also throughout the Mediterranean. Max. length 60 cm TL. Habitat: demersal, depth range: 50-500 m. Found on rocks, muddy bottoms and submarine caves. Trophic level: 3.8. Resilience: not available. Importance: minor commercial.

*Grammatonotus laysanus* Gilbert, 1905

Western Central Pacific: Papua New Guinea. Southeast Pacific: Cupole Seamount. Max. length not available. Habitat: demersal, depth range: not available. Trophic level: 3.3. Resilience: not available. Importance: not available.

**Callionymidae      Dragonets**

*Foetorepus kanmuensis*      Nakabo, Yamamoto & Chen, 1983

Northwest Pacific: Kanmu Seamount of the Emperor Seamount Chain. Max. length 14.19 cm SL. Habitat: bathydemersal, depth range: 355-498 m. Trophic level: 3.1. Resilience: not available. Importance: not available.

*Foetorepus kinmeiensis*      Nakabo, Yamamoto & Chen, 1983

Pacific Ocean: Kinmei and Kanmu Seamounts of the Emperor Seamount Chain (Ref. 37208) and from the Hawaiian Islands. Max. length 13.1 cm SL. Habitat: bathydemersal, depth range: 220-532 m. Collected in channels (Ref. 33412). Trophic level: 3.4. Resilience: not available. Importance: not available.

*Protogrammus sousai*      (Maul, 1972)

Eastern Atlantic: southern Meteor Bank (29°50'-30°00'S, 28°20'-40'W) Max. length 8 cm TL. Habitat: bathydemersal, depth range: 310-320 m. Trophic level: 3.2. Resilience: not available. Importance: not available.

*Synchiropus altivelis*      (Temminck & Schlegel, 1845)

Indo-Pacific: Seychelles, Indonesia and northwestern Australia. Also from southern Japan to the northern South China Sea (Ref. 559). Max. length 17 cm SL. Habitat: demersal, depth range: 70-600 m. Inhabits deep trawling grounds (Ref. 3132). Trophic level: 3.1. Resilience: not available. Importance: commercial.

*Synchiropus phaeton*      (Günther, 1861)

Eastern Atlantic: Portugal and the Azores to Gabon, including the Mediterranean. Max. length 18 cm TL. Habitat: demersal, depth range: 80-650 m. Found on sand or mud bottoms. Territorial, males aggressive to each other. Feeds on small bottom invertebrates, mainly worms, snails and crustaceans. Eggs and larvae pelagic (Ref. 5968). Minimum depth reported from Ref. 26999. Trophic level: 3.4. Resilience: not available. Importance: of no interest.

**Carangidae      Jacks and pompanos**

*Caranx lugubris*      Poey, 1860      Black jack

Circumtropical. Western Indian Ocean: off Natal and East London in South Africa (Ref. 3197, 11228); Reunion, Mauritius and Cargados Carajos (Ref. 33390); Seychelles (Ref. 10685). Western Pacific: southern Japan to New Caledonia; throughout Micronesia. Western Atlantic: Bermuda, northern Gulf of Mexico to Santos, Brazil; Greater and Lesser Antilles (Ref. 9626). Eastern Atlantic: Azores, Madeira, St. Paul's Rocks (Ref. 13121), Ascension Island, Cape Verde, and Gulf of Guinea. Eastern Central Pacific: Mexico (including Revillagigedo Islands) to Costa Rica. Max. length 100 cm TL. Habitat: benthopelagic, depth range: 12-354 m. An oceanic and insular species, very much restricted to clear oceanic waters (Ref. 9283). Not commonly found in shallow banks (Ref. 9283). Sometimes seen near drop-off at outer edge of reefs (Ref. 26938). Occasionally forming schools. Feed on fishes at night (Ref. 5213). Marketed mainly fresh, also dried or salted (Ref. 9283). Trophic level: 4.5. Resilience: Low (K=0.12). Importance: minor commercial.

*Decapterus macarellus*      (Cuvier, 1833)      Mackerel scad

Circumglobal. Western Atlantic: Nova Scotia, Canada and Bermuda to approximately Pernambuco, Brazil. Appears to be absent from the Gulf of Mexico (Ref. 9626). Eastern Atlantic: St. Helena, Ascension, Cape Verde, and Gulf of Guinea (Ref. 7097); Azores and Madeira (Ref. 4233). Indian Ocean: Red Sea, Gulf of Aden, Seychelles, Mascarenes, South Africa, and Sri Lanka (Ref. 3287). Eastern Pacific: Gulf of California and Revillagigedo Island to Ecuador (Ref. 9283). Max. length 40 cm FL. Habitat: pelagic, depth range: 0- 200 m. Prefers clear oceanic waters, frequently around islands (Ref. 5217). Sometimes near the surface, but generally caught between 40 and 200 m depth (Ref. 9283). Forms schools (Ref. 26235). Usually seen as fast moving schools along the reef edges near deep water (Ref. 48635). Feeds mainly on zooplankton (Ref. 9283). Marketed fresh and salted or dried (Ref. 9283). Trophic level: 3.4. Resilience: not available. Importance: commercial.

- Decapterus muroadsi* (Temminck & Schlegel, 1844) Amberstripe scad  
 Eastern Atlantic: St. Helena Island. Remnant populations in Indo-West Pacific from Japan, Australia, and Hawaii. St Helena specimens differ from the Pacific specimens in having slightly fewer gill rakers, and pending additional study perhaps should be recognized as a separate subspecies (Ref. 7097). Eastern Central Pacific: Mexico (including the Revillagigedo Islands) and the Galapagos Islands (Ref. 9283). Max. length 50 cm FL. Habitat: pelagic, depth range: not available. Forms schools (Ref. 9283). Feeds mainly on planktonic invertebrates (Ref. 9283). Marketed fresh and salted or dried (Ref. 9283). Trophic level: 3.4. Resilience: not available. Importance: commercial.
- Decapterus russelli* (Rüppell, 1830) Indian scad  
 Indo-West Pacific: East Africa to Japan, the Arafura Sea (Ref. 9819) and Australia. Max. length 45 cm TL. Habitat: benthopelagic, depth range: 40-275 m. Dwells from middle to benthic (Ref. 11230), forming large schools in deep water, but occasionally inshore in sheltered bays in small to large groups (Ref. 48635). The most common *Decapterus* in coastal waters and on open banks of the Indian Ocean. Feeds mainly on smaller planktonic invertebrates. Generally marketed fresh, may be dried or salted. Also sold frozen and canned (Ref. 9987). Trophic level: 3.7. Resilience: High (K=0.2-1.4; Fec=20,000). Importance: highly commercial.
- Pseudocaranx dentex* (Bloch & Schneider, 1801) White trevally  
 Western Atlantic: Bermuda, North Carolina, and south to southern Brazil. Eastern Atlantic: Mediterranean, Azores, Madeira, the Canary Islands, Cape Verde, Ascension and St. Helena Island. Indo-Pacific: South Africa, Japan, Hawaii (Ref. 26145), Australia, Lord Howe and Norfolk islands; and New Zealand. Reported from New Caledonia (Ref. 9070). Occurrence in Taiwan needs verification. Max. length 122 cm TL. Habitat: reef-associated, depth range: 10-200 m. Occur in bays and coastal waters, including estuaries (Ref. 9563). Juveniles usually inhabit estuaries, bays and shallow continental shelf waters, while adults form schools near the sea bed on the continental shelf (Ref. 6390). Schools are found at the surface, in mid-water and on the bottom and are often associated with reefs and rough bottom (Ref. 9072). Schools are sometimes mixed with *Caranx koheru* and *Arripis trutta* (Ref. 9072). Feed on plankton by ram-filtering and suction feeding and on bottom invertebrates (Ref. 9072, 30206). Cultured only in Japan. (Ref. 4931). One of the best table fish 'being indeed the salmon of St. Helena' (Ref. 5288). Trophic level: 3.2. Resilience: Medium (K=0.18(?); tmax=46(?)). Importance: commercial.
- Seriola dumerili* (Risso, 1810) Greater amberjack  
 Circumglobal. Indo-West Pacific: South Africa, Persian Gulf, southern Japan and the Hawaiian Islands, south to New Caledonia; Mariana and Caroline islands in Micronesia. Western Atlantic: Bermuda (Ref. 26938), Nova Scotia, Canada to Brazil; also from the Gulf of Mexico and the Caribbean Sea (Ref. 9626). Eastern Atlantic: British coast (vagrant) to Morocco and the Mediterranean. Distribution in eastern central Atlantic along the African coast is not well established due to past confusion with *Seriola carpenteri* (Ref. 7097). Max. length 190 cm TL. Habitat: reef-associated, depth range: 1-360 m. Inhabits deep seaward reefs; occasionally entering coastal bays. Feeds primarily on fishes such as the bigeye scad, also feeds on invertebrates (Ref. 4233). Small juveniles associate with floating plants or debris in oceanic and offshore waters. Juveniles form small schools or solitary (Ref. 5213). Utilized fresh and frozen; eaten pan-fried, broiled and baked (Ref. 9987). Reported to cause ciguatera in some areas (Ref. 26938). Trophic level: 4.5. Resilience: Medium (K=0.18; tm=4). Importance: minor commercial.
- Seriola lalandi* Valenciennes, 1833 Yellowtail amberjack  
 Circumtropical, entering temperate waters in some areas. Indo-Pacific: Japan, Great Australian Bight and southeastern Australia. Reported from Walters Shoal (Ref. 33390). Eastern Pacific: British Columbia, Canada to Chile (Ref. 2850). Eastern Atlantic: St. Helena, South Africa (Ref. 7097). Max. length 250 cm TL. Habitat: benthopelagic, depth range: 3-825 m. A pelagic and demersal species (Ref. 9283) found in coastal and oceanic waters, off kelp beds and rocky areas (Ref. 2850), sometimes entering estuaries (Ref. 9563). They are solitary or occur in small groups and can be found near rocky shores, reefs and islands (Ref. 6390). Schools of juveniles are generally found in offshore waters, often near or beyond the continental shelf (Ref. 27865). Prefer warmer water (18-24°C) although they are occasionally found in cooler water (Ref. 27128). Feed on small fish, squid and crustaceans (Ref. 27121). Marketed fresh and salted or dried (Ref. 9283). Trophic level: 4.1. Resilience: Medium (K=0.13; tm=2). Importance: minor commercial.

