



proteus

Exploring the Important Shark and Ray Areas (ISRAs) initiative and dataset

Dr Rima Jabado (IUCN SSC Shark Specialist Group)
Dr Giuseppe Notarbartolo Di Sciara (IMMA Network)
Dr Gill Braulik (IMMA Network)

28TH MARCH 2024

WELCOME

Objectives of the Proteus Data Forum sessions

- A venue for direct communication between data users and technical experts
- Increase familiarity with Proteus resources
- Peer-to-peer learning between Proteus Partner companies
- Identifying common challenges & finding solutions

Logistics

- *Frequency* quarterly
- *Rules* Chatham House discussion, but presentations recorded

AGENDA

Presentation: Exploring the Important Shark and Ray Areas (ISRAs) initiative and dataset

- Overview of the ISRAs project and its key concepts and criteria
- Guidance on interpreting and using ISRAs data
- Relevance of this dataset for Proteus Partners
- A short additional update on recent developments to the Important Marine Mammal Areas (IMMAs) dataset

Peer-to-peer discussion

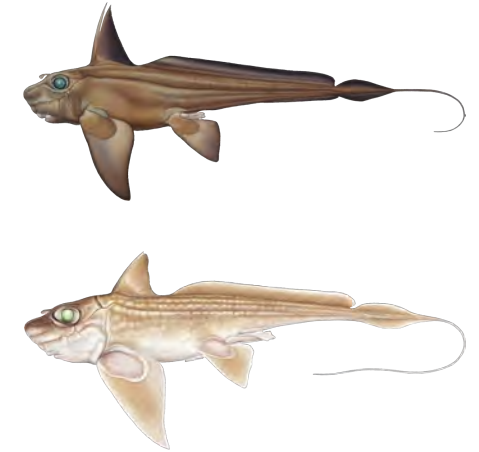
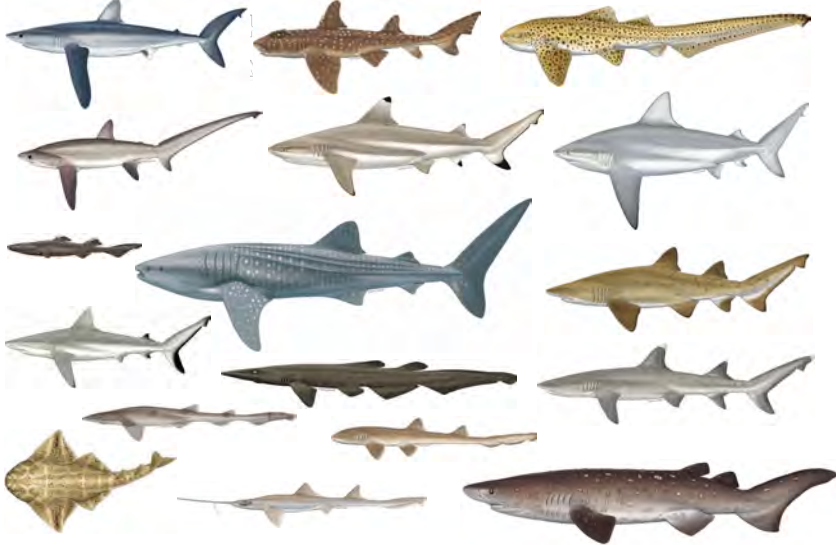
- Q&A with presenters
- Feedback from Partners

Important Shark and Ray Areas — ISRA

Dr Rima Jabado | Deputy Chair | IUCN Species Survival Commission
Chair | IUCN SSC Shark Specialist Group

Chondrichthyans – sharks, rays, and chimaeras

ISRA



~1,266 species

The problem



20%

Reefs surveyed in 54 countries and 20% without sharks

McNeil et al. 2020

-70%

Global abundance of oceanic sharks and rays declined by 71% since 1970

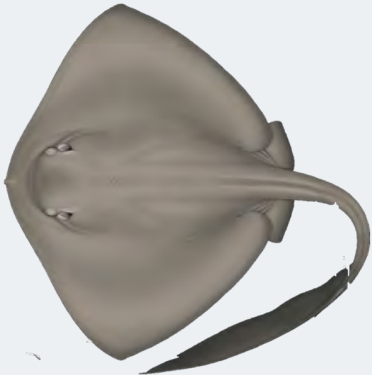
Pacoureaux et al. 2021



37%

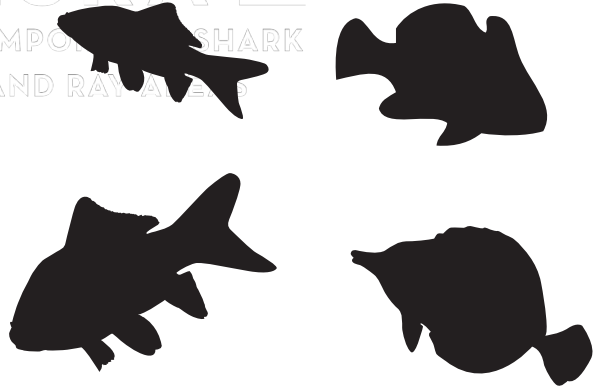
IUCN Red List shows 37% of sharks, rays, and chimaeras threatened with extinction

Dulvy et al. 2021

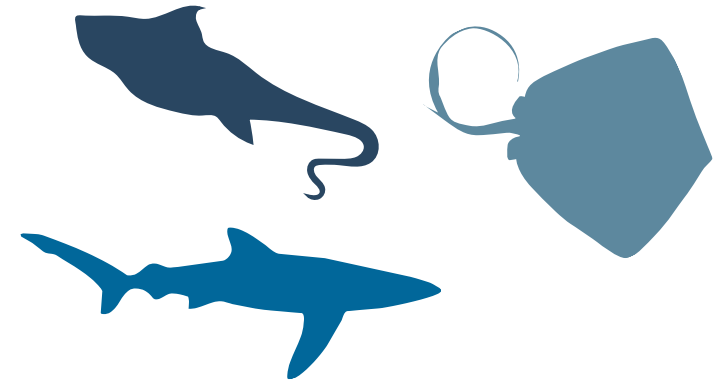


A different kind of fish

ISRA
IMPORTANT SHARK
AND RAY AREAS



-
- Up to 5 million eggs
 - Life span of up to 30 years
 - Mature early
 - Can reproduce multiple times a year
 - Gestation of a few days without



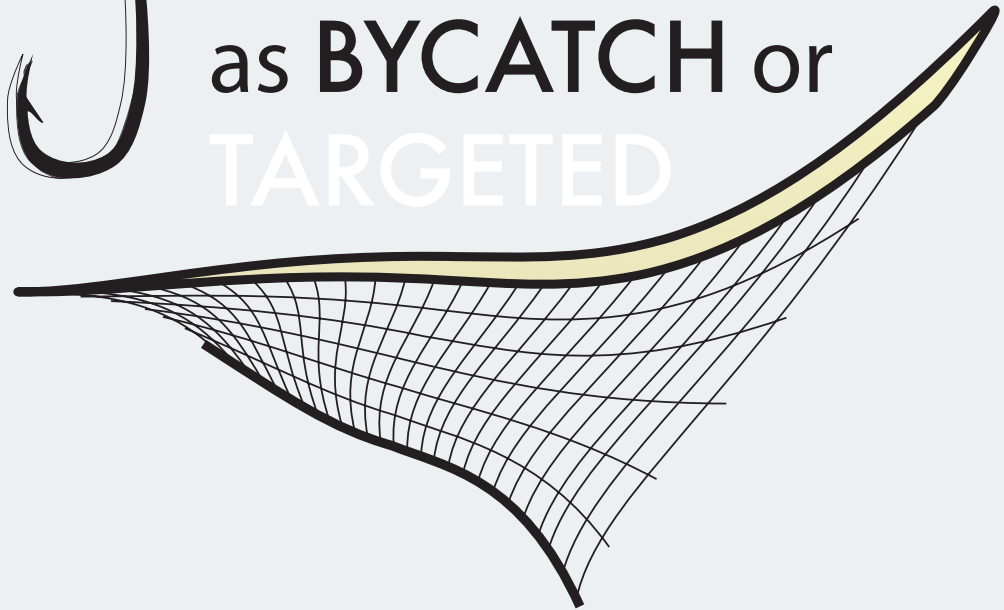
-
- From 1 to 300 pups – LIVE BIRTH
 - Life span of up to 300 years
 - Late to mature
 - Often reproduce only once a year
 - Gestation of up to 2 years



