

## 19: Focal Group: Anglerfishes / Frogfishes

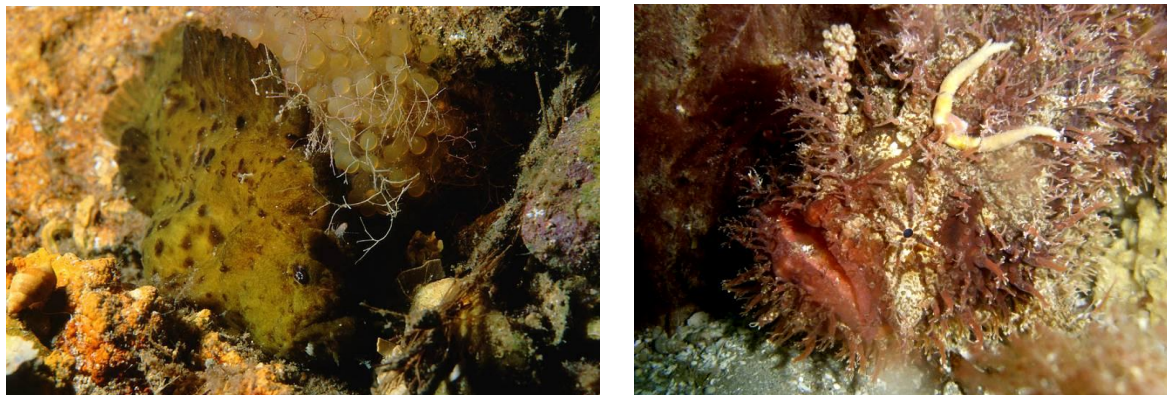


Figure 19.1: Two of the most common anglerfishes found around Yorke Peninsula. (A) White-spotted Anglerfish *Phyllophryne scortea*, and (B) Tasselled Anglerfish *Rhycherus filamentosus*. Photo copyright: J. Lewis (A), and S. Speight @ Flickr, CC BY-NC-SA.

Asset	Anglerfishes
<i>Description</i>	The family Antennariidae comprises the temperate anglerfishes, which are also known as frogfishes. These small, well camouflaged, carnivorous fishes are found in various habitats around Yorke Peninsula, but little is known of habitat preferences, because most records are from jetties, or from trawls. These fishes are mainly sedentary, and rarely swim unless disturbed. Some species are commonly seen, and others are apparently rare, and known from few records. Anglerfishes are strongly associated with habitat, and the eggs are brooded until they hatch.
<i>Examples of Key Species</i>	White-spotted Anglerfish / Smooth Anglerfish Tasselled Anglerfish Sponge Anglerfish Prickly Anglerfish Rodless Anglerfish / Cryptic Anglerfish Glover's Anglerfish Bougainville's Anglerfish

### Introduction

Anglerfishes in the family Antennariidae are distinctive fishes with a short, deep, dome-shaped and slightly compressed body. They have a large mouth with several rows of small teeth; long, leg-like fins on the sides of the body (used for crawling along); and the first spine behind the head is modified into a freely moving, luring apparatus, consisting of a stalk (illicium) and usually an esca (a terminal "bait") (Pietsch and Grobecker 1987; Pietsch 1999; Gomon et al. 2008; Edgar 2008). Anglerfishes also have tube-like gill openings behind and below the base of each side fin, used for jet propulsion when they need to move faster than the usual crawling pace.

The skin of anglerfishes is often spiny, or covered with filaments and appendages which are outgrowths of the skin. This assists in camouflage, especially for reef-dwelling species. The colour and pattern of anglerfishes are highly variable, ranging from white, yellow, pink, orange, red, to dark brown and black.

Baker, J. L. (2015) *Marine Assets of Yorke Peninsula*. Volume 2 of report for Natural Resources - Northern and Yorke, South Australia.

Anglerfishes are voracious carnivores that live on the sea floor, and feed on fishes or crustaceans that are attracted to the angler's wriggling esca. However, shallow water coastal species rely less upon this mechanism for prey capture, compared with deep water species. Some of the shallow water anglerfishes are ambush predators, and rely on their effective camouflage to attract prey within striking distance.

Anglerfish have large, trapdoor-shaped mouths (hence the other common name - frogfishes), and are capable of rapidly seizing large fish that fall prey to their feeding approach. Of the various fishes that form part of the anglerfish diet, of note here are seahorses (Kuitert 2000) and gobies. The females of some species of southern Australian anglerfishes lay benthic eggs on reef surfaces, and they are guarded by one of the parents until they hatch. In South Australia, there are observations of anglerfish guarding the egg mass (e.g. photographs by J. Lewis in 2005). In other southern species, the eggs are attached to the body of a parent, behind the pectoral fin, with the tail curled around to form a pocket which covers and protects the eggs (Pietsch and Grobecker, 1980, 1987).

