



Protecting South Australia's Fish, Sharks & Rays

The Harlequin Fish (*Othos dentex*)

FACT SHEET #1

Harlequin fish are a beautiful but increasingly unusual sight on South Australia's inshore rocky reefs. Understandably, recreational divers love this spectacular species and dive tourism operators promote its presence as a major attraction at their dive sites.

HABITAT AND BIOLOGY

Harlequin fish can be red, orange, yellow or brown in colour, but all have bright blue spots on the head and upper sides and feature a large red blotch on the side, which is covered by the pectoral fin. They can grow to around 75 cm in length and can weigh well over 3 kg (one recorded specimen weighed in at 5.94 kg).

Harlequin fish inhabit moderately exposed coastal rocky reefs and reef drop-offs to around 30 m deep. They live their whole life on and around the reef where they are born, i.e. they are 'site-associated'.

They are an ambush predator that feeds on various small fish species and other prey such as abalone.

Harlequin fish are members of the Family Serranidae (sea basses), as are groupers. Fish from this family generally first mature as females and, after spawning one or more times, they change sex, spawning thereafter as males. This is known as protogynous hermaphroditism. Incredibly, it is not known for certain whether harlequin fish follow this pattern, highlighting the lack of basic knowledge regarding South Australia's fish species.

The harlequin fish is found only in South Australian and Western Australian waters. In South Australia, the species is known from numerous reef areas around the State. While it has historically been reported in Victorian waters, no sightings have been reported in recent years. The absence of this species at sites where it previously occurred could be an indicator of polluted conditions and/or over-fishing. Conservation measures addressing threats to this species will also assist overall marine ecosystem health.

CURRENT CONSERVATION STATUS

The harlequin fish is not currently protected in South Australia.

There are no size, bag, boat or catch limits set for the capture of this fish by recreational or commercial fishers.



The harlequin fish
Picture: Paul Jennings, courtesy
of Reef Watch

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THREATS AND RESPONSES

Fish, sharks and rays in SA waters face a wide variety of threats including: damage to or loss of habitat; over-fishing by commercial, recreational, and spear fishers; being taken as by-catch by commercial fishers; the impacts of climate change; introduced marine pests; and an overall lack of knowledge of the species.

As a site-associated reef species, harlequin fish are particularly vulnerable to habitat degradation. The abundance of harlequin fish appears to have declined over time in areas where its home reef has been degraded by impacts such as excess sediment (sedimentation), excess nutrient inputs leading to lower dissolved oxygen levels (eutrophication) and pollution such as organochlorines, petrochemicals and other toxic substances.

These impacts can be reduced through measures such as improved farming practices, revegetation of waterways, improved sewage treatment, re-use of treated sewage and stormwater, and limits on dredging operations.

The inclusion of a range of reef habitats in sanctuary zones, as part of the establishment of SAs Representative System of Marine Protected Areas will also help protect harlequin fish habitat.

Recreational line, boat and spear fishing are also major threats to the harlequin fish due to its size, appearance and taste. Bycatch by commercial fishers also appears to be an issue for this species.

Legislative protection for the harlequin fish under the SA Fisheries Management Act (2007) is currently being sought by conservation groups. In the interim, the introduction of size and bag limits and a ban on spear fishing, would significantly contribute to its protection. Further research into reducing bycatch and the implementation of the findings would be encouraged and supported.

While the exact impacts of climate change on the marine environment are uncertain, there is little doubt that it will negatively affect reef habitats through increases in water temperature, sea level rise and changes in storm activity.

The lack of knowledge about marine fish means that it is extremely difficult to identify and implement appropriate management actions. Increased research and monitoring for this and other non-commercial species is needed. The Reef Watch 'Feral or in Peril' program is one example of how the community can be involved in reporting harlequin fish sightings. See www.reefwatch.asn.au

For more information: www.ccsa.asn.au/fsr

ACKNOWLEDGEMENT

Information used in this fact sheet was compiled from:

Baker, J.L. (2007 in prep.) Status of Marine Species at Risk in South Australia: Technical Report – Bony and Cartilaginous Fish.



Reef habitat is critical to the future of the Harlequin fish

Photo: (c) Inshore fish group

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