

UNIVERSITY OF PRIMORSKA
Faculty of Mathematics, Natural Sciences and Information
Technologies

MARINE PROTECTED AREAS: SOCIAL ASPECTS

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OTHER STUDY TEXTBOOK

Pages 292

Nature Conservation, 2nd Bologna Cycle

1st edition

Koper, 2019

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Introduction to marine protected areas (MPAs)

Peter Mackelworth

Introduction

- Marine space has typically been regarded as '*unpeopled*';
- Although people are **not generally resident** within the marine environment increasingly there are **users and new uses**.

Crowder & Norse, 2008



Ha Long Bay World Heritage Site

Ha Long Bay, est. 1962

- Originally was established as a **historical and cultural relict** in 1962, management scheme created in 2002
- Land tenure is held by the **Provincial Government**.
- The property is protected effectively by a **number of relevant provincial and national laws** including;
 - the **Cultural Heritage Law**,
 - the **Bio-Diversity Law**,
 - the **Tourism Law**,
 - the **Environmental Protection Law**,
 - the **Fishery Law**
 - the **Marine Transport Law**.
- Any proposed action that could have significant impact must have official approval from the **Ministry of Culture, Sports and Tourism**

Ha Long Bay

- Archaeological findings suggest the bay has been **occupied for more than 10,000 years**
- The Hung Thang coastal commune, half are located on mainland and other remain on **three floating fishing villages with over 500 households**, even in core zone of the WHS;
- The **migration rate** in the floating villages is high, about 5% annually;
- The coastal and marine activities of the commune are focused on:
 - **fishing**,
 - **aquaculture**,
 - **coral exploitation**,
 - **tourism and transportation**.



Ha Long Bay

In 2006 guidance from the **Quang Ninh Province People Committee** for respecting the historical existence of the present floating fishing villages

- **Involved them in heritage conservation activities;**
- Provide fishermen with **favourable conditions to develop** their economic and culture life on the Bay.
- Plan of **moving fishermen to mainland**, not allow to build more floating houses in the bay without permission;
- Policy to assist house **building on the mainland;**
- A certain number of fishermen allowed to live on the bay for the purpose of **tourism business and preservation of cultural identity** of the floating fishing village;

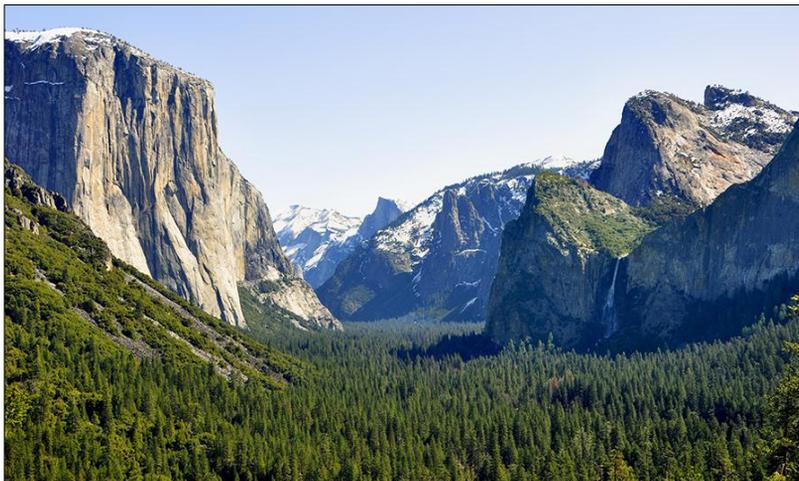
Ha Long Bay, est. 1962



not all MPAs are as 'lived in' as Ha Long Bay

neither are terrestrial PAs...

Yosemite National Park, est. 1864



Yellowstone National Park, est. 1872



Marine Protected Areas

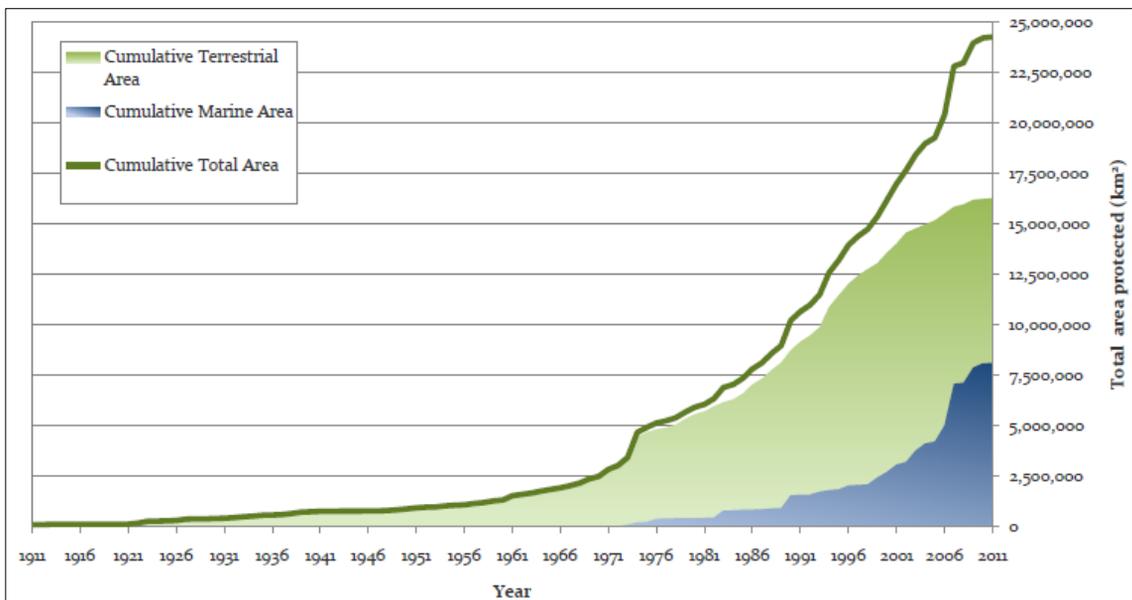
As MPAs are generally considered to be **'unpeopled'** regions their governance should be **much easier** than TPAs...

- **Around 12%** of the world's land surface is protected
- Only about **4%** of the of marine territory is protected
- Why?

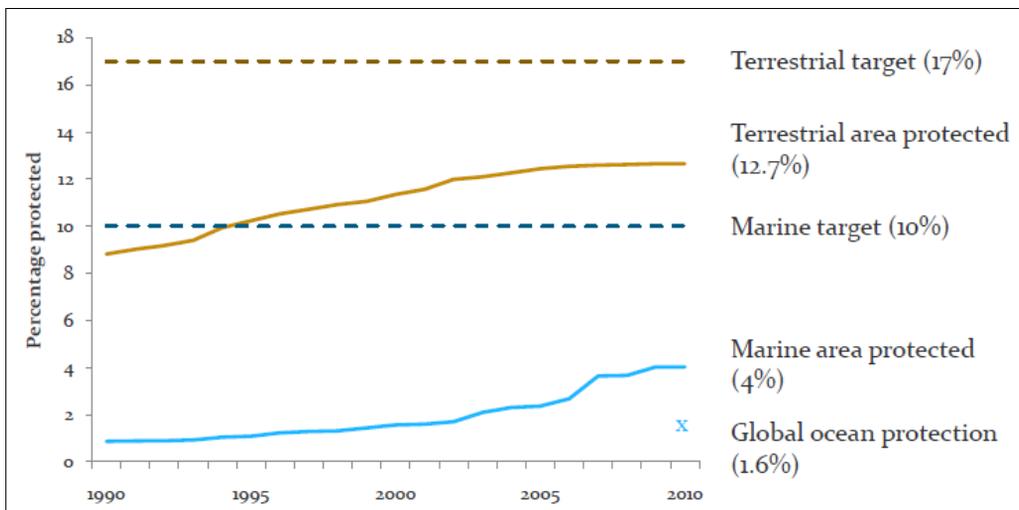
Marine Conservation

The nature of the **marine environment** creates particular problems for conservation

- Until recently the sea was considered as **lifeless and uninteresting**
- Or, even worse providing a **refuge for cold blooded slimy creatures** with little association to terrestrial species
- It has only been in the last few decades that technological advancement has enabled us to **'see' beyond the first few metres** adjacent to our coasts
- However with technological advancement has been the **increasing ability to explore and exploit** the marine system
- Marine conservation is **playing 'catch-up'** to avoid the further over-exploitation of the marine system



Aichi target 11



Numbers

- The **total number** of MPAs now stands at approximately **6000**, covering over 5 million km² of ocean.
- This figure equates to **less than 2%** of the marine area of the world
- focus remains largely on continental shelf areas where MPA coverage is some **4.32%**.
- Off-shelf protection stands at around **1%**.
- fully protected, **no-take areas** cover only a small portion of MPA coverage, while a large proportion of MPAs are ineffective or only partially effective.
- The total ocean area protected has risen by **over 200% since 2003**.

- MPA **coverage is very uneven** and does not adequately represent all ecoregions and habitats important for conservation.
- there is almost a **universal lack of MPA coverage** in offshore waters
- there are major gaps in protection of coastal and continental shelf waters, particularly in **temperate regions**.
- Some **44 coastal ecoregions** have more than 10% MPA coverage but **102 (44%)** have a coverage of **less than 1%**.

Why are there less MPAs?

We **started later**, in all aspects of **biology, designation and management** of MPAs

- First formally recognised TPAs
 - Yosemite **1864**
 - Yellowstone **1872**
- First formally recognised MPAs
 - Glacier Bay **1925**
 - Fort Jefferson **1935**

MPAs at the World Parks Congresses

- 1962 – Seattle – **1 paper**
- 1972 – Yellowstone –referred to in the **regional context**
- 1982 – Bali – series of workshops and recognition for the **‘need for more marine and coastal protected areas’**
- 1992 – Venezuela – emphasising the **links between** terrestrial and marine PAs
- 2003 – Durban – a series of **cross-cutting workshops**
- 2014 – Sydney – **one of four** cross-cutting themes

Guidelines for MPAs

The 1982 Bali workshops led to the publication of:

- **Salm & Clark (1984)**. *Marine and Coastal Protected Areas: A Guide for Planners and Managers*

Other publications included the development of other guides:

- **Kelleher, G & Kenchington, R. (1991)**. *Guidelines for Establishing Marine Protected Areas*. A Marine Conservation & Development Report. IUCN, Gland, Switzerland.
- **Gubbay, S. (Ed.). (1995)**. *Marine Protected Areas: Principles and Techniques For Management*. Chapman and Hall, New York.

Guidelines for MPAs

In 1995, the **landmark report** was published in four volumes, combining knowledge from IUCN, GBRMPA and the World Bank, this detailed report sets out the situation in each of the **18 marine regions** and outlines what further MPAs are needed.

- **Kelleher, G., C. Bleakley, & S. Wells.** (1995). *A Global Representative System of Marine Protected Areas*. 4 volumes. Great Barrier Reef Marine Park Authority, World Bank, and IUCN, Washington, D.C.
- **Kelleher, G.** (1999). *Guidelines for Marine Protected Areas*. IUCN, Gland, Switzerland and Cambridge, UK.

International Meetings for MPAs

- International Conference on **Marine Parks and Reserves** (1976) Tokyo.
 - Guidelines and specific criteria for coastal and marine
- Mediterranean **Regional Sea Meeting** (1980) Athens
 - UNEP – Mediterranean Protocol – first regional seas programme
 - improvement of the **guidelines and criteria** for MPAs
- **1st International Marine Protected Area Congress** (2005) Melbourne, Australia
- **IMPAC 2** (2009) Washington DC, US
 - 1st International Marine Conservation Congress (**IMCC 1**) held at the same time
- **IMCC 2** (2011) Victoria, Canada
- **IMPAC 3** (2013) Marseille, France
- **IMCC 3** (2014) Glasgow, UK
- **IMCC 4** (2016) Newfoundland, Canada

IMPAC 1

Main themes:

- the contribution of MPAs to the **sustainability and resilience** of the oceans
- developing MPA **networks**;
- Assessing **ecosystems processes** and MPA contributions;
- how to **develop and spread** effective management;
- what is the contribution of **shared stewardship** with local communities

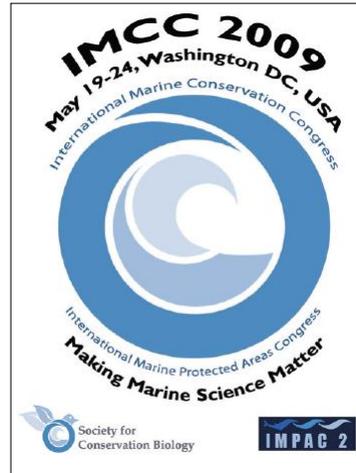


IMPAC1 - Outputs

- Recognition for the need of a **comprehensive and practical guide** for a global system of representative marine sites;
- The development of **marine ecosystem and resource management organisations**;
- Better **recorded and packaged benefits** of MPAs and monitoring of these benefits;
- Have **diverse approaches to managing** marine ecosystems
- Involvement of **stakeholders** as well as governmental agencies, NGOs, business leaders and research organisations

IMPAC2

- coincided with the **first International Marine Conservation Congress, Washington 2009**
- making marine science matter
 - **developing links** between conservation and fisheries
 - looking at the **network development** of MPAs



IMPAC3

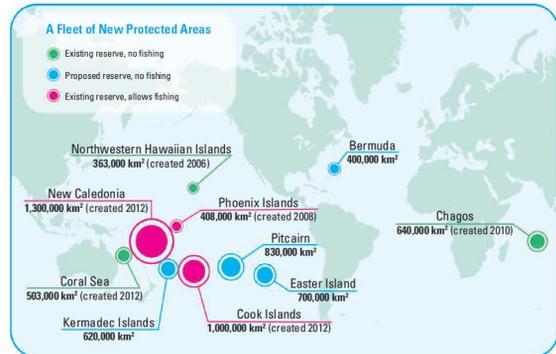
- Exchange MPA planning and management **expertise and know-how**;
- Develop **cooperation and capacity building** among MPAs;
- Promote global and regional **networking**;
- Use the web to **connect stakeholders**;
- Integrate MPAs with the rising **Blue Economy**;
- Foster public interest in MPAs and contribute to the emergence of a **Blue Society**



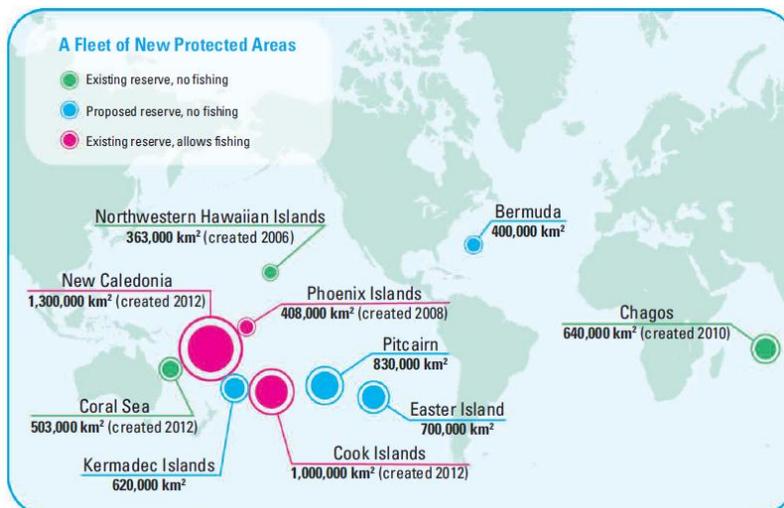
IMPAC3

One of the major features of the congress was the **development of the major MPAs** in remote regions

- Northwestern Hawaiian Islands National Monument
- Chagos Islands Reserve
- Coral Sea MPA
- Cook Islands
- Pitcairn Island
- Easter Island
- New Caledonia



IMPAC3



Pitcairn Islands to get world's largest single marine reserve

UK government gives go ahead in the 2015 budget to a vast marine protected area in the Pacific that's home to more than 80 species of fish, coral and algae

Adam Vaughan

@adamvaughan_uk

Wednesday 18 March 2015 15:56 GMT



< Shares

8,700

Comments

27

Save for later



St Paul's Point, on Pitcairn in the South Pacific, where an 834,000 square kilometre marine area will become protected. Photograph: Alamy

The UK is to establish the world's largest continuous marine reserve in waters around the Pitcairn Islands in the Pacific, the government has said.

Pitcairn island MPA film

<https://www.youtube.com/watch?v=R1-uD1PNOHo>

[3:24]

Motivation for conservation

- tourism?
 - publicity?
 - not good enough for fishery?
 - biological diversity?
- benefit for the local community...

Problems with defining MPAs

IUCN definition

Marine Protected Area

*‘Any area of **littoral or subtidal terrain**, together with its **overlying water and associated flora, fauna, historical and cultural features**, which has been **reserved by law or other effective means** to protect part or all of the enclosed environment’*

(Resolution 17.38: 2b. of the IUCN General Assembly, 1988).

MPA terms

Do We Really Need 50 Ways to Say “Marine Protected Area”?

There has been a **lack of clarity** over the definitions and terms of MPAs and their application globally:

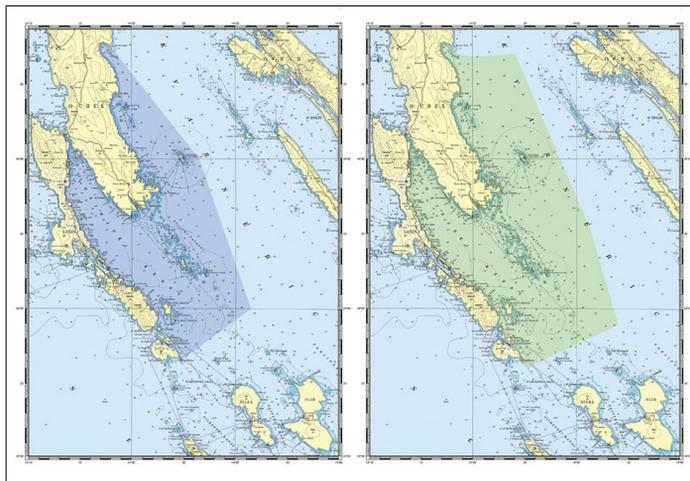
- Marine Park
- **Marine Sanctuary**
- Marine Reserve
- Marine Protected Area
- Marine Refuge
- Marine Monument,
- Marine Managed Area,
- Protected Seascape

Marine reserve

Marine Reserve (also called a no-take zone or area):

*an area of the sea which is **completely protected from all extractive activities**. Within a reserve, biological resources are generally protected through **prohibitions on fishing and the removal or disturbance of living and non-living marine resources**, except as necessary for monitoring or research to evaluate reserve effectiveness.*

Cres-Lošinj Special Marine Reserve



Scovazzi and Tani

- Towards “speaking a common language”, National Marine Protected Areas Center of the United States, **where five functional pragmatic criteria** applicable to most MPAs has been elaborated.
 1. **conservation** focus,
 2. **level** of protection,
 3. **permanence** of protection,
 4. **constancy** of protection,
 5. **scale** of protection.
- The classification system can be applied to a single MPA or to individual management zones established within a larger site.
- It represents the **characteristics** of the area that the MPA was established to conserve and influences **many fundamental aspects** of the site, including its **design, location, size, scale, management strategies** and potential contribution to surrounding ecosystems.

Scovazzi and Tani

- MPAs generally address **many conservation focuses**: natural heritage, cultural heritage, or sustainable production.
- Any MPA, or management zone within a larger marine protect area, can be characterized by one of the **following six levels of protection**:
 1. **uniform** multiple-use,
 2. **zoned** multiple-use,
 3. **zoned** multiple-use **with no-take area(s)**,
 4. **no-take**,
 5. **no impact**, or
 6. **no access**.
- Since **not all MPAs are permanently protected**, the classification system makes the following distinctions: permanent, conditional, or temporary.
- Three degrees of **constancy throughout the year** are provided in the classification system: year-round, seasonal, or rotating.

Category	Description
Ia	Strict Nature Reserve: Protected Area managed mainly for science
Ib	Wilderness Area: Protected Area managed mainly for wilderness protection
II	National Park: Protected Area managed mainly for ecosystem conservation and recreation
III	Natural Monument: Protected Area managed for conservation of specific natural features
IV	Habitat/Species Management Area: Protected Area managed mainly for conservation through <i>management intervention</i>
V	Protected Landscape/Seascape: Protected Area managed mainly for <i>landscape/seascape</i> conservation and recreation
VI	Managed Resource Protected Areas: Protected Area managed mainly for the <i>sustainable use</i> of natural ecosystems

Application of IUCN Categories to MPAs

IUCN categories are **explicitly designed to cover both** terrestrial and marine environments

- **Less concentration** has been on the **application of IUCN categories** than getting MPAs designated;
- IUCN **definition appears to apply to terrain** rather than waters;
- Reference to fauna and flora is too **restrictive** for marine systems;
- **Limited state of knowledge** about marine ecosystems;
- Perceptions that **marine resources are limitless** and protection is unnecessary;
- most marine resources **do not stay within imposed** administrative boundaries;
- only a small portion of marine space lies within the clear jurisdiction of States and dependencies

IUCN Categories

However, the dichotomy between the systems raises the issues:

- To create a **new category system** for marine systems?
- many multiple use MPAs have **zones with differing IUCN categories**
- **Property rights** are significantly different in the Marine system
- However, there are concern that separating the two systems will reduce MPAs to **less importance** than terrestrial PAs.

