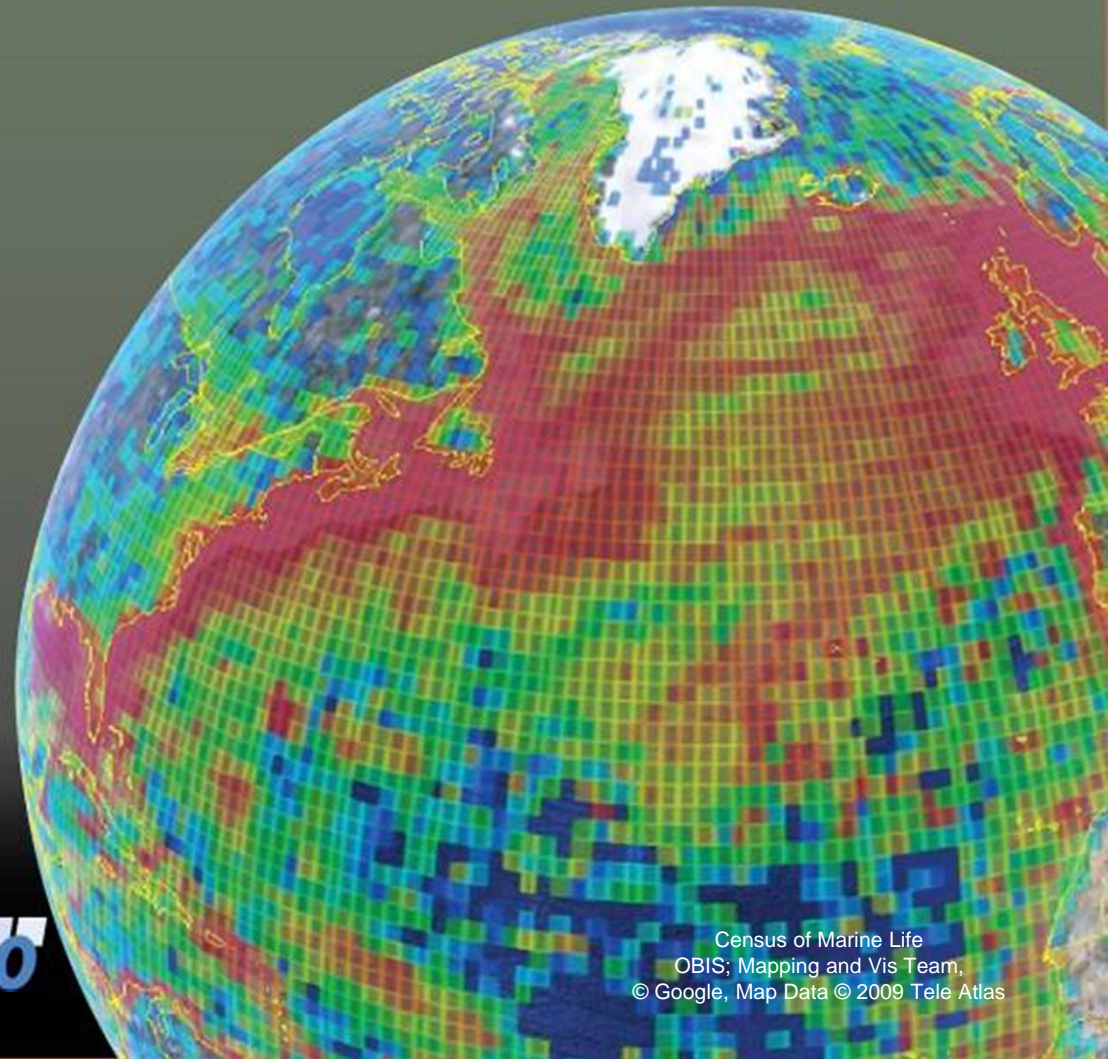


# Ocean Biogeographic Information System

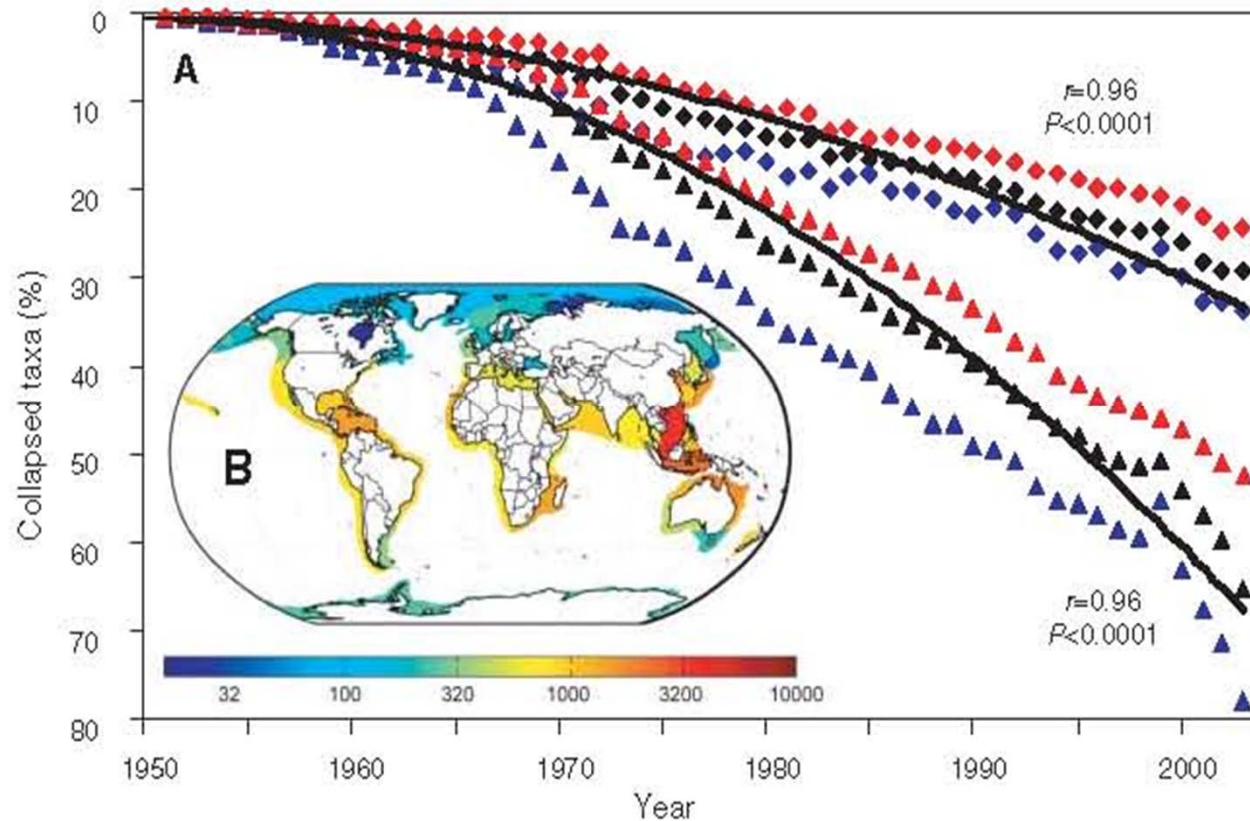
Edward  
Vanden Berghe



 A DECADE OF DISCOVERY  
CENSUS OF MARINE LIFE 2010

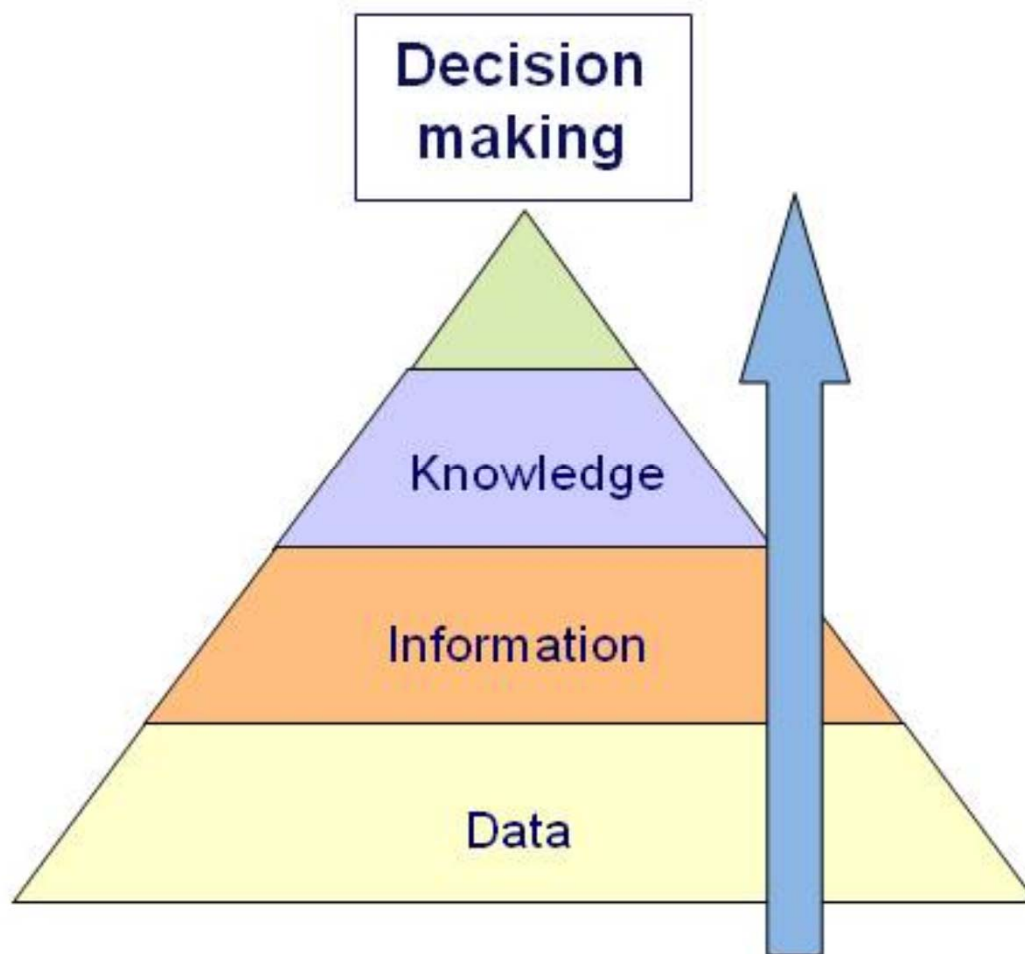
Census of Marine Life  
OBIS; Mapping and Vis Team,  
© Google, Map Data © 2009 Tele Atlas

