

Mediterranean  
marine mammals  
and turtles:  
status, conservation policies and actions



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# The essence of nature conservation

- Conserving the natural environment is recognised as a universal imperative by international, European and national law.
- Conserving the natural environment requires changes in human behaviour, and such changes can only be obtained through political action.
- Science is a fundamental tool in conservation efforts; however, conservation is a political, not a scientific enterprise.
- Oceans are an essential part of the biosphere and of our world, and their conservation is just as important as conserving the terrestrial environment.

# Why is conserving marine mammals and turtles important?

- an important component of marine biodiversity in their own right;
- also very useful to the conservation effort, in many ways:
  - ✧ **Indicator species:** marine mammals are among the easiest to study in the pelagic environment, and as such they are often the best known components in their ecosystems.
  - ✧ **Umbrella species:** extend protection to other species.
  - ✧ **Flagship species:** capture popular imagination.



- Fin whale, *Balaenoptera physalus*
- Sperm whale, *Physeter macrocephalus*
- Cuvier's beaked whale, *Ziphius cavirostris*
- Killer whale, *Orcinus orca*
- Long-finned pilot whale, *Globicephala melas*
- Risso's dolphin, *Grampus griseus*
- Rough-toothed dolphin, *Steno bredanensis*
- Common bottlenose dolphin, *Tursiops truncatus*
- Striped dolphin, *Stenella coeruleoalba*
- Short-beaked common dolphin, *Delphinus delphis*
- Harbour porpoise, *Phocoena phocoena*

## Regulars (11)

## Visitors (3)

- Minke whale, *Balaenoptera acutorostrata*
- Humpback whale, *Megaptera novaeangliae*
- False killer whale, *Pseudorca crassidens*

## Vagrants (8)

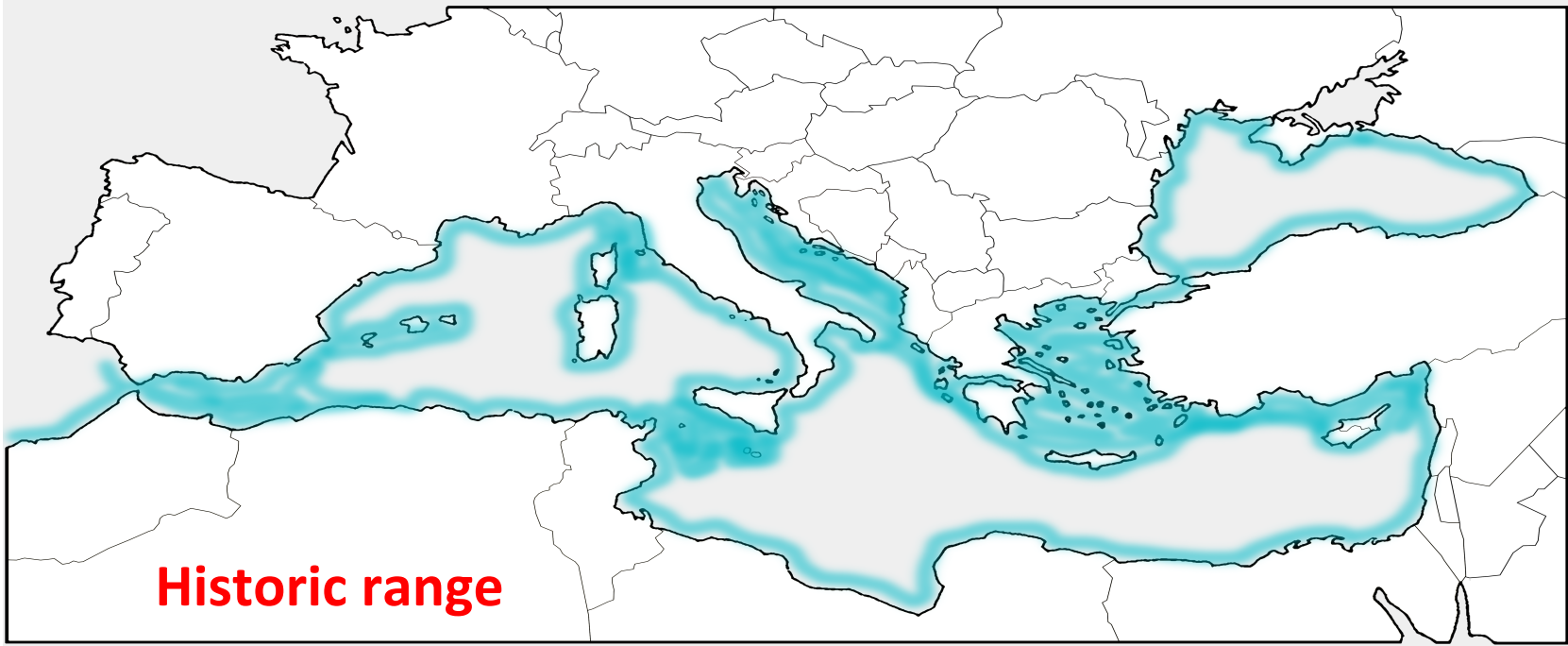
- North Atlantic right whale, *Eubalaena glacialis*
- Sei whale, *Balaenoptera acutorostrata*
- Gray whale, *Eschrichtius robustus*
- Northern bottlenose whale, *Hyperoodon ampullatus*
- Blainville's beaked whale, *Mesoplodon densirostris*
- Gervais' beaked whale, *Mesoplodon europaeus*
- Sowerby's beaked whale, *Mesoplodon bidens*
- Indian Ocean humpback dolphin, *Sousa plumbea*