MPAs by IUCN Category

IUCN Category	Number of Sites	Total Marine Area (km ²)	Proportion of global ocean area (%)
Ia	419	189 439	0.05
Ib	49	5 916	0.00
II	666	279 654	0.08
III	133	3 819	0.00
IV	1 494	305 329	0.08
V	571	73 279	0.02
VI	159	809 354	0.22
No category	625	66 400	0.02
	4 116	1 639 065	0.45

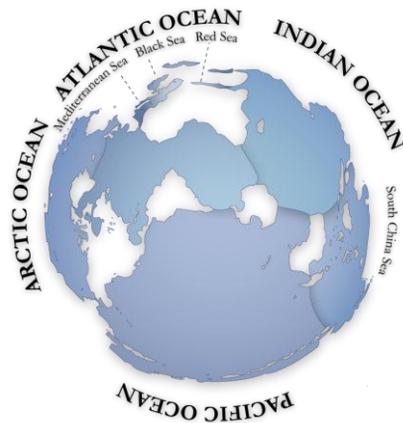
The numbers have been corrected to avoid the problem of double counting where designations overlap, hence the sum of the individual categories gives a slightly higher total than the actual total figures provided here (After Mulongoy & Chape, 2004: 29)

Ecological attributes of the marine environment

Ecological Differences

Wide spatial scale

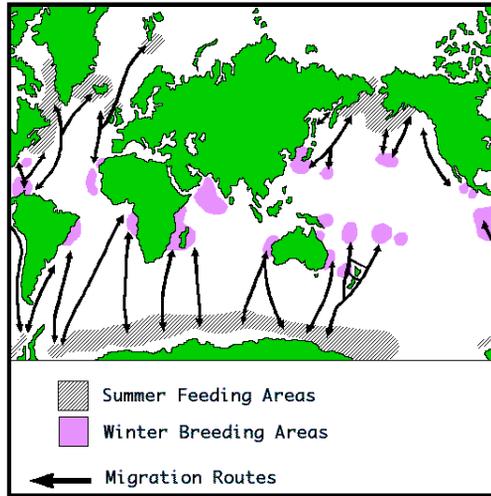
- 70% of the earth is water,
- 90% of liveable habitat,
- Oceans are inter-connected
 - Pacific (165.2m² (32% of earths surface))
 - Atlantic (20%)
 - India (20%),
 - Antarctic (1.6%)
 - Arctic (1%)*



Ecological Differences

Connectivity

- sites may be recognised as important for certain species, known as **critical habitats**, particularly for endangered species

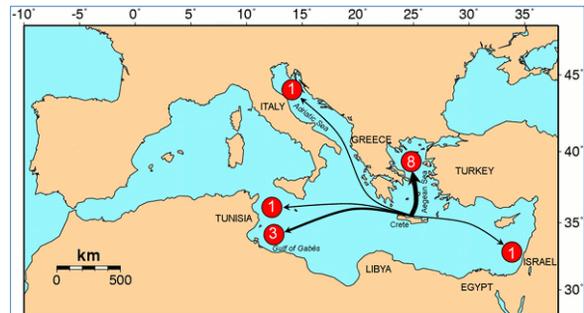


Humpback Whale Migration

Ecological Differences

Connectivity

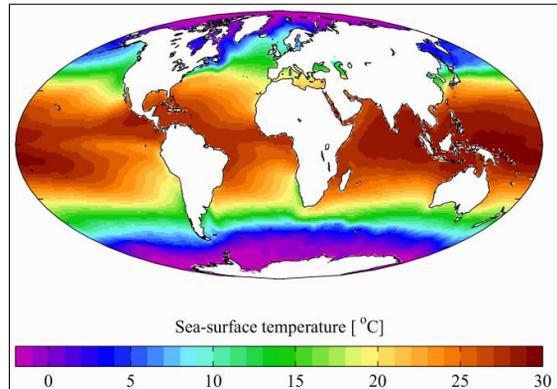
- Turtles - **Nesting** sites for turtles - Med - Greek islands of Zachnythos - **Overwintering** sites - Med - northern Adriatic or the Gulf of Gabes, Tunisia
- Fish - **Spawning** areas for fish congregations – Mangroves, Deep water or Shallow waters,
- E.g. Tuna - **international agreements** for conservation



Ecological Differences

Indistinct boundaries

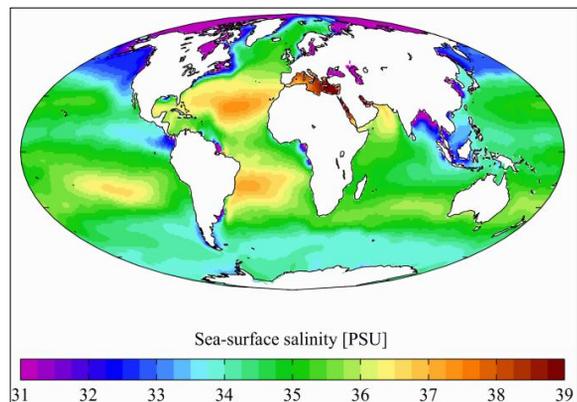
- **Gulf stream** running from the Gulf of Mexico, influences the climate of the east coast of North American and the west coast of Europe.
- Gulf stream is wind influenced, where as the **North-Atlantic Drift** is driven by water density – thermo-haline



Ecological Differences

Indistinct boundaries

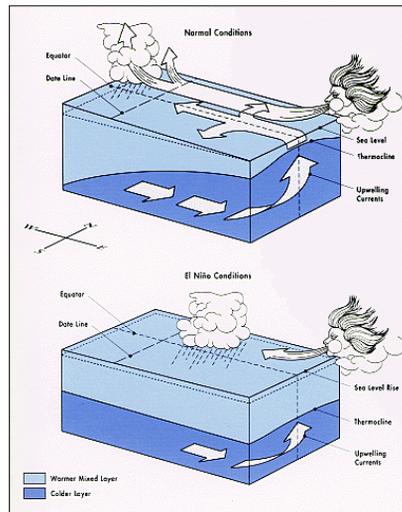
- the rate of **water evaporation** in the Sargasso is faster at its centre than at the surrounding waters generates an inward current
- important in the **migration** of the European eel and the American eel.



Ecological Differences

Variability

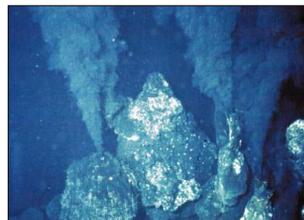
- **El Niño-La Niña** - Change of 0.5°C across the central tropical Pacific Ocean
- Changes in **sea temperatures**
- Bench marks
 - **Shifting baselines**
- natural **changes to migration patterns**



Ecological Differences

Variability

- Although areas such as the abyssal plain maybe **homogenous** and with little biological diversity, other areas, for instance inshore areas have **huge variations**.
- There are a **wide range of niches** that are affected by **wide range of natural and anthropogenic influences**.
- **Non-linear populations** associated with natural fluctuations in the environment, therefore it becomes **difficult to identify what is natural** and what is anthropogenic



Management

Naturalness

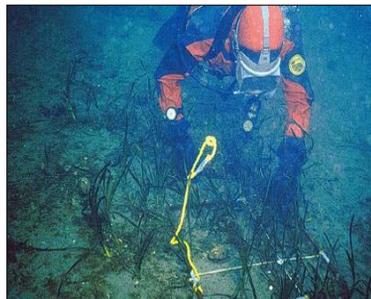
- No '**positive management**' to restrain climax vegetation to maintain biodiversity
- the aim of MPAs is to **limit negative interaction** rather than have positive intervention that can be seen in certain terrestrial systems



Management

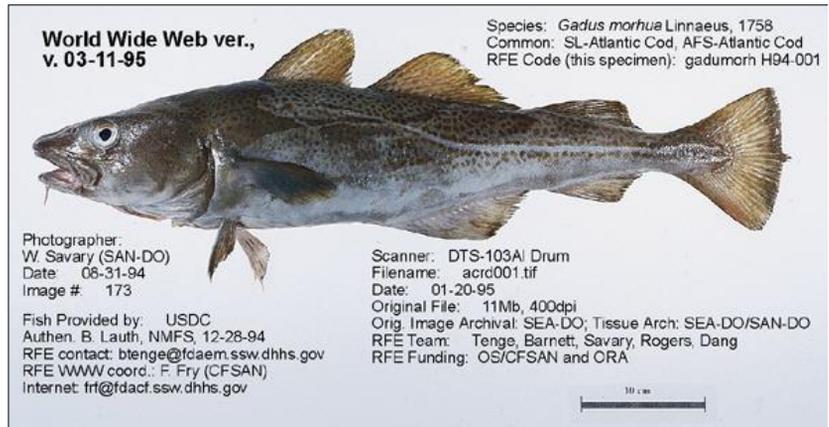
Alien Nature

- Humans are not suited to work in the water
- Logistics & Finances
- Running marine research takes time and money
- Uncertainty
- Take dolphins for example
 - Or, turtles...



Uncertainty

- New England cod fisheries
- Blue fin tuna fishery
- Whaling



Predictability

- Lack of **knowledge** can drive users to over-exploit
- Difficult to **allocate effort**, time and/or money
- **Complexity** of natural systems makes this even more difficult
- Drive for better technology to **'see'** into the depths

Mobility of resources

Many animal species have extensive home-ranges or migration patterns. Invariably it is these species that are of **major conservation importance** hence, this may question the applicability of local resource management systems.

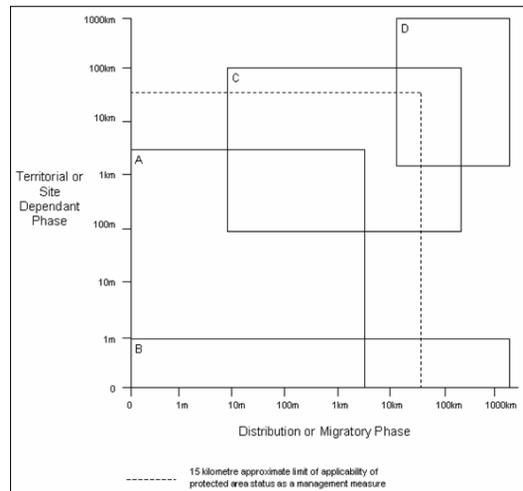
- Increased **mobility** reduces the ability of the users to control catch
- More time '**searching**' for the resources
- The absence of **physical boundaries** enables free movement of both resource users and resource units within, and through the system.

Mobility of resources

Mobility of different life stages of populations

- the relationship between **marine organism life cycles** and **site specific** management strategies.
- global scale of protection is required to protect migrating cetacean species
- also a problem for **research and conservation**

(Kenchington, 1990).



Management

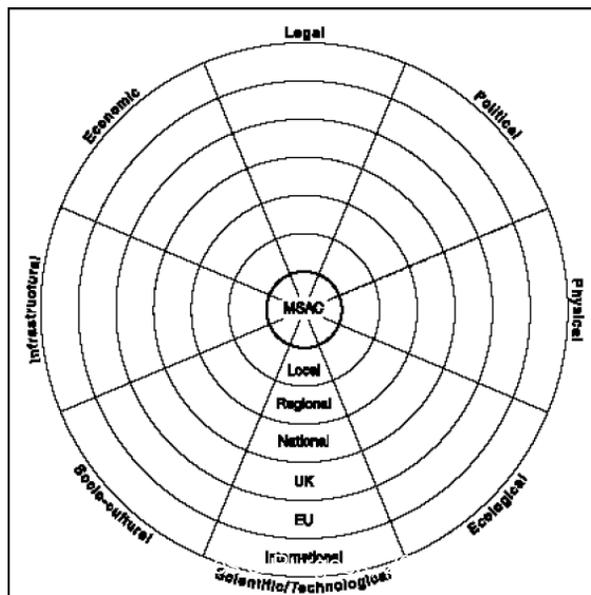
Multiple Levels

- Local
- County
- National
- Regional
- International

Multiple Jurisdictions

- Environment
- Tourism
- Fishery
- [power] Extraction
- Defense

Management



Management

Overlapping areas for traditional and new users, on land all use tends to be planned and separated either in time

- Traditional users
 - Fishery
- 'New users'
 - Tourism
 - Recreation



Appropriators / Users

- Multiple-use MPAs have categories of users:
 - Primary
 - Secondary
 - Tertiary

Primary users

- those **communities living closer** to MPAs will generally have an interest in their management, and in many cases will seek to develop and maintain by themselves adequate **institutional arrangements** for the sustainable appropriation of critical resources
 - Less likely to have **access to other resources**
 - Greater **knowledge and understanding** of the resource
 - **Organic link** between users and the resource
 - Related to **identity and emotional** attachment

Secondary users

- those who have an instrumental interest in appropriation of resources from the MPA yet hold no **intrinsic interest** in the **sustainability** of the resource system over the long term
- Those that **live within the community**, but do subscribe to collective action
 - Poachers, thieves or **'free-riders'**
- Those that **live outside the community**

Tertiary user

- have an instrumental interest in **the consumption** of resources, but are concerned neither with **direct appropriation nor with the resource stock**
- Within this category **market traders** and consumers that have **little interest in the origin** and the processes involved in appropriating the resource and **unaware or indifferent to the sustainability** of the resource.

Example

- Primary
 - Local artisanal fishermen
- Secondary
 - Industrial fishermen
- Tertiary
 - Long-distance consumer



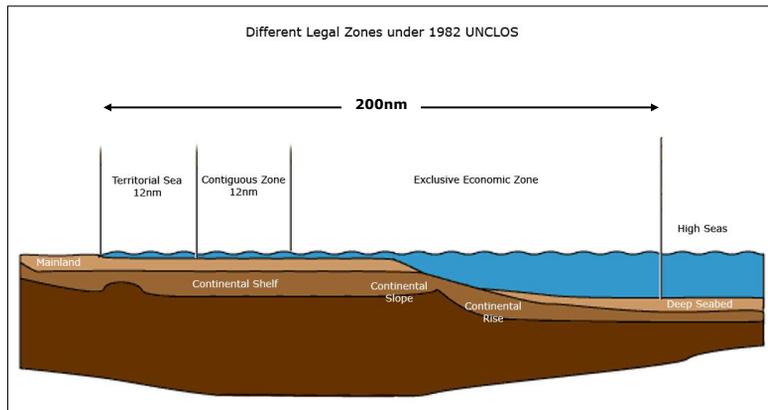
The law

Customary Access and Use Rights

Historical development of protected areas based on terrestrial ecosystems:

- Historical right of access - Customary International Law
 - Hugo Grotius (1609) – ‘mare liberum’
 - John Seldon (1635) – ‘mare clausum’
 - Van Bynkershoek (1703) – high seas & sovereign seas

Historical rights



Tenure

- Whereas we have **no difficulty** organizing our thinking around concepts like **patterns of land use** and systems of land tenure
- comparable phrases relating to marine resources—**“sea use”** and **“sea tenure”**
- have an odd ring to them. Why is this the case?
 - There is **little history** of private property
 - Only **limited experience** with public property

MPA objectives

MPA objectives

- often protected areas have **multiple objectives**
- the marine environment, at least at the near-shore area is often **utilised by multiple users**
- there is a need to **separate these users** in time and space
- the development of MPAs are often seen as the **solutions to this problem**
- **but**, we can outline 10 general objectives:

MPA objectives

Protect **rare and vulnerable** habitats and species

- Extinction is **believed to be rare** in marine habitats, due to connectivity and the extent of habitats, however **specific populations** of species may be placed under threat.
- Examples: **fish stocks of NW Atlantic and great whales**. Loss at local level may lead to fragmentation of a population and greater vulnerability

MPA objectives

Conserve a **representative set** of habitats

- A **structure orientated approach** to conservation. Effort is placed on **conserving examples of bio-geographical** regions.
- Often emphasis is placed on the development of PA networks
- Difficulty in accurately defined habitat types due to the **expenses and time-consuming** nature of mapping

MPA objectives

Maintain or restore ecological functions

- **Process oriented approach** to conservation.
- **Intrinsic value** of coastal and marine ecosystems, however this is closely related to **perceived importance** of marine system in society.
- Returning the environment back to its previous '**pristine**' condition, where is the baseline?

MPA objectives

Promote research and education

- **Control sites or bench marks** with which to assess the degradation of other areas comparatively.
- May also be used to increase **public awareness** and inspire.

MPA objectives

Harvest refugia

- no take MPAs or 'marine reserves'
- calls are increasing due to the fears of the **sustainability** of many fisheries.
- help **replenish stocks**;
- provide an '**insurance**' policy;
- protect **critical habitats**, especially spawning areas.
- however, there are **problems with assessing** their effectiveness.

MPA objectives

Control tourism and recreation

- **Increasing pressure of recreational and tourism use** of the near-shore areas.
- Impacts of divers on **sensitive coral reef areas**, as these areas are often 'hot-spots' of biodiversity.
- identifying **future uses and threats** to biological diversity

MPA objectives

Promote integrated coastal management

- Used as means to **apply management of users** to an area
- Or to **coordinate management** of marine and adjacent terrestrial area, especially in areas of population growth
- To **stop downstream effects** of land-based pollution

MPA objectives

Maintain aesthetic values

- Seascape and marine **wildlife perspective** and **related tourism opportunities**

MPA objectives

Maintain traditional uses

- Provide for the **continuation of traditional practises** in the face of globalisation and increasing external market forces.
- Particularly in communities that are **reliant on seafood for primary protein** intake.
- However, **not all traditional cultures** have the feature of **sustainable use**.

MPA objectives

Cultural symbolic value of set-aside areas

- Moral conviction that **it is right to 'set aside' areas** to preserve related to the **'stewardship'** aspect of human responsibility for future generations
- often applied in **traditional communities**
- the **codification of traditional set-aside areas** into governmental policy and law

Defining objectives

requirement is for a **clear statement** of the goal or multiple goals for which the protected areas are intended;

- To protect **endangered species**;
- **Biodiversity in general**;
- For **sustainable exploitation**;
- To establish 'no-take' zones.

The MPA paradigm

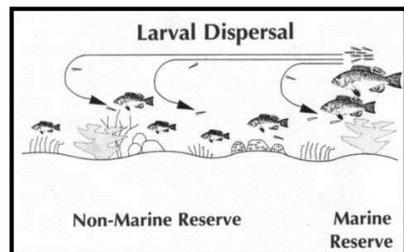
The MPA paradigm

- Historically developed for the **major uses of the sea**, particularly the management of fisheries
- Present and Future – **management of all activities**
 - Fishery
 - Tourism
 - Recreation
 - Extraction
- **Contemporary MPA types** fall into three main forms:
 - No take areas
 - Site specific
 - Multiple use

No take MPAs

Biological results

- Protect spawning and nursery areas for commercial fish species
- enhance fisheries in surrounding areas by spill-over effect
- provide safe havens for endangered or depleted species
- encourage the recovery of functioning natural ecosystems and ecosystem processes
- provide an 'insurance policy' against uncertainty and errors in fishery management



No take MPAs

- excellent biological results
- positive effects for tourism
- In 2006 National Monument of the Northwest Hawaiian Islands larger at 140,000 square
- however negotiations are still ongoing, particularly the buy out of fishers by NGOs led by the Pew



No take MPAs

Location	Size/km ²	Estd.	Conservation evidence
Edmonds Underwater Park, Puget Sound Washington	0.1	1970	Fish numbers inside reserve 15 times greater than at fished sites (Palsson and Pacunski, 1995)
Isle of Man	2	1989	Scallop populations increased from <math><2/200\text{m}^2</math> to $15/200\text{m}^2$ between 1989 and 2000 (Bradshaw <i>et al.</i> , 2001) Denser kelp beds with greater species diversity.
Cape Rodney to Okakari Point Marine Reserve, New Zealand	5.5	1975	13 years after establishment, abundances of snapper, blue cod, red moki, rock lobster all increased (Cole <i>et al.</i> , 1990). Snapper eight times more abundant within reserve than outside and averaged ~100% greater length (Babcock <i>et al.</i> , 1999). Rock lobster population 280% greater inside reserve eight years after protection (Kelly <i>et al.</i> , 2000).
Various, New Zealand	N/A	3-14 years ago	Rock lobster populations increased by 40% (Kelly <i>et al.</i> , 2000)
Maria Island, Tasmania	7	1991	Over six years: 240% rise in numbers of large fish 260% increase in rock lobster numbers (Edgar and Barrett, 1999)
Lamlash Bay, Arran	7.9	N/A	N/A
Georges Bank, USA	17,000	Dec 1994	Scallop biomass increased 14-fold within closed area over a five year period (Murawski <i>et al.</i> , 2000)

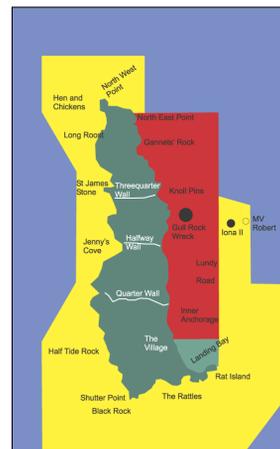
Site specific

- Static systems
 - Coral reefs
- Migratory Species
 - Critical habitats
- Cultural
 - Ship Wrecks



Multiple Use MPA

- Generally larger areas
 - Multiple users
 - Multiple uses
- Lundy Island
 - Red – No take zone
 - Yellow – Refuge area
 - Green – Recreational
 - Black – Site Specific
 - Blue – General Use

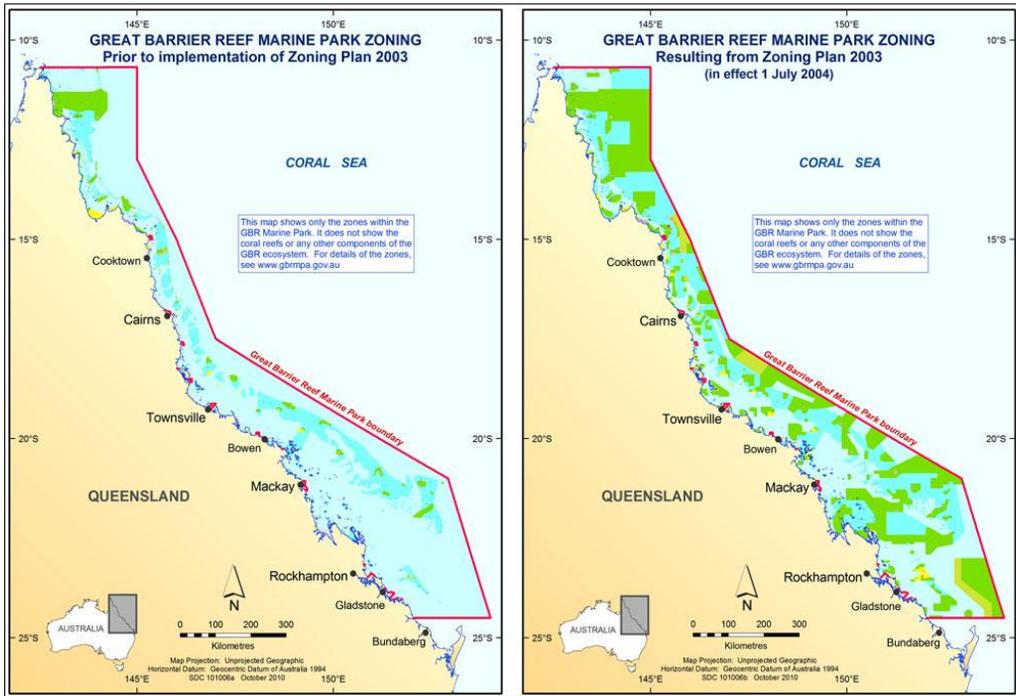


Great Barrier Reef MPA

- The GBR provides **habitats for many diverse forms** of marine life.
- It includes some **2 800 individual reefs**, of which 760 are fringing reefs
- There are an estimated **1 500 species of fish** and more than **300 species of hard**, reef-building corals.
- More than **4 000 mollusc species** and over **400 species of sponges** have been identified.