# Oceans in trouble...



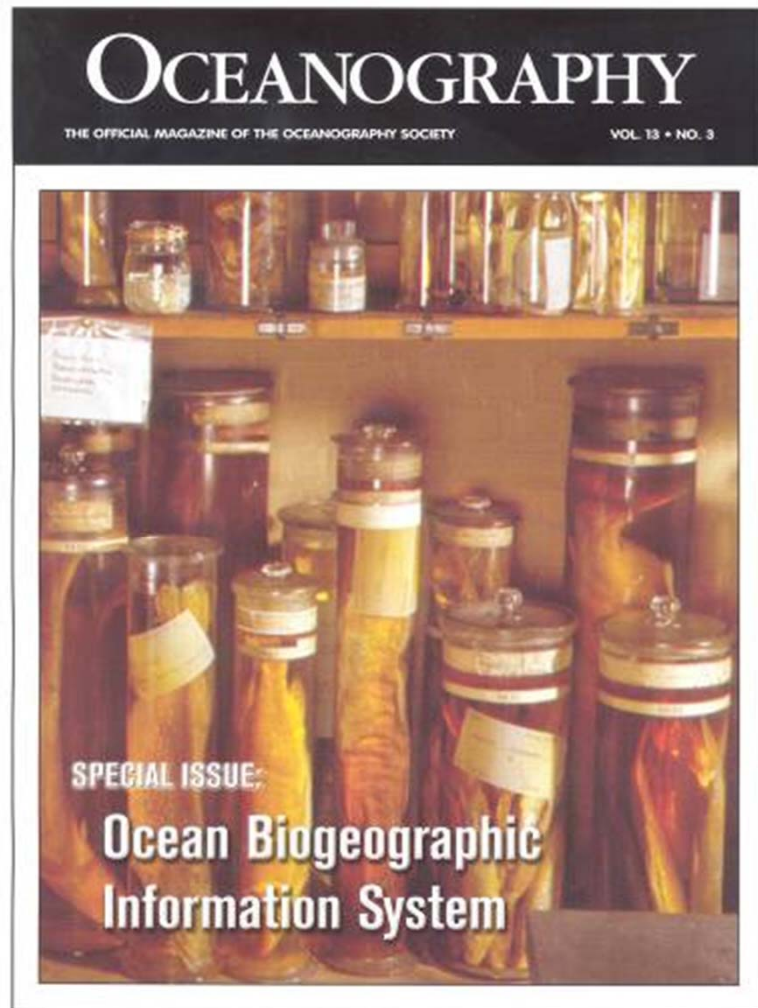
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2010

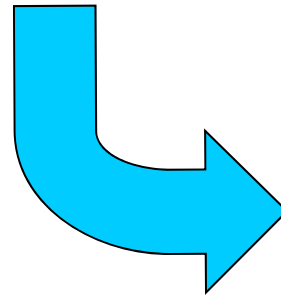


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2010

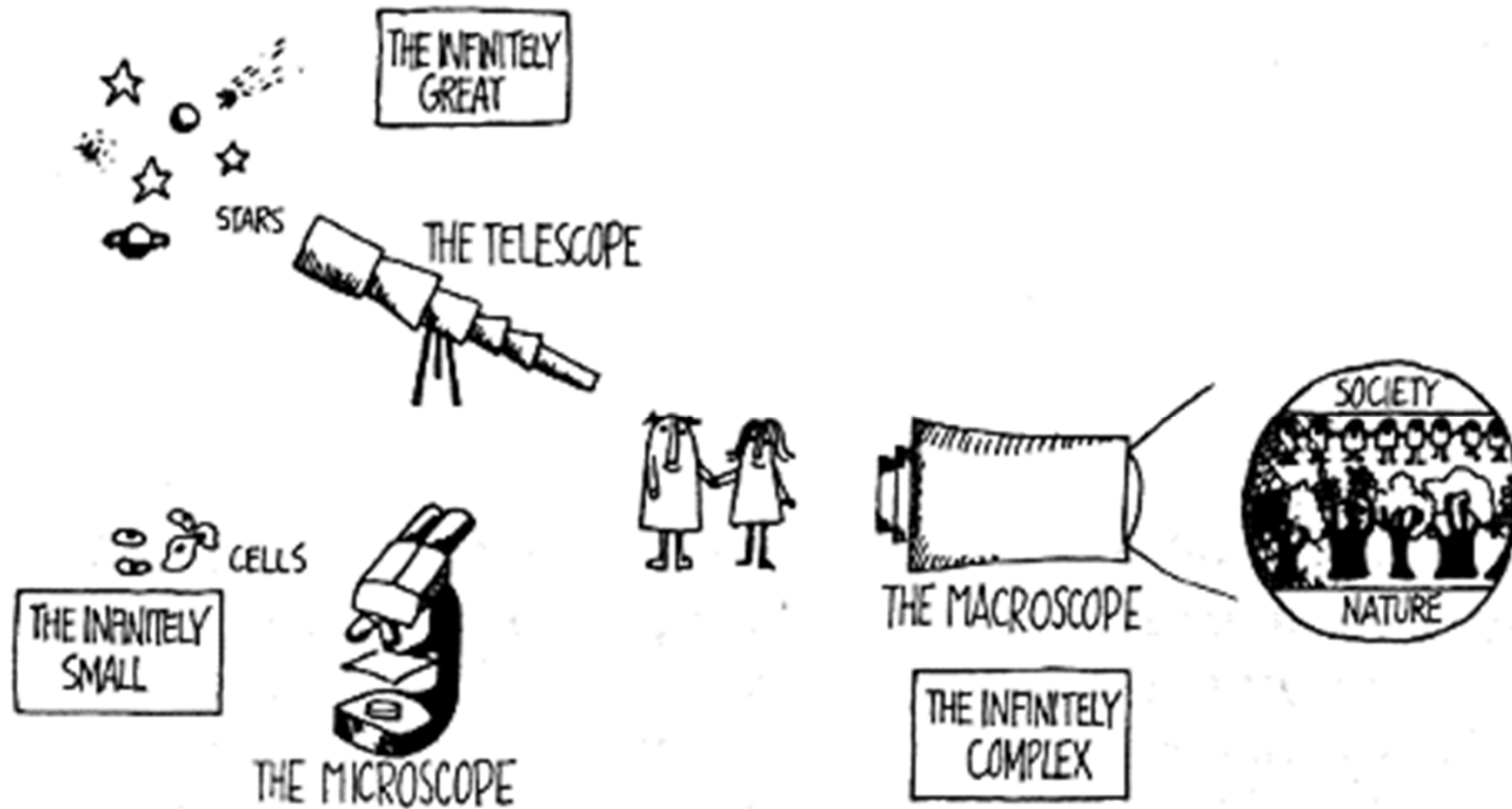


- Data on biodiversity frequently difficult to come by
- Data are not in the places where they are needed



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2010

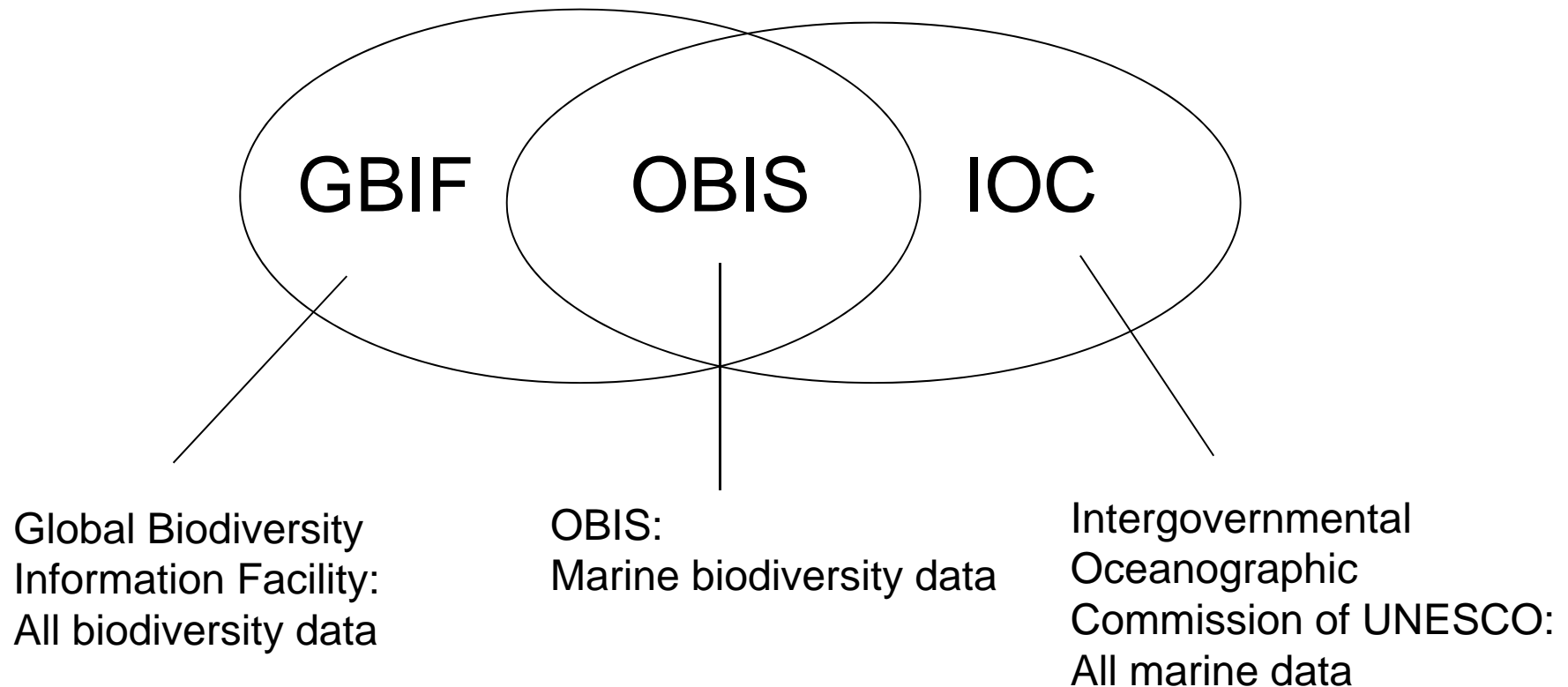


Joël de Rosnay

# OBIS 'Mission'

- OBIS publishes primary data on marine species locations online through [www.iobis.org](http://www.iobis.org)
  - It facilitates data discovery and exploration by
    - Searching by species, time, location, depth, data set
    - Mapping observed occurrences
    - Modelling of potential environmental range
  - Integrates data over marine themes
    - Microbes to whales
    - Genetics and morphology
    - Poles to equator...
  - Enables data capture for re-use

# OBIS in context





# OBIS in context

- Data integration component of CoML
- Marine component of Global Biodiversity Information Facility
- Biodiversity component of the Intergovernmental Oceanographic Commission of UNESCO
- Community of practice, not only database
  - Global network of Regional and Thematic Nodes, including Japanese node and NaGISA
  - Datasets from international waters

Welcome to OBIS! | OBIS - Windows Internet Explorer

http://www.iobis.org/

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**OBIS** OCEAN BIOGEOGRAPHIC INFORMATION SYSTEM



**Welcome to OBIS!**

Last updated on Tue, 2010-09-21 21:59. Originally submitted by everghe on 2010-05-25 15:58.