The intertidal and shallow subtidal habitats around Yorke Peninsula support a variety of anglerfish species. Some are known only from one or two records, and others are commonly recorded by divers around jetties.

Several of the anglerfish species from Yorke Peninsula have a broad distribution across southern Australia; others are shared with either Western Australia, or south-eastern Australia (Victoria and Tasmania); and a few are relatives of tropical or sub-tropical species. There are several anglerfishes found in South Australia which have not yet been recorded in the NY NRM region, and these are excluded from the account below.

Anglerfishes are included as a focal group in this report because they are benthic fishes, slow-moving, and they brood the eggs. There is very limited dispersal of young. Therefore, fishes in this group are potentially vulnerable to localised habitat impacts. For some species, little is known about the distribution or relative abundance.

### **Species Recorded in NY NRM Region**

The habitats and habits of several anglerfish species in particular locations around Yorke Peninsula are well known, due to the popularity of these fishes as subject for marine photographers. For other species, very little is known, and records come mainly from trawl bycatch.

Some information about species occurring in the NY NRM Region is provided below (from Baker 2012):

**White-spotted Anglerfish (Smooth Anglerfish) *Phyllophryne scortea***, a species found on shallow reefs, jetties, and in turf and sponge habitats across southern Australia. White-spotted Anglerfish occurs to around 45m deep, but is usually reported from shallower depths, less than 15m; the minimum depth recorded is 1m. This species is not often seen because individuals usually live under rocks / boulders, ledges, or pieces of debris, commonly hanging upside down. Specimens, particularly those observed in the Yorke Peninsula area, are highly variable in colour and pattern (e.g. orangey-red, orange, yellow, white, pink, brown, dark grey, or black, with variably coloured blotches and other markings). Smooth Anglerfish have numerous skin appendages on the body, and cream, white and/or pink patches that resemble coralline algae, and provide camouflage. The very small esca of the Smooth Anglerfish mimics an amphipod on which sand gobies (*Nesogobius* species) feed, and the Smooth Anglerfish feeds on these sand gobies. The species is considered to be very common in parts of Gulf St Vincent, under jetties, and in boulder reefs. The Smooth Anglerfish is a minor component of the prawn trawling bycatch in Spencer Gulf.

**Tasselled Anglerfish *Rhycherus filamentosus***, a larger species (to 23cm), found on rocky reefs in south-eastern Australia. South Australia is the western edge of the range. Tasselled Anglerfish occurs from several metres deep to around 60m. It is relatively common in some areas, but is very well camouflaged in its reef surroundings due to the numerous thin, fleshy pink-brown tentacles over the body surface. The species prefers small crevices as habitat, and has also been recorded in seaweeds. This species lays several thousand eggs in a bunch, attaching them to the rocky substrate by a long filament. The parent guards and protects the eggs, by covering them with its body. The young hatch after about 30 days, then sink to the substrate, and crawl away into crevices. Tasselled Anglerfish is a minor component of the prawn trawling bycatch in Spencer Gulf.

Baker, J. L. (2015) *Marine Assets of Yorke Peninsula*. Volume 2 of report for Natural Resources - Northern and Yorke, South Australia.

**Glover's Anglerfish *Rhycherus gloveri***, a variably-coloured species which grows to about 16cm and superficially resembles Tasselled Anglerfish. The form of the lure is the main feature distinguishing the two. The distribution also differs, with Glover's being known from WA and SA, and Tasselled from SE Australia. Both species are found off Yorke Peninsula. In SA, there are very few records of Glover's, and confirmed records are from the lower parts of the Gulfs area. Females in the genus *Rhycherus* lay eggs in a large mass, and the eggs stick to growth on the surrounding rock. Like those of the Tasselled Angler, eggs are guarded until they hatch.

**Prickly Anglerfish *Echinophryne crassispina***, a small (to 7cm), reef-dwelling species that occurs across southern and south-eastern Australia and northern Tasmania, on shallow reefs (e.g. 1m – 20m depth, but usually found in the middle of that range). Prickly Anglerfish are covered with very small, forked spines, and the body is often yellow, orange, pink or brown, or mixtures of those colours. The species is rarely observed, because it lives under rocks and ledges, often on low rocky reefs near sand. Also occurs under jetties. In SA, the species is mostly recorded in the Gulfs region.