Great Barrier Reef MPA

- The extensive **seagrass beds are an important feeding ground** for the dugong, a mammal species listed as endangered.
- The **reef contains nesting grounds** of world significance for the endangered **green and loggerhead turtles**.
- It is also a **breeding area for humpback whales**, which come from the Antarctic to give birth to their young.
- The **islands and cays support several hundred bird species**, many of which have breeding colonies there. Reef herons, osprey, pelicans, frigate birds, sea eagles and shearwaters are among the numerous sea birds that have been recorded.

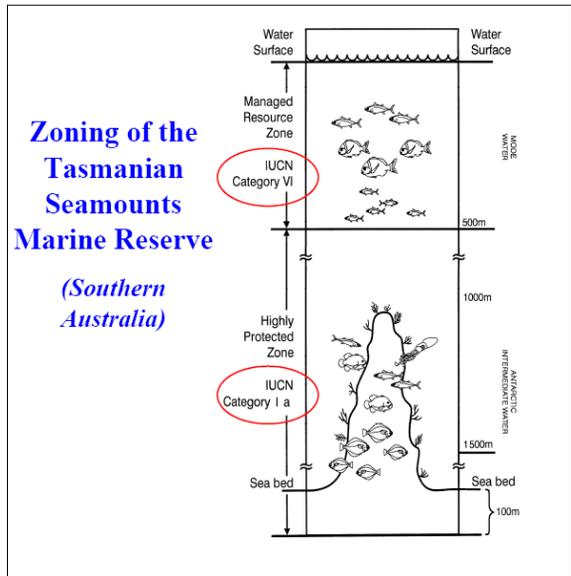


Great Barrier Reef MPA

Zone Type	Equivalent IUCN Category ¹	Area (km ²)	Area (hectares)	% of GBRMP
Preservation	IA	710	71000	<1
Marine National Park	II	114530	11453000	33
Scientific Research	IA	155	15500	<1
Buffer	IV	9880	988000	3
Conservation Park	IV	5160	516000	1
Habitat Protection	VI	97250	9725000	28
General Use	VI	116530	11653000	34
Commonwealth Islands ²	II	185	18500	<1
Total		344400	34440000	100

Vertical Zoning

- multi-dimensional environment
- protection of different layers of the water column
- protection of the sea-bed



The first MPAs

- In many cases '**unofficial MPAs**' have been in place for many centuries,
- many **traditional fishing communities** have created **collective rules** to limit the over fishing of certain areas.
- What in the past have been deemed as **traditional fishing exclusion areas** are now regarded as managed areas.

First MPAs – Glacier Bay, Alaska, est. 1925



Glacier Bay, est. 1925

- Glacier Bay National Monument, Alaska, 1925
 - Doubled in size in 1939
 - National Park Designation in 1980 and further extension
 - Glacier Bay-Admiralty Island Biosphere Reserve 1986
 - International World Heritage Site 1992
- In 2003 about 350,000 people visited the National Park and Preserve.



Fort Jefferson, Florida Keys, est. 1935



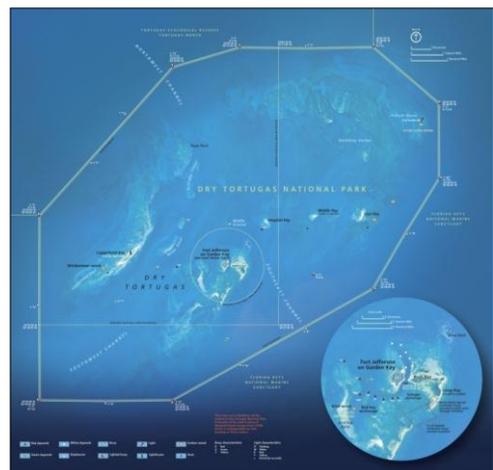
First MPAs

- The Tortugas were first 'discovered' by the Spanish conquistadors in 1513.
- The reefs and shoals of the Dry Tortugas have been a serious hazard to navigation and the site of hundreds of shipwrecks.
- Fort Jefferson National Monument and surrounding waters 1935
- Dry Tortugas National Park 1992



Dry Tortugas National Park est. 1992

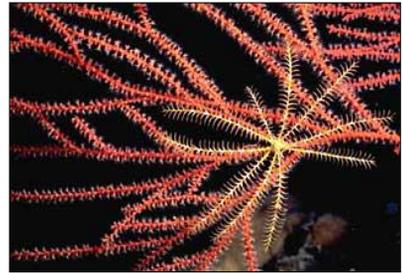
- Extension of the Dry Tortugas National Park, 2006, 190.71km²
 - Total land area: 0.42 km²
- The Marine Natural Resource Area, 120km²
 - Bans all fishing, even recreational
- Bordered by Florida Keys National Marine Sanctuary and Tortugas Ecological Reserve



Exuma Cays, Bahamas, est. 1958

- Considered to be the first self-conscious submarine MPA

'The Exuma Cays Land and Sea Park, the first of its kind in the world, is famous for its pristine beauty, outstanding anchorages and breathtaking marine environment. Under its transparent turquoise waters are beautiful natural gardens of coral teeming with fish and lobster'



Exuma Cays, Bahamas, est. 1958

- Bahamas National Trust established to oversee the park
- Development of SCUBA equipment in 1940s and 1950s
- Since 1986 the waters of Exuma Cays have been managed as a no-take marine fishery reserve.
- This has allowed populations of commercially important species such as
 - Queen conch
 - Nassau grouper
 - Spiny



Exuma Cays, Bahamas, est. 1958

- a comparison of population structure of the commercially important, queen conch, was made between a fished area and the reserve in the Exuma Cays
 - There were **31 times more adult conch** on the shallow (-5 m) Great Bahama Bank
 - on the island shelf in the Exuma Sound, mean adult density was higher by as much **as 15 times**.
 - Total larval densities in the reserve were frequently an order of magnitude higher than those found in the fished area, and densities of late-stage larvae were 4 to 17 times higher.

What links these early examples?

- Initially designated with **terrestrial landscape** concept in mind
- **Later developed into more marine** orientated management
- Subsequently, many have become **more known** for their marine biodiversity than their terrestrial landscape

Recent news

- The designation of the Ross Sea MPA:
 - <http://news.nationalgeographic.com/2016/10/ross-sea-marine-protected-area-antarctica/>
- Expansion of Papahānaumokuākea marine national monument
 - <https://www.theguardian.com/environment/2016/aug/26/obama-to-create-worlds-largest-protected-marine-area-off-coast-of-hawaii-papahanaumokuakea>

MPA networks

Peter Mackelworth

There are multiple PA networks operating in the European-Mediterranean region, these three are significant for MPAs in the Adriatic:

1. European – Natura 2000
2. Mediterranean – MedPAN
3. Adriatic – AdriaPAN

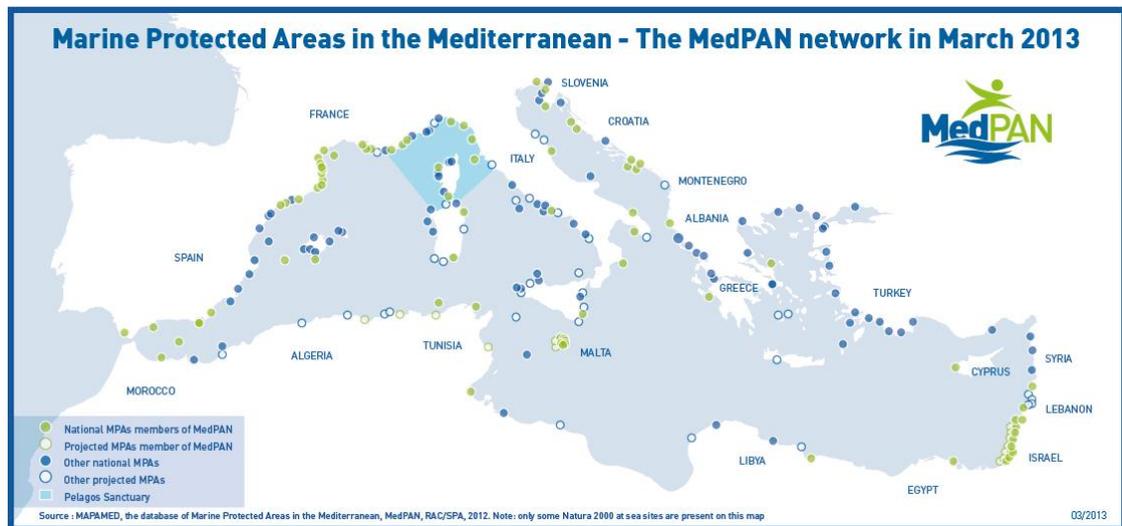
Marine Natura 2000 sites

The marine environment represents one of the **significant gaps** in the Natura 2000 network

- recognised due to the **knowledge gaps** that exist for the distribution of habitats and species
- requirement to **develop a common strategy** for identifying marine sites
- Applies to waters where Member States **exercise sovereign** rights:
 - territorial waters
 - EEZ (and other protection zones)
 - continental shelf

MedPAN

- <http://www.medpan.org/>
- more than 50 members and 31 partners willing to contribute to the creation and strengthening of the network.
- These actors manage more than 80 MPAs in 18 Mediterranean countries.
- The network exists since the 90s. It is run since 2010 by the MedPAN association, a permanent structure with dedicated funds established in late 2008.



AdriaPAN

- <http://www.adriapan.org/index.php/en/>
- A bottom-up network of MPAs in the Adriatic Sea
- Initiated by 2 Italian MPAs, Miramare and Torre del Cerrano.
- The aim is to make contacts between PAs in the Adriatic easier
- To improve their partnership effectiveness, both in management and planning activities.



AdriaPAN

- Originally 10 Italian Protected Areas, both marine and coastal, signed the Cerrano Charter, the founding act of **AdriaPAN**.
- Now has **40 members** from all countries bordering the Adriatic Sea, and more than **30 associated organizations (institutions, NGOs, businesses, etc.)** interested in collaborating on AdriaPAN initiatives.



Law of the sea

Peter Mackelworth

- When planning the establishment of a MPA, **the first step** should consist in identifying all the issues –
 - environmental
 - social
 - economic
 - institutional
 - and **legality**...

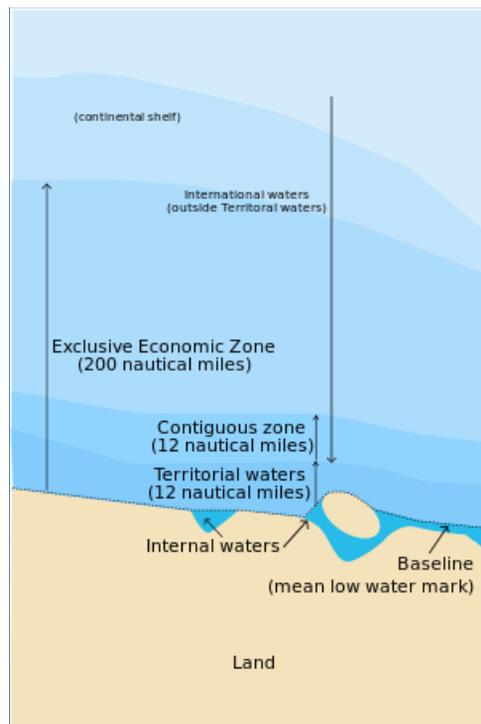
Introduction

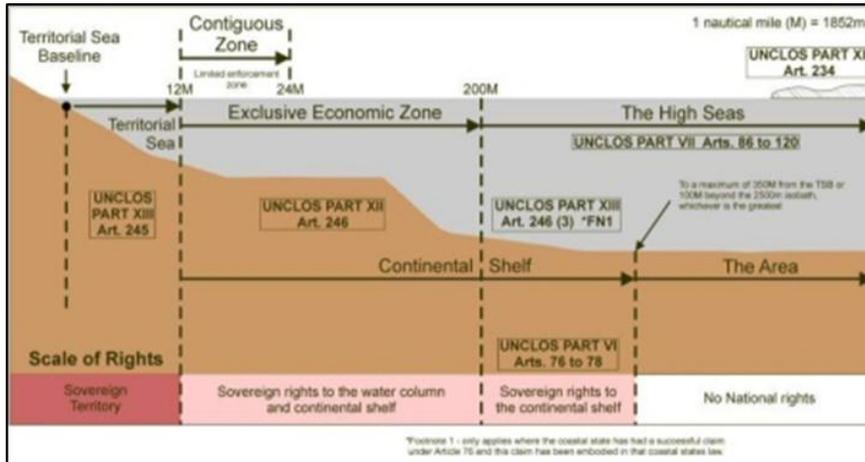
1. customary law

2. law as **unilateral** decisions
3. law as **multi-party** agreements

- **Maritime areas:**

- Baselines
- Territorial Sea
- Contiguous Zone
- Exclusive Economic Zone
- Continental Shelf
- High Seas
- The Area
- Archipelagic Waters
- International Straits





Property Rights

- History
- **Sources of the law** of the sea
- Codification
 - The **Hague Codification Conference** of 1930
 - United Nations Conferences on the Law Of the Seas I (**UNCLOS I**) **1958**
 - **UNCLOS II** **1960**
 - **UNCLOS III** **1973-1982**

History of the law of the sea

- The development of the **law of the sea** cannot be separated from the development of international law in general.
- The **modern law of the sea** dates to the beginning of modern international law in the middle of the 17th century.
 - However there are **examples of agreements** between adjacent states over the use of natural resources

1493-1929

Bilateral **agreements and disagreements**

- **Spain and Portugal**
 - Columbus and Dias
 - 1494 **Treaty of Tordesillas**
 - Pope Alexander VI
- **Holland and England**
 - Hugo Grotius
 - John Selden
 - Cornelius van Bynkershoek

1494 Treaty of Tordesillas

- In the 15th and 16th centuries claims were laid by the **powerful maritime states, especially Portugal and Spain**:
 - **Portugal** claimed **maritime sovereignty** over all of the **Indian Ocean and a part of the Atlantic**.
 - **Spain** claimed rights over the **Pacific** and the **Gulf of Mexico**.
- The division of the seas and oceans in the **Treaty of Tordesillas** was **approved by the Pope**

Customary rights

Hugo Grotius (1609) – '*mare liberum*'

- **Dutch lawyer** who is considered to be the **father of international law**, is regarded as the father of the law of the sea as well.
- Grotius was one of the first to **criticise claims to sovereignty** over high seas in his seminal work on the subject - ***The Freedom of the Seas (1609)***:
- the sea should be **free and open to use by all countries**. His argument was based on two grounds:
 - No sea or ocean can be the property of a nation because it is impossible for any nation effectively to take it into **possession by occupation**
 - Nature does not give a right to anybody to **appropriate things that may be used by everybody** and are exhaustible

Customary rights

John Seldon (1635) – '*mare clausum, seu de dominio maris*'

- English **barrister**, philosopher and politician, particularly interested in the rights of the commoner in English law
- In reply to Grotius and to limit the **Dutch fishing in English waters** his thesis was published 15 years after being originally written. Two main arguments:
 - by the nature of the sea it is not accessible and **not all men are capable** of private dominion or ownership of the sea as they can on land
 - the dominion of the British Sea, or that area which encompasses the Isle of Great Britain is a **part of the Empire** of that Island.

Customary rights

Cornelius van Bynkershoek (1703) – '*de domino maris*'

- a **Dutch lawyer** who also worked in the law of war
- he sought a **practical solution** to the **ongoing argument** forwarded by Grotius and Selden
- his **two main arguments** were:
 - a nation can only realistically control the **sea near to its shore**
 - control can only be **maintained by force** and that is determined by the distance of a cannon shot, 3nm.

Other agreements

- 1774 Russia – Turkey on **Perpetual Peace and Amity**
- 1884 Paris Convention for the **Protection of Submarine Cables**
- 1888 Convention on the **Free Navigation** of the Suez Canal
- 1903 Panama – USA Convention for the **Construction of a Ship Canal**
- 1907 Convention concerning the Rights and Duties of **Neutral Powers in Naval Warfare**
- 1907 Convention relative to the Laying of **Automatic Submarine Contact Mines**
- 1910 Brussels Convention for the Unification of certain Rules relating to **Assistance and Salvage at Sea**
- 1923 Geneva Convention and Statute on the **Regime of Maritime Ports**

1. **customary law**

2. law as **unilateral** decisions

3. law as **multi-party** agreements

Agreements: International Law

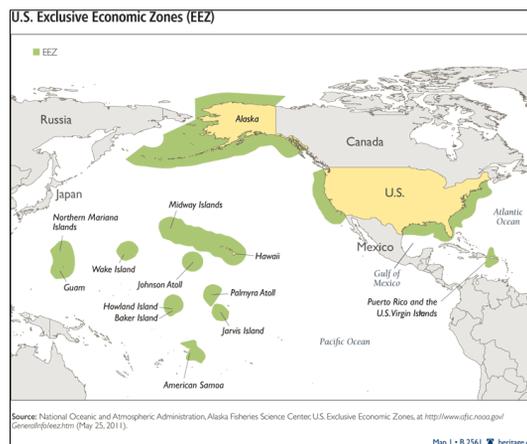
the **Hague Convention** on International Law (1930)

- precursor to the **United Nations Conventions on the Law of the Sea (UNCLOS)**
- unable to adopt a convention concerning territorial waters as no agreement could be reached on the question of the **breadth of territorial waters** and the problem of the **contiguous zone**
- There was some measure of agreement regarding:
 - the **legal status of territorial waters**,
 - the **right of innocent passage**
 - and the **baseline** for measuring the territorial waters

Unilateral decisions

US President Truman proclamations, 1945

- **#2667** Natural Resource of the **Subsoil and Seabed** of the Continental shelf
- **#2668** **Coastal Fisheries** in Certain Areas of the High Seas



Unilateral decisions – Truman proclamations

- #2667 Natural Resource of the **Subsoil and Seabed** of the **Continental shelf**

*'having concern for the urgency of **conserving and prudently** utilizing its **natural resources**, the Government of the United States regards the natural resources of the **subsoil and sea-bed of the continental shelf** beneath the **high seas** but contiguous to the coasts of the United States as appertaining to the United States, **subject to its jurisdiction and control**'*

Unilateral decisions – Truman proclamations

- #2668 **Coastal Fisheries** in Certain Areas of the High Seas

*'In view of the pressing need for **conservation and protection of fishery resources**, the Government of the United States regards it as proper to establish **conservation zones in those areas of the high seas** contiguous to the coasts of the United States wherein fishing activities have been or in the future may be developed and maintained on a substantial scale. Where such activities **have been or shall hereafter** be developed and maintained by its nationals alone, the **United States regards it as proper to establish explicitly bounded conservation zones** in which fishing activities shall be **subject to the regulation and control of the United States**'*

Unilateral decisions – Humboldt current

Mexico, 1945:

- Jurisdiction over **continental shelf mineral & fishery** resources

Argentina, 1946:

- Sovereignty over the **continental shelf and the overlying sea**

Peru 1947:

- established a **zone 200 nm wide**



Unilateral decisions – Humboldt current

Chile, 1947:

- sovereignty over **submarine areas**, regardless of their size or depth, as well as over the adjacent seas **extending as far as necessary** to reserve, protect, maintain, and utilize natural resources and wealth
- **protection zones for whaling and deep sea fishery** to extend to 200 nautical miles from the coasts



Unilateral decisions

- A succession of unilateral declarations were adopted by ten **Arab States and emirates** in **1949**
 - Saudi Arabia, Bahrain, Qatar, Abu Dhabi, Kuwait, Dubai, Sharjah, Ras al Khaimah, Umm al Qaiwain, and Ajman.
- The declarations proclaimed sovereignty particularly over the **petroleum resources** on the continental shelf; they had in common the following aspects:
 - jurisdiction over the **sea-bed and subsoil**;
 - an affirmation of the **regime of the high seas**, the freedoms of navigation and overflight
 - delimitation effected on the basis of **equitable principles**.