OBIS allows users to search marine species datasets from all of the world's oceans.



With our evolving OBIS database repository, users can identify biodiversity hotspots and large-scale ecological patterns, analyze dispersions of species over time and space, and plot species' locations with temperature, salinity, and depth.

**SEARCH OBIS PAGES**

Search

**IOBIS.ORG VERSION 2**

Looking for the version of the iOBIS website from before September 2010? OBIS version 2 is still running here

**RECENT NEWS**

2010-09-21  
[Launch of the new OBIS web site imminent](#)

2010-09-02  
[Prototype OBIS web site becomes available](#)

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Home

Search Data

Maps

About OBIS

Contact

English



## Data Search

Update map

Show results

Options

## Species

Click to search & browse species

## Datasets

Click to search & browse datasets

## Region

## User-defined region

Use drawing tools or  
click here to enter coordinates

## Pre-fixed region

Exclusive Economic Zone (EEZ)

Int'l Hydrographic Org. (IHO)

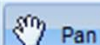
Large Marine Ecosystems (LME)

Marine Ecoregions (MEOW)

## Date &amp; Season

## Oceanography

## Distribution Map



Zoom in



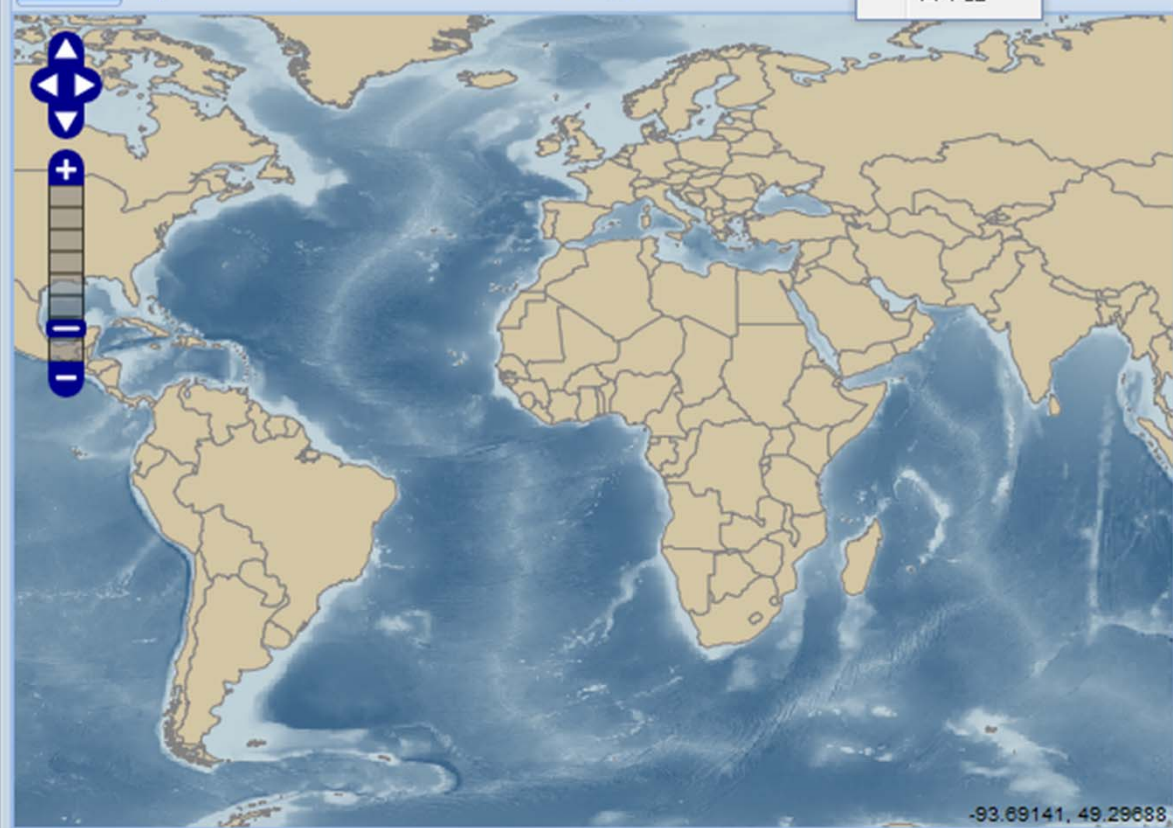
Identify



Fixed size



Layers



Ocean Biogeographic Information System - Windows Internet Explorer

http://iobis.org/mapper/

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### Data Search

Update map Show results Options

**Species**

Pisces

Click to search & browse species

**Datasets**

Click to search & browse datasets

**Region**

**User-defined region**

Use drawing tools or click here to enter coordinates

**Pre-fixed region**

Exclusive Economic Zone (EEZ)

Indonesia

Int'l Hydrographic Org. (IHO)

Large Marine Ecosystems (LME)

Marine Ecoregions (MEOW)

**Date & Season**

**Oceanography**

### Distribution Map - Points

#### Species Search

Scientific name begins with Pisces

#### Taxonomic Tree

- Animalia
  - Acanthocephala
    - Eoacanthocephala
    - Palaeacanthocephala
  - Acoelomorpha
  - Annelida
  - Arthropoda
  - Brachiopoda
  - Bryozoa
  - Cephalorhyncha
  - Chaetognatha
  - Chordata
    - Cephalochordata
    - Tunicata
    - Vertebrata
      - Agnatha
      - Chondrichthyes
      - Gnathostomata
        - Pisces
        - Tetrapoda

#### Species Information

Summary

Scientific name	Pisces
Authority	
Rank	Superclass
Common names	fish (English)
<input type="checkbox"/> Other languages	
Geographic coverage	-171.568 -69.709, 124 78.07
Temporal coverage	1764-07-02 - 2007-11-11
#records this rank	7,176
#records counting branches	12,987,899

#### Environmental Information

Bottom depth	-949 - 6,414	m
Sample depth	0.000 - 7,000.000	m
Temperature	-1.616 - 28.280	°C
Nitrate	0.095 - 40.553	umol/l

Related datasets

OBIS strives to document the ocean's diversity, distribution and abundance of life. Created by the Census of Marine Life, OBIS is now part of the Intergovernmental Oceanographic Commission of UNESCO, under its International Oceanographic Data and Information Exchange programme

CENSUS OF MARINE LIFE

RUTGERS THE STATE UNIVERSITY OF NEW JERSEY

Marine Geospatial Ecology Lab

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## Data Search

Update map

Show results

Options

## Species

Pisces


[Click to search & browse species](#)

## Datasets

[Click to search & browse datasets](#)

## Region

## User-defined region

 Use drawing tools or  
[click here to enter coordinates](#)

## Pre-fixed region

Exclusive Economic Zone (EEZ)

Indonesia



Int'l Hydrographic Org. (IHO)

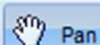
Large Marine Ecosystems (LME)

Marine Ecoregions (MEOW)

## Date &amp; Season

## Oceanography

## Distribution Map - Points



Zoom in



Extent



Identify



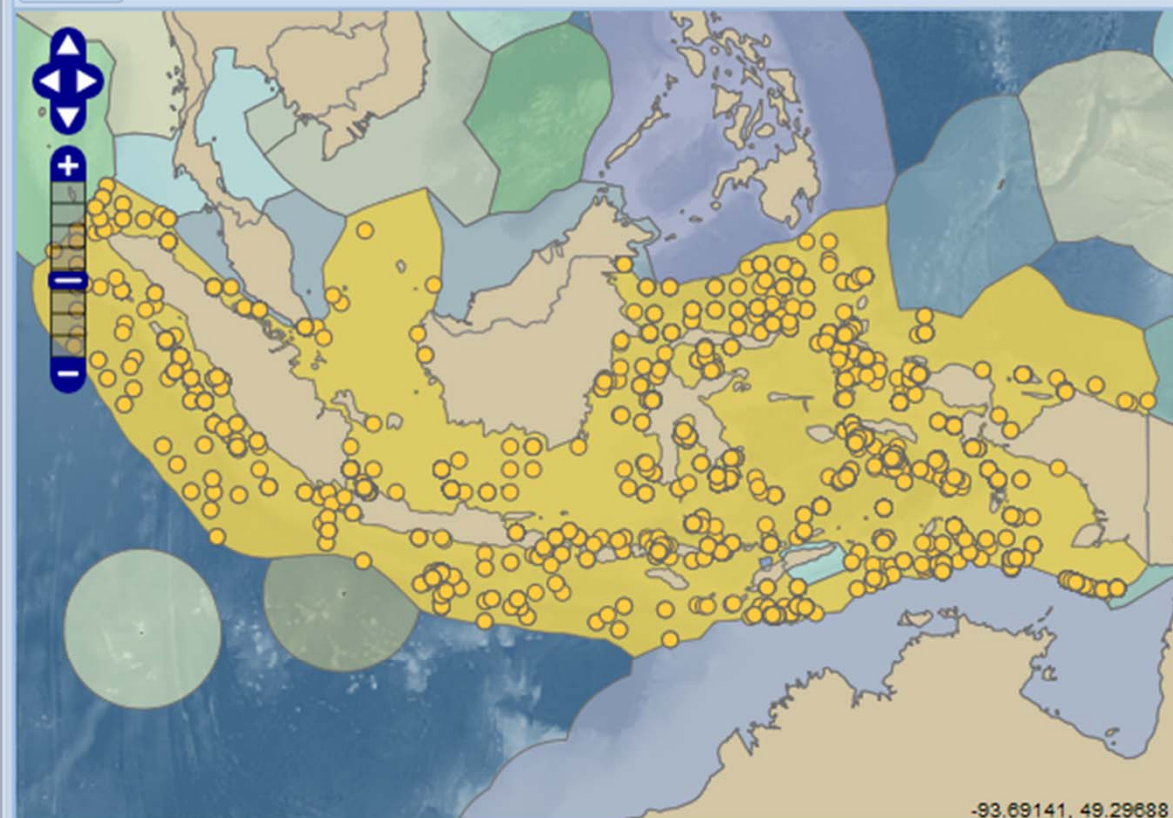
Select



Fixed size



Layers



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### Data Search

Update map Show results Options

**Species**

Pisces ✖

*Click to search & browse species*

**Datasets**

*Click to search & browse datasets*

**Region**

**User-defined region**

*Use drawing tools or click here to enter coordinates*

**Pre-fixed region**

Exclusive Economic Zone (EEZ)

