Bringing Census of Marine Life Discoveries and Technology Together to Establish Protected Areas on the High Seas

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OPEN OCEANS, DEEP SEAS AND HIGH SEAS

Facts:

- 95 % of the global biosphere
- Major part of world’s biodiversity
- Regulating role in Earth’s climate
- 64% = high seas
- The “Area”: seabed beyond legal continental shelves or 200 nm

Pressures:

- Intensifying human uses
- Climate change
- Ocean acidification
• Reduce the rate of biodiversity loss by 2010

• Encourage the application of ecosystem approaches to marine management by 2010

• Establish representative marine protected area networks by 2012

• Restore depleted fish stocks to maximum sustainable yields, where possible by 2015

• Eliminate destructive fishing practices
PROGRESS TOWARDS 2012 MPA TARGETS

0.83% 1.91% <0.5%

5.9% 12.1%

The Area starts at 200 nM from the baseline when the legal Continental Shelf (as defined in Art. 76) does not extend beyond that limit.

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UN CONVENTION ON THE LAW OF THE SEA
1982

• **Freedom to:**
  - Fish
  - Navigate
  - Lay submarine cables and pipelines
  - Conduct marine scientific research
  - Construct artificial islands
  - Authorize vessels to fly national flag

• **Duty to:**
  - Conserve living marine resources
  - Protect and preserve marine environment
  - Cooperate
  - Control vessels and citizens
  - Comply with other international legal obligations
## CBD COP9 Decision 20 (2008)

### Annex I: Site Criteria

“Ecologically or Biologically Significant Areas” (EBSAs)

<table>
<thead>
<tr>
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<th>Criteria</th>
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<tbody>
<tr>
<td>1</td>
<td>Uniqueness / rarity</td>
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<tr>
<td>2</td>
<td>Special importance for life history of species</td>
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<tr>
<td>3</td>
<td>Importance for threatened, endangered or declining species / habitats</td>
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<tr>
<td>4</td>
<td>Vulnerability, fragility, sensitivity, or slow recovery</td>
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<tr>
<td>5</td>
<td>Biological productivity</td>
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<tr>
<td>6</td>
<td>Biological diversity</td>
</tr>
<tr>
<td>7</td>
<td>Naturalness</td>
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</tbody>
</table>
CBD COP9 Decision 20 (2008)
Annex II: Network Criteria

1. EBSAs (site criteria)
2. Representativity
3. Connectivity
4. Replication
5. Adequacy / viability
GLOBAL OCEAN BIODIVERSITY INITIATIVE

an international partnership advancing the scientific basis for conserving biological diversity in the deep seas and open oceans.
Objectives

- Establish and support an international scientific collaboration to assist States and relevant regional and global organizations to identify ecologically significant areas using the best available scientific data, tools, and methods.

- Provide guidance on how the CBD’s scientific criteria can be interpreted and applied towards management, including representative networks of marine protected areas.

- Assist in developing regional analyses with relevant organizations and stakeholders
GLOBAL OCEAN BIODIVERSITY INITIATIVE PARTNERS
APPLYING CENSUS SCIENCE
Meeting CBD Criteria

- Analysis of Biodiversity
- Species ranges
- Habitat
- Migratory paths
- Identification of oceanographic features
- Productivity
- Interaction / threat
Using the OBIS data holdings, it is possible to investigate global patterns of biodiversity.

- Two independent components to species diversity:
  - (1) species richness
  - (2) evenness, or the relative abundance of species in a sample

- Hurlbert Index (ES50) diversity statistic calculated for 1 & 5 degree cells

CREDIT: E. Vanden Berghe, OBIS
Great White Sharks are listed as Vulnerable according to the IUCN Redlist (2009.1)

Adult white sharks tracked (by the TOPP program) from several sites along the North American coast travel to a region in the northeastern Pacific for no known reason.

Utilization distributions were calculated using a Kernel Home Range Estimator.
Endangered Species

Pacific Leatherbacks in the South Pacific Gyre

- Slow growth and low reproductive potential of leatherback turtles makes them particularly sensitive to excessive mortality of adult life stages.

- Analysis of multiple years of tracking data using state-space models have reveal migratory pathways and a consistent foraging area for leatherback turtles in the South Pacific Gyre.

FIGURE: Shillinger et al. 2008
CREDIT: Andre Boustany
Naturalness

South East Atlantic Seamounts

- Global datasets of predicted large seamount locations have been created from ocean bathymetry.
- Overlaid historical seamount catch and a global model of human impacts on a dataset of predicted seamounts
- Identified an area of lightly impacted waters around the Discovery tablemount group in the South East Atlantic.

CREDIT: Jesse Cleary (MGEL), and Ashley Rowden, Malcom Clark & Mireille Consalvey (CenSeam)
Defining ecologically or biologically significant areas in the open oceans and deep seas: Analysis, tools, resources and illustrations

A background document for the CBD expert workshop on scientific and technical guidance on the use of biogeographic classification systems and identification of marine areas beyond national jurisdiction in need of protection.