Multilateral agreement

1952: The Santiago Declaration

- the **first international instrument** to proclaim a **200 nautical mile limit**
- sole sovereignty and jurisdiction over the area of sea adjacent to the coast of its own country and **extending not less than 200 nautical miles** from the said coast
 - Chile, Peru, and Ecuador
- Right of **innocent passage**, rather than **freedom of navigation** was explicitly acknowledged

- by 1970 **ten Latin American States** had declared sovereignty over 200nm from their coast

United Nations Conferences on the Law of the Sea (UNCLOS)

Codification

- Generally there was a **mess of customary law and unilateral declarations** with states using various forms of legislation for the control of the natural resources from the sea and seabed
- The Hague Conference (1930) **failed to codify** a form of consistent regulation, however certain rights were maintained
 - the right to **maintain a territorial sea**
 - **baselines** of territorial seas were set
 - **right of innocent passage** was confirmed

UNCLOS I, 1956

UNCLOS I, 1956 (8), Geneva

1. Convention on the **Territorial Sea and Contiguous Zone**
2. Convention on the **Continental Shelf**
3. Convention on the **High Seas**
4. Convention on **Fishing and Conservation of Living Resources** of the High Seas

Convention on the Territorial Sea and Contiguous Zone

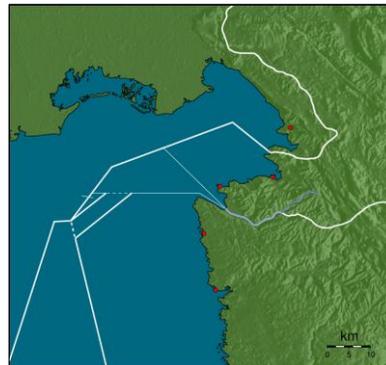
Entry into force: 10 September 1964

- **Includes airspace**
 - submarines required to come to the surface to navigate and show their flag
- Baseline is the **low-water line** along the coast
 - Indentation or islands – baseline
- Contiguous zone may **not go beyond 12nm** from the baseline



Convention on the Territorial Sea and Contiguous Zone

- **Median line** will be taken by states **adjacent or opposite** to one another
- Ships have right of **innocent passage**
- One State cannot **cut another off** from international waters



Convention on the Continental Shelf

Entry into force: 10 June 1964

- **Continental shelf defined** – at a depth of 200m
- The Coastal state has **exclusive exploitation** rights
 - **Mineral**
 - **Non-living** resources
 - **Sedentary species** within or on seabed
 - requirement to **remove structures** after use
 - rig and platform removal following decommissioning
- If two adjacent states are less than 400nm apart **the Median line applies**

Convention on the High Seas

Entry into force: 30 September 1962

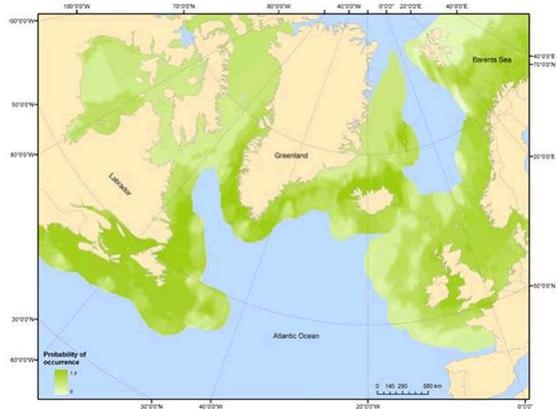
- **“high seas”** are defined as those areas **not included** in the territorial sea or the internal waters of a State
 - **Freedom** of navigation;
 - **Freedom** of fishing;
 - **Freedom** to lay submarine cables and pipelines;
 - **Freedom** to fly over the high seas.
- Every State, whether coastal or not, has the right to sail ships under its flag on the high seas

Convention on Fishing and Conservation of Living Resources of the High Seas

Entry into force: 20 March 1966

- **optimum sustainable yield** from those resources so as to secure a **maximum supply of food** and other marine products.
- If **two or more States** are engaged in fishing the **same stock** these States shall enter into an **agreement for the conservation** of the living resources affected.
- Disputes heard by a **special commission** under **article 23** of the United Nations

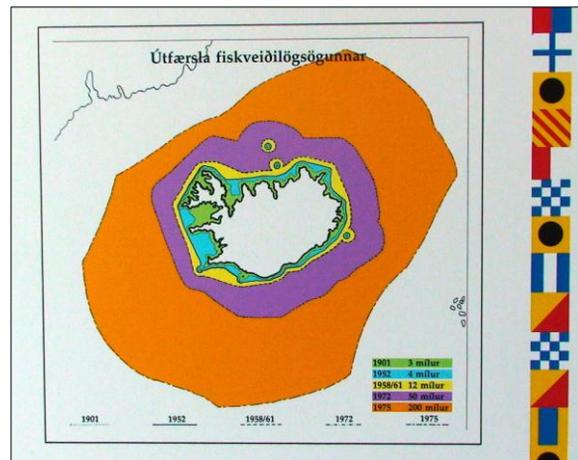
The cod wars



Cod wars

Iceland and the UK

- **1958** Iceland extends the fishery zone from **4nm to 12nm**
 - **dwindling fish stocks** in the North Sea, **British trawlers** fishing off the Icelandic coastline
 - **Royal Navy** accompanies trawlers to **stop Icelandic boats** cutting nets
 - International Court of Appeals in the Hague resolves the dispute



UNCLOS II, 1960

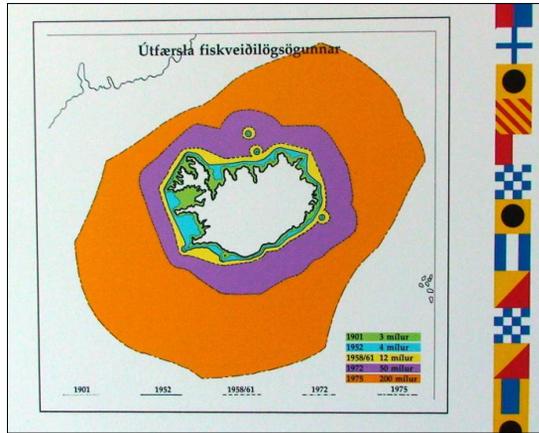
UNCLOS II, 1960

- The main purpose of UNCLOS II was to determine **breadth of the territorial sea and fishery limits**:
 - The Conference **failed to agree** on the British 6+6 compromise (6 miles territorial sea + 6 miles contiguous zone) proposal
 - and decisions on fishery limits were **deferred to a later date**

Cod wars

1972 Iceland extends the fishery zone from **12nm to 50nm**

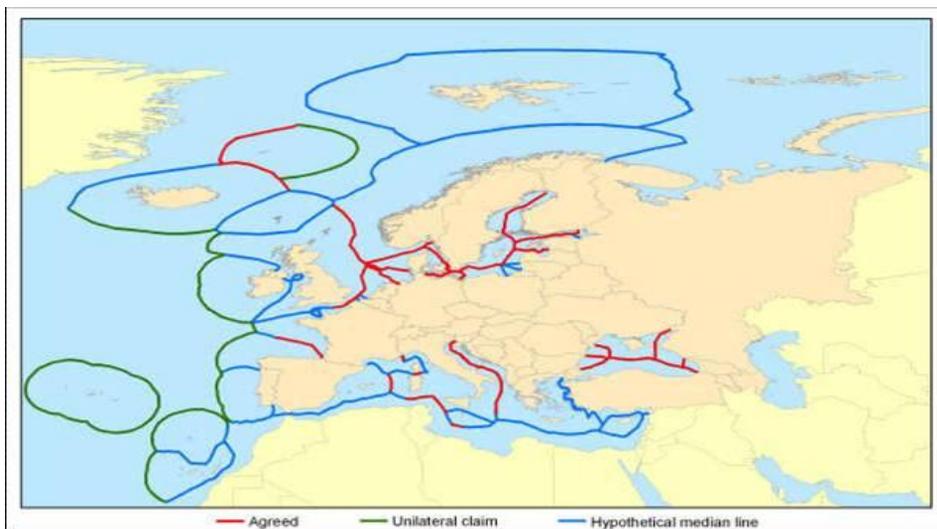
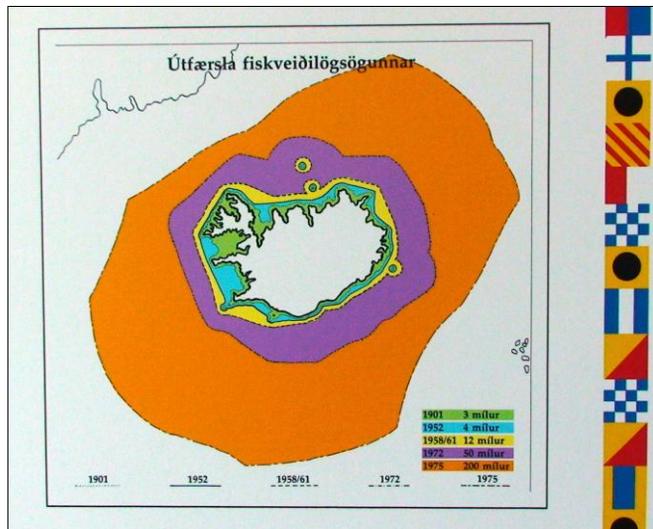
- Icelandic patrol boats **cut the nets** of British trawlers within the zone
- **84 trawlers** lose their nets
- **Royal Navy deployed** as guards to the trawlers again
- **NATO intervenes** and an agreement is made on **catch quotas** for British fleet within the zone



Cod wars

1974 Iceland extends the fishery zone from **50nm to 200nm**

- **Terminates the agreement** for British Fleet to fish within Icelandic waters
 - Icelandic patrol boat **cut the nets** of British trawlers
 - Royal Navy **frigate rams** Icelandic patrol vessel
 - Iceland threatens to **close NATO base**
 - **Britain backs down** under NATO pressure
 - Britain **establishes 200nm** limit



Obviously there is a need for some consistency

UNCLOS III, 1973-1982

UNCLOS III, 1973-1982, New York

- 585 Days over a 9-year period

*“the **largest, most technically complex, continuous negotiation** attempted in modern times” (R.L. Friedheim)*

- On April 30 1982 UNCLOS III, was adopted by voting. **130 states voted** in favour, **4 against** (USA, Israel, Turkey and Venezuela) and 17 abstained.
- The Convention entered into force in on November 16, 1994 after being **ratified by 60 states**.
- The Convention consists of **17 parts with 320 articles and 9 annexes**
- Many Nations have still not Signed the Treaty

UNCLOS III, 1973-1982, New York

- Entry into force: November 16, 1994
- The **most significant issues** covered were setting limits
 - **Navigation**
 - **Archipelagic status** and transit regimes
 - **Exclusive economic zones (EEZ)**
 - **Continental shelf** jurisdiction
 - Deep **seabed mining**
 - The **exploitation** regime
 - **Protection** of the marine environment
 - **Scientific research**
 - **Settlement of disputes.**

Important agreements

- Every State has the right to establish the breadth of its **territorial sea up to a limit not exceeding 12 nautical miles**
- **Contiguous zone up to 24 nautical miles** from the shoreline for purposes of **enforcement of customs, fiscal, immigration, or sanitary laws**
- **Exclusive economic zone up to 200 nautical miles** from the shoreline for purposes of **exploring and exploiting, conserving and managing the natural resources**, whether living or non-living, of the waters super-adjacent to the sea-bed and of the sea-bed and its subsoil

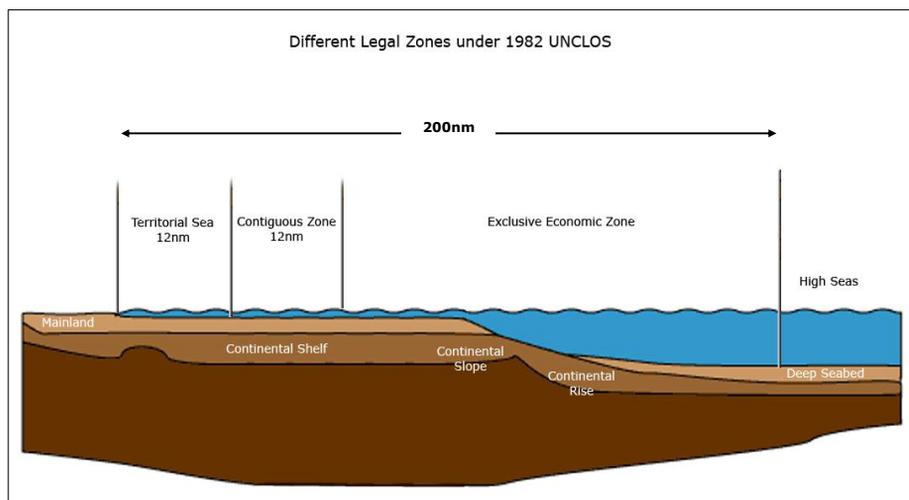
Important agreements

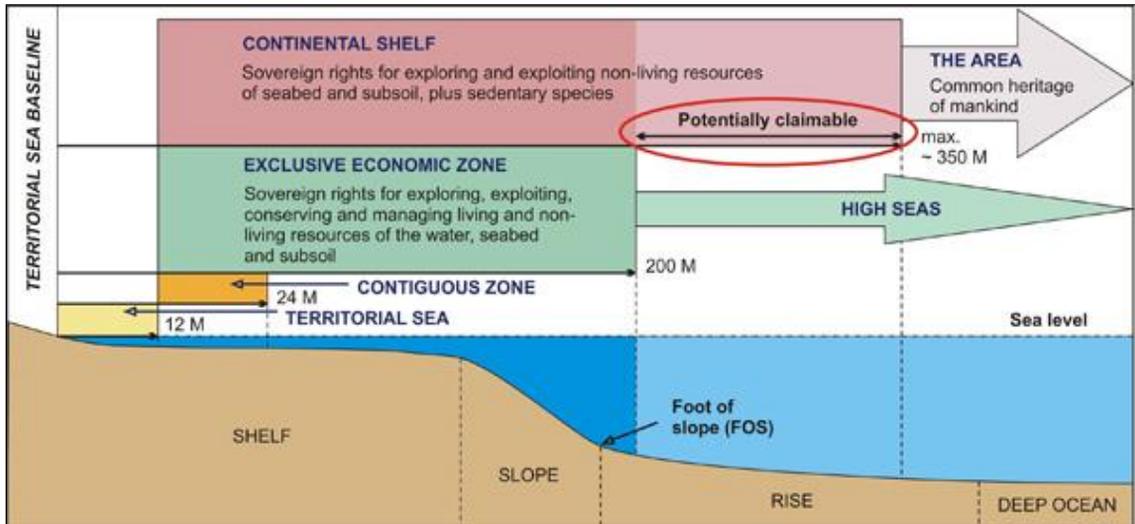
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Important agreements

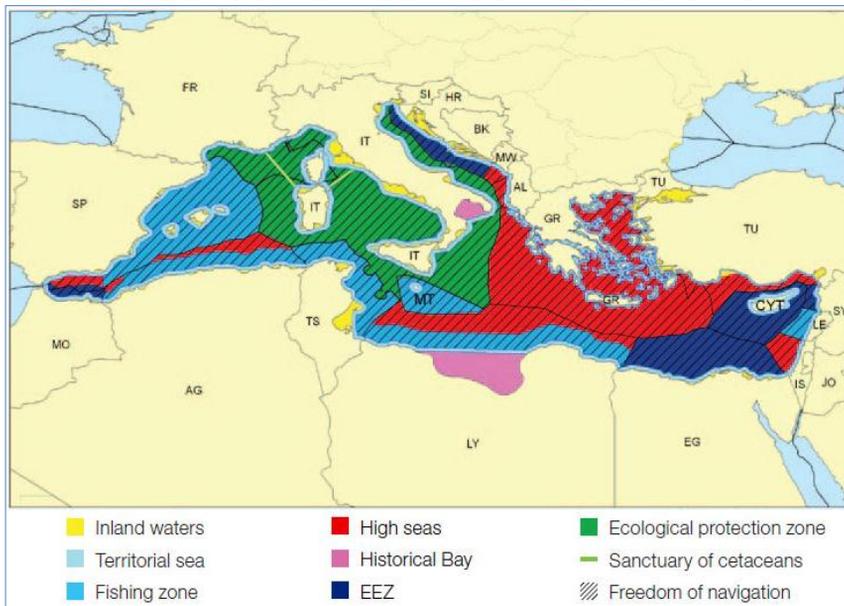
- The resources of the **seabed and ocean floor** and subsoil thereof **beyond the limits of national jurisdiction are the common heritage of mankind**.
 - An **International Seabed Authority** will organize, carry out, and control activities associated with the exploitation of the resources of the international seabed.
 - A **parallel system** will be established for exploring and exploiting the international seabed, **one involving private and state ventures** and the other involving the Authority.
 - A so-called **Enterprise will carry out activities** in the international seabed for the Authority and will be responsible for transporting, processing, and marketing minerals recovered from the international seabed.

UNCLOS III





Mediterranean Jurisdictions



UNCLOS implications for conservation

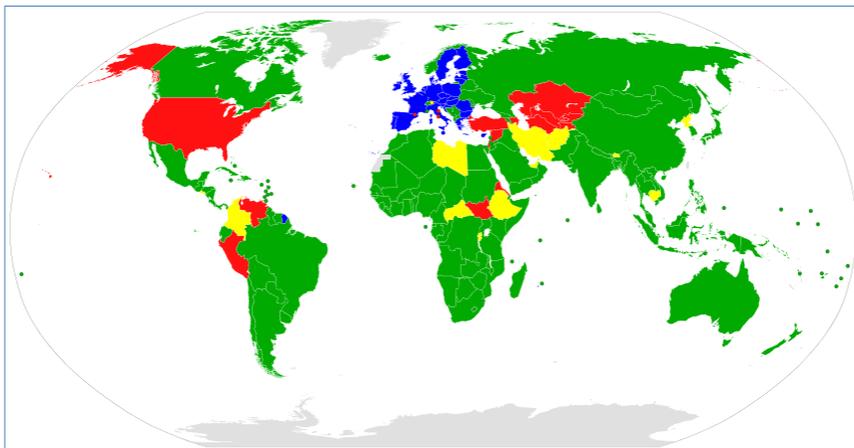
- The UNCLOS is an **important but neglected** legal framework **for MPAs**, defining the rights and responsibilities of states towards conservation of the natural resources of the oceans

article 192:

'to protect and preserve the marine environment'

- the **international tribunal on the law** of the sea is more **focused on settling disputes** between states, but
- UNCLOS has the **potential to be a legally binding** framework for obliging states to conserve their seas.

- On its terrestrial territory each State is entitled to exercise **full sovereign powers**
- The situation is different at sea, as the content of **the rights of the coastal State** with respect to the rights of other States **varies in relation to the legal condition** of the marine waters and seabed according to the present customary international law of the sea.
- UNCLOS is considered to reflect and codify such customary rules, however **not all states** have ratified UNCLOS, **166 states** have ratified.



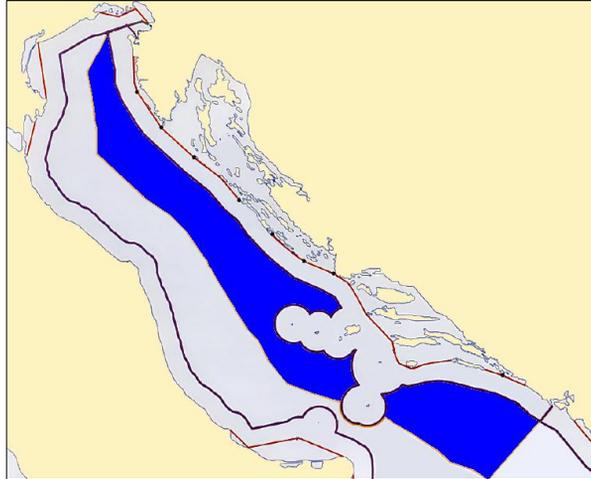
- The **obligation to protect and preserve (Art. 192)** also applies everywhere in the sea, including the high seas and the seabed.

Art. 194, para. 5:

*“The measures taken in accordance with this Part [= Part XII: “Protection and Preservation of the Marine Environment”] shall include those **necessary to protect and preserve rare or fragile ecosystems** as well as the **habitat of depleted, threatened or endangered species** and other forms of marine life”.*

- The rules applied by international law on the **legal regime of different marine spaces** can influence the process for the designation of MPAs and their management
- **most MPAs are located close to shore**, within territorial waters or even in internal maritime waters
- Even MPAs **within the national jurisdiction** of a coastal State **may require the cooperation of other States** to comply
 - particularly special measures for the **regulation of navigation**
 - hence, in almost all cases, the **establishment of MPAs presents international implications**

Zones in the Adriatic



Internal maritime waters

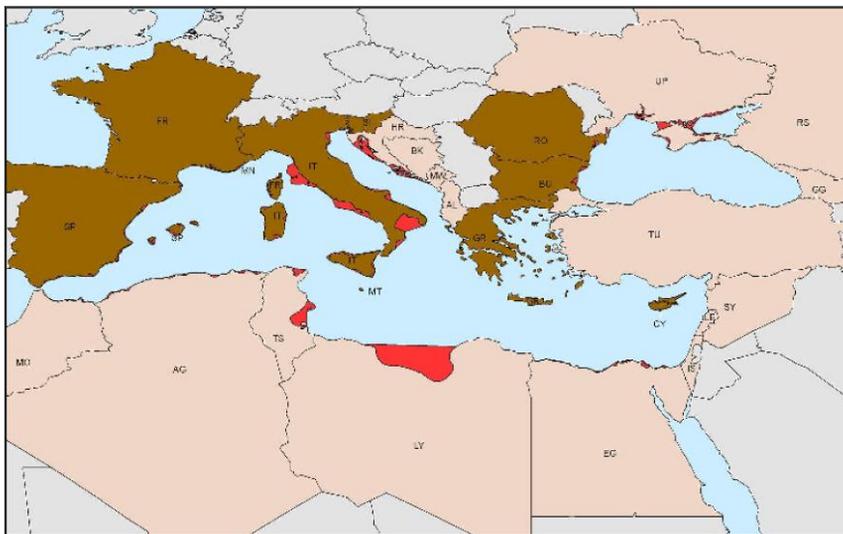
Internal maritime waters

- **land-ward side of the low-water line** (normal baseline of the territorial sea)
- land-ward side of the **straight baselines** from which, in certain cases (such as **bays, deep indentations or fringes of islands** in the immediate vicinity of the coast), the territorial sea is measured.
- In the internal maritime waters **the coastal State exercises full sovereignty** and is entitled to enact laws to regulate any activity, **including navigation**, and the use of resources of any kind

Internal maritime waters

- Several **Mediterranean States** (Albania, Algeria, Croatia, Cyprus, Egypt, France, Italy, Libya, Malta, Montenegro, Morocco, Spain, Tunisia, and Turkey) apply legislation measuring the breadth of the territorial sea from straight baselines **joining specific points located on the mainland or islands**.
- So-called **“historic” bays** (There is **no definition of “historic” bay** in the UNCLOS, Art. 10, para. 6, **only excludes “historic” bays** from its application) are claimed by Italy (Gulf of Taranto) and Libya (Gulf of Sidra).
 - **‘historic bay’**, when a state claims the waters of a bay as internal waters on the basis of historic rights, and can **demonstrate effective and continuing authority** over those waters (UNCLOS, Art. 10).

