

## STATUS OF MARINE MAMMALS IN THE GUADELOUPE ISLANDS

What is the state of the archipelago's marine biodiversity?

### OBJECTIVE OF INDICATOR

This indicator aims to provide a state of knowledge about marine mammals present in the maritime areas of Guadeloupe, to report their conservation status, and to outline preservation measures implemented.

Marine mammals include cetaceans (dolphins, whales, ...), pinnipeds (sea lions, seals, walruses), sirenians (dugongs and manatees), sea otters and even... polar bears!

Today, only cetaceans remain resident in Guadeloupean waters. As emblematic species at the top of the food chain, they are key indicator species for assessing the ecological status of marine ecosystems and monitoring the overall state of the marine environment.

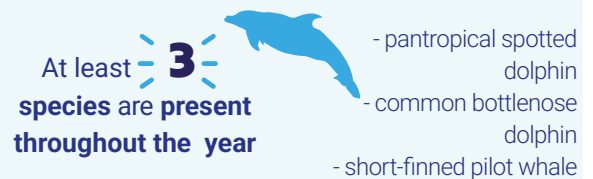
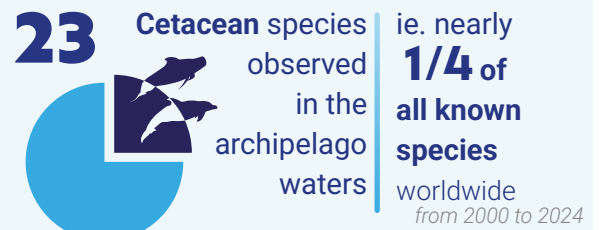
Multiple stakeholders (associations and public institutions) have been working together for many years to improve knowledge about marine mammals in Guadeloupe. Furthermore, cooperation with neighbouring territories has enabled the implementation of regional projects and programmes that improve the understanding of the populations and movements of these animals in the Caribbean region.



▲ Group of Fraser's dolphins

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### SUMMARY RESULTS



**ALL** marine mammal species are protected at the national level

Decree of July 1st, 2011, establishing the list of marine mammals protected on national territory specifying the regulations for their protection

Out of the 18 species listed on the local IUCN Red List of Threatened Species (2021)

**2** species are **extinct** :  
the Caribbean monk seal (globally) and the manatee (regionally extinct in Guadeloupe)

**1** species is **endangered** :  
the sperm whale

# CONTEXT

The West Indies arc hosts **highly diverse marine environments** and represents a major area for **many marine mammal species that spend all or part of their life cycle there** for reproduction, breeding, feeding, and socialisation. The **preservation of Caribbean waters is crucial for their survival**, as they face many pressures from human activities (collisions, disturbance, pollution, bycatch, hunting, etc.).

In Guadeloupe, **most of the current knowledge focuses on the leeward coast**, which offers more favourable environmental and climatic conditions for observing marine mammals than the Atlantic coast. The lack of data on many species makes it difficult to assess the status of their populations. **Regular monitoring and continued efforts to improve knowledge are therefore essential to ensure the effective and long-term conservation of marine mammals and their habitats.**

# RESULTS

## 1. State of knowledge

### 1.1. Stakeholders involved in the study and protection of marine mammals

- 1992** Creation of the **Évasion Tropicale** non-profit organisation, specialised in the study, survey and protection of cetaceans and sea turtles.
- 2008** Creation of the **Marine Mammal Observatory of the Guadeloupe Archipelago (OMMAG)**, a citizen science network made up of involving a broad public likely to encounter cetaceans around the archipelago.
- 2011** Creation of the **Mon école, Ma Baleine** non-profit organisation, which aims to raise awareness about cetaceans in order to better protect them and preserve their habitat.
- 2015** Creation of the **BREACH Antilles** non-profit organisation which supports scientific missions related to the observation of marine mammals in the Antilles.
- 2020** Creation of the **Caribbean Cetacean Society (CCS)**, which works to improve knowledge about cetaceans throughout the Caribbean.

