

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

MICHOACÁN COAST ISRA

Central and South American Pacific Region

SUMMARY

Michoacán Coast is located in the Mexican Central Pacific. It extends from the mouth of the Nexpa River in the east to the Maruata region in the west and is heavily influenced by river discharge. Combined with mixing produced by upwellings during late boreal spring (May-June), this discharge leads to an area that is highly productive. Common habitats within the area include sandy beaches, small estuaries, and rocky reefs. This area includes three Wetlands of International Importance (Ramsar sites), Playa de Maruata, Playa de Colola, and Playón Mexiquillo. Within the area, there are: **threatened species, reproductive areas, and feeding areas** (Scalloped Hammerhead *Sphyrna lewini*).

CRITERIA

**Criterion A - Vulnerability; Sub-criterion C1 - Reproductive Areas;
 Sub-criterion C2 - Feeding Areas**

| | |
|-----------------------------|---|
| — | — |
| MEXICO | — |
| — | — |
| 0-100 metres | — |
| — | — |
| 8,985 km² | — |
| — | — |





DESCRIPTION OF HABITAT

Michoacán Coast is located in the Mexican Central Pacific. It extends from the mouth of the Nexpa River in the east to the Maruata region in the west and is situated within the Pacific Central-American Coastal Large Marine Ecosystem. It is characterised by a very narrow continental shelf with sandy beaches, estuaries, and rocky reefs (Ramírez-Ortiz et al. 2011). This area is highly influenced by discharge from the Balsas, Nexpa, Mexcalhiacan, and Coahuayana rivers, that along with upwellings during late boreal spring, sustain high productivity (Toledo & Bozada 2002). Although the area is located in the tropics, it is under the influence of subtropical and temperate climatic regions. It is also subject to the influence of the Californian Current, the North-Equatorial Current, and the North-Equatorial Counter Current. Sea surface temperatures in the area range from 20°C in the winter to 32°C in the summer (Madrid et al. 1997; Anislado-Tolentino 2018). This area includes three Wetlands of International Importance (Ramsar sites), Playa de Maruata, Playa de Colola and Playón Mexiquillo (Ramsar 2022a, 2022b, 2022c).

This Important Shark and Ray Area is delineated from surface waters (0 m) to 100 m and is pelagic based on the overall vertical distribution of the Qualifying Species within 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 C1 - REPRODUCTIVE AREAS

Michoacán Coast is an important reproductive area for one shark species. The area around the mouth of the Nexpa River is reported as a nursery for Scalloped Hammerhead. Neonates with umbilical scars (44-55 cm total length [TL]) were regularly and predictably landed, mostly from May to July, between 1994 and 2004 (Anislado-Tolentino 2000, 2008). Size-at-birth is reported between 31-57 cm TL (Ebert et al. 2021), which overlaps with sizes of sharks caught in the area. Most of these neonates were captured in areas with depths of 5-50 m. Landings of neonates and juveniles represented 70% of total shark landings in the area. Additionally, pregnant females with full-term embryos are regularly recorded during the month of June. Recent studies indicate that neonates and juveniles (45-95 cm TL) of this species still dominate landings in the region (Anislado-Tolentino 2018; Arellano-Torres 2016).

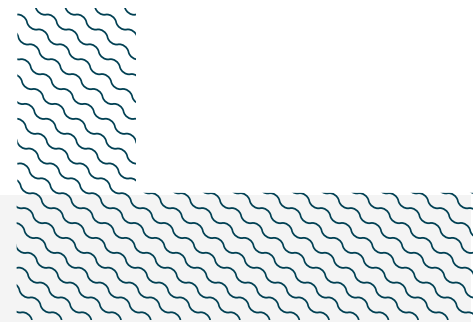
In addition, mating areas have been reported within the area around the Pichilinguillo and Majagua regions based on the presence of fresh mating scars in females caught at depths between 40-90 m during August and September from 1994 to 2004. This suggests that mating occurs immediately following parturition (Anislado-Tolentino 2000, 2008, 2018).

SUB-CRITERION C2 - FEEDING AREAS

Michoacán Coast is an important feeding area for one shark species. Adult male Scalloped Hammerheads who use the Mexcalhucan region, in the eastern part of the area, to feed at depths



between 10–60 m. Based on stomach content analysis (n = 150 full stomachs), it was determined that these animals feed mostly on triggerfish, snappers, rays, dolphinfish, tunas, and squids. Adult females distribute in the western part of the area and feed mostly between 40–100 m on smoothhounds *Mustelus* spp., Humboldt Squid *Dosidicus gigas*, and various rays. In the Maruata area, adult Scalloped Hammerheads also feed on sea turtles, which may be related to nesting activity of Green Turtle *Chelonia mydas*, and sailfish (Anislado-Tolentino 2000, 2008). Neonates (5–30 m depth) feed mostly on shrimps and small rays (Dwarf Round Ray *Urotrygon nana*). The presence of mangrove and seagrass suggest that these smaller individuals feed in these shallow habitats. Juveniles (40–80 m depth) feed mostly on squids, small rays, and snappers between Majahuita and Caleta de Campos. These prey are abundant when these life stages are present within the area (Anislado-Tolentino 2000, 2008).



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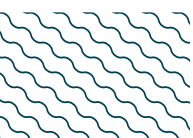
QUALIFYING SPECIES

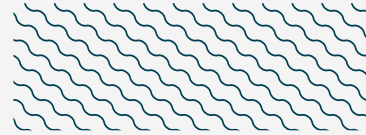
| Scientific Name | Common Name | IUCN Red List Category | Global Depth Range (m) | ISRA Criteria/Sub-criteria Met | | | | | | | | |
|-----------------------|----------------------|------------------------|------------------------|--------------------------------|---|----|----|----|----|----|----|----|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

SUPPORTING SPECIES

| Scientific Name | Common Name | IUCN Red List Category |
|----------------------------------|--------------------------|------------------------|
| SHARKS | | |
| <i>Carcharhinus limbatus</i> | Blacktip Shark | VU |
| <i>Carcharhinus obscurus</i> | Dusky Shark | EN |
| <i>Galeocerdo cuvier</i> | Tiger Shark | NT |
| <i>Nasolamia velox</i> | Whitenose Shark | EN |
| <i>Rhizoprionodon longurio</i> | Pacific Sharpnose Shark | VU |
| RAYS | | |
| <i>Aetobatus laticeps</i> | Pacific Eagle Ray | VU |
| <i>Gymnura marmorata</i> | California Butterfly Ray | NT |
| <i>Hypanus dipterus</i> | Diamond Stingray | VU |
| <i>Mobula munkiana</i> | Munk's Pygmy Devil Ray | VU |
| <i>Narcine entemedor</i> | Cortez Numbfish | VU |
| <i>Narcine vermiculatus</i> | Vermiculate Numbfish | LC |
| <i>Pseudobatos glaucostigmus</i> | Grey-spotted Guitarfish | VU |
| <i>Rhinoptera steindachneri</i> | Pacific Cownose Ray | NT |
| <i>Urobatis concentricus</i> | Bullseye Round Ray | LC |
| <i>Urobatis halleri</i> | Haller's Round Ray | LC |
| <i>Urotrygon nana</i> | Dwarf Round Ray | NT |
| <i>Urotrygon rogersi</i> | Rogers' Round Ray | NT |

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





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