
Family Chimaeridae

Shortnose Chimaeras, Chimères

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Shortnose Chimaeras or Ratfishes are small to medium-sized fish (to 1.5 m) comprising about 22 species in the Atlantic, Indian, and Pacific oceans (two in Canada, of which one is in Arctic waters). One additional species, *Hydrolagus pallidus* Hardy and Stehmann, 1990 (Small-eyed Rabbitfish or Ghost Shark), is recorded at 1,336 m depth from nearby southwestern Greenlandic waters. The Latin root of the family name refers to the odd appearance that appears to encompass parts of several animals and was called a chimaera (monster) in mythology; this monster had a lion's head, a goat's body, and a serpent's tail.

General features of this family and the related Longnose Chimaeras are given under the latter's family account. The snout is rounded and short; the mouth has chisel-like tooth plates; the tail is internally and externally symmetrical (diphycercal); the pre-pelvic tenacula are paired; toothed cartilaginous clasping structures are enclosed in dermal pockets that are partially covered by a flap of skin; egg cases are tadpole shaped and may have a filament at one end, but with little or no lateral web; the poison gland at the base of the dorsal spine produces a painful venom; water is breathed in through the nostrils rather than the mouth; the lateral line is an open or closed groove (the latter has pores at intervals); the eyes are large and prominent; the caudal peduncle is tapering, with a "leaf-like" or filamentous caudal fin; the anal fin is present or absent and may be confluent with the tail (*Hydrolagus*), or separate (*Chimaera*, not in Arctic Canada); and the pectoral fins are large, wing-like, and situated far forward.

Shortnose Chimaeras are benthic in habit and swim poorly. They occur from coastal areas (rarely) to the deeper waters of the continental margins along slopes and at relatively great depths (bathybenthic); however, about 3,000 m is the postulated limit. Food includes invertebrates and small fishes. The ecological importance is unknown but could be significant in mid- to deep-water benthic and epibenthic habitats. Similar to rhinochimaerids, males use the head clasper and pre-pelvic claspers to hold the female during copulation. The bi- or tri-furcate pelvic claspers facilitate

internal fertilization. Two egg capsules (one per ovary) each contain one embryo, develop (oviparous), and are deposited on the substrate. Once laid, embryos take 9–12 months to develop. Head pores in the open lateral line grooves contain electro-sensory organs analogous to those of sharks.

They are generally caught incidentally during other fisheries and have no or very limited economic importance in Canada. Directed fisheries do occur in other areas; for example, Iceland fisheries took approximately 500 t of *Chimaera monstrosa*, a northeastern Atlantic species, in 1991, but catches declined to about 10 t in 1997. They have been used for fish-meal, and the liver produces a fine-quality, machine-grade oil.

SOURCE: Bigelow & Schroeder (1953b).

Hydrolagus affinis

(DE BRITO CAPELLO, 1868)

Deepwater Chimaera, chimère de profondeur

COMMON NAMES: A local name is Småøjet Havmus (Danish/Greenlandic). Other common names include Small-eyed Rabbitfish and Ratfish (and variants) and chimère à petits.

TAXONOMY: The genus comes from the Greek *hydro* (water) and *lagus* (hare or rabbit; hence the variants of the English common names) in reference to the lips and teeth. The species name comes from the Latin *affinis* (related to) in reference to another chimaerid, *Chimaera monstrosa*.

It was originally described as *Chimaera affinis* from deep water off Portugal. *Chimaera plumbea* Gill, 1878, described from south-east of LeHave Bank (42°40' N, 63°23' W), and *C. abbreviata* Gill, 1883, described from the northwestern Atlantic (40°16'50" N, 66°58' W), are synonyms. The Deepwater Chimaera has been suggested by some to be con-specific with South African and/or Japanese taxa, but it likely represents a valid taxon confined to the North Atlantic.

DESCRIPTION: This species is distinguished from the related Longnose Chimaeras by having a snout that is short and rounded (versus elongate and pointed), and claspers that are bifid or trifid (versus a single rod).

The soft body is elongate, the head is large, and the trunk is deepest anteriorly just behind the gill opening, tapering to a pointed tail; the head is short with a blunt, short, conical snout. There is a small inferior mouth, and the eyes are large and oval. The tall first dorsal fin has a free outer edge preceded by a shorter stout spine, and the long second dorsal fin is without a notch. The small lanceolate caudal fin has a short filament (longer in juveniles), and its lower lobe continues forward as a fleshy ridge. The anal fin is small and indistinct, not separated from the caudal, and considered absent