◀ **Figure 1:** Non-profit organisations related to marine mammals in Guadeloupe

A wide range of stakeholders across the territory are working to **improve knowledge, environmental education and conservation.**

In addition to regular monitoring in Guadeloupean waters, temporary missions have contributed to **enhancing knowledge for over 25 years.**

### Milestones of the main monitoring programmes and management measures

- 1987** Creation of the **Grand Cul-de-sac Marin National Nature Reserve**
- 1990** Management of the reserve entrusted to the **Guadeloupe National Park**, created in 1989
- 1995** Ministerial decree of 27 July 1995 establishing the **list of marine mammals protected on national territory (France)**
- 1998** Creation of the **Petite Terre Islets National Nature Reserve**. First monitoring in the leeward coast by the **Evasion Tropicale Association**
- 2000** Creation of the **Guadeloupe Archipelago Marine Mammal Stranding Network**, local representative of the National Stranding Network (Pelagis Observatory)
- 2008** **EXOCET REMMOA 1**
- 2009** Extension of the **Guadeloupe National Park** to include sea areas, with the creation of **core zones** and the **adjacent maritime area**
- 2010** Creation of the **Agoa sanctuary** throughout the French West Indies
- 2010** Creation of **photo-identification catalogs** (sperm whales, bottlenose dolphins, etc.) by OMMAG
- 2011** Text in force: Ministerial decree of 1 July 2011 establishing the **list of marine mammals protected on national territory and the terms of their protection**
- 2017** **REMMOA 2**. Approaching cetaceans is subject to the provisions of Order No. R-02-2017-03-15-003 in the Agoa sanctuary
- 2017** Agoa Campaigns 2012, 2013, 2014, 2015
- 2017-2011** Cetacean survey campaigns as part of Nadège Gandillon's thesis
- 2018** Launch of the **CARI'MAM project**, which aims to strengthen the network of marine protected areas and improve knowledge and conservation of marine mammals in the Caribbean region
- 2020** Deployment of 20 hydrophones in 14 territories of the Greater Caribbean Region for one year as part of the **CARI'MAM project**
- 2021** End of the **CARI'MAM project**. Start of the **Ti Whale An Nou** (CCS) programme: implementation of standardised annual monitoring to study the diversity, distribution, relative abundance, movements and identify local threats to cetaceans
- 2021** **CARI'MAM Ti Whale An Nou**
- 2022** **Ti Whale An Nou**
- 2023** Launch of the **CAMAC project**, which aims to improve knowledge of interactions between marine megafauna and human activities and strengthen regional collaboration
- 2023** **Ti Whale An Nou**
- 2024** Guadeloupe appears in 3 **Important Marine Mammal Areas (IMMAS)**
- 2024** Changes to regulations concerning the approach to marine mammals (prefectural order no. R02-2024-07-12-00001)
- 2024** **Ti Whale An Nou**
- 2025** **Census of marine mammals and other megafauna by aerial observation**
- 2025** **Census of marine mammals by vessel observation**

This timeline is not intended to be exhaustive.

## 1.2. Research methods

Several **complementary methods** are used to study marine mammals. The combination of these techniques provides an **overview of their diversity, distribution and behaviour, while limiting biases**. The integrated approach allows for a better understanding of the specific characteristics of each species.

The first step for studying marine mammals is **species diversity monitoring** (inventory), which involves recording all species observed within a given area, either opportunistically or according to a standardised protocol.

Precise scientific protocols are required to estimate species distribution. The **line-transect method** involves following a predefined route composed of straight lines (transects) and recording the individuals observed (species and number).

Depending on the scale of the study, transects may be conducted as boat-based surveys or from the air as aerial surveys. **Aerial surveys** provide greater spatial coverage, thereby improving knowledge of offshore areas, but they are more expensive, which results in more limited temporal coverage.



Sperm whale fluke  
© Dany Moussa (OMMAG)

◀ Bottlenose dolphin dorsal fin  
© Laurent Bouveret (OMMAG)



As cetaceans spend most of their lives underwater, they spend very little time at the surface. To detect them below the surface, scientists use **passive acoustic monitoring methods**. This involves studying the sounds emitted by marine mammals – which are species-specific – and allows monitoring of site occupancy over time as well as a better understanding of the animals' activity patterns.

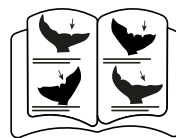
Lastly, **individual identification** through photo-identification provides fairly accurate estimates of population size, especially for resident populations through the “recapture” of individuals.

### Photo-identification

Photo-identification (photo-ID) is a visual method used to monitor marine mammals. It relies on **natural markings and scars** observed on the animals, which both serve as **individual identification criteria**.

Each photograph of an animal is compared to a **species-specific digital catalogue** of previously identified animals. If the animal does not match any existing record, it is added to the catalogue with a unique identifier along with the photographs that enable its recognition.

For humpback whales, the [Happywhale](#) platform is a reference.



