

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

COSTA RICA - CABO BLANCO ISRA

Central and South American Pacific Region

SUMMARY

Cabo Blanco is located at the southern end of the Nicoya Peninsula in north Pacific Costa Rica. The area includes the Absolute Natural Reserve and the Marine Management Area of Cabo Blanco. There are diverse habitats including coral and rocky reefs, sandy bottoms, and tidal pools. Within this area there are: **threatened species** (e.g., Bull Shark *Carcharhinus leucas*); **range-restricted species** (Pacific Chupare *Styracura pacifica*); **resting areas** (Pacific Nurse Shark *Ginglymostoma unami*); and areas important for **movement** (e.g., the Oceanic Manta Ray *Mobula birostris*).

CRITERIA

Criterion A - Vulnerability; Criterion B - Range Restricted; Sub-criterion C3 - Resting Areas; Sub-criterion C4 - Movement

COSTA RICA

0-40 metres

65.5 km²





DESCRIPTION OF HABITAT

Cabo Blanco is located in the southern end of the Nicoya Peninsula along the Puntarenas coast of Costa Rica. Situated within the Pacific Central-American Coastal Large Marine Ecosystem (LME), Cabo Blanco Absolute Nature Reserve was the first protected area with a coastal zone established in Costa Rica in 1963 (RNACB-ACT-SINAC-MINAE 2009; Alvarado et al. 2012). It includes Cabo Blanco Island which is a small portion of land (0.075 km²) located 3 km from the tip of the Nicoya Peninsula. This area comprises a variety of shallow coastal and deep marine habitats, including islands, coral and rocky reefs, sandy bottoms, and numerous tidal pools. The climate in this area is highly influenced by dry and rainy seasons. The dry season occurs from December to April, and the rainy season occurs from May to November, with the heaviest precipitation during September and October. The average annual temperature in this area is 27°C with an annual average humidity of 81%.

This Important Shark and Ray Area is delineated from surface waters (0 m) to a depth of 40 m based on the maximum depth range of the habitat used by the Qualifying Species.

ISRA CRITERIA

CRITERION A - VULNERABILITY

Four Qualifying Species considered threatened with extinction according to the IUCN Red List of Threatened Species™ regularly occur in the area. Threatened sharks comprise the Endangered Pacific Nurse Shark (Pollom et al. 2021) and Vulnerable Bull Shark (Rigby et al. 2021). Threatened rays comprise the Endangered Oceanic Manta Ray (Marshall et al. 2022), and Vulnerable Pacific Chupare (Kyne et al. 2020).

CRITERION B - RANGE RESTRICTED

Cabo Blanco holds the regular presence of Pacific Chupare as a resident range-restricted species in the Pacific Central-American Coastal LME. The species has been regularly observed at Cabo Blanco through ongoing monitoring since 2019 and is recorded on every visit to this area (J. Madrigal-Mesén pers. obs.). In addition, four Pacific Chupare (3 females and 1 male between 53.4 and 68 cm disc width) were caught during two night-surveys (~2 hours of effort per day) and were tagged to monitor their movement. Results indicate that Pacific Chupare utilises mangrove ecosystems and large tidepools within the area (R. Arauz et al. unpubl. data 2022).

SUB-CRITERION C3 - RESTING AREAS

Cabo Blanco is an important resting area for Pacific Nurse Sharks. This species is predictably observed in aggregations of up to 30 individuals within the Cabo Blanco area (Palacios-Martínez 2014). Based on observations between November 2007 and October 2010, Pacific Nurse Sharks regularly rest on the substrate (Palacios 2008).

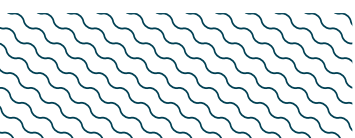


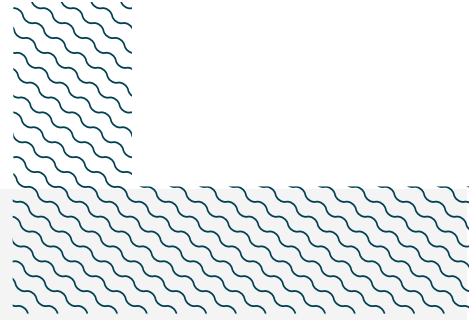
SUB-CRITERION C4 - MOVEMENT

Cabo Blanco is an important area for the movement of one shark and one ray species. There is strong evidence on the presence, residency, and movement patterns of Bull Sharks and Oceanic Manta Rays within this area (E. Chávez et al. unpubl. data 2022; J. Madrigal-Mesén unpubl. data 2022).