*Trachurus picturatus* (Bowdich, 1825) Blue jack mackerel

Eastern Atlantic: southern Bay of Biscay to southern Morocco including Azores, Madeira, Canary Islands, Tristan de Cunha and Gough Islands. Also known from the western part of the Mediterranean Sea. Max. length 60 cm TL. Habitat: benthopelagic, depth range: down to 370 m. Confined to neritic zones of island shelves, banks and sea mounts; a schooling species (Ref. 4233). Known to migrate between the coast of Sahara and the offshore seamounts possibly reaching the Cape Verde Islands (Ref. 26139). Feeds mainly on crustaceans (Ref. 4233). Trophic level: 3.3. Resilience: not available. Importance: commercial.

*Trachurus symmetricus* (Ayres, 1855) Pacific jack mackerel

Eastern Pacific: southeastern Alaska to southern Baja California, Mexico and the Gulf of California; reported from Acapulco in Mexico and the Galapagos Islands. Max. length 81 cm TL. Habitat: pelagic, depth range: 0-400 m. Often found offshore, up to 500 miles from the coast (Ref. 9283). Forms large schools (Ref. 2850). Young frequently occur in school near kelp and under piers (Ref. 2850). Feeds mainly on small crustaceans and fish larvae (Ref. 9283). Large individuals often move inshore and north in the summer (Ref. 2850). Marketed fresh, smoked, canned and frozen; eaten fried, broiled and baked (Ref. 9988). Trophic level: 3.6. Resilience: Low ( $K=0.09-0.21$ ;  $tm=2-3$ ;  $tmax=30$ ;  $Fec<50,000$ ). Importance: commercial.

**Centrolophidae** **Medusafishes***Centrolophus niger* (Gmelin, 1789) Blackfish

North Atlantic: Nova Scotia and Grand Banks (Canada) to Massachusetts, USA (Ref. 7251). Also known from the Northeast Atlantic and the Mediterranean Sea. Southeast Atlantic and Indian Ocean: South Africa and Australia (including New South Wales). Southwest Pacific: New Zealand. Southern Ocean. Antitropical. Max. length 150 cm SL. Habitat: bathypelagic, depth range: 250-650 m. An oceanic, epipelagic or mesopelagic species (Ref. 6942). Juveniles occurring in surface waters (Ref. 4542) and associated with pelagic medusas and salps (Ref. 4410), adults found deeper (Ref. 4542). May form small schools. Appears to feed on whatever is available, small fish, squid, large pelagic crustaceans, and other plankton (Ref. 4542). Trophic level: 4.0. Resilience: not available. Importance: of potential interest.

*Hyperoglyphe antarctica* (Carmichael, 1819) Antarctic butterfish

Southwest Atlantic: Argentina. Southeast Atlantic and Western Indian Ocean: South Africa. Southwest Pacific: New Zealand and Australia (including Western Australia). Max. length 140 cm TL. Habitat: benthopelagic, depth range: 100-900 m. Most common over or near rocky areas at 100-300 m (Ref. 9258). Generally, blue eye remain close to the sea bed during the day and move up in the water column at night, following concentrations of food (Ref. 6390). The fish are found over rough ground and at the edges of canyons and steep drop-offs. Blue eye appear to prefer cold water as part of their general behavior (Ref. 6390). Juveniles inhabit surface waters, sometimes in association with floating debris (Ref. 6390). Feed primarily on the pelagic tunicate *Pyrosoma atlantica* which is found near the sea bed during the day but dispersed throughout the water column at night (Ref. 7129, 30454). They also feed on squid, mollusks and crustaceans (Ref. 30455, 30454) and fish ranging from small lanternfish (Myctophidae) to large fish such as gemfish (*Rexea solandri*). Juveniles consume small planktonic and sedentary organisms (Ref. 30456). Marketed fresh and frozen; exported to Japan for sashimi; eaten steamed, fried, broiled and baked (Ref. 9988). Trophic level: 4.0. Resilience: Low ( $K=0.03-0.3$ ;  $tm=5-7$ ;  $tmax=15$ ). Importance: commercial.

*Hyperoglyphe japonica* (Döderlein, 1884)

Northwest Pacific: central and southern Japan. Larvae found in Taiwan Strait (Ref. 43570). Max. length 90 cm TL. Habitat: benthopelagic, depth range: 150-400 m. Juveniles associate with drifting seaweed (Ref. 12114, 12115). Adults found in deeper water, at depths greater than 100 m (Ref. 559). Plankton feeder (Ref. 12115). Trophic level: 4.0. Resilience: not available. Importance: commercial.

**Cheilodactylidae** **Morwongs***Nemadactylus gayi* (Kner, 1865)

Southeast Pacific: Chile. Max. length not available. Habitat: demersal, depth range: not available. Trophic level: 3.4. Resilience: not available. Importance: not available.

## **Draconettidae**

*Centrodraco acanthopoma* (Regan, 1904)

North Atlantic: west from off Key West, Florida to Georgia; in the east from Portugal, Meteor Bank, Josephine Bank, Madeira and off Casablanca, Morocco. Max. length 9.7 cm SL. Habitat: bathydemersal, depth range: 170-594 m. Trophic level: 3.3. Resilience: not available. Importance: not available.

*Centrodraco nakaboi* Fricke, 1992

Pacific Ocean: Kyushu-Palau Ridge and the Nazca Ridge. Max. length not available. Habitat: bathydemersal, depth range: 545-600 m. Occurs along continental edges and on seamounts. Trophic level: 3.3. Resilience: not available. Importance: not available.

*Centrodraco otohime* Nakabo & Yamamoto, 1980

Northwest Pacific: Kyushu-Palau Ridge. Max. length 11 cm SL. Habitat: bathydemersal, depth range: down to 342 m. Trophic level: 3.0. Resilience: not available. Importance: not available.

*Centrodraco striatus* (Parin, 1982)

Southeast Pacific: known only from seamounts on the Nazca Ridge. Max. length 9.4 cm SL. Habitat: bathydemersal, depth range: 225-340 m. Trophic level: 3.0. Resilience: not available. Importance: not available.

## **Emmelichthyidae Rovers**

*Emmelichthys elongatus* Kotlyar, 1982

Southeast Pacific: Nazca Ridge. Max. length not available. Habitat: demersal, depth range: 135-300 m. Trophic level: 3.4. Resilience: not available. Importance: not available.

*Emmelichthys nitidus* (Guichenot, 1848)

Southeast Pacific: Chile, including the Juan Fernandez Islands. Max. length 34.2 cm SL. Habitat: bathydemersal, depth range: not available. Trophic level: 3.5. Resilience: not available. Importance: not available.

*Emmelichthys nitidus nitidus* Richardson, 1845 Redbait

Indo-Pacific: off western Cape coast in south Africa, Australia, New Zealand, St. Paul and Amsterdam islands. *Emmelichthys nitidus cyanescens* is found in the eastern Pacific. Max. length 50 cm TL. Habitat: bathydemersal, depth range: 100-500 m. A schooling species (Ref. 9563). Juveniles occur near the surface, often with schools of clupeids while adults are found near the bottom in deeper water (Ref. 3394). Feeds mainly on larger zooplankton (Ref. 3394). An excellent food fish; marketed fresh or frozen (Ref. 3394). Trophic level: 3.6. Resilience: not available. Importance: minor commercial.

*Emmelichthys struhsakeri* Heemstra & Randall, 1977

Pacific Ocean: Pacific coast of southern Japan, the northern part of the Kyushu-Palau Ridge, Hawaiian Islands, and Australia. Reported from Malaysia (Ref. 5756). Max. length 30 cm SL. Habitat: demersal, depth range: 180-428 m. Trophic level: 3.4. Resilience: not available. Importance: commercial.

*Plagiogeneion geminatum* Parin, 1991

Southeast Pacific: known only from one seamount of the Nazca Ridge. Max. length 28 cm SL. Habitat: demersal, depth range: down to 200 m. Trophic level: 3.4. Resilience: not available. Importance: not available.

