

BIOPAMA



Biodiversity and Protected Areas Management Programme

Partners in BIOPAMA



Joint Research Centre • Sito di Ispra



In a nutshell

BIOPAMA

- Will improve access to and availability of information on biodiversity and socioeconomic issues in order to improve decisions for protected area management
- Is funded under the EC/ Intra ACP Envelope for Biodiversity
- Thus the geographical focus is on ACP (Africa, Caribbean, Pacific) Countries
- Is jointly implemented by IUCN, EC-JRC and GIZ



Objectives

General Objective

To improve long-term conservation of biodiversity in ACP regions and reduce the poverty of populations surrounding protected areas.

Specific objective

Enhance existing institutions and networks, based on *the best available science and knowledge*, by *building their capacity* to strengthen policy and to implement well informed decisions on **biodiversity conservation, protected areas management and Access and Benefit Sharing**.

Rationale

- ACP countries host a huge share of the planet's **biodiversity**
- The programme recognizes **well-managed protected areas (PAs)** as a key tool for **in-situ conservation**, for **maintaining ecosystem services**, and for helping **adaptation to climate change**
- Recognizes challenges of biodiversity conservation in ACP countries
- **Biodiversity loss** in ACP countries continues in **spite of national efforts to establish PAs**

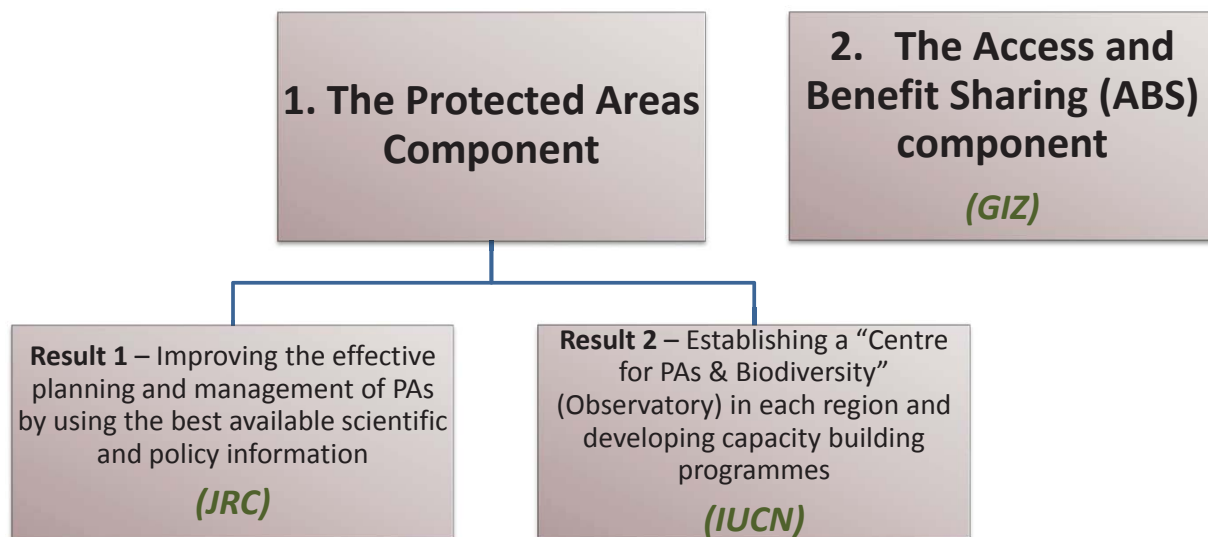


Key problems

- **Limited** human and institutional **capacity**
- **Lack of coordination**

Structure of the programme

Two components



Joint Research Centre • Sito di Ispra



Key principles of implementation

- Action oriented
- Capacity building (CB) guided by general principles but tailored to the specific demands of each region and implemented at different levels
- Coherence of actions at global and regional levels and across key partners
- Create political buy-in by working with regional institutions
 - **Africa:** African Union, RAPAC, OFAC, COMIFAC, SADC
 - **Caribbean:** CARICOM, CARIFORUM, OECS, UNEP-CEP
 - **Pacific:** SPREP

Key principles of implementation

- Close inter-institutional coordination
- Synergies with other projects and initiatives are welcomed
- CB activities should increase the understanding and recognition of the values of protected areas
- Synergies at national/local levels

Beneficiaries

Direct beneficiaries

- Regional and national institutions in charge of PAs planning and management
- PA managers

Indirect beneficiaries

- Training Centres and national and regional schools, colleges and universities providing training to PA managers



Expected outcomes

1) Better policy and decision making

- By making use of available science and knowledge centred in regional observatories

2) Improved technical and institutional approaches

- To better plan and manage PAs through capacity building
- This will enhance their contribution to biodiversity conservation and sustainable livelihoods



Expected outcomes

3) Enhanced regional cooperation

- Building **political support for biodiversity conservation** and to achieve **greater coherence** for implementing/negotiating Multilateral Environmental Agreements (MEAs)
- Building up **regional networks of experts** and enhanced networking to reduce external dependency



BIOPAMA in practice: The Regional Observatories (ROs)

- Information centres
- Dedicated structures hosted in existing institutions
- Technical nodes

Objectives

Building awareness of regional political institutions to strengthen biodiversity conservation and PA management through

- Facilitating data access
- Developing knowledge products



BIOPAMA in practice: The Regional Observatories (ROs)

Additional roles

- **Reality-check assessment:** Balancing political expectations and challenges on the ground
- **Practical advice:** regarding challenges in conservation and PA management
- Effective implementation of the **Regional Capacity Building Programme**
- **Regional experts:** for membership in existing international expert networks



BIOPAMA



Developing capacity for a Protected Planet

www.iucn.org/biopama
biopama@iucn.org

Access and
Benefit
Sharing

The ABS Capacity Development Initiative

The ABS Capacity Development Initiative

- Caribbean activities (foreseen) to start in 2013 –

Dr. Hartmut Meyer

24 January 2013, Bridgetown, Barbados

giz

Programme implementing
the Biodiversity Convention



In kind of
Federal Ministry
for Economic Cooperation
and Development



NORWEGIAN MINISTRY
OF FOREIGN AFFAIRS

DANISH MINISTRY
OF THE ENVIRONMENT



Access and
Benefit
Sharing

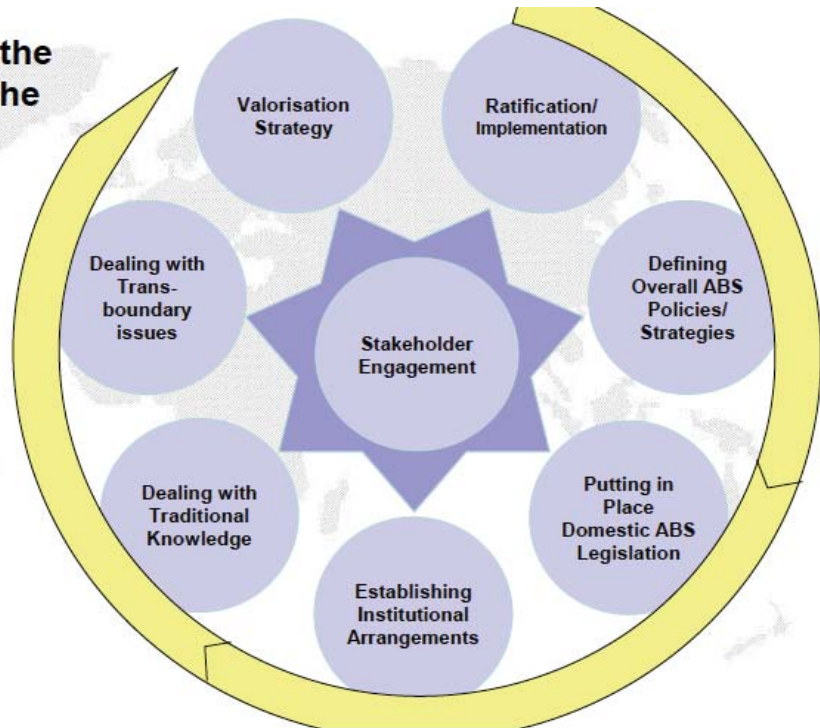
The ABS Capacity Development Initiative

2015 Objectives of the ABS Initiative

1. ACP countries **have ratified the Nagoya Protocol** and benefit after its entry into force from its compliance mechanisms at the international as well as national levels
2. Enabling, transparent and accountable **national ABS policies and regulatory frameworks** are developed and implemented which allow stakeholders of Africa and ACP countries to enter into equitable ABS partnerships with the research community and the private sector.
3. Valuation of genetic resources in provider countries is improved and **functioning ABS agreements** contribute to biodiversity conservation and livelihoods of rural populations.
4. National, bilateral and international **partners are supporting ABS implementation** at national and (sub-)regional level.
5. Approaches for implementing the Nagoya Protocol are **regionally coordinated and harmonized** with other processes and fora relevant to ABS in order to increase transboundary cooperation and to address legal gaps.

How do the Phases of the Policy Cycle relate to the Fields of Action? (1)

- Implementing ABS as a whole occurs in a policy cycle. Each Field of Action can be thought of as a specific thematic area in this cycle.
- While the Fields are interrelated, each of them addresses a specific objective. Also, different fields often involve different stakeholders.



Approach for the 1st ABS Workshop

Stocktaking and Analysis for implementing the Nagoya Protocol on ABS

ABS implementation requires	Policy objective in that phase	“Have’s “ (+)	“Havent’s” (-)
Ratification	Decide whether or not / when to ratify NP		
Overall Policy / Strategy	Clarify national ABS approach		
Legislation/ Regulations	Create legal certainty		
Stakeholder involvement	Ensure commitment & compliance of different stakeholders		
Institutional arrangements	Facilitate implementation with clear institutional responsibilities		
Trans-boundary issues	Avoid conflict and create synergies		
Traditional Knowledge	Facilitate benefit-sharing with TK holders		
Valorization approach	Turn the potential economic value of GR and aTK into actual income and economic development		

Caribbean Region: Interim Steering Group

CARICOM Member Countries	Organisations
St. Lucia (OECS member)	CARICOM Secretariat
Grenada (OECS member)	OECS Secretariat
Jamaica (non-OECS member)	University of the West Indies
Cuba (spanish speaking member)	TRAMIL or CAPSICUM
Suriname or Guyana (continental member)	Secretariat of the ABS Initiative
	Donors (Germany - BMZ, European Union - DG Development)
	observer: Secretariat of the CBD

Field of Action 1: Ratification

- Discussions at the national level necessary to determine procedures, gaps and need for capacity development
- Come into contact with the SCB
- Come into contact with CARICOM project on capacity development for the implementation of MEA
- ABS Initiative could come in with information materials for decision makers

Field of Action 2: Overall strategies & policies

- Discussions at the national level necessary to determine procedures, gaps and need for capacity development
- **ABS Initiative will provide ABS case studies and examples based on the previous work**
- **EPA Guyana/ABS Initiative: Integration of ABS in PA work***
- **CARICOM/ABS Initiative: 3rd ABS Workshop in Autumn 2013 in Jamaica**

*: activity under consideration, no decision made yet

Field of Action 3: National ABS legislation

- **CARICOM: Consultant supporting Dominica**
- **CARICOM/ABS Initiative: Study on ABS provisions in existing frameworks of the MS**
- **CARICOM/ABS Initiative: 2nd ABS workshop on national legislation in Dominica in May 2013**
- **EPA Guyana/ABS Initiative: Continuing work on ABS Bill***

*: activity under consideration, no decision made yet

Field of Action 4: Institutional Arrangements

- Activities needed at a later stage

Field of Action 5: Traditional Knowledge

- **Indigenous Peoples Commission Guyana/
ABS Initiative: Study on interlinkages NP /
Amerindian Act / ABS Bill***
- **Indigenous Peoples Commission Guyana/
ABS Initiative: Exploratory workshop in May
2013 with Executive Council of the National
Toshaos Council***

Field of Action 6: Transboundary Issues

- Activities needed at a later stage

Field of Action 7: Valorisation Strategy

- **UWI / TRAMIL / CAPSICUM / ABS Initiative:** Work on overview on R&D and products based on Caribbean genetic resources and associated traditional knowledge*
- **Bahamas / ABS Initiative:** Study on use of genetic resources for scientific publications and patents based on information in research permits*

*: activity under consideration, no decision made yet

Field of Action 8: Stakeholder Engagement

- Included in all other Fields of Action
- Using and adapting the existing instruments developed by ABS Initiative and the respective partners

Caribbean Priorities for 2013

- Field of Action 2: Overall strategies & policies
(*Guyana, 3rd ABS Workshop*)
- Field of Action 3: National ABS legislation
(*Guyana, Dominica, 2nd ABS Workshop*)
- Field of Action 5: Traditional Knowledge
(*IPC Guyana*)
- Field of Action 7: Valorisation Strategy
(*R&D Organisations, Bahamas*)

Digital Observatory of Protected Areas (DOPA)

Andrew Cottam & DOPA Team

BIOPAMA Regional workshop – Caribbean
Bridgetown, January 22-24, 2013

The DOPA

BIOPAMA



■ Digital Observatory of Protected Areas



a **LEGO** Toolbox for Biodiversity

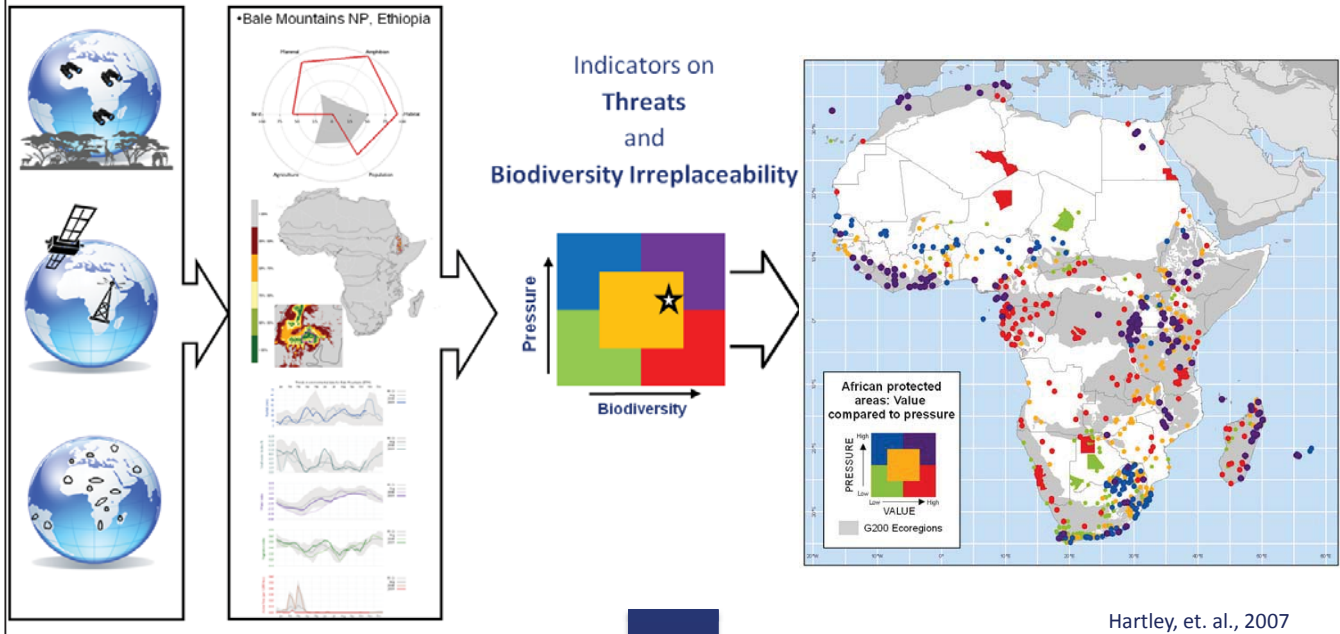


*A set of web based
Critical
Biodiversity
Infrastructures
to Assess,
Monitor,
and Forecast
Biodiversity
at the Global
Scale*

The history



African Protected Areas Assessment Tool



The APAAT



Analysed:

- 741 protected areas
- across 50 countries

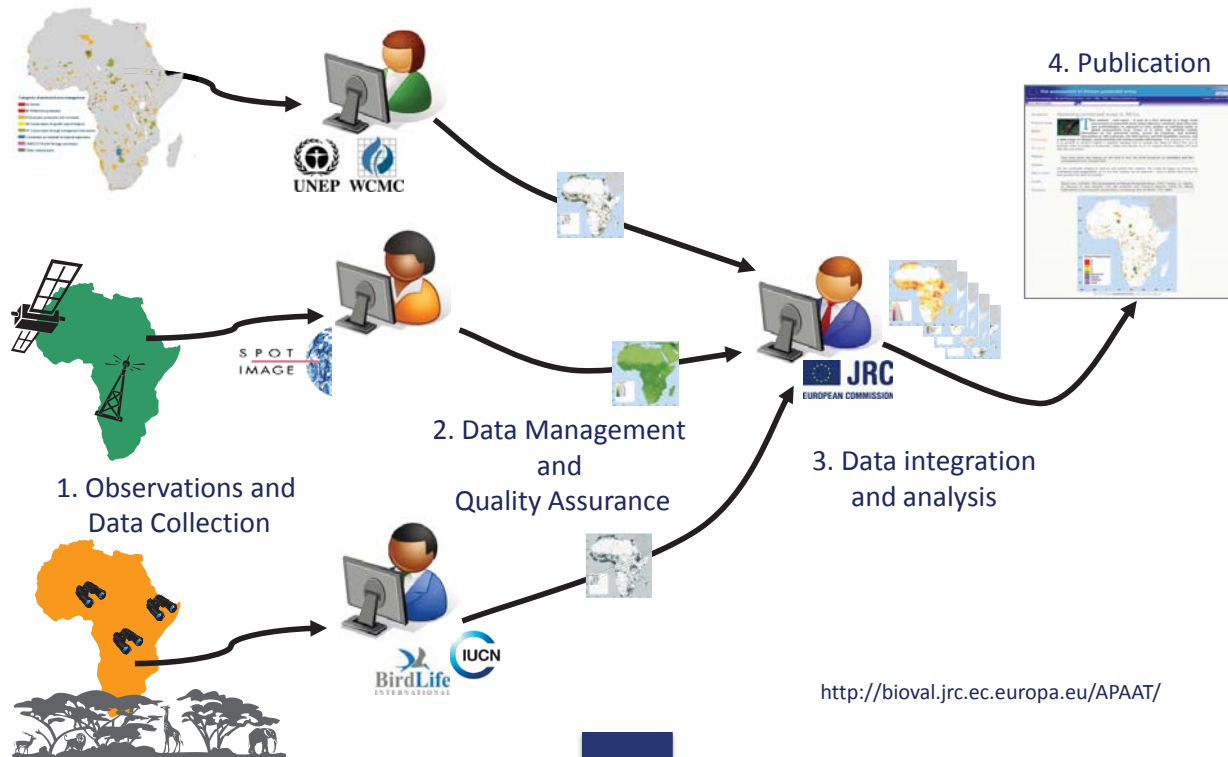
Used:

- information on 280 mammal, 381 bird and 930 amphibian species
- wide range of climatic, environmental and socioeconomic information

Produced:

- Biodiversity indicators
- Index for habitat irreplaceability
- Indicator for anthropogenic pressure

The APAAT



The APAAT



Limitations and lessons learnt

- No reusability of data and models by third parties
- High maintenance costs (one big program, changes & updates complicated)
- We need to go beyond the boundaries of Protected Areas (connectivity, fragmentation, new PAs are major issues)

Limitations and lessons learnt (cont.)

- Limited to Sub Saharan Africa. Policy issues become more and more global and there is a need for accessible global reference data and information systems
- Increase reusability of data, models and IT infrastructure for improved communication and reduced maintenance costs



Where we are now

BIOPAMA



Protected Areas



Habitats



Species



The principles



= a set of tools rather than one single tool

Distributed
Data and Model
Web Based
Services



Park Managers



Funding organizations



Decision-makers

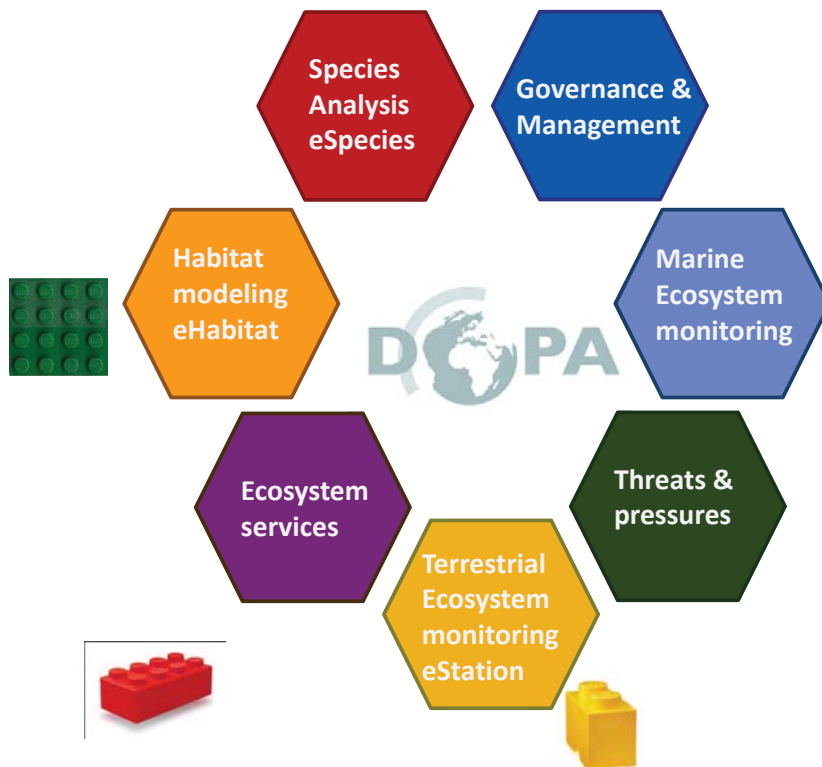
Small independent interoperable
web-based components developed
by experts at different institutions



Researchers

Components are reusable for other
applications

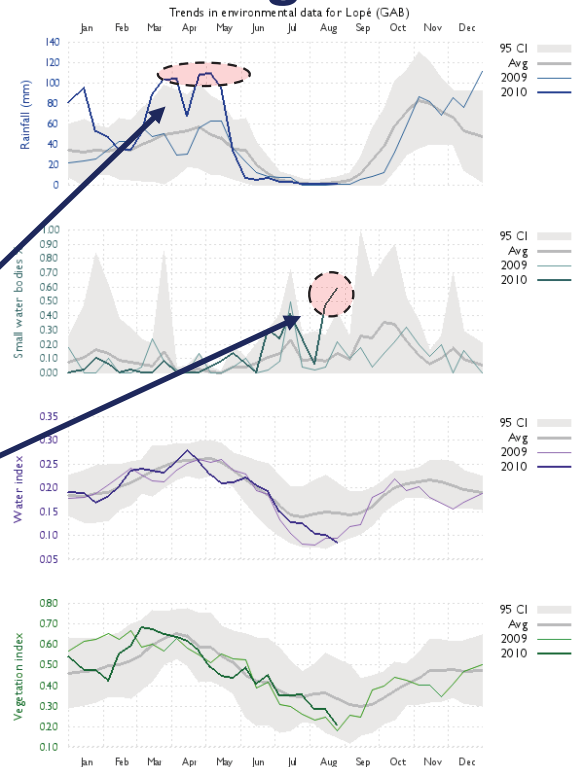
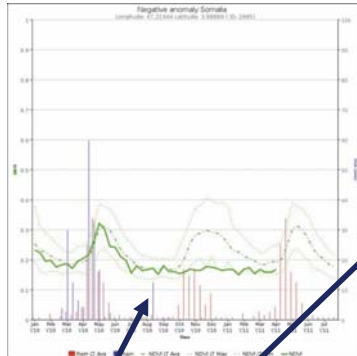
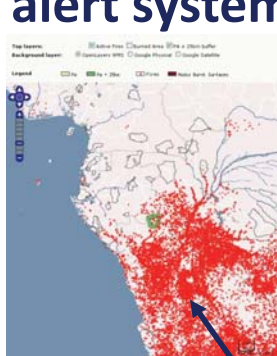
The elements