*Flukebook is an online catalogue used in the Caribbean region for the semi-assisted recognition of certain species using artificial intelligence.*

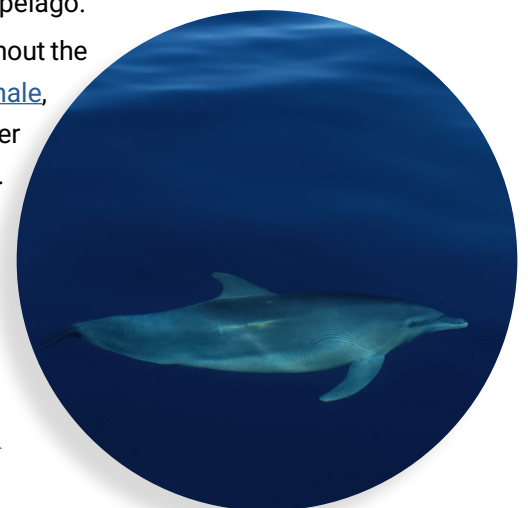
## 2. Marine mammals of the Guadeloupe Islands

### 2.1. Species richness of marine mammals

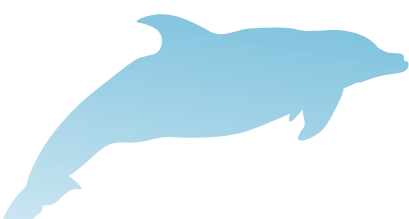
About **1/4** of the world's known cetacean species have been sighted in the French West Indies. **Around twenty species** of marine mammals have been recorded in the waters of the Guadeloupe archipelago.

About ten species are regularly observed around the archipelago: some throughout the year, such as [Fraser's dolphin](#), the [pantropical spotted dolphin](#), and the [sperm whale](#), while others are only present for part of the year, such as [humpback whales](#). Other species, including [killer whales](#) are occasionally observed around the archipelago. Finally, some species, like the **sei whale**, are rarely seen.

A few rare sightings of **hooded seals** have been recorded in the Lesser Antilles, including in Guadeloupe. This behaviour is unusual for a species that usually lives in the cold waters of the North Atlantic Ocean.



Bottlenose dolphin off the leeward coast ▶  
© Lisel Loschenkohl



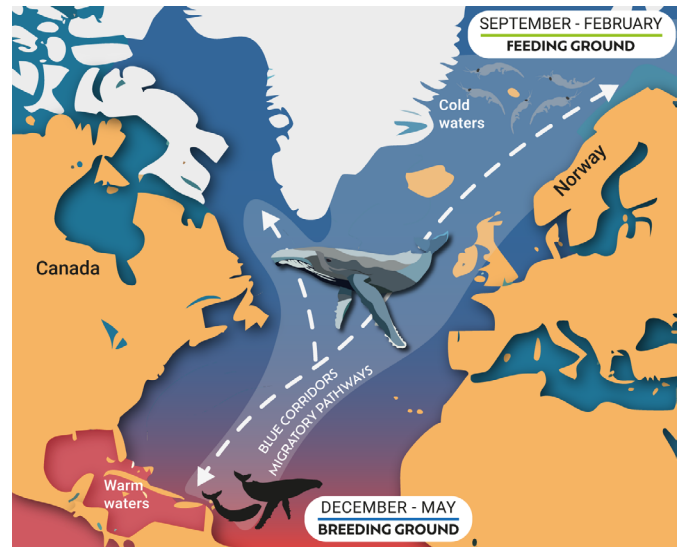
## 2.2. Life cycle of marine mammals

Some species, such as **bottlenose dolphins**, **pantropical spotted dolphins** and **sperm whales**, are observed year-round. Re-sightings of identified individuals and groups provide information on the inter-island movements of these species and enhance knowledge of the population dynamics in the Caribbean.

On the other hand, **humpback whales are migratory species**. They travel thousands of kilometres between **breeding ground** in warm tropical waters and **feeding ground** in cold, nutrient-rich waters.

GPS tags on individuals and photo identification have highlighted the **various migratory “blue corridors”** used by humpback whales ([BlueCorridors.org](https://www.bluecorridors.org) dynamic platform) which constitute vital routes for their survival, underscoring the importance of their preservation.

**Humpback whales migrate seasonally** to the archipelago waters during the dry season, where **they are usually seen along the coasts from February to April**. During this period, they do not feed and draw from their fat reserves they have built up over during the winter.



▲ **Figure 2:** Main migration corridors used by humpback whales encountered in Guadeloupe. *The periods are provided for reference purposes only, as variations depend on each individual and the duration of their migration.* Based on the *Blue Corridors* platform (WWF).