*Plagiogeneion unispina* Parin, 1991

Southeast Pacific: seamount on the western part of Sala y Gomez. Max. length 23.9 cm SL. Habitat: bathydemersal, depth range: 290-310 m. Trophic level: 3.4. Resilience: not available. Importance: not available.

**Epigonidae     Deepwater cardinalfishes***Epigonus atherinoides*                      (Gilbert, 1905)

Pacific Ocean: Philippines and Kyushu-Palau Ridge, near the Hawaiian Islands and the Sala y Gomez Ridge. Max. length 15 cm SL. Habitat: bathydemersal, depth range: 100-1200 m. A mesobenthic-pelagic species living mainly above the bottom (Ref. 31632). Inhabits tops of seamounts (Ref. 559). Trophic level: 3.0. Resilience: not available. Importance: not available.

*Epigonus denticulatus*                      Dieuzeide, 1950                      Pencil cardinal

Cosmopolitan. Western Atlantic: Gulf of Mexico and Caribbean Sea. Eastern Atlantic: along the west coast of Africa to the southern tip of the continent, also western Mediterranean to southern Adriatic Sea. Indian Ocean: Reunion (Ref. 33390). Western Pacific: southwest coast of Japan, southern Australia and eastern New Zealand. Central Pacific: Hawaiian Ridge (Ref. 31632). Max. length 20 cm TL. Habitat: bathydemersal, depth range: 130-830 m. Adults benthic on the continental slope and collected with bottom trawls (Ref. 7321). Juveniles are pelagic in depths of 130-145 and 350-425 m (Ref. 9563). Feeds on small fishes and planktonic invertebrates (Ref. 4738). Trophic level: 3.3. Resilience: not available. Importance: not available.

*Epigonus elegans*                              Parin & Abramov, 1986

Southeast Pacific: seamounts in the Nasca Ridge. Max. length 11.4 cm SL. Habitat: bathydemersal, depth range: 230-500 m. A mesobenthic-pelagic species living mainly above the bottom (Ref. 31632). Trophic level: 3.4. Resilience: not available. Importance: not available.

*Epigonus notacanthus*                      Parin & Abramov, 1986

Southeast Pacific: seamount in the Nazca chain. Max. length 23.8 cm SL. Habitat: bathydemersal, depth range: 230-340 m. A mesobenthic-pelagic species living mainly above the bottom (Ref. 31632). No length type given but assumed to be SL. Trophic level: 3.0. Resilience: not available. Importance: not available.

*Epigonus telescopus*                      (Risso, 1810)                      Bulls-eye

North Atlantic: Iceland to the Canary Islands and Corner Seamounts. One specimen off North America (Ref. 7321). Southeast Atlantic, Indian and Southwest Pacific: Walvis Ridge off southwestern Africa to New Zealand. Max. length 75 cm TL. Habitat: bathydemersal, depth range: 75-1200 m. Adults benthic or benthopelagic on the continental slopes; juveniles pelagic (Ref. 7321). Found on soft bottoms (Ref. 27121). Non-territorial. Carnivorous, feeds on small fishes and planktonic invertebrates. Trophic level: 3.3. Resilience: Very low (tmax=104). Importance: commercial.

*Sphyrænops bairdianus*                      Poey, 1861

Western Pacific: Western Australia. Southeast Pacific: Nazca and Sala-y-Gomez. Northwest Atlantic. Max. length not available. Habitat: bathypelagic, depth range: 200-1750 m. Oceanic species. Trophic level: 3.0. Resilience: not available. Importance: not available.

**Gempylidae     Snake mackerels***Diplospinus multistriatus*                      Maul, 1948                      Striped escolar

Atlantic, Indian and Pacific: in central water masses. Rather rare, but relatively abundant in the northwest and southeast Atlantic and southeast Pacific. Max. length 33 cm SL. Habitat: bathypelagic, depth range: 50- 1000 m. Oceanic, migrating upward at night to 100 to 200 m (Ref. 6181). Probably forming schools during daytime (Ref. 6181). Feeds on crustaceans and small fish (Ref. 6181). Females mature at about 16 cm (Ref. 36731). Trophic level: 4.0. Resilience: not available. Importance: not available.

*Lepidocybium flavobrunneum* (Smith, 1843)                      Escolar

Tropical and temperate seas of the world, but probably not occurring in the northern Indian Ocean. Eastern Atlantic: known from 13°N off Guinea to Lobutu, Angola (Ref. 10816). Max. length 200 cm SL. Habitat: bathypelagic, depth range: 200-885 m. Occurs mainly over the continental slope, down to 200 m and more (Ref. 6181). Migrates upward at night (Ref. 6181). Feeds on squid, crustaceans and a wide variety of fishes (Ref. 6181). Flesh oily and may have purgative properties (Ref. 9784). Sometimes caught by tuna long- liners (Ref. 26938). Marketed frozen and as fish cakes in Japan (Ref. 9302). Trophic level: 4.3. Resilience: not available. Importance: minor commercial.

- Nealotus tripes* Johnson, 1865 Black snake mackerel  
Atlantic, Indian and Pacific: in tropical and temperate waters. The southernmost Indian Ocean occurrence (28°08'S, 49°06'E) was based on an unpublished record (R/V VITYAZ-II, station 2781). Max. length 25 cm SL. Habitat: bathypelagic, depth range: 0-820 m. Oceanic, epipelagic to mesopelagic (Ref. 47377), migrating to the surface at night (Ref. 6181). Feeds on myctophids and other small fishes, squid and crustaceans (Ref. 6181). Matures at 15 cm SL (Ref. 36731). Trophic level: 4.5. Resilience: not available. Importance: not available.
- Nesiarchus nasutus* Johnson, 1862 Black gemfish  
Probably distributed worldwide in tropical and subtropical seas except in eastern Pacific and northern Indian oceans. Large-sized individuals stray in cold-temperate waters off Iceland, Norway, northern Japan and southern New Zealand (Ref. 6181). Reported from 19°41'S, 79°11'W (Ref. 11892). Max. length 130 cm SL. Habitat: bathydemersal, depth range: 200-1200 m. Adults, benthopelagic to mesopelagic, dwell on the continental slope or underwater rises, migrating to midwater at night (Ref. 6181). Larvae and juveniles, epipelagic to mesopelagic, are rather common in oceanic ichthyoplankton and are only found in the tropics (Ref. 6181). Feeds on squid, fish and crustaceans (Ref. 6181). Consumed as food (Ref. 4537). Trophic level: 4.2. Resilience: not available. Importance: minor commercial.
- Promethichthys prometheus* (Cuvier, 1832) Roudi escolar  
Tropical and warm temperate waters of all oceans, but absent from eastern Pacific except at Sala y Gomez Ridge. Max. length 100 cm SL. Habitat: benthopelagic, depth range: 80-800 m. Found at continental slopes, around oceanic islands and submarine rises (Ref. 6181). Migrates to midwater at night (Ref. 6181). Feeds on fish, cephalopods and crustaceans (Ref. 6181). Trophic level: 4.2. Resilience: Medium (K=0.17-0.18; tm=4). Importance: subsistence fisheries.
- Rexea antefurcata* Parin, 1989 Long-finned escolar  
Southeast Pacific: seamounts of Nazca and Sala y Gomez Ridges and at Easter Island. Southwest Pacific: Tasman Sea (from 23° to 37°S along east coast of Australia and on seamounts), and from southern Fiji. Max. length 72.5 cm SL. Habitat: benthopelagic, depth range: 80-800 m. Probably schooling, migrates to midwater at night. Feeds on fishes (myctophids, *Mauroliticus*, eels, macrourids, carangids, emmelichthyids, etc.), prawn and squid; large prey items are swallowed in parts (Ref. 6202). Matures at about 25 cm standard length. No special fishery but appears as a bycatch of deep-water prawn trawl fishery in New South Wales, Australia. Trophic level: 4.4. Resilience: not available. Importance: subsistence fisheries.
- Rexea brevilineata* Parin, 1989 Short-lined escolar  
Southeast Pacific: known only from seamounts of Nazca Submarine Ridge and adjacent parts of Sala y Gomez Ridge. Max. length 43 cm SL. Habitat: benthopelagic, depth range: 180-400 m. Feeds on squid and fish. Matures at about 25 cm. Trophic level: 4.5. Resilience: not available. Importance: not available.
- Rexea prometheoides* (Bleeker, 1856) Royal escolar  
Indo-West Pacific: off Mozambique, Kenya, Reunion Island, Saya de Malha Bank, north Australia, Indonesia, Viet Nam, Philippines, Ryukyu Islands, and southern Japan. Reported from Fiji and Tuvalu (Ref. 12596). Max. length 40 cm SL. Habitat: benthopelagic, depth range: 135-540 m. Feeds on fishes, crustaceans, and cephalopods (Ref. 5213, 9784). Utilized as a food fish food (Ref. 4537). Trophic level: 4.2. Resilience: not available. Importance: commercial.
- Ruvettus pretiosus* Cocco, 1833 Oilfish  
Mediterranean Sea: Antalya Bay. Widely distributed in tropical and temperate seas of the world. Max. length 200 cm TL. Habitat: benthopelagic, depth range: 100-800 m. Usually over the continental shelf, sometimes in oceanic waters down to 800 m (Ref. 9302). Usually solitary or in pairs near the bottom (Ref. 6181). Migrates far offshore (Ref. 26139). Feeds on fish, crustaceans and squid (Ref. 6181). The peculiar wooden 'palu' or *Ruvettus* hook is used to catch this species in south central Pacific (Ref. 6181). The flesh is very oily, with purgative properties, if eaten much (Ref. 6181). Marketed fresh and as fish cakes in Japan (Ref. 9302); also processed into fishmeal (Ref. 5217). Maximum length corrected to 2 m (Heemstra, pers. comm. 03/03). Trophic level: 4.1. Resilience: not available. Importance: minor commercial.