7 blocks supporting the
DOPA



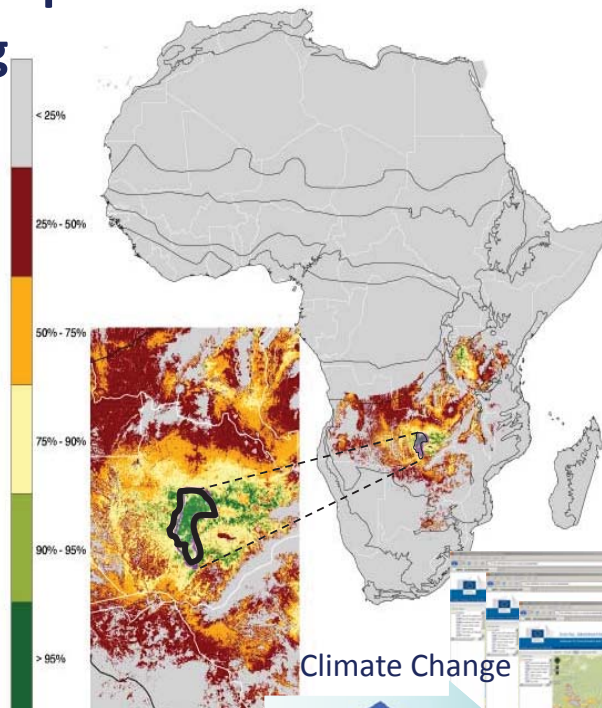
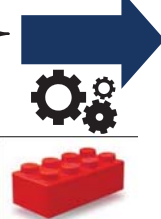
eStation: Environmental monitoring – alert system



eHabitat: Habitat uniqueness and ecological forecasting

- tree cover
- herbaceous cover
- barren cover
- Elevation
- Slope
- Vegetation (NDVI)
- Water (NDWI)
- Aridity index
- water bodies

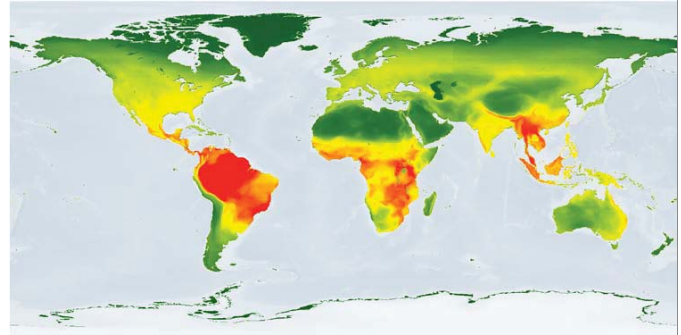
Mapping ecological Similarities (%)



Climate Change

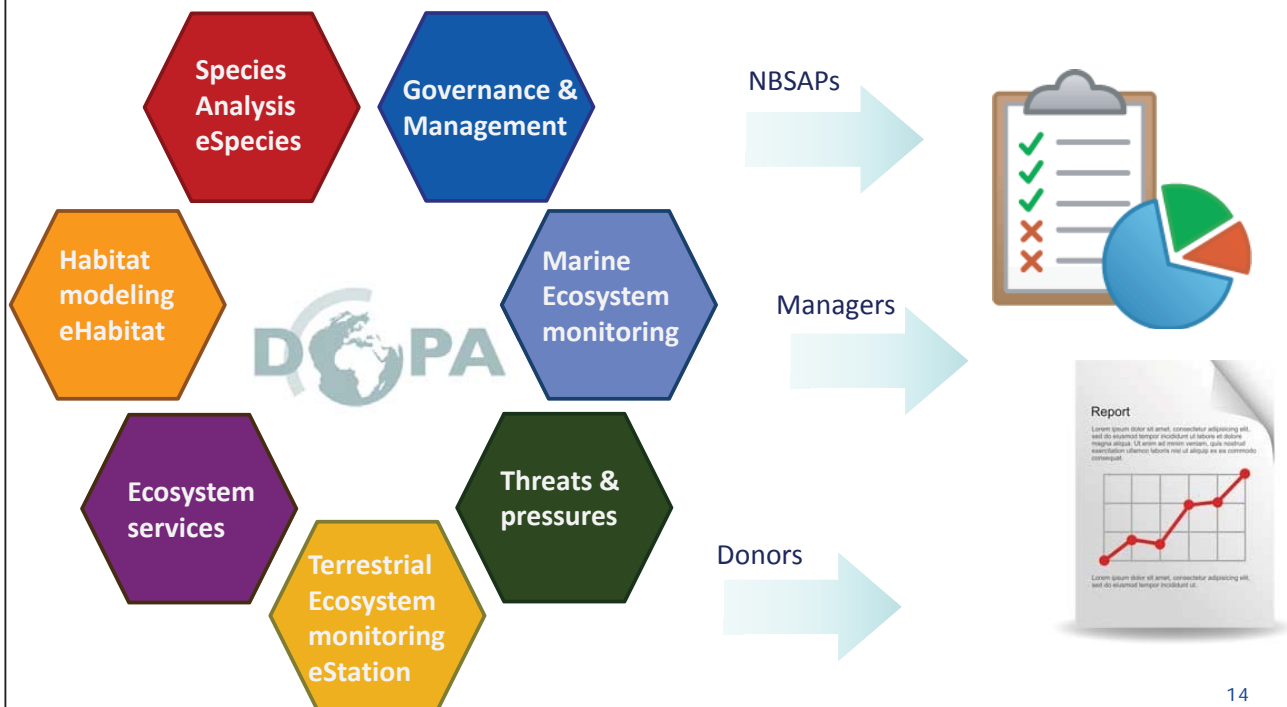
eSpecies: Species Information Service – Value added analyses

- ..More later



What is next

Integrating the services for decision & policy making



Web Services & Service Oriented Architecture (SOA)

- Better sharing of data and models (=improved automation & reusability)
- Distributed responsibilities and easier maintenance
- Easy customization of tools for different end-users
- Increased potential for multidisciplinary analyses

Reference Information System (RIS)

DOPA and BIOPAMA

- BIOPAMA foresees **Regional Reference Information Systems (RRIS)**
- DOPA being developed by JRC and partners will provide fundamental services to support RRIS
- But, **regional specificities** have to be taken into account (technical and thematic issues will vary). Need for additional tools, methods and data to address these specificities
- DOPA is a first step towards providing **decision makers** with **means to assess the state of protected areas** and **prioritize** them according to biodiversity values and threats.

Thank you!

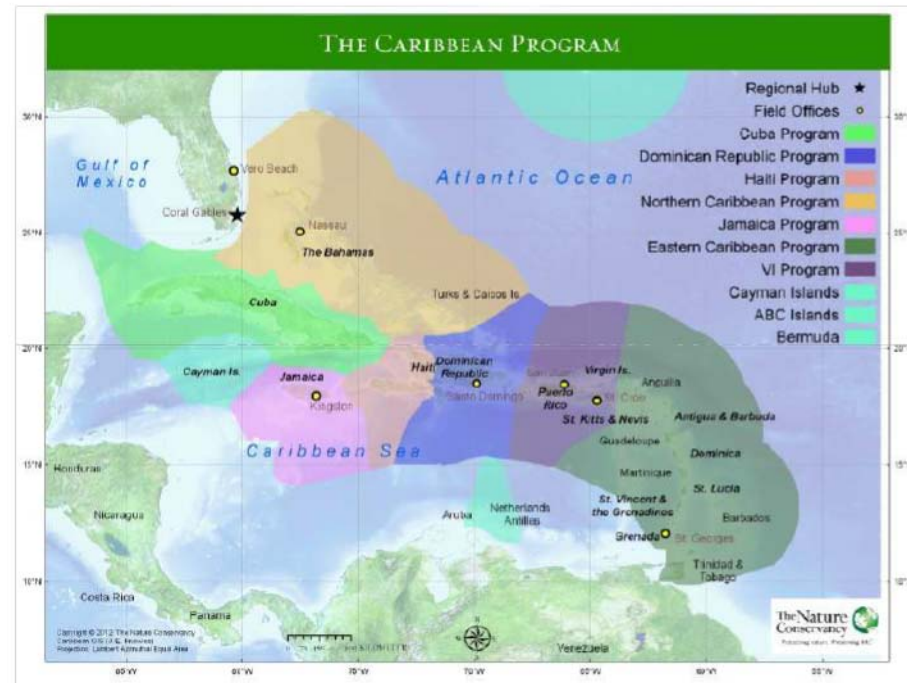
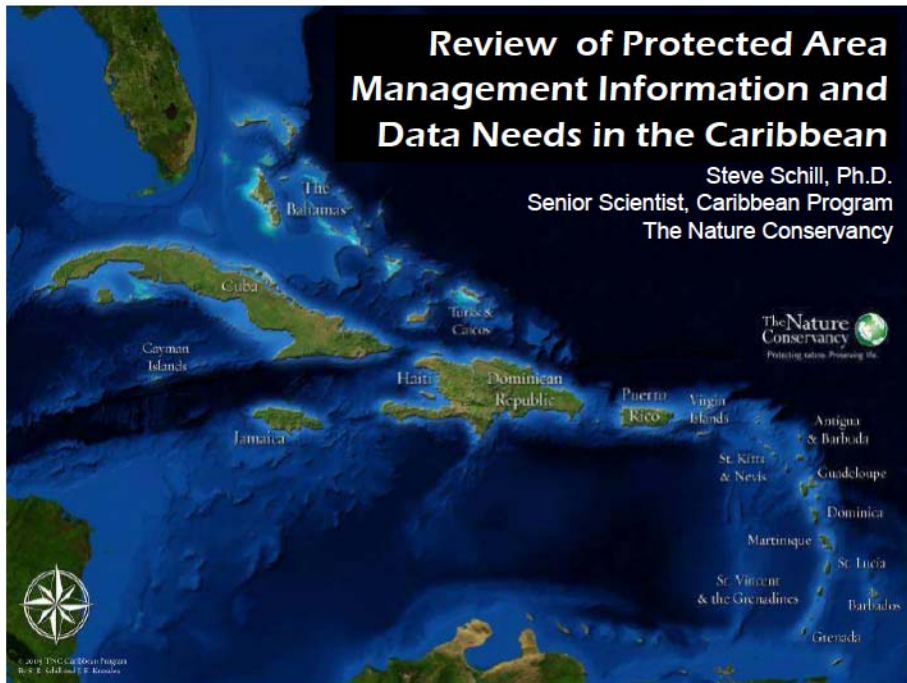


IT developments

and YOU...

Review of Protected Area Management Information and Data Needs in the Caribbean

Steve Schill, Ph.D.
Senior Scientist, Caribbean Program
The Nature Conservancy

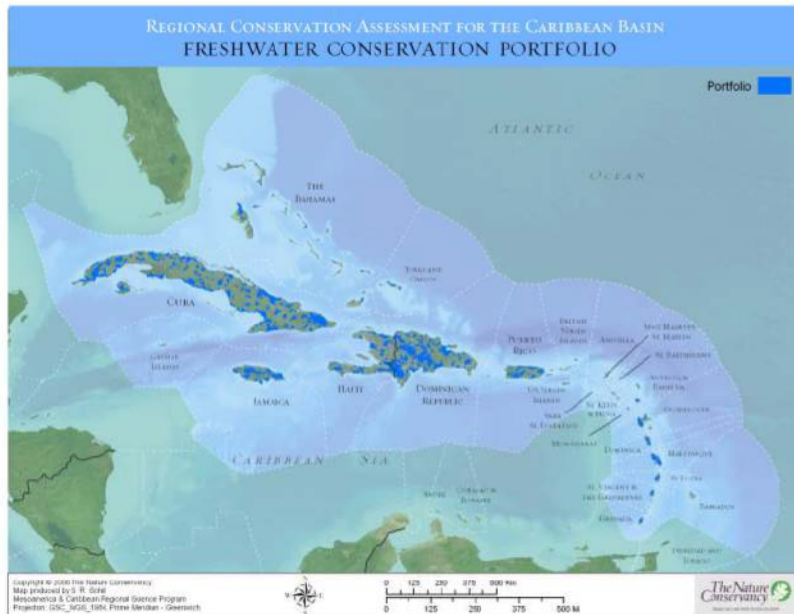


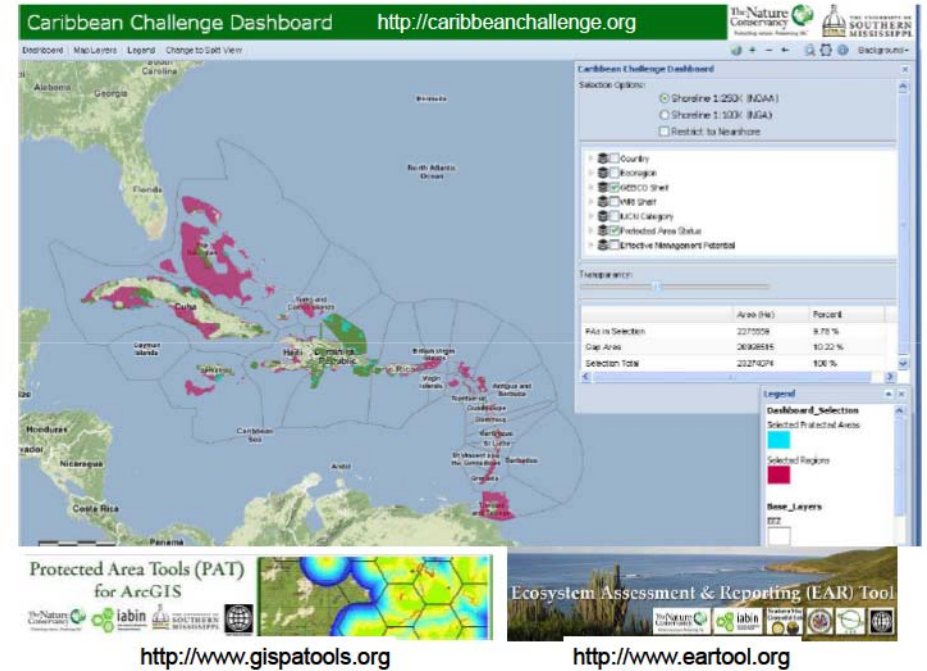
1. Expansion and Strengthening of Protected Areas



Caribbean Challenge Initiative (CCI) launched (2008)

10 governments now participating and MORE to join





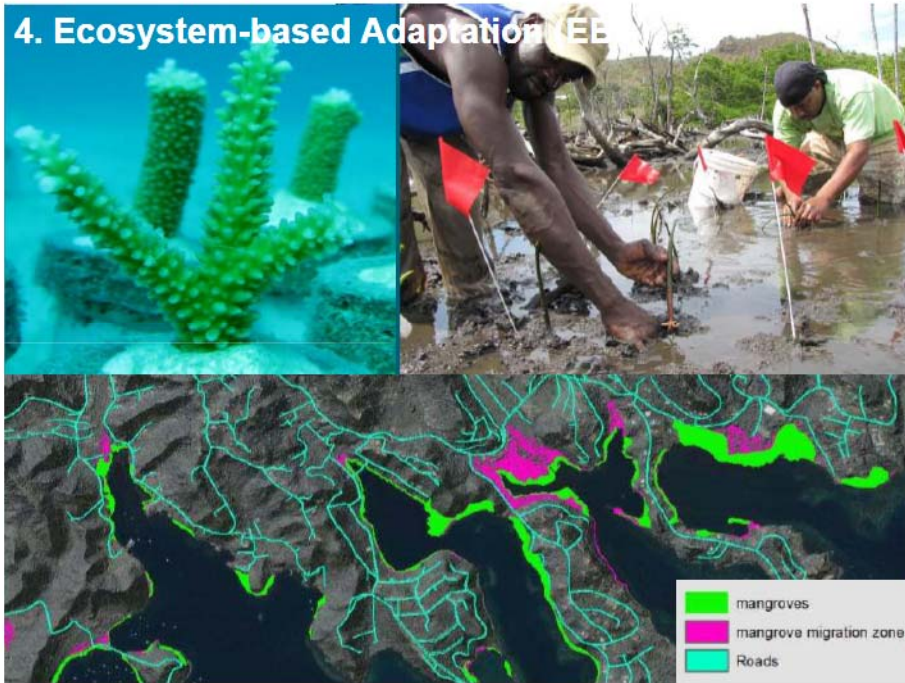
2. Sustainable Fisheries



3. Sustainable Tourism



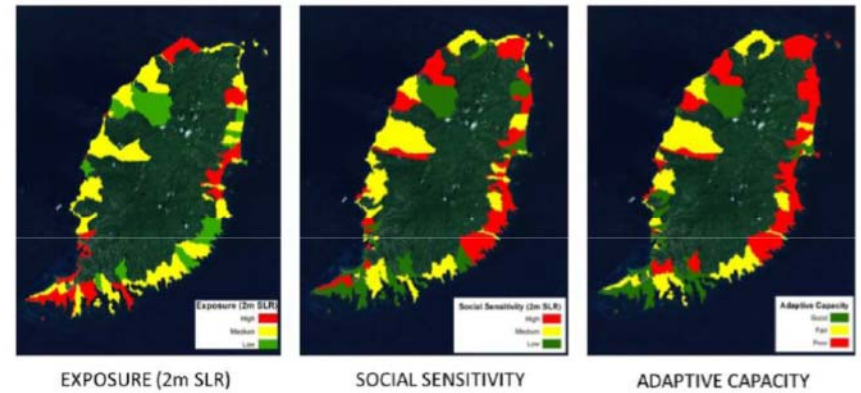
4. Ecosystem-based Adaptation (EBA)



■ mangroves
■ mangrove migration zone
■ Roads

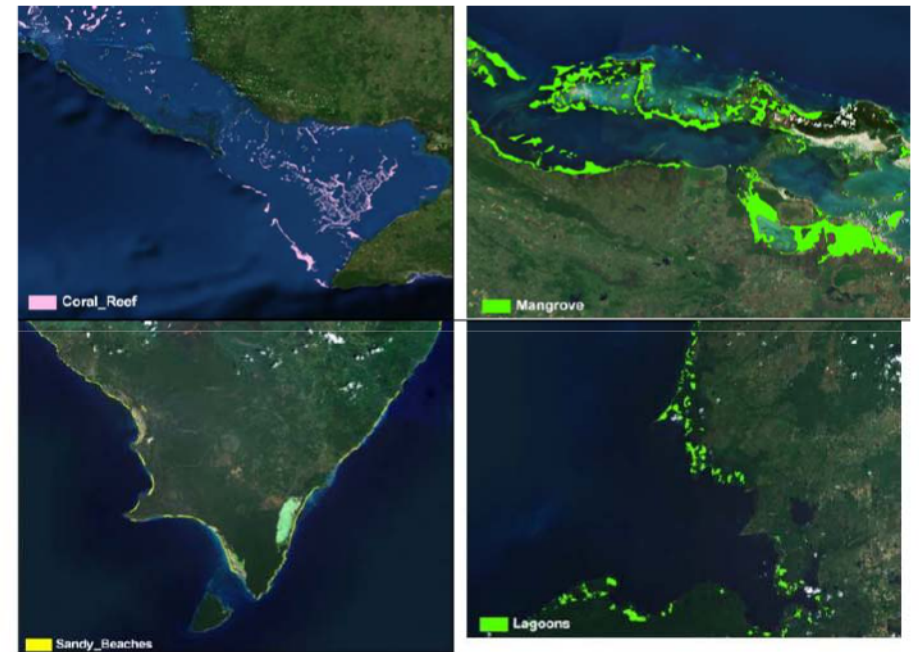
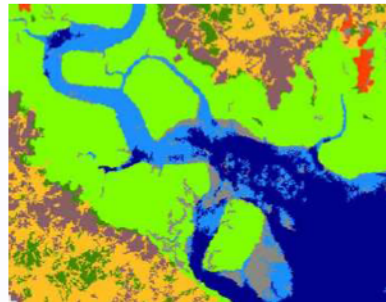
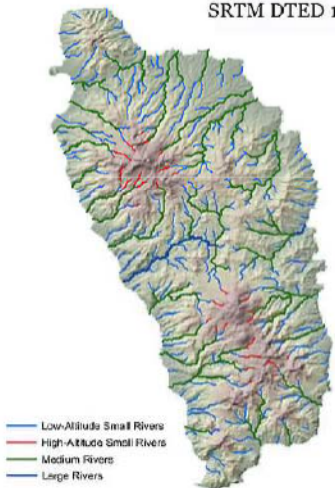
GRENADA:

