

生物多様性の国際モニタリング International Monitoring of Biodiversity

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Contents

- ❁ Scientific data is essential for the conservation of biodiversity
 - Example: use of data for conservation of marine biodiversity in high seas
- ❁ Current available data and international efforts for
 - Increasing amount of available data
 - Increasing availability of existing data



Use of Scientific Data in CBD

- ❁ Decision COP IX/20 (Marine and coastal biodiversity: 14. Designing network of MPAs)
 - Adopts **the scientific criteria**, as contained in annex I to the present decision, for identifying **ecologically or biologically significant marine areas** in need of protection, and **the scientific guidance**, contained in annex II to the present decision, for designing representative networks of **marine protected areas**, as recommended by the Expert Workshop on Ecological Criteria and Biogeographic Classification Systems for Marine Areas in Need of Protection



Scientific Criteria for identifying ecologically or biologically significant marine areas

- ❁ Uniqueness or rarity
- ❁ Special importance for life history stages
- ❁ Importance for threatened, endangered or declining species and/or habitats
- ❁ Vulnerability, fragility, sensitivity or slow recovery
- ❁ Biological productivity
- ❁ Biological diversity
- ❁ Naturalness



Example of proposed MPA in the North Mid Atlantic Ridge

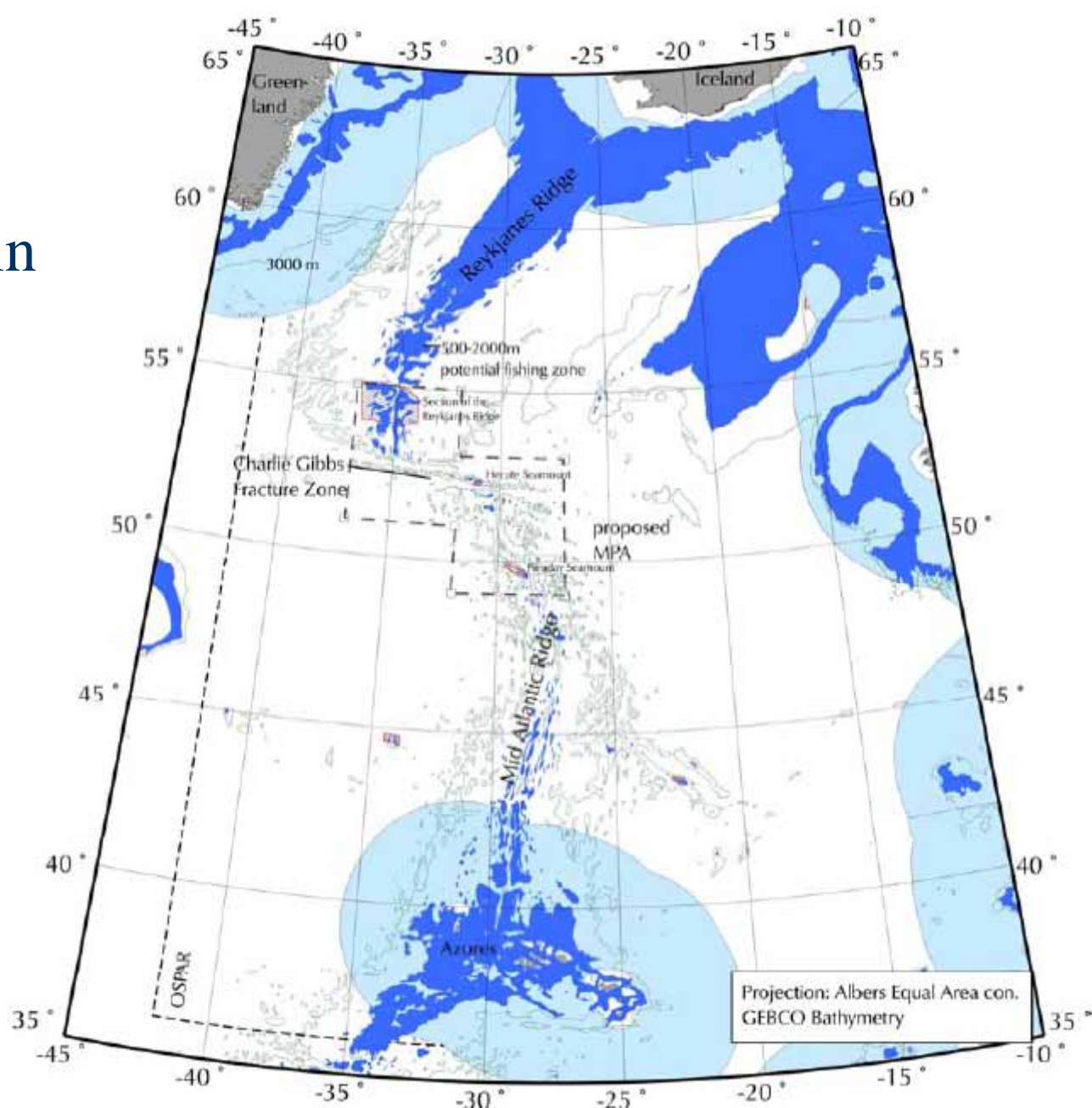


Fig. 1: Location of the proposed MPA on the Mid-Atlantic Ridge. The NEAFC closures within the proposed area are outlined in red (Hecate, Faraday Seamounts and Reykjanes Ridge).

Census of Marine Life

A decade-long program (2000-2010)
to assess and explain marine life's
diversity, distribution & abundance
- past, present & future

The Known, the Unknown, the Unknowable



Grand Challenge Questions

CoML Components

1) *What did live in the oceans?*

History of Marine Animal Populations (HMAP)

2) *What does live in the oceans?*

Ocean Realm Field Projects (Protocols & SCOR Technologies)



Ocean Biogeographic Information System (OBIS)

3) *What will live in the oceans?*

Future of Marine Animal Populations (FMAP)

New Ocean Realm Projects

Human Edges

- NaGISA - Natural Geography In Shore Areas
- CReefs - Coral Reef Ecosystems
- GoMA - Gulf of Maine Area Program (Regional Ecosystem)
- POST - Pacific Ocean Shelf Tracking

Hidden Boundaries

- CoMargE - Continental Margins Ecosystems
- CeDAMar - Census of Diversity of Abyssal Marine Life
- CenSeam - Census of Seamounts
- ChEss - Chemosynthetic Ecosystems (Vents)

Central Waters

- TOPP - Tagging of Pacific Pelagics (Top Predators)
- CMarZ - Census of Marine Zooplankton
- MAR-ECO - Mid-Atlantic Ridge Ecosystems