**Lutjanidae Snappers**

- Etelis carbunculus* Cuvier, 1828 Ruby snapper  
Indo-Pacific: East Africa to the Hawaiian Islands and from southern Japan southward to Australia. This name has been wrongly used for *Etelis coruscans* by some previous authors. Max. length 127 cm FL. Habitat: reef-associated, depth range: 90-400 m. Inhabits rocky bottoms (Ref. 30573). Feeds on fishes and larger invertebrates such as squids, shrimps and crabs; also takes planktonic organisms, including pelagic urochordates. An important food fish in some areas. Marketed fresh or frozen. Trophic level: 4.5. Resilience: Medium ( $K=0.13-0.31$ ). Importance: highly commercial.
- Etelis coruscans* Valenciennes, 1862 Flame snapper  
Indo-Pacific: East Africa up to the Bashee River 32°S (Ref. 5484), eastward to the Hawaiian Islands, north to southern Japan, south to Australia (Queensland and New South Wales) and Lord Howe Island. The name *Etelis carbunculus* has been misapplied to this species by some previous authors. Max. length 120 cm TL. Habitat: reef-associated, depth range: 90-400 m. Inhabits rocky bottoms (Ref. 30573). Feeds on small fishes, squids and crustaceans (Ref. 30573). Considered an important food fish in some areas. Marketed fresh and frozen (Ref. 9987). Highly valued for the quality of its flesh (Ref. 11888). Trophic level: 4.5. Resilience: not available. Importance: highly commercial.
- Parapristipomoides squamimaxillaris* (Kami, 1973) Scalemouth jobfish  
Pacific Ocean: New Caledonia, Tonga, Rapa, and off Easter Island. Max. length 40 cm SL. Habitat: reef-associated, depth range: 130-460 m. Occurs over rocky bottoms. Marketed fresh. Trophic level: 3.2. Resilience: not available. Importance: commercial.
- Pristipomoides argyrogrammicus* (Valenciennes, 1832) Ornate jobfish  
Indo-Pacific: East Africa to the Society Islands, north to southern Japan, south to New Caledonia. Max. length 40 cm SL. Habitat: reef-associated, depth range: 70-350 m. Occurs over rocky bottoms. Feeds on small fishes, crustaceans and squids. Trophic level: 4.2. Resilience: not available. Importance: minor commercial.
- Pristipomoides auricilla* (Jordan, Evermann & Tanaka, 1927) Goldflag jobfish  
Indo-Pacific: Mauritius to Hawaii and Rapa and northward from Australia and New Caledonia to Japan. Max. length 45 cm TL. Habitat: benthopelagic, depth range: 90-360 m. Occurs over rocky bottoms; off Guam, caught most abundantly from 180 to 270 m. Feeds on fishes and salps. Marketed fresh. Trophic level: 3.5. Resilience: not available. Importance: commercial.
- Pristipomoides filamentosus* (Valenciennes, 1830) Crimson jobfish  
Indo-Pacific: East Africa to Hawaii and Tahiti, north to southern Japan, south to eastern Australia and Lord Howe Island. Max. length 100 cm TL. Habitat: benthopelagic, depth range: 40-400 m. Occurs over rocky bottoms (Ref. 30573); off Guam, caught most abundantly between 180 and 270 m (Ref. 9821). At night, it migrates vertically to the upper part of its habitat to feed (Ref. 11888). Feeds on small fishes, shrimps, crabs, amphipods, ascidians and salps. Marketed fresh. Trophic level: 3.6. Resilience: Medium ( $K=0.16-0.31$ ;  $t_{max}=18$ ). Importance: highly commercial.
- Pristipomoides multidentis* (Day, 1871) Goldbanded jobfish  
Indo-Pacific: Red Sea, Arabian Sea and East Africa to Samoa, north to southern Japan, south to Australia. Max. length 90 cm TL. Habitat: demersal, depth range: 40-245 m. Gold band snappers are deepwater fish inhabiting tropical and sub-tropical waters. They are schooling fish and live in areas of hard, rocky and uneven sea floor and steep off islands (Ref. 27354). Feed on fishes, shrimps, crabs, lobsters, stomatopods, squids, gastropods and urochordates. Marketed fresh. An excellent food fish. Trophic level: 3.8. Resilience: Medium ( $K=0.22-0.28$ ;  $t_{max}=14$ ;  $Fec=296,000$ ). Importance: commercial.

*Pristipomoides sieboldii* (Bleeker, 1854-57) Lavender jobfish

Indo-Pacific: East Africa to Hawaii, and northward to southern Japan. A single specimen, apparently of this species, obtained from Vema Seamount in the southeast Atlantic. Max. length 79 cm TL. Habitat: benthopelagic, depth range: 100-360 m. Occurs over rocky bottoms (Ref. 30573); off Guam, caught most abundantly from about 180 to 270 m (Ref. 9821). Feeds mainly on fishes, shrimps, crabs, polychaetes, cephalopods and urochordates. Marketed mostly fresh. Caught mainly with bottom longlines and deep handlines. Trophic level: 3.9. Resilience: not available. Importance: commercial.

*Pristipomoides zonatus* (Valenciennes, 1830) Oblique-banded snapper

Indo-Pacific: East Africa to Hawaii and Tahiti, north to southern Japan, south to Australia and Lord Howe Island. Max. length 50 cm TL. Habitat: benthopelagic, depth range: 70-300 m. Occurs over rocky bottoms (Ref. 30573). Feeds on fishes, shrimps, crabs, cephalopods, miscellaneous benthic invertebrates and pelagic organisms, including urochordates. Trophic level: 3.9. Resilience: Medium (K=0.23). Importance: commercial.

**Nomeidae Driftfishes**

*Cubiceps pauciradiatus* Günther, 1872 Longfin fathead

Atlantic, Indian and Pacific: circumtropical (Ref. 47377). Western Atlantic: Gulf of Mexico, Caribbean (Ref. 26938). Max. length 20 cm TL. Habitat: bathypelagic, depth range: 58-1000 m. Occurs from the border of the continental shelf to about 1,000 m depth (Ref. 13628). Found near the surface at night (Ref. 9834). Adults feed mainly on salps (Ref. 33689). Trophic level: 3.5. Resilience: not available. Importance: of no interest.

*Psenes cyanophrys* Valenciennes, 1833 Freckled driftfish

Atlantic, Indian and Pacific: tropical and warmer temperate waters. Western Atlantic: Massachusetts, USA and northern Gulf of Mexico to South America (Ref. 7251). Reported from southern Africa (Ref. 4412). Max. length 20 cm TL. Habitat: bathypelagic, depth range: down to 550 m. Inhabits the open ocean. Associated with *Sargassum* (Ref. 26340) and jellyfish (Ref. 7251). Trophic level: 3.4. Resilience: not available. Importance: not available.

*Psenes maculatus* Lütken, 1880 Silver driftfish

Atlantic Ocean: New Jersey, USA to northern South America (Ref. 7251); reported from southern Africa. Also Indian and Pacific oceans. Max. length 28.35 cm TL. Habitat: pelagic, depth range: not available. Epipelagic or mesopelagic in oceanic temperate waters. Rarely seen (Ref. 6891). Lives in association with jellyfish (Ref. 7251). Trophic level: 3.5. Resilience: not available. Importance: not available.

**Ostracoberycidae**

*Ostracoberyx dorygenys* Fowler, 1934

Indo-West Pacific: Zanzibar, Tanzania and Madagascar to southern Japan and the Philippines. Max. length 23 cm SL. Habitat: bathydemersal, depth range: 256-711 m. Rarely caught. Trophic level: 3.4. Resilience: not available. Importance: not available.

**Pentacerotidae Armorheads**

*Evistias acutirostris* (Temminck & Schlegel, 1844) Striped boarfish

Pacific Ocean: Japan and Hawaiian Islands; Australia, New Zealand and Lord Howe, Norfolk and Kermadec Islands. Max. length 90 cm TL. Habitat: reef-associated, depth range: not available. Found in pairs or small groups in deep rocky drop-offs (Ref. 9710). Trophic level: 3.5. Resilience: not available. Importance: commercial.

*Pentaceros decacanthus* Günther, 1859 Bigspined boarfish

Indo-Pacific: southern Australia and New Zealand. Max. length 24 cm TL. Habitat: bathydemersal, depth range: 37-460 m. Found on the continental shelf and slope, usually in depths greater than 300 m (Ref. 9563). Trophic level: 3.0. Resilience: not available. Importance: not available.