Indonesia ✖ >>

Int'l Hydrographic Org. (IHO)

Large Marine Ecosystems (LME)

Marine Ecoregions (MEOW)

**Date & Season**

**Oceanography**

### Distribution Map - Points

Show results

Records **Species** Graph Download

Scientific name	Rank	#records
Abalistes stellaris	Species	2
Abalistes stellatus	Species	20
Ablennes hians	Species	1
Abudefduf bengalensis	Species	5
Abudefduf lorentzi	Species	5
Abudefduf saxatilis	Species	21
Abudefduf sexfasciatus	Species	5
Abudefduf vaigiensis	Species	2
Acanthapthritis barbata	Species	1
Acanthapthritis grandisquamis	Species	1
Acanthochromis polyacanthus	Species	5
Acanthoplesiops hiatti	Species	4
Acanthuridae	Family	9
Acanthurus	Genus	9
Acanthurus auranticavus	Species	4

Page 1 of 22 Records 1 - 100 / 2111

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CENSUS OF MARINE LIFE

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# OBIS standard output

- CSV and KML
- OGC Services
  - WMS and WFS
  - Already consumed by others
- Digital Generic Information Retrieval (DiGIR)
- REST in preparation
  
- Empower others to use OBIS data

Ocean Biogeographic Information System - Windows Internet Explorer

http://www.iobis.org/mapper/

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### Data Search

Update map Show results Options

**Species**

Abra alba

Click to search & browse species

**Datasets**

Click to search & browse datasets

**Region**

**Date & Season**

**Oceanography**

Variable	From	To	Unit
Bottom depth			m
Sample depth			m
Temperature			°C
Nitrate			umol/l
Salinity			PSS
Oxygen			ml/l
Phosphate			umol/l
Silicate			umol/l

### Show results

Records Species Graph **Download**

**Data Type**  Summary  Points  Graph

**Data Format**

- CSV In CSV format (Excel-ready)
- WFS As OGC standard WFS (XML format)
- WMS As OGC standard WMS image
- KML In KML format (Google Earth ready)

**Download Status**

Configure your browser so that pop-ups from iobis.org are allowed. Click button above to start downloading. You'll be prompted to save the zipped file except for WMS for which a new window/tab opens.

OBIS strives to document the ocean's diversity, distribution and abundance of life. Created by the Census of Marine Life, OBIS is now part of the Intergovernmental Oceanographic Commission of UNESCO, under its International Oceanographic Data and Information Exchange programme

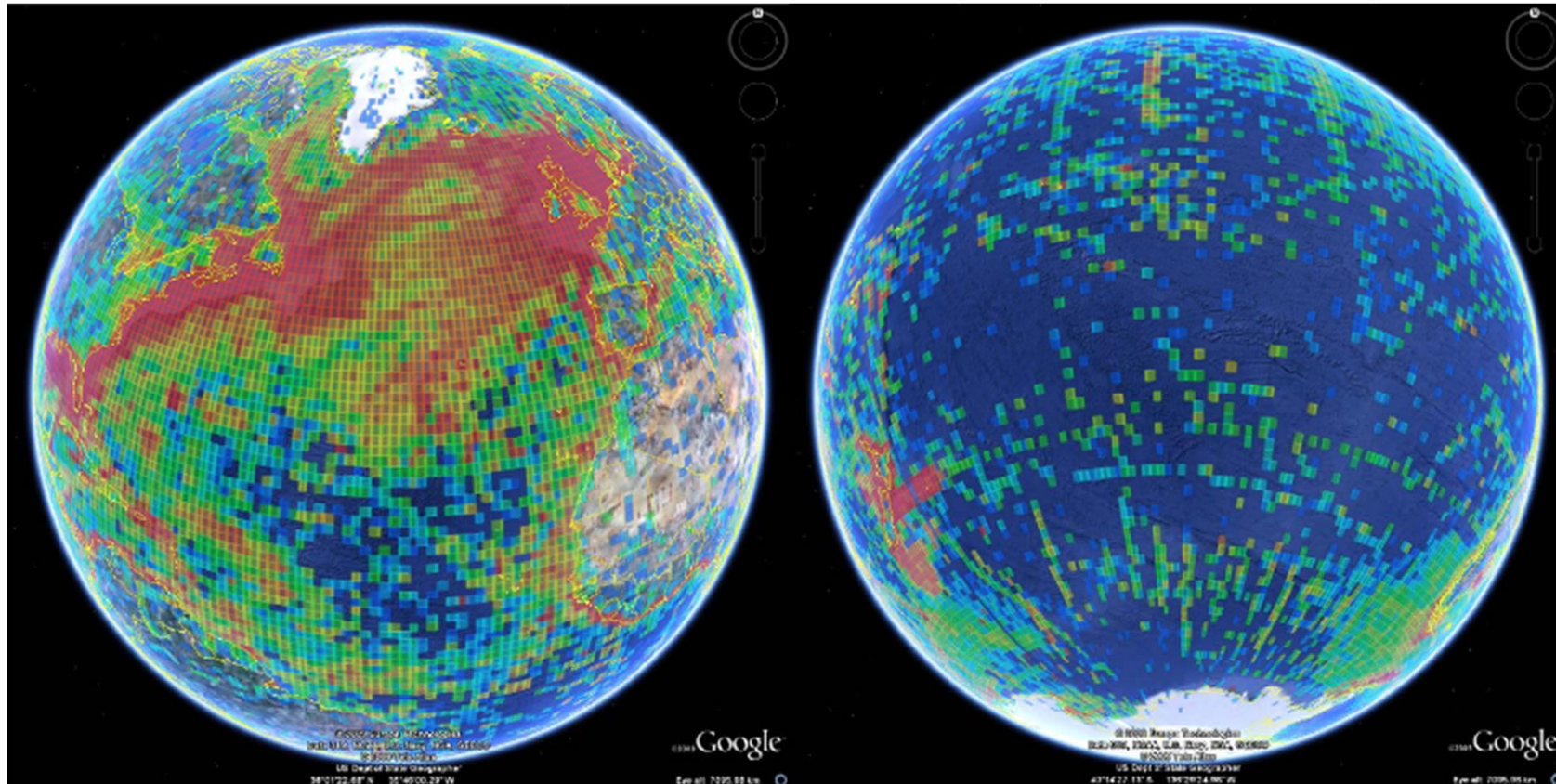
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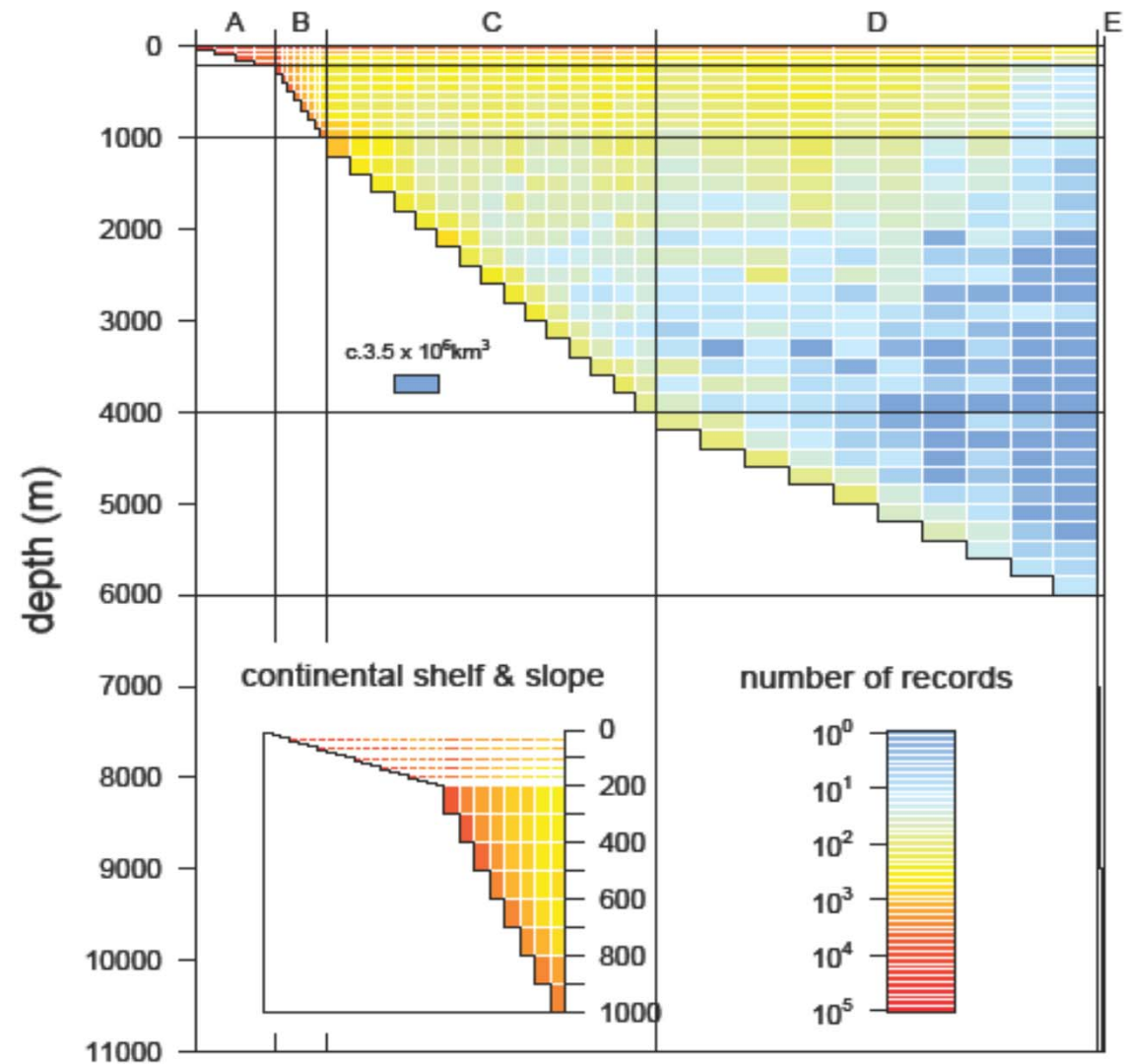
Done Internet 100%





