Area Size

33,078 km²

Qualifying Species and Criteria

Greater Caribbean Manatee – *Trichechus manatus manatus*

Criterion A; B (2); C (1, 2)

Other Marine Mammal Species Documented

Balaenoptera edeni, Balaenoptera physalus, Feresa attenuata, Globicephala macrorhynchus, Grampus griseus, Kogia breviceps, Kogia sima, Megaptera novaeangliae, Mesoplodon densirostris, Mesoplodon europaeus, Orcinus orca, Physeter macrocephalus, Pseudorca crassidens, Stenella attenuata, Stenella frontalis, Stenella longirostris, Steno bredanensis, Tursiops truncatus, Ziphius cavirostris

Summary

The Coabana IMMA encompasses bays and coastal areas around the Cuban archipelago. About 50% of the Cuban shelf is covered by seagrass meadows. Together with the island's extensive system of over 600 rivers, the IMMA provides important feeding, breeding, and aggregating habitat for Endangered Greater Caribbean manatees (*Trichechus manatus manatus*), which are found in multiple hotspots around the islands inland and coastal waters.

Coabana IMMA

Description:

The Cuban archipelago is located in the Wider Caribbean region with boundaries to the Gulf of Mexico, the Atlantic Ocean and the Caribbean Sea. The archipelago shelf is 67,831 km² and the EEZ is 351,000 km² (Claro et al., 2001). This is the largest archipelago in the Caribbean Sea, comprising about 4000 islands and cays, with the highest marine biodiversity in the region (Roman, 2018). The primary coastal marine ecosystems include coral reefs, hard non-reef bottoms, sandy and muddy bottom habitats, seagrass beds, mangroves, coastal lagoons and estuaries, and beaches with significant inputs of freshwater systems across the archipelago (Roman, 2018). About 50% of the Cuban shelf is covered by seagrass meadows (Martinez-Daranas et al., 2018). The abundance of Cuban seagrasses varies across different areas of the shelf, but *Thalassia testudinum* is the most common and climax species. Other species, usually with lower biomass, include *Syringodium filiforme*, *Halodule wrightii*, *Halophila decipiens*, *Halophila engelmannii*, *Halophila ovalis*, *Halophila baillonis*, and *Ruppia maritima* (Martinez-Daranas et al., 2018). Climatic conditions are characterised by a bimodal regime of precipitation, with rainy (April-October) and dry seasons (November-March). A group of protected areas with significant marine components have been internationally recognized, three have been recognized as Biosphere Reserve, two as both, Biosphere Reserve and RAMSAR site, three as RAMSAR sites, and two as Unesco Natural Heritage.