*Pentaceros japonicus* Döderlein, 1883 Japanese armorhead  
 Western Pacific: southern Japan to Australia and New Zealand. Max. length 25 cm TL. Habitat: benthopelagic, depth range: not available. Trophic level: 3.0. Resilience: not available. Importance: commercial.

*Pentaceros quinquespinis* Parin & Kotlyar, 1988  
 Southeast Pacific: Chile. Max. length not available. Habitat: pelagic, depth range: 175-210 m. Trophic level: 3.4. Resilience: not available. Importance: not available.

*Pseudopentaceros pectoralis* Hardy, 1983 Longfin armorhead  
 North Pacific: Japan to Alaska and to central California, USA. This species was commonly misidentified as *Pseudopentaceros richardsoni*. Max. length 53 cm TL. Habitat: pelagic, depth range: 0-402 m. Occurs offshore (Ref. 2850). Sometimes observed feeding at the surface at night (Ref. 2850). May form schools (Ref. 2850). Trophic level: 3.5. Resilience: not available. Importance: not available.

*Pseudopentaceros richardsoni* (Smith, 1844) Pelagic armorhead  
 Southeast Atlantic: Tristan de Cunha and South Africa. Western Indian Ocean: South Africa. South Pacific: southern Australia and New Zealand and Cape Horn, Chile. North Pacific records refers to *pectoralis* (Ref. 4537). Max. length 56 cm TL. Habitat: pelagic, depth range: 0-600 m. Have been trawled on the continental shelf and slope; juveniles recorded from surface waters (Ref. 9563). Trophic level: 3.5. Resilience: not available. Importance: commercial.

### **Percophidae Duckbills**

*Bembrops filifera* Gilbert, 1905 Sharpnosed duckbill  
 Pacific Ocean: Japan to Western Australia and off the Hawaiian Islands. Max. length 22 cm SL. Habitat: bathydemersal, depth range: 62-375 m. Trophic level: 3.0. Resilience: not available. Importance: not available.

*Chrionema pallidum* Parin, 1990  
 Southeast Pacific: known from 3 seamounts in the western part of the Sala y Gomez submarine ridge between 25°01'-25°11'S and 97°28'-100°49'W. Max. length 13.2 cm SL. Habitat: bathydemersal, depth range: 230-350 m. Trophic level: 3.3. Resilience: not available. Importance: not available.

*Dactylopsaron dimorphicum* Parin & Belyanina, 1990  
 Southeast Pacific: western part of the Sala y Gomez Ridge, and at the junction between this ridge and the Nazca Ridge. Max. length 2.9 cm SL. Habitat: bathydemersal, depth range: 240-345 m. Trophic level: 3.2. Resilience: not available. Importance: not available.

*Enigmapercis acutirostris* Parin, 1990  
 Southeast Pacific: western part of the Sala y Gomez Ridge. Max. length not available. Habitat: bathydemersal, depth range: 470-485 m. Trophic level: 3.0. Resilience: not available. Importance: not available.

*Osopsaron karlik* Parin, 1985  
 Southeast Pacific: known from three seamounts at the junction of the Nazca and Sala y Gomez ridges (between 25°19'-25°48'S and 85°05'-86°03'W) and three seamounts in the west of the Sala y Gomez ridges (between 25°03'-26°00'S and 97°29'-100°40'W). Max. length 4.2 cm SL. Habitat: bathydemersal, depth range: 260-450 m. Trophic level: 3.3. Resilience: not available. Importance: not available.

### **Pinguipedidae Sandperches**

*Parapercis dockinsi* McCosker, 1971  
 Southeast Pacific: known only from Juan Fernández Islands. Max. length 17.2 cm SL. Habitat: demersal, depth range: 85-290 m. Inhabits depths of about 150 m. Trophic level: 3.4. Resilience: not available. Importance: not available.

*Parapercis roseoviridis* (Gilbert, 1905)

Pacific Ocean: Kyushu-Palau Ridge and Hawaii (Ref. 559). Southeast Atlantic: Valdivia Bank and Vema Seamount (Ref. 38000). Max. length 18 cm SL. Habitat: demersal, depth range: 113-235 m. Trophic level: 3.4. Resilience: not available. Importance: not available.

**Polyprionidae**                      **Wreckfishes**

*Polyprion americanus* (Bloch & Schneider, 1801)                      Wreckfish

Eastern Atlantic: Norway to South Africa (Ref. 6633), including the Mediterranean, Canary Islands, Madeira, Cape Verde, and Tristan da Cunha. Western Atlantic: Newfoundland, Canada and Gulf of Maine to North Carolina, USA (Ref. 7251). Recorded from Uruguay to Argentina (Ref. 9050). Western Indian Ocean: St. Paul and Amsterdam islands (Ref. 6633). Southwest Pacific: New Zealand (Ref. 5755, 9072). Max. length 210 cm TL. Habitat: bathydemersal, depth range: 40-600 m. Prefers to inhabit caves and shipwrecks (Ref. 27121). Juveniles congregate below floating objects (Ref. 27121). Usually solitary. Feeds on large crustaceans, cephalopods and benthic fishes (Ref. 27121). Spawns in the summer (Ref. 35388). Marketed fresh or frozen; eaten steamed, fried, broiled, boiled, microwaved and baked (Ref. 9988). Minimum depth reported from Ref. 6633. Trophic level: 3.8. Resilience: not available. Importance: minor commercial.

**Priacanthidae**                      **Bigeyes or catalufas**

*Cookeolus japonicus* (Cuvier, 1829)                      Longfinned bullseye

Circumglobal in tropical and tropically influenced seas. Indo-Pacific: South Africa to southeastern Australia north to Japan and Korea and through the central Pacific Islands. Eastern Pacific: Baja California to Peru. Atlantic Ocean: Virginia, USA and Western Atlantic: Nova Scotia (Ref. 47377), New Jersey, North Carolina, USA to probably Argentina (Ref. 11441); southern Caribbean and southern Brazil (Ref. 26938); abundant at St. Helena but no substantiated records in eastern Atlantic from the African coastal region or the Canary Islands. Often misidentified as *Cookeolus boops*, a junior synonym of *Heteropriacanthus cruentatus* (Ref. 11441). Max. length 68 cm TL. Habitat: reef-associated, depth range: 40-400 m. Found on hard bottoms to a depth of about 400 m and reported to be moderately common at depths of 165 to 260 m in association with rocky holes and ledges; preferably with rich invertebrate growth such as sponges and soft corals (Ref. 48635). Juveniles pelagic (Ref. 9335, 9563). Feeds on pelagic crustaceans (Ref. 9335). Probably spawns in the Caribbean from May to September. Trophic level: 3.5. Resilience: not available. Importance: commercial.

*Heteropriacanthus cruentatus* (Lacepède, 1801)                      Glasseye

Circumglobal in tropical and tropically influenced seas. Western Atlantic: continental waters from off Florida to Flower Garden Reef off Texas in the Gulf of Mexico; Caribbean islands and along the coast of South America to Argentina. Eastern Atlantic: eastern and mid Atlantic islands from Madeira to St. Helena; not recorded from African continental waters. Indo-Pacific: South and eastern Africa (excluding the Red Sea) eastward in island habitats through the central Pacific. Eastern Pacific: island habitats from off Baja California to the Galapagos; probably uncommon along coast of Mexico, Central and South America, questionably to Chile. Max. length 50.7 cm TL. Habitat: reef-associated, depth range: 3-300 m. Common in lagoon and seaward reefs, primarily around islands. Under or near ledges by day (Ref. 9710). Juveniles are pelagic (Ref. 9335). Nocturnal (Ref. 5213), feeding mainly on octopi, pelagic shrimp, stomatopods, crabs, small fish, and polychaetes. Solitary (Ref. 5213). During the day usually occurs singly or in small groups but at dusk it may gather in large numbers (Ref. 37816). Known to produce sound. Marketed fresh (Ref. 3800). Minimum depth reported taken from Ref. 30874. Trophic level: 3.8. Resilience: not available. Importance: minor commercial.

*Priacanthus macracanthus* Cuvier, 1829                      Red bigeye

Western Pacific: southern Japan to western Indonesia, the Arafura Sea (Ref. 9819), and Australia. Reported from Peter the Great Bay (Ref. 27683). Max. length 30 cm SL. Habitat: reef-associated, depth range: 20-400 m. Occurs in inshore and offshore reefs from less than 20 m to more than 400 m depths. Apparently forms aggregations in open bottom areas and is very abundant in the South China Sea and Andaman Sea. Marketed fresh, whole. Sound production has been studied in this species. Trophic level: 4.1. Resilience: High (K=0.7-1.0; tmax=6). Importance: commercial.

*Priacanthus meeki* Jenkins, 1903 Hawaiian bigeye

Eastern Pacific: Hawaiian and Midway Islands; a single juvenile specimen recorded from the Galapagos Islands. Strays reach Johnston Atoll (Ref. 9710). Reports from Japan are probably misidentifications of *Priacanthus hamrur*. Max. length 33 cm TL. Habitat: reef-associated, depth range: 3-230 m. Inhabits clear lagoon and seaward reefs. Found under ledges during the day (Ref. 9710). Spawning may occur by December or soon after. Sound production has been studied in this species. Trophic level: 4.0. Resilience: not available. Importance: subsistence fisheries.