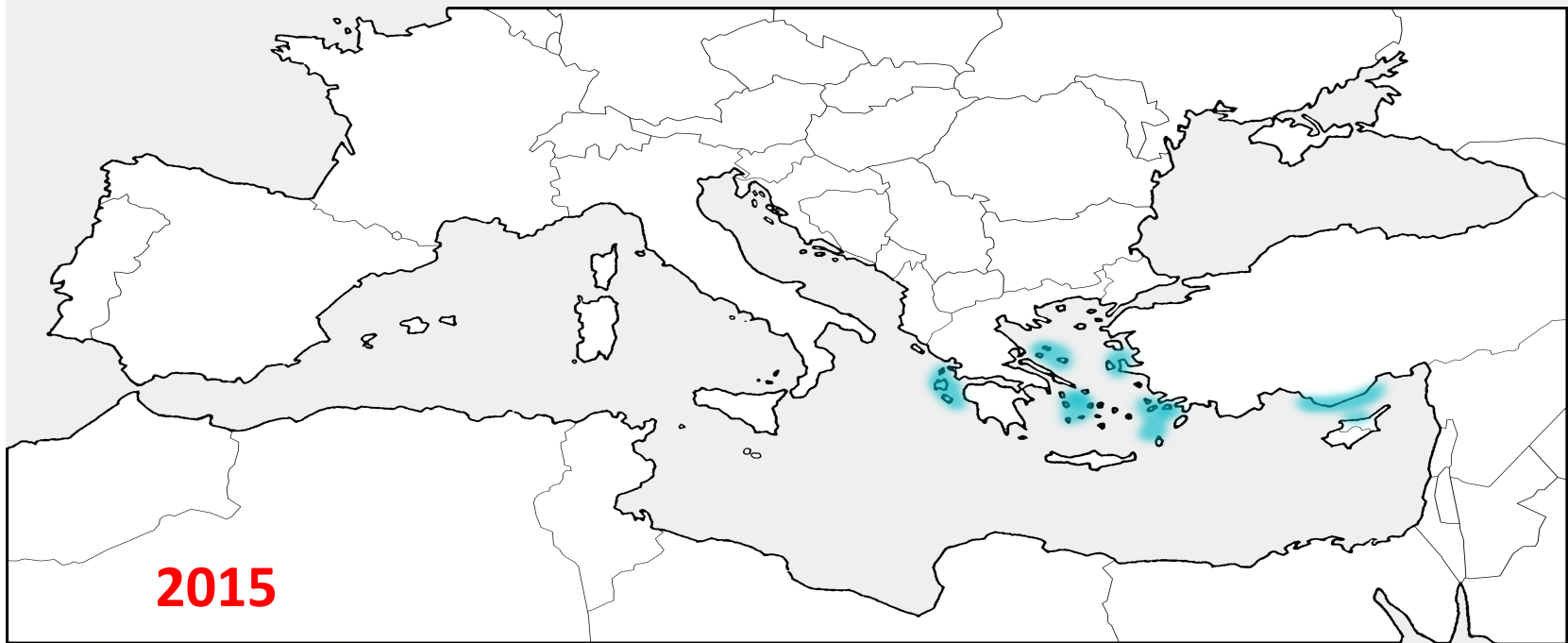


# Mediterranean monk seal

*Monachus monachus*

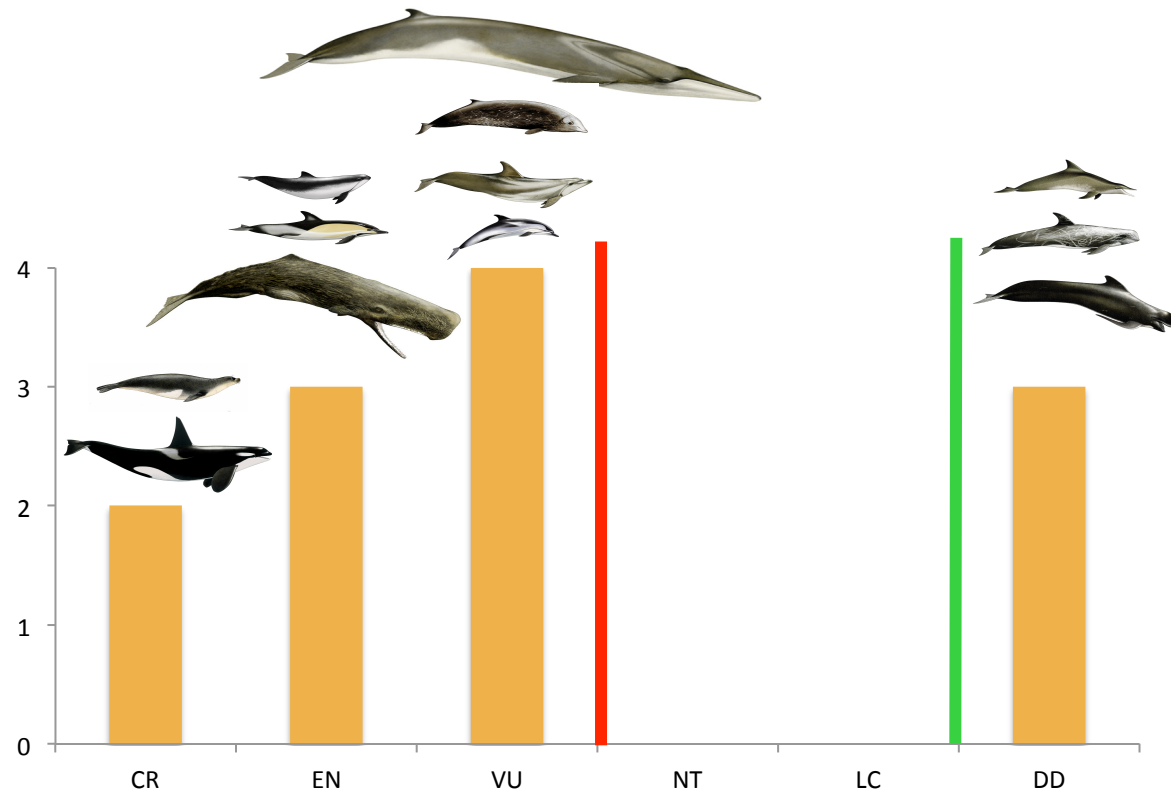






# Mediterranean marine mammal status

IUCN Red List





# Sea turtles in the Mediterranean

Distribution, threats and conservation priorities