Internal waters - historic bays



Territorial sea

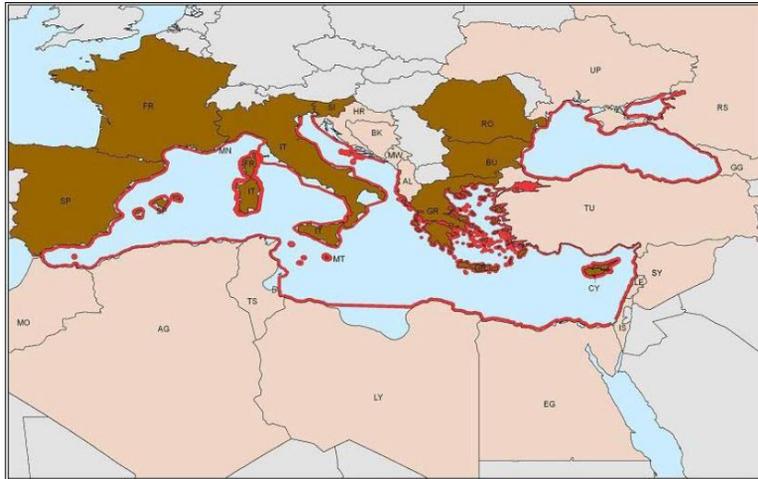
Territorial Sea

- the coastal State is **granted sovereignty**, but foreign ships enjoy the **right of innocent passage**
- **in no case the restrictions** associated to the establishment of a MPA in the territorial sea may be applied by the coastal State in a manner that would **prevent the innocent passage** of foreign ships
- in some instances boat carrying **dangerous substances** may require prior authorisation to pass through a region
- the **International Maritime Organisation (IMO)** provides measures in critical areas for traffic separation and sea routes
 - originally conceived for navigation, also being **applied for ecological purposes**
 - **states may seek endorsement of IMO measures** for traffic in areas of ecological or biological significance

Territorial sea

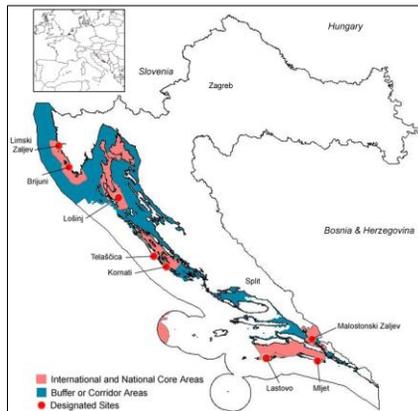
- Coastal States are **entitled to designate MPAs** within their territorial sea with a number of objectives
 - **conservation or sustainable development** of the biodiversity of its coastal areas
 - the temporary or permanent **closing of coastal areas to fishing**
 - or the **promotion of marine scientific** research through the designation of wilderness study areas
- In the Mediterranean Sea, **most coastal States** have established a **12-mile territorial sea**

Territorial sea



Croatian MPAs

- the **majority of MPAs** are located in the zone of the territorial sea or internal waters

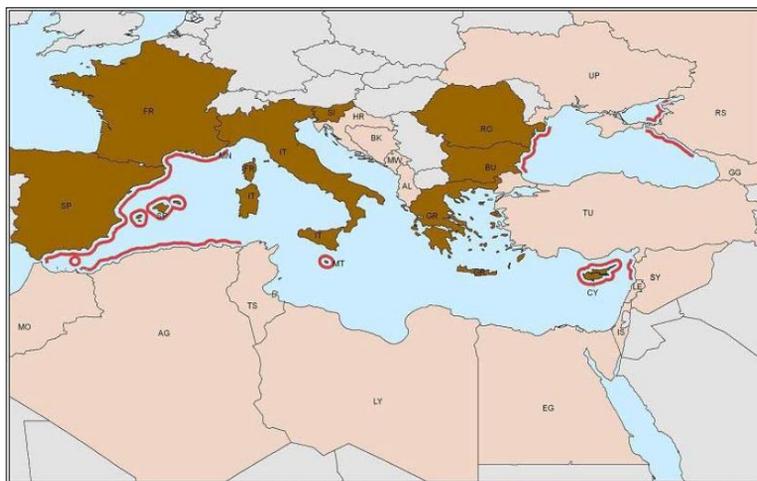


Contiguous zone

Contiguous zone

- In the contiguous zone, consisting of the **belt of water adjacent to the territorial sea and extending up to 24nm.** from the baseline
- coastal State exercises control **only in order to prevent and punish** infringements of its customs, fiscal, immigration or sanitary laws and regulations
- MPAs **do not fall under the scope** of this zone.

Contiguous zone



Exclusive Economic Zone (EEZ) (and variations)

EEZ

Exclusive economic zone

- coastal **State has sovereign rights** for exploiting the natural resources of the water column, the seabed and its subsoil, whether **living or non-living**, and **producing energy** from the water, currents and winds.
 - it is required to **ensure proper conservation and management** so that those resources are not endangered by over-exploitation;
 - it is under the duty to promote their **optimum utilization**, where the State cannot fulfil this it is **obligated to grant access** to surplus to other States
- it has jurisdiction for the establishment of artificial islands, installations and structures, marine scientific research, and **protection and preservation of the marine environment**
- all other States enjoy some specified high seas freedoms related to **maritime communications** (laying cables, overflight, navigation)

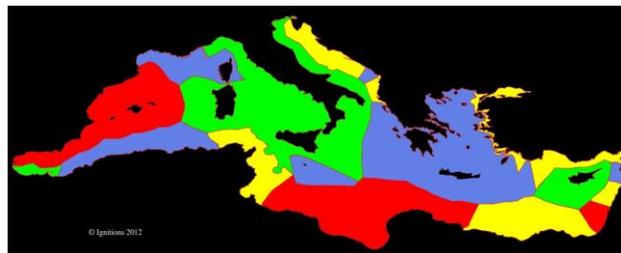
EEZ

Exclusive economic zone

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- all other States enjoy some specified high seas freedoms related to **maritime communications** (laying cables, overflight, navigation)

EEZ

- In many **enclosed or semi-enclosed seas**, such as the Mediterranean the EEZ **cannot be 200nm** for States with opposite or adjacent coasts.
- In this case, its delimitation should be **effected by agreement between the States** concerned, on the basis of **international law**, in order to achieve an equitable solution (Art. 74 of the UNCLOS).



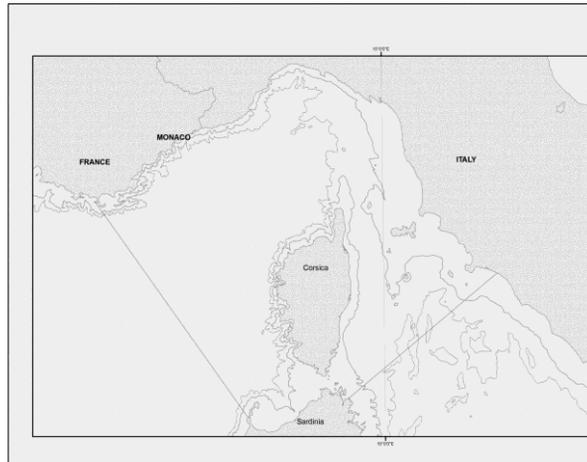
EEZ

- coastal States may declare **MPAs in their EEZs** for the purpose of:
 - **regulating fishing activities**
 - conducting **marine scientific research**
 - as long as the measures enacted do not hamper the exercise by other States of their **freedom of navigation** and other **freedoms and rights** stated in the UNCLOS
- However, bearing in mind the obligation of the coastal State to promote the **optimum utilization of the living resources** within its EEZ,
 - the establishment of an MPA where fishing activities are prohibited on a permanent basis **could be subject to objection by other States**, where not supported by scientific evidence

EEZ

- Certain living resources are subject to **specific rules**
- the coastal State or competent international organization may **prohibit, limit or regulate the exploitation of marine mammals** more strictly than stated in the provisions of the UNCLOS relating to the EEZ.
 - MPAs for marine mammals **may be established in the EEZ** to completely prohibit the exploitation of these animals on a permanent basis, **without any consideration of optimum utilization objectives**.
 - however these regulation are conditional on the **target conservation species**

Pelagos Sanctuary



EEZ

- Conversely, straddling fish stocks and highly migratory **fish stocks are subject to a less protective treatment** in the UNCLOS.
 - States fishing for these species only need to **seek to cooperate**, either directly or through the appropriate organizations, **to agree upon** the measures necessary to **coordinate and ensure their conservation** and development, with a **view to promoting the objective of their optimum** utilization
 - Hence the use of **other legal mechanisms, such as CITES** to protect highly migratory fish stocks

Mediterranean EEZs

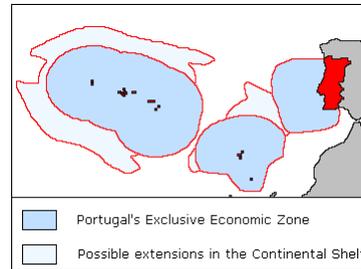
- only some States have so far declared a **“full” EEZ** in the Mediterranean
- despite a certain number of unsettled boundaries there is no doubt that **all coastal States are entitled to establish an EEZ** whenever they wish to do so, even if they cannot claim a full size 200-mile zone.
- international law does not prevent States bordering seas of limited dimensions from establishing their own EEZ, provided that maritime boundaries are not **unilaterally imposed by one State** on its adjacent or opposite neighbouring States
- **ten States** that have established EEZs in the Mediterranean:
 - Cyprus, Egypt, France, Israel, Lebanon, Libya, Morocco, Spain, Syria, and Tunisia

Variations on EEZs

- Other Mediterranean States have declared **diverse zones** where only **some of the sovereign rights and jurisdictional functions** are exercised
- established **zones have been named differently**, reflecting the rights and functions exercised by the declaring State:
 - fishing zones, fisheries protection zones, ecological protection zones, zones for fishing and ecological protection.
 - **fishing zones** have been established by Algeria, Malta, and Tunisia.
 - **ecological protection zones** have been established by Italy and Slovenia
 - Croatia has established a zone for **fishing and ecological purposes**

EEZs

- France
 - **2nd largest EEZ** – 11,035,000 km² (US 11,351,000 km²)
 - French EEZ is approx. **8% of total** area of EEZs worldwide
 - French Republic is **0.45% of total** land area of the earth
- Portugal has the
 - **11th largest EEZ**
 - Main land 327,667 km²;
 - Azores Islands 953,633 km²;
 - Madeira Islands 446,108 km²



Continental shelf

Continental shelf

- **all of the Mediterranean seabed** falls under national jurisdiction, belonging to the continental shelf of one or another coastal State
 - no seabed with the legal condition of **the Area**
- the coastal State exercises sovereign rights for the purpose of **exploring it and exploiting its natural resources**, both living and non-living
 - The living resources of the continental shelf which are subject to the sovereign rights of the coastal State only comprise organisms belonging to the so-called “**sedentary species**”, such as oysters, abalones, sponges and clams.
- In contrast to its obligations within the EEZ, the coastal State **is not required to manage and conserve** its sedentary fisheries with a view to promoting their “**optimum utilization**”, it is **not required to grant** to other States access to any resource surplus.

Continental shelf

- the coastal State may decide to establish MPAs to maintain portions of its continental shelf **undamaged from drilling operations**
- The rights of the coastal State over the continental shelf **do not affect the legal status of the superjacent waters** – which may be subject to the regime of either the EEZ or the high seas – nor of the air space above those waters
- Over its continental shelf, the coastal State has the **exclusive right to construct** as long as these installations do not interfere with navigation and the other rights and freedoms

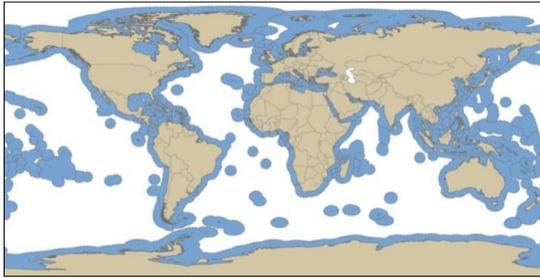
Continental shelf

- biodiversity of the continental shelf includes **deep-water corals**, other sedentary species and all those species which inhabit **seamounts and hydrothermal vents**.
- The main threats to these organisms are **bottom trawling**, exploitation of **mineral resources** of the seabed, and **bioprospecting**.
- In the Mediterranean Sea, the **General Fisheries Commission for the Mediterranean (GFCM)** adopted recommendations requiring its members to prohibit the use of towed dredges and bottom trawl net fisheries at **depths greater than 1000 meters**.

High seas - not open sea or deep sea

High seas

- Total Ocean Area: 361,000,000 km²; **High Seas: 218,671,468 km²**
- High sea equates to **60% of the total ocean**



High seas

- Since their overall **coverage is changing constantly** in connection with the growing number of maritime zones falling under national jurisdiction, the high seas have been appropriately referred to in the UNCLOS *ex negativo*, as

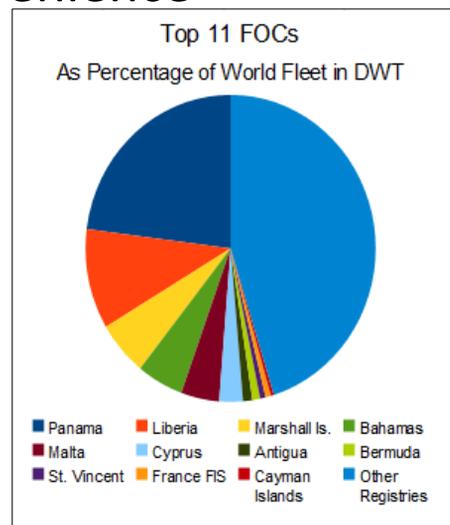
*'all parts of the sea that are **not included in the exclusive economic zone, in the territorial sea or in the internal waters of a State, or in the archipelagic waters of an archipelagic State**'. (Art.86)*

High seas

- The high seas shall be reserved for **peaceful purposes**
- they are subject to a **regime of freedom** that encompasses different activities:
 - **navigation**, overflight, laying of submarine cables and pipelines, construction of artificial islands and other installations permitted under international law, fishing, and scientific research.
 - these activities shall be exercised by all States **with due regard for the interests** of other States in their exercise of the freedom of the high seas
- the high seas regime envisages the **exclusive jurisdiction of any State over vessels flying its flag** on the high seas
- No State can impose its own jurisdiction on vessels **flying the flag** of other States while on the high seas

Flags of convenience

- ships **must fly the flag** of the country of registration
- **flags of convenience** limit control of shipping leading to **concealed ownership**
 - Arms smuggling
 - trafficking in goods and people
 - illegal, unreported and unregulated **fishing** (IUU)



Flags of convenience

- Torrey Canyon



- Prestige



- Amoco Cadiz



...

High seas

- no state may **unilaterally establish a MPA** and claim that ships flying a foreign flag abide by the relevant provisions.
- Yet, every State is legally bound to ensure that its vessels on the high seas observe **all applicable international rules concerning**
 - the prevention, reduction and control of marine pollution
- More generally, States are under the general **obligation to protect and preserve** the marine environment everywhere in the sea, including by adopting measures **to preserve and protect rare or fragile ecosystems** as well as the habitat of depleted, threatened or endangered species and other forms of marine life

High seas

- The **freedom to fish** on the high seas is qualified by the obligation to adopt measures **for the conservation of the living resources**, as well as by the **duty to cooperate** in their management in order to maintain and restore both harvested and associated species
- In the case of **marine mammals**, exploitation may be **fully prohibited through appropriate agreements** among two or more States or by the competent international organization
- All these provisions **offer the legal basis** for the establishment of MPAs on the high seas.

High seas

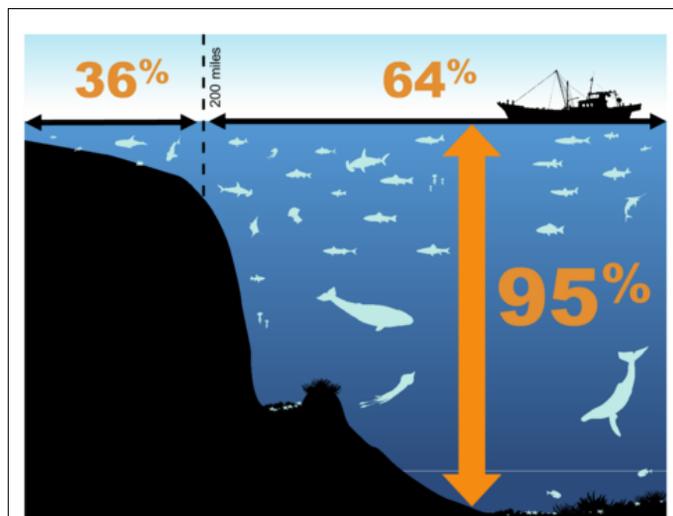
high seas MPAs are generally done through regional agreements, in the **Mediterranean Sea** there are three options:

- the **SPA/BD Protocol of the Barcelona Convention**, whose geographical scope covers all Mediterranean waters.
- the **Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS)** areas which serve as **habitats for cetaceans** or provide important food resources
- the **General Fisheries Council of the Mediterranean (GFCM)**, as the competent regional fisheries management organization in the Mediterranean, may declare **fisheries restricted areas on the high seas**, as it already did to protect corals, cold hydrocarbon seeps and seamounts on the Mediterranean seabed

High seas

- while with exceptions, notably the **Pelagos Sanctuary** in the Mediterranean, there are few opportunities to establish MPAs on the high seas
- However, a **number of international organizations** have been endowed with the competence to recommend, or to directly establish, MPAs in the high seas:
 - **International Maritime Organisation (IMO)**
 - **International Whaling Commission (IWC)**
 - Conference of the parties to the **Convention on Biological Diversity (CBD)**

ABNJ



Biodiversity Beyond National Jurisdiction

- In January 2015 **the party states of UNCLOS** agreed to **open negotiations** on a **new internationally legal binding** instrument for the conservation and sustainable use of **biodiversity beyond national jurisdiction** (BBNJ).
- This new instrument **should fulfil the recognised regulatory** or legal gaps concerning **the area beyond national jurisdiction** (ABNJ).

Biodiversity Beyond National Jurisdiction

- The second session of the **preparatory committee on marine biodiversity beyond areas** of national jurisdiction: 26 August – 9 September 2016 to consider:
 - **marine genetic resources**, including questions on benefit-sharing;
 - measures such as **area based management tools**, including **marine protected areas**;
 - **environmental impact assessments**;
 - **capacity building** and **marine technology transfer**;

The area

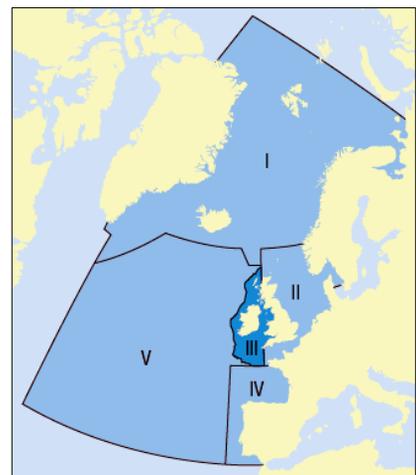
The Area

- The **International Seabed Authority** is an autonomous international organization established under the **1982 UNCLOS**
- The Authority is the organization through which States Parties to the Convention shall, in accordance with the regime for the seabed and ocean floor and subsoil thereof beyond the limits of national jurisdiction (the Area) established in Part XI and the Agreement, **organize and control activities in the Area**, particularly with a view to administering the resources of the Area.
- **there are 166 states** that are members of the ISBA, **guess who is missing...**

Convention for the **Protection of the Marine Environment** of the North East Atlantic (Paris, 1992; OSPAR Convention)

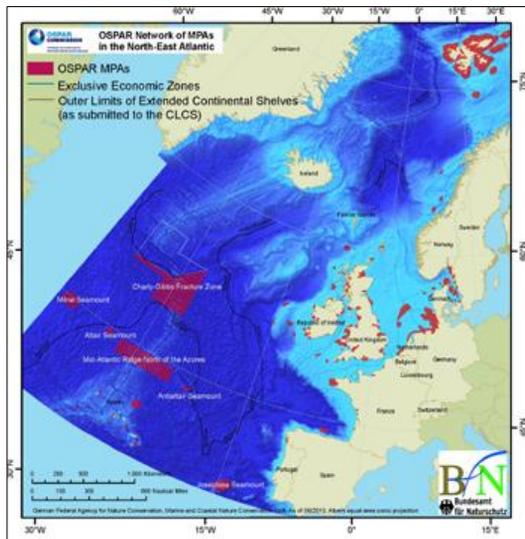
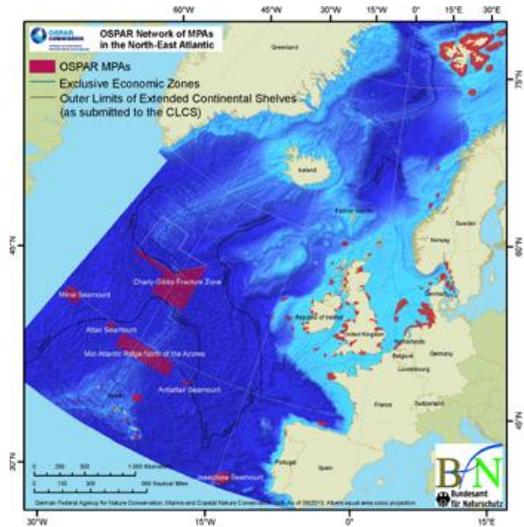
OSPAR

- As a **Regional Seas Convention**, OSPAR has its own particular **regional dynamic driven** by its membership. Fifteen States:
- Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and UK and the European Union are Contracting Parties to OSPAR
- in addition some **30 Observer organisations** are involved.



OSPAR

1. Milne Seamount Complex MPA (21,000 km²)
2. Charlie-Gibbs South MPA (145,420 km²)
3. Altair Seamount High Seas MPA (4,409 km²)
4. Antialtair Seamount High Seas MPA (2,208 km²)
5. Josephine Seamount High Seas MPA (19,370 km²)
6. MAR North of the Azores High Seas MPA (93,568 km²)



CGFZ

- Designation of **Charlie Gibbs South MPA** was **established** through a **legally binding Decision** (OSPAR Decision 2010/2) and **management** through a **complementary Recommendation** (OSPAR Recommendation 2010/13).
- However, considerations pertaining to the **designation of Charlie-Gibbs North as a Pelagic MPA proved complicated**.
 - One of the key aims was to **protect and conserve a special and representative section** of the **water column** above the Mid-Atlantic Ridge which itself is a major portion of the bathyal habitat of OSPAR Region V.

CGFZ

Lesson Learned	CGFZ context	Comment
Targets and deadlines to motivate action are essential	2010 OSPAR Ministerial Meeting spurred technical work and political drive needed	2012 commitment to achieving an ecologically coherent MPA network
Clear criteria, selection process and conservation objectives supported by roadmaps focus effort	2008 scientific case agreed; 2009 conservation criteria agreed; roadmaps	Rigorous procedures developed by OSPAR over many years applied to specific locations
Importance of a 'champion' organization and/or Contracting Party/Parties	WWF developed an initial case for CGFZ. The Netherlands co-sponsored the proposal	ICG-MPA and OSPAR Secretariat were also influential, prioritizing work and promoting dialogue
Scientific credence provided by independent evaluation	Scrutiny and advice was provided by ICES	Scoping was also undertaken by University of York sponsored by Germany as chair of the OSPAR MPA group
Transparency and a precautionary approach	Nomination proformas present information clearly to justify selection	Paucity of data should not hold back protective measures. Larger areas recognize uncertainties.

