

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

## BURLEIGH-KIRRA ISRA

### Australia and Southeast Indian Ocean Region

#### SUMMARY

Burleigh-Kirra is located in southeast Queensland, Australia. The area spans ~10 km of coastline from Burleigh Heads in the north to Kirra Reef in the south. The area is characterised by sandy substrates, with Kirra Reef itself comprised of scattered rocky reef outcrops adjacent to sandy substrates. Burleigh-Kirra is influenced by the East Australian Current and prevailing southeast trade winds. Within this area there are: **threatened species** and **undefined aggregations** (Scalloped Hammerhead *Sphyrna lewini*).

#### CRITERIA

**Criterion A - Vulnerability; Sub-criterion C5 - Undefined Aggregations**

— AUSTRALIA —

— 0-12 metres —

— 7.17 km<sup>2</sup> —





## DESCRIPTION OF HABITAT

Burleigh-Kirra is located in southeast Queensland, Australia. The area spans ~10 km of coastline from Burleigh Heads in the north to Kirra Reef in the south. The area is characterised by sandy substrates, with Kirra Reef itself comprised of scattered rocky reef outcrops adjacent to sandy substrates. (Lubitz et al. 2025). The reef itself is situated ~400 m offshore from the Kirra surf break.

The local oceanography of the area is highly dynamic given its proximity to the surf zone, making access to the area heavily dependent on weather and sea conditions. Burleigh-Kirra is influenced by the East Australian Current, the poleward flowing western boundary current of the South Pacific Gyre (Suthers et al. 2011). The East Australian Current flow is strongest in the austral summer, and the formation of eddies along this coastline also fluctuates seasonally (Ridgway & Hill 2009). The area is subject to semi-diurnal tidal cycles and southeast trade winds, with sea temperatures ranging between 21.7°C in winter to 27.2°C in summer (Sea Temperature 2025).

This Important Shark and Ray Area is benthic and pelagic and is delineated from inshore and surface waters (0 m) to 12 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 Critically Endangered Scalloped Hammerhead (Rigby et al. 2019).

### SUB-CRITERION C5 - UNDEFINED AGGREGATIONS

Burleigh-Kirra is an important area for undefined aggregations of one shark species.

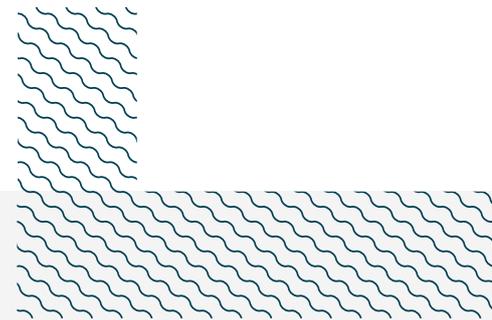
Between 2022-2025, recreational snorkel trips were conducted from the shore multiple times per week at two main sites in the area: Burleigh Heads and Kirra Reef (Lubitz et al. 2025; S Houlihan, C Karger, J Kennedy pers. obs. 2025). Observations are anecdotal, with no formal records maintained from the area. Scalloped Hammerheads were observed on most trips (~90%) between January-July, with occasional aggregations seen outside this period. Scalloped Hammerhead aggregations were first observed at Burleigh Heads in April 2019 (C Karger pers. obs. 2025). Aggregation sizes at this site ranged between 4-30 individuals seen on a single 60-minute snorkel (C Karger pers. obs. 2025). At Kirra Reef, aggregations tended to be larger, with a range of 30-100+ Scalloped Hammerheads observed during a single 60-minute snorkel at the site, depending on weather conditions and visibility. Estimates from opportunistic drone surveys were up to 300 Scalloped Hammerheads in one aggregation at Kirra Reef (C Karger pers. obs. 2025).

Sizes of Scalloped Hammerheads in the area were visually estimated at ~50-120 cm total length (TL) (Lubitz et al. 2025; J Kennedy pers. obs. 2025) with the larger individuals observed in later years (e.g., up to 120 cm TL in 2024; S Houlihan & C Karger pers. obs. 2025). The known size-at-birth for this species is 31-57 cm TL (Ebert et al. 2021), suggesting that some of the individuals were neonates and young-of-the-year (YOY). However, since no formal records were maintained, it is difficult to quantify the percentages of these young age classes, and the size range suggests a mixed cohort of immature individuals.

Scalloped Hammerheads were also captured in the Queensland Shark Control Program (baited drumlines and shark nets) along the coastline in and adjacent to the area (Lubitz et al. 2025). Catch data from 2000-2024, revealed large females (>190 cm TL) were more common in October, November, and December, and a pregnant female with nine near-term pups (<50 cm TL) was captured in a shark net in waters adjacent to the area (off Coolangatta beach) in December 2020 (Lubitz et al. 2025). These findings add support to the observations of young age classes in this area in the first half of the year.