International demand for shark **FINS** and **MEAT** is driving their exploitation



Taken primarily as **BYCATCH** or **TARGETED**





© Daniel Fernando



Current key intervention points

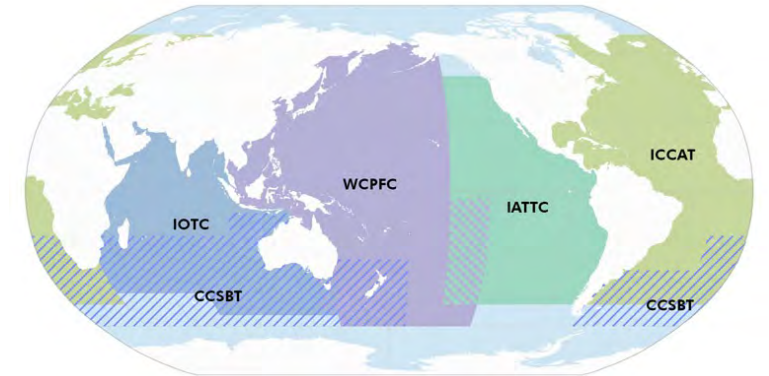
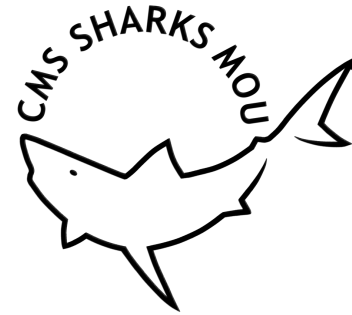
ISRA
IMPORTANT SHARK
AND RAY AREAS