Edited by Paolo Casale and Dimitris Margaritoulis



IUCN-SSC MARINE TURTLE SPECIALIST GROUP



- Loggerhead turtle, *Caretta caretta*
- Green turtle, *Chelonia mydas*

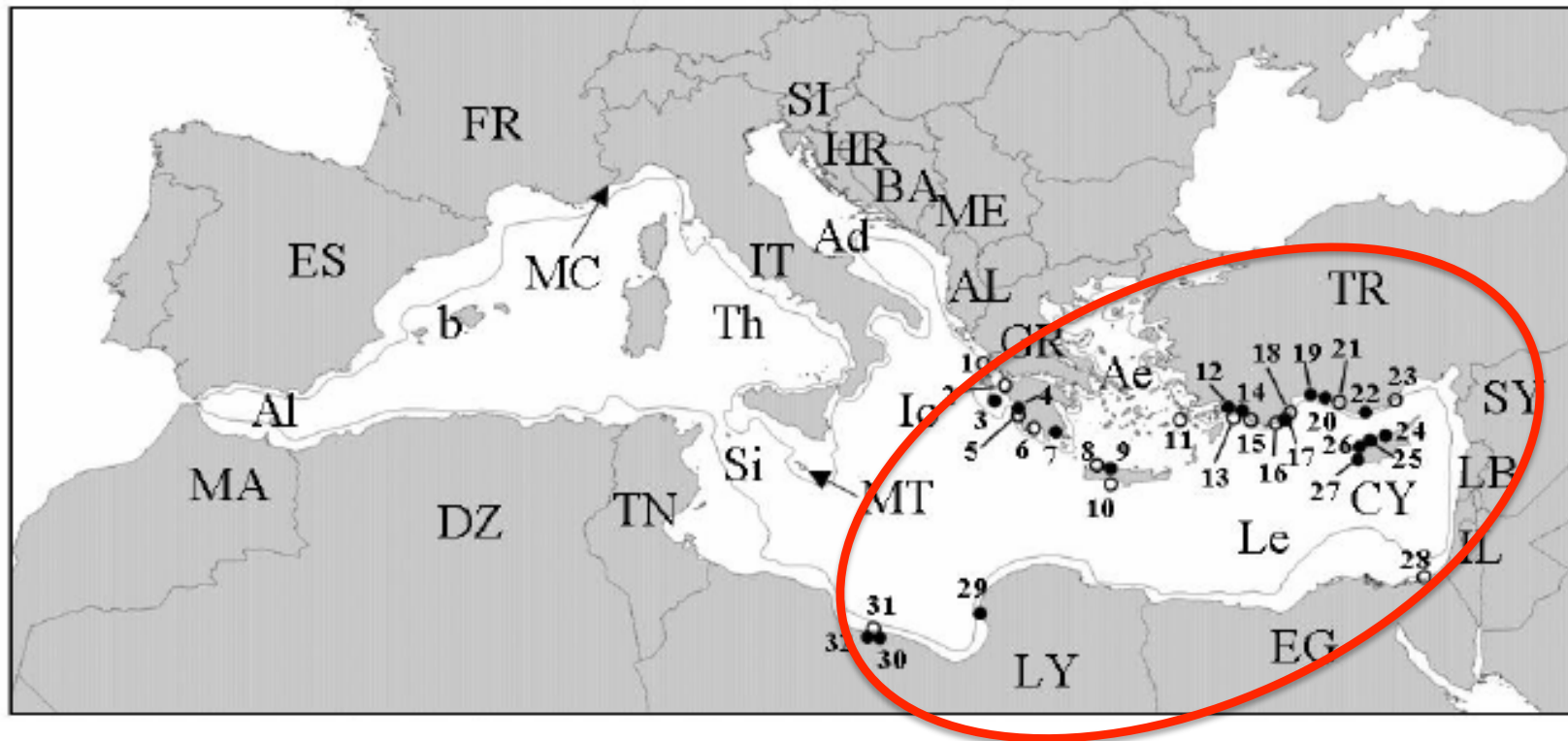
### Regulars (2)

### Visitor

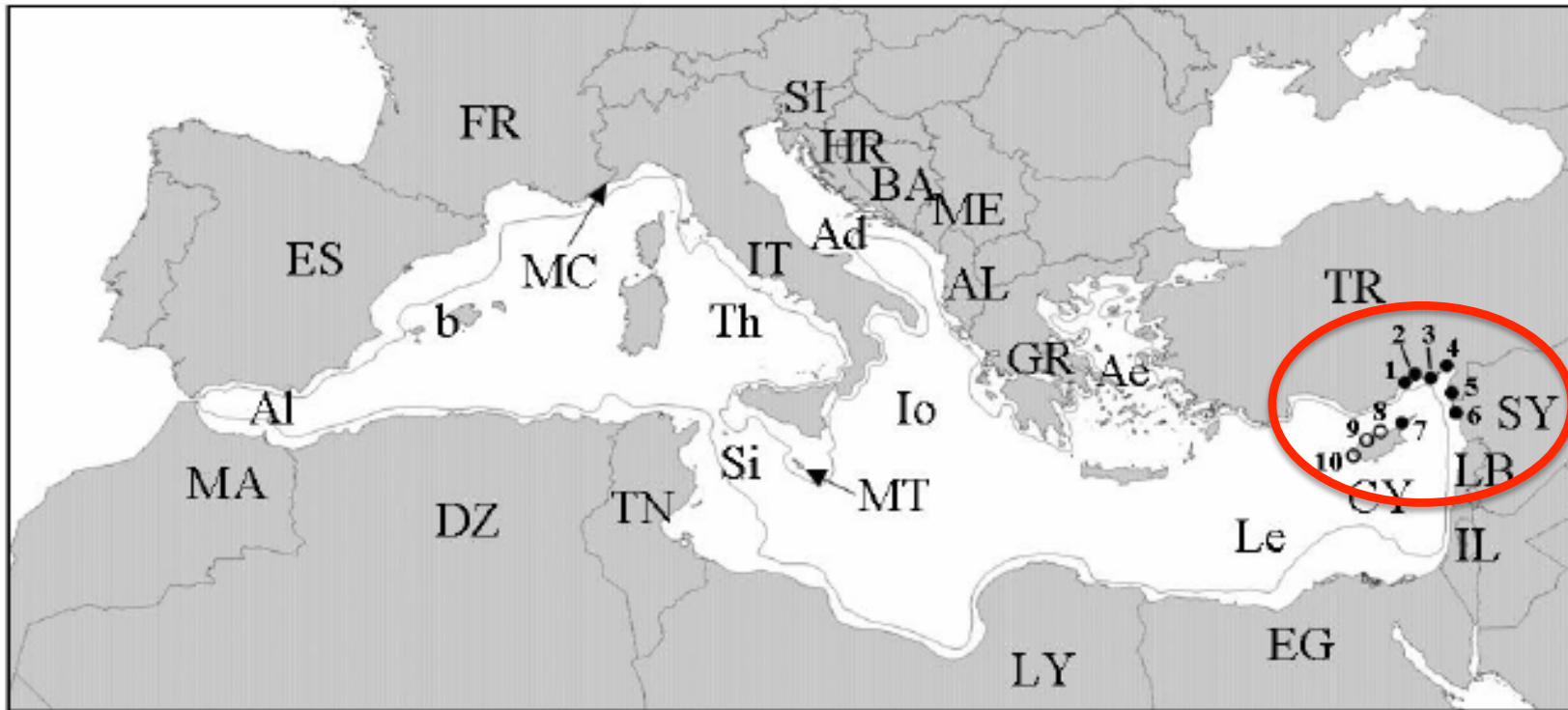
- Leatherback turtle, *Dermochelys coriacea*