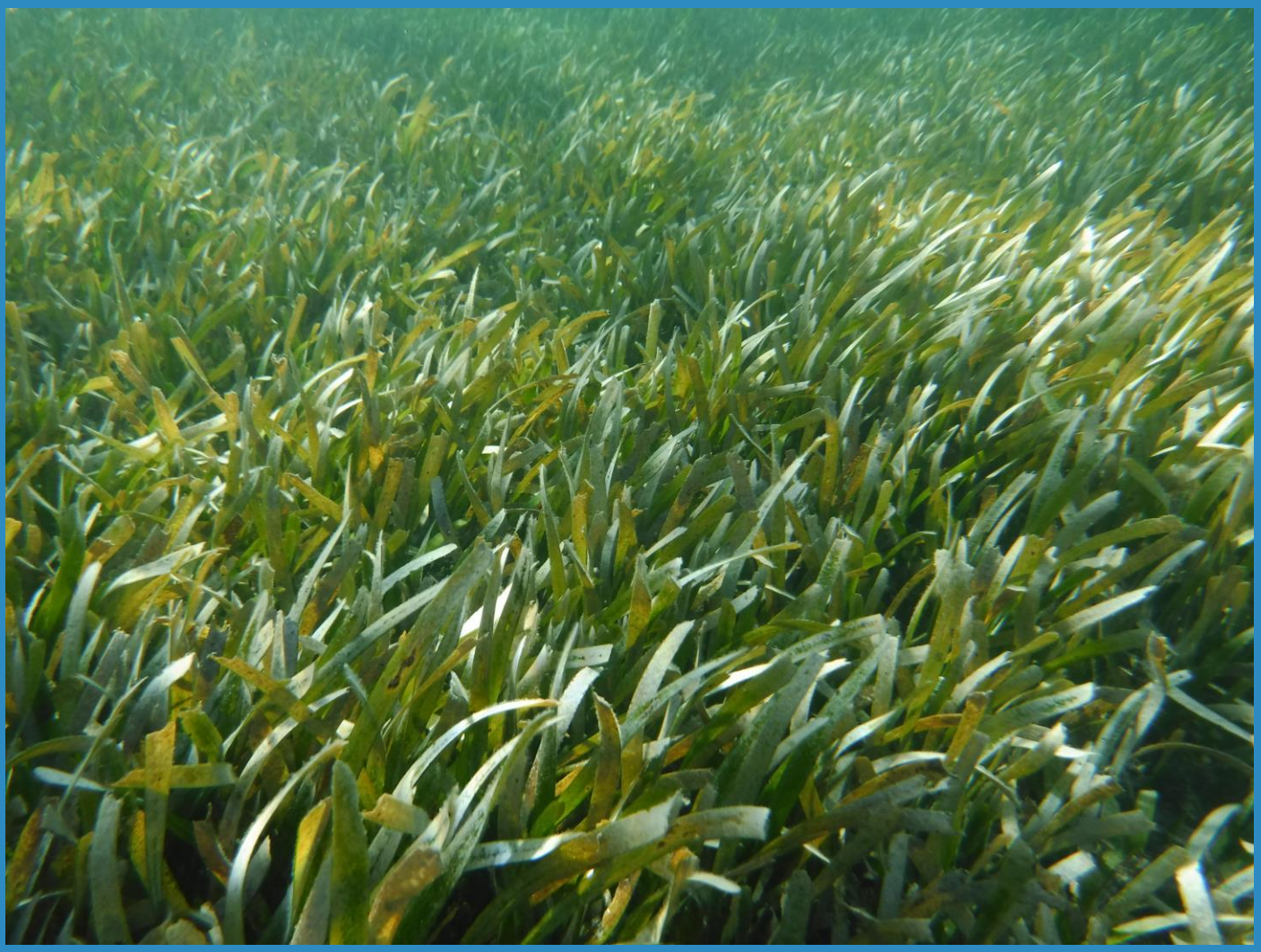

Figure 1: Seagrass meadows in Coabana IMMA. Photo credit: Anmari Alvarez.

Figure 2: Greater Caribbean manatee (*Trichechus manatus manatus*) surfacing in Coabana IMMA. Photo credit: Leonardo Espinosa.

Criterion A: Species or Population Vulnerability

The West Indian manatee (*Trichechus manatus*) has a broad distribution throughout the West Atlantic, Caribbean, and coastal Central and South America (Lefebvre et al., 2001). The species is assessed as "Vulnerable" (Deutsch & Morales-Vela, 2024) while the subspecies, the Greater Caribbean manatee (*Trichechus manatus manatus*) is classified as "Endangered" on the IUCN Red List of Threatened Species (Morales-Vela et al., 2024).

Criterion B: Distribution and Abundance Sub-criterion B2: Aggregations

Greater Caribbean manatees once occupied much of Cuba's coastal habitat, with significant concentrations near numerous river mouths and associated to seagrass beds (Cuni, 1918; Lefebvre et al., 2001; Alvarez-Aleman et al., 2018a). The species can be found island-wide, but based on results obtained through fisheries interviews, aerial surveys, telemetry and boat surveys, higher levels of occurrences are detected in at least 20 areas across the archipelago. Aerial surveys with flight hours ranging from 4.8 to 9.5 hours conducted between 1985 and 1992 in southern Matanzas and Sancti Spiritus provinces recorded between 20 and 59 manatees (Alvarez-Aleman et al., 2018a). Moreover, boat-based surveys in Ciénaga de Lanier, southwest Cuba, from 2007 to 2013, detected manatees on 47% of survey days and 96% of trips, with 133 manatees observed in 93 sightings at a rate of 0.2 sightings per hour. The study concluded that the Ciénaga de Lanier Wildlife Refuge offers essential resources for manatees, such as springs, mangrove creeks, fresh water, feeding areas, and thermal refuges. Other Boat surveys in Desembarco del Granma, Granma Province, and off Cayo Levisa, Pinar del Río Province, involved over 800 hours and 8-18 hours of effort, respectively. Encounter rates during these surveys ranged from 0.05 to 1.8 manatee encounters per hour.