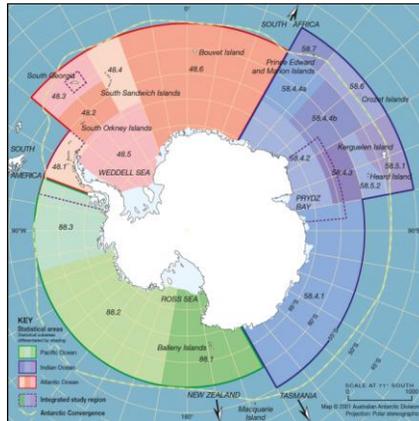
CGFZ

Lesson Learned	CGFZ context	Comment
Importance of synergistic policy drivers	NEAFC closures complemented MPA delineation	These bottom fisheries closures are subject to periodic review
Cooperation amongst competent authorities	Memoranda of Understanding between OSPAR and other competent international organisations	Formal bilateral arrangements to exchange information and discuss mutual interests
Sufficient time needed	Time is needed to build momentum – raising awareness and achieving consensus	Is a decade so long in the context of multilateral environmental agreements?
Strong political commitment is key	France and Portugal took significant proactive positions	Legal complexities may be used to deter engagement
Regional Seas Conventions as a platform for cooperation and communication	An option to protect biodiversity in ABNJ	The Mediterranean Action Plan and Commission for the Conservation of Antarctic Marine Living Resources also have ABNJ MPAs
Compliance is key	Implementation reporting is required for all OSPAR Decisions and Recommendations	OSPAR can only bind its Contracting Parties

Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR)

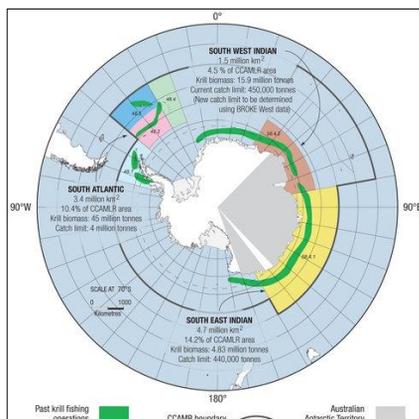
Convention for the Conservation of Antarctic Marine Living Resources

- The Commission (CCAMLR) established by **international convention in 1982** with the objective of conserving Antarctic marine life
- CCAMLR has **25 Members**, and a further **11 countries** have acceded to the Convention
- requires **unanimous agreement** by members for changes to conservation policy

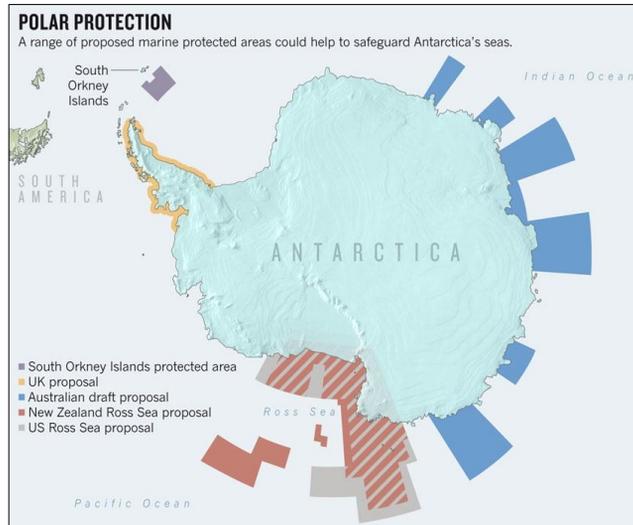


CCAMLR

- Based on the **best available scientific information**, the Commission agrees a set of **conservation measures** that determine the use of **marine living resources** in the Antarctic.



CCAMLR MPAs



CCAMLR MPAs

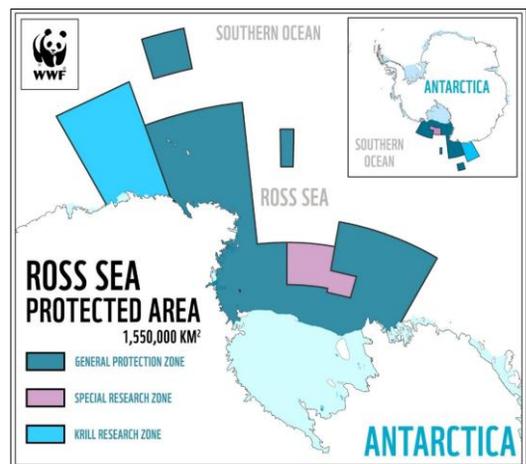
- In **2009 the South Orkney Islands MPA** (94,000km²) was established
 - located entirely in the high seas
- In **2012 four proposals** were submitted to the Commission by CCAMLR Members for the establishment of MPAs in the Antarctic:
 - two in the **Ross Sea** (one by New Zealand and the other by the USA),
 - one in **east Antarctica** (by Australia, France and the EU), and
 - one in **west Antarctica** (by the EU).
 - During the meeting in 2012 New Zealand and the USA merged their proposals for the Ross Sea

CCAMLR MPAs

In October 2013

- US and New Zealand made the proposal for the **Ross Sea MPA** of 1.32 million km with a **1.25 million km area 'no take' zone**, a **40% reduction** from previous proposals
- Australia, France and the EU made the proposal for an **East Antarctic MPA network of 1.6 million km**
 - **Russia and Ukraine blocked** the proposals going to the drafting committee
- Australia, France and the EU discussed **an alternative proposal for East Antarctica**, but this was not formally presented to the meeting.
 - **China did not think that enough discussion** for the East Antarctica proposal had yet taken place.

- More than **1.5m sq km** of the Ross Sea around Antarctica will be protected –
 - **1.1m sq km** - will be set aside as a no-take “general protection zone”, where **no fishing** will be allowed
- deal set between **24 countries and the European Union**.
- Significantly, the protections are set to **expire in 35 years**.



<https://www.theguardian.com/world/2016/oct/28/worlds-largest-marine-park-created-in-ross-sea-in-antarctica-in-landmark-deal>

Coming back to the Mediterranean

Pelagos Sanctuary

- The Pelagos Sanctuary for marine mammals, established by **France, Italy and Monaco**,
- encompasses waters having the **different legal condition**:
 - internal maritime waters,
 - territorial sea,
 - ecological protection zone,
 - exclusive economic zone
 - high seas



Other competences

IMO



- IMO acts as the specialized organization for **regulating international shipping**
- their remit includes **maritime safety, security and environmental protection**
- they are the only international body for developing guidelines, criteria and regulations on an international level for **routing systems for shipping**
- any proposal for the adoption of a routing system **must be referred to the IMO**.
- the only exception of MPAs located **in the internal maritime waters** of the enacting coastal State.

IMO

- Special areas are designated under the **MARPOL Annexes** and refer to the application of special discharge restrictions to vessels
- Refers to a **specific area** within a Particularly Sensitive Sea Area (PSSA)

Special Areas

*“a sea area where for recognized technical reasons in relation to its **oceanographical and ecological condition** and to the particular character of its traffic the adoption of **special mandatory methods** for the prevention of sea pollution by oil is required.” MARPOL Annex I*

International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978

The **whole Mediterranean** is considered a **special area** under Annexes I and V of MARPOL

IMO

Particularly Sensitive Sea Areas

*“an area that need special protection through action by the IMO because of its **significance for recognized ecological, socio-economic, or scientific attributes** where such attributes may be vulnerable to damage by international shipping activities.”*

IMO - PSSA

Proposal should be made by the **member state or states** and include:

PART I – **description, significance and vulnerability**

- detailed description of the **proposed location and any protected** measures that are in place
- **significance** of the area using the **PSSA criteria**:
 - uniqueness or rarity, critical habitat, dependency, representativeness, diversity productivity, spawning or breeding grounds, naturalness, integrity, fragility, bio-geographical importance
 - social or economic dependency, human dependency, cultural heritage
 - research, baseline for monitoring studies, education
- **vulnerability** of the area to damage from international shipping activities

IMO - PSSA

PART II – **appropriate associated protected measures** and **IMOs competence** to approve or adopt such measures

- identify current and proposed measures and specifically describe **how the associated protective measures can protect the area** from the identified vulnerability
- draft **proposal with legal basis to be submitted to the relevant IMP committee**, with the steps that the member state will undertake
- identify the **legal basis for each proposed measure, including UNCLOS**
- identify and **tailor shipping measures consistent** to the required protection
- clearly specify the **application of protective measures to categories of shipping consistent with UNCLOS**

Only one PSSA has been designated in the Mediterranean sea

Adriatic Sea PSSA

Chapter 13

**PARTICULARLY SENSITIVE SEA
AREAS: THE NEED FOR REGIONAL
COOPERATION IN THE ADRIATIC SEA**

Davor Vidas*
The Fridtjof Nansen Institute
Oslo, Norway



IWC

International
Whaling
Commission

- the IWC was set up through the International Convention for the Regulation of Whaling signed in Washington, D.C. on 2 December 1946 to:
*"provide for the **proper conservation of whale stocks** and thus make possible the **orderly development of the whaling industry**"*

IWC

- The Whaling Convention provides that the **IWC may adopt regulations** with respect to the conservation and utilization of whale resources

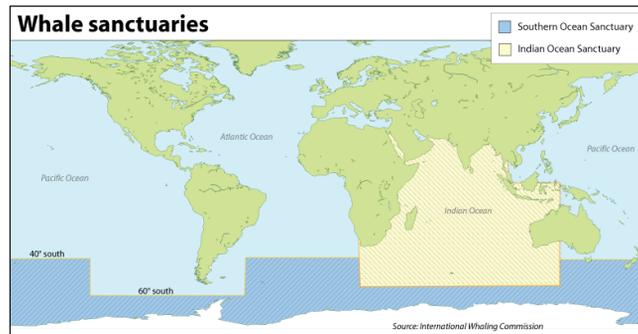
*"open and closed waters, including the **designation of sanctuary areas.**"*

- while there has been a **moratorium in place since 1982** for hunting whales the IWC remains an important organisation for the definition of rules for non-consumptive use of cetaceans including **'whale and dolphin watching'**
- certain whaling countries are **not parties to the convention**, or object to the moratorium and maintain quotas
- the IWC is an important **forum for science**

IWC sanctuaries

So far, **two sanctuaries** have been designated by the IWC.

- the **Indian Ocean Sanctuary** (est. 1979) covers the whole of the Indian Ocean south to 55°S.
- the **Southern Ocean Sanctuary** (est. 1994) covers the waters of around Antarctica.



Convention on biological diversity

- The CBD sets out a series of measures for *in-situ* conservation.
- Parties are required, as far as possible and as appropriate:

*'to establish a **system of protected areas** or areas where special measures need to be taken to **conserve biological diversity**; to develop, where necessary, guidelines for the selection, establishment and management of protected areas where special measures need to be taken to **conserve biological diversity**; and to **regulate or manage biological resources** important for the conservation of biological diversity whether within or outside protected areas, with a view to **ensuring their conservation and sustainable use**.' (Art. 8 (a), (b) and (c))*

CBD

the Jakarta mandate (1995, 2004)

- provides **guidance on integrated marine and coastal area management**, the **sustainable use of living resources** and marine and coastal protected areas.
- Annex II (Guidance for the Development of a National Marine and Coastal Biodiversity Management Framework) to Decision VII/5 recommends that the **legal or customary frameworks of marine and coastal protected areas** clearly identify **prohibited activities** contrary to the objectives of such areas, **as well as activities that are allowed**, with clear restrictions or conditions to **ensure that they will not be contrary to the objectives** of the marine protected area and a decision-making process for all other activities.

CBD

- Under Appendix 3 (Elements of a **Marine and Coastal Biodiversity Management Framework**):
- **integrated networks of marine and coastal protected areas** should consist of marine and coastal protected areas:
 - threats are managed for the **purpose of biodiversity conservation or sustainable use** and where extractive uses may be allowed,
 - or **representative marine and coastal protected areas** where extractive uses are excluded and other significant human pressures are removed or minimized, to enable the integrity, structure and functioning of ecosystems to be maintained or recovered.

CBD - EBSAs

In 2008 the conference of the parties to the CBD adopted a set of Scientific Criteria for Identifying **Ecologically or Biologically Significant Marine Areas** in Need of Protection in Open Waters and Deep-sea Habitats (the so-called EBSA criteria). The EBSA criteria are:

- “**uniqueness** or rarity”,
- “special importance for **life-history stages** of species”
- “importance for **threatened, endangered or declining species** and/or **habitats**”
- “**vulnerability**, fragility, sensitivity, or slow recovery”,
- “biological **productivity**”,
- “biological **diversity**”,
- “**naturalness**”.

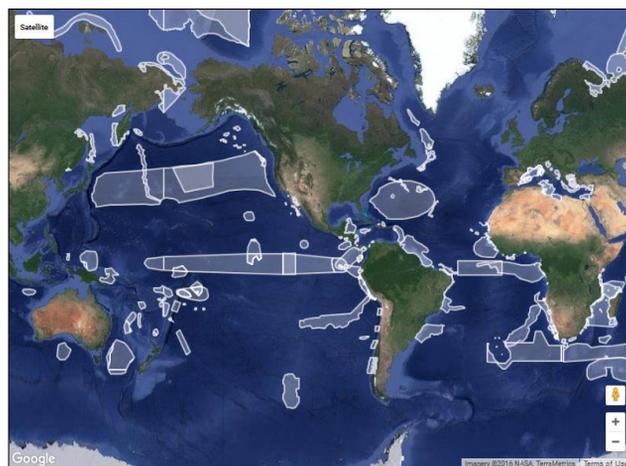
EBSAs

- the same conference adopted the **Scientific Guidance** for Selecting Areas to Establish a **Representative Network of Marine Protected Areas**, including **Open-ocean Waters and Deep-sea Habitats**.
- This lists the required **network properties and components**, namely:
 - “**ecologically and biologically significant areas**”,
 - “**representativity**”,
 - “**connectivity**”,
 - “**replicated ecological features**”
 - “**adequate and viable sites**”

EBSAs

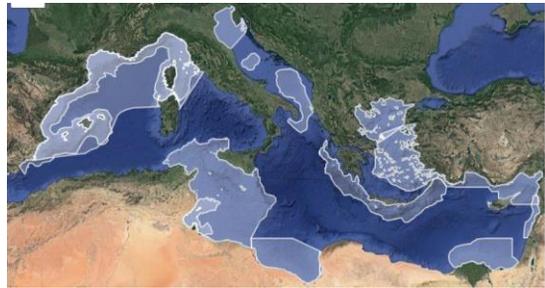
- **Four Initial Steps** to be Considered in the Development of Representative Networks of Marine Protected Areas were also namely
 - “**scientific identification** of an initial set of ecologically or biologically significant areas”,
 - “develop/chose a **biogeographic habitat** and/or community **classification scheme**”,
 - iteratively use **qualitative and/or quantitative techniques** to identify sites to include in a network”
 - “assess the **adequacy and viability** of the selected sites”.

EBSAs



Mediterranean EBSAs

- for the Mediterranean Sea is concerned, the parties took note of the **particular need for a regional workshop** to be organized in order to finalize the **description of areas** that meet the EBSA criteria by 2014.
- the work carried out within the framework of the **Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean** (Barcelona, 1976, 1995) regarding the description of areas that could meet the EBSA criteria in the Mediterranean region.



<https://www.cbd.int/ebsa/>

Conclusions

- need for **international cooperation** for MPAs regardless of the legal status of the waters
 - except the **internal waters** of a state
- there are **multiple agreements and conventions** that allow for the development of MPAs
 - some are limited to **species specific** conservation eg IWC sanctuaries
- coordination of conservation measures **takes time**
 - **political and scientific** issues need to be resolved
 - often international agreements require **consensus**, eg CCAMLR negotiations

EU directives relevant to MPAs

Peter Mackelworth

- At the EU level, **multiple Commission Directorates** have jurisdictional or programme responsibilities in the **marine environment**:
 - Agriculture and Rural Development,
 - Environment, Fisheries and Maritime Affairs,
 - External Relations,
 - Regional Development, and
 - Transport and Energy

Relevant programmatic policies encompass:

- the **habitats** directive (HD) (Council Directive 1992/43/EC)
- the **birds** directive (BD) (Council Directive 2009/147/EC)
- **marine strategy framework** directive (MSFD) (Council Directive 2008/56/EC)
- **water framework** directive (WFD) (Council Directive 2000/60/EC)
- **Common Fisheries** Policy (CFP)
- **environmental impact assessment** directive (EIA) (Council Directive 1985/337/EEC)
- the **Common Agriculture** Policy (CAP)
- **Coastal Zone Management** initiatives
- **Maritime spatial planning**

Background

- the European Community is a contracting party to the Convention on Biological Diversity (CBD) and has prepared an **EU Biodiversity Strategy and Biodiversity Action Plans** which aim to integrate biodiversity considerations into other Community policies.
- Marine biodiversity issues are **addressed by both the Biodiversity Action Plan (BAP) for Natural Resources**, and the **BAP-Fisheries**.
- Marine issues have also been raised in relation to the impact of **European fishing fleets in international waters**.
- A **2003-2004 review of EU Biodiversity Policy** assessed the implementation, effectiveness and appropriateness of the EC Biodiversity Strategy and Action Plans, which culminated in the ***Malahide conference on Biodiversity and the EU***, held in May 2004

Background

- The 'Message from Malahide' included **completing the Natura 2000 network at sea by 2008**, and agreeing and instigating management for all Natura 2000 sites by 2010.
- In May 2006 a Communication on *Halting the Loss of Biodiversity By 2010 — And Beyond* [COM(2006) 216 final], stating:

*"complete marine network of **Special Protection Areas (SPAs) by 2008**; adopt lists of **Sites of Community Importance (SCI) by 2008 for marine**; designate Special Areas of Conservation (SAC) and **establish management priorities and necessary conservation measures for SACs [by 2012 for marine]**; establish similar management and **conservation measures for SPAs [by 2012 for marine]**".*

The habitats and birds directives

Habitats directive

- The initial position of a number of member states was to see their **conservation obligations limited to territorial seas**
- **The Commission challenged this**, arguing that the protection of marine habitats and species, which are included in the annexes of the Directives, cannot be adequately achieved in such a limited area.
- the opinion of the Commission is that recognition exclusive rights of the coastal state in a maritime zone brings **not only rights but obligations**.
- **Exclusive right to exploit natural resources implies a similar duty to preserve** natural resources.
- Therefore, **community law** for the conservation of natural resources applies **in all maritime areas** where Member States exercise such rights

Habitats directive

- the Habitats Directive **now applies up to the outer limit of the exclusive economic zone of those European coastal States** that have declared one.

*“The provisions of the “Habitats” Directive **automatically apply to the marine habitats and marine species located in territorial waters** (maximum 12 miles). However, **if a Member State exerts its sovereign rights in an exclusive economic zone** of 200 nautical miles (for example, the granting of an operating license for a drilling platform), **it thereby considers itself competent to enforce national laws** in that area, and **consequently the Commission considers in this case that the “Habitats” Directive also applies**, in that Community legislation is an integral part of national legislation.”*

Communication from the Commission to the Council and the European Parliament, Brussels, **14 July 1999**, COM(1999) 363 final, para. 5.2.2.

Habitats directive

- This interpretation has been subsequently **confirmed by the European Court of Justice**
- The ECJ, Case C-6/04 (*Commission of the European Communities v. United Kingdom of Great Britain and Northern Ireland*), Judgment of **20 October 2005**.
- the **‘Greenpeace’ judgement**
- The complaint of the Commission reads as follows:

ECJ

*“The Commission alleges that the United Kingdom has **limited the application** of the provisions which transpose the **Habitats Directive into national law to just national territory and United Kingdom territorial waters**. It contends that **within their exclusive economic zone the Member States have an obligation to comply with Community law** in the fields where they exercise sovereign powers and **that the directive therefore applies beyond territorial waters**. In particular, the Commission complains that the **United Kingdom has not complied in its exclusive economic zone** with its obligation to designate Special Areas of Conservation” (para. 115).*

Habitats directive

- aim to protect sites of **European conservation importance** for
 - i. natural **habitat types** listed in Annex I and
 - ii. the **habitats for the species** listed in Annex II
- in order to ensure that these features can be **maintained** or, where appropriate, **restored** at a **favourable conservation status** in their natural range.

Habitats directive

- In total **1000 species** and **200 habitat types** are protected under the annexes of the directive
- The annexes of the HD only include **five marine habitats**:
 - 1110 Sandbanks
 - 1120* Posidonia beds
 - 1170 Reefs
 - 1180 Submarine structures made by leaking gases
 - 8830 Submerged or partially submerged cave

* denotes priority habitats

and **18 marine species**

- 1101 * *Acipenser sturio*
- 1102 *Alosa alosa*
- 1103 *Alosa fallax [saboga]*
- 1938 *Phoca hispida botanica*
- 1224 * *Caretta caretta*
- 1227 * *Chelonias mydas*
- 1095 *Petromyzon marinus*
- 1099 *Lampetra fluviatilis*
- 1100 * *Acipenser naccarii*
- 1113 * *Coregonus oxyrinchus*

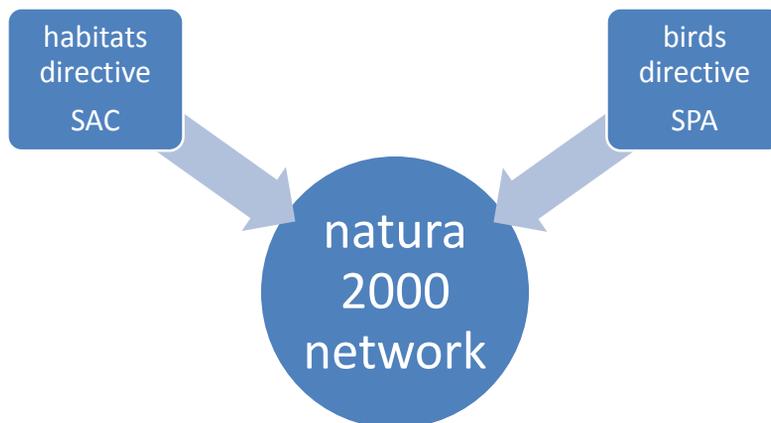
- 1364 *Halichoerus grypus*
- 1351 *Phocoena phocoena*
- 1349 *Tursiops truncatus*
- 1365 *Phoca vitulina*
- 1366 * *Monachus monachus*
- 2578 *Gibbula nivosa*
- 4125 *Alosa immaculata*
- 4127 *Alosa tanaica*

*denotes priority species

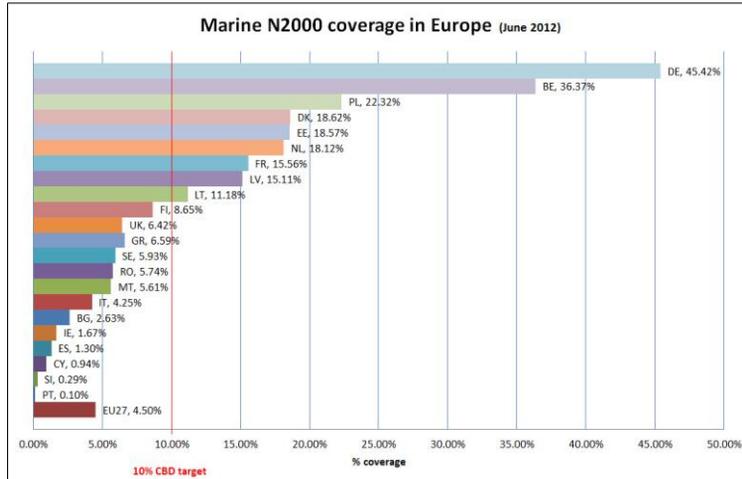
Birds directive

- Under the Birds Directive, core sites need to be classified for approximately **190 species** of birds listed in Annex I.
- Member States must also **classify sites for migratory bird** species not listed in Annex I,
 - bearing in mind the need to protect their **breeding, moulting and wintering areas and staging posts** along their migration routes (for instance, wetlands of **national importance under the Ramsar Convention**).
- These sites are SPA included directly into the Natura 2000 Network.