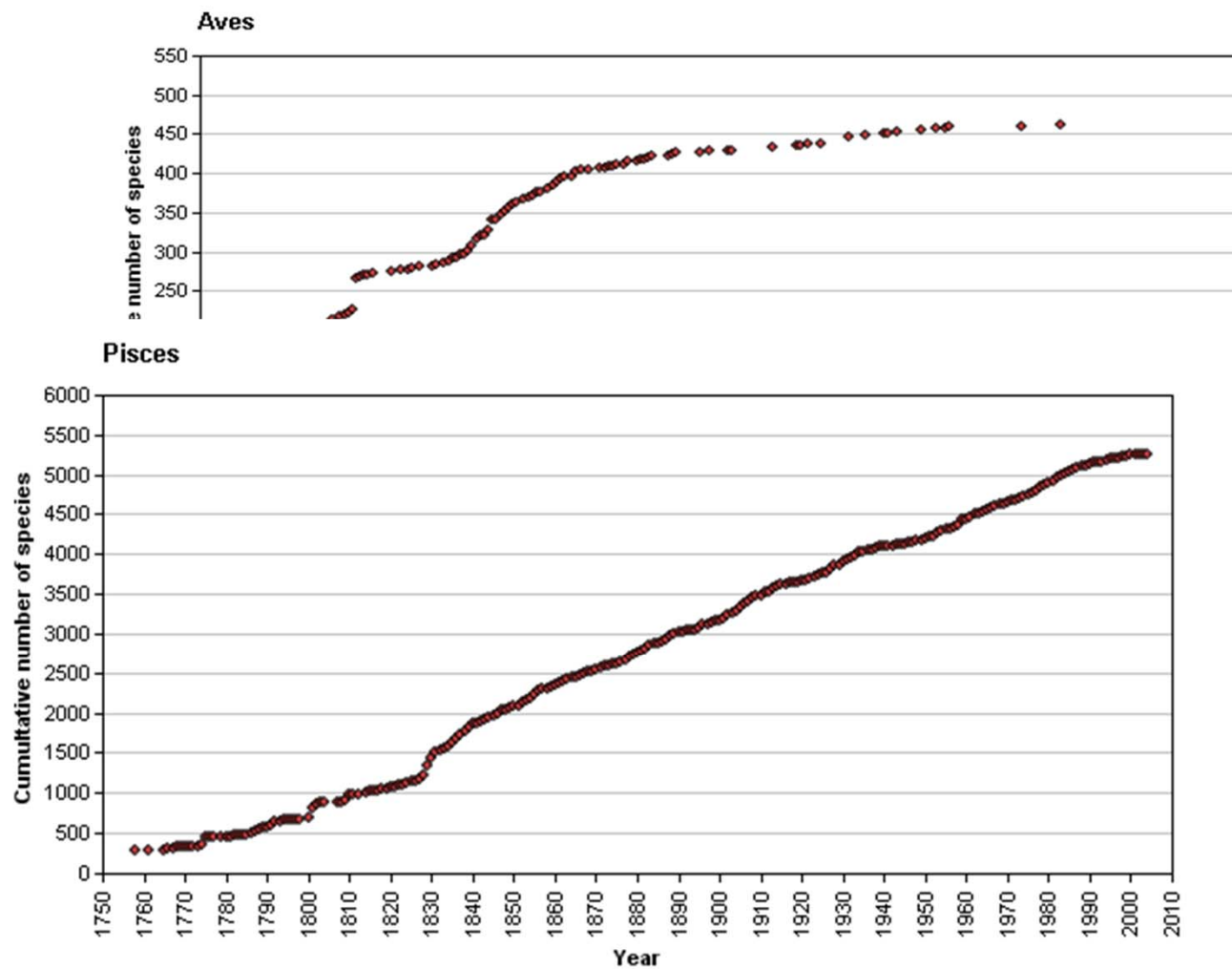
*A Decade of Discovery*

2010



*A Decade of Discovery*

2010



*A Decade of Discovery*

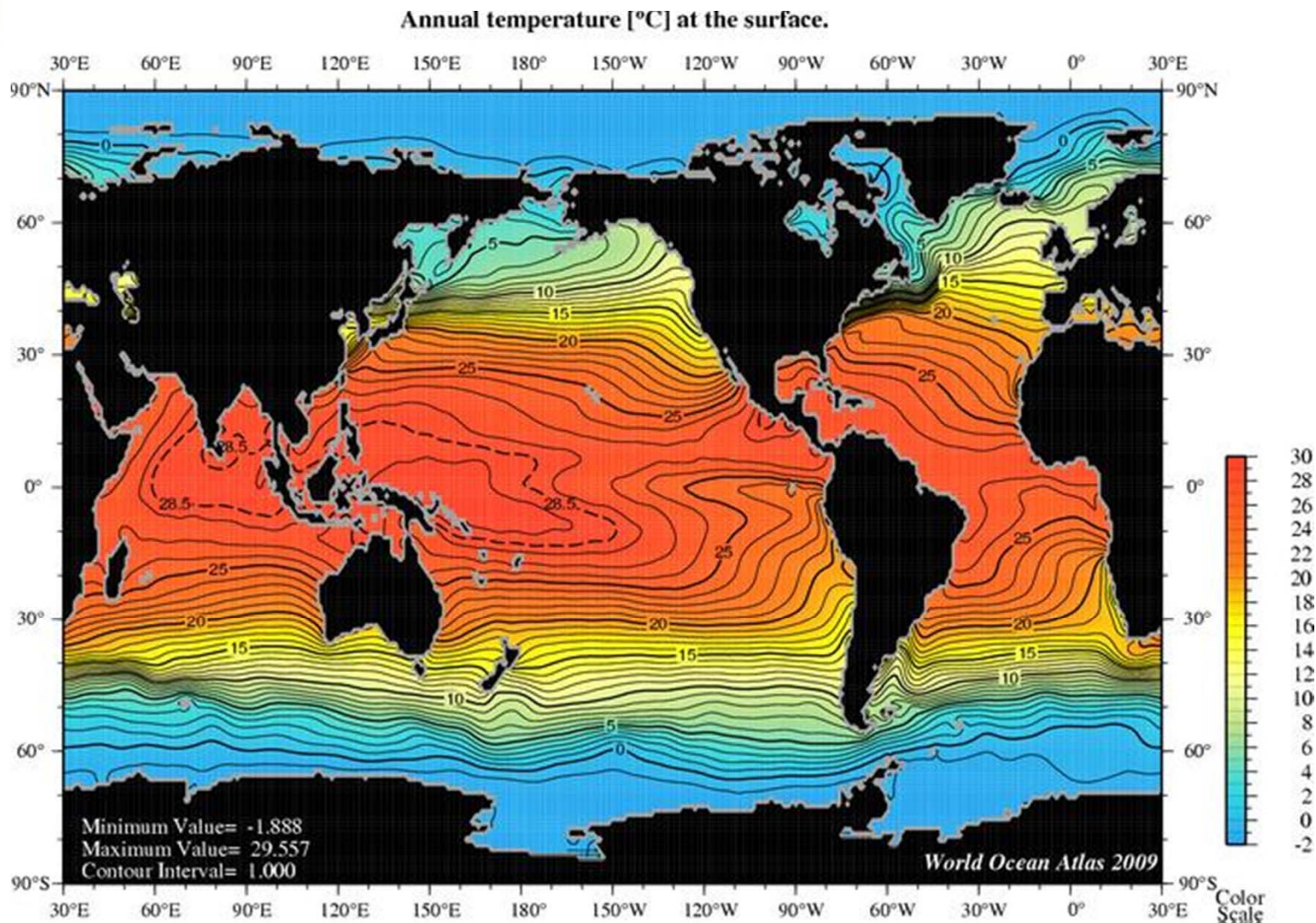
2010

# Taxonomic Bias

Taxon	# species	# in OBIS	%
Whales	133	117	88
Seals	45	36	80
Fish	17670	13985	79
Echinodermata	6199	1624	26
Bryozoa	6000	1096	18

# Still a lot of work...

- We don't know the total biodiversity
  - New species discovered
- Selective sampling in geography
  - Mostly in surface waters
  - Temperate zones
- Selective sampling in taxonomy
  - Mostly big things, vertebrates