Figure 3: Seagrass and mangroves in Coabana IMMA. Photo credit: Noel Lopez.

Figure 4: A pair of Greater Caribbean manatee (*Trichechus manatus manatus*) observed in Coabana IMMA. Photo credit: Jimmy White.

Preliminary studies of manatee habitat use in Cuba, conducted between 2012 and 2015 in Guantanamo Bay and Isla de la Juventud, tracked the movement of eight and three GPS-tagged manatees, respectively. In Guantanamo, manatees remained within 50 km of the coastline, moving between the bay and Guantánamo River for fresh water, while on Isla de la Juventud, a female and mother-calf pair stayed within 25 km along the western coastline, and a male travelled up to 50 km, including areas near San Felipe Keys and Punta Frances. While these survey methods have indicated that manatee distribution may be patchy and concentrated in specific 'hotspots' across the archipelago (Alvarez-Aleman et al., 2018a), genetic studies indicate a non-panmictic population, with regular gene flow occurring across the western portion of the archipelago and low connectivity between the south-eastern Guantanamo Bay region and the western portion (Alvarez-Aleman, 2019).

Criterion C: Key Life Cycle Activities Sub-criterion C1: Reproductive Areas

The presence of calves and mother-calf resting behaviour have been observed in Siguanea Gulf, Isla de la Juventud which indicated suitable reproductive habitat that provides protection and resting areas to mothers and new-born calves (Alvarez-Aleman et al., 2016). In this portion of the IMMA, mother/calf pairs were observed during seven of the 26 survey trips, but during the last 3 years of surveys mother/calf pairs were observed during 63% of the trips (Alvarez-Aleman et al., 2016). Additionally, mother-calf pairs have opportunistically been reported across the Cuban archipelago and through stranding reports (Alvarez-Aleman et al., 2018a). Furthermore, opportunistic observations of mating herds have been recorded from the Zapata Peninsula.

Sub-criterion C2: Feeding Areas

About 50% of the Cuban shelf is covered by seagrass meadows (Martinez-Daranas et al., 2018). The abundance of Cuban seagrasses varies across different areas of the shelf, but *Thalassia testudinum* is the most common species. Other species, usually with lower biomass, include *Syringodium filiforme*, *Halodule wrightii*, *Halophila decipiens*, *Halophila engelmannii*, *Halophila ovalis*, *Halophila baillonis*, and *Ruppia maritima* (Martinez-Daranas et al., 2018).

Cuba's extensive coastal habitats with seagrass beds and over 600 rivers could, in theory, support a considerable number of the Greater Caribbean manatees (Alcolado, 2006; Baisre & Arboleya, 2006). Seagrass species that are frequently observed in the digestive tract contents of manatees, or in association with observations of the animals include *Thalassia*, *Syringodium*, *Halophila*, and *Halodule*. In some areas of the archipelago, *Halodule* is preferred to other marine seagrass species (Alvarez-Aleman, 2010; Navarro et al., 2014). Alvarez-Aleman et al. (2016) observed feeding behaviour in 10 % of the sightings recorded in Isla de la Juventud, in areas dominated by *Thalassia testudinum*, with some patches of *Halodule wrightii.*

Supporting Information

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Acknowledgements

We would like to thank the participants of the 2024 IMMA Regional Expert Workshop for the identification of IMMAs in the North West Atlantic Ocean and wider Caribbean region. Funding for the identification of this IMMA was provided by the Water Revolution Foundation, with additional funding and collaboration from the Sargasso Sea Commission, OceanCare and Animal Welfare Institute. Essential administrative support was given by Tethys Research Institute and Whale and Dolphin Conservation.

Suggested Citation: IUCN-MMPATF (2025) Coabana IMMA Factsheet. IUCN Joint SSC/WCPA Marine Mammal Protected Areas Task Force, 2025.

PDF made available for download at ***https://www.marinemammalhabitat.org/factsheets/coabana-imma/***