Ottawa, Canada
29 September – 2 October 2009

Authors: Jeff Ardron, Daniel Dunn, Colleen Corrigan, Kristina Gjerde, Patrick Halpin, Jake Rice, Edward Vanden Berghe, Mario Vigueras

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REPORT OF THE EXPERT WORKSHOP ON ECOCLOGICAL CRITERIA AND BIOGEOGRAPHIC CLASSIFICATION SYSTEMS FOR MARINE AREAS IN NEED OF PROTECTION

INTRODUCTION

1. At its ninth meeting, the Conference of Parties to the Convention on Biological Diversity, in its decision IX/38, made a significant step forward towards achieving 2012 target for the establishment of marine protected areas (MPAs). It adopted scientific criteria (annex I) to the decision for identifying ecologically or biologically significant marine areas in need of protection, and the scientific guidance (annex II) for designing representative networks of marine protected areas. The Conference of the Parties requested the Executive Secretary to transmit the information contained in annex I and II to this Decision to the relevant General Assembly processes. The Conference of the Parties also took note of the four initial steps to be considered in the development of representative networks of marine protected areas, in annex III to decision IX/38.

2. In the same decision, the Conference of the Parties urged Parties and invited other Governments, and relevant organizations to apply, as appropriate, the scientific criteria, the scientific guidance, and initial steps, with a view to assist the relevant processes within the General Assembly and implement conservation and management measures, including the establishment of representative networks of marine protected areas in accordance with international law, including the United Nations Convention on the Law of the Sea, and recognizing that these criteria may require adaptation by Parties if they choose to apply them within their national jurisdiction acting in the context of their national policies and criteria.

3. The Conference of the Parties further decided to convene an expert workshop, including scientific and technical experts from different Parties, other Governments and relevant organizations, with balanced regional and sectoral participation and using the best available information and data at the time, in order to provide scientific and technical guidance on the use and further development of biogeographic classification systems, and guidance on the identification of areas beyond the national jurisdiction, which meet the scientific criteria. The workshop would review and synthesize progress on the identification of areas beyond national jurisdiction which meet the scientific criteria, and experience with the use of the biogeographic classification system, building upon a completion of existing national, regional and national efforts, and shall not consider issues relating to management and only provides scientific and technical guidance.

In order to facilitate the enforcement of the Convention’s provisions, parties submit to the Secretariat’s Depositary at UNEP/WCMC any information or advice received from the CBD expert workshop on scientific and technical guidance on the use of biogeographic classification systems and identification of marine areas beyond national jurisdiction in need of protection.

UNEP/WCMC...
ILLUSTRATIONS IN GOOGLE EARTH

The Sargasso Sea

Criterion: Rare

Alone in supporting the center of distribution for a holoplagic (continuously pelagic) drift algae (Sargassum spp.) community, the Sargasso Sea is a globally unique marine ecosystem whose entire water column provides a range of critical services (e.g., habitats, migratory routes, spawning and feeding grounds) to a multitude of species including endemic, endangered, and commercially important ones. To illustrate how such an area can meet the EBBA criterion for uniqueness, information on the biological, ecological, and oceanographic features of the Sargasso Sea from peer-reviewed literature, technical reports, and data sets were examined and compared to the four other similar regions of the ocean found within subtropical gyres. Read complete illustration

Next: The Saya de Malha Banks

About | CBG | IUCN | CoMML | UREP | WCMC | MCBII | Duke MGED | openoceansdeepseas.org
http://www.GOBI.org/
The report advised the United Nations General Assembly (UNGA) discussions on sustainable fisheries and managing high seas bottom fishing.

- States and RFMOs to adopt measures to protect «vulnerable marine ecosystems» from adverse impacts from **bottom fishing activities**

**Results:**

- **app 83-98 million km2** of high seas area currently closed to bottom trawling
- **app 61-62 million km2** provisional and/or temporary
- Prior impact assessment and the adoption of measures to prevent significant adverse impacts required before opening
- **app 1.8 million km2**: no bottom contact fishing of any type allowed
SOUTH OF SOUTH ORKNEYS

- CCAMLR adopted 2009
- First large-scale purely high seas protected area in the Southern Ocean
- Size: ~94,000 km²
- No fishing activities
- No discharge/disposal from fishing vessels
- In force: May 2010

Credit: UK Foreign and Commonwealth Office
CHARLIE GIBBS FRACTURE ZONE

- MAR-ECO expedition to Mid Atlantic Ridge
- Science base for MPA proposal
- Site endorsed by OSPAR “in principle” as a MPA in ABNJ since 2007

Credit: Sabine Christiansen, WWF
Design a network of 9 areas of particular environmental interest within the Clarion-Clippterton Zone

- Represent ~30 % of the area
- Promote and encourage marine scientific research
Global Ocean Biodiversity Initiative
Working towards high seas conservation
NEXT STEPS

• Additional partners
• multi-criteria analysis
• network design
• regional workshops
• capacity development
• Reports to CBD Conference of the Parties (COP) 10 in Japan in October 2010.
Spatio-temporal workflows for bycatch assessment
ACKNOWLEDGMENTS

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THANK YOU!

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