The presence of Oceanic Manta Rays in Cabo Blanco is regular and predictable, with over 100 individuals catalogued into an identification database since 2018 (J. Madrigal-Mesén unpubl. data 2022). Between 2020 and 2022, 33 Oceanic Manta Rays have been tagged with acoustic transmitters within this area. An additional two individuals were tagged with satellite transmitters in 2022. Preliminary results provide insight into the movement of this species, which have a large geographic range within this region. Tracking indicates that this area and two other locations (Las Catalinas and Caño Island) are used by Oceanic Manta Rays between November and May/June and connect the movement of this species (J. Madrigal-Mesén unpubl. data 2022). This behaviour has been recorded during the dry season, and recorded movements suggest that the presence of Oceanic Manta Rays relates to increased productivity as a result of increased sea surface temperature. These changes in environmental variables also drive the movement of Oceanic Manta Rays in other areas (Lezama-Ochoa et al. 2019).

Bull Sharks have been recorded moving between Cabo Blanco, Coyote, and Bongo. Twenty-three Bull Sharks were acoustically tagged and tracked between 2015 and 2019. Preliminary results indicate that at least five of these Bull Sharks were detected in the Cabo Blanco area (by acoustic receivers installed at the coast and on the island) approximately one year after being tagged. These results suggest that Bull Sharks, roughly 3-4 years old, travel about 40 km (linear distance) from Coyote and Bongo to Cabo Blanco revealing the spatial connectivity between these locations (E. Chávez et al. unpubl. data 2022). The Coyote and Bongo area sustains younger Bull Sharks, as neonate, young-of-the-year, and juveniles are recorded in the area (Chávez 2017; De la Llata Quiroga 2021; E. Chávez et al. unpubl. data 2022). Therefore, Cabo Blanco is spatially connected to Coyote-Bongo and the movement of the Bull Sharks between these areas could be related to a vital function (reproduction).





Acknowledgments

Elpis J. Chávez (CREMA; MigraMar), Randall Arauz (Marine Watch International; MigraMar); Jeffrey Madrigal-Mesén (CREMA); Mario Espinoza (CIMAR-Universidad de Costa Rica; MigraMar), and Ryan Charles (IUCN SSC Shark Specialist Group - ISRA Project) contributed and consolidated information included in this factsheet. We thank the participants of the 2022 ISRA Region 12 - Central and South American Pacific workshop for their contributions to this process.

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. 2023. Costa Rica - Cabo Blanco ISRA Factsheet. Dubai: IUCN SSC Shark Specialist Group.

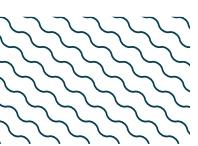
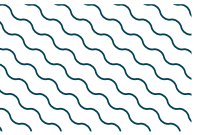
QUALIFYING SPECIES

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	
SHARKS													
<i>Carcharhinus leucas</i>	Bull Shark	VU	0-164	X					X				
<i>Ginglymostoma unami</i>	Pacific Nurse Shark	EN	0-32	X				X					
RAYs													
<i>Mobula birostris</i>	Oceanic Manta Ray	EN	0-1,000	X					X				
<i>Styracura pacifica</i>	Pacific Chupare	VU	0-30	X	X								

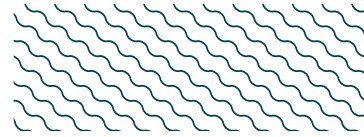
SUPPORTING SPECIES

Scientific Name	Common Name	IUCN Red List Category
SHARKS		
<i>Alopias pelagicus</i>	Pelagic Thresher	EN
<i>Sphyrna lewini</i>	Scalloped Hammerhead	CR
<i>Triaenodon obesus</i>	Whitetip Reef Shark	VU
<i>Alopias pelagicus</i>	Pelagic Thresher	EN

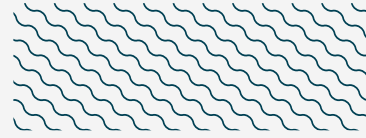
IUCN Red List categories: *CR*, Critically Endangered; *EN*, Endangered; *VU*, Vulnerable; *NT*, Near Threatened; *LC*, Least Concern; *DD*, Data Deficient.