## 3. State of knowledge

### 3.1. Species distribution

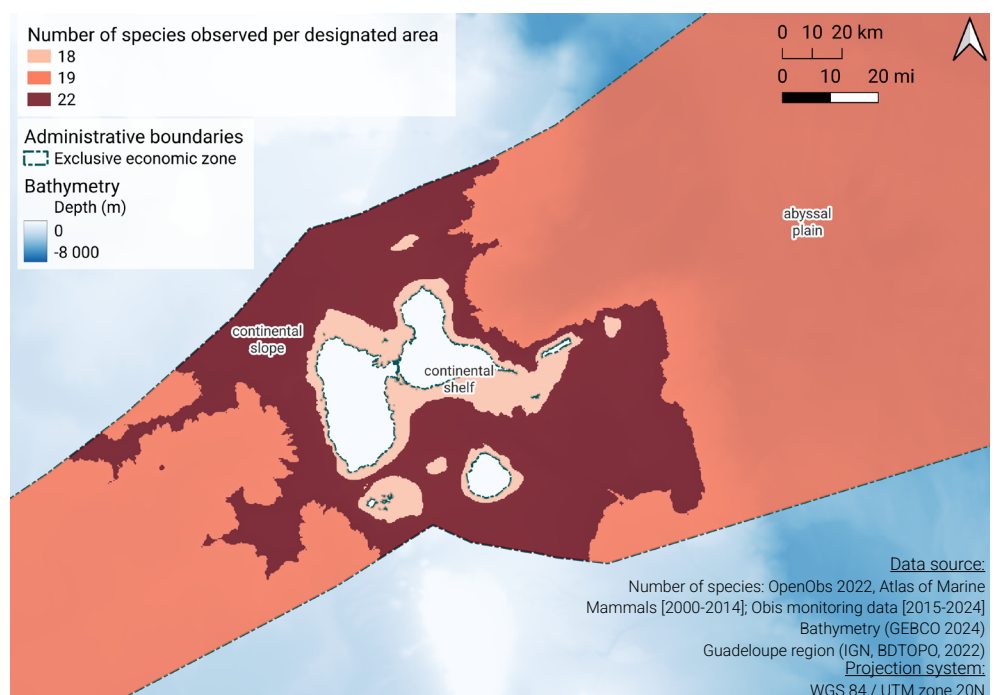
Marine mammals are distributed throughout Guadeloupe’s exclusive economic zone<sup>1</sup>. The **higher species diversity observed in the slope area** can be explained by increased observation efforts, but also by other environmental and ecological factors such as depth, underwater topography, and food availability. Despite a wide variety of species, the **densities (number of individuals per km<sup>2</sup>) recorded across the French West**

**Indies are low**. For instance, in the French West Indies, the REMMOA project (2008 and 2017 aerial campaigns) estimated the sperm whale population at an **average of 200 individuals**, with **1 individual per approximately 700 km<sup>2</sup>**, i.e **21 times lower** than for bottlenose dolphins, estimated at **3 individuals per 100 km<sup>2</sup>** (*based on the REMMOA II Report, 2019*).

<sup>1</sup> Extent of the Exclusive Economic Zone (EEZ): waters under French jurisdiction off the coast of Guadeloupe

► **Figure 3:** Number of species observed by zone between 2000 and 2024. Continental shelf: depth between -100 m and 0 m; Continental slope: depth between -1,500 m and -100 m; Abyssal plain: depth greater than -1,500 m.

Based on data from the Atlas of Wild Mammals of France (2000-2014) and OBIS (2015-2024).



### 3.2. Stranding data

Since the creation of the stranding network in Guadeloupe in the late 1990s, the main species found dead onshore are beaked whales, followed by sperm whales and bottlenose dolphins. Since 1990, the **overall trend has remained stable in Guadeloupe**, with an average of 3 strandings<sup>2</sup> per year (*Pelagis Report, 2023*).

Locally, the Guadeloupe Archipelago Marine Mammal Stranding Network consists of around twenty trained and authorised individuals who can respond to strandings.

<sup>2</sup> When a marine mammal (alive or dead) is found out of the water, with no possibility of returning to the sea.

