

# The Dugong

“The dugong, known as the sea cow, is a primarily **herbivorous marine mammal**. With its unique appearance, this species has captivated the collective imagination for centuries, inspiring the myth of mermaids.

Due to increasing pressures, including hunting, habitat loss, and pollution, this species is now **endangered**. Let's learn more about dugongs and the efforts being made to preserve this species !

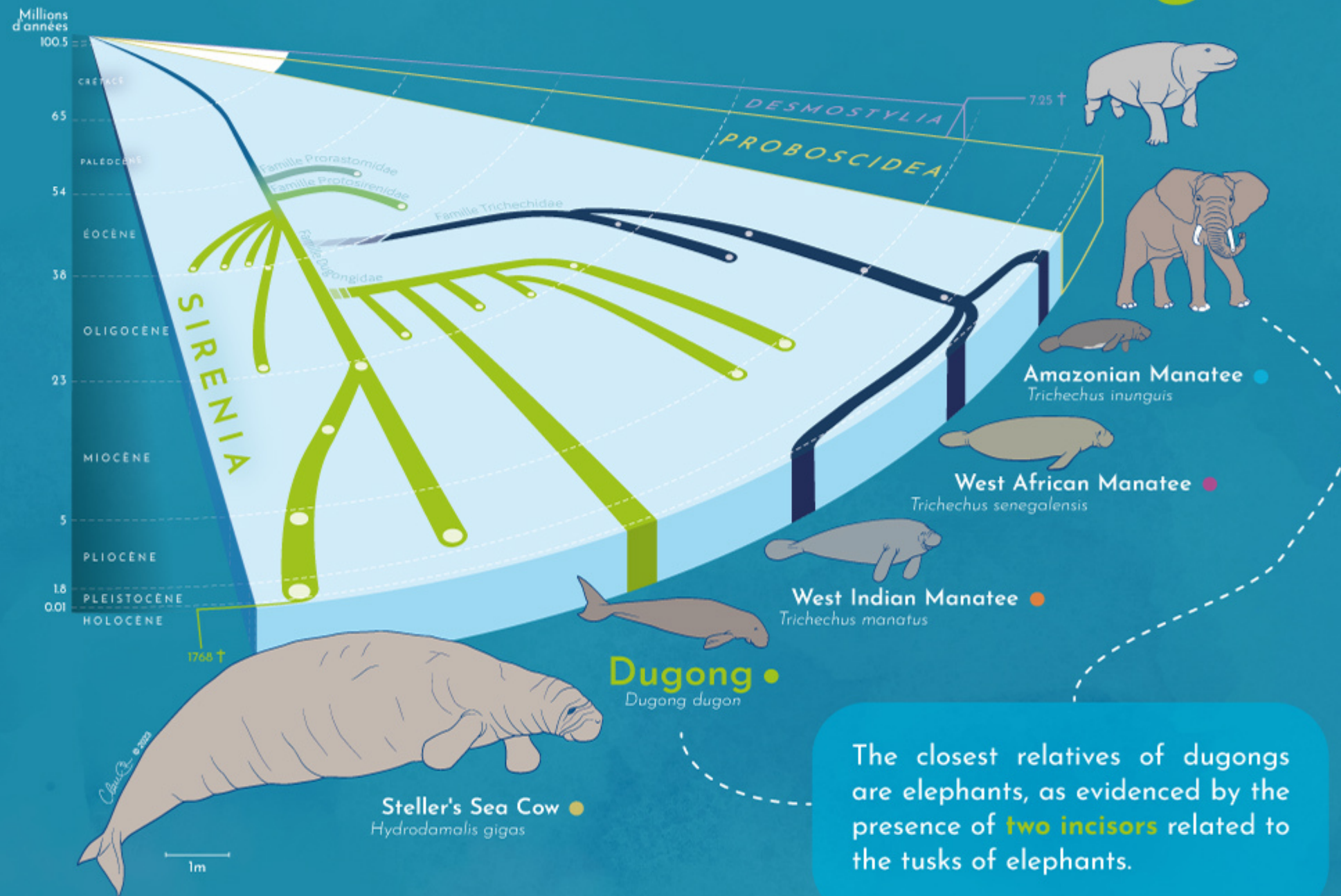
In the Southwest Indian Ocean, several stakeholders are actively working to conserve this species. This exhibition is the result of collaborations between the Seychelles Islands Foundation, Bazaruto Archipelago National Park / Africans Parks, Mohéli National Park, the University of Tuléar, and les Naturalistes de Mayotte.



