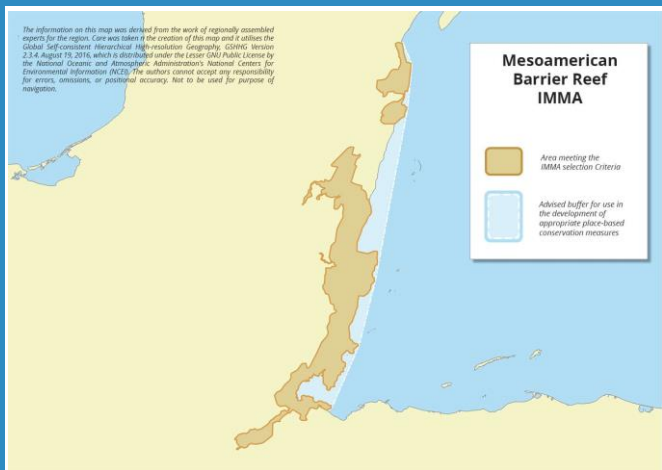




Area Size

16,425 km²

Qualifying Species and Criteria

Greater Caribbean Manatee –

Trichechus manatus manatus

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

Other Marine Mammal Species Documented

Tursiops truncatus

Summary

The Mesoamerican Barrier Reef IMMA encompasses critical habitats for the Endangered Greater Caribbean manatee (*Trichechus manatus manatus*) along the Caribbean coasts of Mexico, Belize, and Guatemala, including coastal lagoons, riverine systems, and the Mesoamerican Barrier Reef itself. This area supports the largest and most significant populations of the Greater Caribbean manatees throughout the species' range. Approximately 1,500 Greater Caribbean manatees (25% of the subspecies) inhabit this region year-round, making it a stronghold for the species. They are known to aggregate in groups ranging from dozens to hundreds throughout the IMMA, especially in areas abundant with seagrasses and freshwater sources. These aggregations occur in key locations such as the Sian Ka'an Biosphere Reserve (Mexico);

Mesoamerican Barrier Reef IMMA

Summary, continued.

the Drowned Cayes, Southern Lagoon, Corozal Bay, Placencia Lagoon and Turneffe Atoll (Belize); and Bahía de Amatique (Guatemala). The manatees rely on this IMMA for feeding on various seagrass species—including *Thalassia testudinum*, *Syringodium filiforme*, and *Halodule* spp.—as well as freshwater plants and algae. The region is also crucial for reproduction, with long-term studies documenting the presence of mothers and calves of all ages throughout the area.

Description:

The Mesoamerican Barrier Reef IMMA extends 550 km lengthwise parallel to the coast and is located along the Caribbean Sea coast of Mexico, Belize, and Guatemala. It extends to the 25 m isobath along the barrier reef and encompasses the Mesoamerican Barrier Reef from Campeche Lagoon in Quintana Roo, Mexico, the coast of Belize, the Gulf of Honduras in Guatemala, including marine habitats and the coastal lagoon and riverine systems (Figure 1). The area encompasses numerous marine protected areas and reserves, including but not limited to: the Sian Ka'an Biosphere Reserve at the northern point of the cIMMA; Turneffe Atoll Marine Reserve in the offshore waters of Belize, the transnational Santuario del Manatí, Bahía de Chetumal (Mexico)/Corozal Bay Wildlife Sanctuary (Belize); Swallow Caye Wildlife Sanctuary (Belize); South Water Caye Marine Reserve (Belize); Hol Chan Marine Reserve (Belize); Nacional Rio Dulce National Park (Guatemala) and Refugio de Vida Silvestre Punta de Manabique (Guatemala).

Criterion A: Species or Population Vulnerability

The West Indian manatee (*Trichechus manatus*) is red-listed globally as Vulnerable (Deutsch et al., 2008), while the Greater Caribbean subspecies (*Trichechus manatus manatus*) which occurs in this IMMA is listed as Endangered (Morales et al., 2024) (Figure 1).

