

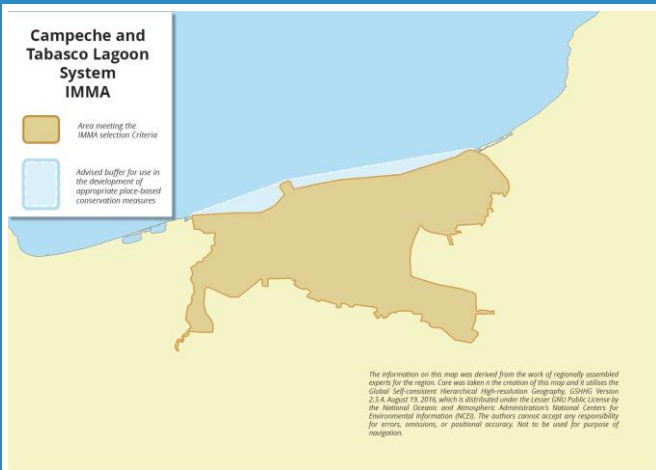
Campeche and Tabasco Lagoon Systems IMMA

Description:

This IMMA encompasses the largest coastal lagoon systems in Mexico. These are situated along the southern coast of the Gulf of Mexico. It is shallow, averaging between 3 and 5 m in depth, extending to 12 – 14 m deep in the mouth that connects to the Gulf. The physical-chemical properties of the water vary drastically due to seasonal fluvial discharges (i.e., strong temperature, salinity, nutrient and oxygen gradients) (Delgado-Estrella, 2002; García-González, 2015). Extensive mangroves over the margins of the main lagoon form channels and smaller lagoons, produce large amounts of organic matter and provides protection, nesting, feeding and reproduction areas for fish of both marine and freshwater origin, as well as reptiles, amphibians, insects and birds. Furthermore, these are "Priority Marine Regions for Biodiversity Conservation in Mexico", and the Centla Swamps–Terminos Lagoon is a Biosphere reserve and in 1994 this area was declared a Protected Natural Area, since it supports high biodiversity and species richness (DOF, 1994; INE, 1997).

Criterion A: Species or Population Vulnerability

The Antillean, or Greater Caribbean manatee (*Trichechus manatus manatus*) inhabits coastal areas along the Mexican states of Tamaulipas, Veracruz, Tabasco, and the Bay of Campeche (Olivera-Gómez et al., 2022). It is considered Endangered (EN) on the IUCN Red List of Threatened Species (Morales-Vela et al., 2024). This species is considered Endangered under the Mexican Official Norm (SEMARNAT, 2010),



Area Size

18,909 km²

Qualifying Species and Criteria

Greater Caribbean Manatee –

Trichechus manatus manatus

Criterion A; B (1); D (1)

Common Bottlenose Dolphin – *Tursiops truncatus*

Criterion B (2)

Summary

The Campeche and Tabasco Lagoon Systems IMMA is located in the Southern Gulf of Mexico. It is the largest lagoon system in Mexico. It encompasses estuarine and shelf habitats with strong seasonal gradients in water properties influenced by high nutrient inputs from river discharges that are supporting high diversity of species. This IMMA hosts resident populations of the Antillean, or Greater Caribbean manatee (*Trichechus manatus manatus*), including a unique riverine ecotype of this Endangered species. The area also hosts large aggregations of bottlenose dolphins (*Tursiops truncatus*) are found in this area in great numbers throughout the year, with well-known nursing and feeding grounds. Terminos Lagoon and its surroundings were declared a protected natural area with the status of Flora and Fauna Protection Area for its diversity and ecological richness.



Figure 1: Common bottlenose dolphin (*Tursiops truncatus*) leaping out of the water in Terminos Lagoon. The bridge is the representative landmark of this area. Photo credit: Eduardo Morteo.