Claudia  
2023

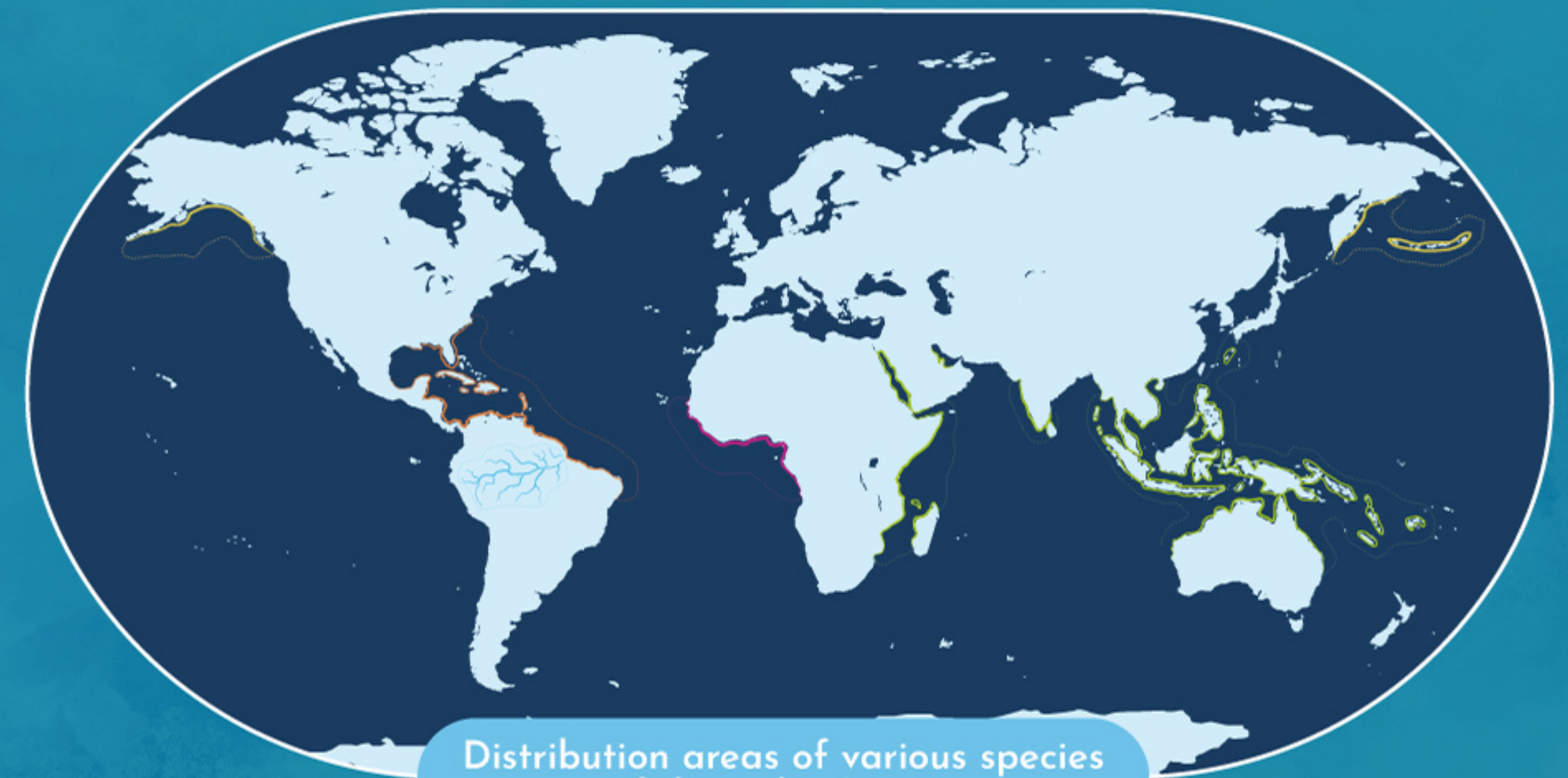


# The Dugong Phylogeny



The closest relatives of dugongs are elephants, as evidenced by the presence of **two incisors** related to the tusks of elephants.

