

## Eastern Shovelnose Ray, *Aptychotrema rostrata*

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. & Stevens, J.D.		
Australian Assessors	Kyne, P.M., Heupel, M.R., White, W.T., Simpfendorfer, C.A. (Shark Action Plan) & Rigby, C.L. and Peddemors, V. (Status of Australian Fish Stocks)		
Report Card Remarks	Abundant with stable catches, high post-release survival and low risk from assessed fisheries, and some refuge in marine protected areas.		

### Summary

The Eastern Shovelnose Ray is a medium-sized and abundant continental shelf ray endemic to east Australia in tropical to temperate waters. The species is a regular incidental catch in commercial and recreational fisheries and is released in Queensland where it cannot be retained but is sometimes marketed for its meat in New South Wales. When released, it has high post survival rates. It is caught in the Commonwealth Southern and Eastern Scalefish Fishery (SESSF) with increases in catches from 2000–2006 and is assessed as at low risk from the fishery. The species is one of the most abundant elasmobranchs caught in the Queensland East Coast Trawl Fishery and is also assessed as at low risk from that fishery. It is taken in the New South Wales (NSW) Ocean Trawl Fishery with a fairly stable catch-per-unit-effort. Its vulnerability was assessed as low and medium for fishing and climate change, respectively and marine protected areas provide some refuge. It may have undergone some declines in parts of its range subject to high historical fishing pressure, however, it remains abundant. Therefore, the Eastern Shovelnose Ray is assessed as Least Concern (IUCN) (Kyne et al. 2021). The Status of Australian Fish Stocks (SAFS) classified this species as Undefined Stock as there was insufficient information for a full SAFS assessment (Peddemors 2021). However, for the purposes of the Report Card, the information is sufficient to assess the Eastern Shovelnose Ray as Sustainable.



### Distribution

The Eastern Shovelnose Ray is endemic to eastern Australia in tropical to temperate waters (Last et al. 2016). It occurs in a wide range from Halifax Bay (Queensland) to Merimbula (New South Wales) (Last and Stevens 2009).

### Stock structure and status

There is currently no information on population size or trend for the species. Biological differences between Queensland (Qld) and New South Wales (NSW) imply potential stock differentiation though further investigation is needed (Peddemors 2021). The Eastern Shovelnose Ray's occurrence across its range is not uniform, and it is particularly scarce in the northern part of its distribution. The species is considered to be a fairly common to abundant across the centre of its distribution in southern Qld and northern-central NSW (P.M. Kyne, unpubl. data, Last and Stevens 2009).

### Fisheries

The Eastern Shovelnose Ray is a regular incidental catch in both commercial and recreational fisheries. It is caught in the Southern and Eastern Scalefish and Shark Fishery with an estimated average annual catch of 23 t between 2000–2006 with an increase in catch-per-unit-effort over this period (Walker and Gason 2007). Three-quarters of this catch was retained for its meat and the remainder released with high post-release survival (Walker and Gason 2007, Campbell et al. 2018). It is assessed as at low risk from the SESSF (Sporcic et al. 2021). It is one of the most abundant elasmobranchs in the Queensland (Qld) East Coast Trawl Fishery and is prohibited from retention. Although bycatch reduction devices have been mandatory since 2002, their effectiveness is limited at excluding this species. However, it is assessed as at low risk from the fishery as less than one-third of its Qld range is trawled and it has a high post-release survival rate (Campbell et al. 2018). In New South Wales (NSW), the species is taken in the Ocean Trawl Fishery with stable catch rates of approximately 110 t per year between 1998–2008 with some of the catch retained (Kyne et al. 2021, Peddemors 2021, Johnson and Barnes 2023). Catches have reduced since 2014 but there has also been a concurrent effort reduction and catch-per-unit-effort has remained fairly stable (Peddemors 2021). It is also caught and retained in the New South Wales Ocean Trap and Line Fishery (Johnson and Barnes 2022). Recreational fishers in NSW catch 18 t per year and retain approximately 14% of the catch (Peddemors 2021). Marine protected areas, particularly Moreton Bay Marine Park provide refuge for the species (Kyne et al. 2021). It occurs across an area that in some parts has had historically high fishing pressure and it may have previously declined, however it is still abundant (Kyne et al. 2021). The Eastern Shovelnose Ray's vulnerability was assessed as low and medium for fishing and climate change, respectively (Walker et al. 2021).

### Habitat and biology

The Eastern Shovelnose Ray is demersal and occurs inshore on the continental shelf at depths of 0–220 m but mainly inshore to 100 m in a variety of habitats including estuaries, mudflats, seagrass beds, and rocky reefs (Kyne and Stevens 2015). Maximum size is 120 cm total length (TL) and maximum age estimated to 11 years (Last et al. 2016, Peddemors 2021). Males mature at 4.5–5 years and 60–72 cm TL and females at 3.5–4 years and 54–70 cm TL (Last et al. 2016). Litter size is 4–18 pups (Kyne 2000).

Longevity and maximum size	Longevity: estimated 11 years Max size: 120 cm TL
Age and/or size at maturity (50%)	Males: 4.5–5 years, 60–72 cm TL Females: 3.5–4 years, 54–70 cm TL

**CAAB Code:** 37 027009

**Link to IUCN Page:** <https://www.iucnredlist.org/species/161596/68609037>

**Link to page at Shark References:** <https://shark-references.com/species/view/Aptychotrema-rostrata>

### References

- Campbell, M., Courtney, A., Wang, N., McLennan, M. and Zhou, S. 2018. *Estimating the impacts of management changes on bycatch reduction and sustainability of high-risk bycatch species in the Queensland East Coast Otter Trawl Fishery*. FRDC Final Report Project number 2015/014, Brisbane, Queensland.
- Johnson, D.D. and Barnes, T.C. 2022. Observer program data summary - NSW Ocean Trap & Line Fishery - line fishing western zone. NSW Department of Primary Industries, Fisheries.
- 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. 2000. *Aspects of the reproductive biology and diet of the eastern shovelnose ray, Aptychotrema rostrata (Shaw & Nodder, 1794), from Moreton Bay, Queensland*. Honours Thesis, Department of Anatomical Sciences, The University of Queensland.
- Kyne, P.M. and Stevens, J.D. 2015. *Aptychotrema rostrata*. *The IUCN Red List of Threatened Species 2015*: e.T161596A68609037
- 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.
- Peddemors, V. 2021. Eastern Shovelnose Ray (2020). *Aptychotrema rostrata*. Status of Australian Fish Stocks. <https://www.fish.gov.au/report/307-Eastern-Shovelnose-Ray-2020>
- Sporcic, M., Bulman, C.M. and Fuller, M. 2021. *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.
- 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.