Ice Oceans

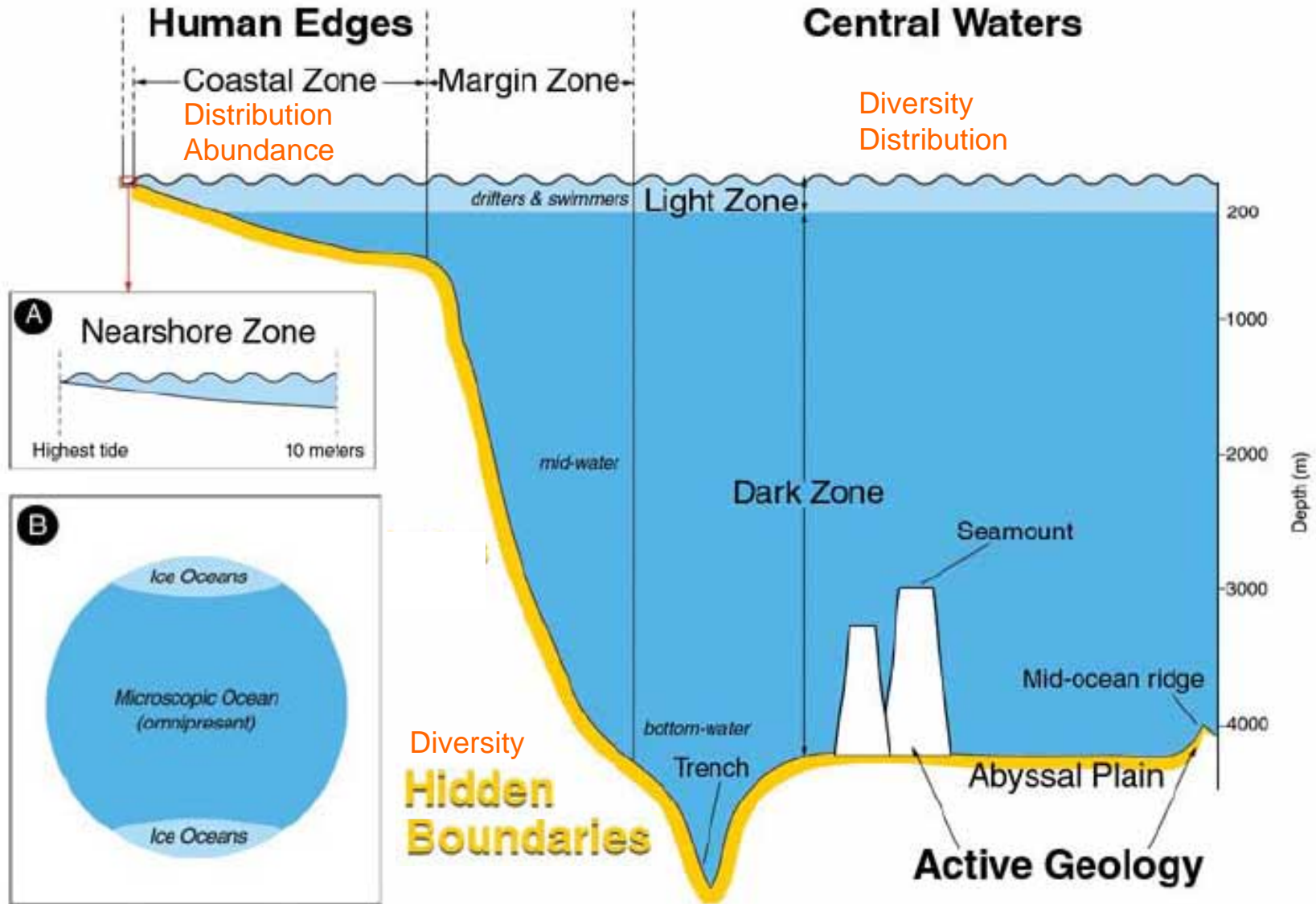
- ArcOD - Arctic Ocean Diversity
- CAML - Census of Antarctic Marine Life

Microscopic Ocean

- ICoMM - International Census of Marine Microbes

Oceans Present – What lives in the oceans?

CoML Ocean Realms & Zones

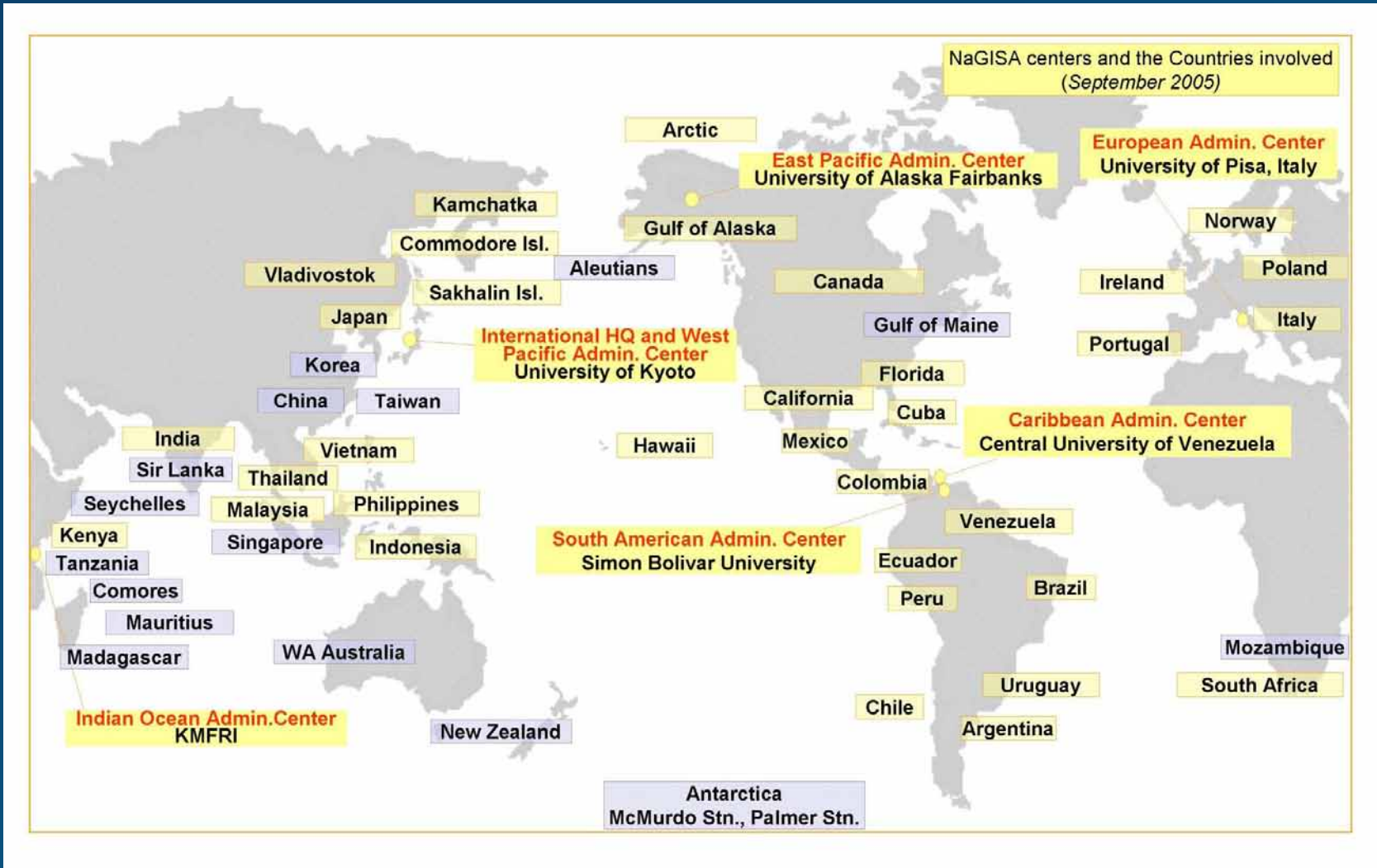


CoML can provide

- Global pattern of marine biodiversity
- Past change of marine biodiversity (extinction)
- Prediction of future biodiversity
- Public access to the information of marine biodiversity