Convention on International Trade in Endangered Species of Flora and Fauna



Convention on the Conservation of Migratory Species of Animals and Sharks MoU



Regional Fisheries Bodies

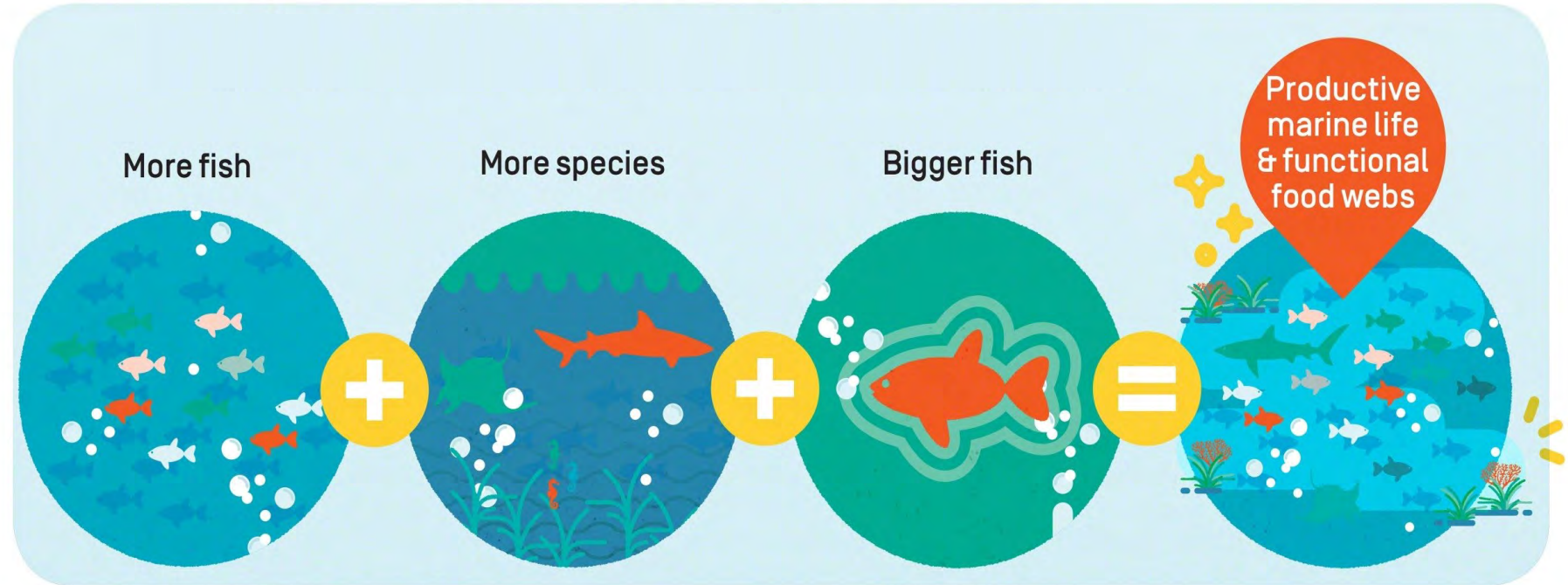
Easy
solution



In theory — marine protected areas

ISRA
IMPORTANT SHARK
AND RAY AREAS

saveourseasmagazine.com/marine-protected-area/



Marine protected areas

ISRA
IMPORTANT SHARK
AND RAY AREAS

sharks.panda.org/images/PDF/WF_MPA_Guide2019.pdf



Marine protected areas and sharks

ISRA
IMPORTANT SHARK
AND RAY AREAS

sharks.panda.org/images/PDF/WWF_MPA_Guide2019.pdf





IMPORTANT SHARK
AND RAY AREAS

30 x 30 MOVEMENT

Kunming – Montreal Global Biodiversity Framework



Area-based approaches

ISRA
IMPORTANT SHARK
AND RAY AREAS

IBA
BIRDLIFE IMPORTANT BIRD
AND BIODIVERSITY AREA

KBA
KEY BIODIVERSITY AREAS

IMMA

 Convention on
Biological Diversity

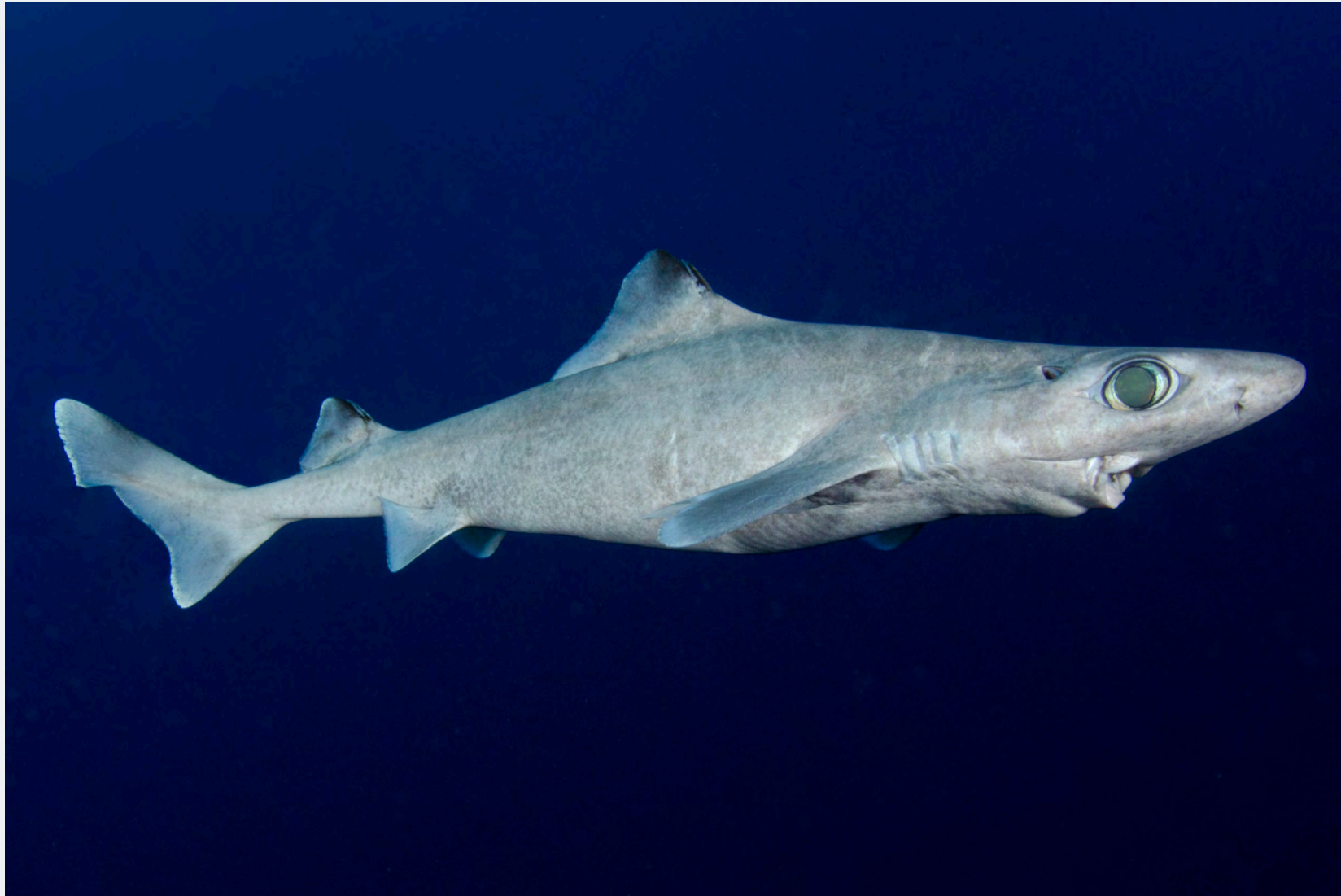
SHARK AND RAY CONSERVATION OUTCOMES

- First expert driven, advisory classification of habitats with potential to be delineated and managed for conservation
- Complement and contribute EBSAs, KBAs, IMMAs, IBAs
- Support creation of representative networks of MPAs to protect the connectivity between ecosystems
- Sharks incorporated in ongoing conservation planning processes
- REDUCED SHARK, RAY, AND CHIMAERA MORTALITY

ISRAs are

“discrete, three-dimensional portions of habitat, important for one or more shark species, that are delineated and have the potential to be managed for conservation”.

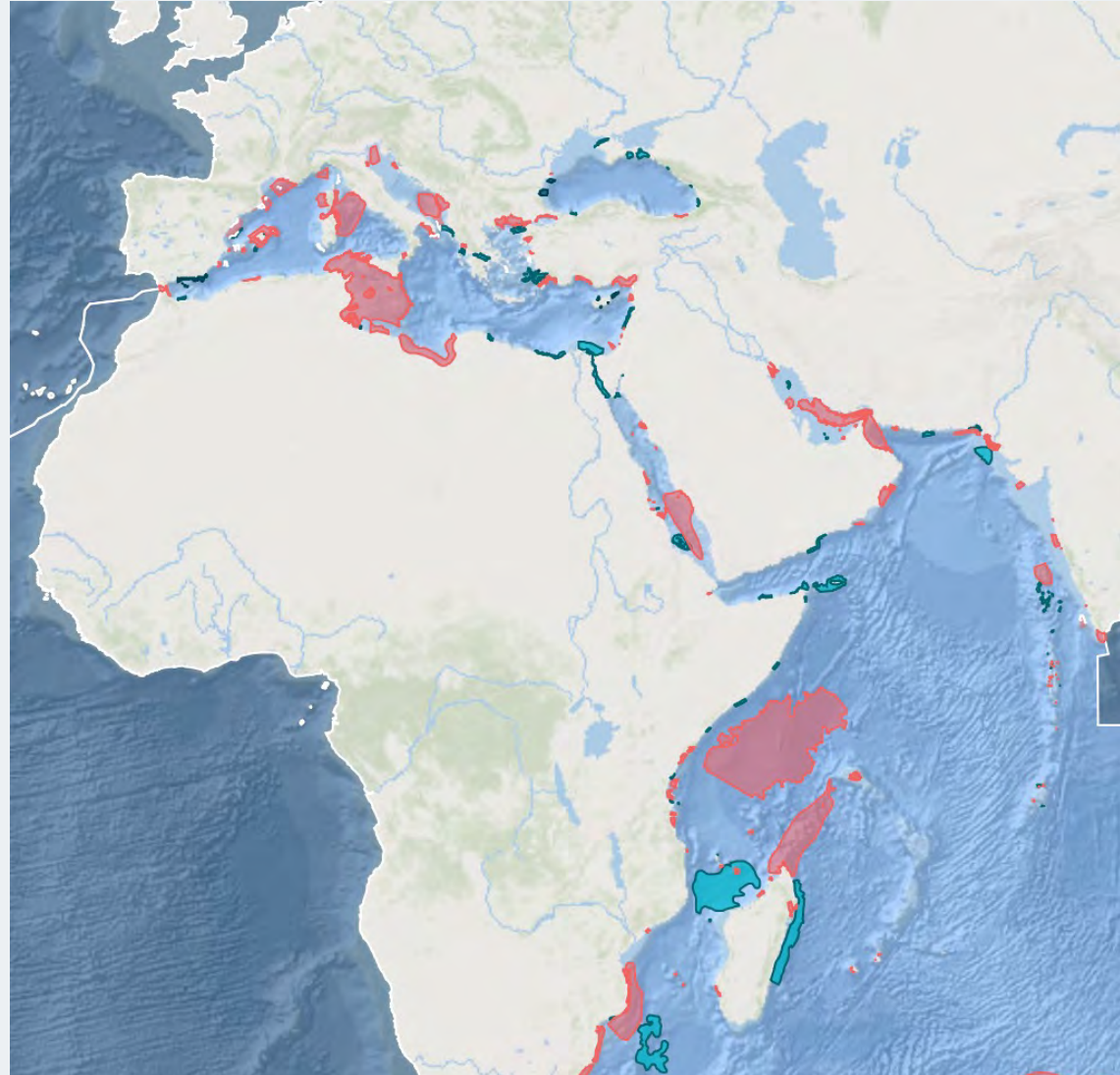
“...three-dimensional portions of habitat...”



435-770 m depth

┌
ISRA └
IMPORTANT SHARK
AND RAY AREAS

“...potential to be managed for conservation”.



