

## Greeneye Spurdog, *Squalus chloroculus*

Report Card assessment	Depleted		
IUCN Red List Australian Assessment	Endangered (Endemic to Australia)	IUCN Red List Global Assessment	Endangered
Assessors	Walker, T.I. & Rochowski, B.E.A.		
Australian Assessors	Kyne, P.M., Heupel, M.R., White, W.T. & Simpfendorfer, C.A. (Shark Action Plan)		
Report Card Remarks	Depleted in much of its range.		

### Summary

The Greeneye Spurdog is a large, deepwater endemic dogfish from southeast Australia. The species has low biological productivity due to its high longevity and low reproductive output. Fishing was intense in some areas where it has caused severe population reductions. Fishing intensity has since reduced, and management measures such as a low combined Total Allowable Catch of all deepwater dogfish in southeast Australia and a network of refuges may have stabilised the population, but at low levels. Therefore, the Greeneye Spurdog is assessed as Endangered (IUCN) (Kyne et al. 2021) and Depleted (SAFS).



### Distribution

The Greeneye Spurdog occurs off southern Australia from New South Wales (NSW) to the Great Australian Bight (Last and Stevens 2009).

### Stock structure and status

The Greeneye Spurdog is a relatively recently described species (Last et al. 2007). The relative abundance of populations has varied widely across its distribution range with localised depletion in some localities and comparatively high abundance in others (Walker and Gason 2007).

### Fisheries

Declines in the population indicated by both fishery-dependent monitoring and fishery-independent scientific surveys show that Greeneye Spurdog is vulnerable to rapid population decline where it is heavily fished. Fishing is intensive on trawl grounds around southeast Australia, where there is evidence that this species has been severely depleted in some localities, but less so in others. Mean annual catch for the period 2000–2006 was as 212 t. This catch is taken by demersal trawl (89%), automatic longline (7%), and other methods (4%), with 95% and 5% from depths less than and

greater than 600 m, respectively (Walker and Gason 2007). Catch rate of ‘greeneye dogsharks’ declined by ~97% from 1976–1977 to 1996–1997 between the Sydney area (central NSW) and the Eden-Gabo Island area (southern NSW–northern Victoria) (Graham et al. 2001). It is likely that *Squalus chloroculus*, *S. montalbani* and *S. grahami* were all caught during these surveys (K. J. Graham pers. comm. 2007). The Greeneye Spurdog was possibly the predominant species in the southern survey areas (Ulladulla and Eden-Gabo Island) (K. J. Graham pers. comm. 2007). Subsequent monitoring of commercial trawl catches indicated for the period 1996–2006 that overall relative abundance was stable off New South Wales, but declined rapidly during 1999–2003 before stabilising at a low level in the Great Australian Bight and off South Australia.

### Habitat and biology

The Greeneye Spurdog occurs on the upper to mid-continental slope at depths of 216–1,360 m (Last et al. 2007). The maximum size is at least 99 cm total length (TL) and maximum age is at least 26 years. Males mature at 9 to 12 years and 63 cm TL and females at 16 years and 80 cm TL. The females have a long, triennial breeding cycle (Rochowski et al. 2015).

Longevity and maximum size	Longevity: estimated at least 26 years Max size: males at least 99 cm TL
Age and/or size at maturity (50%)	Males: 9–12 years, 63 cm TL Females: 16 years, 80 cm TL

**CAAB Code:** 37 020048

**Link to IUCN Page:** <https://www.iucnredlist.org/species/161360/68644464>

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

### References

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- 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., 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.
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- Rochowski, B.E.A, Graham, K.J., Day, R.W. and Walker, T.I. 2015. Reproductive biology of the greeneye spurdog *Squalus chloroculus* (Squaliformes, Squalidae). *Journal of Fish Biology* 86: 734–754.
- Walker, T.I. and Gason, A.S. 2007. *Shark and other chondrichthyan byproduct and bycatch estimation in the Southern and Eastern Scalefish and Shark Fishery*. Final report to Fisheries and Research Development Corporation Project No. 2001/007. July 2007. vi + 182 pp. Primary Industries Research Victoria, Queenscliff, Victoria, Australia.