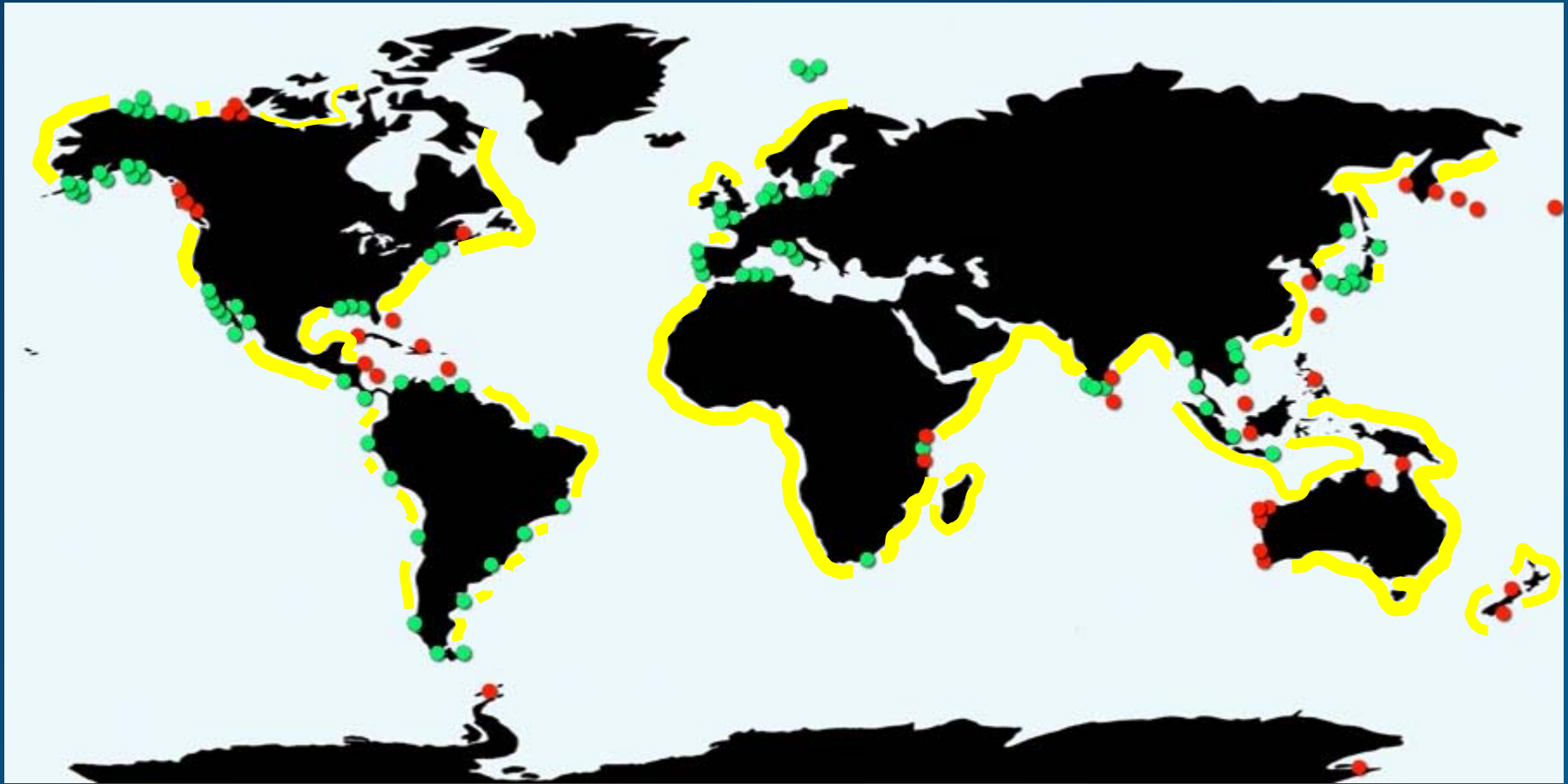


Current Project Map





Map of NaGISA Sites and Dreams



Current NaGISA sites (green), by the end of 2006 (red). Over the next 50 years (yellow) we will continue to fill in the global base line that we establish by 2010.

NaGISA started collaboration with Kenya scientists



Participants of the NaGISA meeting collecting samples and testing methodologies during the fieldwork session in Gazi Bay, south coast of Kenya.

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EXPLORE DATA ON LOCATIONS OF MARINE ANIMALS AND PLANTS

Obtain data tables, maps and predict distributions using environmental information

13.6 million records of 80000 species from 231 databases

SEARCH BY NAME

"Great white shark" or "Carcharodon" or "Carcharodon carcharias"

Search >>

[Advanced Search](#) including date, depth, dataset [Browse by taxonomic groups](#)