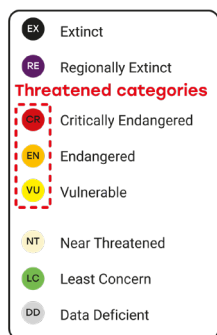
## 4. Conservation status of marine mammals

### What is the IUCN Red List?

The **IUCN Red List of Threatened Species**<sup>3</sup> can be produced at a **global, national or regional** scale, based on a proven scientific methodology. Experts assess species within a group, thereby providing an overview of biodiversity in the territory. They characterise the level of threat facing each species, estimate its risk of extinction and assign it to a specific category.

<sup>3</sup> International Union for Conservation of Nature.

**Figure 4:** Main categories of the Red List, according to the IUCN French Committee



*Threatened species are at greater risk of extinction than others.*

In 2021, the Red List of Threatened Species in Guadeloupe assessed the conservation status of **18 species**. Among the 7 species for which the status could be evaluated, the **Caribbean monk seal is considered extinct since 1994 because of intensive hunting and overfishing**.

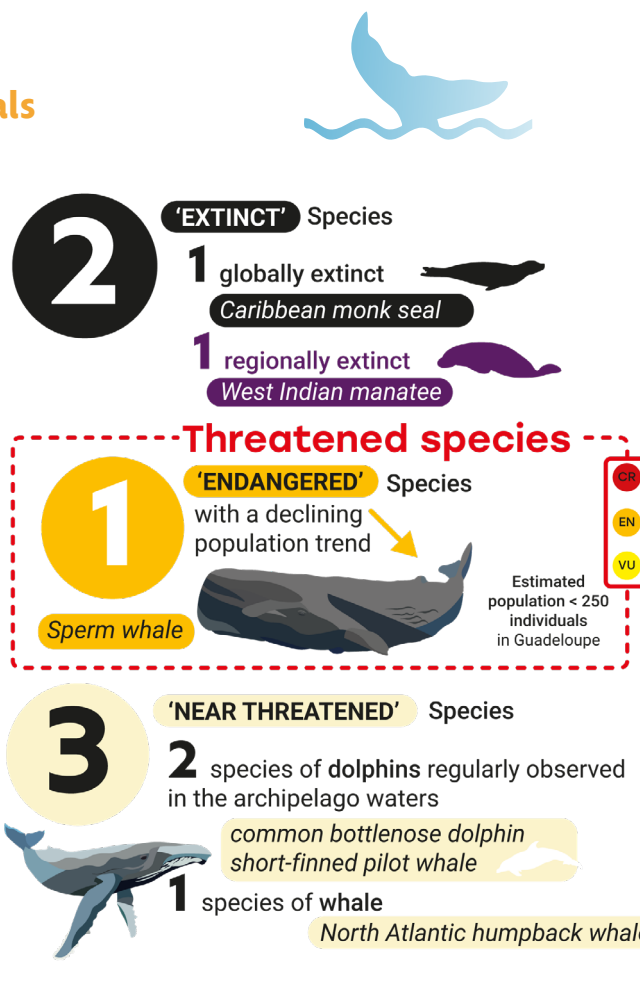
The **West-Indian manatee has disappeared from Guadeloupe**, but other populations subsist elsewhere along certain coast of the western Atlantic.

The assessment could not be carried out due to insufficient data for 11 species (**61%**).

In 2023, **4 cetaceans** were found stranded along the Guadeloupean coastline: one dwarf sperm whale in Les Saintes, one pygmy sperm whale in Le Moule, one bottlenose dolphin and one Cuvier's beaked whale in Pointe-Noire.

The **causes of mortality can be natural** (e.g. disease) or **anthropogenic** (collisions, pollution, or capture by fishing gear). However, they are **difficult to determine in most cases**.

*Strandings likely indicate a greater presence of large diving species (beaked whales) than at-sea observations alone would suggest.*



**Figure 5:** Conservation status of extinct, threatened and near-threatened species on the Guadeloupe Red List of Fauna. The coloured boxes show the number and species classified by category (IUCN, 2021).

**This lack of data highlights small populations with several species of small cetaceans rarely observed, which precludes assessment despite surveys and long-term data collection.**

## 5. Protection and conservation measures

### 5.1. The Agoa Sanctuary

The Agoa Sanctuary is a **marine protected area dedicated to marine mammals**. It covers the entire exclusive economic zones of the French West Indies (i.e. the waters of Martinique, Guadeloupe, Saint Martin and Saint Barthélemy). The extend of the Sanctuary is over than **143,000 km<sup>2</sup> (55,213 mi<sup>2</sup>)** representing more than a **1/4** of the surface area of mainland France. The extensive size of this area reflects the large home ranges (area essential for activities like breeding, feeding, and resting) of certain migratory marine mammals.