Criterion B: Distribution and Abundance

Sub-criterion B2: Aggregations

The Mesoamerican Barrier Reef IMMA hosts the highest numbers of Greater Caribbean manatees found throughout the species' entire range (Self-Sullivan & Mignucci, 2012). The total estimated manatee population across the Mexican Caribbean, Belize, and Guatemala is approximately 1,500 individuals, representing up to 25% of the entire subspecies (Quintana-Rizzo & Reynolds, 2010; Castelblanco-Martínez et al., 2012; SEMARNAT, 2020). Manatees are distributed in the coastal waters of the IMMA, including the inshore lagoons and riverine systems, and, somewhat unusually for the species, marine habitats from Mexico to Guatemala (Morales-Vela et al., 2000; Auil, 2004; Galves et al., 2023a; LaCommare et al., 2008; LaCommare et al., 2012; Castelblanco-Martínez et al., 2012). In Belize, manatees inhabit areas as far offshore as the Turneffe Atoll in Belize (Edwards et al., 2014), which hosts a population that regularly migrates to and from the mainland coast across deep water east of the barrier reef (Castelblanco et al., 2013b). Manatees are known to aggregate in dozens to hundreds year-round in core areas throughout the IMMA including Southern Lagoon, Placencia Lagoon, and Chetumal Bay with evidence from multiple years of transnational aerial surveys covering the IMMA (Unpublished aerial surveys; Castelblanco-Martínez et al., 2013; Morales-Vela & Bahena-Basave, 2022;

Auil, 2004; Galves et al., 2023a, 2023b). Manatees throughout the IMMA are dependent on seagrasses and freshwater from inland water bodies, rivers, and underwater sinkholes (Morales-Vela et al., 2000; Allen et al., 2008; Castelblanco-Martínez et al., 2013, SACD Annual Report, 2019; Gagnon, 2023). Manatees prefer areas with freshwater availability, and the IMMA includes major freshwater sources used by manatees including sinkholes (Gagnon, 2025) and the middle and low reaches of rivers such as Hondo River (Castelblanco-Martínez et al., 2013; Corona-Figueroa et al., 2021; Callejas-Jiménez et al., 2021), Belize River (Castelblanco-Martínez et al., 2013, Galves et al., 2023a), and others (Figure 2).

Criterion C: Key Life Cycle Activities

Sub-criterion C1: Reproductive Areas

Long-term studies support the presence of reproductive populations of Greater Caribbean manatees throughout the IMMA including manatee mothers and calves of all ages found throughout the region (Quintana-Rizzo, 1993; Self-Sullivan et al., 2003; Galves et al., 2023; Ramos et al., 2024; Quintana-Rizzo et al., 2023; Castelblanco-Martínez et al., 2018; Morales-Vela & Bahena-Basave, 2022). Reproduction appears to occur year-round given the occurrence of numerous orphaned calves of different ages including newborns, typically found stranded or in inland canals along the coast of Belize and Mexico (Galves et al., 2023a; Castelblanco-Martínez, Unpublished data). Additionally, Self-Sullivan et al. (2008) reported increased movements of male manatees across reef habitats in Belize suggesting the possibility of peak reproductive periods in the region.

Sub-criterion C2: Feeding Areas

Antillean manatees inhabiting the IMMA are dependent on various species of seagrasses for their



Figure 1: A mother-calf pair of the endangered Greater Caribbean manatees (*Trichechus manatus manatus*) observed in the Sian Ka'an Biosphere Reserve (Mexico)—an essential reproductive and conservation area for the species. Photo credit: Karen Flores



Figure 2: Mouth of the Hondo River (Mexico/Belize), one of several rivers flowing into the Caribbean in the Mesoamerican region, is an important feeding area and source of freshwater for manatees. Photo credit: Humberto Bahena Basave



Figure 3: A *Thalassia testudinum* seagrass bed in Punta de Manabique Wildlife Refuge (Guatemala). Seagrasses serve as the primary food source for manatees in this region. Photo credit: Victor Gudiel

survival, including *Thalassia testudinum*, *Syringodium filiforme*, and *Halodule* spp; and a variety of algae and plants from estuarine and freshwater environments (Castelblanco-Martínez et al., 2009; Flores-Cascante et al., 2013; Allen et al., 2018; Ramos et al., 2024; Garcés-Cuartas, 2025). Different areas including Sian Ka'an Biosphere Reserve (Mexico, Castelblanco-Martínez, 2018), Southern Lagoon (Belize, for its abundant *Halodule* spp: Unpublished aerial surveys; Galves et al., 2023a), Placencia Lagoon (Belize, Unpublished aerial surveys; Ramos et al., 2024), Turneffe Atoll (Belize, Edwards et al., 2014), and Bahía de Amatique (Guatemala; Quintana-Rizzo, 1993; Arrivillaga & Baltz, 1999) support large expanses of seagrass beds on which manatees feed (Quintana-Rizzo et al., 2023; Ramos et al., 2024) (Figure 3).

Supporting Information

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