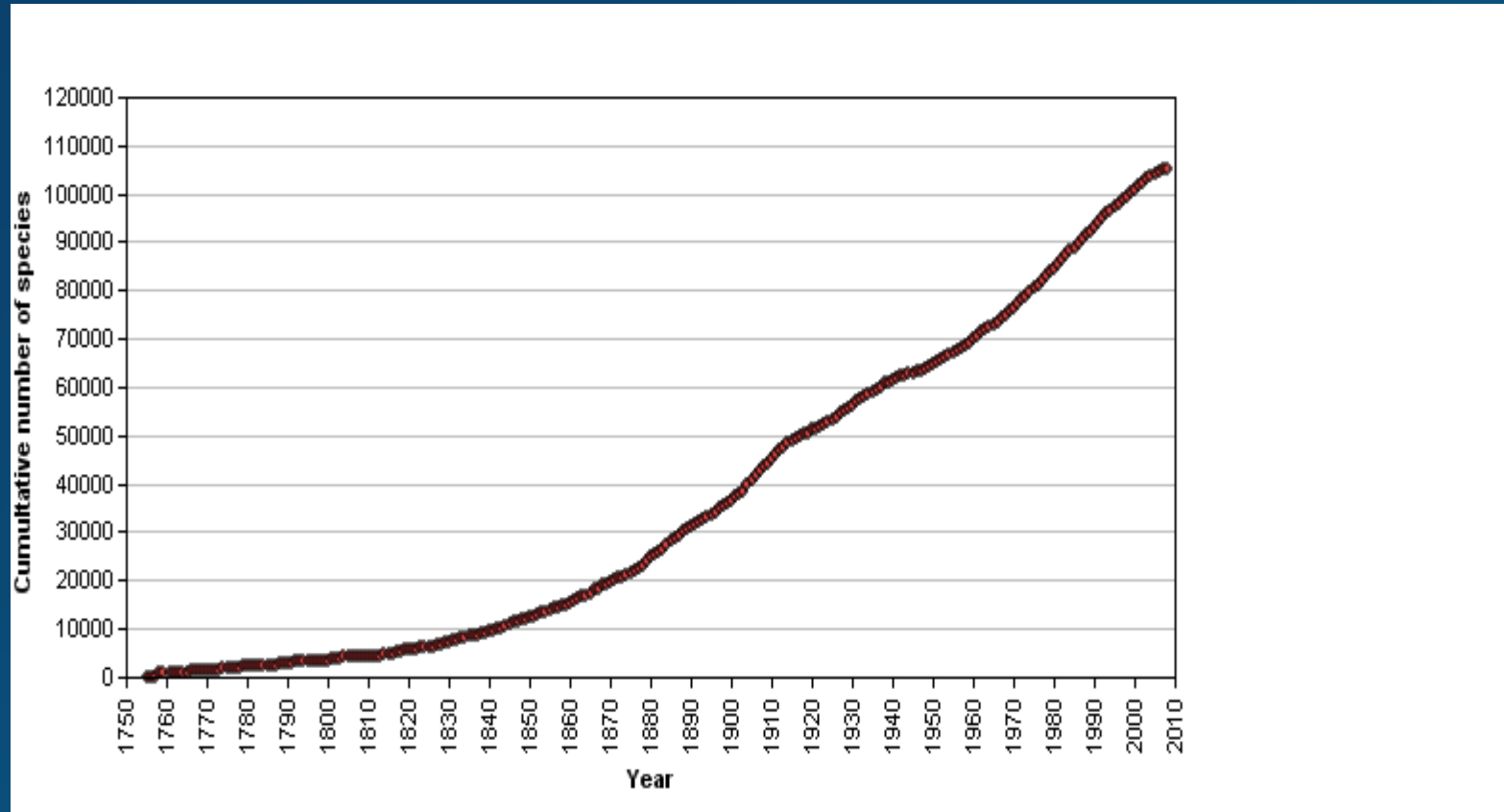
SEARCH BY GEOGRAPHY

Click on the map to set the query box 5° search area

Search >>

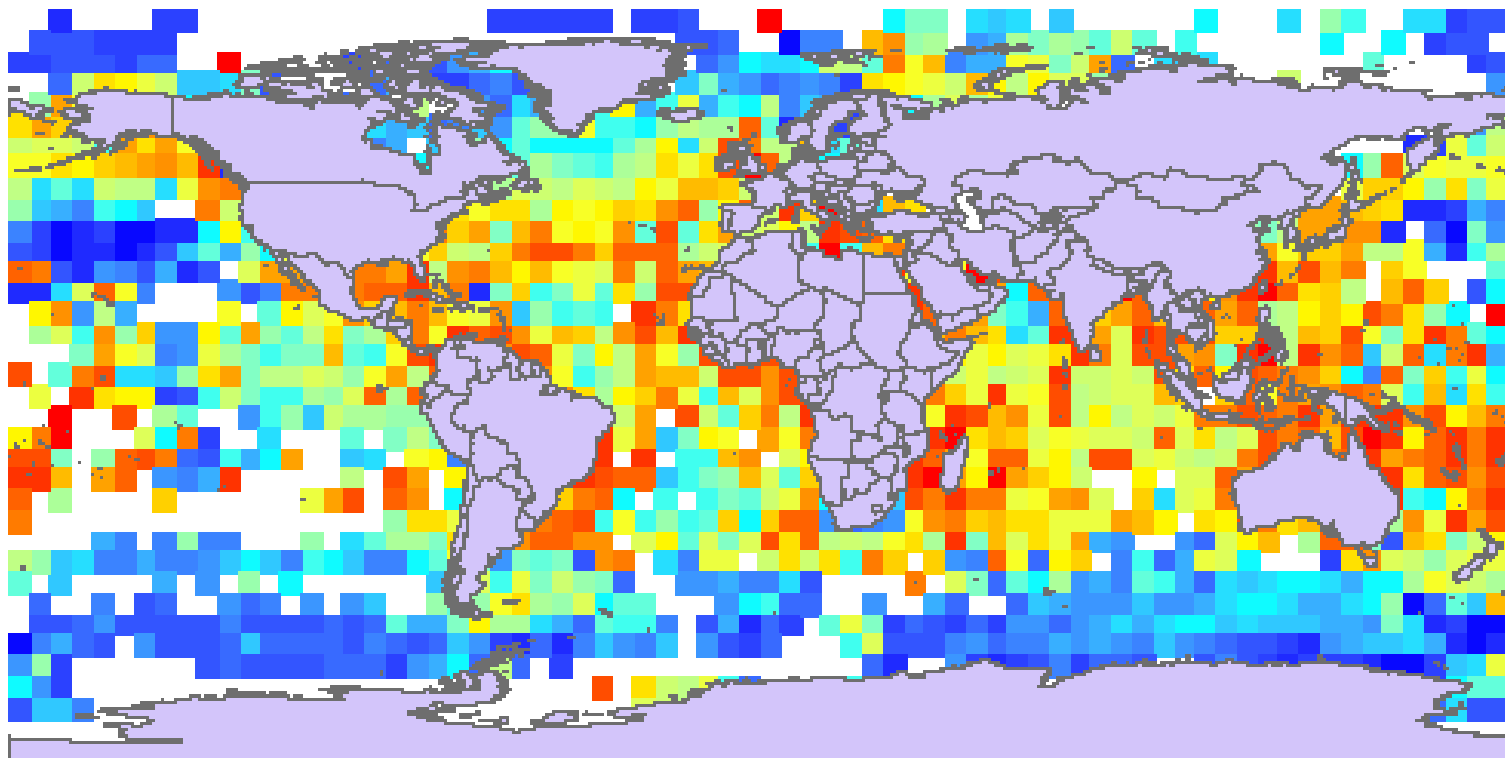


Growth of knowledge



Number of species in database WoRMS

Corrected for bias: ES(50)



Information of one species

SPECIES INFORMATION

How to [cite OBIS data](#)

[Back to previous page](#)

[Notes to users](#)

Ablennes hians

Name verified: Catalogue of Life; FishBase; Collette, Bruce B.

Organism type: a fish [FishBase](#)

Data Extent Map (from OBIS Australia/ C Square Mapper)



For more options, view [full-size map](#)

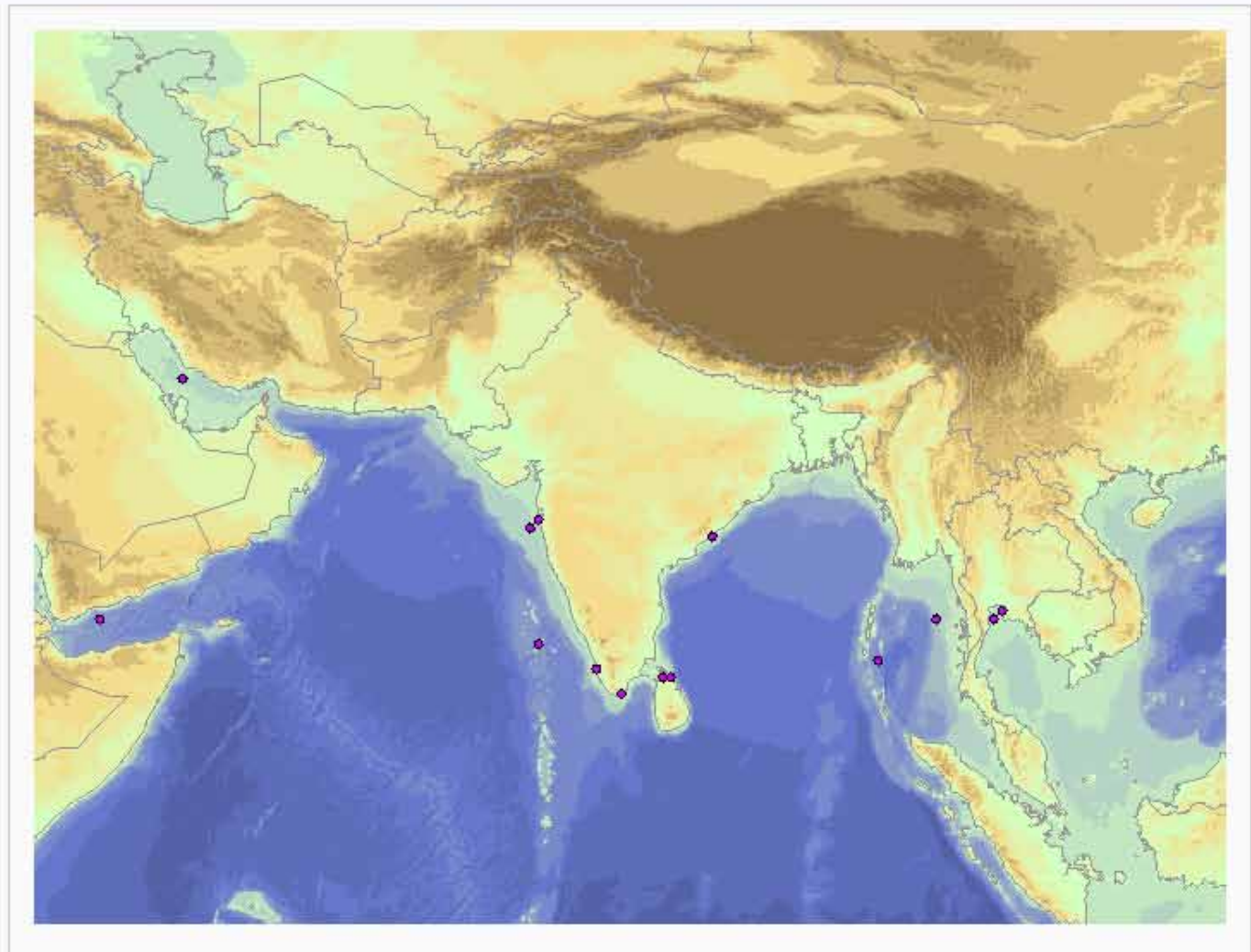
You searched for the distribution of *Ablennes hians*
Your search returned 272 records