◀ **Figure 6:** I do not approach within 300 metres at the sea surface, but also underwater and above the surface of the sea.

© Agoa Sanctuary

*At the local level, specific regulations are implemented within the Sanctuary, such as prohibiting approaches to animals closer than 300 metres (-0.2 mi).*

The main objective of the Agoa Sanctuary is to **ensure a favourable conservation status for marine mammals** by **protecting them and their habitats from the direct or indirect, proven or potential, negative impacts of human activities**.

It is a conservation tool **intended for ensuring their tranquillity**, therefore disturbing individuals is prohibited.

### 5.3. Species protection

A species and its habitat are protected when they play a **key role in the ecosystem**, constitute a remarkable component of natural heritage, or are of scientific interest. In France, animals and plants are **protected by ministerial decrees**.

An [initial decree of July 27,1995](#) established the list of protected marine mammals in France. On July 1, 2011, a [new ministerial decree](#) updated the list and **included protection measures as well as the safeguarding of habitats (resting and breeding grounds)**.

Whether alive or dead, it is **prohibited** to:

- Destroy, capture, mutilate or kill these animals;
- Intentionally disturb them in their natural environment;
- Carry out taxidermy on them;
- Transport, use, possess or peddle them;
- Offer them for sale, sell, or purchase them.

It is also prohibited to destroy, alter or degrade the natural habitats of these species.

### 5.2. Important Marine Mammal Areas

Since 2019, the scientific community has been cooperating globally to establish [Important Marine Mammal Areas](#) (IMMAs).

These are defined as **portions of habitat that are important for one or more marine mammal species and can be delineated and managed for conservation purposes**.

In 2025, the Guadeloupe archipelago is included in **3 IMMAs** and **2 additional Areas of Interest** (AoI) for marine mammals.

Beyond French jurisdictional waters, these **species are also protected by European and international agreements**, such as the SPAW Protocol to the [Cartagena Convention](#), the [Bonn Convention \(Conservation of Migratory Species\)](#) and the [Washington Convention \(CITES\)](#) which ensures that international trade in animals and plants does not threaten the survival of species in their natural habitats.

*All marine mammals are listed in [Appendix 2 of the SPAW Protocol for the strict protection of these species at the international level \(19 territories are signatory to the SPAW Protocol\)](#).*

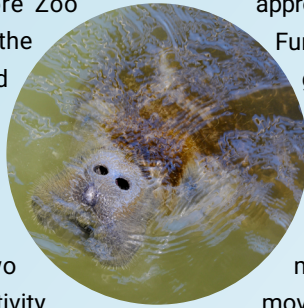


**Intentional disturbance of marine mammals can result in a fine of up to ~ USD 4,000 (€3,500) for a legal entity (Article R415-1).** Furthermore, **undermining the conservation of protected species is an offence punishable by up to three years' imprisonment and a fine of ~ USD 174,600 (€150,000) (Article L415-3).**

**Focus on the manatee reintroduction project carried out by the Guadeloupe National Park (2000-2018)**

Launched in the early 2000s, a manatee reintroduction programme was initiated by the Guadeloupe National Park. **The objective was to breed captive animals in a centre established in Guadeloupe, so that those born on the territory could be released into the Grand Cul-de-Sac Marin Bay.**

In 2016, two males born at Singapore Zoo arrived, providing an opportunity to test the animals' adaptability to protocols and facilities. One died after two months from an asymptomatic kidney disease not previously observed in this subspecies by veterinary medicine. The other was transferred to Paris Zoological Park two years later, as it could not be kept in captivity without social interactions.