The ISRA Criteria

CRITERION A - VULNERABILITY

CRITERION B - RANGE RESTRICTED

CRITERION C - LIFE-HISTORY

SUB-CRITERION C1
REPRODUCTIVE AREAS

SUB-CRITERION C2
FEEDING AREAS

SUB-CRITERION C3
RESTING AREAS

SUB-CRITERION C4
MOVEMENT

SUB-CRITERION C5
UNDEFINED
AGGREGATIONS

CRITERION D - SPECIAL ATTRIBUTES

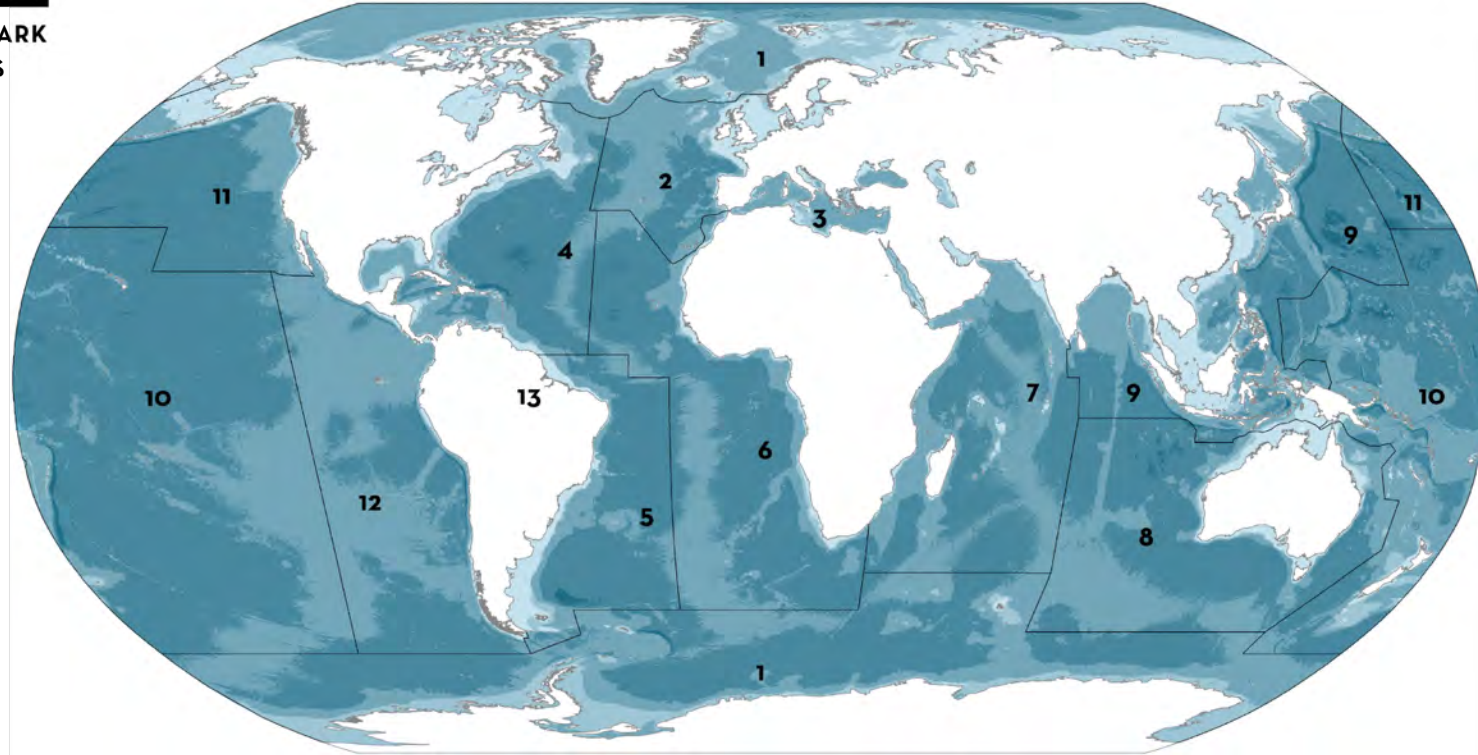
SUB-CRITERION D1
DISTINCTIVENESS

SUB-CRITERION D2
DIVERSITY

GLOBAL REGIONS

ISRA
IMPORTANT SHARK
AND RAY AREAS

ISRA
IMPORTANT SHARK
AND RAY AREAS



01 POLAR WATERS

02 EUROPEAN ATLANTIC

03 MEDITERRANEAN & BLACK SEAS

04 NORTH AMERICAN & CARIBBEAN ATLANTIC

05 SOUTH AMERICAN ATLANTIC

06 AFRICAN ATLANTIC

07 WESTERN INDIAN OCEAN

08 AUSTRALIAN & SOUTHEAST INDIAN OCEAN

09 ASIA

10 NEW ZEALAND & PACIFIC ISLANDS

11 NORTH AMERICAN PACIFIC

12 CENTRAL & SOUTH AMERICAN PACIFIC

13 SOUTH AMERICAN INLAND WATERS

The ISRA Team

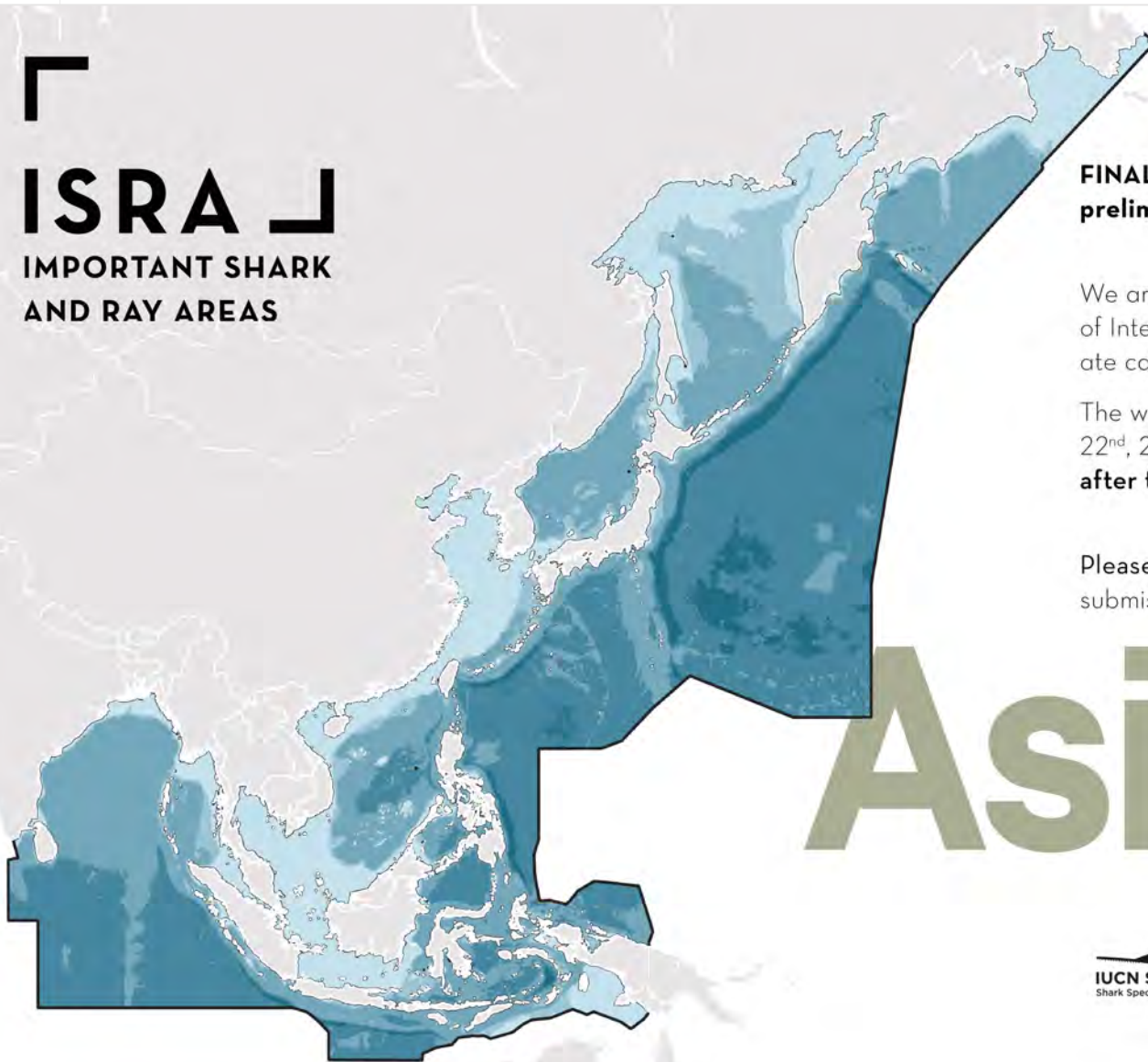


Stage 1

ISRA
IMPORTANT
AND RAY AR

ISRA

IMPORTANT SHARK
AND RAY AREAS



FINAL CALL for proposals for preliminary Areas of Interest

We are seeking proposals for preliminary Areas of Interest in Asia which we will be used to delineate candidate Important Shark and Ray Areas.