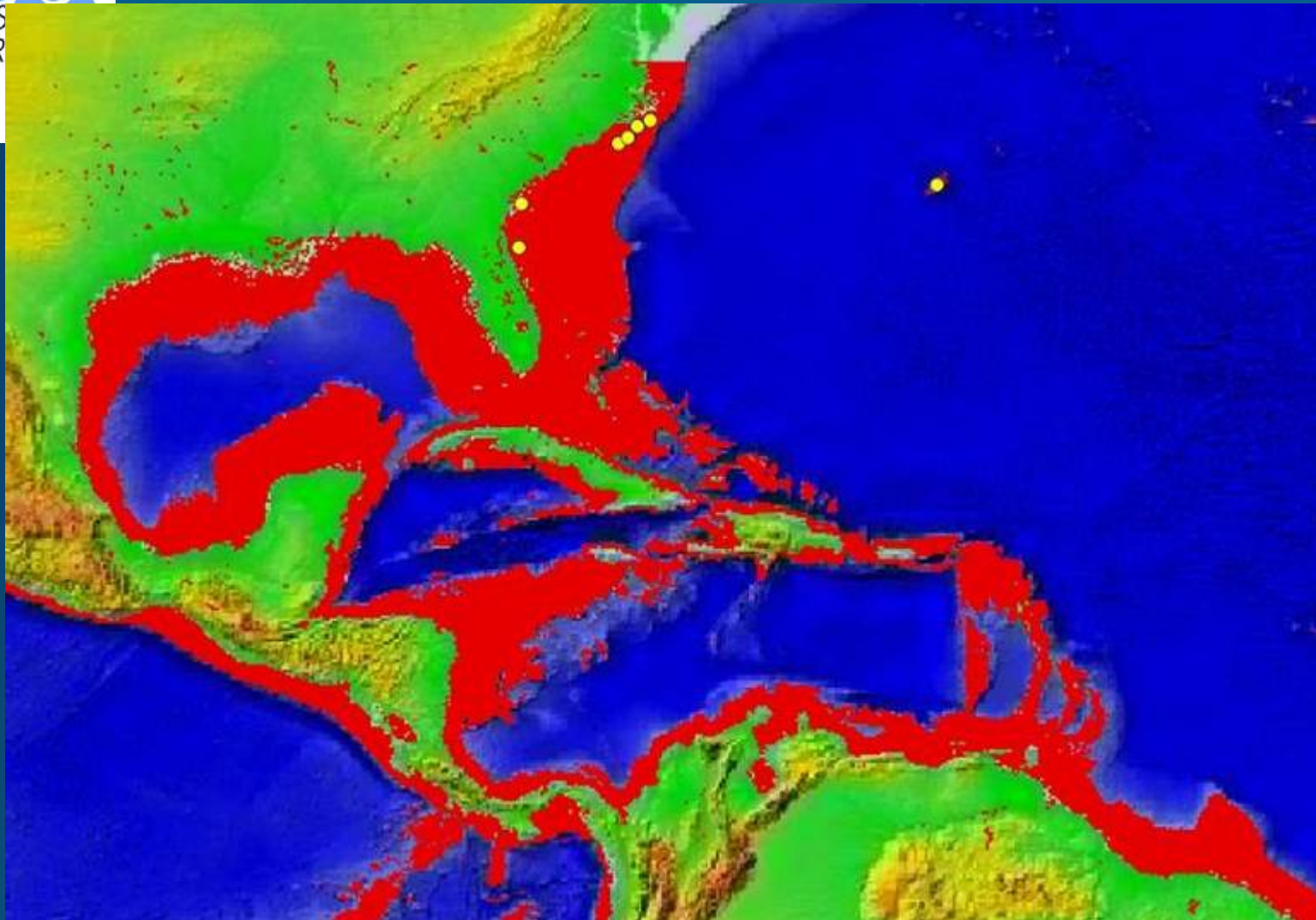
View all 272 results as [.TXT](#) (download) [HTML](#) (download)

Additional information on *Ablennes hians*

- [World Register of Marine Species](#)
- [Barcode of Life](#)
- [GenBank](#)
- [Catalogue of Life](#)
- [ITIS](#)
- [Google Images](#)
- [Google Scholar](#)
- [uBio](#)
- [DiscoverLife](#)
- [DiscoverLife mapper](#)
- [Species-Identification.org](#)
- [Encyclopedia of Life](#)

More sophisticated mapper

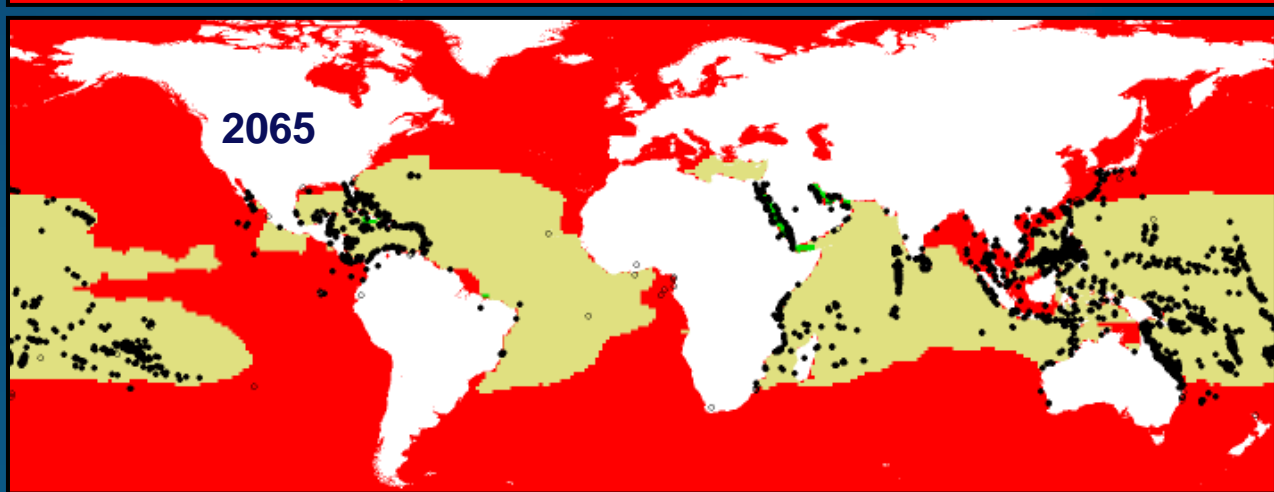
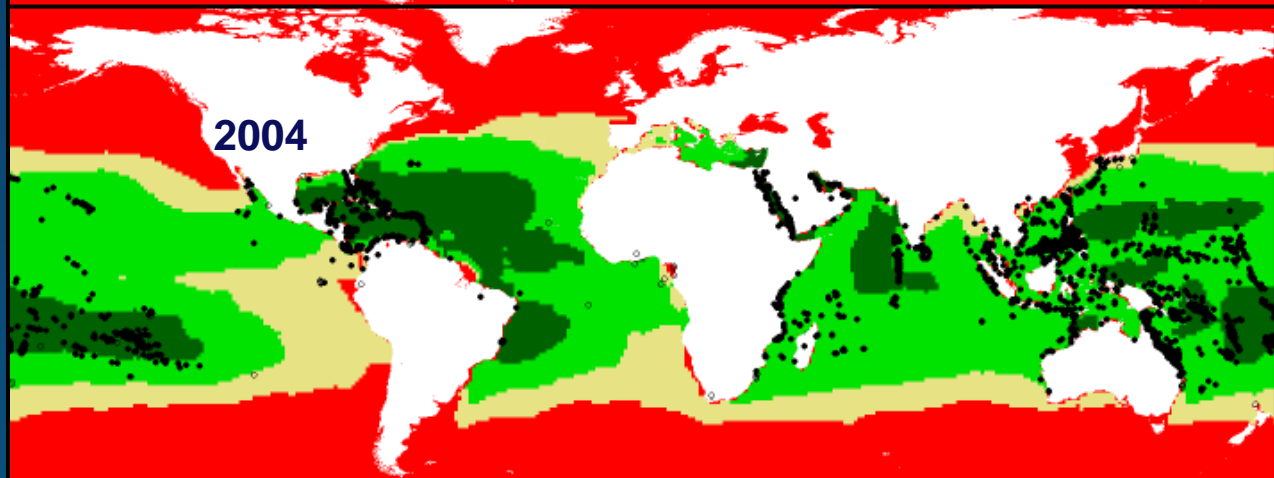
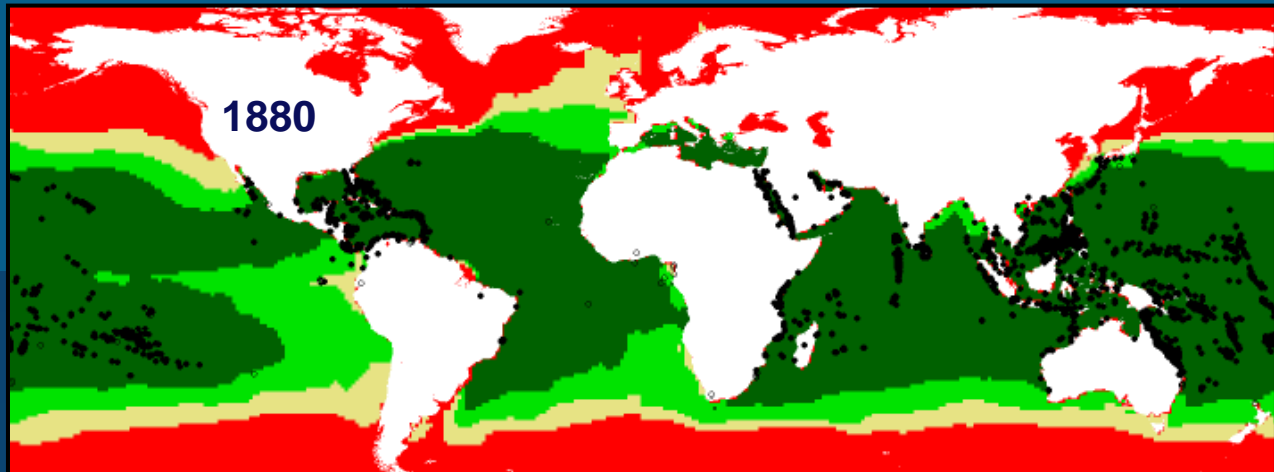
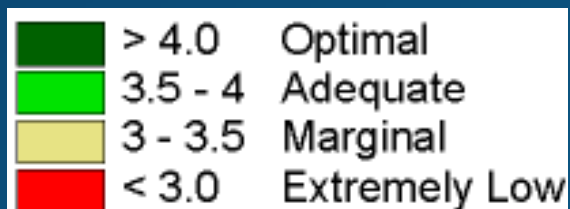