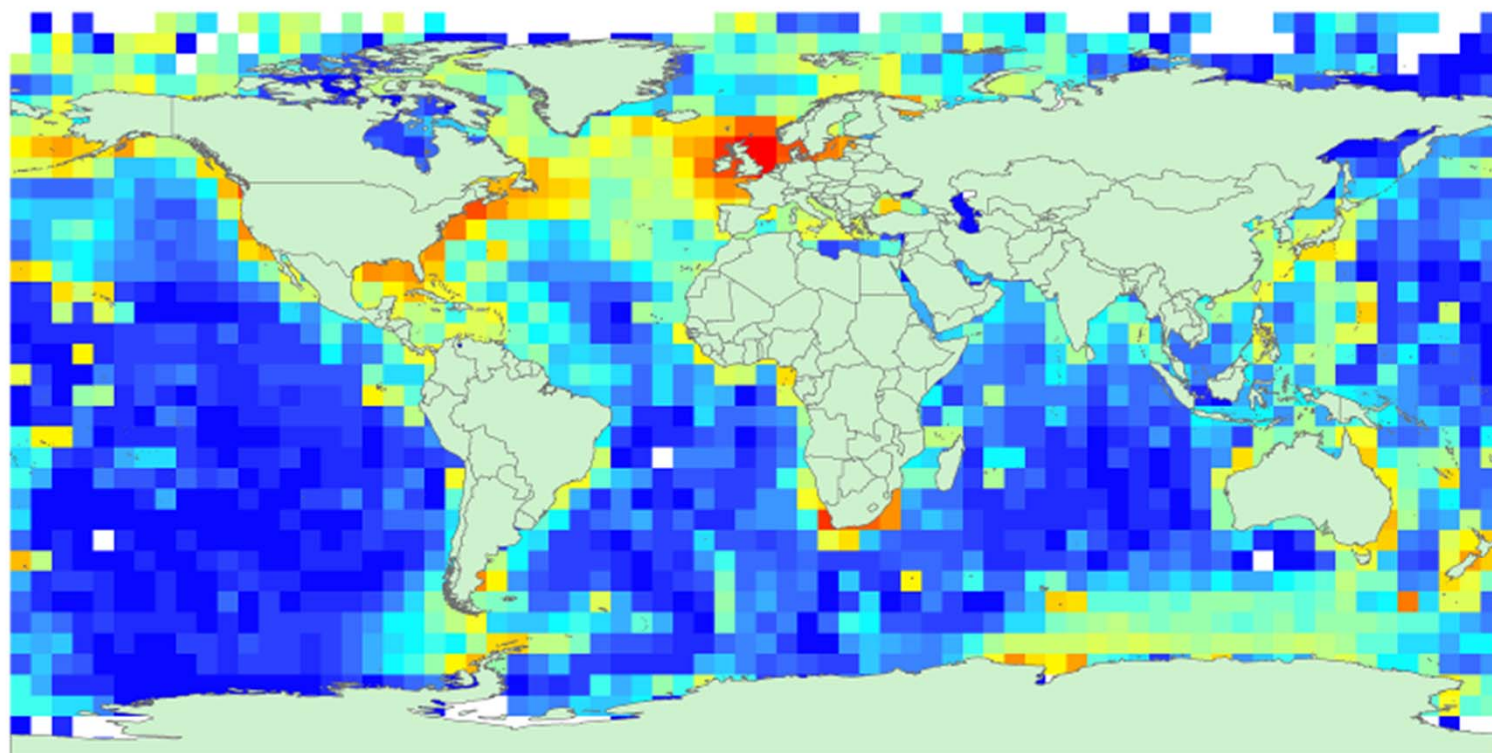


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# OBIS statistics

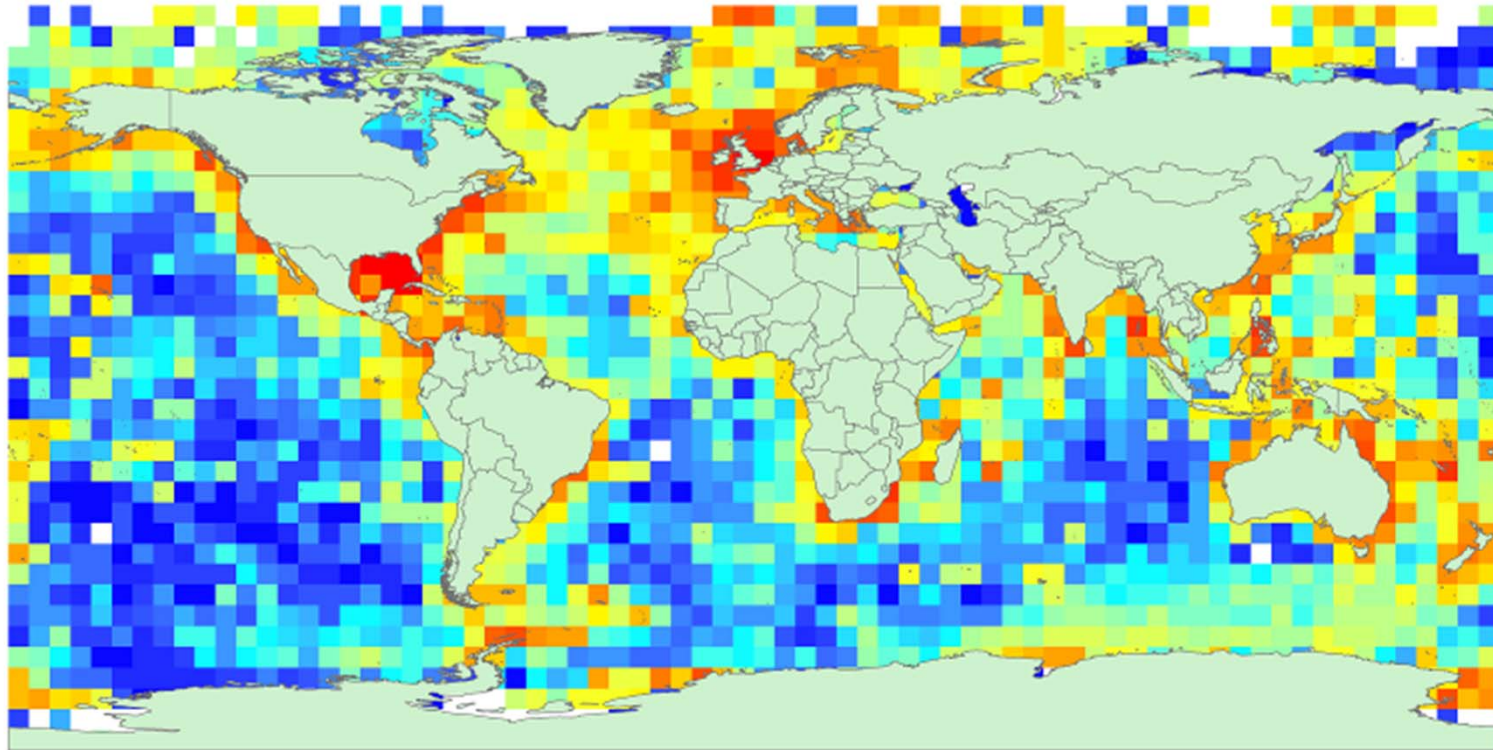
- 874 datasets
- 28.4 million distribution records
- 247,000 names, 126,000 species
- Among the largest provider to the Global Biodiversity Information Facility
- Largest provider of marine primary biodiversity data