The workshop will be held the week of January 22nd, 2024 - **new proposals will not be accepted after this time.**

Please submit proposals to submissions@sharkrayareas.org

Expert contributions at regional level



85 contributors

Central and South American Pacific

Bogota, Colombia, October 2022



166 contributors

Mediterranean and Black Seas

Thessaloniki, Greece, May 2023



233 contributors

Western Indian Ocean

Durban, South Africa, September 2023



Find all ISRA geospatial data and factsheets in:

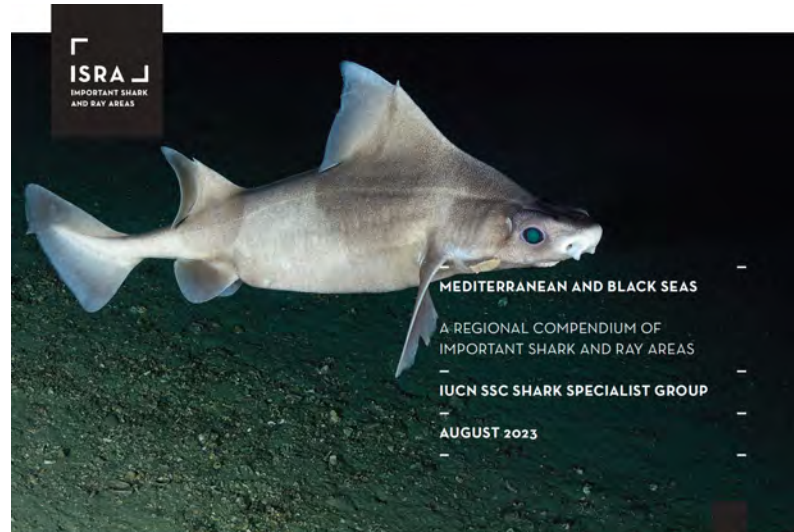
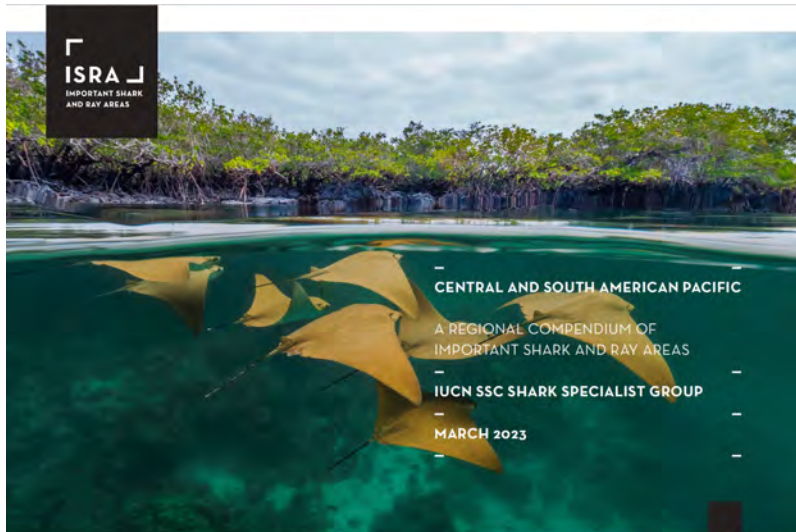
<https://sharkrayareas.org/e-atlas/>

Important Shark and Ray Area (Surface)
 Important Shark and Ray Area (Subsurface)
 candidate Important Shark and Ray Area