**Scombridae Mackerels, tunas, bonitos***Katsuwonus pelamis* (Linnaeus, 1758) Skipjack tuna

Cosmopolitan in tropical and warm-temperate waters. Not found in the eastern Mediterranean Sea (Ref. 28950) and the Black Sea. Highly migratory species, Annex I of the 1982 Convention on the Law of the Sea (Ref. 26139). Max. length 108 cm FL. Habitat: pelagic, depth range: 0-260 m. Found in offshore waters; larvae restricted to waters with surface temperatures of 15°C to 30°C (Ref. 6390). Exhibit a strong tendency to school in surface waters with birds, drifting objects, sharks, whales and may show a characteristic behavior like jumping, feeding, foaming, etc. Feed on fishes, crustaceans, cephalopods and mollusks; cannibalism is common. Preyed upon by large pelagic fishes (Ref. 6885). Also taken by trolling on light tackle using plugs, spoons, feathers, or strip bait (Ref. 9684). Marketed fresh, frozen or canned (Ref. 9340); also dried-salted and smoked (Ref. 9987). Spawns throughout the year in the tropics, eggs released in several portions (Ref. 35388). Trophic level: 4.4. Resilience: Medium (K=0.3-0.5; tm=2-3; tmax=12; Fec=80,000). Importance: highly commercial.

*Scomber japonicus* Houttuyn, 1782 Chub mackerel

Circumglobal, east coast of America from Nova Scotia, Canada to east Argentina (Ref. 47377). Indo-Pacific distribution for the chub mackerel *Scomber japonicus*; while *Scomber colias* is found in the Atlantic (Ref. 33246). *Scomber japonicus* is apparently absent from Indonesia and Australia and is replaced by *Scomber australasicus* (Ref. 9684). Population from the Red Sea and northern Indian Ocean (Gulfs of Aden and Oman) is *Scomber australasicus* (Ref. 27328). Complete partitioning of haplotypes among samples from the Atlantic and Indo-Pacific populations suggests that they may need to be recognized as separate species (Ref. 30232). Max. length 64 cm TL. Habitat: pelagic, depth range: 0-300 m. A coastal pelagic species, to a lesser extent epipelagic to mesopelagic over the continental slope (Ref. 168). Schooling by size is well developed and initiates at approximately 3 cm (Ref. 168); may also form schools with *Sarda chiliensis*, *Trachurus symmetricus* and *Sardinops sagax* (Ref. 9340). Stays near the bottom during the day; goes up to the open water at night, (Ref. 5377) where it feeds on copepods and other crustaceans, fishes and squids (Ref. 168). In Asian waters, it is said to move to deeper water and remain inactive during the winter season (Ref. 4576). Commercially cultured in Japan. Marketed fresh, frozen, smoked, salted and occasionally canned (Ref. 9684). Eaten fried, broiled and baked (Ref. 9988). Used in Chinese medicine (Ref. 12166). Trophic level: 3.1. Resilience: Medium (K=0.12-0.22; tm=2-3; tmax=18). Importance: highly commercial.

**Scombrolabracidae***Scombrolabrax heterolepis* Roule, 1921 Longfin escolar

Atlantic, Indian and Pacific: widespread in tropical and subtropical areas. Not occurring in the eastern Pacific and southeast Atlantic. Max. length 30 cm TL. Habitat: benthopelagic, depth range: 100-900 m. Oceanic and mesopelagic. Found on the continental shelf and underwater sea rises (Ref. 10817). Rather rare. Trophic level: 3.4. Resilience: not available. Importance: of no interest.

**Serranidae Sea basses: groupers and fairy basslets***Anatolanthias apiomycter* Anderson, Parin & Randall, 1990

Southeast Pacific: Nazca Ridge. Max. length not available. Habitat: pelagic, depth range: not available. Endemic to few oceanic islands, below 100 m (Ref. 50846). Trophic level: 3.9. Resilience: not available. Importance: not available.

- Anthias anthias* (Linnaeus, 1758) Swallowtail seaperch  
 Eastern Atlantic: Mediterranean and Portugal to Angola, including the Azores. Range reported to extend south to northern Namibia (Ref. 27121). Max. length 27 cm SL. Habitat: reef-associated, depth range: down to 300 m. Lives amongst rocks, gravel, coral (Ref. 2683) and in submarine caves on the continental shelf and upper slope. Nocturnal. Feeds on crustaceans and small fishes. Protogynous. Trophic level: 4.0. Resilience: not available. Importance: commercial.
- Caprodon longimanus* (Günther, 1859) Pink maomao  
 Southwest Pacific: Australia and New Zealand (including the Kermadec Islands). Southeast Pacific: Juan Fernández Islands (Ref. 33693); including Easter Island and the Nazca Ridge from the Desventuradas Islands off the coast of Chile (Ref. 40817). Eastern Indian Ocean: off Rottneest Island, Western Australia (Ref. 7300). Max. length 50 cm TL. Habitat: reef-associated, depth range: 0-220 m. Occurs inshore near reefs (Ref. 7300). Feed on plankton and small nekton. Occasionally caught on small hooks when fishing in midwater without sinker and make excellent eating (Ref. 30464). Trophic level: 3.2. Resilience: not available. Importance: not available.
- Caprodon schlegelii* (Günther, 1859)  
 Pacific Ocean. Max. length 35 cm TL. Habitat: benthopelagic, depth range: 50-200 m. Occurs inshore near reefs (Ref. 7300), on sand or rock bottom (Ref. 11230). Consumed as food (Ref. 559). Trophic level: 3.4. Resilience: not available. Importance: commercial.
- Chelidoperca lecroimi* Fourmanoir, 1982  
 Western Pacific: Chesterfield Islands. Max. length 13 cm SL. Habitat: demersal, depth range: down to 300 m. Trophic level: 3.1. Resilience: not available. Importance: not available.
- Epinephelus septemfasciatus* (Thunberg, 1793) Convict grouper  
 Northwest Pacific: known with certainty only from Japan, Korea, and China. Reports from other areas appear to be based on misidentifications of *Epinephelus octofasciatus*. Max. length 155 cm TL. Habitat: reef-associated, depth range: 5-30 m. Occurs near shore, including semi-enclosed sea areas in rocky reefs in shallow waters (Ref. 11230). Commercially cultured in Japan. Trophic level: 4.0. Resilience: not available. Importance: minor commercial.
- Plectranthias exsul* Heemstra & Anderson, 1983  
 Southeast Pacific: Juan Fernández Islands (Ref. 33693) and Nazca Ridge, also from Desventuradas Islands (Ref. 40817). Max. length 15.8 cm SL. Habitat: demersal, depth range: 140-225 m. Trophic level: 3.5. Resilience: not available. Importance: not available.
- Plectranthias kelloggi* (Jordan & Evermann, 1903)  
 Western Pacific: southern Japan (Ref. 559) and the Chesterfield Islands (Ref. 11897). Eastern Central Pacific: Hawaiian Islands (Ref. 583). Max. length 12 cm SL. Habitat: demersal, depth range: 60-400 m. Uncommon deepwater fish. Found over rock or sand bottoms (Refs. 559 and 9137). Trophic level: 4.0. Resilience: not available. Importance: not available.
- Plectranthias parini* Anderson & Randall, 1991  
 Southeast Pacific: Sala y Gómez Ridge and Easter Island. Max. length not available. Habitat: bathypelagic, depth range: 260-272 m. Trophic level: 3.0. Resilience: not available. Importance: not available.
- Pseudanthias thompsoni* (Fowler, 1923) Hawaiian anthias  
 Pacific Ocean: Ogasawara Islands (Ref. 26066) and Hawaii. Max. length 22 cm TL. Habitat: reef-associated, depth range: 5-190 m. Found around coral outcrops and escarpments (Ref. 9710). Rare in less than 15 m. Feeds on zooplankton. Trophic level: 3.4. Resilience: not available. Importance: not available.

### **Symphysanodontidae**

- Symphysanodon maunaloae* Anderson, 1970 Longtailed slopefish  
 Pacific Ocean: off Japan and Lombok, Indonesia to the Hawaiian Islands and Sala y Gómez Ridge. Max. length 16 cm SL. Habitat: demersal, depth range: 150-500 m. Trophic level: 3.4. Resilience: not available. Importance: not available.

