

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. Buffers for freshwater areas are determined based on hydroBASINS to capture watershed boundaries.

## BELLINGER RIVER ISRA

### Australia and Southeast Indian Ocean Region

#### SUMMARY

Bellinger River is located on the mid-north coast of New South Wales, Australia. This area comprises the lower reaches of the Bellinger River, from the town of Bellingen to the river mouth. The habitat is characterised by muddy substrate and the riverbanks adjoin mainly agricultural land. It is influenced by a subtropical climate, freshwater flow, and by the tides that create a range of salinities. Within this area there are: **threatened species** and **reproductive areas** (Bull Shark *Carcharhinus leucas*).

#### CRITERIA

##### Criterion A - Vulnerability; Sub-criterion C1 - Reproductive Areas

— AUSTRALIA —

— 0-10 metres —

— 5.36 km<sup>2</sup> —





## DESCRIPTION OF HABITAT

Bellinger River is located on the mid-north coast of the New South Wales, Australia. It is situated south of Coffs Harbour. This riverine and estuarine area comprises the lower reaches of the Bellinger River, from the town of Bellingen to the mouth of the river. The Bellinger River is 109 km long and has a catchment of 1,100 km<sup>2</sup> (Chessman et al. 2020). The habitat is characterised by muddy substrate and the riverbanks adjoin mainly agricultural land.

The area is influenced by a subtropical climate, with an average annual rainfall of ~1,500–2,200 mm (Chessman et al. 2020). Tides influence the river up to ~20 km upstream in Bellingen town, creating a range of salinities within this area.

This Important Shark and Ray Area is benthic and pelagic and is delineated from inshore and surface waters (0 m) to 10 m based on the bathymetry of the area.

## ISRA CRITERIA

### CRITERION A – VULNERABILITY

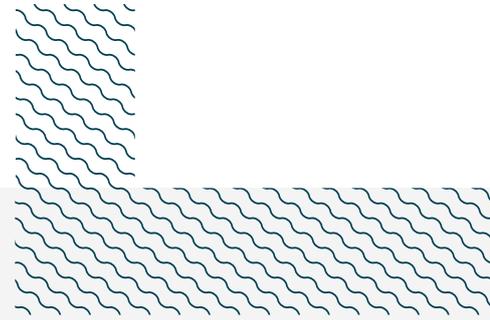
One Qualifying Species considered threatened with extinction according to the IUCN Red List of Threatened Species regularly occurs in the area. This is the Vulnerable Bull Shark (Rigby et al. 2021).

### SUB-CRITERION C<sub>1</sub> – REPRODUCTIVE AREAS

Bellinger River is an important reproductive area for one shark species.

Neonate and young-of-the-year (YOY) Bull Sharks are regularly observed in this area (Smoothery et al. 2023; Lubitz 2023; N Lubitz unpubl. data 2025). During 2015–2025, research surveys captured and released Bull Sharks mostly during November–January (Smoothery et al. 2023; Lubitz 2023; N Lubitz unpubl. data 2025). In 19 fishing trips in this area, 28 Bull Sharks were captured ranging in size from 69–290 cm total length (TL). Nine neonates (31% of total captures) were identified by the presence of an umbilical scar and ranged in size from 69–82 cm TL. Two individuals of 90 and 91 cm TL were classified as YOY. The size-at-birth of the species is 56–81 cm TL and individuals up to 99 cm TL are classified as YOY in this region (Pillans et al. 2020; Ebert et al. 2021). One shark was a large female of 290 cm TL, although the pregnancy status was not recorded. All other individuals (n = 16; 57% of total) were juveniles ranging from 117–178 cm TL.

Bull Sharks in eastern Australia remain in river and estuary habitats for up to five years (Werry et al. 2011), highlighting that these juveniles have not yet moved into marine areas. Additional records on social media show that small Bull Sharks are regularly observed in this area. A passive acoustic telemetry study that monitored detections of 111 Bull Sharks on receivers along the New South Wales coast from 2017–2023 recorded most detections at South West Rocks, located ~40 km south of the river mouth (Smoothery et al. 2023), indicating that the broader marine region near this area is important for large juveniles and adults. Although Bellinger River is located only ~20 km from Macleay River and ~40 km from Nambucca River to the south, and ~125 km from Clarence River to the north, these river systems are individually important. Bull Sharks in Australia display natal philopatry, with females returning to particular river systems to pup (Tillett et al. 2012; Lubitz 2023). For example, half-sibling pairs were found within a river up to seven cohorts apart, highlighting the long-term natal philopatry of females (Lubitz 2023). Therefore, individual rivers in this region represent discrete portions of habitat that are important to Bull Sharks.



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## **Suggested citation**

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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	
<b>SHARKS</b>													
<i>Carcharhinus leucas</i>	Bull Shark	VU	0-256	X		X							

IUCN Red List of Threatened Species Categories are available by searching species names at [www.iucnredlist.org](http://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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