Area of Interest
 Region not assessed

Regional Compendium

ISRA
IMPORTANT SHARK
AND RAY AREAS



COVERAGE



47

countries with an ISRA



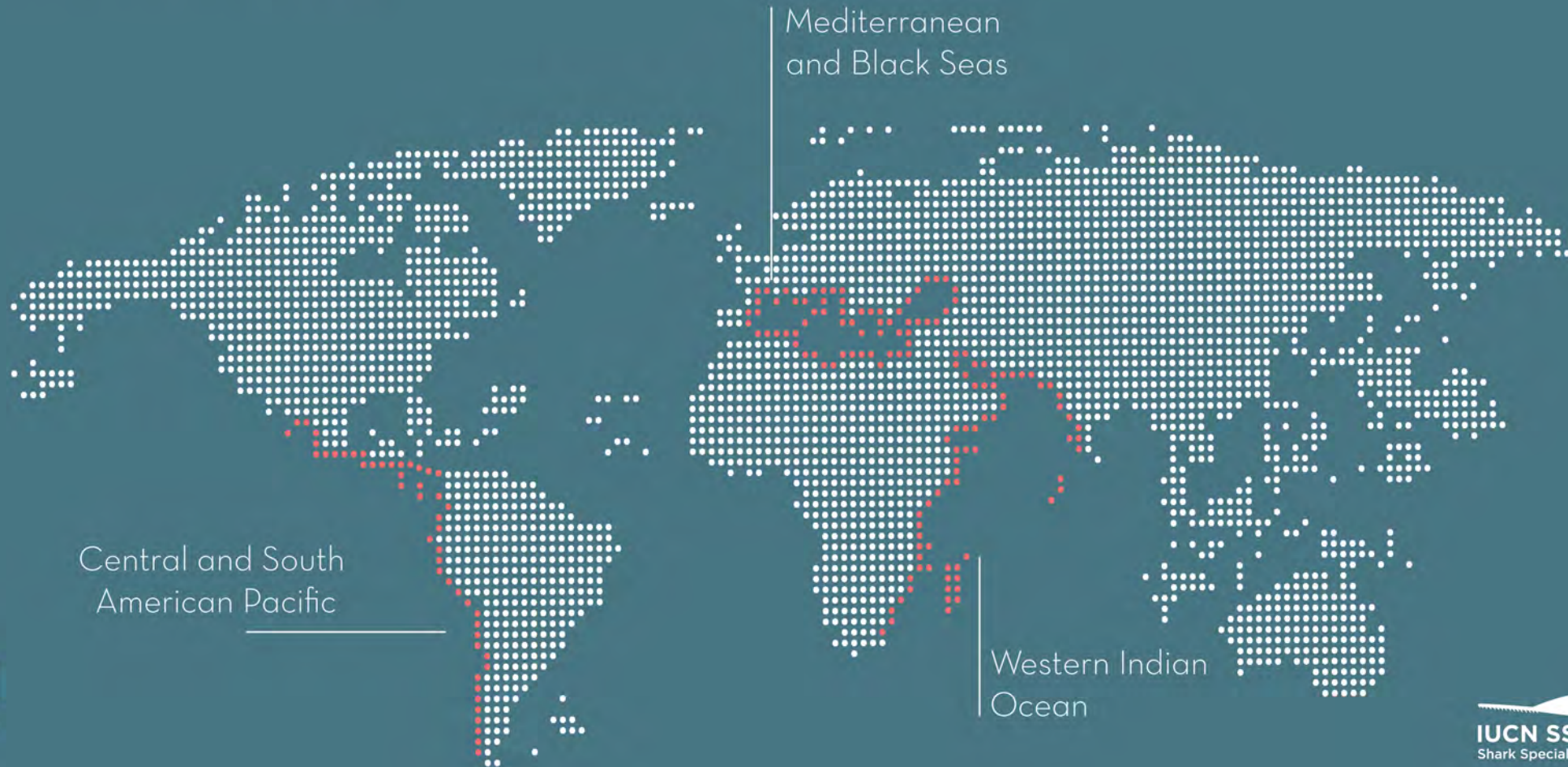
256

Important Shark and Ray Areas



484

of contributors from >60 countries



ISRA

IMPORTANT SHARK
AND RAY AREAS



IUCN SSC
Shark Specialist Group

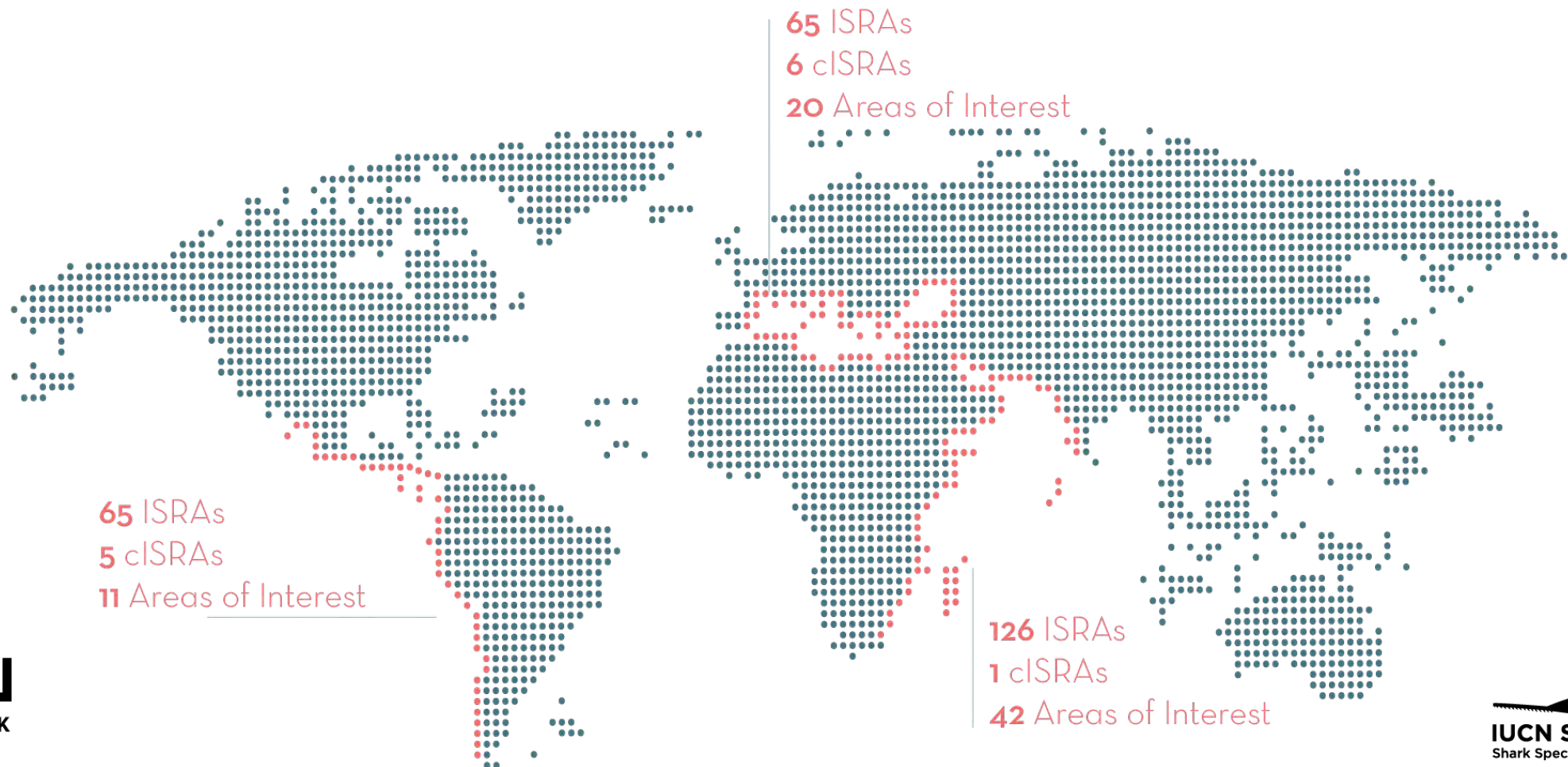
AREAS DELINEATED



18.72%
of the ocean assessed



3.1%
of the ocean as an ISRA



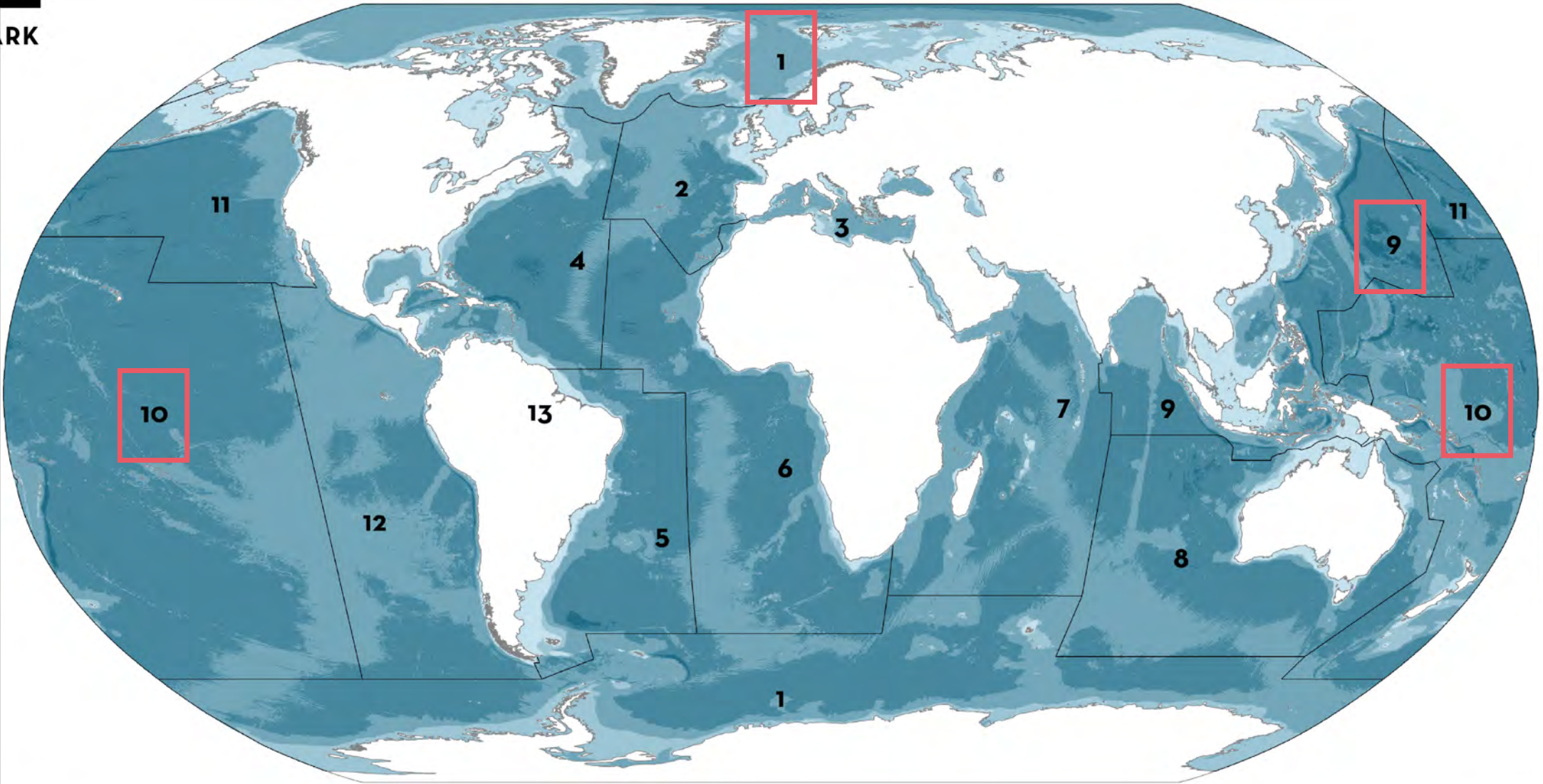
65 ISRAs
5 cISRAs
11 Areas of Interest

65 ISRAs
6 cISRAs
20 Areas of Interest

126 ISRAs
1 cISRA
42 Areas of Interest

GLOBAL REGIONS

ISRA
IMPORTANT SHARK
AND RAY AREAS



Spatial data requests



>100 requests

1 year after launching the eAtlas



GLOBAL
FISHING
WATCH

GREENPEACE



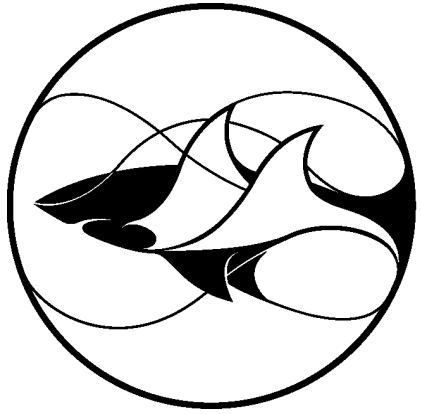
Fundación
Charles Darwin
Foundation
GALAPAGOS



OCEANA



Supporters



**Shark
Conservation
Fund**

Resources



Putting sharks on the map: A global standard for improving shark area-based conservation

Ciaran A. Hyde^{1*}, Giuseppe Notarbartolo di Sciara^{2,3,4},
Lynn Sorrentino⁵, Charlotte Boyd⁶, Brittany Finucci^{2,7},
Sarah L. Fowler^{2,8}, Peter M. Kyne⁹, Guido Leurs^{2,10},
Colin A. Simpfendorfer^{2,11,12}, Michael J. Tetley³,
Freya Womersley^{13,14} and Rima W. Jabado^{2,11,15*}



