

Harrison's Dogfish, *Centrophorus harrissoni*

Report Card assessment	Depleted		
IUCN Red List Australian Assessment	Endangered	IUCN Red List Global Assessment	Endangered
Assessors	Finucci, B., Cheok, J., Cotton, C.F., Kulka, D.W., Neat, F.C., Rigby, C.L., Tanaka, S. & Walker, T.I.		
Australian Assessors	Kyne, P.M., Heupel, M.R., White, W.T. & Simpfendorfer, C.A. (Shark Action Plan)		
Report Card Remarks	In Australia, severely depleted with management measures implemented but recovery expected to be slow. Listed on EPBC Act (Conservation Dependent).		

Summary

Harrison's Dogfish is a deepwater species of eastern Australia and New Zealand. It is taken as bycatch by deepwater fisheries and depletion estimates for this dogfish off eastern Australia indicated a 79% reduction in virgin population size. This part of its range is still fished and there is no evidence that numbers have



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recovered on these fishing grounds. It has very low productivity that make the species extremely sensitive to rapid population depletion by commercial fishing and also means very slow recovery after such depletion. A number of conservation measures have been implemented to promote recovery following its listing as Conservation Dependent (EPBC Act). These include a total ban on retaining any specimens for sale, gulper shark (*Centrophorus* spp.) protection areas off Sydney and eastern Bass Strait that are closed to all methods of fishing, and a ban on trawling below 700 m along the east coast south from Sydney. Therefore, the species is assessed as Endangered (IUCN) in Australia (Kyne et al. 2021) and Depleted (SAFS) because although management is in place, recovery has not yet been shown and is expected to take decades.

Distribution

Harrison's Dogfish occurs off eastern Australia and the seamounts and ridges off New Zealand (Duffy 2007, Last and Stevens 2009). In Australia, it is found from southern Queensland to South East Cape (Tasmania) and on all the Tasmantid seamounts (except for Gascoyne Seamount) (K. Graham pers. obs.).

Stock structure and status

Harrison's Dogfish has been depleted off New South Wales between Sydney and the Eden-Gabo Island area where over 20 years from 1976–1977 to 1996–1997 there was a >99% decline in relative

abundance of all gulper sharks (*Centrophorus* spp.) (Andrew et al. 1997, Graham et al. 2001). It is likely that there is still some low level fishing mortality in both the lightly fished northern part of its range and the severely depleted southern part of its range, possibly resulting in a continuing slow decrease in the total population size. There is no knowledge of the relative abundance of this dogfish outside Australian waters.

Fisheries

The core depth of the species (350– 800 m) coincides with the most heavily fished depths by trawlers and longliners operating on the upper slope around southeast Australia. In the period 1975–2000, the population south of Newcastle (NSW) was severely affected with its relative abundance reduced to <5% of historical levels (Graham et al. 2001, Daley et al. 2002, Wilson et al. 2009). Commercial fishing in the Commonwealth Trawl and Scalefish Hook Sectors of the Southern and Eastern Scalefish and Shark Fishery (SESSF) continued to affect the remaining stock, despite a ban on trawling below 700 m implemented in 2007 (AFMA 2006). In 2010, the stock status for the three species of upper slope gulper sharks (Harrison’s Dogfish, Endeavour Dogfish *C. moluccensis* and Southern Dogfish *C. zeehaani*) on southeast Australian grounds was assessed as ‘overfished’ and ‘subject to overfishing’ (Stobutzki et al. 2011). Further south off eastern Bass Strait and Tasmania, trawling and targeted gillnet fishing in the 1980s and 1990s also severely depleted numbers (Daley et al. 2002). As a result of population declines a plan of management was implemented (AFMA 2012) and the species was listed as Conservation Dependent under the *Environment Protection Biodiversity Conservation Act 1999* (EPBC Act) in 2013. This plan includes closures to allow the recovery of the population, no retention and other spatial and temporal closures. Incidental fishing mortality by demersal trawlers and auto longliners targeting upper slope teleosts may continue to maintain pressure on the remnant population of Harrison’s Dogfish off southeast Australia. There is limited deepwater commercial fishing activity across New Zealand Exclusive Economic Zone waters, the north Tasman and Coral Sea where it also occurs.

Habitat and biology

Harrison’s Dogfish inhabits the upper to mid-continental slope, mainly at depths between 350 and 800 m but with an overall depth range of 275–1,050 m. Maximum size is 112 cm total length (TL), with males mature at 84 cm TL and females at 99 cm TL (Graham and Daley 2011). It has a very low fecundity of one to two pups every two (or possibly three) years and an estimated age at first maturity of >23 years (Whitely 2004).

Longevity and maximum size	Longevity: unknown Max size: 112 cm TL
Age and/or size at maturity (50%)	Males: 84 cm TL Females: estimated >23 years, 99 cm TL

CAAB Code: 37 020010

Link to IUCN Page: <https://www.iucnredlist.org/species/41740/68614118>

Link to page at Shark References: <http://www.shark-references.com/species/view/Centrophorus-harrissoni>

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