2-meter SLR Vulnerability Indices by Enumeration District

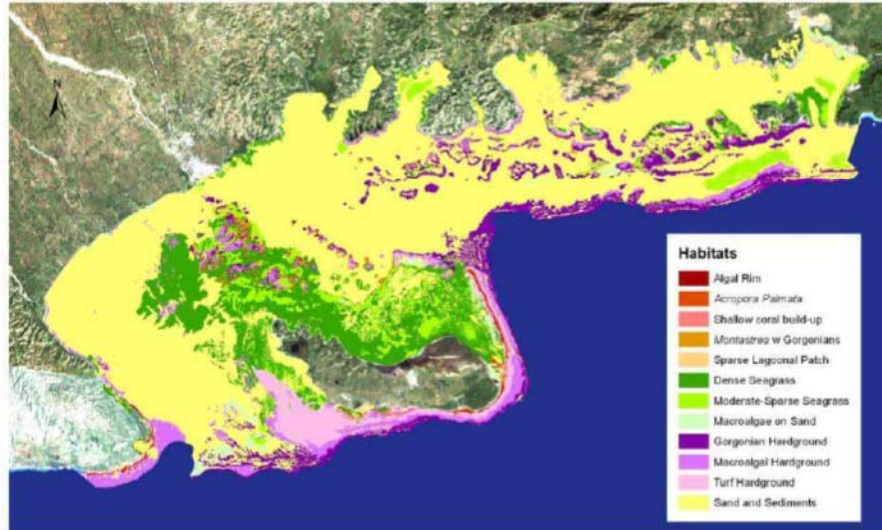


MAPPING HABITATS

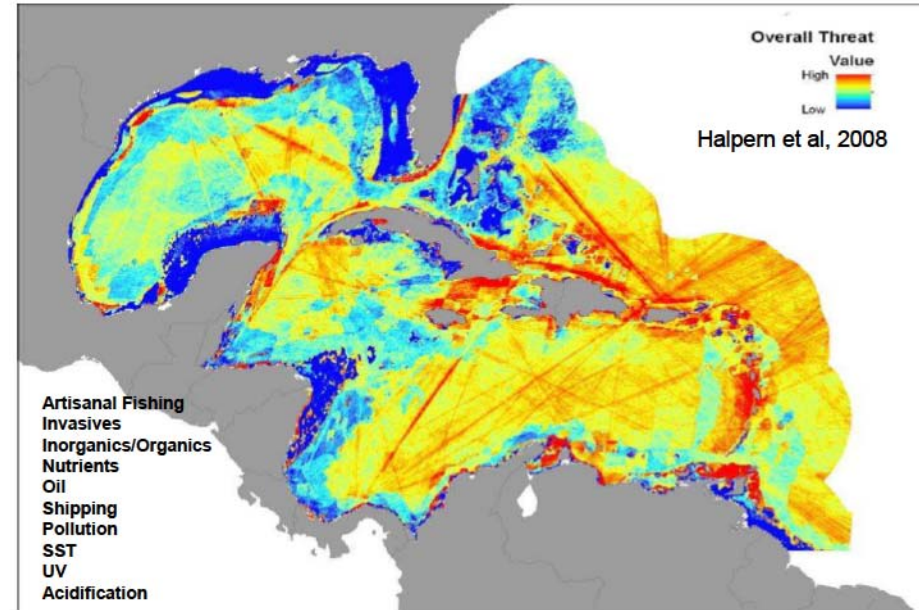
Dominica Hydrology
SRTM DTED 1.1 (90m cell)



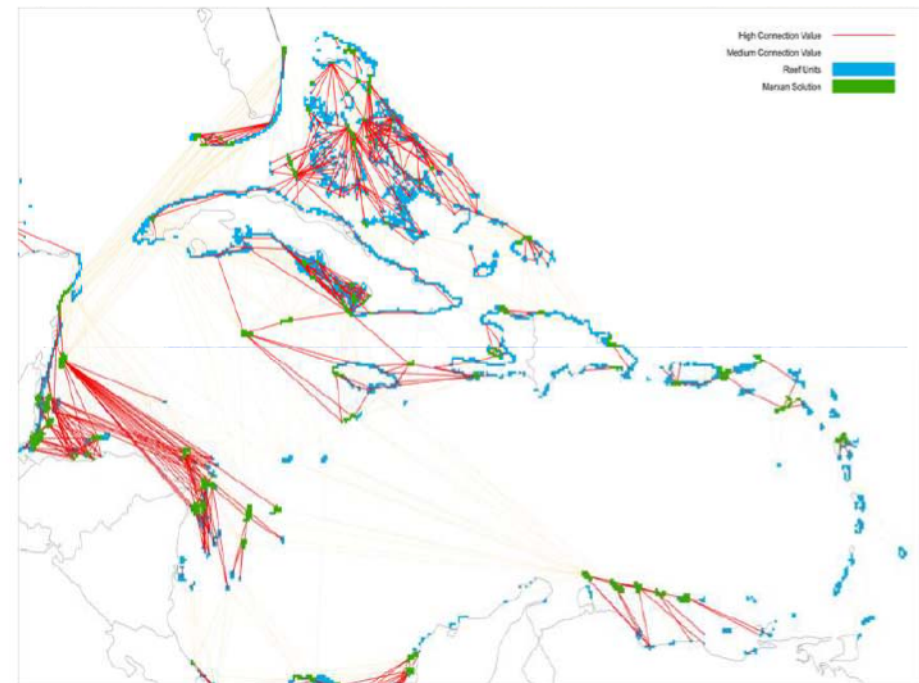
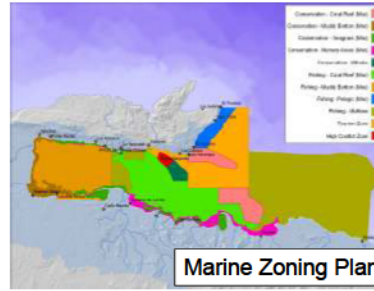
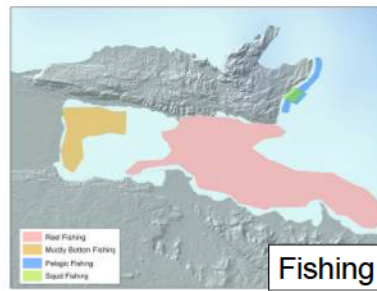
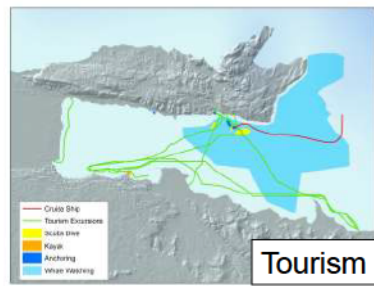
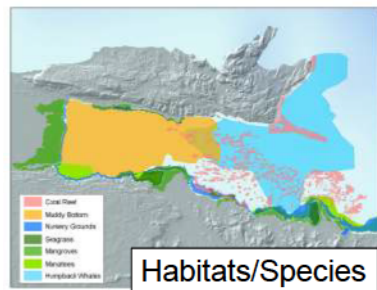
DRAFT BENTHIC HABITAT MAP
Île à Vache, Haiti



MAPPING THREATS



Samaná Bay, Dominican Republic



Calculating the Protected Area Statistics for each Country

- NGA global Landsat Mosaic shoreline dataset (1:75:000)
- Compilation of protected area boundaries
- Terrestrial: < 600 meters, 600-1800 meters, > 1800 meters
- Marine: Nearshore, shallow, shelf, and deep ocean

Regional GIS Data Summary

Terrestrial	Modeled using the GeoCover LC, USGS surface geology, and WWF ecoregions (55 regional terrestrial habitats)
Freshwater	Stream channels, rivers (SRTM), coastal lagoons, wetlands, lakes and ponds (GeoCover LC) (9 freshwater habitats)
Marine	Coral reefs, seagrass beds (Global), mangroves, beaches, estuaries, rocky shores, lagoons (High res satellite)
Species	Manatee, seabird nesting, spawning aggregation, turtle nesting and OBIS data
Gap Assessments	TNC, CEPF regional assessments
Terrestrial protection	12% (419 protected areas)
Marine protection	3% (133 protected areas)

Country GIS and Gap Assessments

Country	GIS	Terr	FW	Marine	Gap
Antigua & Barbuda	Green	Red	Yellow	Red	Red
Bahamas	Green	Yellow	Yellow	Yellow	Yellow
Barbados	Yellow	Red	Yellow	Yellow	Red
Belize	Green	Green	Green	Green	Green
Dominica	Red	Red	Yellow	Red	Red
Dominican Republic	Green	Green	Green	Green	Green
Grenada	Yellow	Green	Green	Green	Green
Guyana	Yellow	Yellow	Yellow	Red	Red
Haiti	Green	Yellow	Yellow	Yellow	Red
Jamaica	Green	Green	Green	Green	Green
St Kitts & Nevis	Green	Green	Green	Green	Green
St Lucia	Yellow	Green	Green	Green	Green
St Vincent & the Grenadines	Green	Green	Green	Green	Green
Suriname	Yellow	Yellow	Yellow	Red	Red
Trinidad & Tobago	Yellow	Yellow	Yellow	Red	Red

Country Terrestrial Protection

Country	Low	Mid	High	Overall
Antigua & Barbuda	13.0%	10.0%	N/A	13.0%
Bahamas	30.0%	N/A	N/A	30.0%
Barbados	1.0%	N/A	N/A	1.0%
Belize	31.0%	96.0%	N/A	37.0%
Dominica	12.0%	75.0%	N/A	21.0%
Dominican Republic	18.0%	42.0%	98.0%	25.0%
Grenada	7.0%	91.0%	N/A	8.0%
Guyana	5.0%	3.0%	0.0%	5.0%
Haiti	0.5%	7.0%	30.0%	2.0%
Jamaica	14.0%	28.0%	100.0%	17.0%
St Kitts & Nevis	14.0%	85.0%	N/A	18.0%
St Lucia	16.0%	64.0%	N/A	16.0%
St Vincent & the Grenadines	12.0%	45.0%	N/A	16.0%
Suriname	11.0%	38.0%	N/A	11.0%
Trinidad & Tobago	29.0%	19.0%	N/A	29.0%

Country Marine Protection

Country	Shallow	Shelf	Deep	Overall
Antigua & Barbuda	8.0%	5.0%	0.0%	0.2%
Bahamas	3.0%	3.0%	0.1%	0.7%
Barbados	5.0%	3.0%	0.0%	0.1%
Belize	24.0%	23.0%	0.5%	7.0%
Dominica	5.0%	2.0%	0.0%	0.1%
Dominican Republic	72.0%	73.0%	14.0%	16.0%
Grenada	1.0%	0.4%	0.0%	0.1%
Guyana	0.0%	0.0%	0.0%	0.0%
Haiti	0.0%	0.0%	0.0%	0.0%
Jamaica	14.0%	12.0%	0.1%	0.8%
St Kitts & Nevis	0.0%	0.0%	0.0%	0.0%
St Lucia	0.0%	0.0%	0.0%	0.0%
St Vincent & the Grenadines	13.0%	4.0%	0.0%	0.2%
Suriname	20.0%	8.0%	0.0%	5.0%
Trinidad & Tobago	0.01%	0.01%	0.0%	0.01%

Inventory of Global Protected Area Databases

Organization	Strength	Weakness
WDPA	Authority on protected area information, thus should be an end user to any improved PA dataset; Excellent visualization tools	Does not have the capacity to maintain updates without strong help from regional players and governments
MPA Global	Formal collaboration to focus on the development of a global MPA database	Reliant on information available in WDPA
MPAtlas	An interactive online atlas/tools for the World's MPAs; Looks to advance visualization of MPAs	Reliant on information available in WDPA; Seems to not take into account existing platform or efforts. Doesn't seem interested in national level application

Inventory of Regional Institutions/Initiatives

Organization	Strengths	Weaknesses
CaMPAM	Wide network, Trainings/surveys	Limited GIS capacity
CARANI	Community networking/Collaboration with CEPF	No GIS capacity
CaribSave	Access to CCCCC /University of Oxford resources	Limited to climate change and fish sanctuaries/focus on E. Caribbean and Jamaica
CCCCC	Climate change modeling expertise	No protected area or biodiversity focus
CEP	Coordinator of Regional Seas Programme	No GIS capacity
CLME	Integrated regional approach to ocean management, setting up data portal, informing regional projects	Limited GIS capacity, medium term project ending
CMA	Compilation of marine data and creation of a data portal, Supported by IOC and IODE	Limited funding and resources
GBIF	Largest global species level database	Poor coverage and consistency in the Caribbean
IABIN	Diverse thematic networks and well designed portal	Project and funding has ended; lack of original data for protected areas and ecosystems
OBIS/COML	Largest marine species database	Inconsistency of data across region
SERVIR	Strong GIS and computing power, NASA resources and long-term funding; good resources for climate change work	Low involvement in biodiversity and ecosystems
TNC	Most comprehensive database and accurate PA layer, strong initiatives, GIS portal and tools	Do not work in Suriname and Guyana – need to partner with CI in those countries
UWI	High level GIS research/skill for select topics in focused areas around the Caribbean	Limited region-wide assessments

Inventory of Sub-Regional Initiatives

Organization	Strength	Weakness
NOAA - Caribbean Regional Ocean Partnership	Marine spatial planning, data coordination and DSS portal	3-year program and unknown long-term support
OECS – Sustainable Financing & Management of Eastern Caribbean Marine Ecosystem	Assembly of protected area dataset and the monitoring of management and ecological measures	Reliant of countries to implement and collect measures
World Bank – GeoNode network	National GeoNodes are being set up to aid in data distribution and disaster risk reduction	Reliant on countries to maintain nodes

Primary strengths of existing databases

- Realizing importance of GIS as a useful **decision-support tool**
- Governments are increasing efforts and directing resources to **expand protected area networks**
- Ecological gap assessments are providing guidance on designing networks that are more **representative, redundant, and resilient**
- GIS data is providing valuable information for **climate change adaptation** actions
- Governments are beginning to recognize the need for establishing **national GIS coordination centers**

Primary weaknesses of existing databases

- Lack of **GIS infrastructure, technical support, and training**
- Lack of proper **metadata and data standards**
- Lack of **national, fine scale habitat and threat data** needed for decision making
- Lack of **communication/coordination** within and among countries to avoid data redundancy and project efforts
- Lack of a **centralized data repository** and/or agency to manage GIS data at a national level

Recommendations for filling important data gaps (Part I)

- Mapping the extent and condition of **habitats, threats, and protected areas**
 - regular standardized products
- Mapping **changes** in the extent/severity of habitats and threats
 - adopt a standardized classification
 - divide up land cover by agencies
- Higher resolution and more accurate **topographic/bathymetric** models
 - slope, trans/planning, wind farms, forestry/habitats, watershed and coastal zone management, DRR , SLR
 - One time investment with multiple countries participating to reduce costs
- The development of regional and national scale **benthic habitat** maps
 - using cost-effective methods (e.g. drop cam/satellite imagery)

Recommendations for filling important data gaps (Part II)

- Protected area management effective scores compiled on a regular basis
 - to assess the impact of the CBF
- Consistently mapped **species** of interest as point occurrences
 - modeling habitat range/suitability
- Mapping **census information** at the finest spatial resolution available
- Improved land and ocean **connectivity models** in order to better maintain critical ecological corridors and protect life cycles
- Documenting the **migratory routes/behavioral patterns** for certain land and marine species
- Downscaled **climate change models**
- Incorporating **ecosystem services** into the conservation planning process
- Increase efforts to **document data** (metadata)

Recommended actions for developing a PA observatory

- **Be realistic** in expectations, resources, and time it will take to implement the observatory
- Identify the **core institutions** and set up a **steering committee** to create the work plan
- Identify **core datasets** and implement a **data standard**
- Provide a **value-added incentive** for providing data updates
- Provide a platform that **does not interrupt on-going work flow** and **disseminates data** to key stakeholders
- **Build capacity** through investments in **technology and people**
- Establish a **long-term commitment** to the project by identifying adequate **leadership** and **sustainability**

Historic Opportunity





Information Systems for BioPAMA

Andrew Cottam
Joint Research Centre, Ispra, Italy

BioPAMA Caribbean Regional Workshop
Bridgetown, Barbados
22-24 January 2013



Information Systems for BioPAMA

Overview

- BioPAMA is all about information and systems
- Systems will be deployed in the regions and at JRC
- Early stage of development
- Workshop purposes:
 - Capture information requirements for Caribbean region
 - Define capacity building needs
 - Draft an action plan



Information Systems for BioPAMA

Information flow



Information Systems for BioPAMA

Information flow



- Collating existing data
- Commissioning new surveys or fieldwork





Information Systems for BioPAMA

Information flow



- Database management and administration
- Cataloguing



5



Information Systems for BioPAMA

Information flow



- Create value-added products and services from the datasets

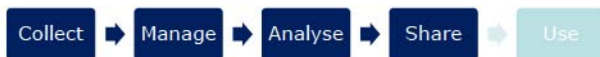


6



Information Systems for BioPAMA

Information flow



- Providing access to BioPAMA products and services

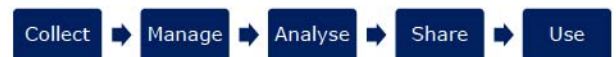


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Information Systems for BioPAMA

Information flow



- Use of products and services for conservation gain
- Most important part!
- Integration of products and services into tools
- Use/requirements drive what information is collected and produced



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Information Systems for BioPAMA

Information flow



Information Systems for BioPAMA

Analyse

- Output DOPA products and services
- Data
 - Indicators
 - Maps
- Models
- Services



Information Systems for BioPAMA

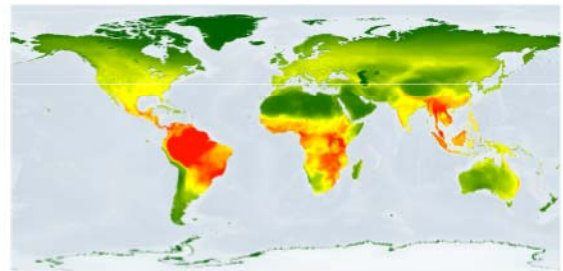
Analyse – Example products from eSpecies

- Species richness
- Species/land cover analyses
- Species protection coverage
- Gap analysis
- Species Irreplaceability Index
- Protected Area Ecotourism Potential Index
- Research focused (e.g. global species richness by latitude)



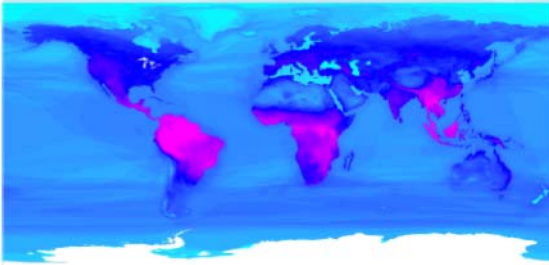
Information Systems for BioPAMA

Species richness at 1Km² - All Red List Species





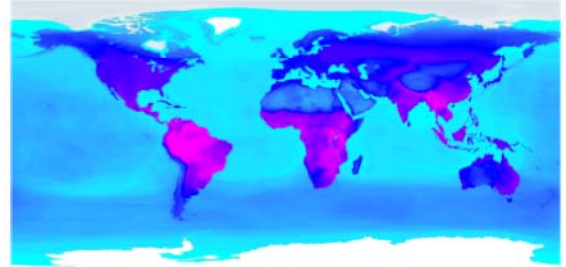
Information Systems for BioPAMA
Species richness at 1Km² - Mammals



13



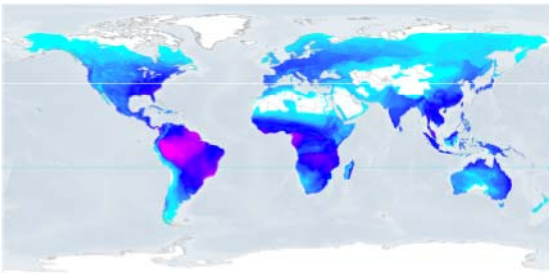
Information Systems for BioPAMA
Species richness at 1Km² - Birds



14



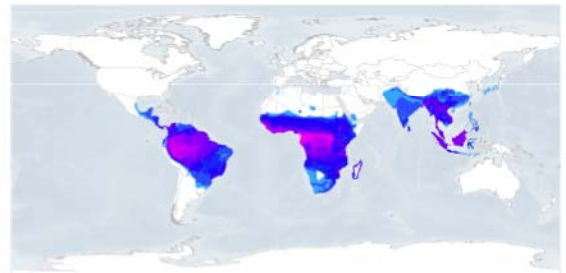
Information Systems for BioPAMA
Species richness at 1Km² - Amphibians



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Information Systems for BioPAMA
Species richness at 1Km² - Primates

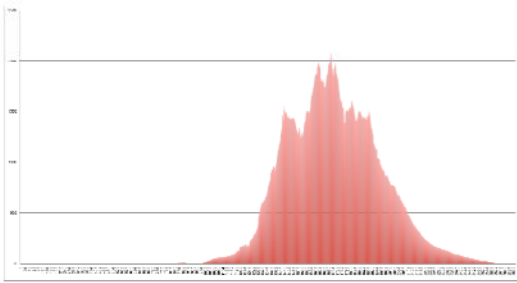


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Information Systems for BioPAMA

Species richness by latitude



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Information Systems for BioPAMA

Species richness by latitude

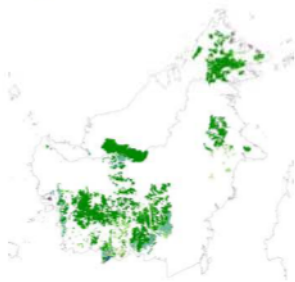


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Information Systems for BioPAMA

Species land cover analyses

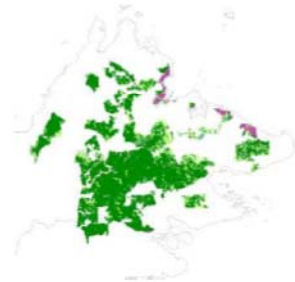


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Information Systems for BioPAMA

Species land cover analyses



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Information Systems for BioPAMA

Analysis - Issues

- Data quality
- Information gaps
 - Taxonomic group coverage
 - Lack of trend data
 - PA IUCN Management Category
- Sustainability
 - Automated update mechanism when data changes
 - Informatics challenge of 'big data' and scaling geographically
 - Technology choice – standards-based, open-source, interoperable



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Information Systems for BioPAMA

Sharing

- Data search and discovery
- Data catalogues and metadata
- Provides access to:
 - Data
 - Models
 - Services, e.g. alerts
- Many options to deliver access and sharing:
 - Web, SMS, email, EUMETCast, data sharing portals etc.



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Information Systems for BioPAMA

Sharing – Access and delivery

- DOPA has published the [REST Services Catalog](#)
 - Open access to main DOPA products and services
 - Web delivery, SMS, email etc.
- Spatial data sharing
 - Within the region/partners – contribute and access
 - [ArcGIS.com](#) map sharing (cloud)
 - Harvard [Worldmap](#)



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Information Systems for BioPAMA

Sharing – Issues

- Licensing
- Sensitivity and access control
- Offline delivery
- Data standards
- Harmonisation/generalisation



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Information Systems for BioPAMA

Use

- Integration of products and services into tools
- Web Services
 - Modular architecture – ‘lego’ building blocks
 - Data managed at source (so always current)
 - Flexible reuse of information
 - Foster a developer community
- Decision support tools:
 - Tools in your browser
 - Desktop tools
 - Smart phone apps
 - Physical reports



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Information Systems for BioPAMA

Use - sources



Example products:

- Species richness maps
- Land cover change data
- Threat information



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Information Systems for BioPAMA

Use - sources



Example products:

- PA management plans
- National land cover data
- Local monitoring data

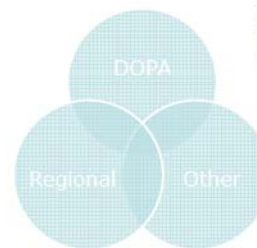


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Information Systems for BioPAMA

Use - sources



Example products:

- GBIF species occurrences
- PA information from UNEP-WCMC



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Information Systems for BioPAMA

Use – Tools in your browser

- [Species lists](#) for a protected area
- Species richness [visualisation tool](#)
- [WebGL Globe](#)
- [Mash up](#) of services
- [DOPA Explorer](#)
- [DOPA Ecological Niche Modelling](#)
- [Fire Ecology tool](#)



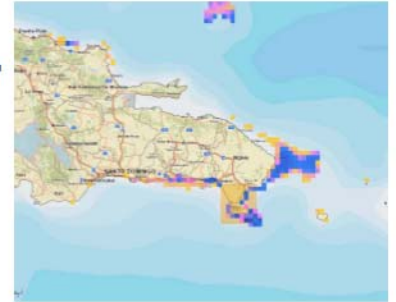
33



Information Systems for BioPAMA

Use – Examples of habitat similarity for Caribbean

Dominican Republic
MPA: Punta del Este
Unique, very isolated ecosystem



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Information Systems for BioPAMA

Use – Examples of habitat similarity for Caribbean

Guadeloupe
Archipel de la Guadeloupe
Multiple, disconnected,
similar ecosystems



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Information Systems for BioPAMA

Use – Examples of habitat similarity for Caribbean

Dominican Republic
MPA: Jaragua
Coastal Ecosystem similar in
Dominican republic and Haiti.
Case for transboundary MPA?