### Vagrants (2)

- Hawksbill turtle, *Eretmochelys imbricata*
- Kemp's ridley turtle, *Lepidochelys kempii*



Major nesting sites ( $\geq 50$  nests/year) of *Caretta caretta* in the Mediterranean (Casale and Maragritoulis 2010)



Major nesting sites ( $\geq 40$  nests/year) of *Chelonia mydas* in the Mediterranean  
(Casale and Maragritoulis 2010)



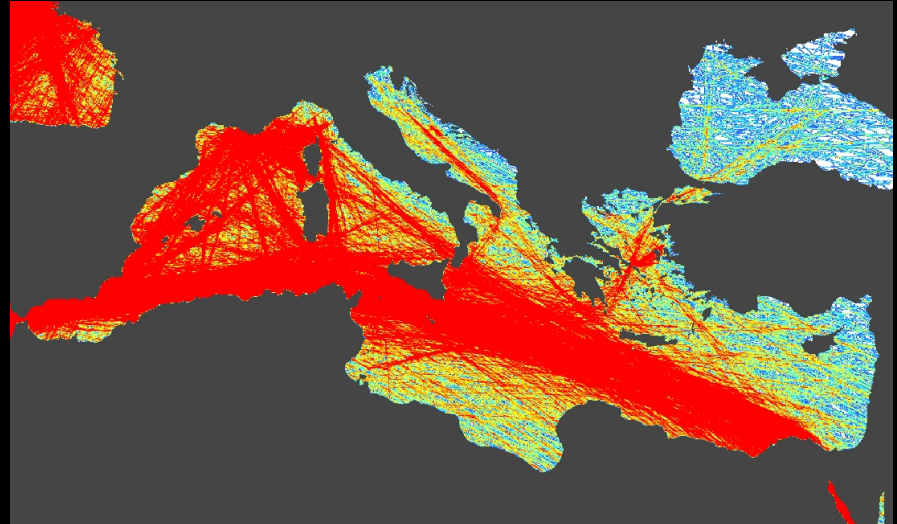
photo by Alberto Romeo



Tethys/Giovanni Bearzi

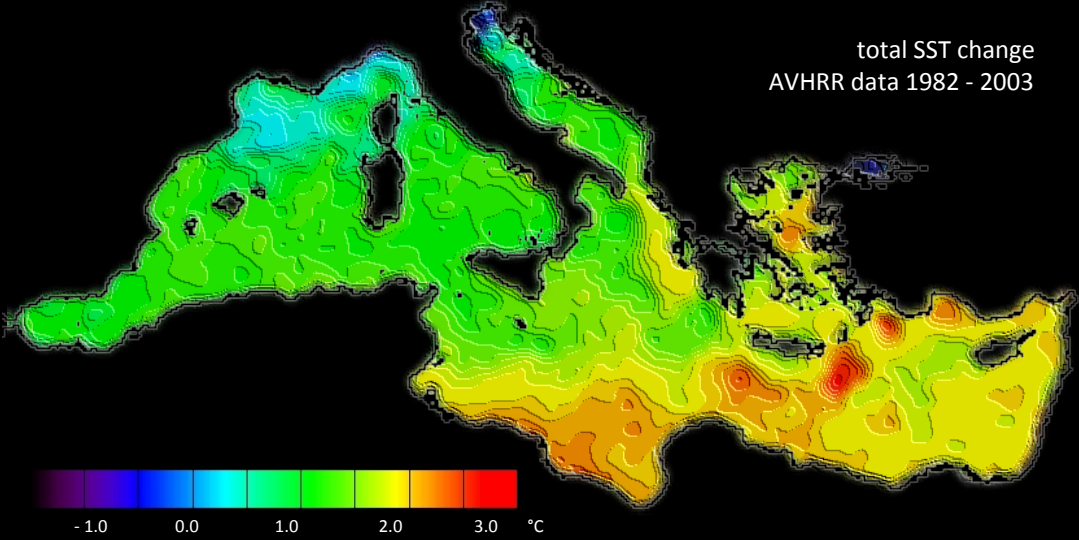


Renaud de Stephanis

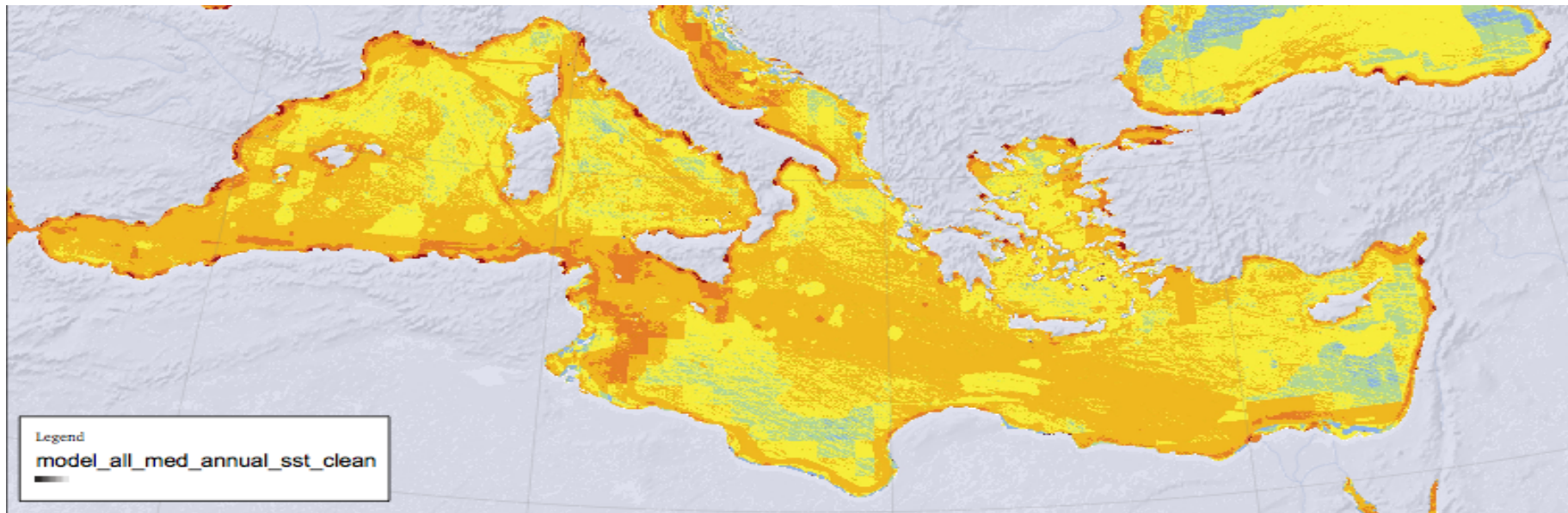




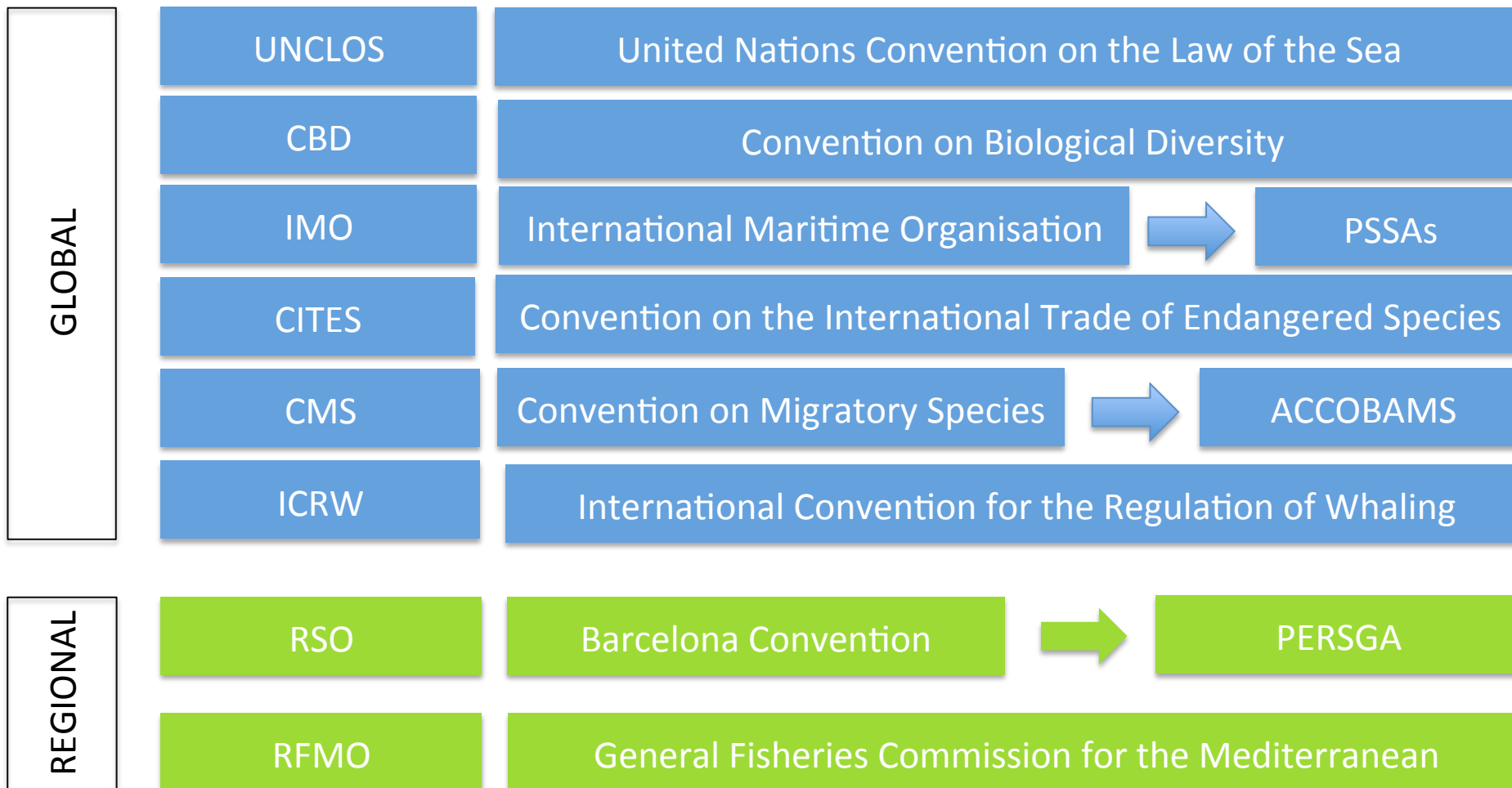
total SST change  
AVHRR data 1982 - 2003



## Cumulative human impact on the Mediterranean Sea



Micheli F., Halpern B.S., Walbridge S., Ciriaco S., Ferretti F., Frascetti S., Lewison R., Nykjaer L., Rosenberg A.A. 2013. Cumulative human impacts on Mediterranean and Black Sea marine ecosystems: assessing current pressures and opportunities. *PLoS ONE* 8(12): e79889. doi:10.1371/journal.pone.0079889





## Convention on Biological Diversity

### Aichi Target 11

*By 2020, at least 17 per cent of terrestrial and inland water areas and **10 per cent of coastal and marine areas**, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures<sup>\*</sup>, and integrated into the wider landscape and seascape.*

<sup>\*</sup> VMEs, PSSAs, UNESCO WHSs & BRs, Natura2000, etc.



