

## Estuary Stingray, *Hemirhynchus fluviorum*

<b>Report Card assessment</b>	<b>Depleting</b>		
IUCN Red List Australian Assessment	Vulnerable* (Endemic to Australia)	IUCN Red List Global Assessment	Near Threatened
Global Assessors	Rigby, C.L. & Derrick, D.		
Australian Assessors	Kyne, P.M., Heupel, M.R., White, W.T., Simpfendorfer, C.A. (Shark Action Plan) & Rigby, C.L.		
Report Card Remarks	Intrinsically vulnerable, habitat specialist impacted by previous habitat loss and some persecution.		

\*The Australian assessment status incorporates more recent information than was available for the Global assessment which shifts status from NT to VU.

### Summary

The Estuary Stingray is a medium-sized ray endemic to eastern and northern Australia in a wide range from temperate to tropical waters. It is intrinsically vulnerable and a habitat specialist occurring in near-shore waters, estuaries, and lower reaches of rivers. It is a very minor component of inshore trawl fisheries in New South Wales (NSW) and southern Queensland (Qld), the Qld tunnel net fishery, and recreational line fisheries. The trawl fisheries mandate the use of bycatch



Reduction Devices (BRDs) which have been shown to reduce the catch of large rays by >94%, though are less effective at excluding smaller rays. If caught it would be released In Qld where elasmobranch retention is prohibited, although post-release mortality is unknown, and it is persecuted in some inshore fisheries, by recreational fishers, and by shellfish farmers that report it feeds on oysters. Habitat degradation and loss for urban and commercial foreshore development along the east coast have reduced the area the species occupies in NSW and to a lesser extent in southern Qld. Anecdotal evidence indicates a historic and recent decline in abundance and area of occupancy across the southern ~25% of its range, although across the remainder of its range it is unfished or lightly fished. The sudden and severe mangrove dieback in the Gulf of Carpentaria likely impacted this species. Therefore, taking a precautionary approach, the Estuary Stingray is assessed as Vulnerable (IUCN) (Kyne et al. 2021) and Depleting (SAFS).

### Distribution

The Estuary Stingray is endemic to eastern and northern Australia in temperate to tropical waters (Last et al. 2016). It has a wide range but patchy occurrence from Wagonga Inlet (New South Wales) to Darwin (Northern Territory) (Gladstone et al. 2012, Last et al. 2016, Rigby and Derrick 2021).

## Stock structure and status

The Estuary Stingray was historically extremely common in the New South Wales (NSW) and southern Queensland (Qld). It is now uncommon in NSW where the area it occupies is inferred to have declined due to habitat degradation but it is still locally abundant in some southern Qld bays and estuaries (Pierce et al. 2011, Rigby and Derrick 2021). Anecdotal evidence suggests a population decline in this part of its range (Rigby and Derrick 2021, Kyne et al. 2021).

## Fisheries

The Estuary Stingray is a very minor component of the incidental catch of inshore commercial prawn trawl fisheries in NSW and Qld, the Tunnel Net Fishery in Qld, and recreational line fisheries (Rigby and Derrick 2021). It is not encountered in the Commonwealth Northern Prawn Fishery as the fishery does not operate in near-shore waters. Bycatch reduction devices (BRDs) have been mandated in the inshore prawn trawl fisheries since the early-mid 2000s and reduce the catch of the large rays by >94%, though they may not be as effective at excluding smaller individuals (Griffiths et al. 2006). If it is caught, it would be released as elasmobranch retention is now prohibited, although post-release mortality is unknown. The Estuary Stingray was considered at intermediate risk of overfishing in the southern Queensland East Coast Otter Trawl Fishery and River and Inshore Beam Trawl Fishery (RIBTF) due to its low resilience and the impact of the fishery, particularly the RIBTF (Jacobsen et al. 2018). It was assessed as at medium risk in the Qld Tunnel Net Fishery due to its intrinsic vulnerability and susceptibility to capture (Jacobsen et al. 2021). The species is known to be persecuted by recreational fishers, some commercial inshore fisheries, and by commercial shellfish farmers that report the Estuary Stingray feeds voraciously on farmed oysters (Last and Stevens 2009, Rigby and Derrick 2021). The species is suspected to have been impacted by significant habitat degradation and loss along parts of the east coast due to tidal bays and mangrove reclamation for urban and commercial foreshore developments (Pierce and Bennett 2010, Rigby and Derrick 2021). In 2015, over 7,000 hectares of mangroves died along 2,000 km of coastline across the Gulf of Carpentaria due to a sudden and temporary drop in sea level with the time-frame for recovery uncertain and threatened by other events such as cyclones (Duke et al. 2022, NESP 2022). This event likely would likely have impacted this species. It probably receives some refuge in inshore marine protected areas, though they generally do not protect all of the species specialised habitats (Rigby and Derrick 2021). There is now a recreational possession limit of one shark or ray in Qld and it is listed as Near Threatened in the Nature Conservation (Wildlife) Regulation 2006 (Qld) and cannot be retained if captured in a national park (Jacobsen et al. 2021). Since the early 2000s, coastal habitat protection measures have been implemented in Queensland to protect near-shore estuarine and mangrove habitats.

## Habitat and biology

The Estuary Stingray is demersal in freshwater, estuarine, and near-shore marine habitats, and occurs in specialised habitats of lower reaches of mangrove-fringed rivers and estuaries along with near-shore waters at depths of 0–40 m (Last et al. 2016, Rigby and Derrick 2021). Maximum size is 93 cm disc width (DW) and maximum age estimated to 21 years (Pierce and Bennett 2010). Males mature at 7 years and 41 cm DW and females at 13 years and 63 cm DW (Pierce and Bennett 2010).

Longevity and maximum size	Longevity: estimated 21 years Max size: 93 cm DW
Age and/or size at maturity (50%)	Males: 7 years, 41 cm DW Females: 13 years, 63 cm DW

**CAAB Code:** 37 035008

**Link to IUCN Page:** <https://www.iucnredlist.org/species/41797/68618306>

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

#### References

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