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Information Systems for BioPAMA

Use – Other tools

- Excel [species list](#) for a protected area
- Desktop GIS (e.g. ArcGIS)
- Conservation planning tools (e.g. Marxan)



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Information Systems for BioPAMA

Workshop – capturing requirements and planning

- Informatics requirements
 - Requirements for national reporting (to CBD)
 - Requirements for PA management, e.g. [‘How is my MPA doing?’](#)
 - Other requirements
 - What is the prioritisation process?
- Capacity building needs
- Planning
 - Some pieces of the jigsaw are in development (e.g. DOPA)
 - Lot needs to be defined and implemented, e.g. Regional RIS
 - Iterative pilots are needed to focus on a few key requirements



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Information Systems for BioPAMA

Workshop – Capacity Building needs



- Regional Reference Information Systems may need:
 - Ecologists
 - Database administrators and custodians
 - Information scientists
 - Developers
 - Physical things, e.g. offices and computers



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Information Systems for BioPAMA

Capturing requirements



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Information Systems for BioPAMA

Contact

- For more information on eSpecies:
 - Andrew Cottam
 - andrew.cottam@irc.ec.europa.eu
 - Julianna Stropp
 - juliana.stropp@irc.ec.europa.eu
- For more information on DOPA:
 - Gregoire Dubois
 - Gregoire.dubois@irc.ec.europa.eu



IUCN Protected Area Capacity Development Programme



INTERNATIONAL UNION FOR CONSERVATION OF NATURE



Vision

- Provide a range of products and services for countries to more effectively and equitably manage their systems of protected areas and meet their commitments under the Convention on Biological Diversity (CBD) Programme of Work on Protected Areas and the Aichi Targets.



Components of IUCN WCPA Protected Area Capacity Development Programme



3

- Knowledge Products
- Education and Learning Programmes
- Management Effectiveness Instruments and Programmes

IUCN's Role in PA Capacity Development

- Provides global standards for use and adaptation to regional, country and local needs
- World Commission on Protected Areas (WCPA) has 1500 members. PA products identified and developed through members and their networks



Flagship Initiatives

- IUCN Protected Area Best Practice Guidelines
- Global Partnership for Professionalizing Protected Areas
- Green List of Well-Managed Protected Areas



Flagship Initiatives

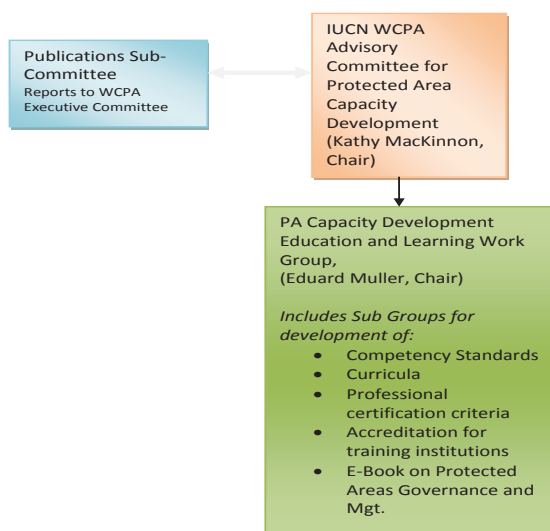
- IUCN Protected Area Best Practice Guidelines
- Global Partnership for Professionalizing Protected Areas
- Green List of Well-Managed Protected Areas



Core Working Partners

- BIOPAMA
- World Heritage Programme
- IUCN Commission on Education and Communication
- GIZ
- Park/Protected Area Agencies
- CBD, UNEP, UNDP

IUCN WCPA Protected Area Capacity Development Organization



- Books
- Journals such as *PARKS*
- Best Practice Guidelines
- Technical briefs
- Translations
- E-Book on Managing Protected Areas



Best Practice Protected Area Guidelines

- 19 BP PA Guidelines
- In production – Conservation Planning, Invasive Alien Species, Climate Change, Urban PA Management, Sustainable Tourism revision, Wilderness, Governance
- More Planned – Social Assessment of PAs, Healthy Parks, Healthy People, Sustainable Use of PA's



Knowledge Products



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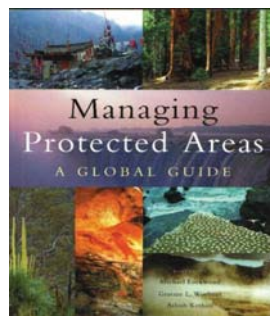
PARKS Journal

- Promotes understanding of the values and benefits derived from protected areas to governments, communities, visitors, and business.
- Serves as a leading global forum for the exchange of information on issues relating to protected areas.
- Produced twice a year

Knowledge Products

E- Book on Managing Protected Areas

- Training text book for students and professional managers
- Available as a free compendium E-Book **by 2014**
- Available in all three of IUCN's official languages
- Modeled after the 2006 publication, "Managing Protected Areas – A Global Guide





Education and Learning

Global Partnership for Professionalizing Protected Areas (GPPAM) Eduard Muller, WCPA Vice Chair

- Core Competencies
- Curriculum Development
- Certification of Professionals
- Mentorship

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Management Effectiveness

The Green List of Well Managed Protected Areas will:

- Celebrate quality and success and accomplishments of protected area managers
- Incorporate a full suite of quality criteria, including conservation, community and visitor standards
- Recognize the diversity of context and capacity
- Involve a simple process for designation, with no undue reporting requirements

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Management Effectiveness

Green List Process

- Countries work with IUCN WCPA to establish program, identify candidate sites, and prepare prospectus
- An IUCN Green List Reference Group will assess nominated sites according to agreed standards
- Criteria for being on Green List

Management Effectiveness

The Benefits of the Green List of Well-Managed Protected Areas:

- International recognition
- Political and financial support
- Motivation of PA Managers and their agencies to meet high standards
- Opportunities for areas to receive financial and project support
- Recognition by the tourism industry and visitors that the area will offer a quality visitor experience



Components of IUCN WCPA Protected Area Capacity Development Programme



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Promoting effective and equitable protected area management through global:

- Knowledge Products
- Education and Learning Programmes
- Management Effectiveness Instruments and Programmes



Contacts

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Kathy MacKinnon, Deputy Chair, WCPA

kathy.s.mackinnon@gmail.com



WCPA-SSC Joint Task Force on Biodiversity and Protected Areas and BIOPAMA

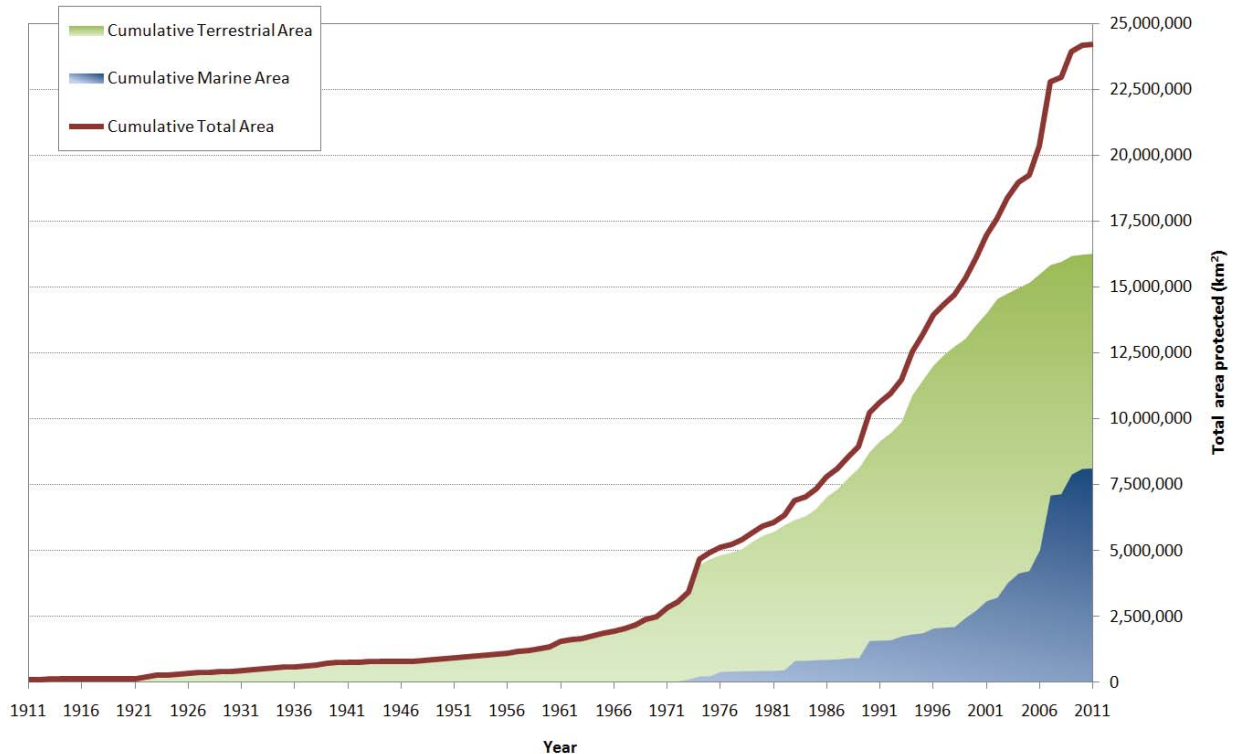
Stephen Woodley and Thomas Brooks
Co-Chairs, Joint Task Force on Biodiversity and Protected Areas

Luigi Boitani (University of Rome)
Nigel Dudley (Equilibrium)
Gustavo Fonseca (GEF)
Jaime Garcia-Moreno (Wetlands International)
Marc Hockings (Uni. Queensland)
Jon Hutton (UNEP-WCMC)
Kathy MacKinnon (WCPA Deputy Chair)
Paul Matiku (NatureKenya)
Kent Redford (Archipeligo)
Yvonne Sadovy (University of Hong Kong)

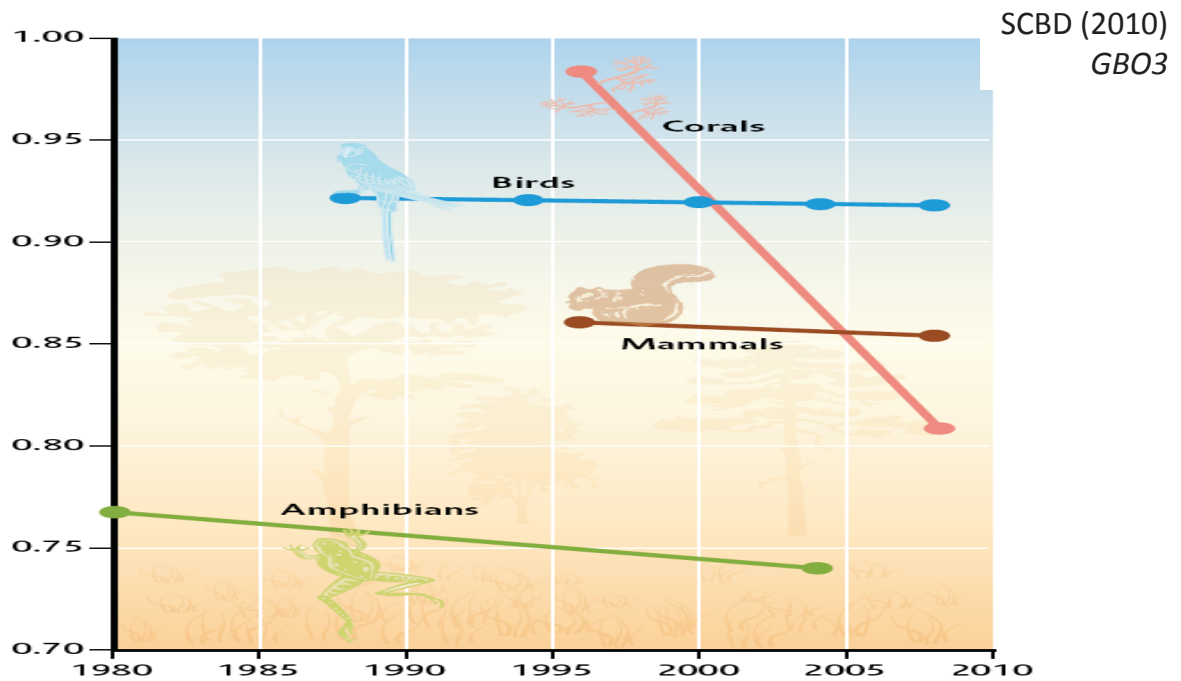
Yoshihisa Shirayama (Kyoto University)
Jane Smart (IUCN)
Ali Stattersfield (BirdLife International)
Sue Stolton (Equilibrium)
Topiltzin Contreras MacBeath (Universidad Autónoma del estado de Morelos)
Justina Ray (WCS)
Ian Craigie, James Cook University

Supported by a full-time IUCN staff position – Annabelle Cuttloed and Diego Juffe
PhD students – Megan Barnes, Jonas Geldman and Luke Harrison

Good News - Enormous Growth In Protected Areas



The BAD news – Biodiversity Declining



Why is there a disconnect between protected areas growth and increasing levels of species endangerment?

Several possibilities:

- 1. Protected areas might not be being established in the right places**
 - we may not know the right places or we might fail to act on what we know.
- 2. Protected areas might not be working, e.g.,**
 - because they're too small or un-connected
 - because of "other" threats, e.g., disease, exotics
 - because of ineffective management
- 3. Coverage of protected areas might be inadequate to conserve the planet's biodiversity – simply not enough**

One Hundred Questions of Importance to the Conservation of Global Biological Diversity - Conservation Biology 2009

- 27. How effective are different types of protected areas (e.g., strict nature reserves, hunting reserves, and national parks) at conserving biodiversity and providing ecosystem services?
- 28. What is the management cost per hectare required to manage protected areas effectively, and how does this vary with management category, geography, and threat?
- 29. What are the human well-being costs and benefits of protected areas, how are these distributed, and how do they vary with governance, resource tenure arrangements, and site characteristics?
- 30. How does the management of protected areas affect conservation beyond the boundaries of the protected area, such as through the displacement of human populations, hunting, or fishing?



Objective 1

- How well do protected areas conserve biodiversity?
- What are the factors that are responsible for protected areas success or failure?

Objective 2

- What should be the global standards for the identification of sites of biodiversity conservation significance (“key biodiversity areas”)?

Objective 1: What are the factors the best predict protected areas effectiveness?

- IUCN, WCPA (Stephen Woodley)
- James Cook University (Ian Craigie)
- University of Queensland (Megan Barnes / Marc Hockings)
- University of Copenhagen (Jonas Geldman)
- McGill University (Luke Harrison)

Global Study: Biological Outcomes Change in biodiversity - species (Habitats)

- **Population trend data information on species (and communities)**
- Relative abundance in and out of PAs
- Focus on biodiversity values identified in the management plan



Potential drivers of protected area outcomes

Management

IUCN Category
Governance
Year of establishment
Staff
Budget
Equipment
International Designations
Values (focus)
Management Effectiveness

Social and Political Context

Country
Geopolitical Region
Poverty
Corruption - CPI
Legal Framework
GDP
Land Tenure

Ecological Context

Stressors and Threats
Relative Threat
Trophic Level
Functional Group
Biome/EcoRegion

Design Characteristics

Size
Shape
Connectivity/Fragmentation
Critical Habitat
Position wrt Threat

Land-Use Context

Population Density
Land use Type
Land-Use Change
Fragmentation
Roads
Night Lights



Objective 1: What are the factors the best predict protected areas effectiveness?

- Size of the Protected Area
- IUCN Protected Area Category – I to VI
- GDP of the country
- Human Development Index of the Country
- Corruption Index
- Size of the biodiversity – big vs small wildlife
- External land use around the protected area
- Proximity of human populations
- Management Effectiveness

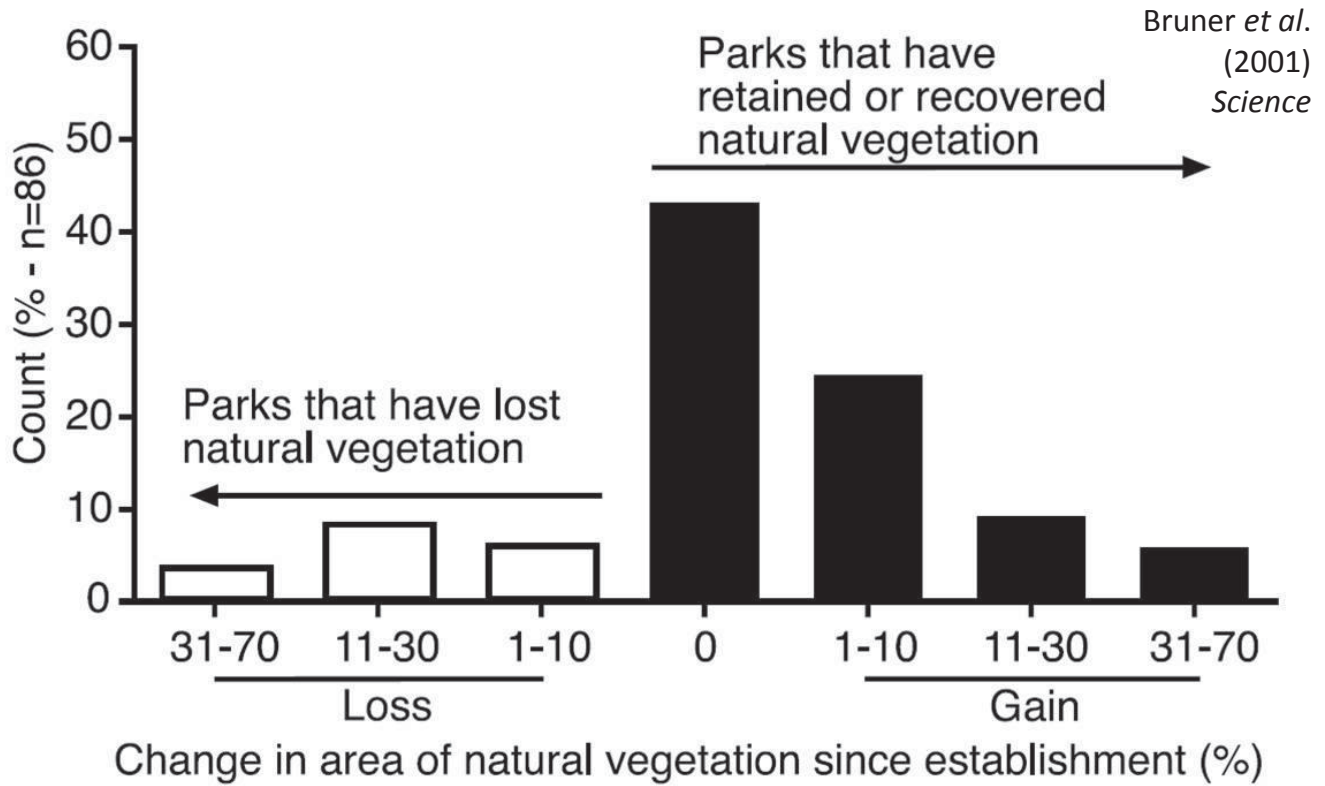
Do Protected Areas Conserve Biodiversity????

1. Always (>90 %)
2. Most of the time (60-90 %)
3. Sometimes (30-60%)
4. Seldom (0-30 %)

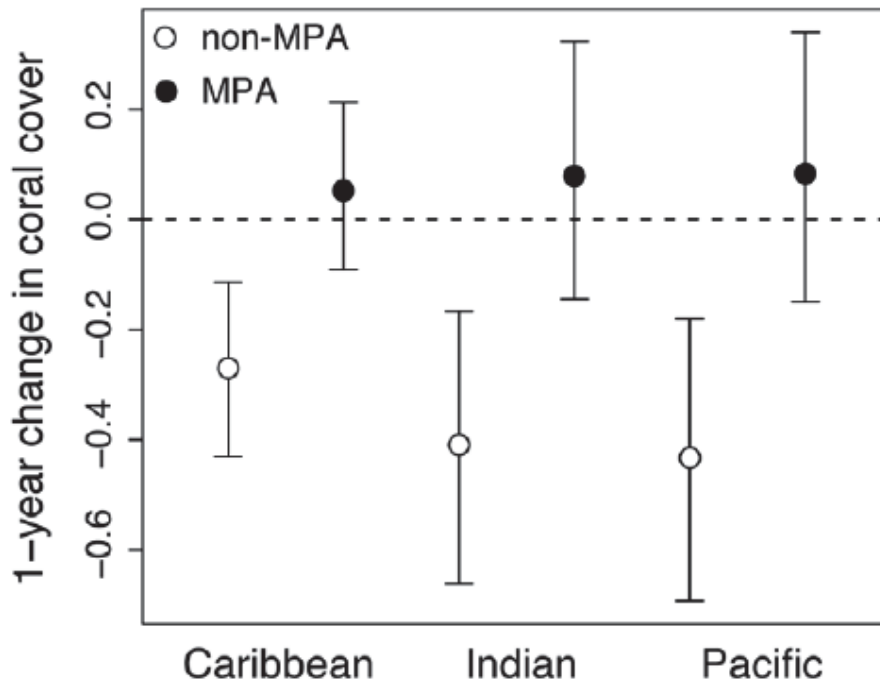
What others have found

Ecosystem level analyses

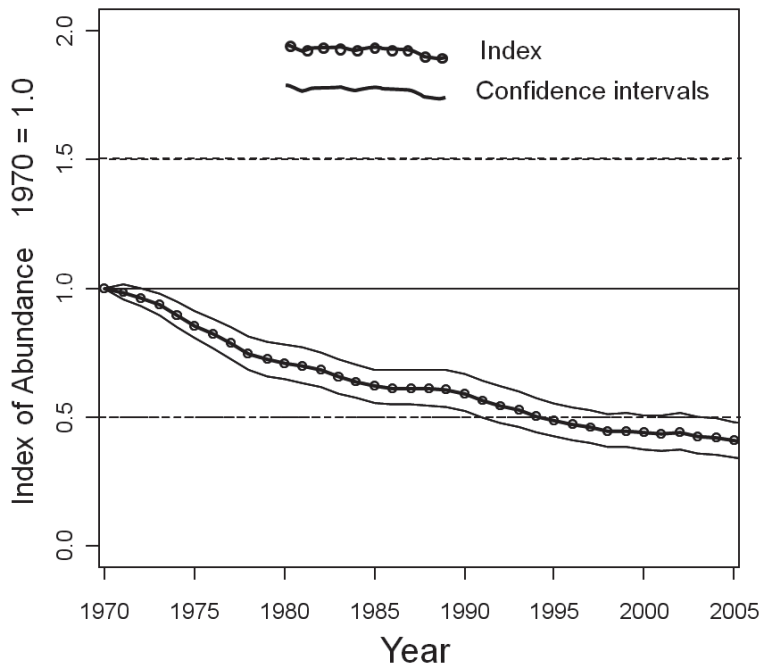
- 80% increased or stable



The change in percent coral cover from 2004 to 2005 inside and outside of MPAs (Selig and Bruno, 2010)



African Protected Area Population Index



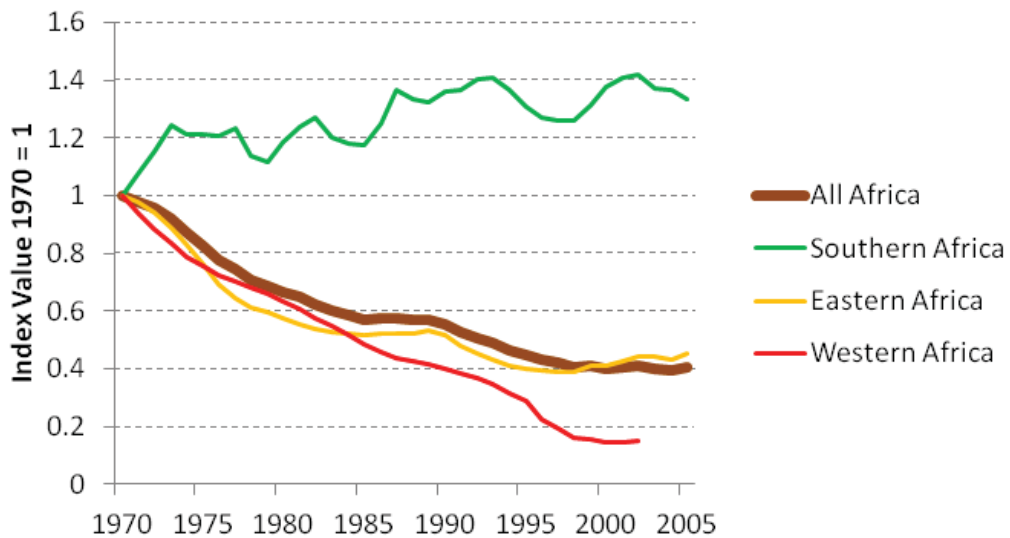
Craigie, I. D. et al. (2010) Biol. Cons.