During snorkel trips, the sharks demonstrated searching behaviour across the sandy substrate, looking for and finding small rays and displayed hunting behaviour (though often unsuccessful; C Karger pers. obs. 2025). Direct feeding was observed on at least two occasions while snorkelling, with prey consisting of Common Stingaree *Trygonoptera testacea* (J Kennedy pers. obs. 2025) and Coral Sea Maskray *Neotrygon trigonoides* (C Karger pers. obs. 2025). Some of the observed rays in the area exhibit small wounds and bite marks, potentially resulting from Scalloped Hammerhead foraging activity.

Combined, these observations suggest this area may be important for both reproduction and feeding for Scalloped Hammerheads, however, more information is needed to understand the nature and function of these aggregations.



---

## Acknowledgments

Siobhan Houlihan (Sea World Foundation), Clinton Karger (Sea World Foundation), Jai Kennedy (Independent Freediver), and Asia O Armstrong (IUCN SSC Shark Specialist Group - ISRA Project) contributed and consolidated information included in this factsheet. We thank all participants of the 2025 ISRA Region 08 - Australia and Southeast Indian Ocean workshop for their contributions to this process.

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.

This factsheet has undergone review by the ISRA Independent Review Panel prior to its publication.

This project was funded by the Shark Conservation Fund, a philanthropic collaborative pooling expertise and resources to meet the threats facing the world's sharks and rays. The Shark Conservation Fund is a project of Rockefeller Philanthropy Advisors.

## Suggested citation

IUCN SSC Shark Specialist Group. 2025. Burleigh-Kirra ISRA Factsheet. Dubai: IUCN SSC Shark Specialist Group.

## QUALIFYING SPECIES

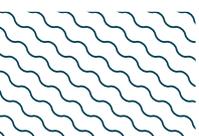
Scientific Name	Common Name	IUCN Red List Category/ EPBC Act	Global Depth Range (m)	ISRA Criteria/Sub-criteria Met									
				A	B	C1	C2	C3	C4	C5	D1	D2	
<b>SHARKS</b>													
<i>Sphyrna lewini</i>	Scalloped Hammerhead	CR/CD	0-1,043	X							X		

## SUPPORTING SPECIES

Scientific Name	Common Name	IUCN Red List Category
<b>SHARKS</b>		
<i>Orectolobus maculatus</i>	Spotted Wobbegong	LC
<i>Stegostoma tigrinum</i>	Indo-Pacific Leopard Shark	EN
<b>RAYS</b>		
<i>Aetobatus ocellatus</i>	Spotted Eagle Ray	EN
<i>Neotrygon trigonoides</i>	Coral Sea Maskray	LC
<i>Rhina ancylostomus</i>	Bowmouth Guitarfish	CR
<i>Rhinoptera neglecta</i>	Australian Cownose Ray	DD
<i>Taeniurops meyeri</i>	Blotched Fantail Ray	VU
<i>Trygonoptera testacea</i>	Common Stingaree	NT

*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.*

*Australian Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) categories are available at: <https://www.dcceew.gov.au/environment/epbc/our-role/approved-lists> Abbreviations refer to: CR, Critically Endangered; EN, Endangered; VU, Vulnerable; CD, Conservation Dependent.*





## REFERENCES

**Ebert DA, Dando M, Fowler S. 2021.** *Sharks of the world: A complete guide*. Princeton: Princeton University Press.

**Lubitz N, Doupain K, Houlihan S, Mitchell JD. 2025.** A seasonal aggregation of juvenile scalloped hammerheads *Sphyrna lewini* along beaches of the Gold Coast, Australia. *Journal of Fish Biology* 107: 1441-1446. <https://doi.org/10.1111/jfb.7011>

**Ridgway K, Hill K. 2009.** The East Australian Current. In: Poloczanska, ES, Hobday AJ, Richardson AJ. eds. *A marine climate change impacts and adaptation report card for Australia 2009*. Hobart: NCCARF Publication, CSIRO, 1-16.

**Rigby CL, Dulvy NK, Barreto R, Carlson J, Fernando D, Fordham S, Francis MP, Herman K, Jabado RW, Liu KM, et al. 2019.** *Sphyrna lewini*. *The IUCN Red List of Threatened Species* 2019: e.T39385A2918526.

**Sea Temperature. 2025.** Gold Coast Water Temperature. Available at: <https://www.seatemperature.org/australia-pacific/australia/gold-coast.htm> Accessed September 2025.

**Suthers IM, Young JW, Baird ME, Roughan M, Everett JD, Brassington GB, Byrne M, Condie SA, Hartog JR, Hassler CS, Hobday AJ. 2011.** The strengthening East Australian Current, its eddies and biological effects—an introduction and overview. *Deep Sea Research Part II: Topical Studies in Oceanography* 58: 538-546. <https://doi.org/10.1016/j.dsr2.2010.09.029>