## Convention on Biological Diversity

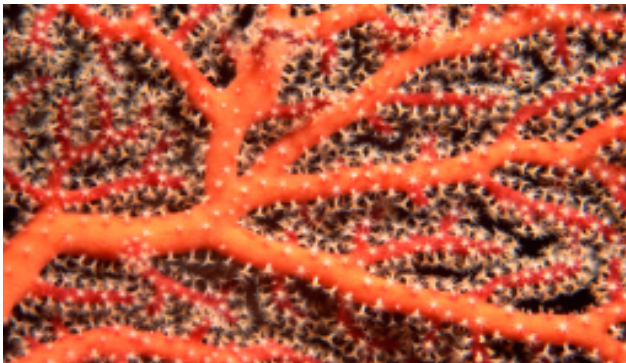
In 2006, in response to the *Johannesburg Plan of Implementation* call to establish protected areas globally, the **Convention on Biological Diversity (CBD)** started to develop and apply criteria to describe and designate *Ecologically of Biologically Significant Marine Areas* (EBSAs) in the world's oceans, which will, *inter alia*, support the nations' 2010 commitment to achieve the Aichi Biodiversity Targets by 2020.



## Convention on Biological Diversity

The EBSAs are special marine areas that serve important purposes, to support the healthy functioning of oceans and the many services that they provide.

In 2008 CBD adopted 7 scientific criteria for identifying EBSAs in need of protection in open-ocean waters and deep-sea habitats:



1. Uniqueness or rarity;
2. Special importance for life history of species;
3. Importance for threatened, endangered or declining species and/or habitats;
4. Vulnerability, fragility, sensitivity, slow recovery
5. Biological productivity;
6. Biological diversity;
7. Naturalness.

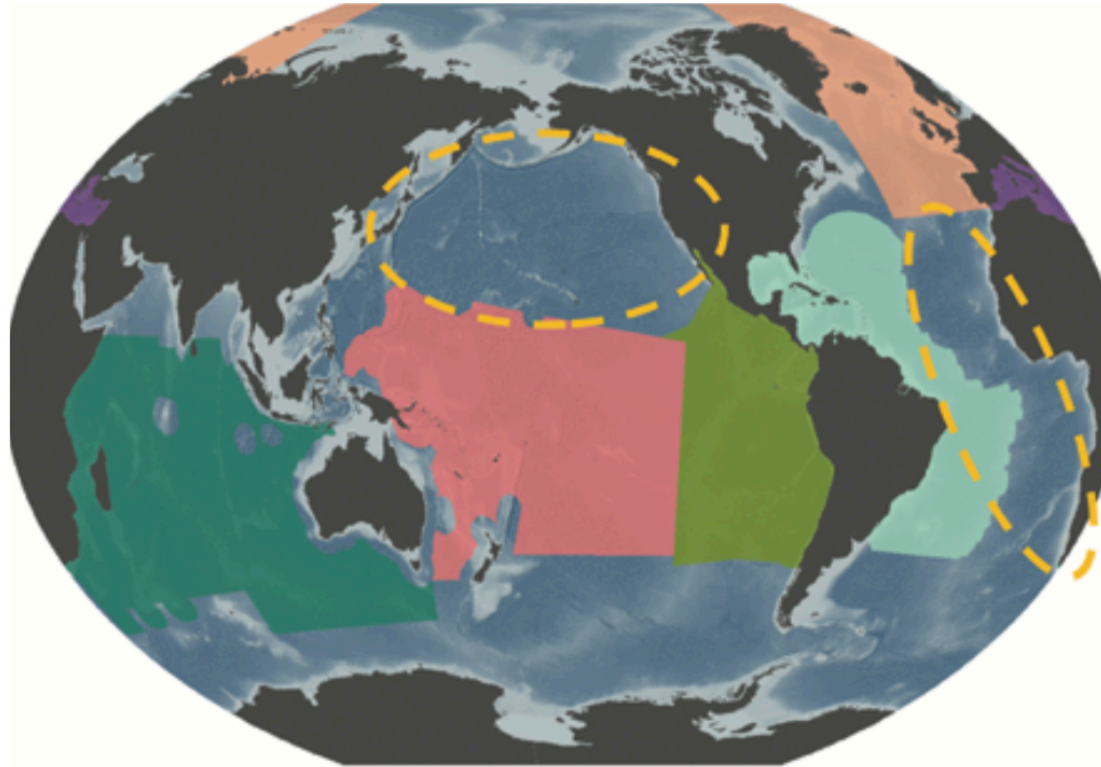
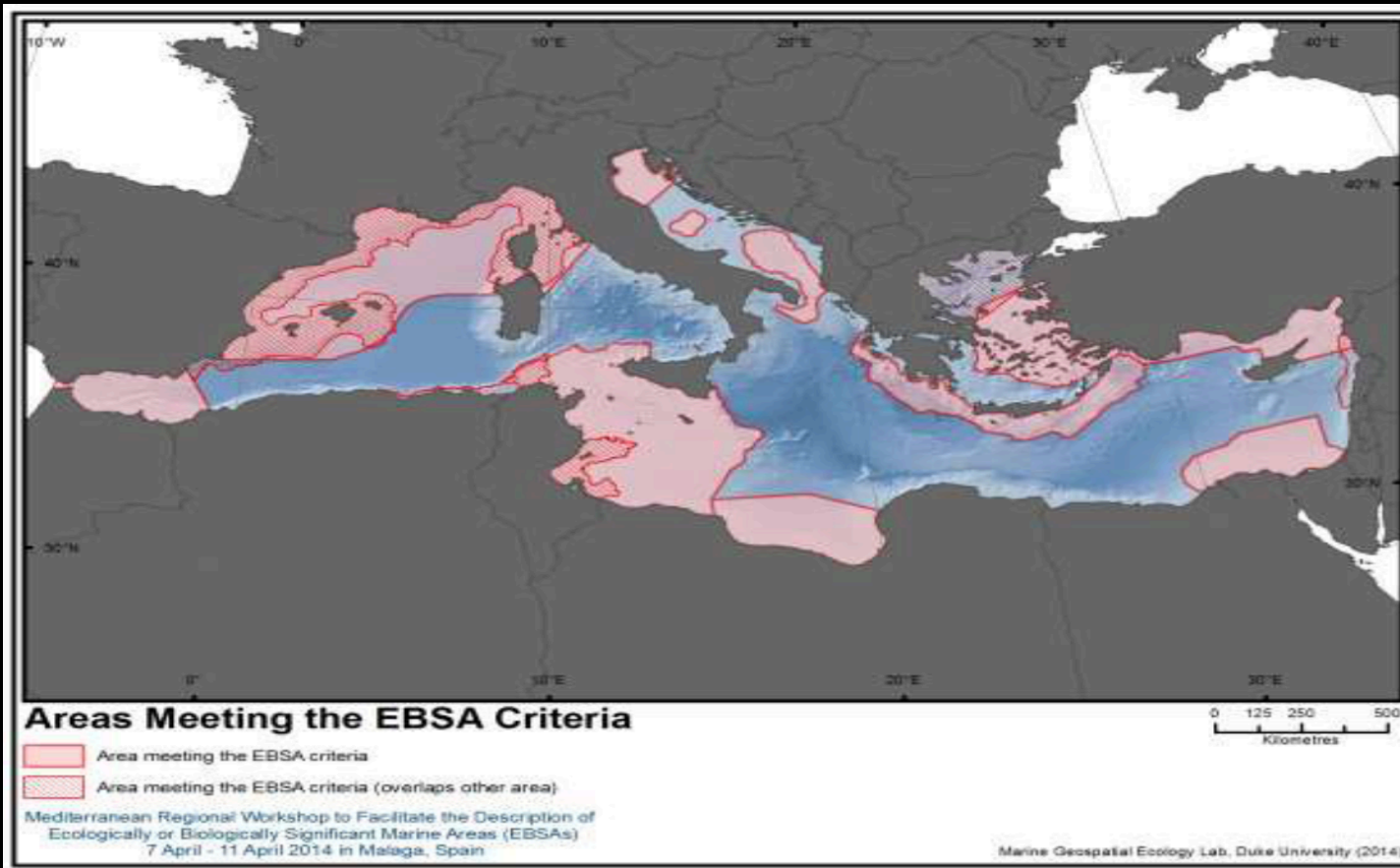