Source: Dr. Ian Craigie

Biodiversity Outcomes

- Large mammal population declines in African PAs?

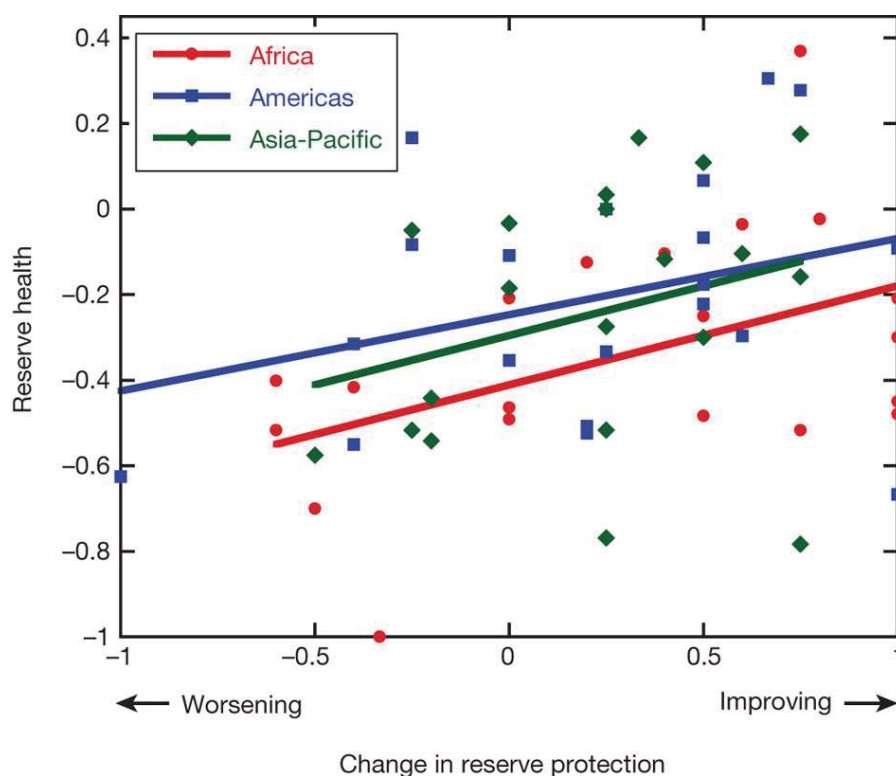


Craigie et al. 2010

WF Laurance *et al.* *Nature* 2012 – *Tropical Protected Areas*

- Drivers of Decreasing Health
 - Changes outside reserves (declining forest cover, increasing logging and increasing fires outside reserves);
 - Changes within reserves (particularly declining forest cover, increasing hunting, increasing logging and harvests of non-timber forest products).
- Drivers of Increasing Health
 - An important predictor of reserve health was improving reserve management.

Effects of improving on-the-ground protection on a relative index of reserve health.



Are PAs in the right place?

PA coverage is poor for species...

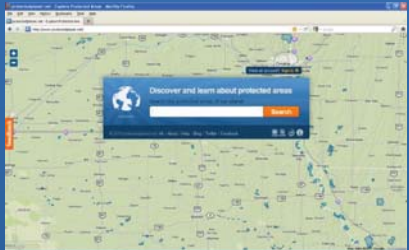
Rodrigues *et al.*
(2004) *Nature*



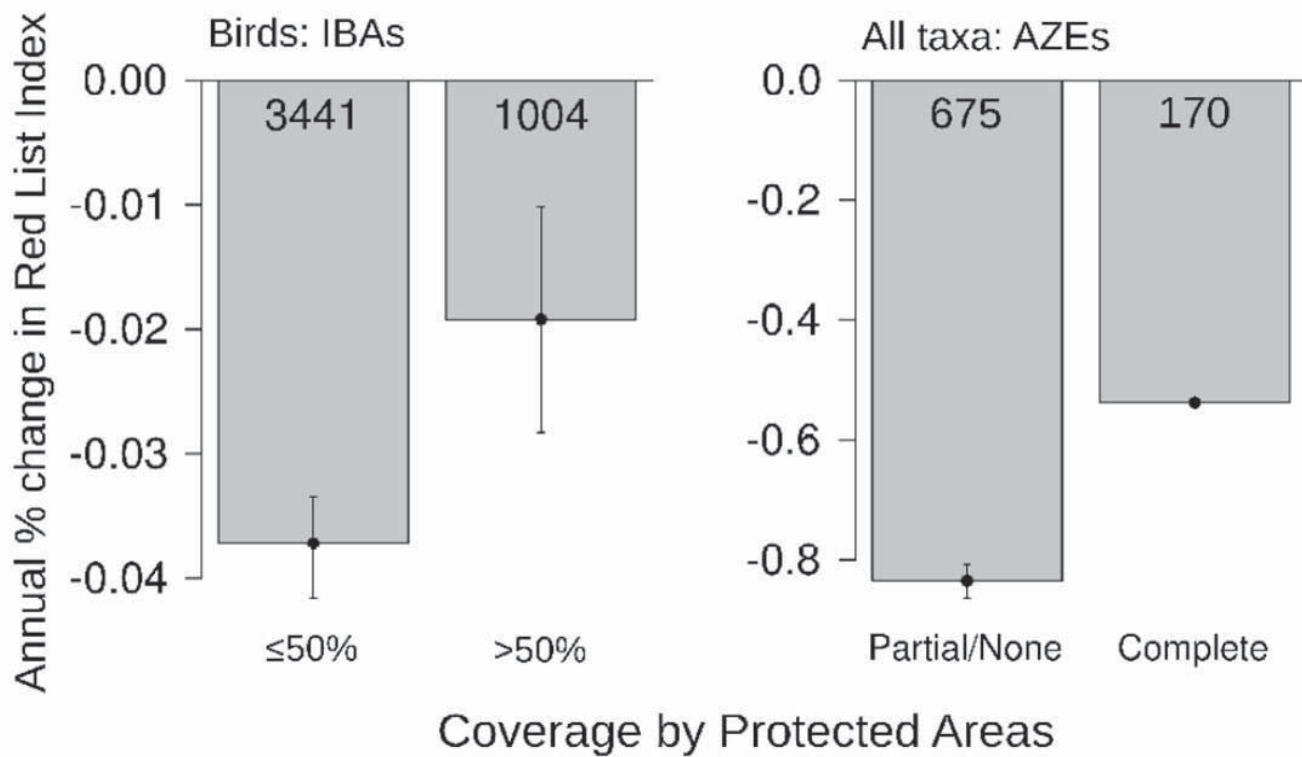
extinction risk in and outside pas



+



Reducing the rate of loss

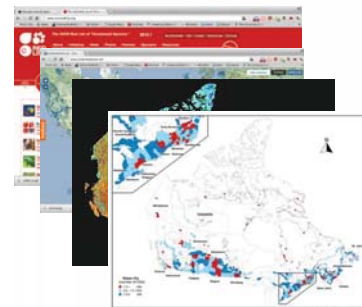


Butchart et al 2012



Population time-series data so far

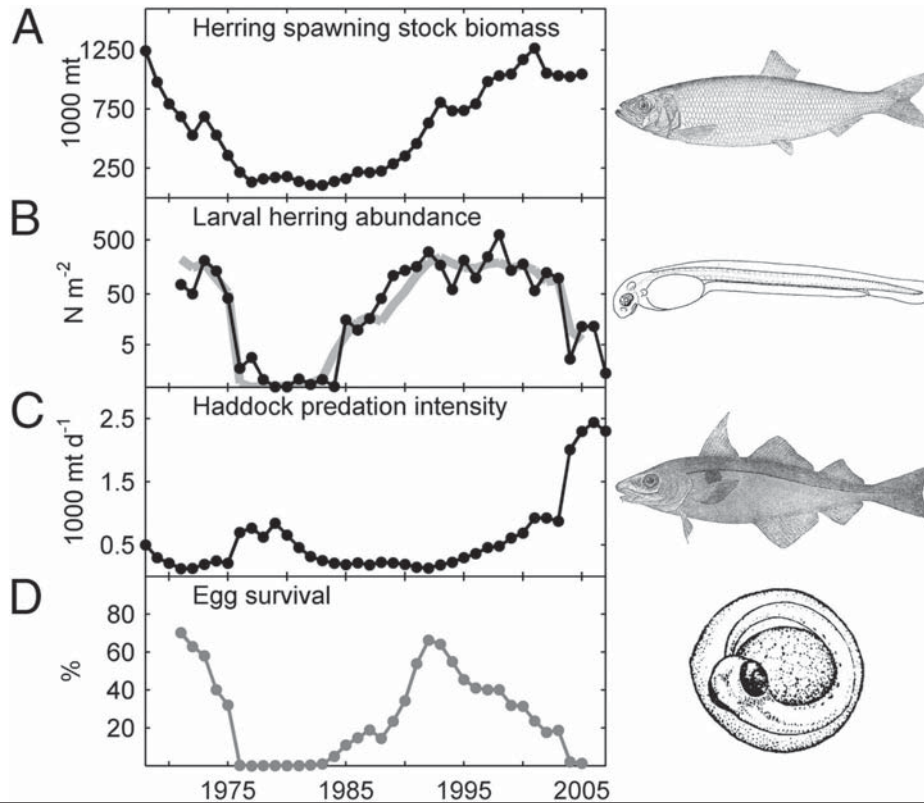
- 1620 time series
- 378 protected areas
- 496 species



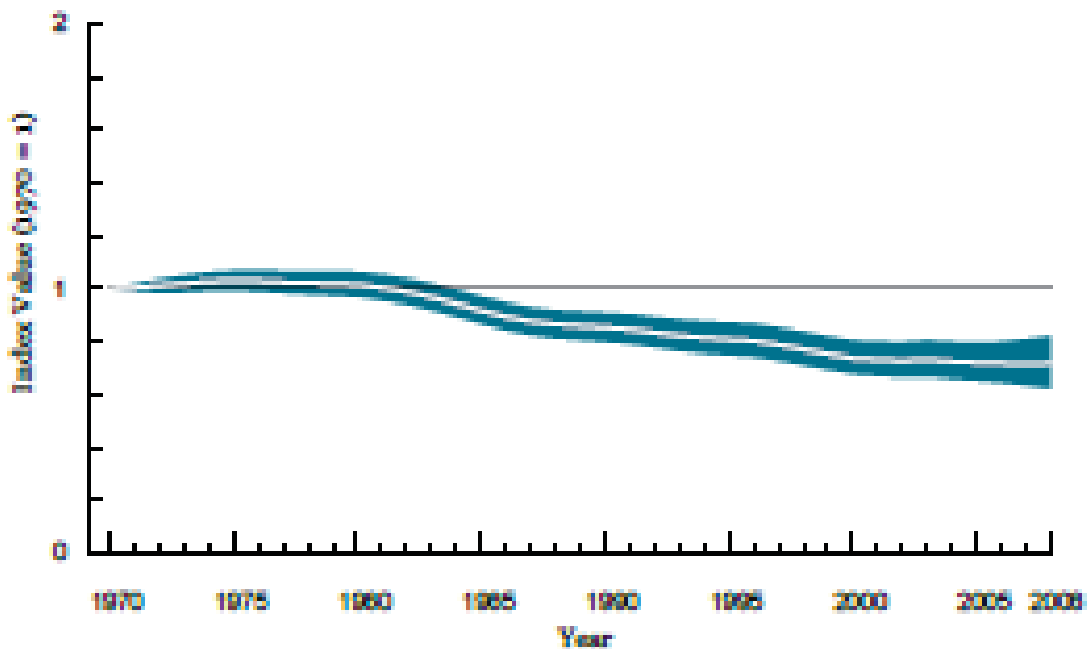
Explanatory variables

- More than 50 variables
- Site (Protected area), species and country scales

Population Abundance Time Series

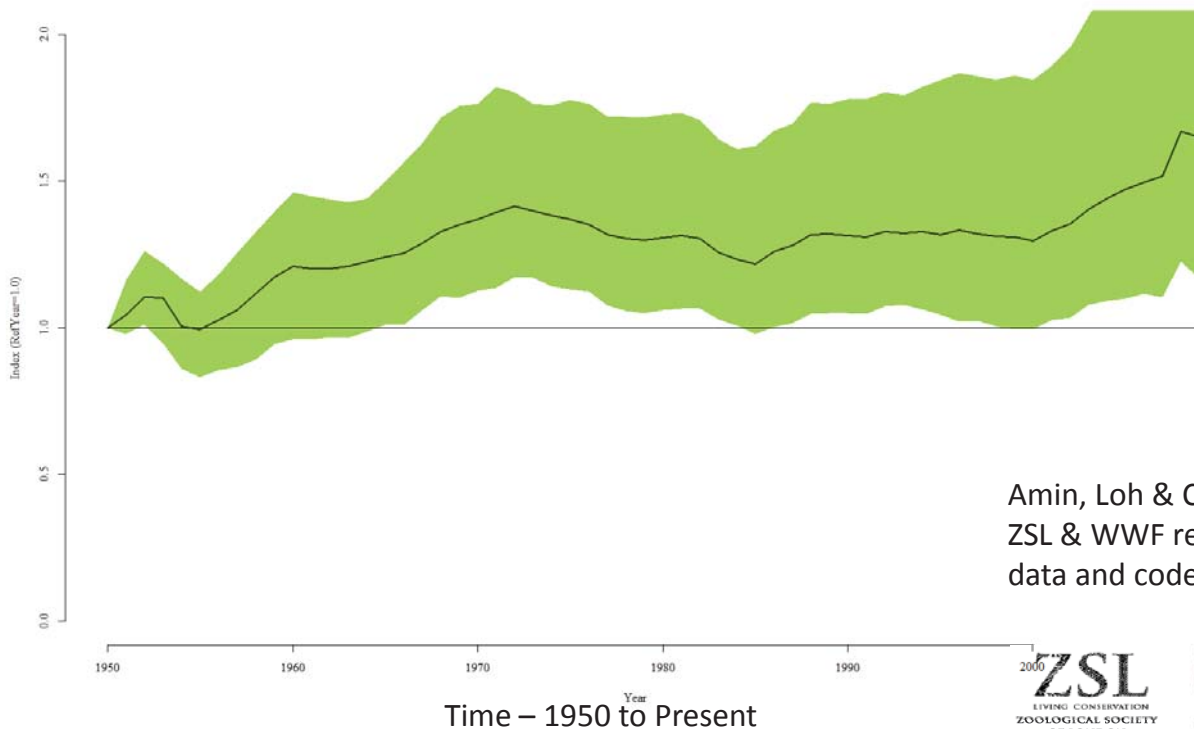


Living Planet Index 2012



GLOBAL PROTECTED AREA POPULATION INDEX FROM 1950 -2010 USING ALL POPULATION TIME SERIES – TERRESTRIAL AND MARINE.

2956 population time series



Preliminary Results

Significant

- Socio-economic variables – GDP, HDI, Corruption Index
- Larger body size
 - Perhaps a bias toward stewardship or measurement of large mammals

Not significant

- IUCN Protected Area Category I-VI
- Park size
- External - Roads, People, Urbanization

What Can we Conclude

- Understanding protected areas outcomes is highly complex
- Population data sets are hard to get!
- Many lines of evidence support the notions that protected areas work when they are well managed and well designed
- Classic notions are size and fragmentation are not well tested by existing data
- Protected area success is very contextual.

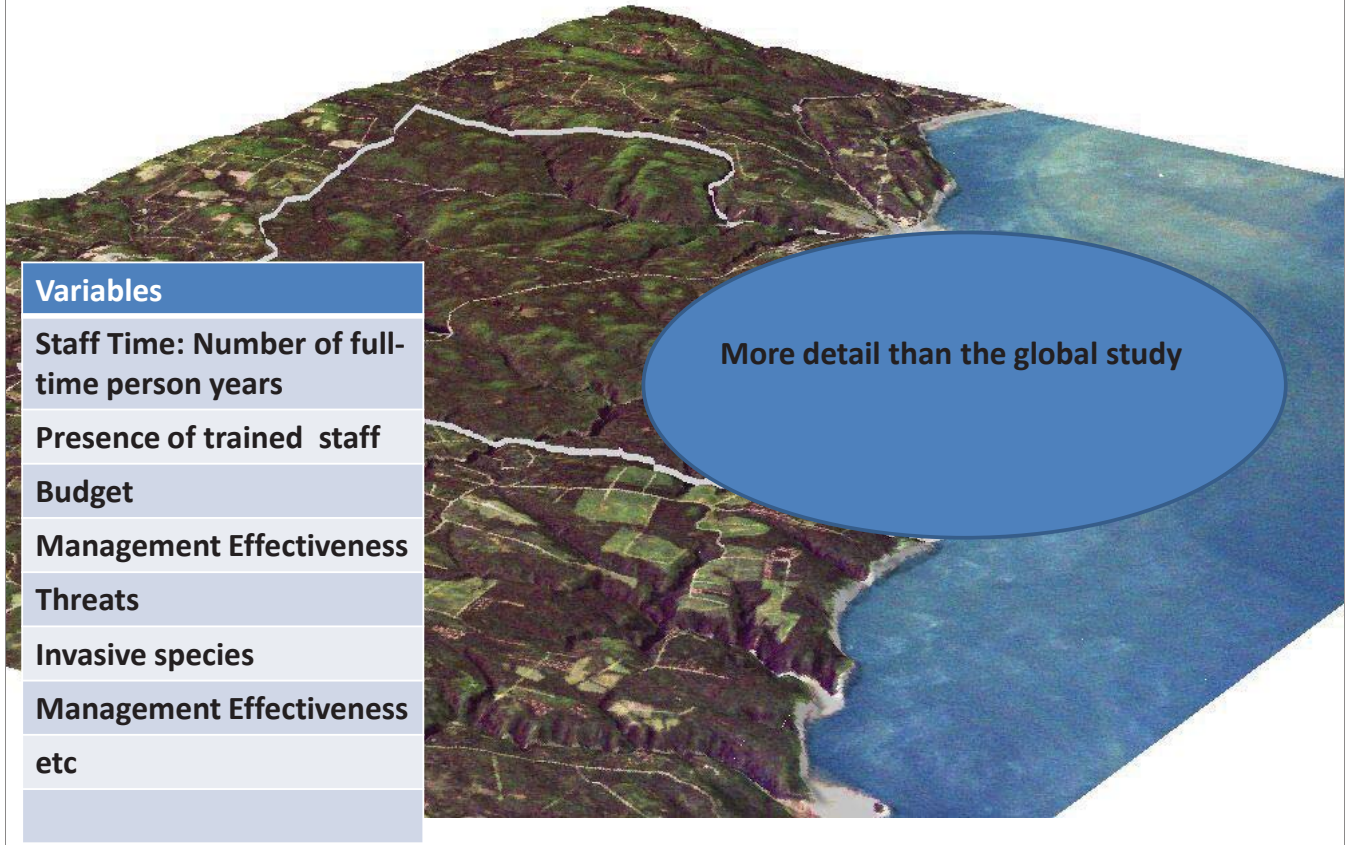


Contributing to BIOPAMA

- Ultimately BIOPAMA needs to help park managers understand the state of their ecosystem: and the effectiveness of management interventions
- There needs to be a range of ecological structure and functional measures, at a range of ecological scales – but population abundance measures are very valuable
- Many lines of evidence support the notions that protected areas work when they are well managed
- Some level of population monitoring is highly desirable, to be connected with remotely sensed measures
- Protected area success appears very contextual to place

Independent (predictor) variables

- Case Studies-



Where to from here?

- Analysis of Task Force data is ongoing
- Search for additional data is ongoing
- Set up a global data centre in partnership with the Living Planet Index
- BIOPAMA project – Caribbean and Pacific analysis, marine model
- Need to monitor inside and outside

A plea for data

- It we are going to make the case that we need protected area, we need to know why and when they work
- The Joint Task force on Biodiversity and Protected Areas needs your data
- All contributions recognized
- Stephen.Woodley@iucn.org
- Sarah.Whitmee@ioz.ac.uk



Data Request: Assessing the effectiveness of protected areas for biodiversity conservation

IUCN's Biodiversity and Protected Areas Management Programme (BIOPAMA).

BIOPAMA is a flagship initiative of the IUCN Global Protected Areas Programme, with a thematic focus on developing capacity for protected areas. Funded by the EU and the Intra-ACP (Africa, the Caribbean and Pacific countries), BIOPAMA is a unique effort to combine the best data available on biodiversity in ACP countries with capacity building to strengthen protected area management for the benefit of both nature and people. One of the objectives of BIOPAMA is to improve protected areas management and decision making through better data availability and the establishment of regional observatories. This note is a data request to support that study. This research is being conducted by the IUCN through a WCPA-SSC Joint Task Force on Biodiversity and Protected Areas, in collaboration with the Institute of Zoology, ZSL.

