

Grey Skate, *Dipturus canutus*

Report Card assessment	Depleted		
IUCN Red List Australian Assessment	Endangered (Endemic to Australia)	IUCN Red List Global Assessment	Endangered
Global Assessors	Sherman, C.S.		
Australian Assessors	Kyne, P.M., Heupel, M.R., White, W.T., Simpfendorfer, C.A. (Shark Action Plan) & Rigby, C.L.		
Report Card Remarks	Likely significant historic population reduction in a quarter of its range yet lesser fishing pressure elsewhere.		

Summary

The Grey Skate is a medium-sized deepwater ray endemic to mostly temperate waters of eastern and southern Australia in a wide range. It is caught in the Commonwealth Southern and Eastern Scalefish Fishery (SESSF) and was mostly released; post-release mortality is unknown. In recent years, an estimated 30% of 'mixed skates' are retained in the SESSF. Significant declines in all skate species were noted in SESSF surveys over 20 years from 1977–1997 with the Grey Skate dominating the skate catches across all survey grounds at depths of 330–605 m. Thus, it likely has undergone significant population decline in southeast Australia. Fishing pressure has since declined significantly in the SESSF, and fishing is now prohibited deeper than 700 m providing refuge at depth for the species, though pressure is ongoing and the Grey Skate is assessed as at medium risk in the Commonwealth Trawl Sector of the SESSF but at low risk in both the Great Australian Bight Trawl and Gillnet Hook and Trap Sectors where fishing pressure is lower. The species would also have some refuge in the network of marine parks. Its vulnerability to fishing and climate change was assessed as medium and low, respectively. Given significant declines of >90% in about a quarter of its range yet lower fishing pressure elsewhere, the Grey Skate is assessed as Endangered (IUCN) (Kyne et al. 2021) and Depleted (SAFS).



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Distribution

The Grey Skate is endemic to subtropical and temperate waters of eastern and southern Australia (Last et al. 2016). It occurs in a wide range from Crowdy Head (New South Wales) to at least Eucla (Western Australia) (Last and Stevens 2009).

Stock structure and status

The Bight Skate was historically common and has likely undergone significant historic population declines in the Commonwealth Southern and Eastern Scalefish Fishery (SESSF) (Graham et al. 2001, Kyne et al. 2021).

Fisheries

The Grey Skate is an incidental catch of trawl and longline fisheries. It is caught in the Commonwealth Southern and Eastern Scalefish Fishery (SESSF) with an estimated annual average catch of 13 t between 2000–2006 and nearly all released; post-release mortality is unknown (Walker and Gason 2007, Kyne et al. 2021). Grey Skate estimated total catches in the SESSF for 2003–2019 were 261 t with a rise-peak-decline catch trend in the Commonwealth Trawl Sector (CTS) from 2012–2019 and no trends in other sectors; an estimated 15% is retained in the CTS with no retention in other sectors (Daley and Gray 2020). There was a decline of 75–88% in mean catch rates of deepwater skates in the SESSF over 20 years from 1977–1997 with the Grey Skate dominating catches across the survey grounds at depths of 330–605 m (Graham et al. 2001). Thus, it has likely gone through significant population decline in southeast Australia (>90% over three generations of 36 years) due to the historically high levels of fishing pressure (Sherman 2016). Fishing pressure has since declined significantly in the SESSF and fishing deeper than 700 m has been prohibited since 2007, providing refuge at depth, however fishing pressure is ongoing in the southeast and the Bight Skate is assessed as at medium risk in the Commonwealth Trawl Sector of the SESSF but at low risk in both the Great Australian Bight Trawl and Gillnet Hook and Trap Sectors where effort is significantly lower (Sporcic et al. 2021a, b, c). An area south of Coffin Bay in the Great Australian Bight was found to have high abundance of Grey Skate and was subsequently closed to fishing (Daley and Gray 2020). It may also be caught in the New South Wales Ocean Trawl Fishery and although there is no species-specific catch data, catches are likely minimal as skates (Rajidae) and softnose skates (Arhynchobatidae) undifferentiated and combined, were noted in only 4% of observed shots over two years (2017/18–2018/19) (Johnson and Barnes 2023). It would receive some refuge in the Commonwealth South-east and South-west Marine Parks Networks which include zoning and gear restrictions (Parks Australia 2023). The species vulnerability to fishing and climate change was assessed as medium and low, respectively (Walker et al. 2021).