Figure 1. Coloured patches indicate areas covered by a series of CBD regional workshops and similar regional processes to facilitate the description of areas meeting EBSA criteria (dotted line indicates the confirmed future workshops to be convened by March 2013)





## Convention on Migratory Species

- Based on the principle that to protect migratory species international cooperation is necessary
- Appendix I lists “strictly protected migratory species that have been categorized as being in danger of extinction throughout all or a significant proportion of their range”
- Appendix II lists “migratory species which have an unfavourable conservation status and which require international agreements for their conservation and management, as well as those which have a conservation status which would significantly benefit from the international cooperation that could be achieved by an international agreement”.
- Several marine mammal and turtle species listed in the Convention’s Appendices.



## Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area

A cooperative tool for the conservation of marine biodiversity in the Mediterranean and Black Seas, under the umbrella of CMS, to reduce threats to cetaceans in Mediterranean and Black Sea waters and improve our knowledge of these animals.





## **Barcelona Convention for the protection of the marine environment and the coastal region of the Mediterranean**

- Together with 7 Protocols, creates the legal framework for the Mediterranean Action Plan (MAP), managed by UNEP.
- Protocol on Specially Protected Areas and Biological Diversity (SPA/BD Protocol):
  - Establishing Specially Protected Areas of Mediterranean Importance (SPAMIs);
  - Listing species to be protected (including marine mammals and turtles) in its Annexes II and III.

# Good Environmental Status of the marine environment



EU Marine Strategy  
Framework Directive  
(European waters)



Ecosystem Approach  
(EcAp) of UNEP MAP  
(all Mediterranean waters)



# Important Marine Mammal Areas

- Discrete portions of habitat, important to one or more marine mammal species, which have the potential to be delineated and managed for conservation.
- Involve the collation and standardisation of information available for marine mammals, using agreed criteria and an expert protocol, subject to review, to grade the relative importance of areas for delivery to international and national processes.

# Working toward Important Marine Mammal Areas (IMMAs)

## Preliminary Indications of Marine Mammal Habitat from Various Existing Political and Biological Designations



### IUCN MARINE MAMMAL PROTECTED AREAS TASK FORCE

In October 2013, the IUCN Marine Mammal Protected Areas Task Force was launched by IUCN and the International Commission for the Conservation of the Atlantic Ocean (ICCAO) at the 2nd International Marine Conservation Summit (IMCS) in St. John's, Newfoundland.

The first action of the Task Force was to hold a workshop to develop criteria for a new International Category of Marine Mammal Protected Areas (IMMA).