Background: Protected areas are recognized as key tools in biodiversity conservation and over the past decade we have also made great advances in understanding issues of protected area management effectiveness. However, we still have surprisingly little data on long-term biodiversity conservation outcomes from protected areas, and what current data we do have is heavily biased towards toward only a few countries and terrestrial systems. To test whether protected areas are working in ACP countries, both on land and in marine systems, we aim to assess protected area outcomes at the population and species level.

Success or failure in biodiversity conservation might be measured in terms of (i) genes (ii) individual populations; (iii) species; (iv) communities; or (v) ecosystems. For this study we are using trends in population time series for populations located inside protected areas. Ideally there would be similar population time series located in unprotected areas so we can compare trends both inside and outside protected areas to benchmark effectiveness.

Data Requirements:

We would like your help to collect data from both inside and outside protected areas:

- Data should come from one of the African, Caribbean or Pacific countries (listed overleaf). It can be from species or populations inhabiting terrestrial, freshwater or marine systems.

Data Request Sheet

Objective 2: KBAs

- What should be the global standards for the identification of sites of biodiversity conservation significance (“key biodiversity areas”)?
- Later today

Task Force Outputs

- ✓ World Cons Congress 2012
- ✓ Presentation to World parks Congress 2014
- ✓ Joint WCPA/SSC publication
- ✓ Journal article(s)
- ✓ Formal Review of the Literature
- ✓ **Ongoing data base** – LPI, ProtectedPlanet.Net
- ✓ **Input to CBD** - POWPA, NBSAPS, AICHI Targets
- ✓ **Support for new IUCN products and programs:** Green List of Protected Areas, Red List of Ecosystems, Bioppama
- ✓ **Nature conserved**

Overview of the Regional Capacity Building Needs Assessment

BioPAMA Caribbean Regional Workshop

Barbados

January 22-24, 2013

PRESENTATION OUTLINE

- 1 Scope of the Assessment
- 2 Background / Setting the Context/ Methodology
- 3 Findings: Capacity Needs PA Managers
- 4 Available Regional Trainings
- 5 Recommendations

1

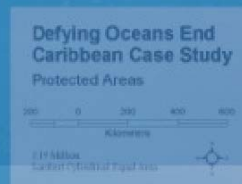
Scope of the assessment

- Summarize the results of previous protected area management capacity needs assessments carried out in the Caribbean
- Review the main existing capacity building programs/activities relevant for protected area managers in the region
- Identify main gaps and prioritize capacity building needs

2

Background / Setting the Context/ Methodology

- Protected Areas in the Caribbean
 - Long existence
 - Diverse types
 - Varying levels of management, from “paper parks” to more sustained management
 - Rich areas of biodiversity
 - Complex systems under increasing pressures and threat
- Myriad of interventions, but capacity often weak



Strengthening skills and knowledge, to manage protected areas adaptively is critical to preventing and/or arresting degradation of natural resources and ensuring sustainable livelihoods for those dependent on these resources

Background- Capacity Needs Assessment (CNA)

- A PA Capacity Needs Assessment (CNA) is the determination of need for change or reform by key individuals in order to carry out effective protected area management

Approach

- The assessment framework used a gap analysis approach to assess the *human and institutional* capacities needed for effective protected area management in Caribbean countries.
- Utilized a mixed-methods approach
 - Literature review
 - Online survey
 - Emails, telephone discussions, Skype

Methodology

Desired outcome that “*staff at all levels (national and site) be equipped with the key technical knowledge and skills (and have access to training opportunities) needed to plan and manage the range of governance and biophysical issues needed for effective protected areas (P.A.) management*”

Limitations

- Time
- Secondary data limited data analysis
- Lack of standard approach to CNA used in previous studies
 - Variation in purpose, geographic scope, methodology, depth of information collected

3

Findings: Capacity Needs PA Managers

- Some of the major assessment conducted to assess capacity needs include:
 - TNC/Institutional Self-Assessments (2004)
 - OECS Protected Areas and Associated Livelihoods Project, Capacity Building for Protected Areas Planning and Management and Associated Livelihoods Regional Protected Areas Training Needs Assessment (2007)
 - TNC/ RAPPAM Assessments and Capacity Development Plans (2005-2007)
 - TNC/ Parks in Peril - National Protected Areas System Capacity Development Final Draft Plan (2006)
 - CAMPAM Capacity Needs Assessment (2011)

Findings ...

- Although there has been tremendous on-the-job experience, there are significant deficiencies in knowledge and skills for effective management of Protected Areas.
- Most PA managers have completed a degree program

Findings ...

- While PA managers had competencies relevant to the field of PA management, the training and education they received was disciplinary in nature and often lacked the interdisciplinary and cross-sectoral training and education necessary for effective protected areas management



Findings ...

- Areas of responsibilities for PA managers include:
 - Financial and Physical Resources Management
 - Human Resources Management
 - Communication
 - Project Development and Management
 - Revenue Generation and Fundraising
 - Conservation Management
 - Socioeconomic and cultural assessments
 - Sustainable Development, Communities and associated livelihoods
 - Protected Areas Policy, Planning and Management Awareness, Education and Public Relations

Select training courses completed by PA Managers

Course Title	Date
Short courses in ArcGIS	2003 & 2010
Project Management,	-
Protected areas management	2002
Conditions of Service Training (Belize Fisheries Department	2012
Peers-to-Peer Workshop on Building Compliance and Enhancing Enforcement for MPAs in the Caribbean	2012
Alternative livelihoods workshop for MPA Managers	2012
Grant Writing	2011
Business Management	2010
Stakeholder Participation and Good Decision Making: MPAs and beyond. Finding Sanctuary	2008
First Journey of International Valuation Artisanal Fisheries	2011
Management Plan: Tools for MPA Governance	2012
Intl Seminar on PA Management, USA	2008
Advocacy & Citizen Engagement	
World Wide Views on Biodiversity Training	2012
Reef Check	
Communication Skills/ Presentation Skills Workshop	2012
Time Management	2012
FAO-Forestry Workshop	2012
WildAid Global MPA Enforcement Workshop	2012
Conflict Management	2012

Findings ...

- Some of the Institutional training needs documented across the region include:
 - Protected Areas Governance (Policy foundations, institutions, legal framework analysis, community-based management, co-management, collaborative management etc.)
 - Natural resources inventory and socioeconomic assessment and monitoring
 - Protected area systems planning methods and management plan development and implementation
 - Protected area financing and resource mobilization
 - Assessing management effectiveness
 - Protected Areas Zoning, Enforcement and Surveillance
 - Protected Areas Financing & Fundraising, including Business Planning & Business Plan Development
 - Associated Sustainable Livelihoods & Tourism Management in Protected Areas
 - Communication Tools and Skills for Protected Areas Management (negotiation and mediation and diplomacy, conflict resolution and consensus building, awareness raising, participatory techniques, networking and partnerships etc.)

Findings ...

- **Human resource capacity needs** (focused at the site level)
 - Enforcement and control
 - Communications
 - Conflict management and resolution
 - Natural resource inventory, and socioeconomic assessments and monitoring
 - Water quality monitoring
 - Project development and management
 - Financial management
 - Proposal writing
 - Resource mobilization
 - Site business planning and management
 - Education and awareness
 - Legislation
 - Monitoring and evaluation of management effectiveness
 - Site assets and infrastructure management
 - Disaster management
 - Organizational management and leadership
 - Research and data management

Summary of Capacity Needs at the PA Site and System levels

OPAAL Training Needs Assessment (2007)		CaMPAM Capacity Needs Assessment Regional Priority Capacity Needs (2011)
<i>System level</i>	<i>Site Level</i>	
Organizational management and leadership	Product development and marketing	Enforcement
Communications	Organizational management and leadership	Financing
Project management	Tour guiding skills	Monitoring (both socio-economic and biophysical)
Fundraising	Cooperation/collaboration partnerships	Management Planning
PA financing	Communication	Outreach and Education
Identifying and building partnerships	Business management	Alternative livelihoods
Networking techniques	Project development	Fisheries Management
Community outreach and management	Environmental education	
Integrated conservation and development planning	Customer service training	
Participatory processes	Communication and negotiation skills	
Planning methods and management plan development	Protected areas planning methods and management plan development	
Protected areas	Site operations and management	

Common Capacity Needs

- Integrated conservation and development planning/eco-regional planning
- PA financing
- Education and outreach
- Enforcement
- Natural and socio-economic monitoring and assessments

Strategic areas of focus for Capacity Development Plans

STRATEGIC DIRECTIONS FOR CAPACITY DEVELOPMENT PLANNING FOR IMPROVING PA MANAGEMENT EFFECTIVENESS		
GRENADA	ST. VINCENT AND THE GRENADINES	JAMAICA
<ul style="list-style-type: none"> • Inter-sectoral integration • Management planning • Law enforcement • Research and monitoring • Resilience • Integrated coastal zone management • Land use policy • Government policy • Legislative review • Protected areas designation • Public awareness and advocacy • Human resource capacity • Sustainable financing 	<ul style="list-style-type: none"> • Inter-sectoral integration • Management planning • Data management • Law enforcement • Invasive species control • Sustainable resource management • Integrated coastal zone management • Government policy • Public awareness and advocacy • Human resource management • Sustainable financing 	<ul style="list-style-type: none"> • Sustainable Financing • Collaboration • Enabling Environment (Policy, Legal and Regulatory Framework) • Human Resources Management for protected areas • Research, Monitoring and Evaluation • Boundary and Zoning Setting • Public Education and Awareness • Infrastructural Development

Common strategic areas (institutional level)

- Sustainable financing
- Public awareness, education and advocacy
- Human resource development
- Policy, legislation and regulation
- Management Planning
- Inter-sectoral integration/collaboration

Available Regional Trainings

- Short term Projects (previous and current)
- Long term Programs (previous and current)
- Academic Programmes
- NGOs
- Regional Networks and Organizations

Short-term

- *Socio-economic Monitoring for Caribbean Coastal Management (SocMon)*
- *Socio-economic monitoring by Caribbean Challenge MPA Managers (Caribbean Challenge SocMon)*
- *Sustainable Finance and Management of Eastern Caribbean Marine Ecosystems Project*
- *Caribbean Fish Sanctuaries (C-Fish)- Caribsave*

Program

- *The Nature Conservancy – Mesoamerican Reef area – MAR Program*
- *The Nature Conservancy, Conservation Training Week (Parks in Peril Project)*
- *Center for Resource Management and Environmental Studies (CERMES), Cave Hill, UWI*
- *Caribbean Challenge Initiative (CCI): The Nature Conservancy*
- *Critical Ecosystems Partnership Fund (CEPF)*

Academic Programmes

- UWI degree level training:
 - Center for Resource Management and Environmental Studies (CERMES), Cave Hill
 - Department of Life Sciences, Mona
 - Institute for Sustainable Development at Mona
- M.Sc. Degree programs:
 - Marine and Terrestrial Ecosystems: Assessment, Conservation and Management Department of Life Sciences and the Environment Management Unit of ISD
 - CERMES: 12 month M.Sc. in Natural Resource and Environmental Management, with a specialization stream in Coastal and Marine Resource Management

NGO

- *Iwokrama International Center (IIC) for Rainforest Conservation and Development, Guyana*
- *Caribsave Partnership, Barbados*
- *Caribbean Natural Resources Institute (CANARI)*

Regional networks and organizations

- *Caribbean Marine Protected Areas Management Network and Forum (CaMPAM)*
 - Communication and outreach tools
 - Training of Trainers (ToT) Programme
- *Gulf and Caribbean Fisheries Institute (GCFI)*
- *OECS Environment and Sustainable Development Unit (ESDU)*

- In the design of training strategies, particular emphasis must be placed on ensuring that trainings delivered are practical and tailored to the needs of the target country (ies) and sites.
- Particular emphasis needs to be placed on site-focused training, on the use of experiential or practical learning methods that allowed practitioners to “learn by doing”.
- Training of trainers (ToT) is a good practice and approach, where key representatives from national, site and associated livelihoods stakeholders can be selected for this training
- Any new PA capacity building initiative can be designed, developed and delivered by national/regional consultants and/or training institutions

From CAMPAM study (2011) and others

- Priority capacity building approaches recommended include:
 - Technical support
 - Training
 - Increased staffing
 - Learning exchanges



THANK YOU



Question

**Are the gaps and
needs reflecting the
reality?**

WCPA-SSC Joint Task Force on Biodiversity and Protected Areas and BIOPAMA

Objective 2:

- What should be the global standards for the identification of sites of biodiversity conservation significance (“key biodiversity areas”)?

- **Convention on Biological Diversity Strategic Plan 2011 - 2020, Target 11:**

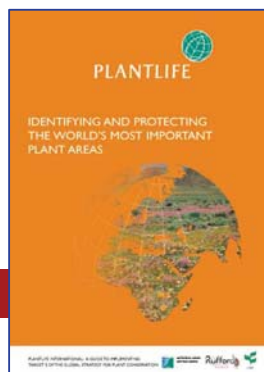
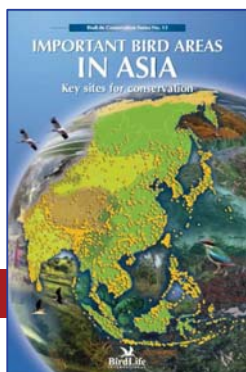
*By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, **especially areas of particular importance for biodiversity and ecosystem services**, are conserved through effectively and equitably managed, ecologically representative and well connected systems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

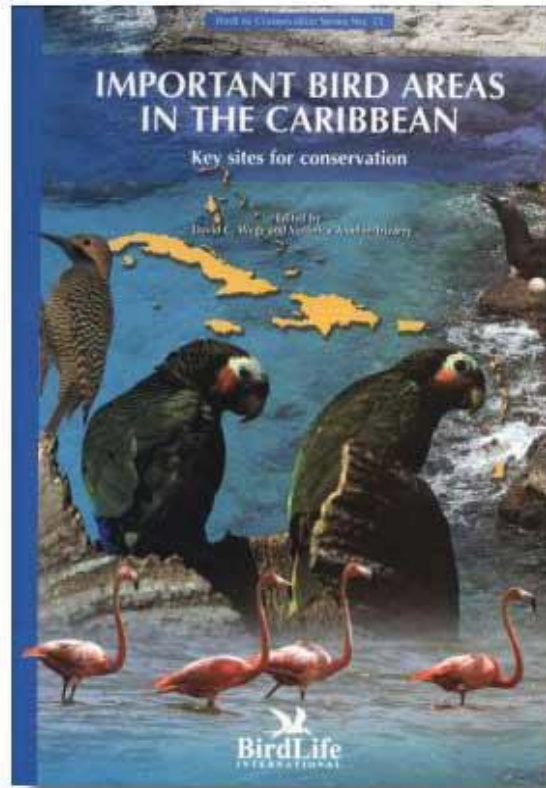




The uses of the IUCN Red List of Threatened Species. The World Conservation Congress at its 3rd Session in Bangkok, Thailand, 17-25 November 2004: REQUESTS the SSC, working in partnership with IUCN members, to convene a worldwide consultative process to agree a methodology to enable countries to identify Key Biodiversity Areas, drawing on data from the IUCN Red List of Threatened Species and other datasets, building on existing approaches (RESWCC3.013)

- Important Bird Areas
- Important Plant Areas
- Important Freshwater Areas
- Prime Butterflies Areas
- Alliance for Zero Extinction, etc.





KBAs from the Caribbean – AZE sites



Disadvantages of not having a global standard

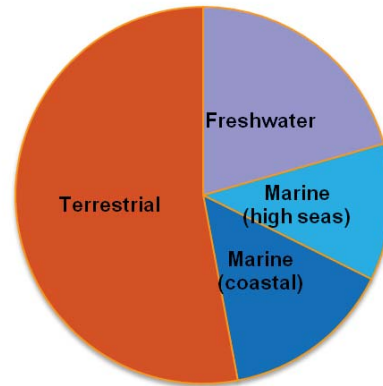
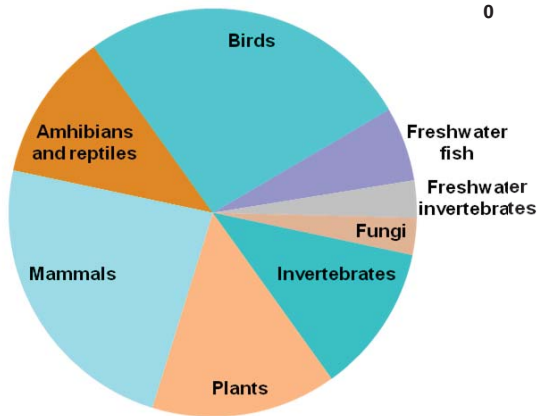
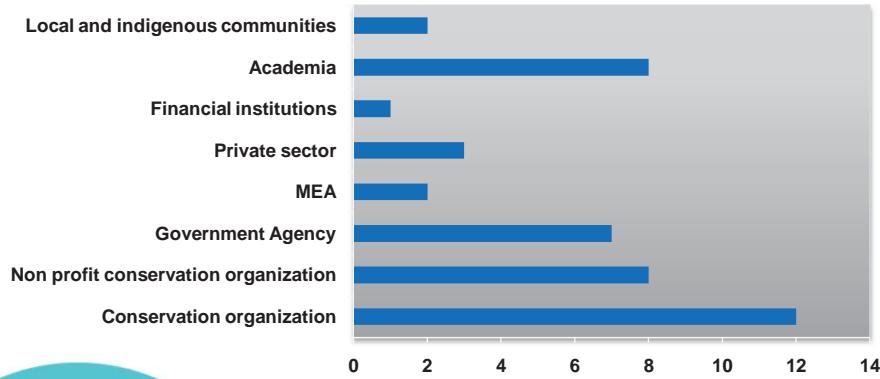
- **Policy confusion**
- **Discrepancies in application for different taxonomic groups and in different regions**
- **Underrepresentation of some less charismatic mega-fauna groups**
- **Delineation challenges**
- **Duplication of efforts**

Benefits of a global standard

- **Easy and effective to apply: a pragmatic method**
- **Allow to compare results between regions and taxonomic groups (credibility and repeatability)**
- **Guide decision makers, resources managers, private sector, donor agencies, etc.**
- **Adds value to (and doesn't subtract it from) existing approaches**
- **Help countries to define their conservation priorities and to achieve their international commitment**

1. International framing workshop (June 2012)
2. Technical options papers (Ongoing)
3. Regional consultations (ICCB NZ, Oregon, SCB Asia 2012, ECCB Glasgow 2012!!)
4. End user and applications workshop (8th September 2012 IUCN WCC, Jeju)
5. Technical working groups (Early 2013)
6. Finalization and dissemination (2013)





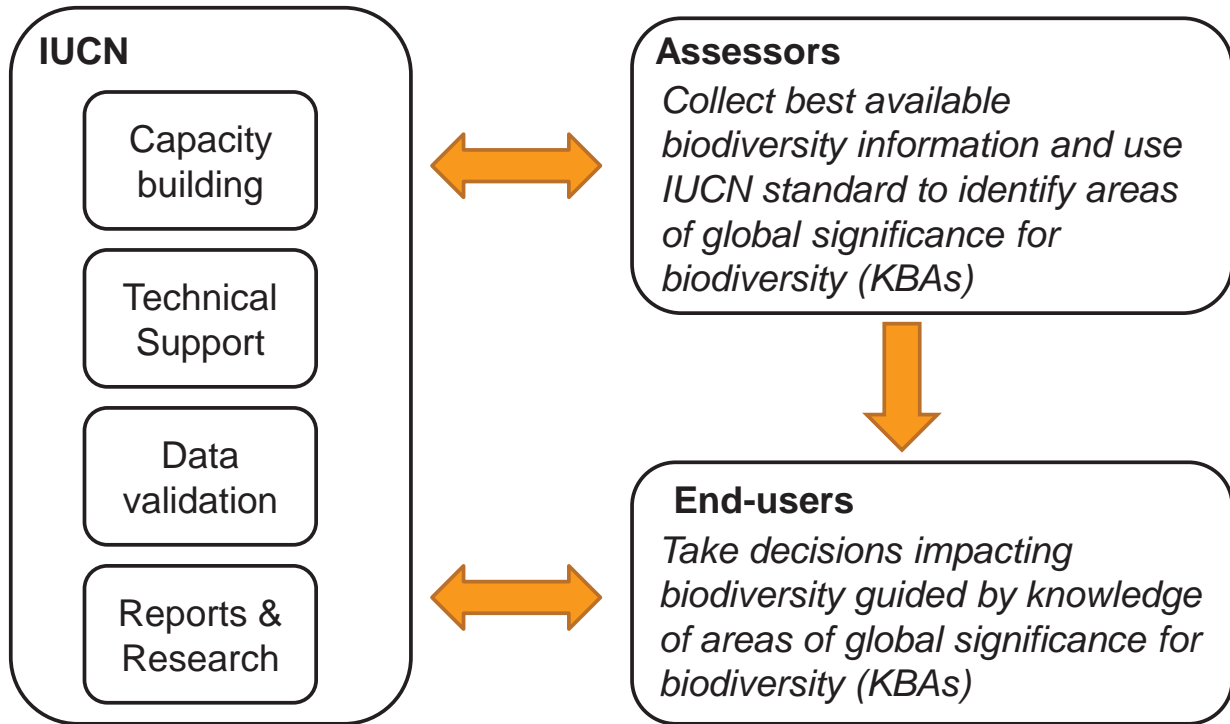
Framing workshop

YES

- Sites that contribute significantly to the global persistence of biodiversity
- Manageable sites
- Scientifically robust but pragmatic criteria
- A data layer to inform a wide range of end users
- Use best available data
- A national process

NO

- Not formal designation or management scheme
- Not broad scale
- Not only capture threatened species
- No systematic conservation planning exercise
- Not subtracting value
- Not a top down approach



1. A set of guidelines, recommendations for assessors, end-users and procedures for IUCN.
2. An online spatial tool and a database to provide access to the data.
3. The data: areas that contribute significantly to the global persistence of biodiversity

- Task Force website
www.iucn.org/biodiversity_and_protected_areas_taskforce/
- Google Group
<http://groups.google.com/group/wcpassc-joint-task-force/about>
- Thomas.Brooks@iucn.org
- Stephen.Woodley@iucn.org
- Annabelle.Cuttelod@iucn.org

- How will the new KBA standard be relevant for your work?
- What should this standard deliver in order to be relevant for your work?
- What kind of materials/formats will allow you to use this standard and its results?
- Will you use the standard to identify KBAs themselves once it is ready OR use the results?