SUPPORTING INFORMATION



There are additional indications that one species of ray may use this area for reproductive purposes. A mating event of Pacific Chupare has been video recorded by a park ranger when working in the shallow waters of Cabo Blanco (JJ. Zuñiga pers. comm. 2022). Additional survey effort is planned to determine the regularity and predictability of this behaviour (E. Chavez pers. comms. 2022).



REFERENCES

- Alvarado JJ, Cortés J, Esquivel MF, Salas E. 2012.** Costa Rica's marine protected areas: status and perspectives. *Revista de Biología Tropical* 60: 129-142.
- Chávez Calderón E. 2017.** Movimientos y uso del habitat del tiburón toro (*Carcharhinus leucas*) en el estero Coyote, Guanacaste, Costa Rica. Unpublished Master's Thesis, Universidad Nacional de Costa Rica, Heredia.
- De la Llata Quiroga E. 2021.** Ecología trófica de tiburones toro juveniles (*Carcharhinus leucas*) en dos sistemas estuarinos de Costa Rica. Unpublished Master's Thesis, Universidad Nacional de Costa Rica, Heredia.
- Kyne PM, Charvet P, Areano EM, Avalos C, Cevallos A, Espinoza M, González A, Herman K, Mejía-Falla PA, Morales-Saldaña JM, Navia AF. 2020.** *Styracura pacifica*. *The IUCN Red List of Threatened Species* 2020: e.T144163683A144164959. <https://doi.org/10.2305/IUCN.UK.2020-3.RLTS.T144163683A144164959.en>
- Lezama-Ochoa N, Hall M, Román M, Vogel N. 2019.** Spatial and temporal distribution of mobulid ray species in the eastern Pacific Ocean ascertained from observer data from the tropical tuna purse-seine fishery. *Environmental Biology of Fishes* 102: 1-17.
- Marshall A, Barreto R, Carlson J, Fernando D, Fordham S, Francis MP, Derrick D, Herman K, Jabado, RW, Liu KM, Rigby CL, Romanov E. 2022.** *Mobula birostris* (amended version of 2020 assessment). *The IUCN Red List of Threatened Species* 2022: e.T198921A214397182. <https://doi.org/10.2305/IUCN.UK.2022-1.RLTS.T198921A214397182.en>
- Palacios-Martínez GE. 2014.** Recomendaciones de manejo de la población del Tiburón Nodriz (*Ginglymostoma cirratum*), en la Reserva Natural Absoluta Cabo Blanco, Costa Rica. *Biocenosis* 28: 1-2.
- Pollom R, Avalos C, Bizzarro J, Burgos-Vázquez MI, Cevallos A, Espinoza M, González A, Herman K, Mejía-Falla PA, Navia AF, Pérez Jiménez JC, Sosa-Nishizaki O, Velez-Zuazo X. 2021.** *Ginglymostoma unami*. *The IUCN Red List of Threatened Species* 2021: e.T144151831A144151864. <https://doi.org/10.2305/IUCN.UK.2021-1.RLTS.T144151831A144151864.en>
- Rigby CL, Espinoza M, Derrick D, Pacoureaux N, Dicken M. 2021.** *Carcharhinus leucas*. *The IUCN Red List of Threatened Species* 2021: e.T39372A2910670. <https://doi.org/10.2305/IUCN.UK.2021-2.RLTS.T39372A2910670.en>
- RNACB-ACT-SINAC-MINAE. 2009.** Plan de manejo de la Reserva Natural Absoluta Cabo Blanco 2010-2014. Guanacaste: RNACB-ACT-SINAC-MINAE.