**Trichiuridae Cutlassfishes**

- Aphanopus capricornis* Parin, 1994  
Western Pacific: eastern Australia. Southeast Pacific: Peru. Max. length 77.8 cm SL. Habitat: bathypelagic, depth range: 879-1024 m. Trophic level: 4.3. Resilience: not available. Importance: not available.
- Aphanopus carbo* Lowe, 1839 Black scabbardfish  
North Atlantic: on both sides and at underwater rises from Denmark Strait to about 30°N. Max. length 110 cm SL. Habitat: benthopelagic, depth range: 200-1700 m. Juveniles mesopelagic (Ref. 6181). Migrates to midwater at night and feeds on crustaceans, cephalopods and fishes (mostly macrourids, morids and alepocephalids). Matures at 80 to 85 cm. Commercial catch up to 1000 t was caught off Madeira with a specialized commercial deep water longline (Ref. 6255). Appears as bycatch in the trawl fishery west of the British Isles, along the Middle-Atlantic Ridge and at Corner Rise. Important and fabled food fish in Madeira (Ref. 4537). Trophic level: 4.5. Resilience: Low (K=0.11-0.25). Importance: commercial.
- Assurger anzac* (Alexander, 1917) Razorback scabbardfish  
Atlantic Ocean: Walvis Ridge, off Puerto Rico and Uruguay. Indian Ocean: off western Australia. Pacific Ocean: off New Guinea, southern Japan, Midway Island, California, Nazca and Sala y Gomez Ridge. Max. length 250 cm SL. Habitat: benthopelagic, depth range: 150-400 m. Probably benthopelagic from 150 to 400 m, juveniles epipelagic or mesopelagic. Feeds on fishes (including *Engraulis mordax* and *Merluccius productus* off California) and squids. Occasionally hooked, captured in nets, or found washed ashore. No special fishery. Trophic level: 4.5. Resilience: not available. Importance: subsistence fisheries.
- Benthodesmus elongatus* (Clarke, 1879) Elongate frostfish  
Atlantic, Indian and Pacific: off south Brazil and Argentina, Rio Grande Rise, southeastern Africa, Madagascar Ridge, southeastern Australia, New Zealand, Sala y Gomez Ridge. Max. length 100 cm TL. Habitat: bathydemersal, depth range: 178-950 m. Juveniles mesopelagic (Ref. 6181). Feeds on crustaceans (mainly prawns and euphausiids), small fishes (e.g. *Maurolicus*) and squid (Ref. 6202). Minimum depth reported from Ref. 36453. Trophic level: 3.7. Resilience: Low (tm=5-6). Importance: not available.
- Benthodesmus tenuis* (Günther, 1877) Slender frostfish  
Western Atlantic: off Cape Hatteras, Gulf of Mexico, Suriname and southern Brazil. Eastern Atlantic: Gulf of Guinea to Angola. Western Indian Ocean: off Natal, South Africa (Ref. 11228). Western Pacific: Emperor Seamounts, Japan, Ryukyu Islands, Viet Nam, and the Sulu Sea. Indian Ocean: south of Java, Indonesia. Reported from British Columbia, Canada (Ref. 11980). Max. length 230 cm SL. Habitat: bathydemersal, depth range: 200-850 m. Mainly found over the continental slope (Ref. 27121). Juveniles mesopelagic (Ref. 6181). Trophic level: 4.5. Resilience: not available. Importance: not available.
- Lepidopus calcar* Parin & Mikhailin, 1982 Hawaiian ridge scabbardfish  
Northwest Pacific: known only from type locality at Colahan Seamount of Hawaiian Submarine Ridge (31°01'N, 175°53'W). Max. length 79 cm SL. Habitat: bathydemersal, depth range: 270-350 m. Maximum standard length recorded only from 3 specimens. Trophic level: 4.3. Resilience: not available. Importance: not available.
- Lepidopus caudatus* (Euphrasen, 1788) Silver scabbardfish  
Eastern Atlantic: France and western Mediterranean to Senegal, including Azores, Madeira, the Canary Islands and offshore seamounts; Cape Fria, Namibia to Agulhas Bank, South Africa including northern Walvis Ridge. Southern Indian Ocean: seamounts 30 to 35°S. Southwest Pacific: Australia (New South Wales to southern West Australia) and New Zealand. Southeast Pacific: Peru. A doubtful record from Cape San Lucas, Mexico. Max. length 210 cm TL. Habitat: bathydemersal, depth range: 100-600 m. Occurs on continental shelf, along its edge and upper slope down to 400 m (600 m in Australia), usually over sandy and muddy bottoms from 100 to 250 m (over 300 m in Australia). Migrates into midwater at night. Forms schools; occasionally found inshore in upwelling of deep water when it appears at surface. Feeds on crustaceans, small squid and fish (Ref. 6768). Trophic level: 3.9. Resilience: Medium (K=0.3; tmax=7). Importance: highly commercial.

## Zoarcidae      Eelpouts

*Lycodes esmarkii*                      Collett, 1875                      Greater eelpout

North Atlantic: western Barents Sea to southern Norway, the Faeroes-Shetlands and northern Iceland. Max. length 75 cm TL. Habitat: bathydemersal, depth range: 251-500 m. Occurs at a temperature range of -0.4° to 5.0 °C. Optimal temperatures appear to range between 2.6° and 3.5°C (Ref. 13534). Inhabits soft bottom areas. Feeds almost exclusively on ophiuroids (Ref. 13532). Trophic level: 3.4. Resilience: not available. Importance: not available.

*Lycodes terraenovae*                      Collett, 1896

Western Atlantic: Davis Strait, off Newfoundland and Middle Atlantic Bight. Eastern Atlantic: Rockall Trough/ Bill Bailey Bank, off Mauritania and off southwestern Africa. Max. length 45.2 cm TL. Habitat: bathydemersal, depth range: 630-1920 m. Species forgotten in CLOFNAM (10007) and FNAM (4695). Trophic level: 3.1. Resilience: not available. Importance: not available.

*Melanostigma atlanticum*      Koefoed, 1952                      Atlantic soft pout

Northwest Atlantic: New Brunswick in Canada to Virginia in USA. Eastern Atlantic: Off the western coast of Scotland and in the Mediterranean (Gulf of Genoa; also off Spain) (Ref. 4695), Faeroe-Iceland Ridge and between Cap Blanc, Mauritania and the Canary Islands (Ref. 6950). Max. length 15 cm TL. Habitat: bathypelagic, depth range: 400-1000 m. Occurs in midwater over the continental slope. Mostly found from 365-550 m depth, but enters shallower water in the northern part of range (Ref. 7251). Feeds on foraminifera, copepods, and ostracods (Ref. 9731). Trophic level: 3.0. Resilience: not available. Importance: not available.

## Pleuronectiformes (flatfishes)

### Bothidae      Lefteye flounders

*Arnoglossus imperialis*                      (Rafinesque, 1810)                      Imperial scaldfish

Eastern Atlantic: Scotland to Namibia (Ref. 27121), including the western Mediterranean. Max. length 25 cm TL. Habitat: demersal, depth range: 20-350 m. Found on sand, mud, shell and corals ( Ref. 27171). Caught with bottom and pelagic trawls (Ref. 2683). Trophic level: 3.8. Resilience: not available. Importance: commercial.

*Arnoglossus multirastris*                      Parin, 1983

Southeast Pacific: Chile. Max. length not available. Habitat: demersal, depth range: not available. Trophic level: 3.1. Resilience: not available. Importance: not available.

*Arnoglossus rueppelii*                      (Cocco, 1844)                      Rüppell's scaldback

Eastern Atlantic: west Gibraltar to Cape Bojador (West Sahara) and Canary Islands including western Mediterranean and Morocco. Max. length 15 cm SL. Habitat: demersal, depth range: 85-550 m. Feeds on small fishes and invertebrates. Spawns during autumn in the Mediterranean. Trophic level: 4.0. Resilience: not available. Importance: not available.

*Arnoglossus septemventralis*      Amaoka & Mihara, 2000

Western Central Pacific: off southern New Caledonia. Max. length not available. Habitat: bathydemersal, depth range: 240-250 m. Trophic level: 3.1. Resilience: not available. Importance: not available.

*Chascanopsetta megagnatha*      Amaoka & Parin, 1990

Southeast Pacific: known from three seamounts on the Sala y Gomez Ridge, between Chile and Easter Island. Max. length 24.6 cm SL. Habitat: bathydemersal, depth range: 410-590 m. Trophic level: 3.2. Resilience: not available. Importance: not available.

*Chascanopsetta prorigera*                      Gilbert, 1905

Northwest Pacific: Midway Islands and Emperor Seamount. Eastern Central Pacific: Hawaii. Max. length 3 cm SL. Habitat: bathydemersal, depth range: 267-400 m. Trophic level: 3.3. Resilience: not available. Importance: not available.

*Engyprosopon regani* Hensley & Suzumoto, 1990  
 Southeast Pacific: Isla de Pascua [=Easter Island] (Ref. 33343). Max. length not available. Habitat: demersal, depth range: not available. Trophic level: 3.5. Resilience: not available. Importance: not available.

*Parabothus amaokai* Parin, 1983  
 Southeast Pacific: Sala y Gomez and Nazca Submarine ridges. Max. length not available. Habitat: demersal, depth range: not available. Trophic level: 3.5. Resilience: not available. Importance: not available.

*Parabothus coarctatus* (Gilbert, 1905)  
 Pacific Ocean: New Caledonia, southern Japan, and the Hawaiian Islands (Ref. 9824); including the Norfolk Ridge and Isle of Matthew (Ref. 28982). Max. length 22.5 cm SL. Habitat: bathydemersal, depth range: 253-580 m. Inhabits mud and sand bottoms. Feeds on small benthic animals. Marketed fresh, sometimes dried-salted. Trophic level: 3.5. Resilience: not available. Importance: commercial.

