



Ijimaia plicatellus
Courtesy Chris Kelley

Marine Fishes

Deep Fishes

Ateleopodiformes

Ijimaia plicatellus

Beryciformes

Aulotrachichthys heptalepis

Gadiformes

Caelorinchus doryssus

Caelorinchus gladius

Hymenocephalus antraeus

Hymenocephalus tenuis

Kumba hebetata

Malacocephalus hawaiiensis

Nezumia ectenes

Nezumia holocentra

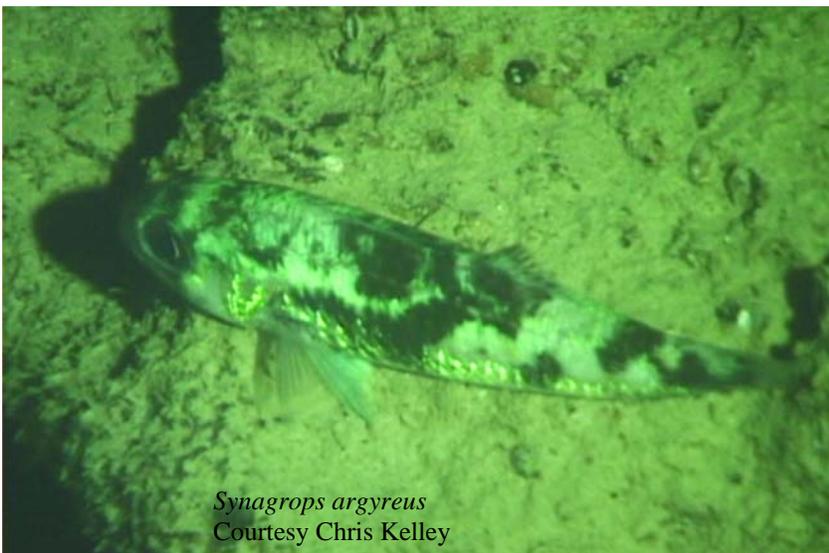
Sphagemacrurus gibber

Ventrifossa ctenomelas

Gadella molokaiensis

Physiculus sterops

Bathygadus bowersi



Synagrops argyreus
Courtesy Chris Kelley

Gonorynchiformes

Gonorynchus moseleyi

Lophiiformes

Halieutaea retifera

Linophryne escaramosa

Lophiodes bruchius

Solocisquama erythrina

Ophidiiformes

Luciobrotula lineata
Pycnocraspedum armatum
Cataetyx hawaiiensis
Grammonus waikiki
Microbrotula rubra
Saccogaster hawaii

Osmeriformes

Glossanodon struhsakeri

Perciformes

Champsodon fimbriatus
Epigonus devaneyi
Epigonus glossodontus
Osopsaron incisum
Synagrops argyreus

Squaliformes

Etmopterus villosus

Stomiiformes

Araiophos gracilis
Argyripnus brocki
Eustomias albibulbus
Eustomias bulbiramis
Eustomias magnificus

SPECIES STATUS:

IUCN Red List – Not considered
Endemic

SPECIES INFORMATION: Deep fishes usually live on soft sediment substrates and feed on fishes and invertebrates in or above those sediments. The grenadiers (gadiformes) are elongate fishes with tails that end in a point. The lophiiformes use a modified dorsal fin spine as a lure

to catch prey. Males are permanent parasites of females in *Linophryne*. The bythitids (last four Ophidiiformes) are live-bearers. Struhsaker's deep-sea smelt (*Glossanodon*) is a midwater pelagic planktivore. *Champsodon* is also a vertically migrating and schooling predator. The stomiiformes have bioluminescent organs. The *Eustomias* species are mesopelagic and vertically migrate diurnally. None of the species have Hawaiian names and only some have common names. The species with common names are: *Ijimaia plicatellus* (deep water ateleopid), *Caelorinchus doryssus* (spear-nosed grenadier), *Caelorinchus gladius* (sharp-snouted grenadier), *Hymenocephalus antraeus* (common big-eyed grenadier), *Hymenocephalus tenuis* (slender grenadier), *Kumba hebetate* (dull grenadier), *Malacocephalus hawaiiensis* (Hawaiian softhead grenadier), *Nezumia ectenes* (elongated grenadier), *Nezumia holocentra* (Cramer's grenadier), *Sphagemacurus gibber* (humped grenadier), *Ventrifossa ctenomelas* (Hawaiian grenadier), *Bathygadus bowersi* (Bower's grenadier), *Gonorynchus moseleyi* (beaked salmon), *Haliutaea retifera* (net bat fish), *Solocisquama* (red bat fish), *Glossanodon* (Struhsaker's deep-sea smelt), *Champsodon fimbriatus* (fringed champsodontid), *Etmopterus* (Hawaiian lanternshark), and *Argyripnus brocki* (Brock's bristlemouth).