- Which aspects of the identification process could be particularly beneficial? Which could not?
 - What should be the role of IUCN in supporting the process of identification of such sites?
 - Are there particularly instructive examples from your country which could be used as case studies for an IUCN publication?
-

The World Database on Protected Areas (WDPA)

Amy Milam, Programme Officer, Protected Areas



UNEP



WCMC



BIOPAMA Regional Workshop for the Caribbean's

22-24 January 2013



United Nations Environment Programme World Conservation Monitoring Centre

- ❖ Provide the Data and information that supports decision-making
- ❖ Strengthen capacity for biodiversity decision-making



“A World Where Biodiversity Counts”



UNEP WCMC

Conservation Commons

conservationcommons.net



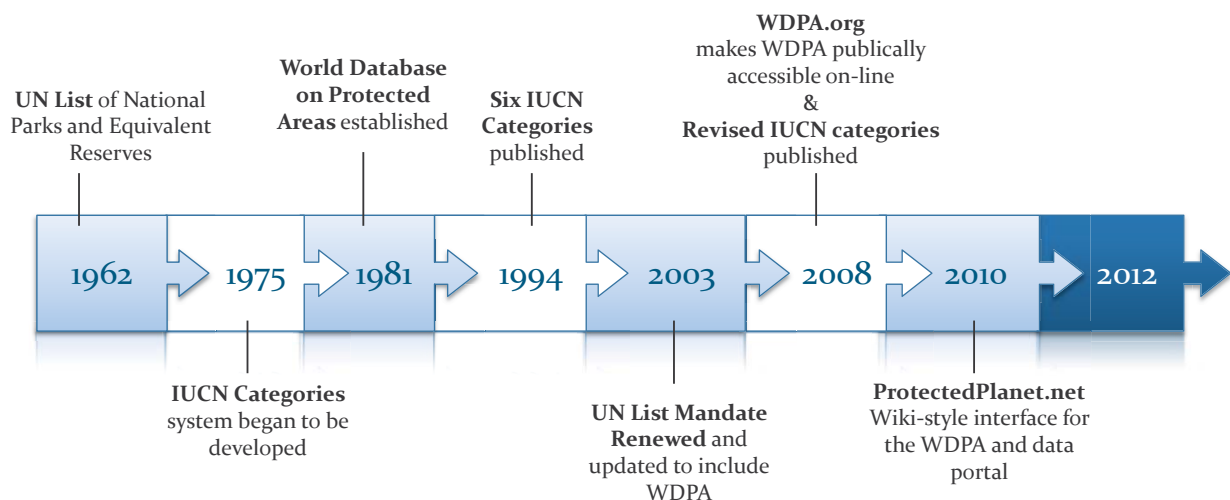
Three Principles:

- Open Access
- Mutual Benefit
- Rights and Responsibilities

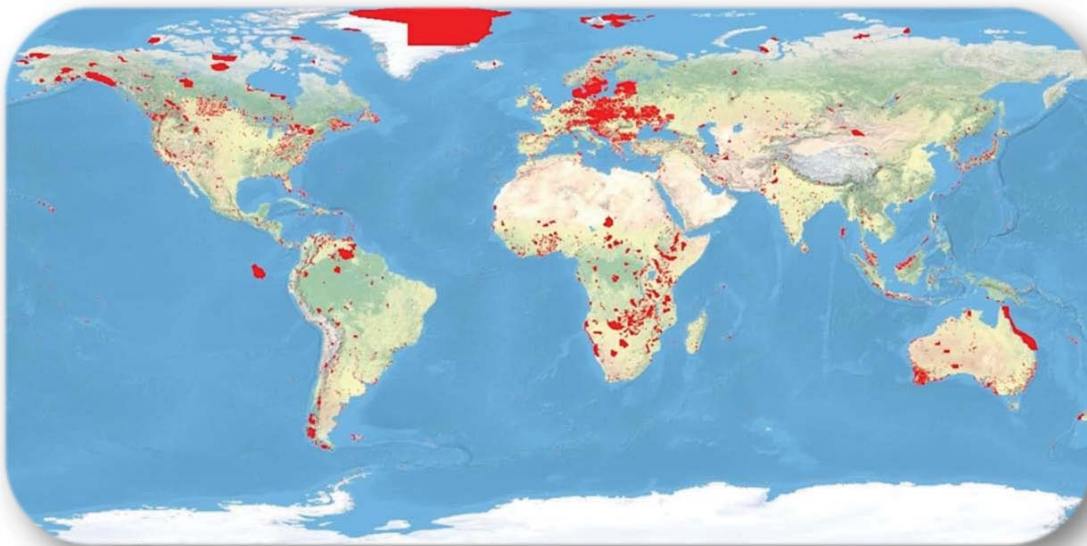


A joint IUCN & UNEP initiative

The World Database on Protected Areas



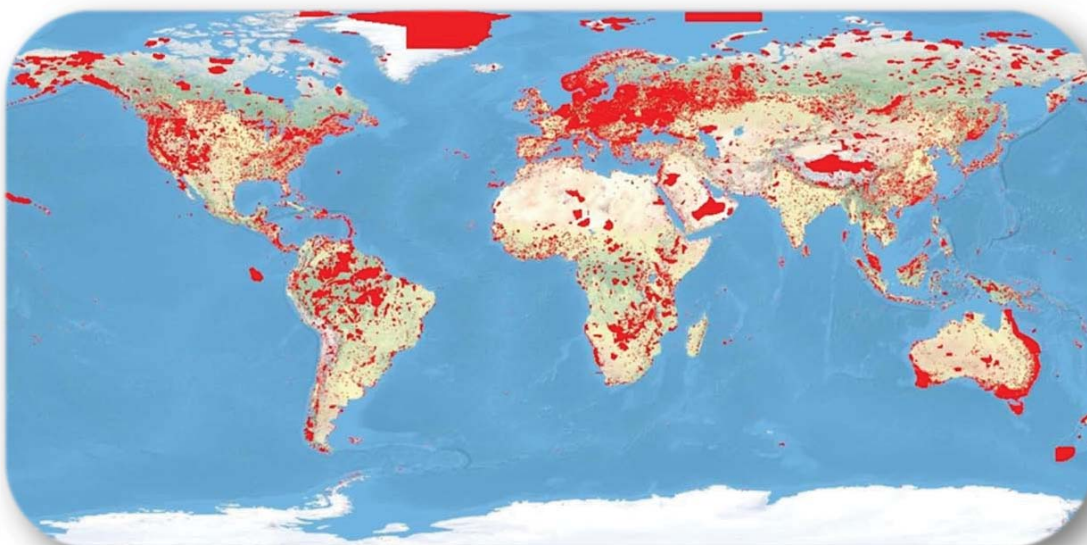
Today the WDPA is a baseline data set with a 50+ year history...



1981: 40,000 protected areas covering 7,000,000 km²



...and is the authoritative global inventory of protected areas.



2012: 200,000+ protected areas covering 12% of the world



Through Protected Planet the WDPA is interactive and searchable

1. Improve data quality
2. Add context
3. Improve search functionality
4. Enable interoperability



protectedplanet.net



BIOPAMA Regional Workshop for the Caribbean's

22-24 January 2013

International Mandates

- United Nations
- World Parks Congress
- Convention on Biological Diversity
- IUCN World Conservation Congress



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22-24 January 2013

WDPA in Practice

GIS Mapping & Analyses / Integration with Other Data sets

Data Sets

- IUCN Red List
- Global Biodiversity Information Facility
- WWF Ecoregions
- Socioeconomic Data
- Population Data
- Management Data

Analysis

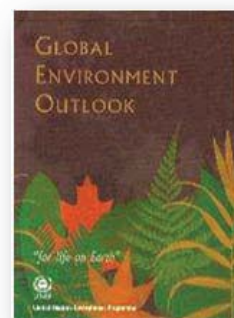
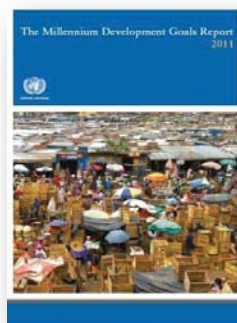
- Gap Analysis
- Coverage Analysis
- Assessments
- Fire & Resource Management



WDPA in Progress

Tracking Progress toward targets and goals of MEAs

- Millennium Development Goals (Goal 7)
- CBD Aichi Target 11
- Global Biodiversity Outlook
- Global Environment Outlook



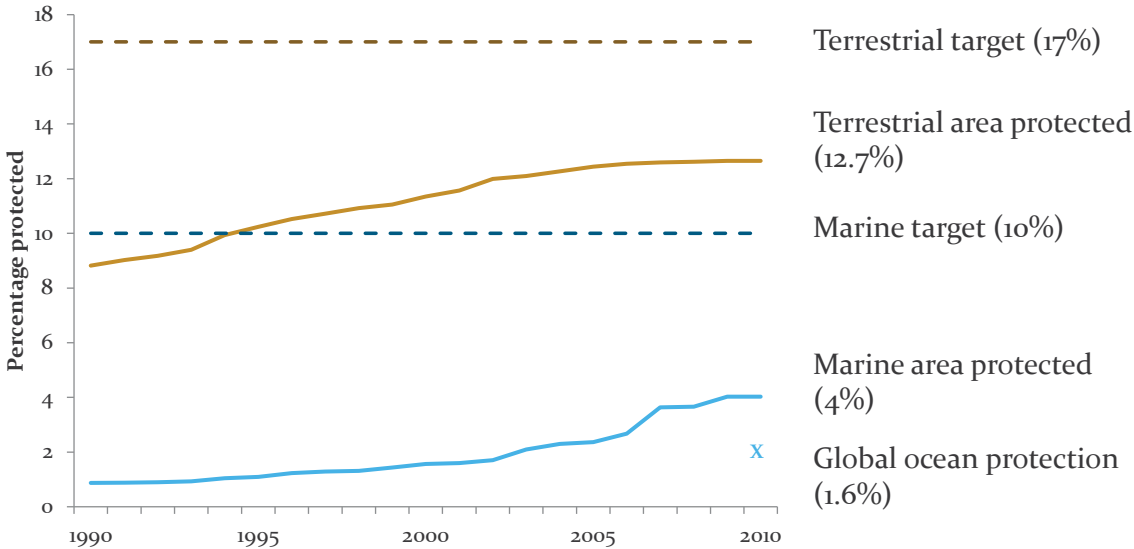


- Aichi Target 11
- Summarizes status and trends
- Builds on protected area indicators (BIP)
- Biennial series
- English, French and Spanish online:
www.unep-wcmc.org



Global Coverage & Aichi Targets

~ 200,000 protected areas
 Covering nearly 25 million km²

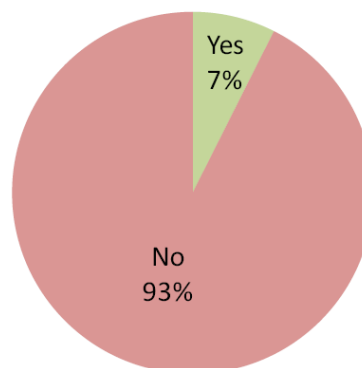
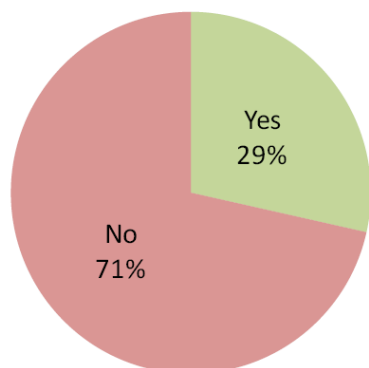


... few countries meet the coverage target

Caribbean: BLZ, CRI, DOM, SUR / DMA, GLP, JAM, SUR, TTO

17% terrestrial (n = 228)

10% marine (n = 175)



Note: Global % targets are not necessarily applicable to national level. The pie chart for marine protection refers only to marine area under national jurisdiction (0-200 nautical miles).



Percentage of territory protected

Millennium Development Goals: Caribbean Region

Total Territorial Area:

4.6%

Marine (12nm): 2.2%

TNC (EEZ) (3%)

Terrestrial Area: 11.2%

TNC (12%)

Goal 7:

Ensure
environmental
sustainability

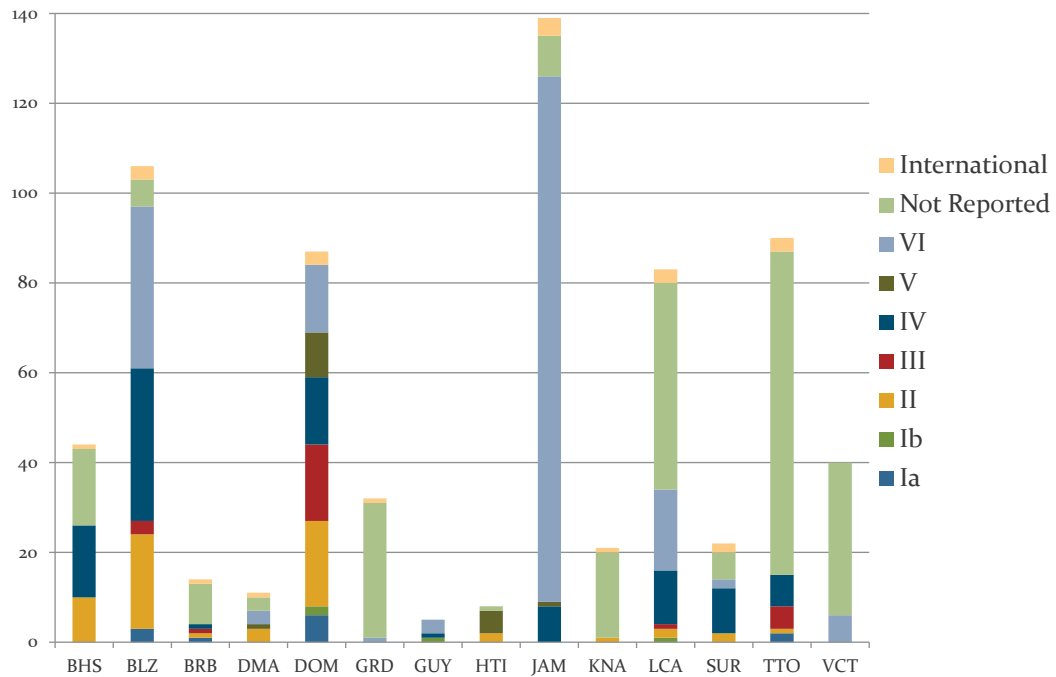


<http://wdpa.org/Statistics.aspx>



Number of Protected Areas

Caribbean Region



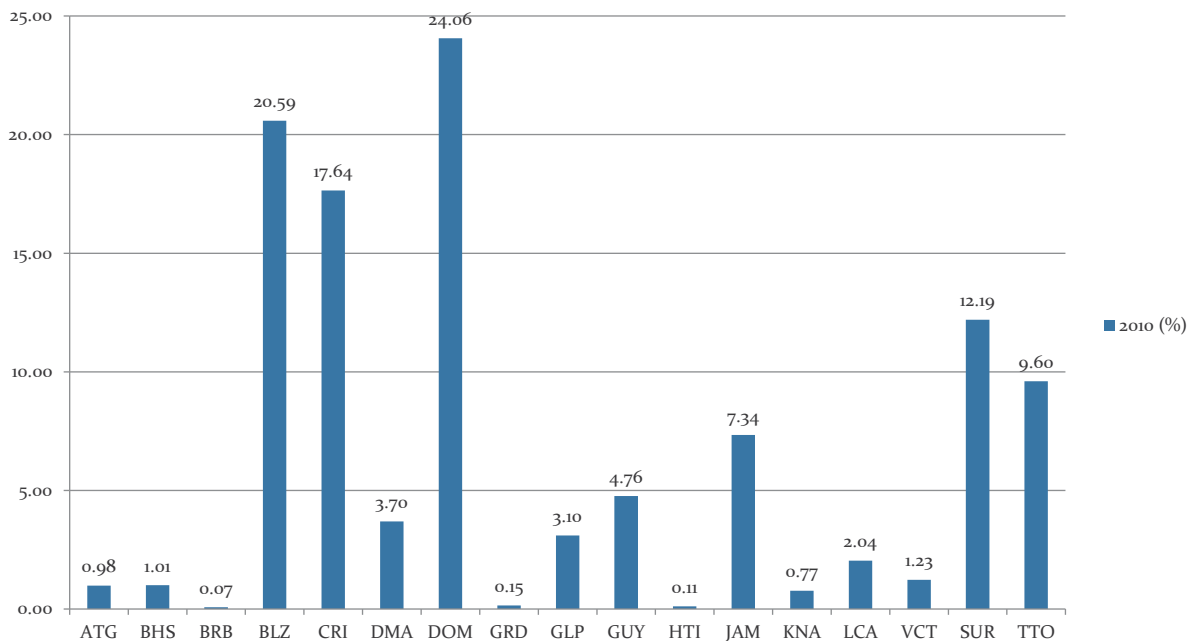
Source: WDPA Jan. 2013

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Percent Total Territorial Area Protected

WDPA Dec. 2010 / UN MDGs 2011 - BioPAMA Caribbean



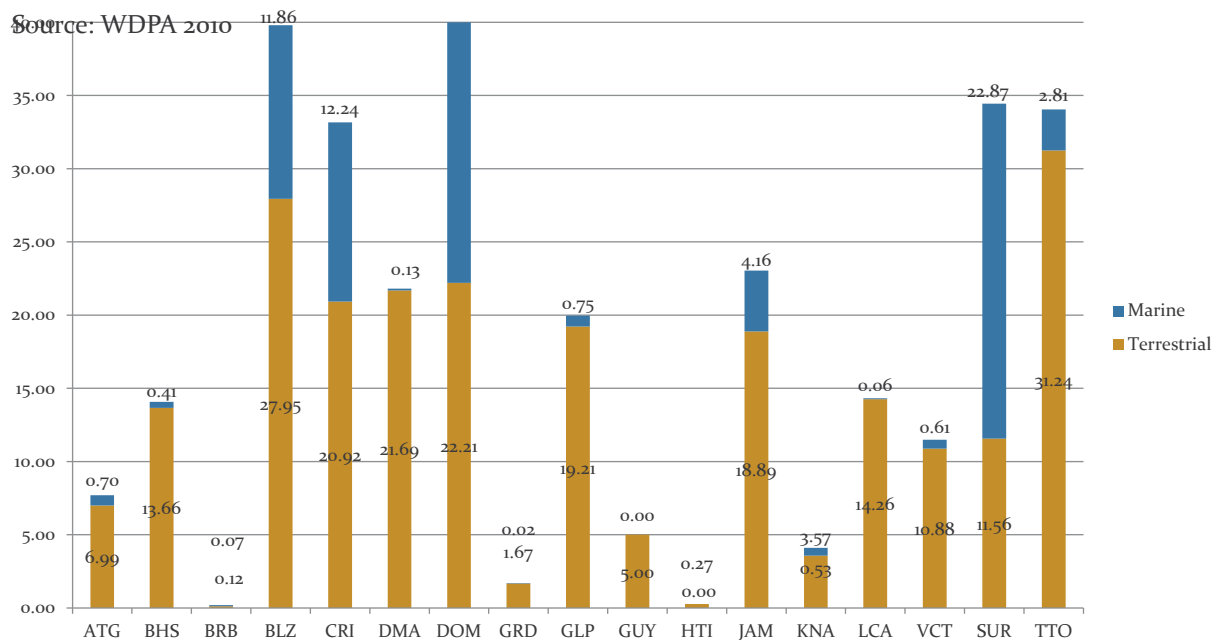
Source: WDPA Dec. 2010

Our Protected Planet: Strengthening the Information Base in Asia

28 March 2012

Marine (12nm) and Terrestrial Area

WDPA Dec. 2010 / UN MDGs 2011 - BioPAMA Caribbean



Source: WDPA Dec. 2010

Our Protected Planet: Strengthening the Information Base in Asia 28 March 2012

WDPA in Policy & Standards

Governments:

- Foreign Aid – US Millennium Challenge Fund – Natural Resource Indicator
- Prioritising Protection: Transboundary and Connectivity
- Recognised International Standard:
 - MedPAN, MAIA, OSPAR, CAFF, TNC Carib

Business:

- Environmental Impact Assessment
- Biodiversity Strategy and Action Plans
- Compliance with Environmental Safeguards



Good Quality is achieved through Standards, Updates and Validation

- **Standards setting:** WDPA Data Standards
- **Updates:** Aim to update every country in the world every five years
- **Validation:** Expert Reviews, World Commission on Protected Areas (WCPA), Stakeholder Engagement



Importance of protected area conservation standards

Define Common Ground

- 'protected area' in context of biodiversity protection
- categories based on management objectives

Enable global comprehension

- Measure and monitor at global & regional scales
- Inform global decision making
- Make comparison between countries
- Learn, Share and Improve



United Nations Environment Programme
World Conservation Monitoring Centre
(UNEP-WCMC)

Data Standards

World Database on Protected Areas (WDPA)

2012



Our Protected Planet: Strengthening the Information Base in Asia 28 March 2012

WDPA Data Providers and Partners

UN List, Memorandums of Cooperation and other Agreements

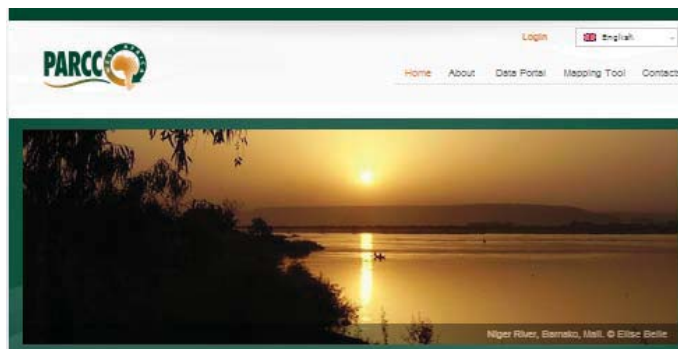


Projects/Synergies

- Governance
 - ICCA's
 - Private Pas
- Management Effectiveness Assessments
 - PAME & METT
- Resilience
 - PARCC



<http://www.iccaregistry.org/>



<http://www.parcc-web.org/parcc-project/>



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22-24 January 2013



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International Mandates

Mandates

CBD COP 9, 2008 “Encourages Parties to develop national or regional data networks in order to facilitate the exchange of, and access to information...,including providing information to the **WDPA**” (COP IX/18)

CBD COP 10, 2010 “Encourages Parties to share and update relevant information on their protected areas system with the **World Database on Protected Areas**” (COP X/31)

CBD COP 11, 2012 “Invites the UNEP World Conservation Monitoring Centre and its partners, including the World Commission on Protected Areas of the International Union for Conservation of Nature (IUCN), to continue to report progress towards achieving Aichi Biodiversity Target 11 and related targets through the **Protected Planet Report**” (COP XI/24)

IUCN World Conservation Congress, 2012 “Recognizing IUCN’s responsibility to maintain the **World Database on Protected Areas** through its partnership with the United Nations Environment Programme-World Conservation Monitoring Centre” (WCC5/42)

World Parks Congress, 2003 “Urge the Parties to the CBD to request all governments to provide annual updates of information to the **WDPA**” (WPC V.4/8)



The WDPA uses the IUCN definition of a protected area

*“A **clearly defined** geographical space, recognised, dedicated and managed, through **legal or other effective means**, to achieve the **long-term conservation of nature** with associated ecosystem services and cultural values.”*



Dudley et al. [Ed] 2008. Guidelines for applying protected areas management categories. IUCN, Gland.
<http://data.iucn.org/dbtw-wpd/edocs/PAPS-016.pdf>



There are different designations of protected areas in the WDPA

National	Regional	International
<ul style="list-style-type: none">▪ IUCN Categories I-VI▪ Indigenous & Community Conserved Areas▪ Private Protected Areas	<ul style="list-style-type: none">▪ Natura 2000 sites▪ Barcelona Convention sites▪ ASEAN Heritage Parks	<ul style="list-style-type: none">▪ UNESCO World Heritage Sites▪ Ramsar Wetlands of International Importance▪ UNESCO Man & Biosphere Reserves



WDPA Standards for Global Interoperability

1. All protected areas must fit the IUCN definition of protected area
2. The data must be spatial
3. Minimum attributes for each protected area must be included
4. Source information must be provided for the data



Attribute Data Standards

- ✓ 22 fields
- ✓ Uses ISO & IUCN terminology
- ✓ Supports Multiple Languages

Αιγαίου
欢迎来到
محمية العقبة البحرية

- ✓ Sets Clear Requirements:
Minimum/Core/Enhanced
- ✓ Encourages Data Stewardship



Source Standards

*Based on ISO Metadata Standards**

- Dataset Title
- Responsible Party
- Responsible Party Contact E-mail
- Year
- Dataset Language
- Dataset Character Set
- Source Scale Denominator
- Lineage Process Description
- Source Citation



Professionalize Protected Area Management



Standards
Competence

Open
Access
Curriculum
& Courses

E-Book

**Global
Partnership for
Professionalizing
PA Management**

Centers of
Excellence
Accreditation

Scholarship
fund

Certification
of
Performance

A global partnership

Successful launch at the WCC in Jeju, Korea, 2012



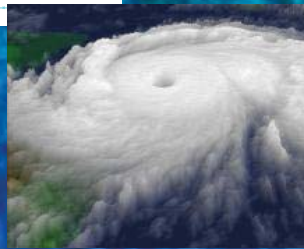
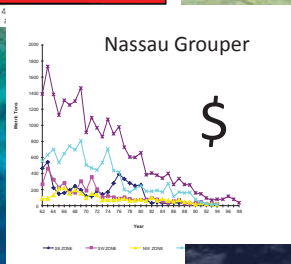
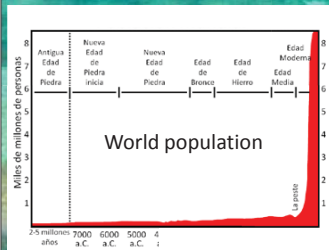
Braulio Ferreira de Souza Dias,
United Nations Executive
Secretary of the Secretariat of the
Convention on Biological Diversity

Eduard Müller,
Vice-chair for Education and Training,
World Commission on Protected Areas,
IUCN
President, University for International
Cooperation, Costa Rica



200000+ PAs

Why do we need professionals?