*A Decade of Discovery*

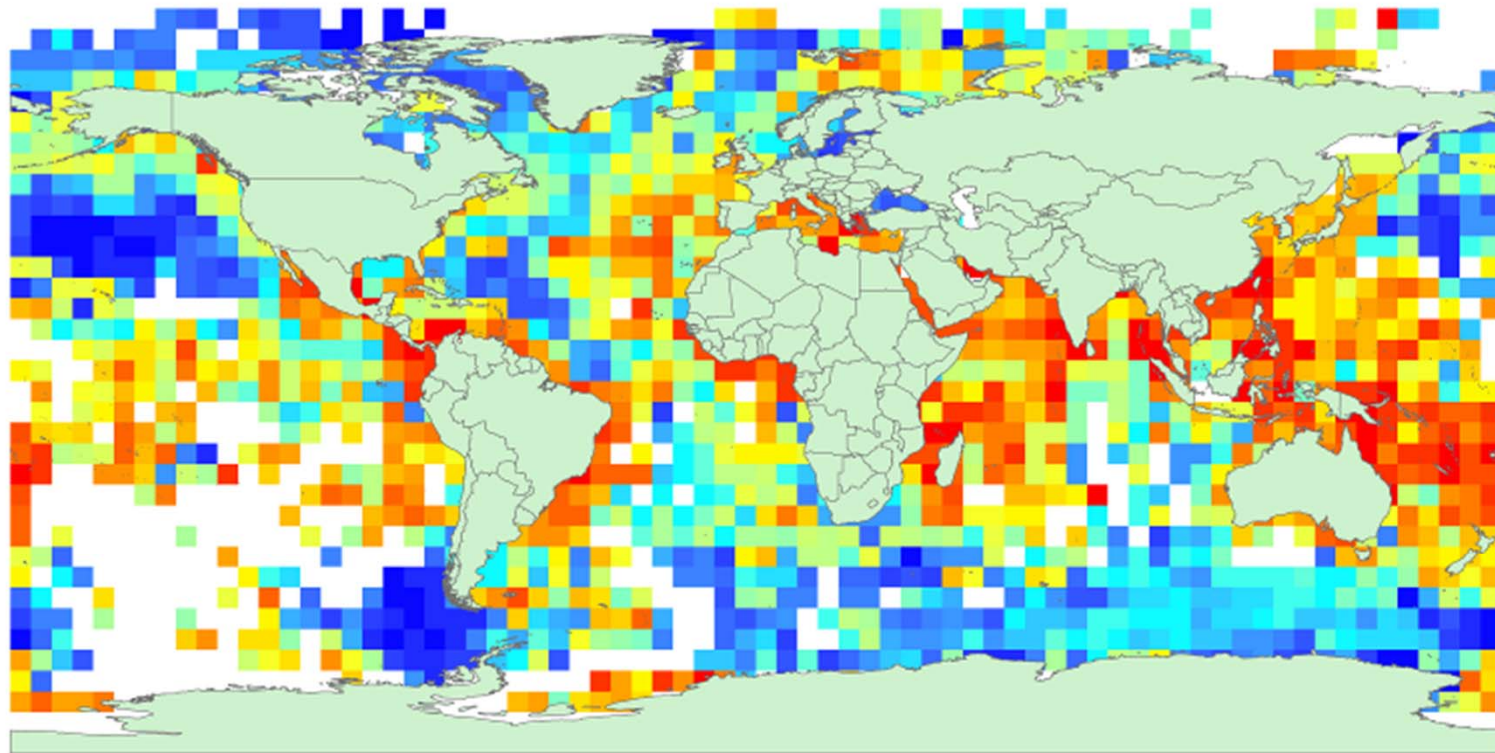
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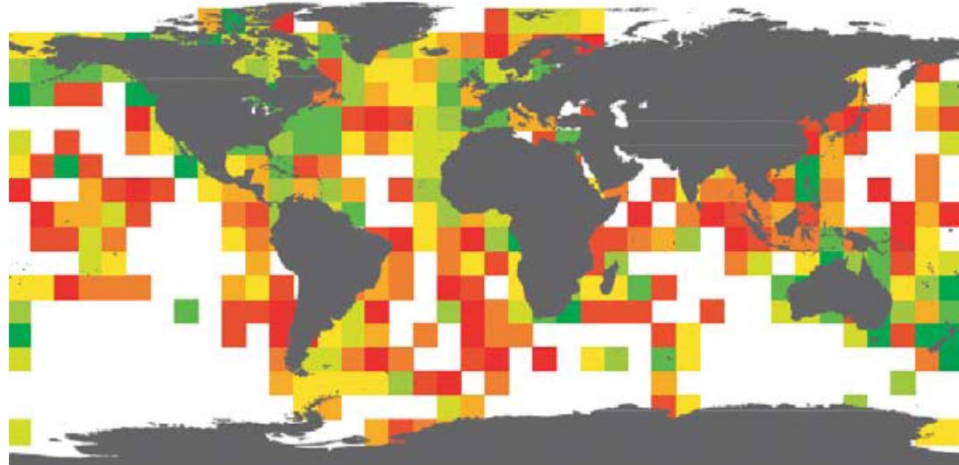
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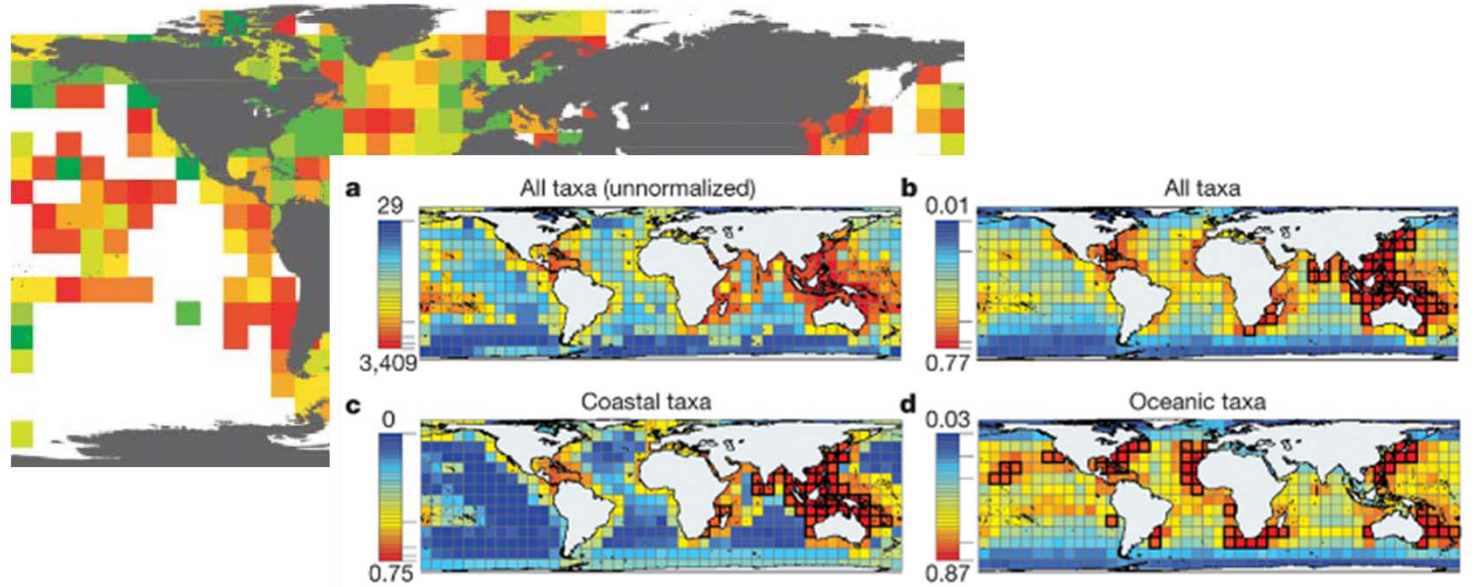


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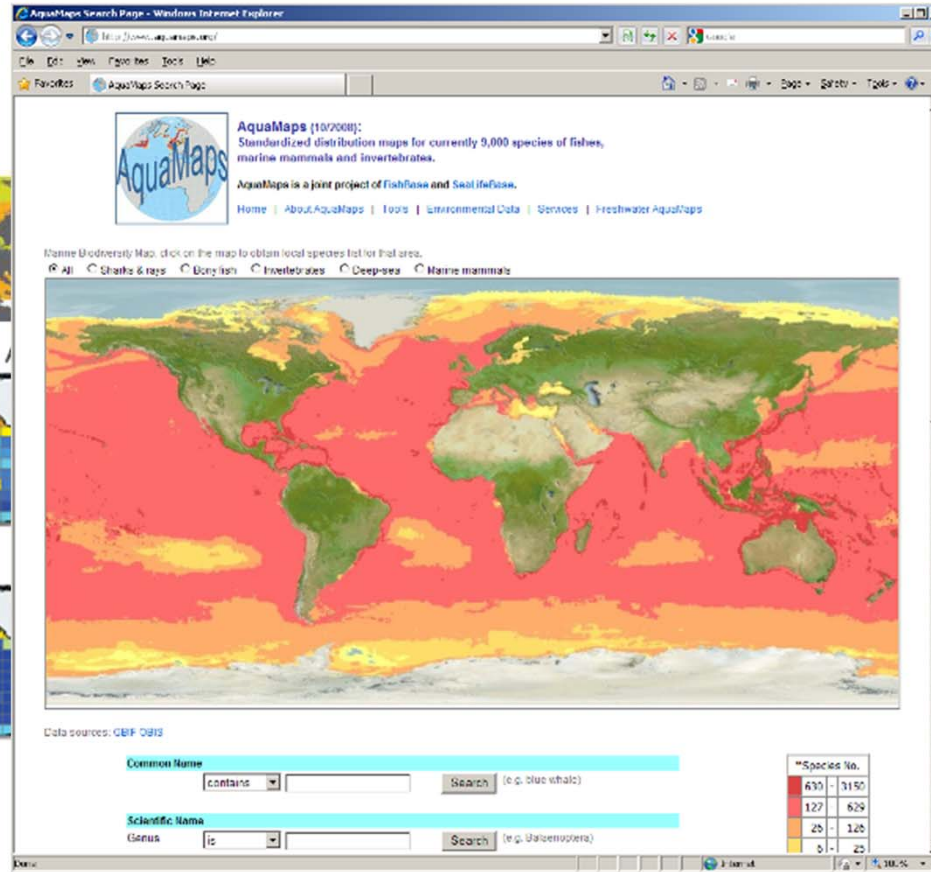
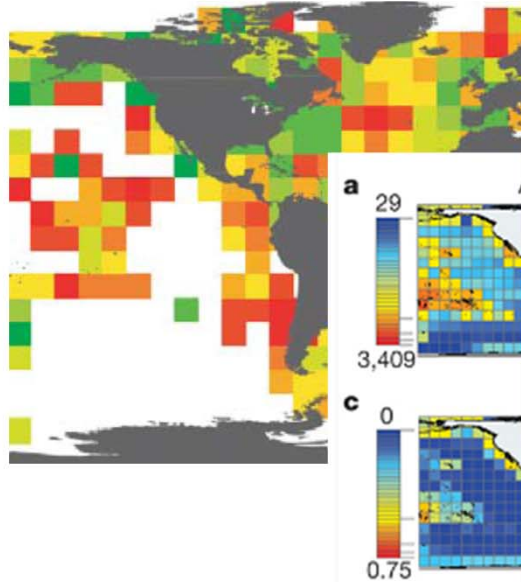
2010



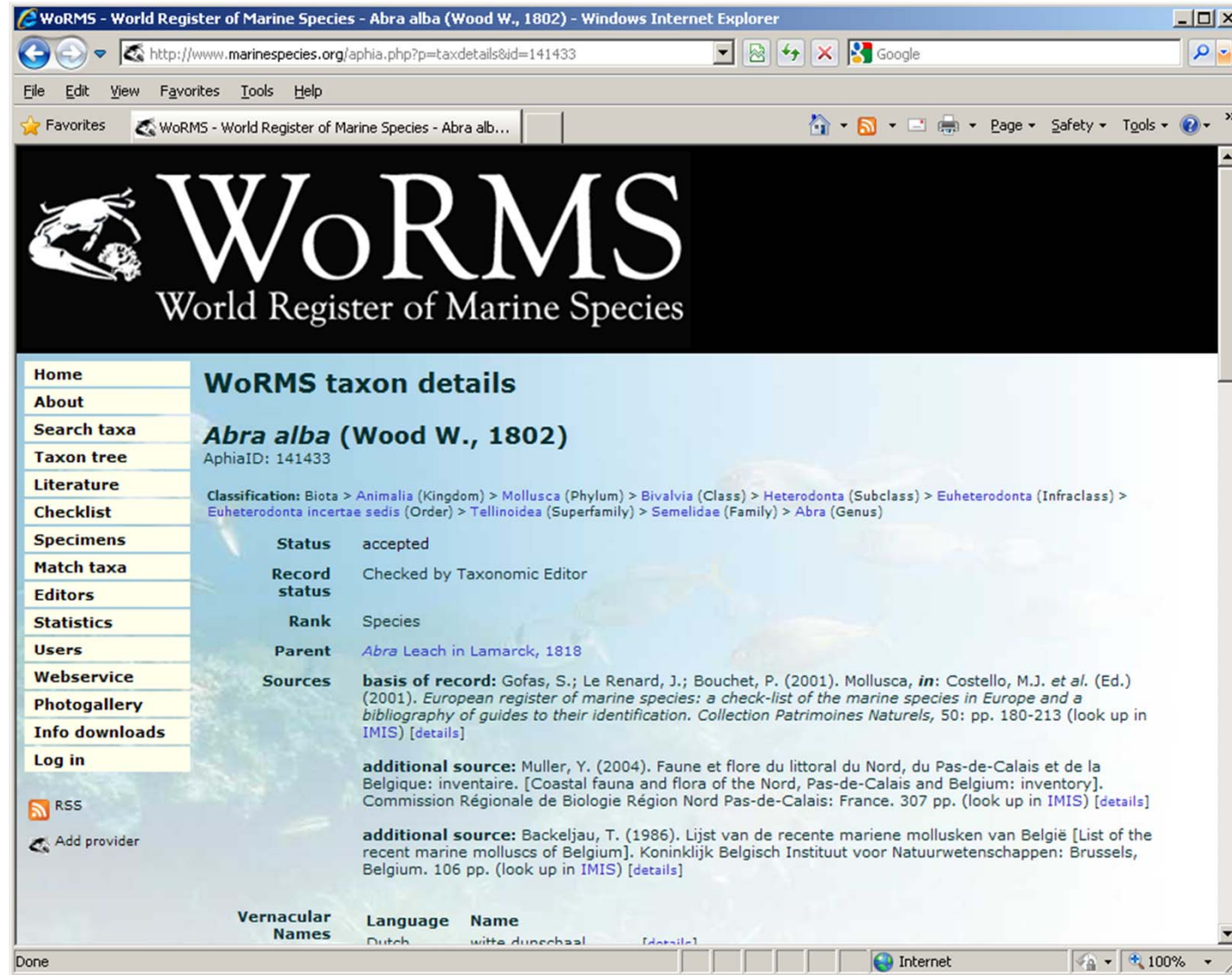
Completeness of fish inventories. Red:  
poorly known; green well known