▲ Kai, one of the two manatees

©Jacques Clauzier, PNG

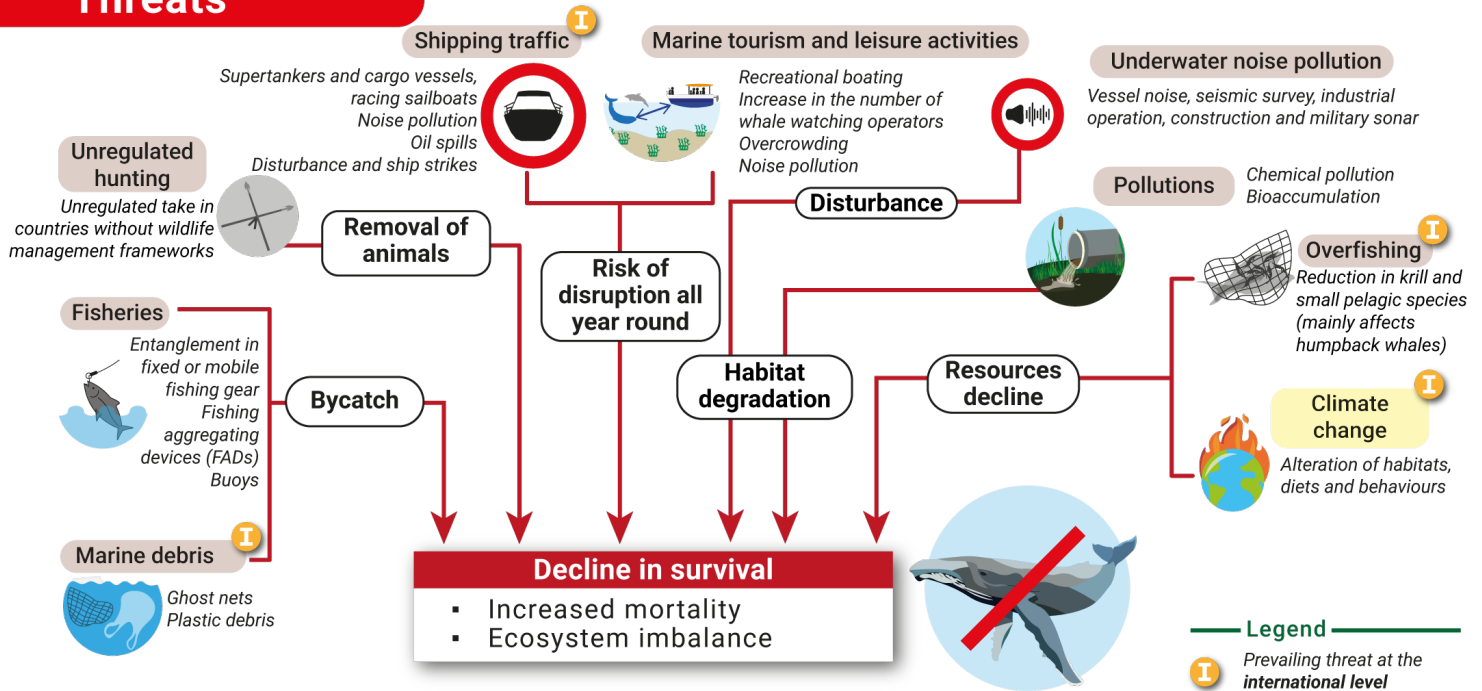
Although this first reintroduction attempt was not successful, **veterinary knowledge on captive manatees was enhanced** (preparation for soft release, inventory of captive or rehabilitating animals, etc.). This project also fostered international cooperation and an integrated management approach that considers ecological, economic and social factors.

Furthermore, it contributed to raising awareness among the general public and schoolchildren about the threats faced by the Grand Cul-de-Sac Marin.

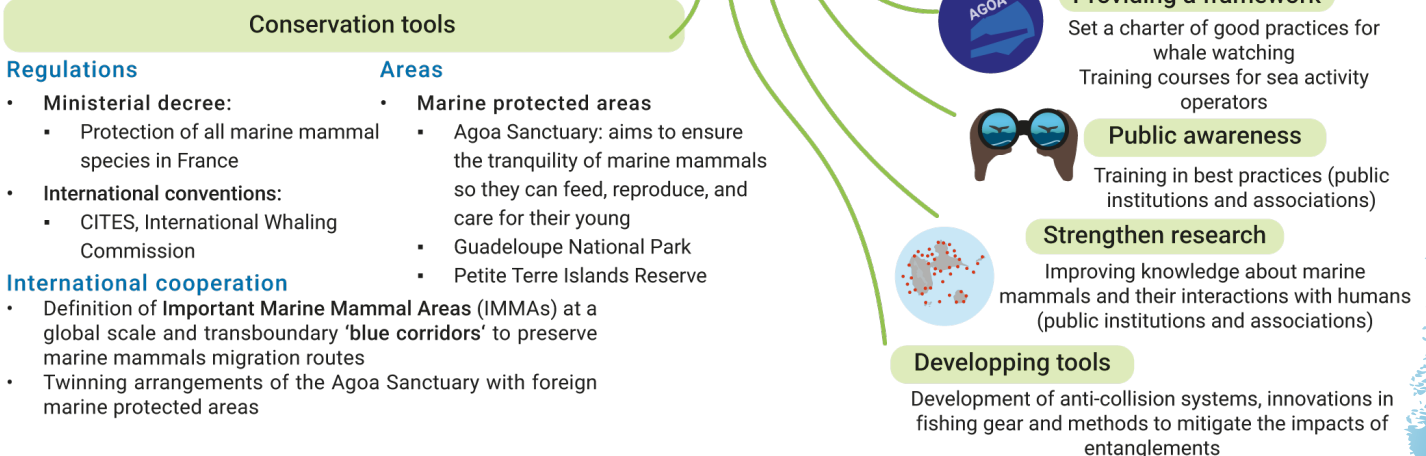
Although suspended, the **programme retains substantial ecological relevance**. The **objective of restoring functional connectivity among core populations** within the Caribbean metapopulation is supported by documented inter-island movements of two individuals to Guadeloupe and Saint-Martin from Puerto Rico, indicating the **feasibility of dispersal and, ultimately, the potential for gene flow**.