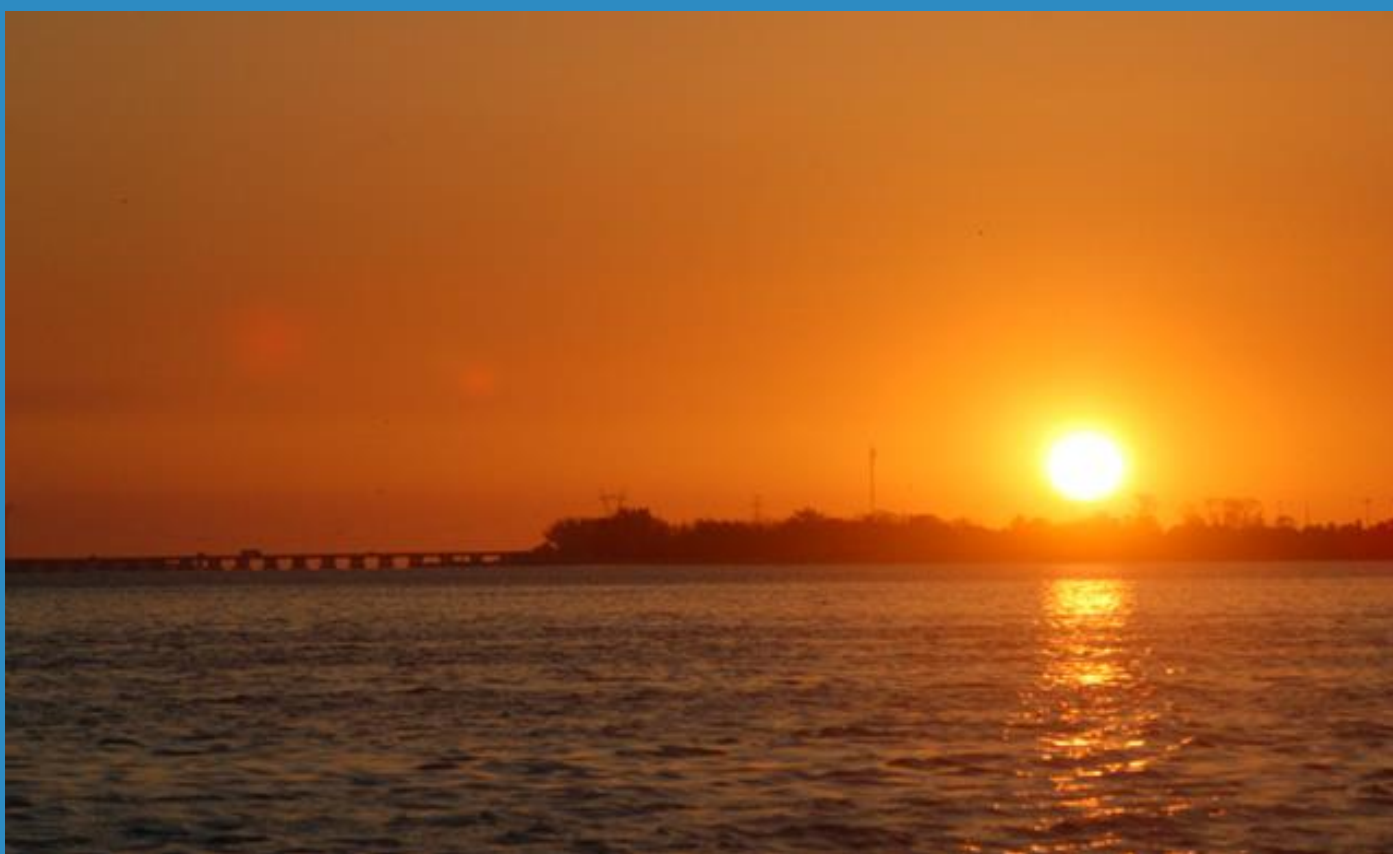


Figure 2: The Zacatal Bridge in Terminos Lagoon during sunset. Photo credit: Eduardo Morteo.

with documented local extirpations in the northern Gulf of Mexico, possibly attributed to the increase of human activities (Serrano et al., 2007). In Mexico, there are three key Greater Caribbean manatee distribution areas: 1) the region of rivers and estuaries in the state of Veracruz (the only remaining population with a northern distribution mainly in the central and southern parts of the state), 2) the region of the hydrological basins of the Grijalva and Usumacinta rivers in Tabasco and Chiapas and southern Campeche (particularly in the Terminos Lagoon and the Palizada, Candelaria, and Chumpán rivers), and 3) the Caribbean coastal region from Holbox to the Hondo river in Quintana Roo. (SEMARNAT, 2020).

Criterion B: Distribution and Abundance

Sub-criterion B1: Small and Resident Populations

This IMMA covers the Grijalva and Usumacinta river basins in Tabasco and southern Campeche, including the Terminos Lagoon and the Palizada, Candelaria, and Chumpán rivers which host a significant proportion of Mexico's manatee populations (SEMARNAT, 2020). The south-eastern portion of Pantanos de Centla Biosphere Reserve, known "los Bitzales" hosts some of the highest concentrations of manatees (Olivera-Gómez et al., 2022) along with the Grijalva-Usumacinta River basins and San Pedro Martir River (Puc-Carrasco et al., 2017). An isolated population of about 24 manatees (CV of 16 -24%) is confined within Laguna de las Ilusiones, Tabasco, a landlocked lake (Pérez-Garduza et al., 2023). This IMMA covers all these riverine and lagoon systems with abundant and diverse flora, including submerged, emergent, floating, and riverbank vegetation that provide nourishment for manatees (Pablo-Rodríguez et al., 2015).

Riverine manatees are opportunistic herbivorous

mammals adapted to the seasonal dynamic of the region, including major fluctuations of water levels between dry and wet seasons (Pablo-Rodríguez et al., 2016). Individuals from inland populations may move along the coast from one area to another (Olivera-Gómez et al., 2022). However, there is no evidence that manatees from this area travel to the northern Gulf of Mexico or towards the Caribbean (Deutsch et al., 2022).

Sub-criterion B2: Aggregations

Bottlenose dolphins (*Tursiops truncatus*) inhabiting the Terminos Lagoon System are highly abundant, with an estimated 3,484 individuals during 1989-1999, and 2,912 individuals during 2005-2008, of which less than 10% exhibit long term site fidelity (Delgado-Estrella, 2015; García-González, 2015). Long-term data indicates there is a large aggregation of individuals that visit the lagoon occasionally or seasonally, as the lagoon provides them with prey throughout the year (Delgado-Estrella, 2002; García-González, 2015). This is also a well-known nursing and breeding area for this species (Delgado-Estrella, 2002).

Criterion D: Special Attributes

Sub-criterion D1: Distinctiveness

Greater Caribbean manatees in Mexico are separated into two clusters with low genetic diversity- one in the Gulf of Mexico and the other in the Mexican Caribbean (Nourisson et al., 2011). This IMMA contains the unique Gulf of Mexico population of the riverine ecotype of *Trichechus manatus manatus* with the lowest documented genetic diversity (probably due to a combination of founder and bottleneck effects) (Nourisson et al., 2011). The riverine manatee ecotype of this subspecies found in this region is consistently thinner and lighter in mass than its coastal counterparts, even those from nearby countries (Castelblanco-Martínez et al., 2022).

Supporting Information

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Acknowledgements

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**MARINE MAMMAL
PROTECTED AREAS
TASK FORCE**

IMMA

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<https://www.marinemammalhabitat.org/factsheets/campeche-and-tabasco-lagoon-system-imma/>