Predicting distribution of invasive species, *Pterois volitans*

Maximizing Coral Reef Biodiversity

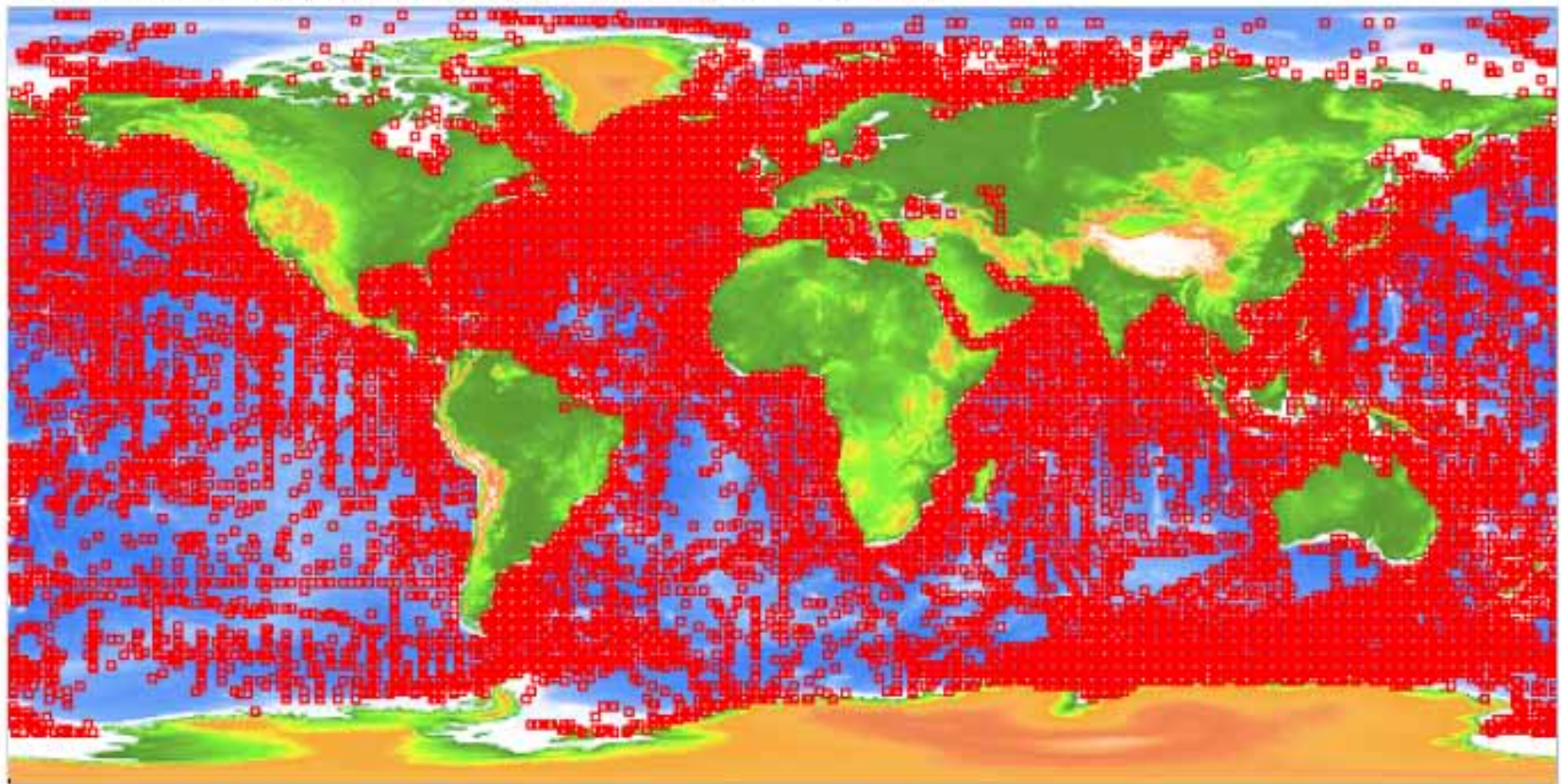
by conserving sites
with long-term
optimal temperature
& pH conditions
for calcification



OBIS Datapoints

Global distribution of all taxonomic categories

Data Extent Map (from OBIS Australia/ C Square Mapper)



Select a **square size**:



