

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

ARVOREDO ISLAND ISRA

South American Atlantic Region

SUMMARY

Arvoredo Island is located off Florianopolis, Santa Catarina State, southern Brazil. The habitat consists of coastal and insular reefs with similar geomorphology, characterised by steep granite rocky formations that transition into sandy substrates. The area overlaps with the Arvoredo Marine Biological Reserve. Within this area there are: **threatened species**, **range-restricted species**, and **undefined aggregations** (Brazilian Guitarfish *Pseudobatos horkelii*).

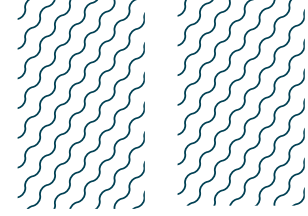
CRITERIA

Criterion A - Vulnerability; Criterion B - Range Restricted; Sub-criterion C5 - Undefined Aggregations

BRAZIL

0-20 metres

10.94 km²



DESCRIPTION OF HABITAT

Arvoredo Island is located off Florianopolis, Santa Catarina State, southern Brazil. The habitat consists of coastal and insular reefs with similar geomorphology, characterised by steep granite rocky formations that transition into sandy substrates (Anderson et al. 2014). This area is under a moderate continental influence, receiving suspended sediments from river inputs and resuspension of the North Bay and Tijuca's Bay. On its oceanic boundary, the area is influenced by the Brazil Current and by a mixture of waters from higher latitudes (Paquette et al. 2016). Sea water temperatures range from 16–28°C (Anderson et al. 2014).

The area overlaps with the Arvoredo Marine Biological Reserve (UNEP-WCMC & IUCN 2024).

This Important Shark and Ray Area is benthic and pelagic and is delineated from surface waters (0 m) to 20 m based on the depth range of the habitat used by the Qualifying Species in 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 Brazilian Guitarfish (Pollom et al. 2020).

CRITERION B – RANGE RESTRICTED

This area holds the regular presence of the Brazilian Guitarfish as a resident range-restricted species. There are reports of three aggregation events for the Brazilian Guitarfish in this area ranging from 15–50 individuals during the austral summer in 2014, 2018, and 2019. This is the only nearshore area where aggregations of the Brazilian Guitarfish have regularly been recorded during diving surveys (Anderson et al. 2021). Previous studies monitoring fish species note the Brazilian Guitarfish as rare in the state of Santa Catarina highlighting the importance of this area for the species (Anderson et al. 2015; Quimbayo et al. 2022). Brazilian Guitarfish occurs in the Patagonian Shelf Large Marine Ecosystem (LME) and the South Brazil Shelf LME.

SUB-CRITERION C5 – UNDEFINED AGGREGATIONS

Arvoredo Island is an important area for undefined aggregations of one ray species.

Photographs were taken during surveys conducted annually from 2012–2019, during the austral summer (December–March) (Anderson et al. 2021). Routine underwater visual census surveys (average number of surveys per year = 12) were conducted in the mornings (Anderson et al. 2021, Quimbayo et al. 2022). In February 2014, the first record of a Brazilian Guitarfish aggregation was photographed consisting of 25 individuals, resting on the seabed and dispersed on sandy substrates at the interface of a rocky reef (Anderson et al. 2021). A few individuals were visually estimated to be young-of-the-year (~35 cm total length [TL]), but most were adults ranging from 80–100 cm TL. Size-at-birth for this species is 22–29 cm TL (Vooren et al. 2005). In December 2018, another aggregation of 15 individuals was recorded (Anderson et al. 2021). Individuals were dispersed in small clusters of 2–3 individuals on the sandy substrate. In December 2019, a third and much larger aggregation of the Brazilian Guitarfish was photographed. At least 50 large (mostly ranging from 80–

120 cm TL) individuals were counted and photographed clustered on the sandy substrate (Anderson et al. 2021).

In southern Brazil, adult Brazilian Guitarfish migrate to coastal waters at depths of less than 20 m from November–March. Parturition and mating take place in March. Soon after, the males and females return to deeper waters and disperse to depths of 40–150 m over the continental shelf. Neonates and juveniles remain in shallow waters throughout the year (Lessa et al. 1986, Vooren et al. 2005). All aggregations in this area were recorded during the reproductive season of the species in southern Brazil in waters at depths <20 m (Anderson et al. 2021). However, further information is required to understand the nature and function of these aggregations.

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Rodrigo Domingues (São Paulo State University – UNESP) and Vanessa Bettcher Brito (IUCN SSC Shark Specialist Group – ISRA Project) contributed and consolidated information included in this factsheet. We thank all participants of the 2025 ISRA Region 05 – South American Atlantic workshop for their contributions to this process.

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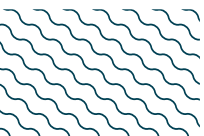
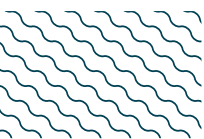
QUALIFYING SPECIES

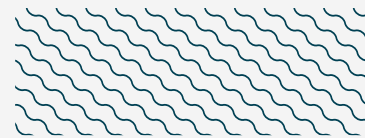
Scientific Name	Common Name	IUCN Red List Category	Global Depth Range (m)	ISRA Criteria/Sub-criteria Met								
				A	B	C1	C2	C3	C4	C5	D1	D2
RAYS												
<i>Pseudobatos horkelii</i>	Brazilian Guitarfish	CR	0–150	X	X					X		

SUPPORTING SPECIES

Scientific Name	Common Name	IUCN Red List Category
RAYS		
<i>Atlantoraja cyclophora</i>	Eyespot Skate	EN
<i>Dasyatis hypostigma</i>	Groovebelly Stingray	EN
<i>Gymnura altavela</i>	Spiny Butterfly Ray	EN
<i>Narcine brasiliensis</i>	Lesser Numbfish	NT
<i>Rioraja agassizi</i>	Rio Skate	VU
<i>Sympterygia acuta</i>	Bignose Fanskate	CR
<i>Sympterygia bonapartii</i>	Smallnose Fanskate	NT
<i>Zapteryx brevirostris</i>	Shortnose Guitarfish	EN

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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