

Philippine Spurdog, *Squalus montalbani*

Report Card assessment	Recovering		
IUCN Red List Australian Assessment	Near Threatened	IUCN Red List Global Assessment	Vulnerable
Assessors	Graham, K.J.		
Australian Assessors	Kyne, P.M., Heupel, M.R., White, W.T. & Simpfendorfer, C.A. (Shark Action Plan)		
Report Card Remarks	In Australia, management measures in place to promote recovery, and low threat level across most of the Australian range.		

Summary

The Philippine Spurdog is a medium-sized deepwater dogfish that occurs in warm-temperate to tropical Australia, the Philippines, Taiwan, and Indonesia. It is captured in trawl and longline fisheries and is susceptible to overfishing as it likely has low biological productivity characteristic of deepwater *Squalus* species. Dramatic population declines in



Source: CSIRO National Fish Collection. License: CC BY Attribution

abundance have occurred in trawled areas of southern New South Wales. Management measures have been implemented to promote recovery of deepwater dogfish in the area. The species has also been reported in large numbers at some landing sites from which unregulated deepwater fisheries operate in Indonesia, the Philippines, and Taiwan. There is strong anecdotal evidence from the Philippines of serious declines in deepwater dogfish landings (including Philippine Spurdog) after approximately 10 years of targeted fishing. In Australia, there is a considerable proportion of its range with light or absent fishing pressure and the deeper portions of its depth range may provide refuge from fishing. Therefore, in Australia it is assessed as Near Threatened (IUCN) (Kyne et al. 2021) and Recovering (SAFS) because although recovery is expected to take decades, the declines were only across a part of its range, with little fishing pressure on the remainder of the population.

Distribution

The Philippine Spurdog occurs across the Eastern Indian Ocean and western central Pacific. It is found in the Philippines, Indonesia, and Taiwan (Ebert et al. 2013, Last and Stevens 2009). In Australia, it occurs from Flinders Reef (Queensland) to Terrigal (New South Wales) and off the west coast from the Timor Sea to Rottneest Island (Last et al. 2007).

Stock structure and status

A population of the Philippine Spurdog off central New South Wales declined by approximately 97% in the 20 years between 1976–77 and 1996–97 (Graham et al. 2001). There is no available information on population trends throughout the rest of the species' range and outside Australia, but there is no reason to suspect that declines similar to those recorded off eastern Australia will not occur in other areas of high exploitation.

Fisheries

The species is taken as bycatch in mostly deepwater trawl fisheries and in some line fisheries. Off southeast Australia, dramatic declines have been recorded of approximately 97% due to upper slope trawling off central and southern New South Wales (NSW) (Graham et al. 2001). Trawling continues in the Southern and Eastern Scalefish and Shark Fishery (SESSF) but this represents a very small part of the species' overall range. A ban on trawling below 700 m depth was implemented in the SESSF (AFMA 2006), though as this species occurs to 670 m in Australia, the ban would not have protected the Philippine Spurdog in that part of its range. A plan of management was later implemented with catch limits and spatial and depth closures to promote recovery of the overfished dogfish populations, with recovery estimated to take many decades (AFMA 2012). There is relatively little fishing effort in deepwater off northern NSW and Queensland, though the Philippine Spurdog may be taken in very low numbers in the deepwater line fishery in Southern Queensland (Sumpton et al. 2013). Deepwater fishing effort is also very low off Western Australia, suggesting that outside southeast Australia, the threat levels are low through most of the Philippine Spurdog's Australian range. Outside of Australia, it is reportedly taken in relatively unmanaged deepwater demersal longline fisheries off Indonesia, Taiwan, and the Philippines (Graham et al. 2001, White 2009, Sembiring et al. 2015).

Habitat and biology

The Philippine Spurdog is mostly demersal on the continental slope. In Australia, it is reported from 295–670 m (Last and Stevens 2009) and from 154–1,370 m in Indonesian waters (White et al. 2006), although unlikely to exceed 1,000 m depth. The species known maximum size is 111 cm total length (TL) and maximum age 28 years with males mature at 22 years and females at 26 years (Rigby et al. 2015).