DISTRIBUTION: *Ijimaia*, common big-eyed grenadier, *Physiculus*, *Pycnocraspedum*, *Epigonus glossodontus* and *Argyripnus* have been found from the island of Hawai'i to O'ahu. *Aulotrachichthys* has been found from Maui to Maro Reef. The spear-nosed grenadier has been found from Maui through the Northwestern Hawaiian Islands (NWHI). The sharp-snouted grenadier and *Ventrifossa* are found in the Main Hawaiian Islands (MHI). The slender grenadier, dull grenadier, elongated grenadier, and *Linophryne* are known only from holotypes collected off O'ahu; and Cramer's grenadier, *Grammonus*, *Microbrotula*, *Saccogaster*, and the *Eustomias* species have also only been collected off O'ahu. The Hawaiian softhead grenadier and the humped grenadier are found from the island of Hawai'i to French Frigate Shoals. Bower's grenadier is found from Kaua'i to French Frigate Shoals. Beaked salmon have been collected from Maui to O'ahu. *Lophiodes* is found from Maui to Necker Island. Red bat fish are found from Maui to Kaua'i. *Luciobrotula* and *Cataetys* are known only from the island of Hawai'i. *Epigonus devaneyi* has been found from Necker Island to Maro Reef. *Osopsaron* occurs from Maui to Laysan Island. *Synagrops* occurs from the island of Hawai'i to Laysan Island. *Araiophos* is known from the island of Hawai'i to St. Rogatien Bank. All the other species occur throughout the Hawaiian Islands.

ABUNDANCE: Little abundance data appears to exist for these species and trends are unknown. The common big-eyed grenadier is the most common macrourid.

LOCATION AND CONDITION OF KEY HABITAT: All species except *Aulotrachichthys*, *Physiculus*, beaked salmon, Net bat fish, *Grammonus*, *Microbrotula*, *Epigonus devaneyi*, *Araiophos*, and Brock's bristlemouth can be found in water depths greater than 300 meters (1,000 feet). *Aulotrachichthys* is found from 45 to 275 meters (150 to 900 feet) deep. *Physiculus*, net bat fish and *Epigonus devaneyi* are found from about 100 to 300 meters (300 to 1,000 feet) deep. Beaked salmon are found from 110 to 180 meters (350 to 600 feet) deep. *Grammonus* and *Microbrotula* are known from a few specimens caught in shallow reef habitat. *Araiophos*, *Eustomias albibulbus* and *Eustomois bulbiramis* have been collected from the surface to 400 meters (1,300 feet) deep. *Eustomias magnificus* has been collected from the surface to 1,800 meters (6,000 feet). Brock's bristlemouth has been collected from 180 to 300 meters (600 to 1,000 feet) deep. *Ijimaia* can be found as shallow as 240 meters (800 feet) as well as deeper than 300 meters (1,000 feet). *Gadella*

and Struhsaker's deep-sea smelt can also be found as shallow as 180 meters (600 feet). *Gadella* can be found in rocky crevices. *Synagrops* can be found as shallow as 75 meters (250 feet) deep.

THREATS: Deep offshore aquaculture may become a threat in the future.

CONSERVATION ACTIONS: The goals of conservation actions are to not only protect current populations, but to also establish further populations to reduce the risk of extinction. In addition to common statewide and island conservation actions, specific actions include:

- Maintenance of habitat.

MONITORING:

- Survey for populations and distribution in known and likely habitats.

RESEARCH PRIORITIES:

- Improve understanding of factors affecting the species population size.

References:

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