Natura 2000



Marine Natura 2000



Integrated maritime policy and marine strategy framework directive

EU Maritime Policy

- In 2002, the European Parliament and the EU Council adopted the **Sixth Community Environment Action Programme**, which called for the development of “**thematic strategies**” in regard to priority environmental problems.
- Seven areas were to be addressed:
 1. air pollution
 2. prevention and recycling waste
 3. soil
 4. sustainable use of pesticides
 5. sustainable use of resources
 6. urban environment,
 7. **protection and conservation of the marine environment.**

EU Maritime Policy

- In 2002 the EU Commission reviewed the environmental situation of the seas for the region
 - most existing Community legislation that gave **some degree of protection to the marine environment but** was not specifically designed for that purpose and was **sectoral in character**.
 - what was required was an **integrated approach** focused on the protection of the seas, and extending over an adequate geographical area, and reflected an **ecosystem-based approach that recognized regional diversity**.
- to be developed through an **open and collaborative process** involving Community institutions, national governments, regional organizations, and all other stakeholders.

Marine Thematic Strategy

- The EC adopted the **Marine Thematic Strategy on the Protection and Conservation of the Marine Environment** and Proposal for a Marine Strategy Directive, COM(2005)504, and COM(2005)505.
- The vision proposed by the Strategy is **to protect and restore Europe's oceans and seas** and ensure that human activities are carried out in a sustainable manner so that current and **future generations enjoy and benefit** from **biologically diverse and dynamic oceans and seas** that are safe, clean, healthy and productive.
- an **integrated policy towards the implementation of an ecosystem based** approach to the management of human activities taking into account the concepts of **favourable status** and **good ecological status as required by HD, BD and WFD**.

EU Integrated Maritime Policy

- The IMP seeks to **integrate numerous different sectoral policies** including **shipping, fishing and mineral extraction** through three key tools:
 - marine data and knowledge
 - integrated maritime surveillance
 - maritime spatial planning
 - sea basin strategies
 - blue growth
- The IMP will seek to move towards the development of a '**common EU maritime space**' governed by consistent rules for safety, security and environmental protection.

MSFD

- The **Marine Strategy Framework Directive** constitutes the **environmental pillar of the Integrated Maritime Policy** of the European Union
- applies to the **waters, seabed and subsoil on the seaward side of the baseline** extending to the outmost reach of the areas under the jurisdiction of each European Union member State, in accordance with the UNCLOS
- establishes a **framework** for member States to take the necessary measures to achieve or **maintain good environmental status (GES)** in European Union's waters **by 2020 at the latest**,
- and to protect the **resources base** upon which marine-related economic and social activities depend

MSFD

- Adopted in **June 2008**, and due to be transposed into national law by **July 2010**
- The **initial assessment** of the current environmental status of national marine waters and the environmental impact and socio-economic analysis of human activities in these waters (**by 15 July 2012**)
- The **determination of what GES** means for national marine waters (**by 15 July 2012**)
- The establishment of **environmental targets** and associated indicators to achieve GES by 2020 (**by 15 July 2012**)

MSFD

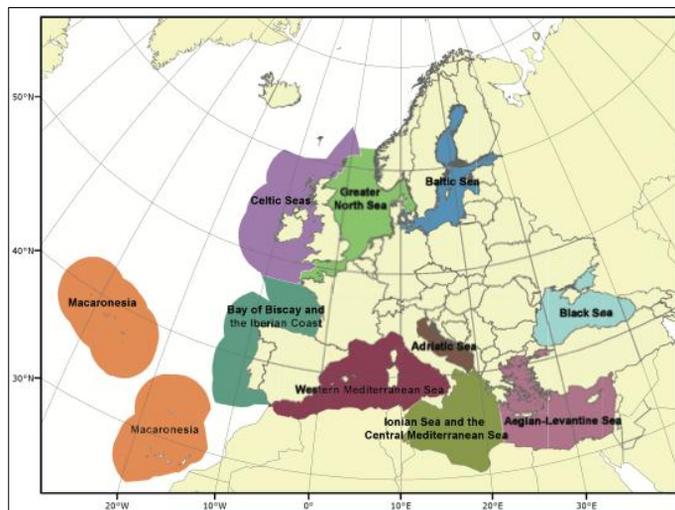
- The establishment of a **monitoring programme** for the ongoing assessment and the regular update of targets (**by 15 July 2014**)
- The development of a **programme of measures** designed to achieve or maintain GES by 2020 (**by 2015**)
- The **review and preparation** of the second cycle (2018 – 2021)



MSFD

- The **Mediterranean and Black Seas** are among the four marine regions identified by Art. 4, para. 1, of the MSFD.
- The Mediterranean Sea is **divided into the sub-regions**
 - “Western Mediterranean Sea”
 - “**Adriatic Sea**”
 - “Ionian Sea and Central Mediterranean Sea”
 - “Aegean-Levantine Sea”
- **To achieve the coordination** needed for the development of marine strategies, European Union member States

*“shall, where practical and appropriate, **use existing regional institutional** cooperation structures, including those under **Regional Sea Conventions**, covering that marine region or sub-region”*



GES

- The main goal of the directive is to achieve **Good Environmental Status** of EU marine waters by 2020. The Directive defines GES as:

*“The environmental status of marine waters where these provide **ecologically diverse and dynamic oceans and seas** which are clean, healthy and productive” Article 3*

- GES means that the **different uses made of the marine resources are conducted at a sustainable level**, ensuring their continuity for future generations.

GES indicators

- To ensure that human induced pressures are kept **within levels compatible** with the achievement of GES,
- enabling the **sustainable use of marine goods and services** by present and future generations,
- **methodological standards, criteria and indicators** have been adopted to ensure consistency when Member States **fulfil their obligations** under the Directive.
- In determining their GES, **11 qualitative descriptors** were developed

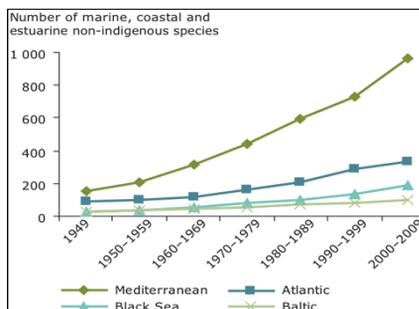
GES

- Descriptor 1: **Biological diversity**
 - “the quality and occurrence of habitats and the distribution and abundance of species are in line with prevailing physiographic, geographic and climatic conditions.”
- Descriptor 2: **Non-indigenous species**
 - “Non-indigenous species introduced by human activities are at levels that do not adversely alter the ecosystems”
- Descriptor 3: **Population of commercial fish / shell fish**
 - “Populations of all commercially exploited fish and shellfish are within safe biological limits, exhibiting a population age and size distribution that is indicative of a healthy stock.”

Descriptor 2

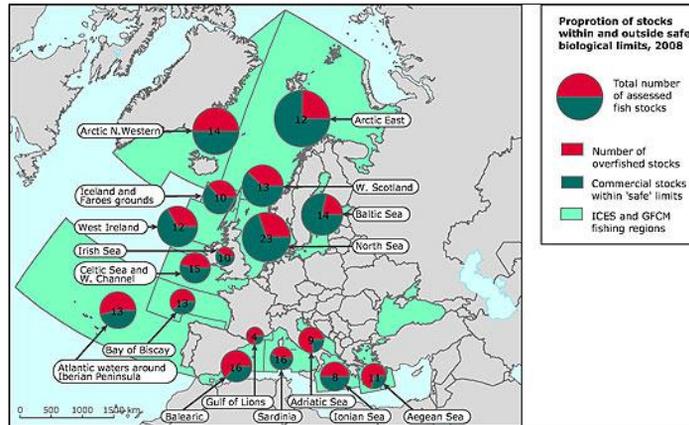
Non-indigenous species

- estimated cost to the European economy of **12 B Euro per year**
- **Mediterranean** seriously under threat since the connection with the Suez canal (Lessepsian species)



Descriptor 3

Populations of commercial fish / shell fish



- **Descriptor 4: Elements of marine food webs**
 - “All elements of the marine food webs, to the extent that they are known, occur at normal abundance and diversity and levels capable of ensuring the long-term abundance of the species and the retention of their full reproductive capacity”
- **Descriptor 5: Eutrophication**
 - “Human-induced eutrophication is minimised, especially adverse effects thereof, such as losses in biodiversity, ecosystem degradation, harmful algae blooms and oxygen deficiency in bottom waters”
- **Descriptor 6: Sea floor integrity**
 - “Sea-floor integrity is at a level that ensures that the structure and functions of the ecosystems are safeguarded and benthic ecosystems, in particular, are not adversely affected”

Descriptor 4

Sea floor integrity



- **Descriptor 7: Alteration of hydrographical conditions**
 - *“Permanent alteration of hydrographical conditions does not adversely affect marine ecosystems”*
- **Descriptor 8: Contaminants**
 - *“Contaminants are at a level not giving rise to pollution effects.”*
- **Descriptor 9: Contaminants in fish and seafood for human consumption**
 - *“Contaminants in fish and other seafood for human consumption do not exceed levels established by Community legislation or other relevant standards”*
- **Descriptor 10: Marine litter**
 - *“Properties and quantities of marine litter do not cause harm to the coastal and marine environment”*
- **Descriptor 11: Introduction of energy, including underwater noise**
 - *“Introduction of energy, including underwater noise, is at levels that do not adversely affect the marine environment”*

Descriptor 10

Marine litter

- huge problem due to **longevity of plastics** in the environment
- new issues arising from **micro-plastics and nanotechnologies**
- estimates for the Mediterranean suggest that there are around **250 billion pieces of waste plastic micro-fragments** floating in the water column of **10 to 15 cm depth** (Terre d'avenir, 2010)

The Marine Litter Express

The incredible journey of the rubber ducks



Waste which enters the ocean can turn up anywhere in the world. In 1992 a container ship in the Pacific Ocean lost 30,000 rubber ducks off the coast of China. These ducks first traveled with the dominant currents in the direction of Australia, but fifteen years later they turned up on the shores of the UK. An interesting story, but it illustrates perfectly how ship-source marine litter is a global problem.

midway island: <http://www.youtube.com/watch?v=ozBE-ZPw18c>

Descriptor 11

Introduction of energy, including underwater noise

- **Shipping for trade or tourism**, like ferries or cruise ships, recreation boats and fishing boats, which all produce noise;
- The use of **sonar systems** by all kinds of vessels;
- **Construction** (especially through piling) of offshore oil and gas platforms and wind parks;
- **Dredging** for shipping lanes, sand mining and for laying pipes and cables;
- Operation of **platforms and their lights**;
- **Cable connections** between offshore activities, the main land and between power stations, causing electromagnetic radiation;
- **Cooling water systems for industry**, which raise water temperature;
- **Military activities**, which produce noise.

*Water framework directive and environmental impact
assessment directive*

Water Framework Directive

- establishes a **framework to enhance the protection and to improve** the aquatic environment of continental, transitional, and coastal waters
- coastal waters are defined as **one nautical mile** extending from the baseline of the territorial sea
- aims to prevent further deterioration and achieve 'good status' by 2015
 - good status refers to **both ecological and chemical** status
 - specifically focuses on wider river basin management
 - requires the **integration of the aims of Natura 2000 sites** into the relevant river basin management plans

EIA directive

- contains the **obligation binding on all member States** to carry out **environmental impact assessments** for projects and activities both on land and sea.
- In June 2010, the European Commission launched a **public consultation** on the review of the instrument
- As a result of the review process, on 26 October 2012 the European Commission adopted a proposal for a new instrument that would amend the current EIA Directive by **improving current levels of environmental protection**

Common fisheries policy

CFP

- **Common Fisheries Policy (CFP)** is the fisheries policy of the EU.
- formally **created in 1983**, but its origins date back to the early 1970s, when fisheries were **originally part of the Common Agricultural Policy**.
- provides the rules to ensure that **Europe's fisheries are sustainable** and do not damage the marine environment.
- Two fishing rules are particularly important:
 - **Restriction of the size of the fleet** that sets to sea and the **amount of time** it can spend fishing;
 - Restriction of the **quantity of fish** that can be taken from the sea before fishers need to stop fishing (total allowable catches).

CFP

- also provides **funding and technical support** for initiatives that can make the industry **more sustainable**.
- In 2009, the Commission started a **review of the CFP** to make it more efficient in conserving fish stocks, ensuring the economic viability of the European fleets and providing good quality food to consumers.
- In July 2011, the Commission adopted its “Communication on the reform of the common fisheries policy”.
- The new CFP entered into force on January 1st 2014

New CFP

1. Take action **against over-fishing** and in favour of the sustainable management of fish.
2. Ensure **productivity of fish stocks** to maximise long-term yield.
3. **Multi-annual plans** governed by **ecosystem approach**.
4. Simplified rules and **decentralised management**.
5. System of **transferable** fishing concessions.
6. Measures beneficial to **small-scale fisheries**.
7. **Ban on discards**.
8. New marketing **standards and clearer labelling**.
9. Better framework for **aquaculture**.
10. EU financial assistance **to support sustainability** objectives.
11. Up-to-date information on **state of marine resources**.
12. International **responsibility**.

CFP and SACs

The Habitats and Birds Directives versus the Common Fisheries Policy: A Paradox (Leijen, J. 2011)

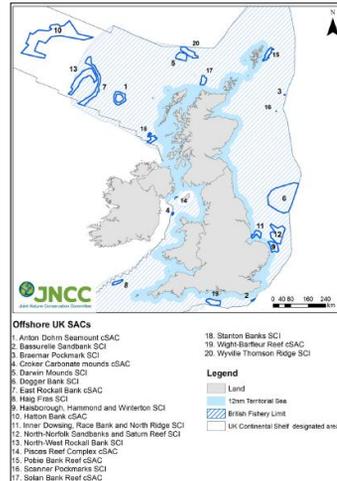
- the **obligation of member states to conserve** or protect marine biodiversity
- yet the overall **coordination of fisheries** in the region falls under the **exclusive competence of the EU**
- member states are prohibited in fulfilling their duties for conservation **if measures proposed affect fisheries**

CFP and SACs

- action to **limit fisheries within a SAC** may be **beyond the competence** of the member state
 - the exception applies for the limitation of **fishing vessels flying the flag** of the member state itself
- however inaction, i.e. the continued utilisation of an area by a fishery, constitutes a **violation of the habitats directive**
 - in exceptional cases the EU, through the **CFP can designate a protected area** within the jurisdictional limits of a member state, at their request.

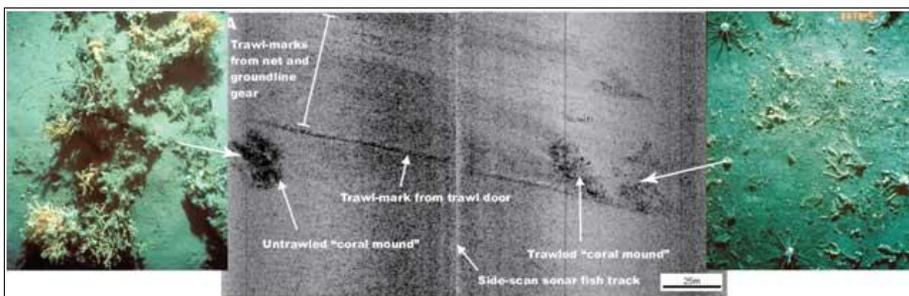
CFP and MPAs

- In 2003, the **Darwin Mounds** an area of cold-water coral (*Lophelia pertusa*) was designated as the **UK's first offshore MPA**
- First **discovered in May 1998** by an oceanographic survey combining the oil and gas industry and the UK state



Darwin mounds

- 1999 – second survey revealed the eastern field of mounds
- 2000 – third survey revealed trawl damage over half of the field of mounds



Darwin mounds

- the area was **considered unique** as the coral was found growing on a **sandy substrate** at 1000m depth
- and it also displayed a **distinctive tail structure** unseen previously
- hundreds of structures, each **approximately 100m in diameter and 5m high**
- this coincided with the **national 'Greenpeace' judgement that the habitats directive** should apply beyond the territorial seas to include the EEZ
- however the judgement was **only finalised in 2010**

Darwin mounds

- recognising that a **specific threat applied to the region** the UK utilised a new CFP (2002) mechanism
- negotiations with **other member states, France and Spain** enabled the development of a temporary trawling closure
- informal negotiations with the EU and finally a submission of an emergency request for a **temporary trawling ban** was submitted and approved in **July 2003**
- in **March 2004** a **permanent trawling** ban was imposed
- in **August 2008** the **Darwin Mounds** were declared an SAC

Conclusion

- there are **multiple directives that have implications** for marine protected area development
- the **marine Natura 2000 network is significantly under-represented**, especially outside territorial and internal waters
- the **CFP is a powerful tool rarely used for conservation**, but has the potential for its application
- many MPAs are in existence due to **rulings by the ECJ** and precedents that have been set
- there is a movement towards wider **zoning of the seas through MSP** and the development of **EBM**

Maritime Spatial Planning

Peter Mackelworth

MSP & MSFD

- With the MSFD there has been a move away from specific **spatial conservation measures** towards an **ecosystem based management approach**
- the development of **maritime spatial planning** is an example of broader planning and attempts to 'manage' the marine environment in a more inter-sectoral manner
- In 2008, the Commission adopted the Communication **"Roadmap for Maritime Spatial Planning: Achieving Common Principles in the EU"**, which proposed a set of key principles for MSP.
- In the Roadmap, the Commission undertook to produce a report on the **series of workshops** which were held during 2009 to propose further steps and actions.

MSP and ICM

- In March 2013, the Commission proposed legislation to create a **common framework for maritime spatial planning and integrated coastal management**.
- While **each EU country** will be free to **plan its own maritime** activities, local, regional and national **planning in shared seas** would be made more compatible through a **set of minimum common requirements**.



July 2014

DIRECTIVE 2014/89/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
of 23 July 2014
establishing a framework for maritime spatial planning

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

MSP

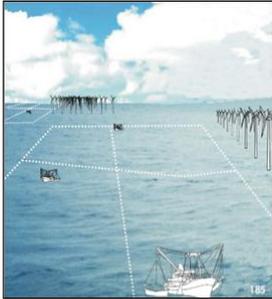
- Maritime spatial planning has been defined by the UK DEFRA as:

*“...a strategic plan for **regulating, managing, and protecting** the marine environment that addresses **the multiple, cumulative, and potentially conflicting uses** of the sea.”*

- <http://ioc3.unesco.org/marinesp/>

What Is MSP?

“The public process of **analysing and allocating** the **spatial and temporal distribution** of human activities in marine areas to achieve **ecological, economic, and social objectives** that are usually specified through a **political process**”



Ehler & Douvère
Visions for a Sea Change
UNESCO International Workshop on
Marine Spatial Planning 2006

MSP

- Spatial planning originates from land use planning concepts and methods
- **Originated in town planning**
- Rolled out into suburbia
- Finally land-use planning **covers the majority of terrestrial**, particularly in western countries
 - **Permits based on a comprehensive planning process** are standard in well planned terrestrial environment

MSP

- MSP is a **natural extension of the terrestrial planning** process in the marine environment, lack of planning has led to:
 - Spatial and temporal **overlap**
 - **Lack of communication** between authorities
 - **Lack of connection** between offshore activities and onshore communities
 - **Lack of conservation**
 - Lack of **investment certainty** for developers

MSP

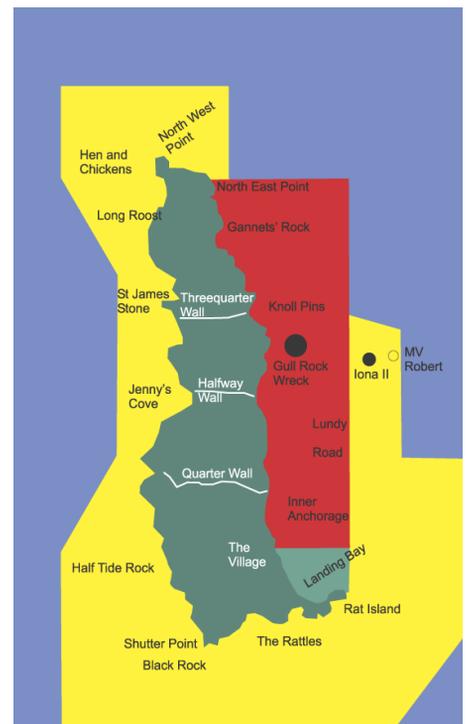
1. Address **heterogeneity** of marine ecosystems and **prioritise specific sites**:
 - High biodiversity / endemism
 - Point sources for specific resources, such as gravel / hydrocarbons
2. Focus on **influencing human behaviour**
 - Goals are set for the ecosystem and human activities:
 - Only human activities can be managed

MSP

3. Provide a management **framework for new and previously inaccessible** scientific information
 - Remote sensing
 - GPS
4. Makes **conflicts and compatibilities transparent** and tangible
5. Guides single sector management toward **integrated decision-making**
 - Visualise **alternatives**
 - **Guidance for managers** in different sectors

MSP

- Generally two simple components:
 - A map that depicts the zones
 - A set of regulations or standards applicable to each zone (Agardy, 2007).



Why?