Longevity and maximum size	Longevity: at least 28 years Max size: 111 cm TL
Age and/or size at maturity (50%)	Males: ~22 years, 62–70 cm TL Females: ~26 years, 80–85 cm TL

CAAB Code: 37 020047

Link to IUCN Page: <https://www.iucnredlist.org/species/161404/68645208>

Link to page at Shark References: <http://shark-references.com/species/view/Squalus-montalbani>

References

- AFMA 2006. *Response to Ministerial Direction- SESSF*. Australian Fisheries Management Authority. Australian Government.
- AFMA. 2012. *Upper-Slope Dogfish Management Strategy. AFMA-managed fisheries. October 2012*. Australian Fisheries Management Authority, Canberra
- Ebert, D.A., White, W.T., Ho, H.-C., Last, P.R., Nakaya, K., Séret, B., Straube, N., Naylor, G.J.P. and de Carvalho, M.R. 2013. An annotated checklist of the chondrichthyans of Taiwan. *Zootaxa* 3752(1): 279–386.
- Flores, J.O. 2004. Fisheries in deep-water areas of the Philippines, Coastal Resource Management Project, Cebu City, Philippines.
- Gaudiano, J.P.A and Alava, M.N.R. 2003. *Resource utilization and exploitation of dogshark resources in Butuan and Gingoog bays, northern Mindanao, Philippines*. Unpublished report submitted to WWF-Philippines as part of the Cetacean Fishery Interaction Assessment Project.

- Graham, K.J., Andrew, N.L. and Hodgson, K.E. 2001. Changes in the relative abundances of sharks and rays on Australian South East Fishery trawl grounds after twenty years of fishing. *Marine and Freshwater Research* 52: 549–561.
- Kyne, P.M., Heupel, M.R., White, W.T. and Simpfendorfer, C.A. 2021. *The Action Plan for Australian Sharks and Rays 2021*. National Environmental Science Program, Marine Biodiversity Hub, Hobart.
- Last, P.R. and Stevens, J.D. 2009. *Sharks and Rays of Australia*. CSIRO Publishing, Collingwood.
- Last, P.R., White, W.T. and Motomura, H. 2007. Description of *Squalus chloroculus* sp. nov., a new spurdog from southern Australia, and the resurrection of *S. montalbani* Whitley. In: P.R Last, W.T. White and J.J. Pogonoski (eds) (eds), Descriptions of New Dogfishes of the genus *Squalus* (Squaloidea: Squalidae), pp: 55–69. CSIRO, Australia.
- Rigby, C.L., Daley, R.K., and Simpfendorfer, C.A. 2015. Comparison of life histories of two deep-water sharks from eastern Australia: the piked spurdog and the Philippine spurdog. *Marine and Freshwater Research*, doi: 10.1071/MF15176.
- Sembiring, A., Pertiwi, N.P.D., Mahardini, A., Wulandari, R., Kurniasih, E.M., Kuncoro, A.W., Cahyani, N.K.D., Anggoro, A.W., Ulfa, M., Madduppa, H., Carpenter, K.E., Barber, P.H., and Mahardika, G.N. (2015) DNA barcoding reveals targeted fisheries for endangered sharks in Indonesia. *Fisheries Research* 164(0), 130–134.
- Sumpton, W., McLennan, M., Campbell, M., and Kerrigan, B. (2013) *Assessing technology changes and risks to the sustainable management of deepwater line fisheries in southern Queensland*. Department of Agriculture, Fisheries and Forestry. FRDC Project 2010/053.
- White, W.T. 2009. *Squalus montalbani*. The IUCN Red List of Threatened Species. Version 2014.3. www.iucnredlist.org.
- White, W.T., Last, P.R., Stevens, J.D., Yearsley, G.K., Fahmi and Dharmadi. 2006. *Economically Important Sharks and Rays of Indonesia*. Australian Centre for International Agricultural Research, Canberra, Australia.