**Phylogeny** is the study of the relationships between living organisms. It allows us to trace the evolutionary history of species back to a common ancestor.



Distribution areas of various species of the order Sirenia

Dugongs and manatees are **herbivorous marine mammals**; however, dugongs are strictly marine, while manatees can live in both freshwater and marine environments. The primary morphological feature that distinguishes them is the **caudal fin**.

The caudal fin of the manatee is rounded and flat, whereas that of dugongs is similar to that of cetaceans.



Manatee



Dugong



# The Dugong Morphology



To differentiate between a female and a male dugong, one must examine the **ventral side**. The distance between the genital slit and the anal slit is greater in females.

Both sexes have nipples located beneath the pectoral fins. They are more developed in nursing females. In males, the penis is retractable.

Absence of a **dorsal fin**

3 meters

450 kg

Developed lips with numerous short **sensory vibrissae**

**Scars** from friction with the substrate and interactions between individuals

A **pair of nostrils** used for surface breathing  
The average dive time for a dugong is 8 minutes

**Caudal fins** with a notch resembling those of cetaceans  
Cruise speed is **6 km/h**  
Top speed is **20 km/h**

1,2 meter

30 kg



Presence of **2 tusks** in the skull





# The Dugong Distribution Range



The Convention on the Conservation of Migratory Species of Wild Animals (CMS) is a United Nations environmental treaty (UNEP).

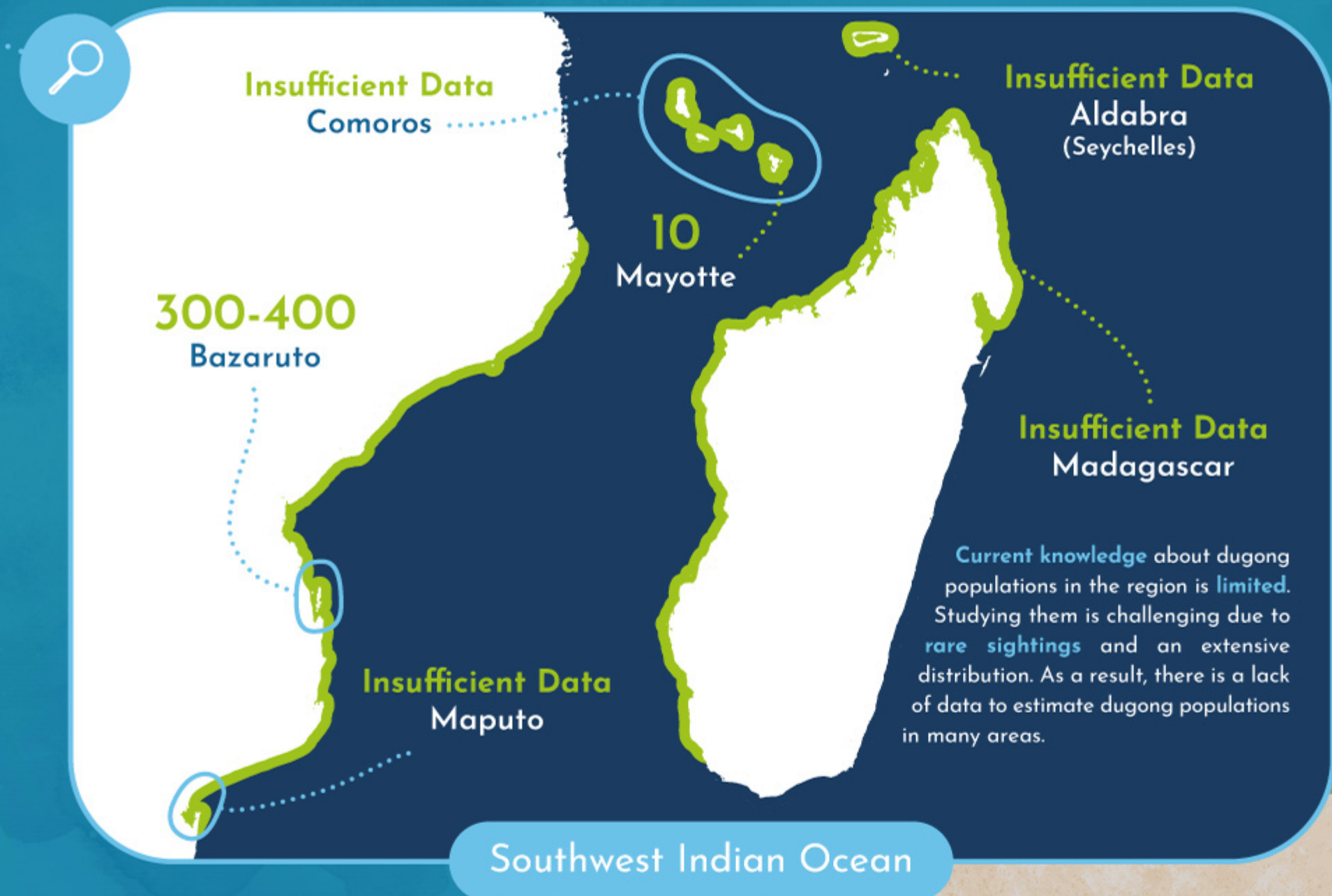
Under this convention, there is a specific Memorandum of Understanding (MOU) aimed at promoting coordinated international actions to ensure the long-term survival of dugongs and their habitats, the **Dugong MOU**. This agreement entered into force on October 31, 2007, in Abu Dhabi, Mozambique, the Comoros, Madagascar, the Seychelles, and France are among the 27 signatory countries.