10 degrees



5 degrees

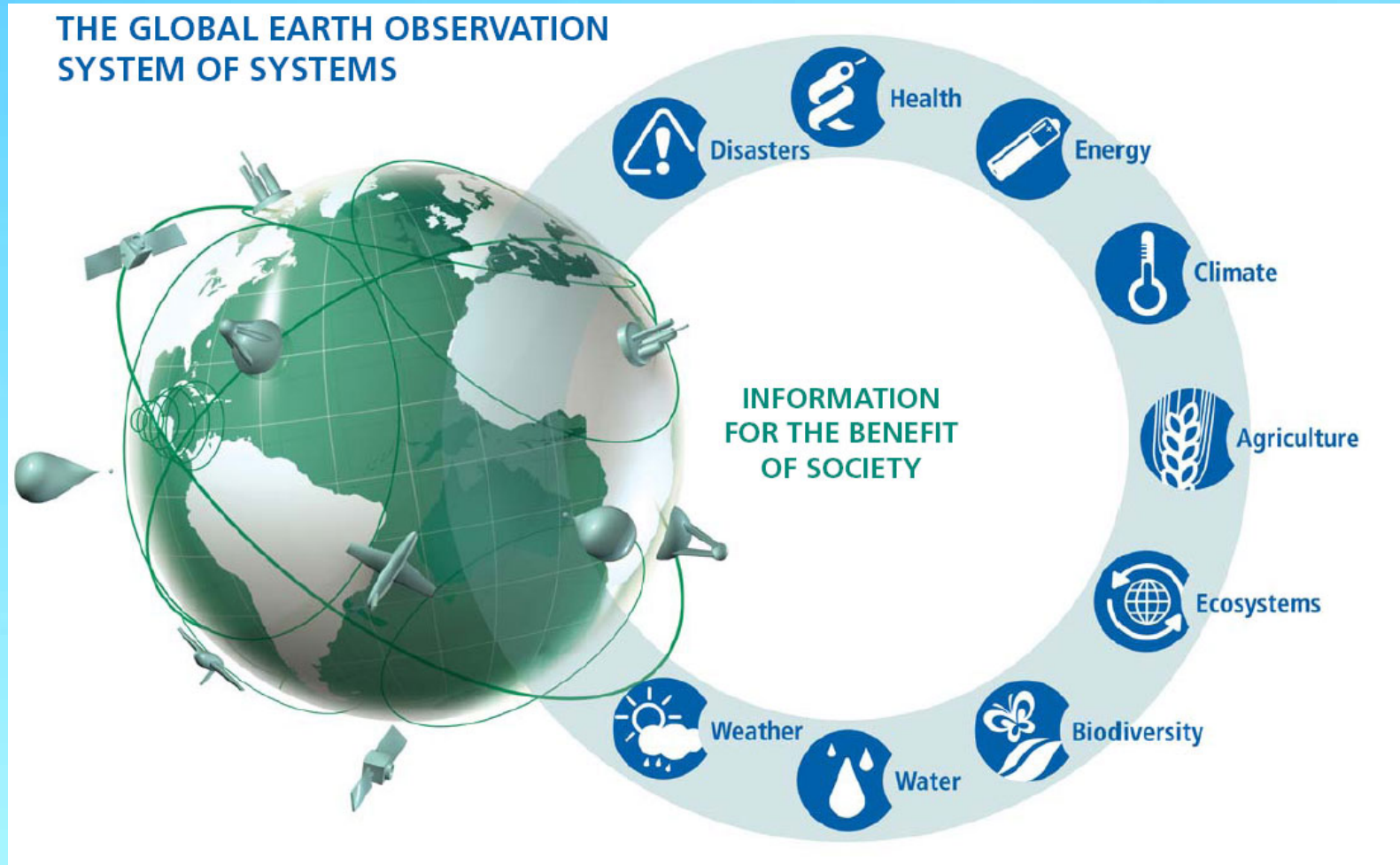


1 degree



0.5 degrees

GEO: Group on Earth Observation



The context of GEO BON

2006: **User Needs workshop, Geneva 23-25 October**

2007: **GEO Ministerial in Cape Town**

2008: **Interim GEO BON Committee formed 14-16 January**

- Draft **GEO BON concept document** produced

2008: **2nd International workshop, Berlin/Potsdam 8-10 April**

- Draft **GEO BON concept document** discussed and amended, first implementation steps planned

The image shows the cover of a report titled "GEO Biodiversity Observation Network - 2nd International Workshop". The cover features the logos of the Group on Earth Observations (GEO) and the Biodiversity Observation Network (BON) at the top. The title "GEO Biodiversity Observation Network" is prominently displayed in blue. Below the title, it says "- 2nd International Workshop -" in green. The central graphic consists of two overlapping circles, one green and one blue, with a white sphere in the background. Below this graphic, the dates "8-10 April 2008" and the location "Potsdam/Berlin" are listed in green. At the bottom, there is a paragraph of text: "Establishing a network to implement a global biodiversity observation system that will collect, manage, analyze, and share data on the status and trends of the world's biodiversity". The bottom of the cover features three logos: the Federal Ministry of Education and Research (Germany), the Diversitas program (an international programme of biodiversity science), and the NASA logo.

GEO GROUP ON EARTH OBSERVATIONS

Biodiversity Observation Network

GEO Biodiversity Observation Network

– 2nd International Workshop –

8-10 April 2008
Potsdam/Berlin

Establishing a network to implement a global biodiversity observation system that will collect, manage, analyze, and share data on the status and trends of the world's biodiversity

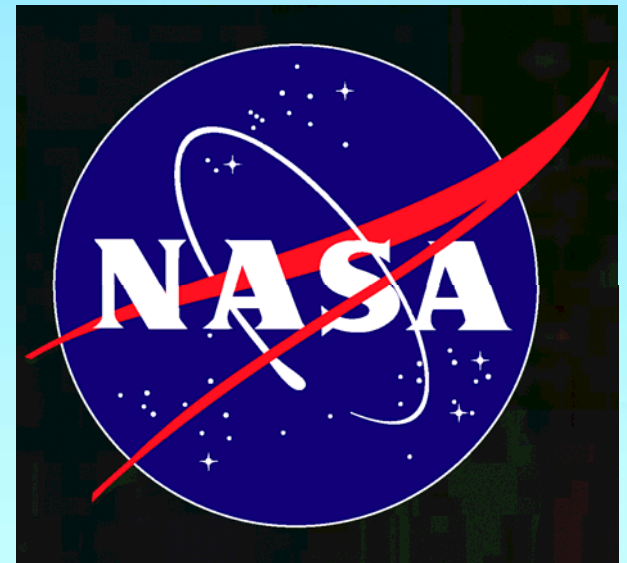
Federal Ministry of Education and Research