**Sponge Anglerfish *Echinophryne reynoldsi***, a small anglerfish (to about 8cm), found in shallow water habitats across southern Australia, including Tasmania. Within SA, the few existing museum records and photographs of this species have come from a small number of sites around Yorke Peninsula. Sponge Anglerfish has been recorded in reef habitats where yellow and orange sponges which match its body colour exist (Kuitert 1993, 2000; Pietsch, in Gomon et al., 1994; Kuitert, 1996; SA Museum records, Museum of Victoria records). The species has been recorded inside large, exposed sponges; also in the vicinity of sponges growing under cave overhangs (Kuitert, 1993, 2000), and in the vicinity of shell rubble (photographs by J. Lewis, 2003, 2005). Sponge Anglerfish is a cryptic species that is variable in colour, ranging from pale yellow to orange-brown or red, with irregular greyish-white patches around the head and body. On the body and fins, individuals often have numerous small ocelli, with brown centres and yellow or white borders (Pietsch, in Gomon et al. 1994).







**Rodless Anglerfish / Cryptic Anglerfish *Histiophryne* species**, a small (to about 9cm), undescribed anglerfish which is related to the widespread tropical species *Histiophryne cryptacanthus*. To date in SA, the species has been found in the Gulfs region, with only one record from another part of the State. Most records are known from less than 20m deep, but the maximum depth record to date is around 130m deep (Paxton et al., 1989; Australian Museum records, cited in ALA 2015). In the shallow part of the range, Rodless Anglerfish has been found under rocks and in ledges, and camouflaged on rubble bottoms, in the vicinity of jetties (SA Museum records, and photographs by divers). In *Histiophryne* species, eggs are attached to each other by a single, flattened filament, and are brooded in a hollow behind the left pectoral fin (Pietsch and Grobecker 1987), with the tail curled around to form a pocket (Gomon et al. 2008). *Histiophryne* species is variable in colour. Some specimens are covered with small, close-set spots (ocelli) that are darker than the base colour on the body (Gomon et al. 2008), making the fish resemble a sponge in appearance. In addition to diver records at jetties, a number of examples in SA come from prawn trawling in Spencer Gulf (South Australian Museum data, 1980-1983).

**Bougainville's Anglerfish / Smooth Anglerfish *Histiophryne bougainvilli***, a small (to 9cm), uncommonly recorded anglerfish which closely resembles Rodless Anglerfish. This species is known from Queensland, New South Wales and South Australia, and thus there is a geographical gap in the distribution. There are no records of this species in WA, and all previous examples were misidentifications (B. Hutchins, pers. comm. 2007). The very few records from South Australia which are reported to be this species are from sites around Yorke Peninsula (Museum Victoria and South Australian Museum records). The identification of the South Australian records of this sub-tropical species should be checked. Bougainville's Anglerfish is found inshore, on shallow reefs (Paxton et al. 1989; Pietsch, in Gomon et al. 1994). There are records from 3m to at least 6m, but the full depth range has not been determined. Bougainville's Anglerfish is highly variable in colour, and some specimens are covered with small, close-set ocelli (spots) that are darker than the base colour on the body. During breeding season, eggs are attached to each other by a single, flattened, filament, and are brooded in a hollow behind a parent's left pectoral fin (Pietsch and Grobecker 1987).

Baker, J. L. (2015) *Marine Assets of Yorke Peninsula*. Volume 2 of report for Natural Resources - Northern and Yorke, South Australia.

**Table 19.1** below illustrates six of the anglerfish species which occur in the Yorke Peninsula NRM region. Bougainville’s Anglerfish is not illustrated here. Several other anglerfish species for which there are no confirmed records from Yorke Peninsula are also excluded. In addition to Rodless Anglerfish, there may be another undescribed species of anglerfish which occurs in South Australia, including waters around Yorke Peninsula.

**Table 19.1: Examples of some anglerfish species which occur around Yorke Peninsula**

Species Name	Representative Image	Species Name	Representative Image
Tasselled Anglerfish	 <p>© J. Baker</p>	Glover’s Anglerfish	 <p>© J. Lewis</p>
Prickly Anglerfish	 <p>Topside view showing dorsal fin. © J. Baker</p>	Sponge Anglerfish	 <p>© J. Lewis</p>
White-spotted Anglerfish / Smooth Anglerfish	 <p>© J. Lewis</p>	Rodless Anglerfish / Cryptic Anglerfish	 <p>© J. Lewis</p>