

Circular Stingaree, *Urolophus circularis*

Report Card assessment	Sustainable		
IUCN Red List Australian Assessment	Least Concern (Endemic to Australia)	IUCN Red List Global Assessment	Least Concern
Global Assessors	Kyne, P.M. & White, W.T.		
Australian Assessors	Kyne, P.M., Heupel, M.R., White, W.T., Simpfendorfer, C.A. (Shark Action Plan) & Rigby, C.L.		
Report Card Remarks	Relatively restricted range but mostly remote with very low levels of fishing pressure.		

Summary

The Circular Stingaree is a small continental shelf species endemic to temperate waters of southwest Australia in a relatively restricted area. It is rarely seen or caught in fisheries due to its preference for rocky bottom and kelp bed habitats which also provides it refuge from fishing pressure. It has been infrequently caught incidentally in small-scale trawl and net fisheries with the low encounter rates likely due to these fisheries mostly operating in sand and mud habitats. The species range is mostly in remote areas where a combination of state and Commonwealth marine parks and reserves and low fishing effort result in 98% of the region not being fished. The species vulnerability has been assessed as low and high for fishing and climate change, respectively. Therefore, the Circular Stingaree is assessed as Least Concern (IUCN) (Kyne et al. 2021) and Sustainable (SAFS).



Distribution

The Circular Stingaree is endemic to temperate waters off southwest Australia in a relatively restricted range (Last et al. 2016). It occurs from Rottnest Island to near Esperance (Western Australia) (Last and Stevens 2009).

Stock structure and status

There is currently no information on population size, structure, or trend for the species. The species is rarely seen which may be due to its preference for rocky bottoms and kelp beds and its dorsal colouration which can make detection difficult (Last and Stevens 2009, Kyne and White 2019).

Fisheries

The Circular Stingaree has been reported as infrequently caught incidentally in the small-scale scallop (*Ylistrum baloti*) and prawn trawl fishery and may be caught in the small-scale finfish net

fisheries (Laurenson et al. 1993, Gaughan and Santoro 2021). These fisheries are low effort with low levels of bycatch and the infrequent catches of the Circular Stingaree may be partly because the fisheries mainly operate over sand and mud habitats (Gaughan and Santoro 2021). The fisheries are managed with limited entry, seasonal closures, and mandatory bycatch reduction devices (BRDs), although BRDs are not highly effective at excluding small rays such as this species (Kangas et al. 2019, Gaughan and Santoro 2021). The species' range is in mostly remote areas where a combination of state and Commonwealth marine parks and reserves and lack of fishing effort result in approximately 98% of the inshore habitats of the South Coast region not being fished (Gaughan and Santoro 2021). If caught, the species would be released as rays have been prohibited from retention since 2006 in Western Australian commercial fisheries (Evans and Molony 2010). However, post-release mortality for trawl caught stingarees is generally high (Campbell et al. 2018) and urolophids typically abort their embryos when caught which can reduce population viability (Rigby et al. 2016, Adams et al. 2018). Conversely, a recent assessment considered that the post-encounter mortality of this species was low, that is, a low proportion of the population dies as a result of encountering fishing gear and the species vulnerability was assessed as low and high for fishing and climate change, respectively (Walker et al. 2021).

Habitat and biology

The Circular Stingaree is demersal on rocky bottoms and in kelp beds on the continental shelf at depths of 0–120 m (Last and Stevens 2009, Last et al. 2016). Maximum size is 60 cm total length (TL) and males mature at approximately 53 cm TL (Last et al. 2016). Little else is known of its biology.

Longevity and maximum size	Longevity: unknown Max size: 60 cm TL
Age and/or size at maturity (50%)	Males: approximately 53 cm TL Females: unknown

CAAB Code: 37 038020

Link to IUCN Page: <https://www.iucnredlist.org/species/60089/68649151>

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

References

- Adams, K.R., Fetterplace, L.C., Davis, A.R., Taylor, M.D. and Knott, N.A. 2018. Sharks, rays and abortion: The prevalence of capture-induced parturition in elasmobranchs. *Biological Conservation* 217, 11–27.
- Campbell, M.J., McLennan, M.F., Courtney, A.J. and Simpfendorfer, C.A. 2018. Post-release survival of two elasmobranchs, the eastern shovelnose ray (*Aptychotrema rostrata*) and the common stingaree (*Trygonoptera testacea*), discarded from a prawn trawl fishery in southern Queensland, Australia. *Marine and Freshwater Research* 69: 551–561.
- Evans, R. and Molony, B.W. 2010. *Ranked Risk Assessment for Bycatch in Multiple Fisheries: a Bioregional Risk Assessment Method*. Fisheries Research Report No. 212. Department of Fisheries, Western Australia.
- Gaughan, D.J. and Santoro, K. (eds). 2021. *Status Reports of the Fisheries and Aquatic Resources of Western Australia 2019/20: The State of the Fisheries*. Department of Primary Industries and Regional Development, Western Australia.
- Griffiths, S. P., Brewer, D. T., Heales, D. S., Milton, D. A. and Stobutzki, I. C. 2006. Validating ecological risk assessments for fisheries: assessing the impacts of turtle excluder devices on elasmobranch bycatch populations in an Australian trawl fishery. *Marine and Freshwater Research* 57: 395–401.
- Kangas, M., Wilkin, S., Sporer, E., Chandrapavan, A., Breheny, N, and Meredith, D. 2019. *Resource Assessment Report. No. 3. Scallop Resource*. Department of Primary Industries and Regional Development, Government of Western Australia.
- Kyne, P.M. and White, W.T. 2019. *Urolophus circularis*. The IUCN Red List of Threatened Species 2019: e.T60089A68649151. <https://dx.doi.org/10.2305/IUCN.UK.2019-1.RLTS.T60089A68649151.en>.
- 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.

- Laurenson, L.J.B., Unsworth, P., Penn, J.W. and Lenanton, R.C.J. 1993. *The impact of trawling for saucer scallops and western king prawns on the benthic communities in coastal waters off south-western Australia*. Fisheries Research Report No. 100. Fisheries Department of Western Australia, Perth.
- Rigby, C.L., White, W.T. and Simpfendorfer, C.A. 2016. Deepwater Chondrichthyan Bycatch of the Eastern King Prawn Fishery in the Southern Great Barrier Reef, Australia. *PLOS ONE* 11(5), e0156036.
- 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., Huveneers, 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.