Resources

ISRA
IMPORTANT SHARK
AND RAY AREAS



ISRA
IMPORTANT SHARK
AND RAY AREAS

ISRA

IMPORTANT SHARK
AND RAY AREAS

THANK YOU



facebook.com/SharkRayAreas



[@SharkRayAreas](https://twitter.com/SharkRayAreas)



sharkrayareas.org



IUCN SSC
Shark Specialist Group



IUCN Task Force to identify Important Areas for Marine Mammals (IMMAs):

Global marine mammal layers for cetaceans, pinnipeds, sirenians, the sea otter & polar bear



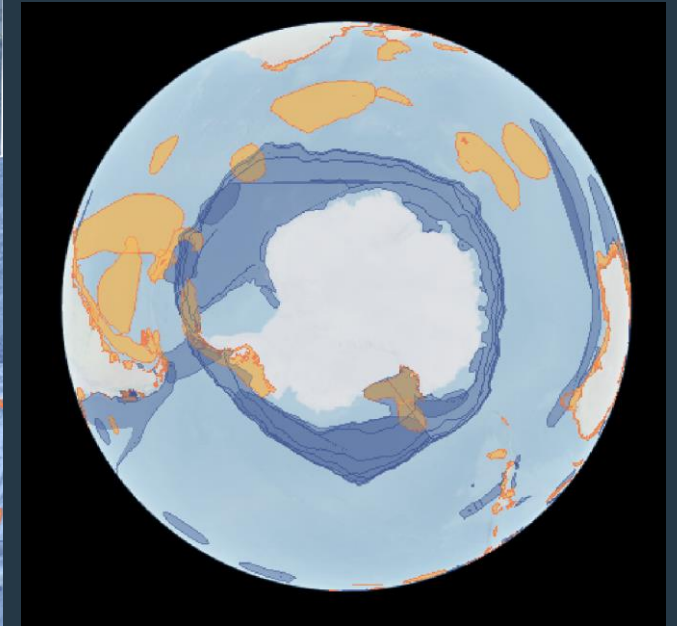
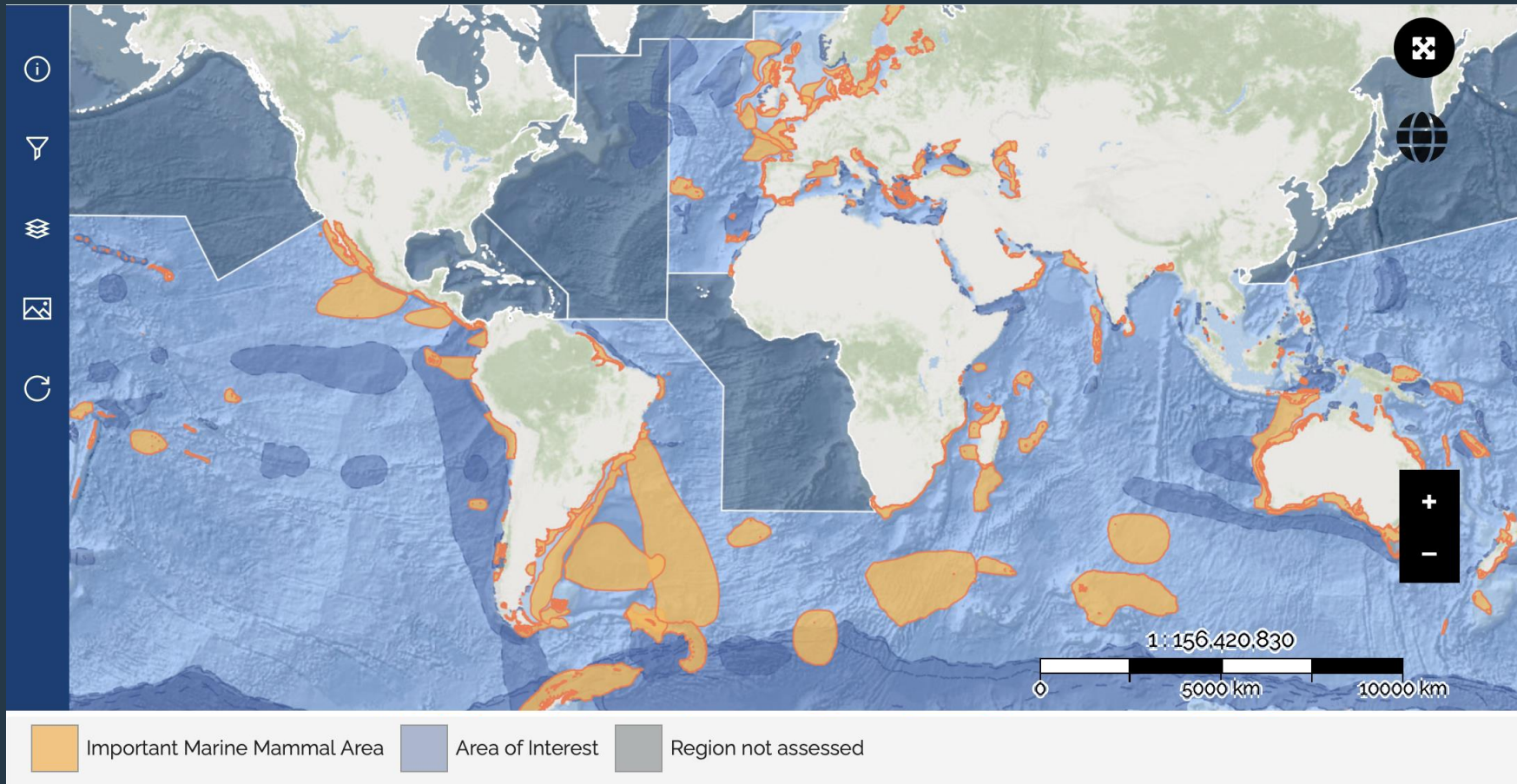
IUCN Joint SSC-WCPA Marine Mammal Protected Areas Task Force

IUCN = International Union for Conservation of Nature

SSC = Species Survival Commission; WCPA = World Commission on Protected Areas

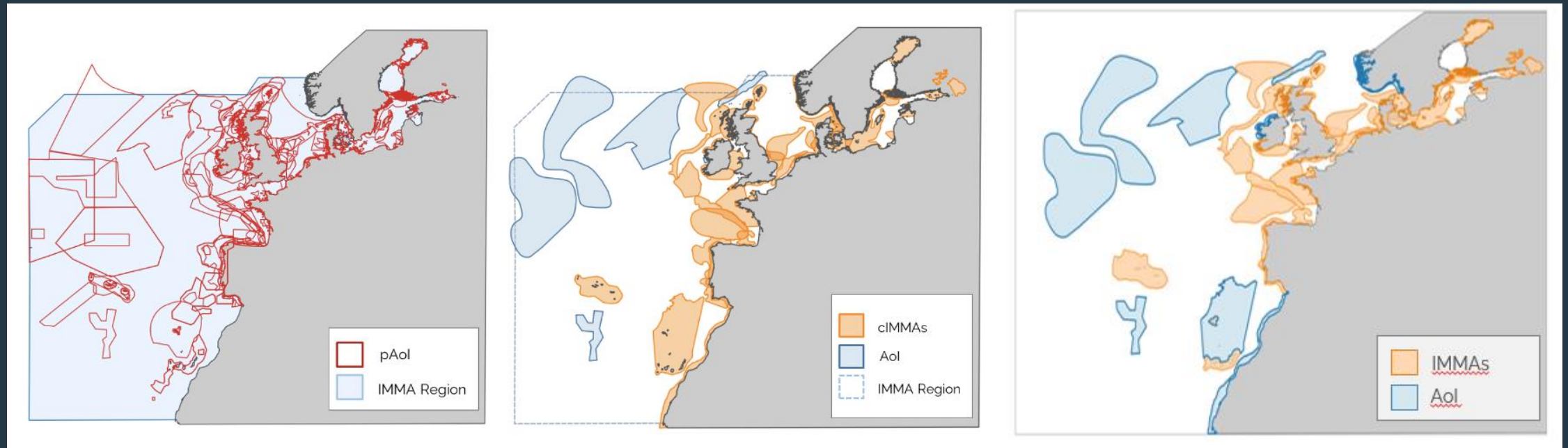
IMMA Results: 2016-2024 • 10 regions • 300+ scientists