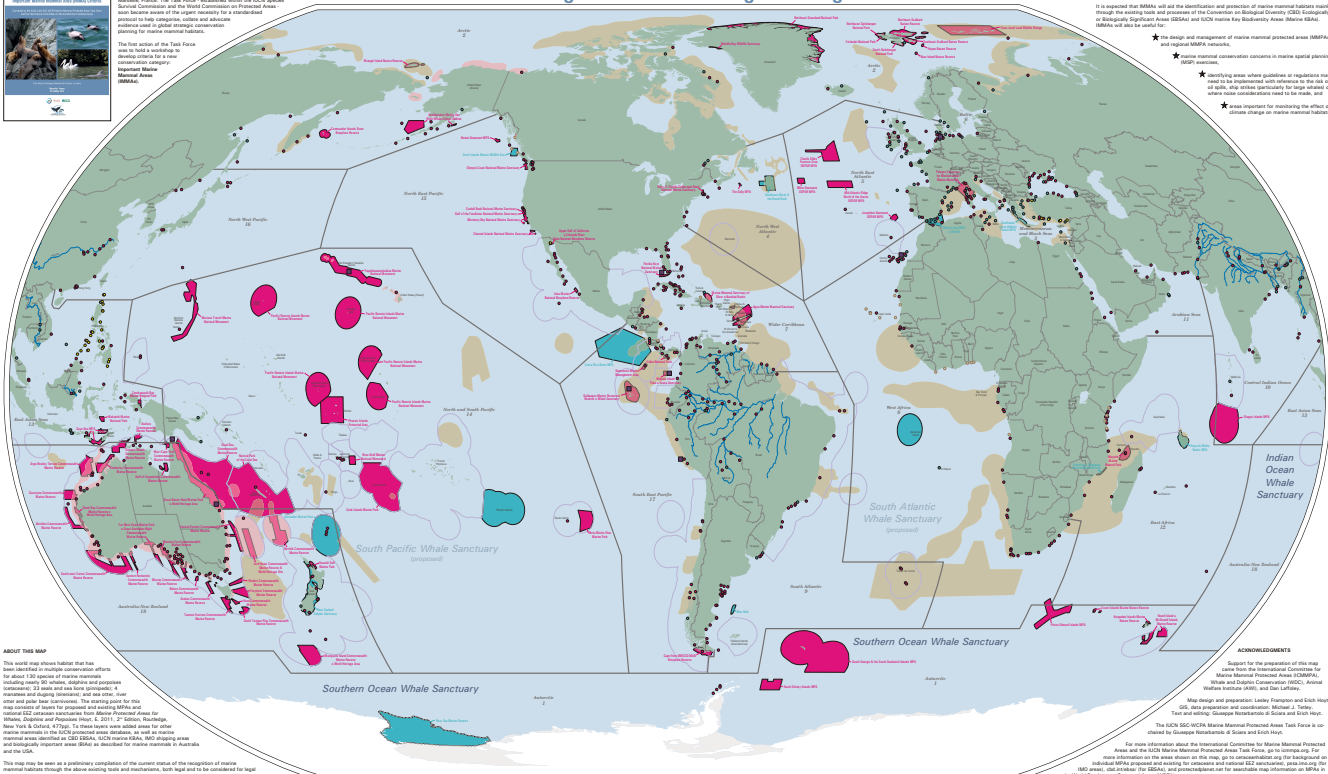
### IMPORTANT MARINE MAMMAL AREAS (IMMAs)

Important Marine Mammal Areas (IMMAs) are discrete portions of habitat, important to one or more marine mammal species, which have the potential to be delineated and managed for conservation.

It is expected that IMMAs will aid the identification and protection of marine mammal habitats globally through the existing work and processes of the Convention on Biological Diversity (CBD), Catalogue of Biological Significant Areas (CBSAs) and IUCN marine Key Biodiversity Areas (KBAs).

IMMAs will also be used for:

- ★ the design and management of marine mammal protected areas (MMPAs) and regional IMMA networks.
- ★ marine mammal conservation concerns in marine spatial planning (MSP) work.
- ★ identifying areas where guidelines or regulations may need to be implemented with reference to the risk of oil spills, other stressors (especially for high areas of value), and other conservation risks to the health and well-being of marine mammals.
- ★ areas important for monitoring the effect of climate change on marine mammal habitats.



### ABOUT THIS MAP

This world map shows habitat that has been identified in multiple conservation efforts for about 120 species of marine mammals. It includes marine mammal protected areas (MMPAs), marine mammal key biodiversity areas (MKBAs), and other areas of importance. The map also shows the distribution of marine mammals and the locations of various marine mammal protected areas. The map is based on data from the IUCN Marine Mammal Protected Areas Task Force and other sources.

### ACKNOWLEDGMENTS

Support for the production of this map came from the International Commission for the Conservation of the Atlantic Ocean (ICCAO), the International Commission for the Conservation of the Pacific Ocean (ICPO), the International Commission for the Conservation of the Indian Ocean (ICIO), and the International Commission for the Conservation of the Southern Ocean (ICSO). The IUCN SSC Marine Mammal Protected Areas Task Force is co-chaired by Giuseppe Nicosia and David Hays.

This map may be used as a preliminary compilation of the current status of the recognition of marine mammal habitats through the above existing tasks and mechanisms. Any map user is considered to be legal and responsible for any use of the map. The map is not intended to be used for legal purposes.

Map data is derived from various sources, including the IUCN Marine Mammal Protected Areas Task Force, the International Commission for the Conservation of the Atlantic Ocean (ICCAO), the International Commission for the Conservation of the Pacific Ocean (ICPO), the International Commission for the Conservation of the Indian Ocean (ICIO), and the International Commission for the Conservation of the Southern Ocean (ICSO).

### LEGEND KEYS FOR POTENTIAL IMPORTANT MARINE MAMMAL AREAS AS SHOWN ON THE MAP

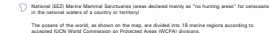
- Existing Marine Mammal Protected Areas (MMPAs) designated by the IUCN in the context of one or more countries, or in the high seas by regional agreements. Also includes freshwater habitats for river and a few Great Lakes, freshwater protected, historical, and others not used to develop criteria for other areas and not based on species and habitat for protection. MMPAs are defined as MPAs either declared for marine mammals or others to include important marine mammal habitat.
- Proposed Marine Mammal Protected Areas (pMMPAs)
- Biologically Significant Areas (BSAs) identified as marine mammal habitat in Australia and USA (only). BSAs that also or overlap are shown consistently on the map.
- National IUCN Marine Mammal Sanctuaries (IUCN MMS) declared mainly as "no hunting areas" for cetaceans in the national waters of a country or territory.

The IUCN Marine Key Biodiversity Areas (MKBAs), selected in several countries to form a worldwide network of marine biodiversity locations shown include marine mammal habitat.

Particularly Sensitive Sea Areas (PSSAs) and other International Maritime Organization (IMO) directives for marine mammal habitat shipping lanes or speed restrictions in at least marine mammal habitat.

Biologically Significant Areas (BSAs) with marine mammal habitat (in Australia and USA only). BSAs that also or overlap are shown consistently on the map.

Two International Whaling Commission (IWC) marine mammal sanctuaries are noted on the map: the Indian Ocean Whale Sanctuary (IOWS) and the Southern Ocean Whale Sanctuary (SOWS). These are mostly coastal feeding areas although they also encompass some offshore areas. The IOWS and SOWS are established as sanctuaries for the protection of whales, as well as engagement by bordering countries. The IOWS and SOWS are not intended to be considered as examples of specific marine mammal habitat areas.



In conclusion: with all these efforts,  
why has marine conservation not been  
working until now?



Tethys/Nino Pierantonio