**5. Threats and solutions**

**Threats**



**Solutions**



▲Figure 7: Threats to marine mammals and possible solutions. The red arrows indicate threats and the green arrows indicate solutions to be implemented.

# ABOUT THE INDICATOR

## ► Calculation method

### Species richness

• Species richness data within Guadeloupe's EEZ was obtained by compiling two datasets to ensure temporal coverage from 2000 to 2024: gridded data (10x10 km) from the marine mammal atlas [2000-2015] and Obis monitoring data [2016-2024]. The spatial delimitation of the data set was based on the boundary of Guadeloupe's EEZ. The bathymetric thresholds used to define the zones were 0 m, -100 m and -1,500 m depth. Species richness was calculated per area based on the total number of species observed over the 2000-2024 period.

### Species conservation status

• The proportion of threatened species for each category is based on the percentage of the number of species in each category out of the total number of assessed species. Proportion of threatened species =

$$\frac{\text{Number of threatened species (CR+EN+VU)}}{\text{Total number of assessed species}} \times 100$$

## ► Limitations

Regarding IUCN threatened status categories, the analysis is based solely on the species assessed in the 2021 Red List of Threatened Species of France - Guadeloupe Fauna Chapter.

Note that the data provided does not consider the greater observation effort in the coastal zone and along the leeward coast.

## ► Source data

### Species richness:

Data set from the Atlas of Marine Mammals compiling observation data in French waters from 2000 to 2014. Available at the following link: <https://inpn.mnhn.fr/espece/jeudonnees/290>

Obis query on the Carnivora and Cetartiodactyla species groups, from 2015 to 2024 in the Guadeloupe and Martinique area. Available at: <https://mapper.obis.org/?taxonid=2687,370511,159502&areaid=78&enddate=2024-12-31> downloaded on 2025-10-06.

### Stranding data:

Data from the French National Stranding Network: <http://pelagis.in2p3.fr/public/histo-carto/> by the Pelagis Observatory and UAR 3468 BBEES (most recent data: 2023). For the current year and the previous year, stranding data is incomplete as it is still being processed.

## Conservation status data:

Red List of Marine Mammals of Guadeloupe (2021). Available at: <https://uicn.fr/wp-content/uploads/2022/05/tableaux-liste-rouge-faune-de-guadeloupe.pdf> (accessed 26 February 2025). Downloaded from the INPN, version (2023.1) on 26/06/2024.

## ► Regulatory references

### Légifrance (in French):

- [Order of 1 July 2011 establishing the list of marine mammals protected on national territory and the terms of their protection](#)
- [Prefectural decree regulating the approach to cetaceans in the French West Indies](#)

## ► Bibliographic references

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## ► Theoretical update frequency

Every 10 to 20 years.

## Editors

- Mrs. Lisel Loschenkohl (ORBIG's Data Valorization and Production Officer)
- Catherine Hermant, PhD (Head of the Regional Observatory of Biodiversity of the Guadeloupe Islands (ORBIG))
- Translation: ARBIG

## USEFUL LINKS

**Agoa Sanctuary:** <https://sanctuaire-agoa.fr/>

**Evasion Tropicale Association:** <http://www.evasiontropicale.org/>

**Mon Ecole Ma Baleine Association:** <https://monecolembaleine.com/Accueil>

**Blue Corridors Project:** <https://bluecorridors.org/explore/species>

**IMMAs:** <https://www.marinemammalhabitat.org/immag/>

**OMMAG:** <https://ommagguadeloupe.wixsite.com/ommag>

**CAR-SPAW:** <https://www.car-spaw-rac.org/>

**CCS:** <https://www.ccs-ngo.com/>

## Associated partners