“In the Southwest Indian Ocean, it is believed that the **last viable population** of dugongs can be found in Bazaruto, Mozambique. This situation highlights the importance of better understanding the connections and movements between these populations.

Ancient **biological samples** have been analyzed to study the relationships between dugong populations in the region<sup>1</sup>. The results have revealed that the populations of Madagascar and the Comoros were **isolated** from other groups. This suggests that these populations have limited exchanges with other dugong groups. In contrast, East African populations showed **low genetic diversity**, suggesting some connectivity among them and potential movements between territories.

A new study aims to use advanced molecular genetic techniques to better assess the genetic structure and diversity of dugong populations in the western Indian Ocean



Current knowledge about dugong populations in the region is **limited**. Studying them is challenging due to **rare sightings** and an extensive distribution. As a result, there is a lack of data to estimate dugong populations in many areas.

<sup>1</sup> Pless, S., Thakur, V., Poiré, L., Lavery, S.D. 2019. Phylogeography of the dugong (*Dugong dugong*) based on historical samples of the Southwest Indian Ocean. *Ocean Science* 14(1): 4019-4029



# The Dugong Marine Seagrass Meadows

Marine seagrass meadows are vast **underwater grasslands** composed of flowering plants known as **marine phanerogams**. These meadows serve as habitats and the **primary food source** for dugongs. By grazing on the seagrass, the species promotes vegetation renewal, contributes to the maintenance of seagrass beds, and increases the diversity of underwater meadows.

In interaction with mangroves and coral reefs, marine seagrass meadows hold **various ecological benefits**! For many marine species, they provide refuge from predators, feeding areas, breeding grounds, and nurseries.

They also contribute to the **well-being of populations** by providing protection against coastal erosion, sediment stabilization, coastal water filtration, and atmospheric carbon sequestration, among other functions.



Seagrass meadows can be categorized into **intertidal** seagrass meadows found at shallow depths and **subtidal** seagrass meadows located at a depth of over 10 meters.

Unlike algae, marine phanerogams share **similarities with terrestrial plants**, including leaves, roots, conducting tissues, and seeds adapted to marine conditions.

Dugongs leave very recognizable **traces of herbivory**! They feed by leaving behind a characteristic trail in the seagrass beds. These trails can be compared to the path left by a lawnmower.

These fragile ecosystems are subject to numerous **threats**...



Anchoring



Sedimentation



Climate change



Trampling



Pollution





# The Dugong Biological Cycle

Dugongs are characterized by **slow growth** and can live up to **70 years**. Their reproductive process is also slow, with only one offspring carried by the female during a long gestation period. These biological traits limit their ability to recover quickly from environmental pressures or losses within their populations, making dugongs extremely **vulnerable** to external threats.