## **Pleuronectidae Righteye flounders**

*Hippoglossus stenolepis* Schmidt, 1904 Pacific halibut  
 North Pacific: Hokkaido, Japan and the Sea of Okhotsk to the southern Chukchi Sea and Point Camalu, Baja California, Mexico. Max. length 258 cm TL. Habitat: demersal, depth range: 0-1200 m. Found on various types of bottoms (Ref. 2850). Young are found near shore, moving out to deeper waters as they grow older (Ref. 6885). Older individuals typically move from deeper water along the edge of the continental shelf where they spend the winter, to shallow coastal water (27-274 m) for the summer (Ref. 28499). Feeds on fishes, crabs, clams, squids, and other invertebrates (Ref. 6885). Utilized fresh, dried or salted, smoked and frozen; eaten steamed, fried, broiled, boiled, microwaved and baked (Ref. 9988). Trophic level: 4.1. Resilience: Low (rm=0.2; K=0.05; tm=5-20). Importance: highly commercial.

*Microstomus bathybius* (Gilbert, 1890) Deepsea sole  
 North Pacific: Japan to the Gulf of Alaska and to Mexican border. Max. length 47 cm TL. Habitat: bathydemersal, depth range: 320-1433 m. Found on mud bottoms (Ref. 2850). Trophic level: 3.0. Resilience: not available. Importance: not available.

*Microstomus pacificus* (Lockington, 1879) Dover sole  
 Eastern Pacific: Navarin Canyon in the Bering Sea to Stalemate Bank in the Aleutian Islands and San Cristobal Bay, Baja California, Mexico. Max. length 76 cm TL. Habitat: demersal, depth range: 10-1189 m. Occurs on mud bottom (Ref. 2850). Moves into deep water in winter (Ref. 2850). Produces large amounts of slime which may cover other fishes when caught in trawls (Ref. 4925). Marketed as mink food (Ref. 4925) or as fillet (Ref. 2850). Trophic level: 3.3. Resilience: Medium (K=0.26; Fec=37,000). Importance: commercial.

*Microstomus shuntovi* Borets, 1983  
 North Pacific. Needs better reference. Max. length not available. Habitat: bathydemersal, depth range: not available. Caught in 270-290 m. Trophic level: 3.5. Resilience: not available. Importance: not available.

## **Samaridae**

*Plagiopsetta glossa* Franz, 1910 Tongue flatfish  
 Western Pacific: Japan and Taiwan to New South Wales, Australia. Max. length 19 cm TL. Habitat: demersal, depth range: 65-278 m. Found in the sublittoral zone on sandy mud bottoms (Ref. 11230). Rare. Feeds on small benthic animals. Trophic level: 3.5. Resilience: not available. Importance: of no interest.

## Scophthalmidae

*Lepidorhombus boscii* (Risso, 1810) Fourspotted megrim

Northeast Atlantic: British Isles south to Cape Bojador, West Sahara and the Mediterranean. Max. length 40 cm SL. Habitat: demersal, depth range: 7-800 m. Inhabits soft bottoms (Ref. 6501). Trophic level: 3.7. Resilience: Medium (K=0.14-0.26; tmax=13). Importance: minor commercial.

## Tetraodontiformes (puffers and filefishes)

### Monacanthidae Filefishes

*Thamnaconus tessellatus* (Günther, 1880)

Western Pacific: Sagami Bay to the East and South China seas. Also recorded from Darwin to North West Cape, Australia (Ref. 5978) and Papua New Guinea (Ref. 6771). Max. length 22 cm SL. Habitat: bathydemersal, depth range: 230-600 m. Juveniles(?) found near shore on sand bottoms (Ref. 11230). Adults in deep water (see occurrence records). Trophic level: 2.8. Resilience: not available. Importance: not available.

### Ostraciidae Boxfishes

*Kentrocapros flavofasciatus* (Kamohara, 1938)

Northwest Pacific: southern Japan to the East China Sea (Ref. 559). Although mainly antitropical, it has been reported from New Caledonia (Ref. 33352). Max. length 13 cm SL. Habitat: demersal, depth range: 80-360 m. Trophic level: 3.0. Resilience: not available. Importance: not available.

### Tetraodontidae Puffers

*Arothron firmamentum* (Temminck & Schlegel, 1850) Starry toado

Western Pacific: southern Japan (Ref. 559) to Australia (New South Wales, South Australia, and Tasmania) and New Zealand (Ref. 5755). Southeast Atlantic: south coast of South Africa (Ref. 11228). Max. length 35 cm SL. Habitat: demersal, depth range: 10-360 m. Found over the continental shelf and slope (Ref. 9563). Trophic level: 3.3. Resilience: not available. Importance: not available.

*Canthigaster callisterna* (Ogilby, 1889) Clown toado

Southwest Pacific: Australia, including Lord Howe and Norfolk Islands and New Zealand, including Kermadec Islands (Ref. 8879). Including New Caledonia (Ref. 33352). Max. length 23 cm TL. Habitat: demersal, depth range: down to 250 m. Trophic level: 3.0. Resilience: not available. Importance: not available.

*Canthigaster rivulata* (Temminck & Schlegel, 1850) Brown-lined puffer

Indo-West Pacific: East Africa south to Natal, South Africa (Ref. 4919) and east to Seychelles, China, southern Korea, southern Japan and Bonin, and Hawaii. Also northwestern Australia (Ref. 3132). Max. length 18 cm TL. Habitat: reef-associated, depth range: 0-350 m. Inhabits rocky and coral reefs (Ref. 9710). Trophic level: 3.1. Resilience: not available. Importance: of no interest.

*Lagocephalus lagocephalus lagocephalus* (Linnaeus, 1758) Oceanic puffer

Atlantic, Indian and Pacific: in tropical and subtropical waters. Western Atlantic: Newfoundland, Canada to Brazil (Ref. 36453). Eastern Atlantic: Orkney Island and the Azores to South Africa (but very rare in the north), also in the Mediterranean (Ref. 10001). Max. length 61 cm TL. Habitat: benthopelagic, depth range: 10-100 m. Primarily an oceanic (Ref. 2850, 2683), pelagic species but may enter estuaries (Ref. 4919). Feeds on crustaceans and squids (Ref. 10001). Suspected responsible for fatal poisoning (Ref. 4919). Should not be eaten (Ref. 36731). Trophic level: 3.7. Resilience: not available. Importance: commercial.

*Sphoeroides pachygaster* (Müller & Troschel, 1848) Blunthead puffer  
 Circumglobal in tropical and temperate seas. Western Atlantic: New Jersey, USA (Ref. 47377) to Argentina (Ref. 13608). Mediterranean sea: Turkey. Max. length 40.5 cm SL. Habitat: demersal, depth range: 50-480 m. Inhabits sandy, muddy and rocky bottoms (Ref. 2683). Young are pelagic (Ref. 7251). Feeds mainly on squid. In southeast Brazil captured between 50 and 145 m (Ref. 47377). Trophic level: 4.5. Resilience: not available. Importance: commercial.

**Triacanthodidae Spikefishes**

*Halimochirurgus alcocki* Weber, 1913  
 Indo-Pacific: East Africa to Japan (Ref. 33352); including Philippines and Indonesia (Ref. 559). Max. length 21.6 cm SL. Habitat: bathydemersal, depth range: 390-610 m. Trophic level: 3.3. Resilience: not available. Importance: not available.

*Hollardia goslinei* Tyler, 1968  
 Eastern Central Pacific: Hawaii. Max. length not available. Habitat: demersal, depth range: down to 366 m. Trophic level: 3.0. Resilience: not available. Importance: not available.

*Macrorhamphosodes uradoi* (Kamohara, 1933) Trumpetsnout  
 Indo-West Pacific: Kenya to Japan and New Zealand (Ref. 5755). Southeast Atlantic: one record off Port Elizabeth, South Africa. Max. length 16.5 cm SL. Habitat: demersal, depth range: 50-675 m. Feeds on scales of fishes (Ref. 6660). Trophic level: 4.5. Resilience: not available. Importance: not available.

*Paratriacanthodes restrospinis* Fowler, 1934 Sawspine spikefish  
 Indo-Pacific: Mozambique, Natal, Japan, China, New Caledonia, Chesterfield and Bellona plateaus (Ref. 33352). Max. length 12 cm SL. Habitat: bathydemersal, depth range: 418-920 m. Trophic level: 3.0. Resilience: not available. Importance: not available.

*Triacanthodes ethiops* Alcock, 1894 Shortsnout spikefish  
 Indo-West Pacific: South Africa eastward to Japan (Ref. 6660); south to the Philippines, Indonesia, Australia and New Caledonia (Ref. 33352). Max. length 8.5 cm SL. Habitat: demersal, depth range: 50-125 m. Trophic level: 3.0. Resilience: not available. Importance: not available.

**Triodontidae Three-toothed puffer**

*Triodon macropterus* Lesson, 1831 Threetooth puffer  
 Indo-Pacific: East Africa to Japan, through the Philippines, Indonesia, Australia and New Caledonia. Max. length 54 cm TL. Habitat: reef-associated, depth range: 50-300 m. Rare species (Ref. 4419). Trophic level: 3.0. Resilience: not available. Importance: not available.