280 IMMAs Identified + 185 areas of interest (Aol)



NE Atlantic Ocean & Baltic Sea May 2023 IMMA Workshop

- pre-workshop, 395 pAoI submitted by 80+ conservation & citizen groups & scientists
 - during week-long workshop, 53 experts from 12 countries used the 395 pAoI to create 36 cIMMAs
 - following peer review, 33 IMMA + 10 AoI to be announced 27 Feb. 2024
- (the three bullets refer to the maps below from left to right)



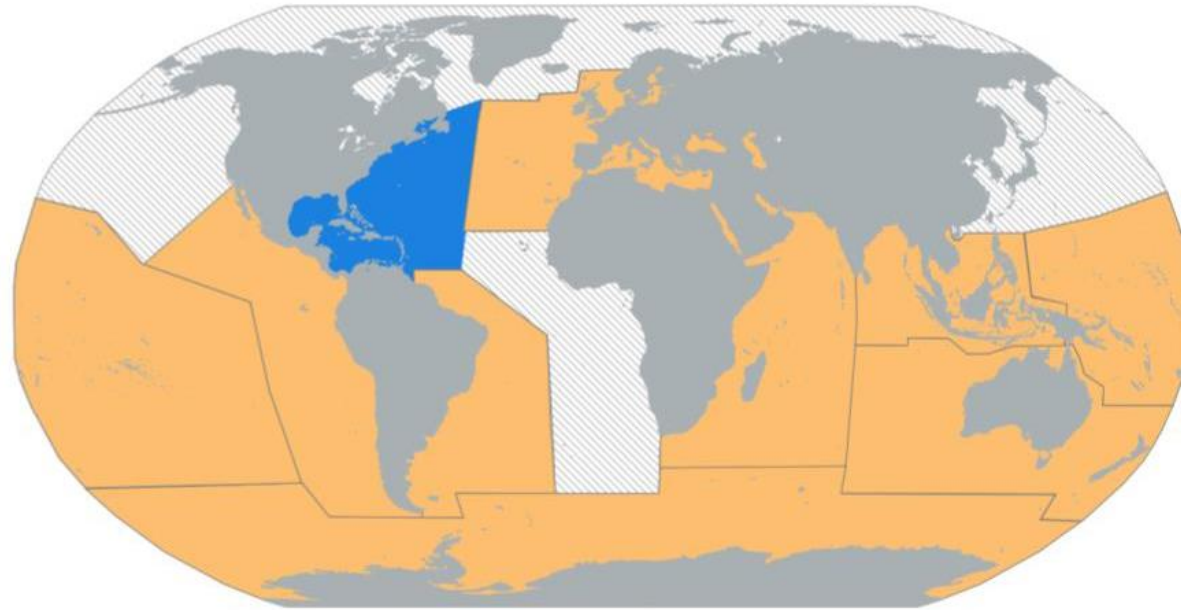
IMMA performance indicators, 2016 - 2024

Number of regions examined and completed (2016-2023)	10	
Number of experts involved	300+	
Number of IMMAs identified	280	
Number of areas of interest (Aoi) identified	185	
Area covered by IMMAs (km ²)	33,327,053	
Area of 10 regions examined (km ² , approximate)	258,689,760	
Global ocean area (km ²)	361,100,000	
Percent of global waters (ocean+inland) examined	74.3	%
Percent of examined area covered by IMMAs	13	%
N° of marine mammal species for which IMMAs were identified	91	
Percent of IMMAs identified based on important habitat for one or more threatened marine mammal species (CR, EN and VU categories)	66	%
Percent of IMMAs in EEZ and High Seas	57 % / 43%	



2016-2024: The MMPA Task Force has made progress to identify a worldwide network of IMMAs

IMMAs are identified region-by-region: 10 regions examined to date — 74.3% of the global ocean



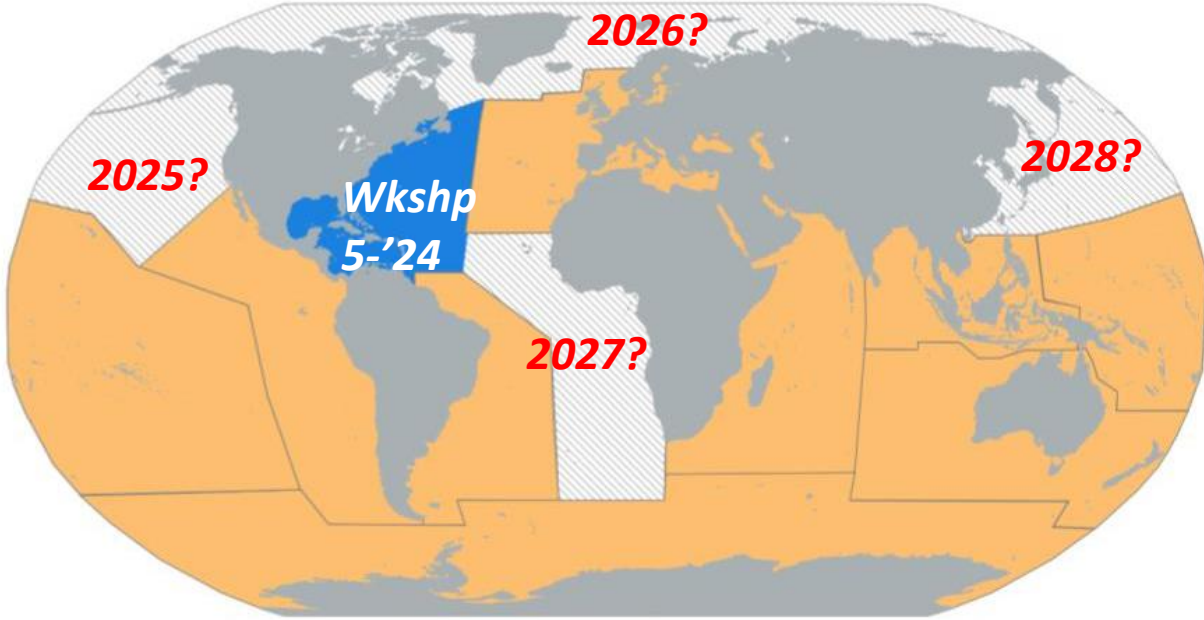
COMPLETED SCHEDULED TO BE ARRANGED



MARINE MAMMAL
PROTECTED AREAS
TASK FORCE



2024-2028: The MMPA Task Force hopes to complete the worldwide network of IMMAs



MARINE MAMMAL
PROTECTED AREAS
TASK FORCE



COMPLETED SCHEDULED TO BE ARRANGED

Marine Conservation and Management Initiatives utilising products of the IMMA Process

- Convention on Biological Diversity **Ecologically or Biologically Significant Areas (EBSAs)**;
- **Marine Spatial Planning (MSP)** and management of any human activity at sea (e.g., *shipping, fishing, industrial and scientific exploration*);
- the establishment of **Marine Protected Areas (MPAs)** and **MPA Networks**;
- International Maritime Organisation's **Particularly Sensitive Sea Areas (PSSAs)** and other initiatives;
- IUCN **Key Biodiversity Areas (KBAs)**.



Additional Policy & Management Implications of IMMAs in the local, national, international arenas

- More than 725 downloads of shapefile layer to date.
- Convention on Migratory Species resolution to engage countries in identifying and supporting IMMAs (encourages MPA or other implementation of IMMAs in a country's waters).
- US & other navies downloading IMMMA layers to inform LF sonar use.
- 50 scientific papers since 2016 have covered work in IMMAs, explained the IMMMA concept or mentioned IMMAs, with 25 papers since 2022.
- We have built a strong constituency around habitat-based conservation for marine mammals and associated biodiversity with the global marine mammal research community.





<https://www.marinemammalhabitat.org/imma-eatlas/>



Thank you

UN 
**environment
programme**

WCMC