DIVERSITAS
an international programme of biodiversity science

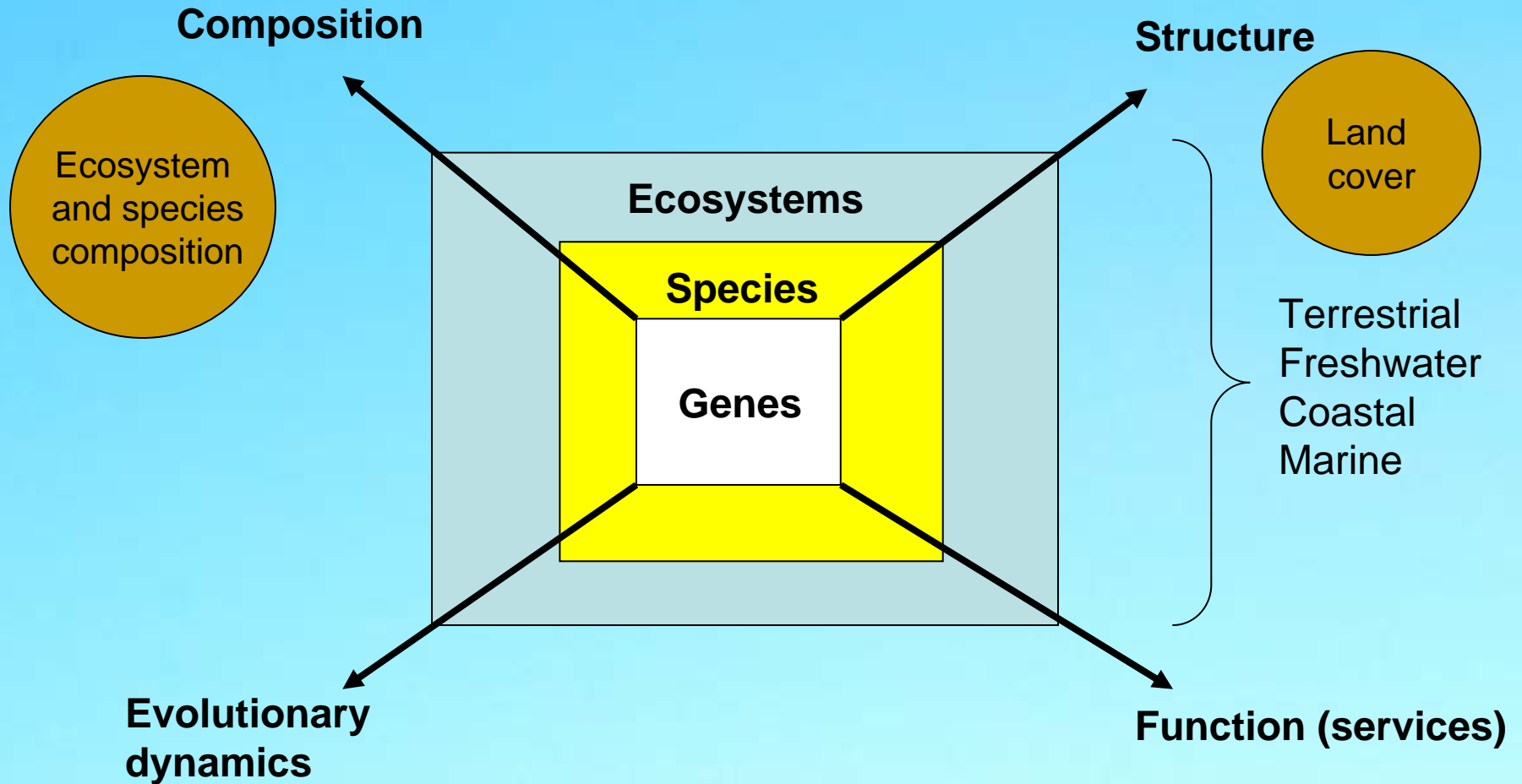
NASA

The context of **GEO BON**

- **DIVERSITAS** and **NASA** have been appointed to lead task of developing a global **Biodiversity Observation Network**



The concept of **GEO BON**




“States”, “Drivers” and “Impacts” will be monitored.

Two initiatives of MoE, Japan

ESABII

Targeting Area for East and Southeast Asia Biodiversity Inventory Initiative



Targeting area: East and Southeast Asia

Biodiversity Centers ★

- Japan: Biodiversity Center of Japan
- Korea: National Institute of Biological Resource (NIBR)
- China: Chinese Academy of Science
- Indonesia: Research Center of Biology (RCB), LIPI
- Vietnam: Center for National Resources Management and Environmental Studies (CRES) VNU.
- ASEAN: ASEAN Center for Biodiversity (ACB)
- S-CBD: Secretariat of Convention on Biological Diversity

GBMI

Proposed Activities for Developing Global Biodiversity Monitoring System

Targeting East Asia and Pacific Region

- Identification of existing researches on biodiversity
- Distribution of Monitoring sites
- Development of standardized data collection
- Data integration, storage and analysis
- Capacity building for data collection and data analysis
- Provision and dissemination of the information

Networking among Biodiversity Centers

- Data provision/sharing

GEO-BON GBIF

Collaboration

ILTER
NaGISA (CoML)
Other programmes

- Data collection and its standardization
- Data integration and analysis
- Capacity building

Contribution

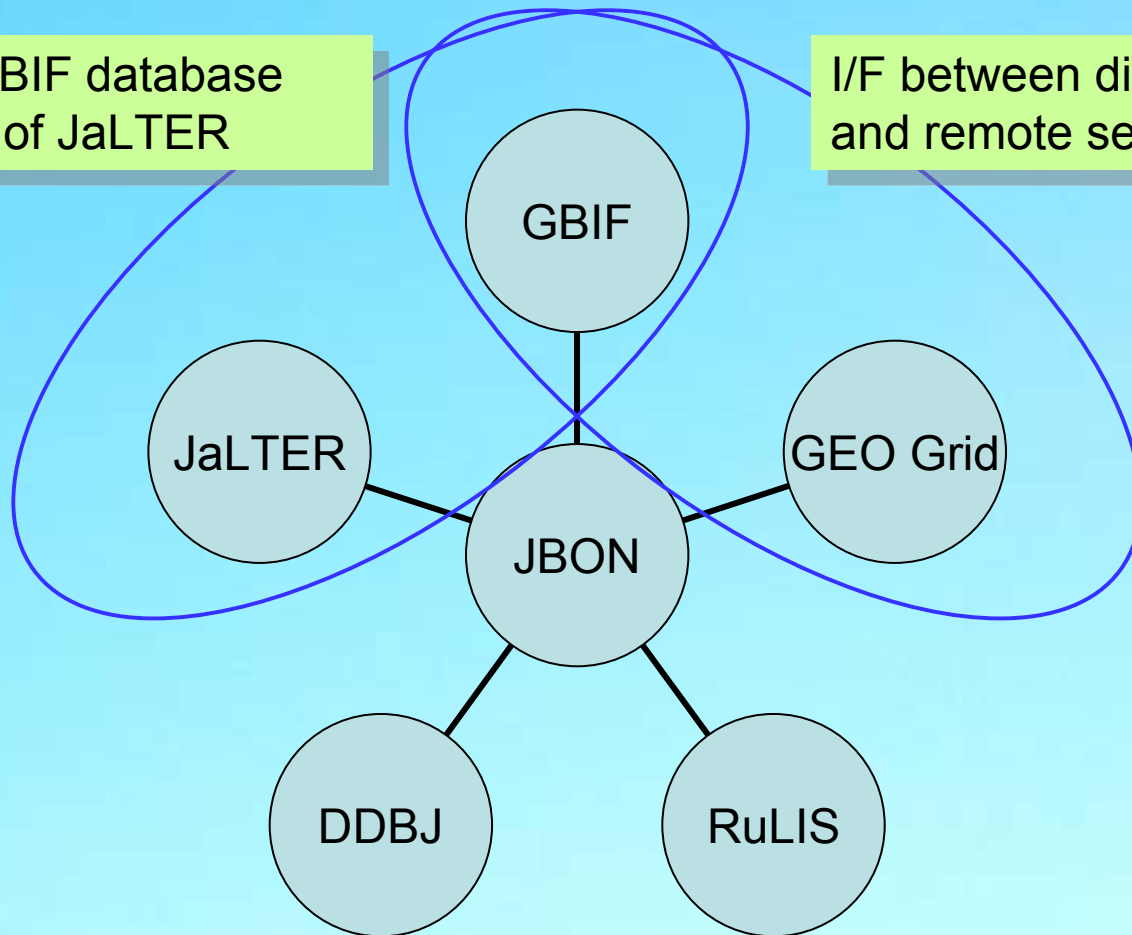
Decision Making in Biodiversity Conservation

Needs for networking scientists → J-BON was organized

Toward developing J-BON Portal

I/F between GBIF database and metadata of JaLTER

I/F between distribution data and remote sensed data



Conclusion

- ❁ Scientific data are essential for establishing conservation plan of biodiversity
- ❁ Data are available, but not well integrated
- ❁ Strategic planning of scientific research and monitoring is need for the future actions of CBD
- ❁ COP10 is the best opportunity to discuss about the strategic planning



Thanks you
for your attention