## Biodiversity hotspots



Environmental envelope modeling – extrapolating beyond observations



WoRMS  
World Register of Marine Species

Home  
About  
Search taxa  
Taxon tree  
Literature  
Checklist  
Specimens  
Match taxa  
Editors  
Statistics  
Users  
Webservice  
Photogallery  
Info downloads  
Log in

RSS  
Add provider

## WoRMS taxon details

### *Abra alba* (Wood W., 1802)

AphiaID: 141433

Classification: Biota > Animalia (Kingdom) > Mollusca (Phylum) > Bivalvia (Class) > Heterodonta (Subclass) > Euheterodonta (Infraclass) > Euheterodonta incertae sedis (Order) > Tellinoidea (Superfamily) > Semelidae (Family) > Abra (Genus)

**Status** accepted

**Record status** Checked by Taxonomic Editor

**Rank** Species

**Parent** *Abra* Leach in Lamarck, 1818

**Sources**

**basis of record:** Gofas, S.; Le Renard, J.; Bouchet, P. (2001). Mollusca, *in*: Costello, M.J. et al. (Ed.) (2001). *European register of marine species: a check-list of the marine species in Europe and a bibliography of guides to their identification. Collection Patrimoines Naturels*, 50: pp. 180-213 (look up in [IMIS](#)) [[details](#)]

**additional source:** Muller, Y. (2004). Faune et flore du littoral du Nord, du Pas-de-Calais et de la Belgique: inventaire. [Coastal fauna and flora of the Nord, Pas-de-Calais and Belgium: inventory]. Commission Régionale de Biologie Région Nord Pas-de-Calais: France. 307 pp. (look up in [IMIS](#)) [[details](#)]

**additional source:** Backeljau, T. (1986). Lijst van de recente mariene mollusken van België [List of the recent marine molluscs of Belgium]. Koninklijk Belgisch Instituut voor Natuurwetenschappen: Brussels, Belgium. 106 pp. (look up in [IMIS](#)) [[details](#)]

Vernacular Names	Language	Name
	Dutch	witte dunschaal [ <a href="#">details</a> ]

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Tritonia hombergi Cuvier, 1803 - Encyclopedia of Life - Windows Internet Explorer

http://www.eol.org/pages/3028100

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**eol** Encyclopedia of Life

We apologize, but the user registration system is not currently available. Please try again later.

SEARCH:  **FIND**

Names Tags Full-text

SHOWING: ALL IN ALTERNATE CLAS FILTERED IN

---

## Tritonia hombergi Cuvier, 1803

Taxon recognized by [World Register of Marine Species \(WoRMS\)](#), [World Marine Mollusk database](#), [CoReS](#), [Serpis](#) in [WoRMS Species Information \(Marine Species\)](#)

IUCN RED LIST STATUS: **NOT EVALUATED**

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IMAGES MAPS COMMENTS



IMAGES



CLASSIFICATION: [What's](#)

WoRMS Species Information (Marine Spe

- [Animalia +](#)
- [Mollusca +](#)
- [Gastropoda +](#)
- [Nudibranchia +](#)
- [Tritoniidae +](#)
- [Tritonia +](#)
- [Tritonia hombergi Cuvier, 1803](#)

- [Archaea +](#)
- [Bacteria +](#)
- [Chromista +](#)
- [Fungi +](#)
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- [Plantae +](#)
- [Protocista +](#)
- [Protozoa +](#)

COPYRIGHT: Some rights reserved  
  
 SUPPLIER: [World Register of Marine Species](#)   
 AUTHOR: BioMar-TCD

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Species

Abra alba

Click to search & browse species

Datasets

Click to search & browse datasets

Region

Date & Season

Oceanography

Variable	From	To
Bottom depth		
Sample depth		
Temperature		
Nitrate		
Salinity		
Oxygen		
Phosphate		
Silicate		

Distribution Map - Grid at 1 degree resolution

Species Search

Scientific name begins with Abra alba

Include branches

Taxonomic Tree

- Euheterodonta incertae sedis
  - Arcticoidea
    - Arcticoidea
  - Cardioidae
  - Chamoidea
  - Corbiculoidea
  - Dreissenoidae
  - Galeommatoidae
  - Gastrochaenoidea
  - Glossidae
  - Hiatelloidea
  - Kelliellidae
  - Lucinoidea
  - Mactroidea
  - Myoidea
  - Pholadoidea
  - Solenoidae
  - Tellinoidea
    - Donacidae
    - Pharidae
    - Psammobidae
    - Semelidae
    - Abra
      - Abra aequalis
      - Abra alba

Species Information

Summary

Links to Other Information Systems

- Encyclopedia of Life
- Catalog of Life
- World Register of Marine Species (WoRMS)
- Integrated Taxonomic Information System (ITIS)
- Barcode of Life
- GenBank
- Google Images
- Google Scholar
- uBio
- Species-identification.org
- FAO fact sheet

Links to Other Mapping Systems

- GBIF
- DiscoverLife
- AquaMaps (About AquaMaps)

Related datasets

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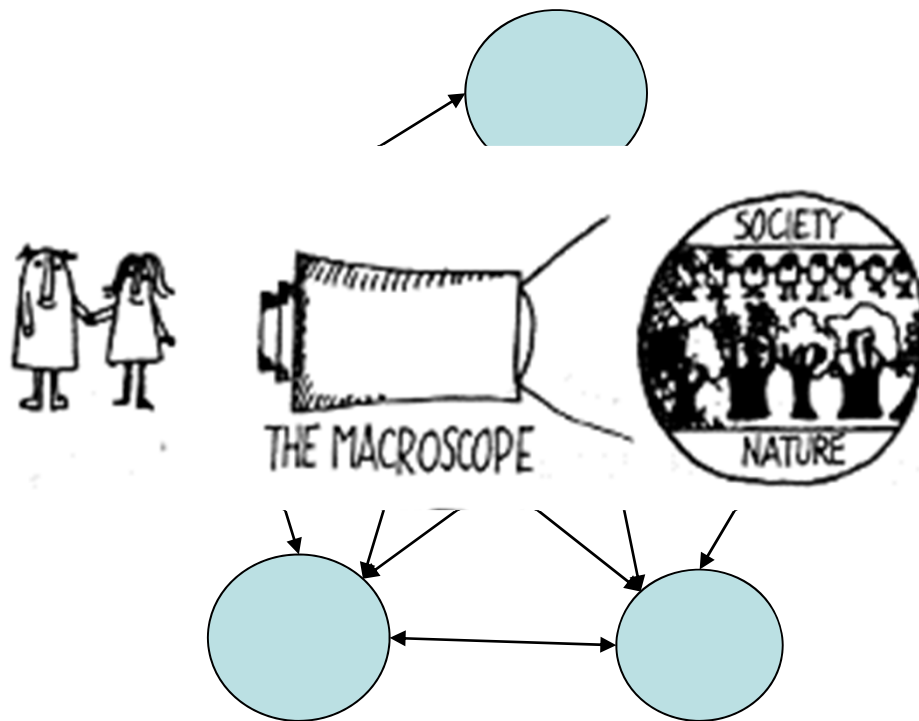
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A Decade of Discovery

2010



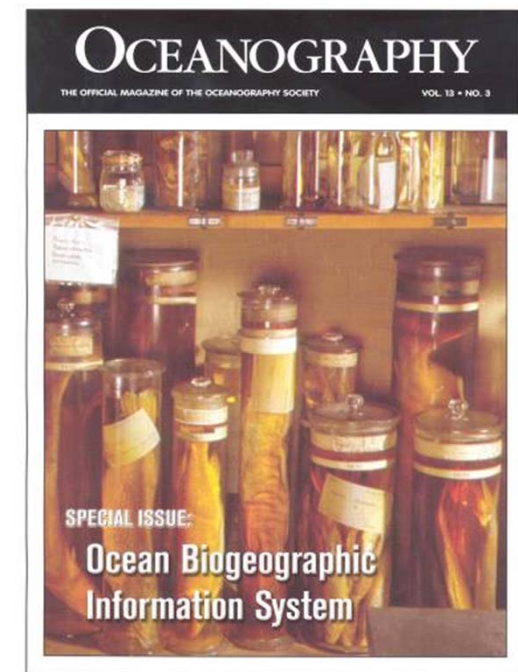
# Biodiversity Web 3.0



- An ecosystem of information services
- Interconnected by web services
- Up-to-date and easy to use

# OBIS is...

- Framework for data sharing
- Actively mobilising difficult-to-access data
- There for everyone to use
- Open for collaboration



[www.iobis.org](http://www.iobis.org)

[info@iobis.org](mailto:info@iobis.org), [evberghe@iobis.org](mailto:evberghe@iobis.org)