

Blue lines indicate the area meeting the ISRA Criteria; dashed lines indicate the suggested buffer for use in the development of appropriate place-based conservation measures

BRISBANE WATER ESTUARY ISRA

Australia and Southeast Indian Ocean Region

SUMMARY

Brisbane Water Estuary is located on the central coast of New South Wales, Australia. This estuary includes small bays, beaches, islands, and channels and is characterised by extensive intertidal sandy and muddy flats and seagrass beds (*Zostera* spp.). Within this area there are: **threatened species** and **feeding areas** (Estuary Stingray *Hemirhynchus fluviorum*).

CRITERIA

Criterion A - Vulnerability; Sub-criterion C2 - Feeding Areas

— AUSTRALIA —

— 0-2 metres —

— 11.78 km² —





DESCRIPTION OF HABITAT

Brisbane Water Estuary is located on the central coast of New South Wales, Australia. It is a barrier estuary found in the northern arm of Broken Bay to which it is connected by a narrow entrance to the south. It is characterised by extensive intertidal sandy and muddy flats and seagrass beds (*Zostera* spp.). The area includes small bays (e.g., Hardy's), beaches (e.g., Ettalong), islands (e.g., St Huberts), and channels (e.g., Woy Woy). It is influenced by wave dynamics with tidal changes of 0.4 m on average (Roberts & Sainty 2005; Gladstone 2006).

This Important Shark and Ray Area is benthic and is delineated from inshore and surface waters (0 m) to 2 m based on the bathymetry of the area.

ISRA CRITERIA

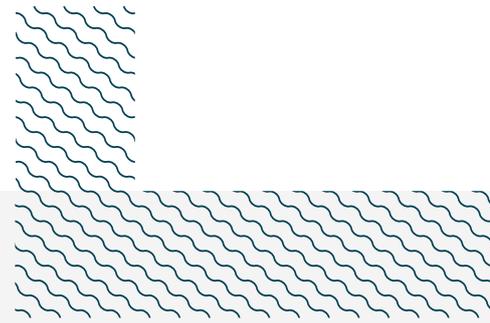
CRITERION A - VULNERABILITY

One Qualifying Species considered threatened with extinction according to the IUCN Red List of Threatened Species regularly occurs in the area. This is the Vulnerable Estuary Stingray (Hyde et al. 2025).

SUB-CRITERION C2 - FEEDING AREAS

Brisbane Water Estuary is an important feeding area for one species of ray.

Estuary Stingrays regularly and predictably feed in the area according to foraging observations and the presence of feeding pits (Bourke et al. 2023; Grew et al. 2025). Between October 2021-March 2022, drone surveys were conducted in the area to evaluate behavioural responses of Estuary Stingray to drone presence (Bourke et al. 2023). During these surveys, 50 Estuary Stingrays were tracked, with 23 observed actively foraging in the area (ingesting food or flapping pectoral fins to excavate food in the substrate; Bourke et al. 2023). In addition, the presence of feeding pits was assessed from drone surveys conducted over a 7-day period in May 2023 during low tide conditions (Grew et al. 2025). In these surveys, 1,090 feeding pits were identified in the area with newly excavated pits observed daily and ranging from 74-329. Evaluation of feeding pits was extrapolated to the whole estuary based on satellite imaging from 2021 and revealed that while feeding pits were found across the whole estuary, this area concentrated the largest number of feeding pits (Grew et al. 2025). The diet of Estuary Stingrays was not assessed in this area but in other regions like Wallis Lake (170 km north) and Burril Lake (225 km south) this species uses bare substrate habitats for feeding on highly abundant benthic fish and crustaceans that aggregate to spawn. Bare substrates may be a preferred habitat for this species due to the higher accessibility to prey compared to other substrates (Grew et al. 2025). No other nearby estuaries have been monitored in the region. While Common Stingaree *Trygonoptera testacea* also occurs in the area, feeding pits were attributed to Estuary Stingray as it was the only confirmed ray residing in the estuary during the study and feeding pits were found in the same locations where Estuary Stingrays were recorded foraging during 2021-2022. Brisbane Water Estuary has extensive sand flats and seagrass that have been found to be the main habitats where Estuary Stingrays forage (Grew 2025).



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We acknowledge the Traditional Owners of Country throughout Australia and recognise the continuing connection to land, waters, and culture. We pay our respects to Elders past, present, and emerging.

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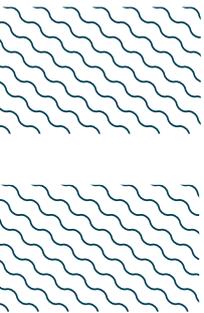
QUALIFYING SPECIES

Scientific Name	Common Name	IUCN Red List Category	Global Depth Range (m)	ISRA Criteria/Sub-criteria Met									
				A	B	C1	C2	C3	C4	C5	D1	D2	
RAYS													
<i>Hemirhina fluviorum</i>	Estuary Stingray	VU	0-28	X			X						

SUPPORTING SPECIES

Scientific Name	Common Name	IUCN Red List Category
SHARKS		
<i>Heterodontus portusjacksoni</i>	Port Jackson Shark	LC
RAYS		
<i>Myliobatis tenuicaudatus</i>	Southern Eagle Ray	LC
<i>Rhinoptera neglecta</i>	Australian Cownose Ray	DD
<i>Trygonoptera testacea</i>	Common Stingaree	NT
<i>Trygonorrhina fasciata</i>	Eastern Fiddler Ray	LC

IUCN Red List of Threatened Species Categories are available by searching species names at www.iucnredlist.org. Abbreviations refer to: CR, Critically Endangered; EN, Endangered; VU, Vulnerable; NT, Near Threatened; LC, Least Concern; DD, Data Deficient.





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