Habitat and biology

The Grey Skate is demersal on the continental slope at depths of 155–1,050 m but mostly at 330–730 m (Last et al. 2016). Maximum size is 94 cm total length (TL) and males mature at approximately 72 cm TL and females at approximately 77 cm TL (Treloar 2008, Last et al. 2016).

Longevity and maximum size	Longevity: unknown Max size: 94 cm TL
Age and/or size at maturity (50%)	Males: ~72 cm TL Females: ~77 cm TL

CAAB Code: 37 031028

Link to IUCN Page: <https://www.iucnredlist.org/species/14134315/14134317>

Link to page at Shark References: <https://shark-references.com/species/view/Dipturus-canutus>

References

- Daley, R.K. and Gray, C. A. 2020. On-the-water management solutions to halt the decline and support the recovery of Australia’s endemic elasmobranchs. Report for the Australian Marine Conservation Society and Humane Society International.
- 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. *Journal of Marine and Freshwater Research* 52: 549–561.

- Johnson, D.D. and Barnes, T.C. 2023. *Observer-based survey of the prawn trawl sectors (inshore & offshore prawn) of the New South Wales ocean trawl fishery. Retained and discarded catch characteristics*. Fisheries Final Report Series | No. 163. NSW Department of Primary Industries.
- 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*. Second Edition. CSIRO Publishing, Collingwood, Australia.
- Last, P., White, W., Carvalho, M.R. de, Séret, B., Stehmann, M. and Naylor, G.J.P. 2016. *Rays of the World*. CSIRO Publishing, Clayton, Victoria, Australia.
- Parks Australia 2023. Australian Marine Parks Network. <https://parksaustralia.gov.au/marine/parks/>.
- Sherman, C.S. 2016. *Dipturus canutus*. *The IUCN Red List of Threatened Species* 2016: e.T14134315A14134317.
- Sporcic, M., Bulman, C.M. and Fuller, M. 2021a. *Ecological Risk Assessment for the Effects of Fishing. Report for Southern and Eastern Scalefish and Shark Fishery (Commonwealth Trawl Sector): Otter trawl Sub-fishery 2012-2016*. Report for the Australian Fisheries Management Authority. 277 p.
- Sporcic, M., Bulman, C.M. and Fuller, M. 2021b. *Ecological Risk Assessment for the Effects of Fishing. Report for Southern and Eastern Scalefish and Shark Fishery, Great Australian Bight Sector: Otter trawl sub-fishery 2012-2016*. Report for the Australian Fisheries Management Authority. 174 p.
- Treloar, M.A. 2008. *Aspects of the life history of skates from southeastern Australia*. PhD thesis. Deakin University.
- Sporcic, M., Bulman, C.M. and Fuller, M. 2021c. *Ecological Risk Assessment for the Effects of Fishing. Report for the Southern and Eastern Scalefish and Shark Fishery (Gillnet Hook and Trap Sector): Shark gillnet sub-fishery 2012-2016*. Report for the Australian Fisheries Management Authority. 218 p.
- Treloar, M.A. 2008. *Aspects of the life history of skates from southeastern Australia*. PhD thesis. Deakin University.
- 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 Research and Development Corporation Project No. 2001/007. Primary Industries Research Victoria: Queenscliff, Victoria, Australia.
- Walker, T.I., Day, R.W., Awruch, C.A., Bell, J.D., Braccini, J.M., Dapp, D.R., Finotto, L., Frick, L.H., Garcés-García, K.C., Guida, L., Huvneers, C., Martins, C.L., Rochowski, B.E.A., Tovar-Ávila, J., Trinnie, F.I. and Reina, R.D. 2021. Ecological vulnerability of the chondrichthyan fauna of southern Australia to the stressors of climate change, fishing and other anthropogenic hazards. *Fish and Fisheries* 22(5), 1105–1135.