PA Training

- **Transition** from “short” “isolated” courses to **professionalizing PA management**
- Change of mindsets, attitudes, leadership skills, empowerment, recognition
- Competency based learning
- Use of **technology** and **methodology: *emphasis on learning, not on teaching!***
- **Field work** – permanent application of knowledge during the learning process



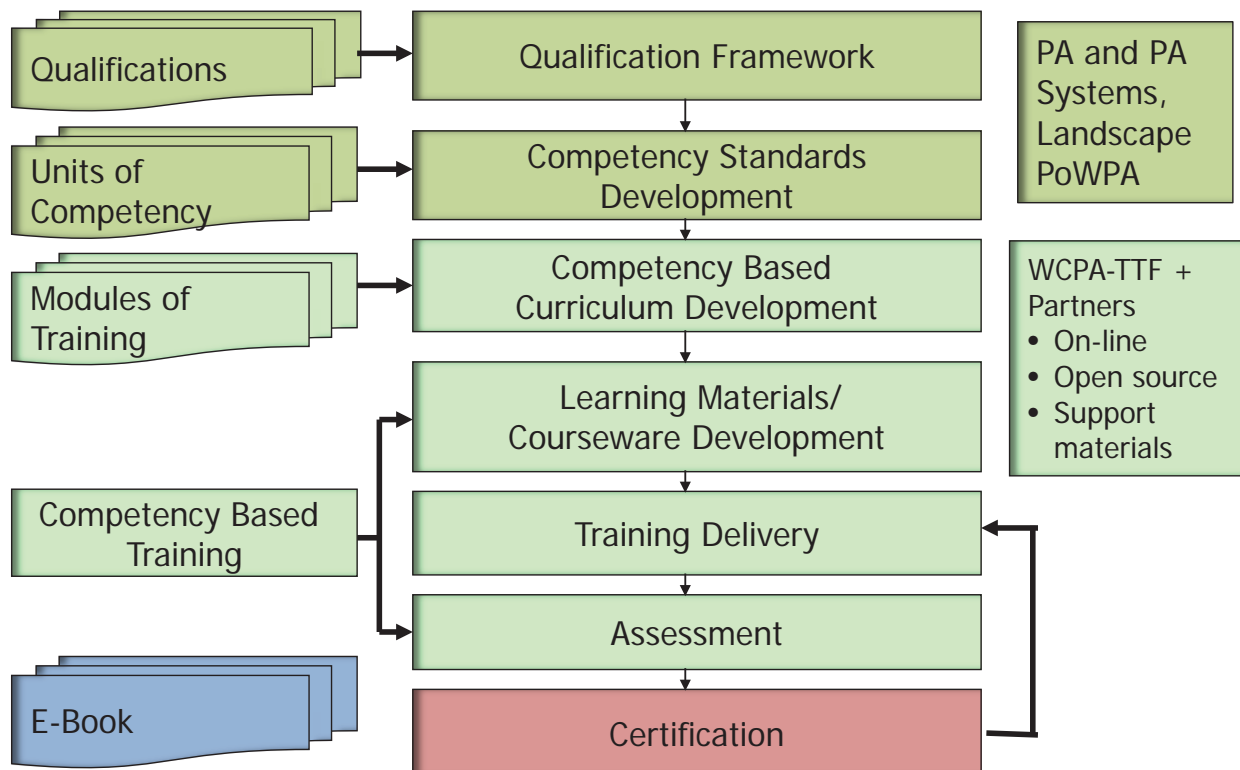


Pioneer programs in Latin America

- 1997: Bachelor's degree in PA management
- 2005: Masters program in PA management and ecorregional development
- 2012: Masters program in coastal and ocean management (with UNU-INWEH and FIT).

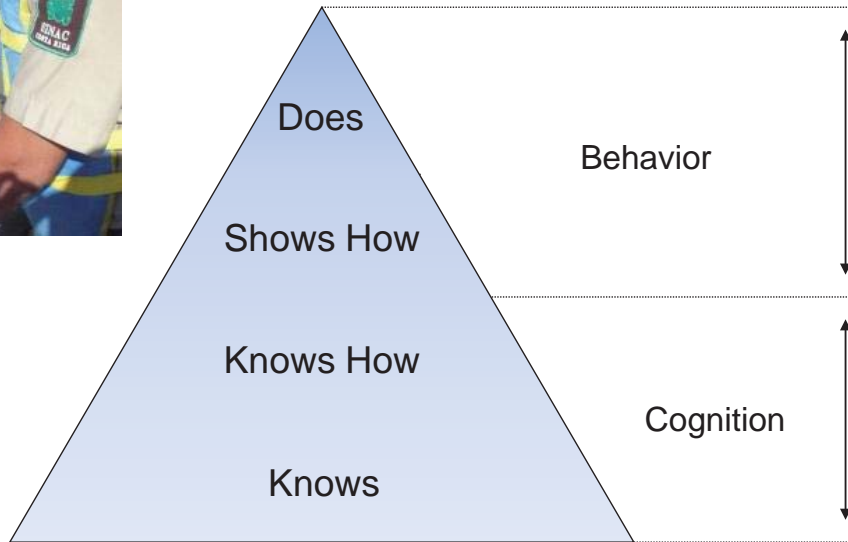


Competency based framework



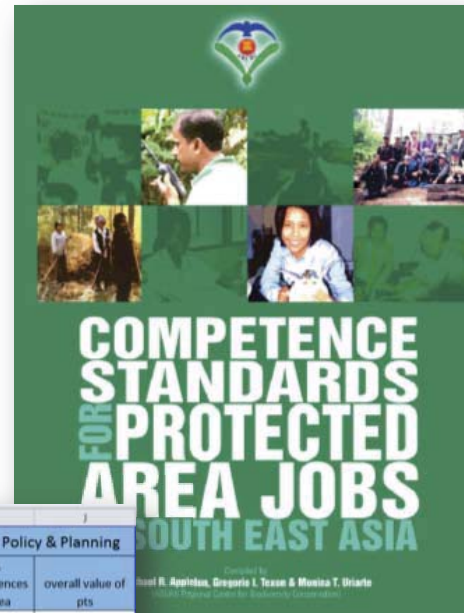


Levels of Competence



ASEAN

MPA Pro



	A	B	C	D	E	F	G	H	I	J
		Level 1 Marine Field Operations			Level 2 Site Management			Level 3 Strategy, Policy & Planning		
1	Competence Areas (CA)	Points per CA	No. Competences in Area	overall value of pts	Points per CA	No. Competences in Area	overall value of pts	Points per CA	No. Competences in Area	overall value of pts
2	1. MPA Governance	18	6	13%	24	8	9%	32	9	15%
3	2. Marine Conservation: MPAs and other Approaches	14	4	10%	24	8	9%	20	6	9%
4	3. Communication and Stakeholder Engagement	20	6	14%	36	10	14%	34	10	16%
5	4. Human and Financial Resources Mobilisation and Management	12	4	9%	18	5	7%	24	7	12%
6	5. Management Implementation and Effectiveness	38	10	27%	78	21	31%	38	12	18%
7	6. Biophysical and Socio-Economic Context	22	7	16%	40	13	16%	32	8	15%
8	7. Leadership, Ethics and Innovation	16	4	11%	32	4	13%	32	4	15%
9	Totals	140	41	100%	252	69	100%	212	56	100%
10	PASSING GRADE (70%)	98			176			148		

Resultados compilados del taller:

Capacidades, habilidades esenciales, y conocimientos fundamentales necesarios para ser un profesional de conservación altamente eficaz	Número de votos
Nivel 1—Fueron mencionados en los tres grupos de trabajo	
• Comunicación efectiva	51
• Planificación y pensamiento estratégico	36
• Conocimiento y entendimiento de ciencias económicas, sociales, políticas y cultura	35
• Manejo de conflictos y negociación	31
• Conocimiento de sistemas ecológicos	31
• Visión holística de los problemas globales asociados con la comunidad local	30
• Entendimiento de problemas de conservación globales (Ej.: cambio climático)	28
• Manejo de grupos y redes sociales	28
• Sensibilidad social y cultural	25
Nivel 2 – Fueron mencionados en dos de los tres grupos de trabajo:	
• Liderazgo	23
• Habilidad de trabajar con gente (puede facilitar procesos participativos)	20
• Conocimiento de los marcos legales (y la legislación ambiental y económica)	19
• Manejo de recursos financieros	15
• Habilidad de trabajar en equipos	15
• Capacidad para trabajar dentro de disciplinas múltiples	13
• Conocimiento de como escribir buenas propuestas	12
• Conocimiento de sistemas de gobernabilidad	12
• Habilidad de abogar/mediar	11



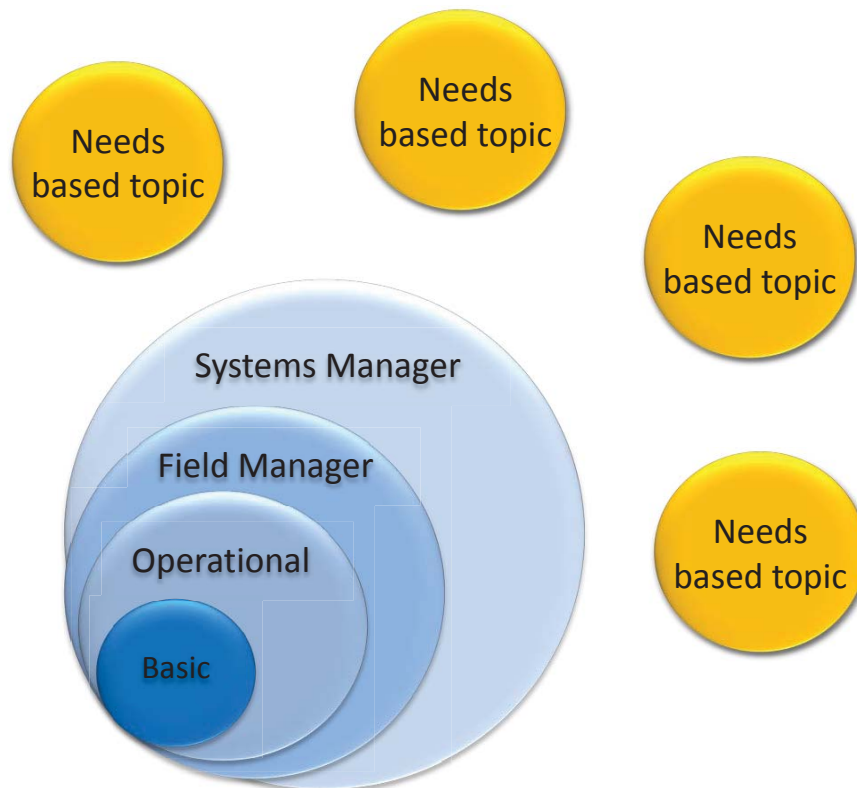
Course contents

- E-learning based
- Open source
- Templates
- Train the trainers for non-internet users
- Case studies
- Videos, interviews, statements
- Languages
- Links to ProtectedPlanet.net
- PALNet - similar
- Regular updates
- Peer review
- Permanent feedback

E-Book

Curricula Concept:

3 Levels with additional topics



Protected Area Management Training Curricula (Knowledge areas)

Draft for discussion

August 2012

2. RANGER COURSE

The E-Book focuses on the core knowledge needs of Rangers. These have been identified from international input, experience and research and developed as five knowledge Themes with supporting Subjects (Table One).

Table One: Ranger Course – Themes and Subjects

Theme	Subjects
1	Protected area concepts
	1.1 Introducing protected areas
	1.2 Values of protected areas
	1.3 Benefits of protected areas
2	Diversity of protected areas
	2.1 IUCN Protected Area Categories
	2.2 World Heritage Properties
	2.3 UNESCO Man and the Biosphere Reserves
3	Protected area governance (I)
	3.1 Types of governance
	3.2 Governance roles of protected areas
	3.3 Governance of protected areas
4	Managing protected areas - I
	4.1 Management concepts
	4.2 Diversity of protected areas
	4.3 Management tools and techniques
5	Protected area management
	5.1 Establishing protected areas
	5.2 Planning
	5.3 Staff and financial management
5.4 Financing parks	

3. PROTECTED AREA MANAGER COURSE

Protected Area Managers undertake management for one and perhaps many protected areas within a given landscape area. The E-Book focuses on the knowledge needs of Protected Area Managers to undertake this work and five Themes have been recognised (Table Two). This Course assumes prior knowledge of the information provided by the Rangers Course.

Table Two: Protected Area Manager Course – Themes and Subjects

Theme	Subjects
1	Leadership
	1.1 Leadership concepts
	1.2 Human resource management
	1.3 Strategic decisions in management
	1.4 Communication skills
2	Protected area governance (II)
	2.1 Private sector governance
	2.2 NGO governance
	2.3 Government governance
	2.4 Community governance
3	Running the business
	3.1 Business planning - Sustainable finance
	3.2 Leases and licenses
	3.3 Managing complex matters: people management
	3.4 Information management
4	Protected areas – part of the landscape
	4.1 Conservation context (biodiversity)
	4.2 Transboundary management (international)
	4.3 Working with the community
	4.4 Working with the private sector

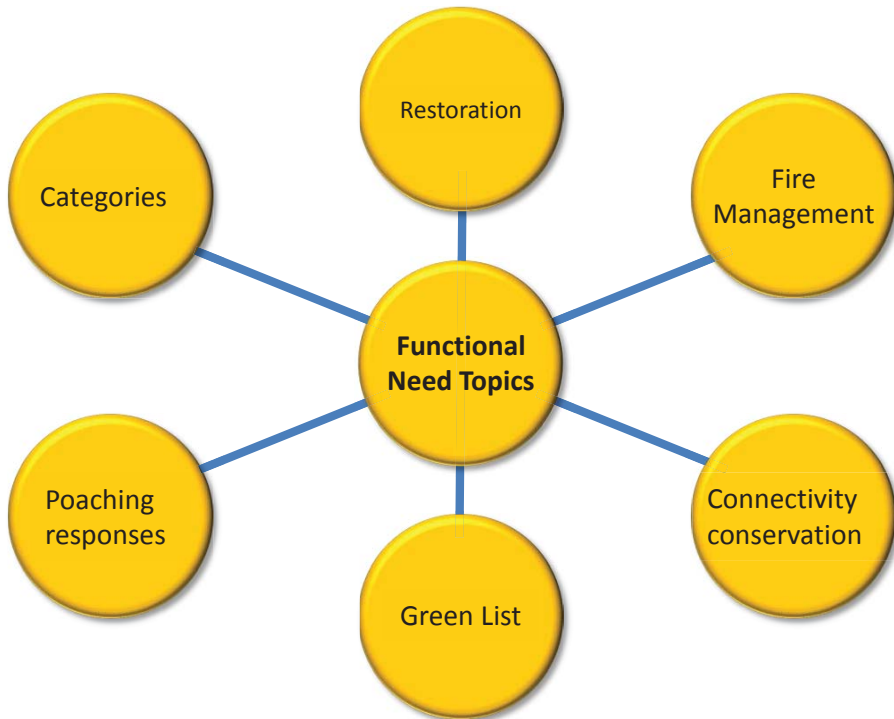
4. PROTECTED AREA SYSTEM MANAGER COURSE

Protected area system manager competencies reflect the skills, knowledge and attitudes that are needed to effectively undertake the management of a protected area system at an executive level. The E-Book focuses on the knowledge needs of Protected Area System Managers to undertake this work and nine Themes have been recognised (Table One). The Protected Area Manager Systems Course assumes prior knowledge of the information provided by the Rangers Course and the Protected Area Manager Course.

Table Three: Protected Area System Manager Course – Themes and Subjects

Theme	Subjects
1	Global protected area management
	1.1 State of the planet
	1.2 The Convention on Biological Diversity
	1.3 The World Heritage Convention
	1.4 International organisations, NGO's, funding organisations and processes
2	Protected area system management
	2.1 Comprehensive, adequate and representative reserve systems
	2.2 Effectively managed reserve systems
	2.3 National biodiversity conservation
	2.4 Sustainably managed reserve systems
3	Organisation management (advanced)
	3.1 Public sector - intra-government management
	3.2 Public sector - parliamentary process management
	3.3 Non-democracy sector - executive decision making processes
	3.4 Private sector - board decision making processes

Needs Based Topics (Examples)



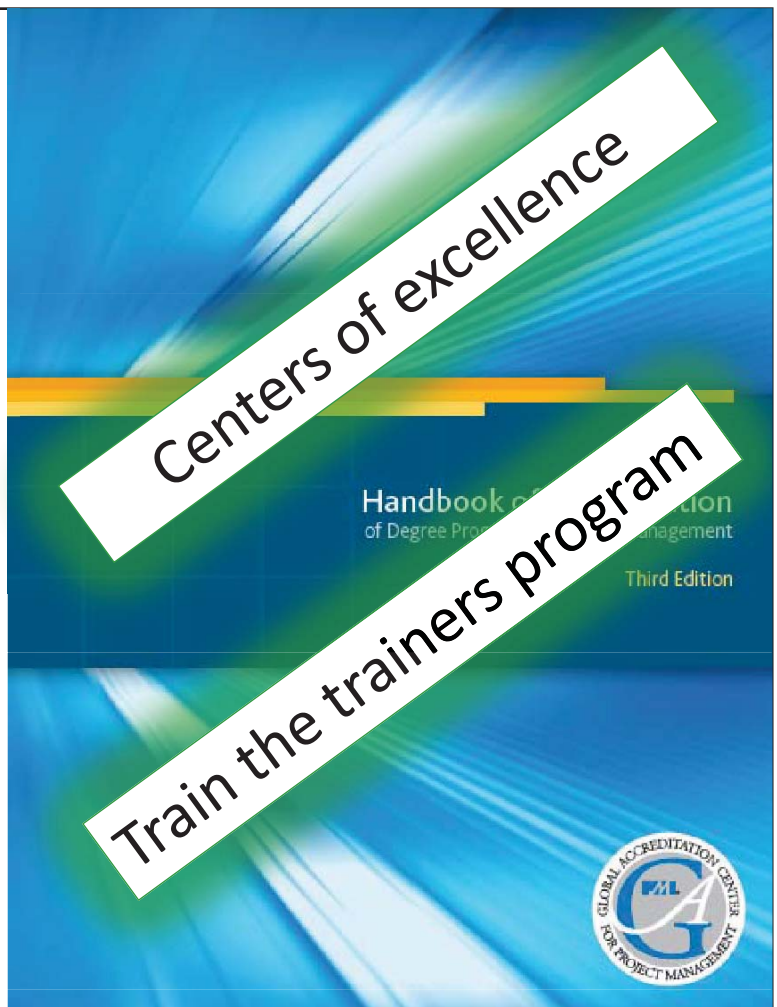
Certification

Promotes Leadership
and Retention of Staff

(M)PA Pro



Accreditation
process for
academic
or programs



Global Scholarship Fund



- Individuals not organizations
- Tied to accreditation process
- Optimizing sources



Global Support is Growing

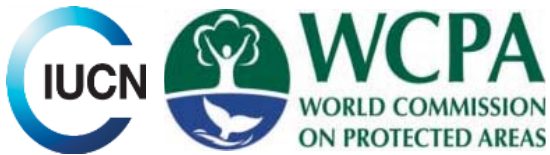
Jon Day of the Great Barrier Reef Marine Park Authority says **“very impressed and in full support”**

“I have quickly read through the concept document with an increasingly bigger smile on my face. The SAWC would be privileged to become a partner in this initiative...” Theresa Sowry, CEO”



Australian Government
Great Barrier Reef
Marine Park Authority





Global Partnership for Professionalizing Protected Area Management



gpppam@uci.ac.cr

How the regional observatories can help you?

- National services / agencies
 - Reporting to CBD
 - Prioritisation of fund allocation (dialog with donors)
 - Tool for land-use planning and negotiation with other sectoral policies
 - Backup of important data by an external body



How the regional observatories can help you?

- Regional institutions / networks
 - Improving the efficiency of networks of Pas
 - Better planning of regional initiatives
 - Coherent regional position in Multilateral Environmental Agreements
 - Platform for dialogue between scientists and decision-makers
 - Adaptation of networks of PAs to climate change
 - New knowledge will generate new questions



How the regional observatories can help you?

- PA managers
 - Ownership of data recognised internationally
 - Better visibility
 - New faces in WCPA and other networks
 - Backup of important local data
 - Access to important databases (species, habitat sensitivity, ecosystem services, satellite images...) for management and fund-raising



How the regional observatories can help you?

- Non Governmental Organisations
 - Up scaling of data collected at local scale
 - Close association to BIOPAMA
 - Better planning of their interventions
- Scientific community
 - Access to advanced information and models
 - Better interaction with policy-makers



How the regional observatories can help you?

- Capacity-building institutions
 - Case-studies for teaching
 - New fields for investigation
- General public
 - Awareness-raising on biodiversity value and threats of PAs