Use of the sea

- marine resources should **no be longer open access and free**
- when resources are open access they are **over-exploited**
- the marine environment is **not owned by one entity**, but **managed by the state for their citizens**
- these are **public resources** that should be managed for the **public good**
- therefore this **process should be inclusive of society**, not just for special interest groups

Traditional human uses



Traditional human uses



Technological change



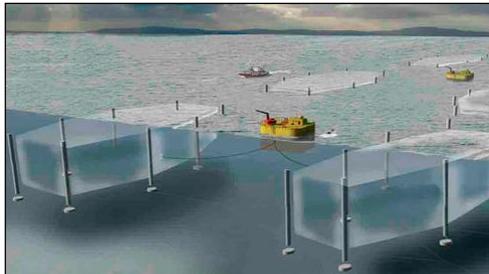
Technological change



New demands for ocean space



New demands for ocean space



new demands for ocean space



Development in New Ocean Places



Characteristics of Integrated Management

- Multiple problems
- Multiple institutions
- Multiple stakeholders
- Multiple and conflicting goals & objectives
- Multiple linkages to human activities and ecological processes outside boundary of management area

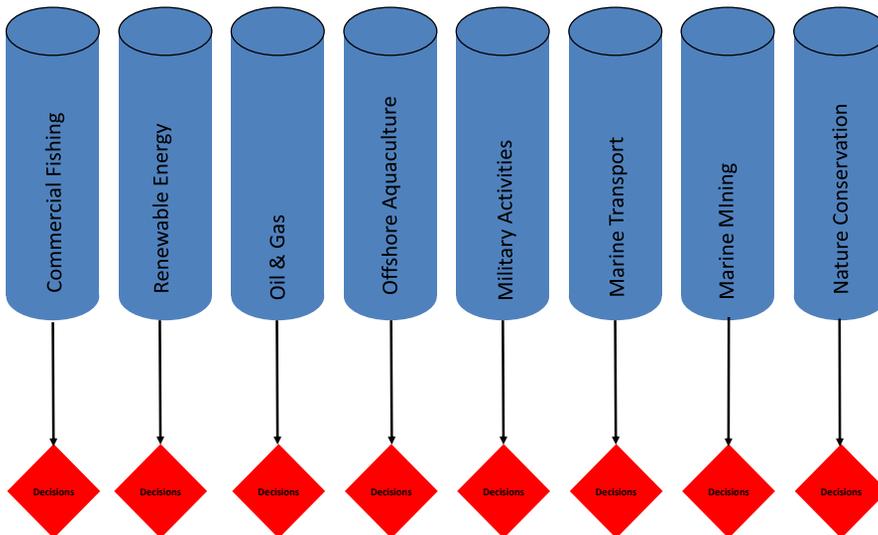
Fragmentation



Alternatives to Managing Marine Space

- **Incremental**
 - One economic sector at a time
 - Little or no coordination across government agencies
 - Little or no coordination among levels of government
 - Allocation of uses with little regard for other uses
 - Allocation of uses with little regard for nature
 - Across government agencies
 - Among levels of government
 - Allocation of uses with consideration of other uses
 - Allocation of uses with consideration of nature
 - Allocation of uses with consideration of cumulative effects
- **Integrated Planning**
 - Across economic sectors

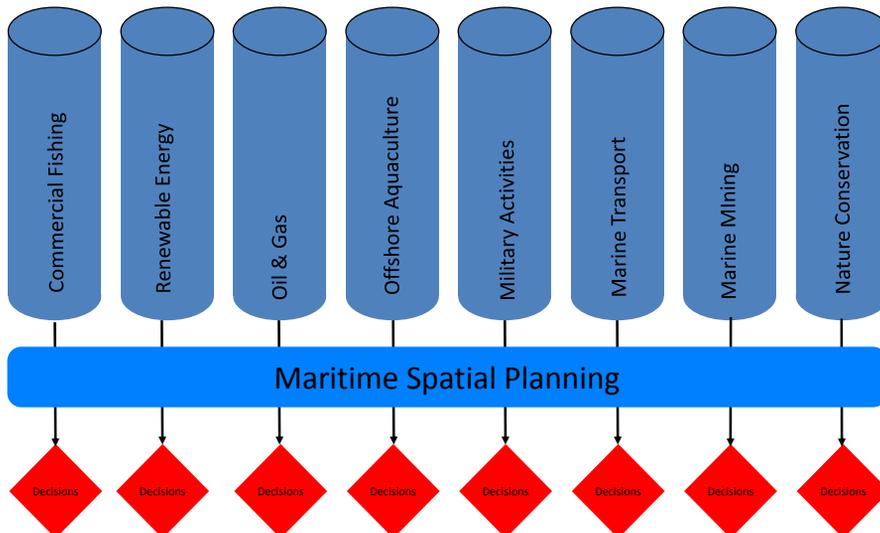
Single-Sector Planning



Zoning already exists

- Vessel Traffic Routes
- Vessel Traffic Separation Zones & Precautionary Zones
- Area to be Avoided (by vessels)
- Particularly Sensitive Sea Area (PSSA)
- Safety Zones around Vessels and Terminals
- Anchoring & No-Anchoring Areas
- Security Zones in Ports and Waterways
- Oil & Gas Lease or Concession Areas
- Wind Farm and Wave Park Lease or Concession Areas
- Safety Zones around Oil & Gas Installations, Wind Farms, Wave Parks, etc
- Military Operations or Exercise Zones
- Dredging Sites or Areas
- Oil and Gas Pipeline Rights-of-Way
- Submarine Communications Cable Rights-of-Way
- Energy Transmission Line Rights-Of-Way
- Sand & Gravel Extraction Areas
- Fishery Closure Areas, including seasonal closures
- No Trawl Areas
- Critical Habitat Designations
- Offshore Aquaculture Areas
- Marine Protected Areas
- Marine Reserves/No-Take Areas
- Protected Archeological Areas, e.g., shipwrecks
- Cultural or Religious Sites
- Scientific Reference Areas

Integrated MSP



Why Are Time and Space Important?

The Oceans are **not** Homogeneous

Some Areas **are** more Important than Others

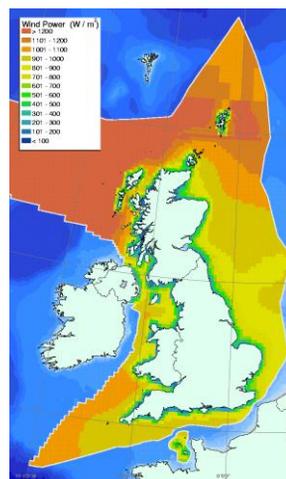
Some areas are more **ecologically important** than others

- Areas of High Biodiversity
- Areas of High Endemism
- Areas of High Productivity
- Spawning Areas
- Nursery Areas
- Migration Corridors and Stopover Points

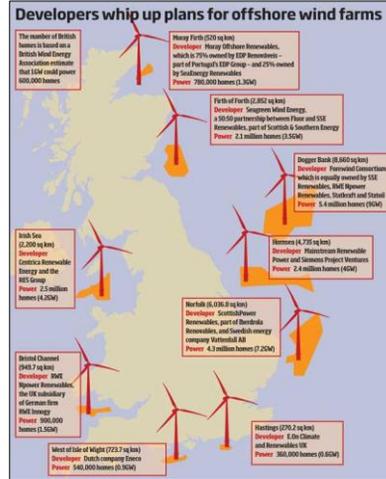
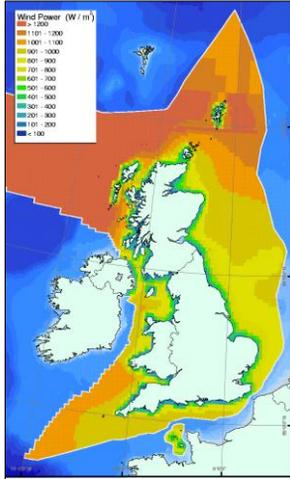


Some areas are more **economically important** than others

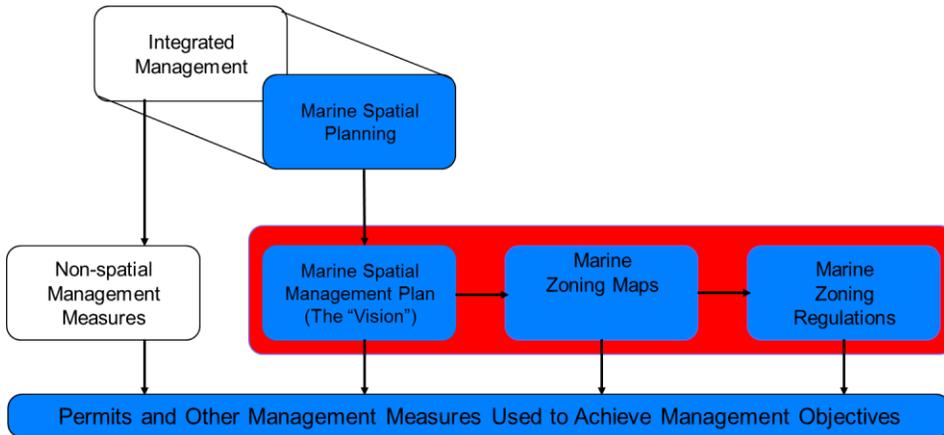
- Oil & Gas Deposits
- Sand & Gravel Deposits
- Fishing Grounds
- Transportation Routes
- **Areas of Sustained Winds**
- Areas of Sustained Waves



wind farms



Outputs of MSP



Benefits of MSP

Ecological/Environmental Benefits

- Identification of **biologically and ecologically important areas** as a basis for space allocation
- Incorporation of **biodiversity objectives into planning and decision-making**
- **Identification and reduction of conflicts** between human activities and nature
- Ensure **space for nature**
- Establish context for **planning network of marine protected areas**
- Identification and **reduction of cumulative effects of human activities** on marine ecosystems

Benefits of MSP

Economic Benefits

- Greater certainty of access to desirable areas for new private sector investments, frequently amortized over 20-30 years
- Identification of compatible uses within the same area for development
- Identification and early resolution of conflicts between incompatible uses
- Improved capacity to plan for new and changing human activities, including emerging technologies and their associated effects
- Promotion of the efficient use of resources and space
- Streamlining and transparency in permit and licensing procedures
- Resolution of conflicts at planning level instead of individual project review
- Enables government, industry, and NGOs to work together to identify suitable locations for development and to identify areas where environmental values need to be protected and conservation should take precedence

Benefits of MSP

Social Benefits

- Improved opportunities for local community and citizen participation
- Identification of effects of decisions on the allocation of ocean space on communities, e.g., closure areas for certain uses, protected areas
- Identification and improved protection of cultural heritage
- Identification and preservation of social, cultural, and spiritual values related to ocean use

Benefits of MSP

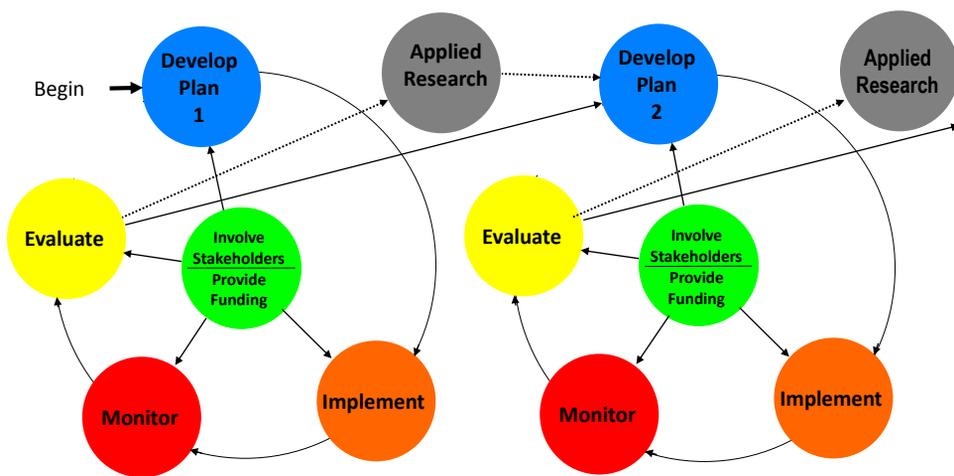
Administrative Benefits

- Increase consistency and compatibility of regulatory decisions
- Improve information collection, storage and retrieval, access and sharing
- Increase integration and reduce duplication of effort and its associated waste of resources
- Improve speed, quality, accountability, and transparency of decision making and reduction of costs of regulation

Characteristics of MSP

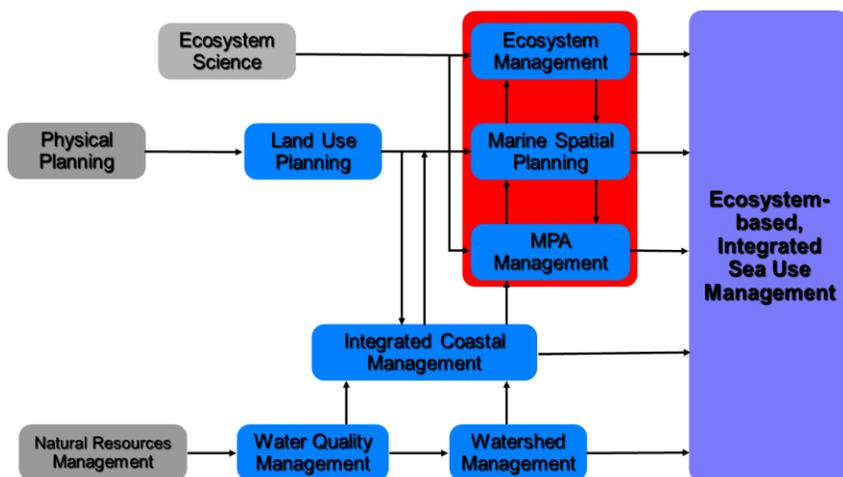
Ecosystem-based	Balanced ecological, economic, and social objectives toward maintenance of ecosystem services
Integrated	Across sectors, agencies, and among levels of government
Participatory	Involving stakeholders actively throughout the process
Adaptive	Capable of learning from experience
Strategic & Future-Oriented	Focused on the long-term
Place-based	Integrated management of all human activities within a spatially demarcated area identified through ecological, economic, and jurisdictional considerations

The Continuing MSP Cycle



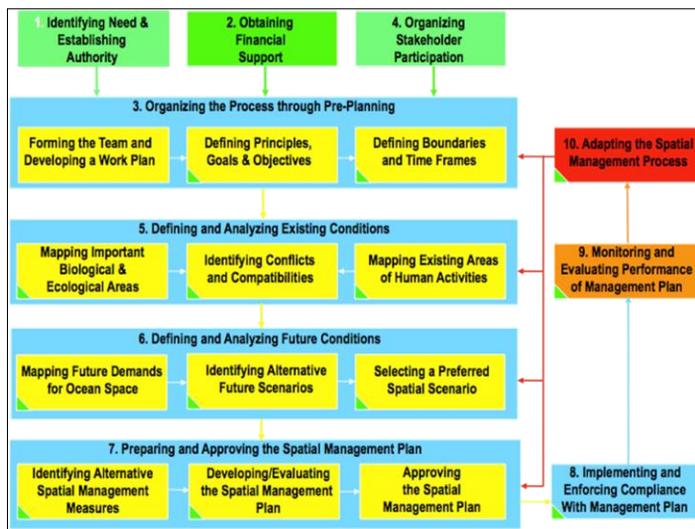
Towards Ecosystem-based, Integrated Sea Use Management

Evolution Toward
Integrated, Sea Use Management



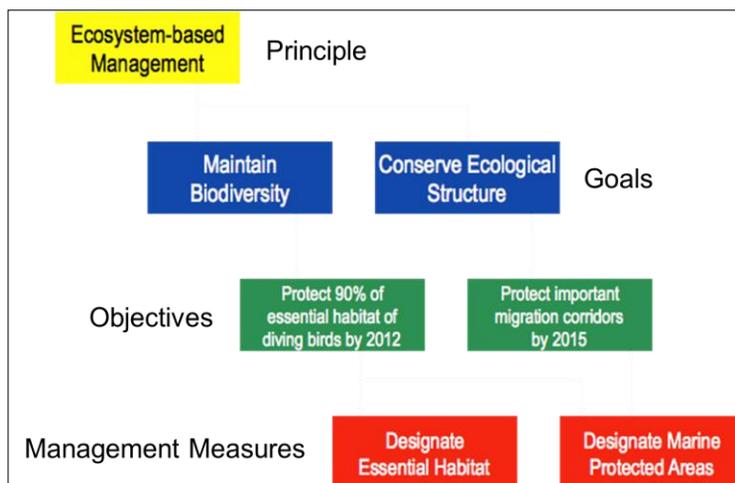
10 Steps of MSP

- Step 1 Defining Context and Authority
- Step 2 Obtaining Financial Support
- Step 3 Organizing Stakeholder Participation
- Step 4 Organizing the Process Through Pre-Planning
- Step 5 Analyzing Current Conditions
- Step 6 Analyzing Future Conditions
- Step 7 Developing the Spatial Plan
- Step 8 Implementing and Enforcing the Plans
- Step 9 Monitoring and Evaluating Performance
- Step 10 Adapting the Spatial Planning Process



Four Fundamental MSP Questions

- Where Are We Today?
 - Baseline characterization
- Where Do We Want to Be?
 - Alternative scenarios
- How Do We Get There?
 - Management plan
- What Have We Accomplished?
 - Monitoring and evaluation



Establishing a Baseline

Baseline

- Spatial and temporal information about the conditions of the marine management area before a MSP plan is implemented
- It is the situation before the implementation of a MSP plan against which progress can be assessed and comparisons made

Types of Conflicts

Types of Conflicts		Examples (Illustrative, not Exhaustive)	Effects	Spatial Management Measures	Other Management Measures
Within Individual Human Uses	Single Sector User Conflicts	<p>Within fishing: Conflicts between fish traps and trawling</p> <p>Conflicts between commercial and recreational fishers</p> <p>Fishery by-catch</p> <p>Within recreation Conflicts between recreational boaters and whale-watching</p>	<p>Loss of gear & catch</p> <p>Loss of gear & catch</p> <p>Mortality of non-target fish species (see also user-nature conflict)</p>	<p>Separation of areas using different gear types</p> <p>Designation of specific recreational fishing areas</p> <p>Designation of specific use zones, and marine protected areas</p>	

Types of Conflicts

Types of Conflicts		Examples (Illustrative, not Exhaustive)	Effects	Spatial Management Measures	Other Management Measures
Among Individual Human Uses	User-User Conflicts	<p>★ Conflicts between pipelines and trawling</p> <p>★ Conflicts between marine transport and wind farms</p> <p>★ Conflicts between oil & gas development and aquaculture</p> <p>★ Conflicts between military operations and marine recreation</p>	<p>Damage to pipelines and cables, loss of fishing gear</p> <p>Collisions, spills, damage to wind farm structures</p> <p>Degraded water quality, oil spills</p> <p>Lost opportunities for marine recreation</p>	<p>Designation of no-trawl areas around pipelines</p> <p>Separation of uses, security zones around wind farms</p>	<p>Pilotage requirements, aids to navigation</p>

Types of Conflicts

Types of Conflicts		Examples (Illustrative, not Exhaustive)	Effects	Spatial Management Measures	Other Management Measures
Between Human Uses and Nature	User-Nature Conflicts	<ul style="list-style-type: none"> ★ Conflicts between trawling and fish spawning areas ★ Conflicts between marine transport and marine mammal feeding areas ★ Fishery by-catch 	<ul style="list-style-type: none"> Loss of habitat, reduced fish populations Vessel noise, whale strikes (collisions) Mortality of marine mammals, seabirds, sea turtles 	<ul style="list-style-type: none"> Fishery closure areas Modification of shipping lanes, marine protected areas 	

Conflicts among human uses



Conflicts between human activities and nature



Conflicts between human activities and nature



Conflicts between human activities and nature



Belgium MSP

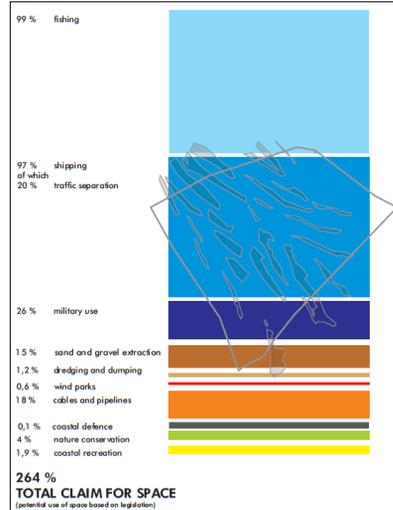
Belgium MSP

- a maximum width of about **65km** and extends **87km** from the coast.
- Its surface area is about **3,600km²**.
- It only consists of **about 5%** of the total area of the North Sea

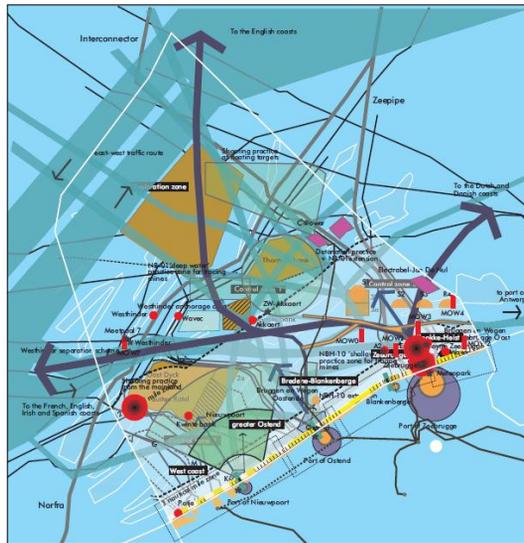


The Belgium Sea

- analysis of the **space allocations** based on **current legislation** this space is used by **264%**
- while not **all users are using the space at all times**
- some **activities or infrastructure can be combined** without spatial or temporal conflicts



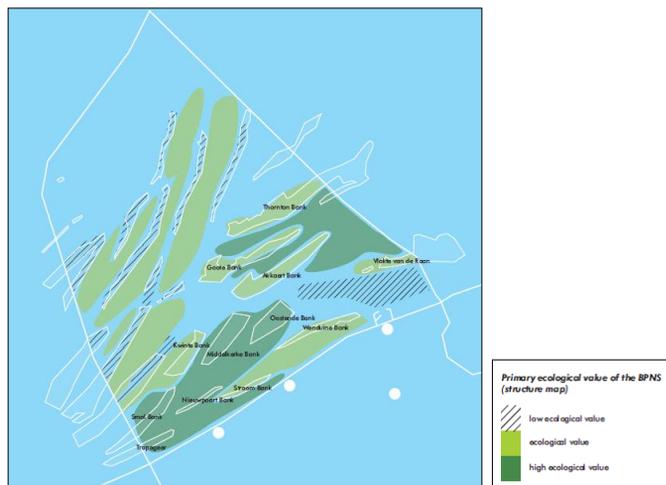
An outcome of a lack of MSP

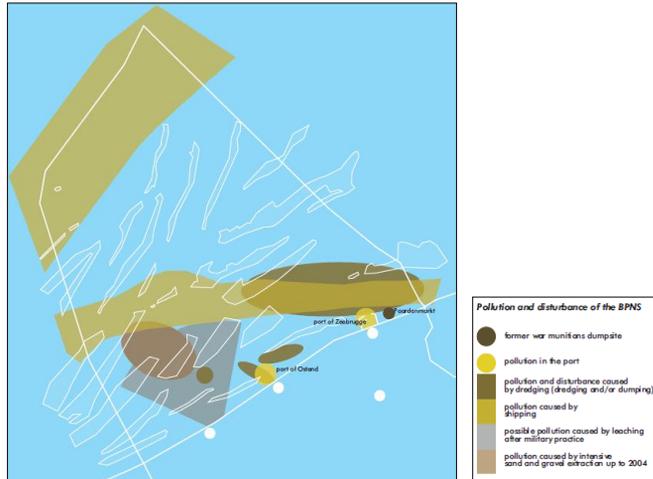


Currents



Ecological value

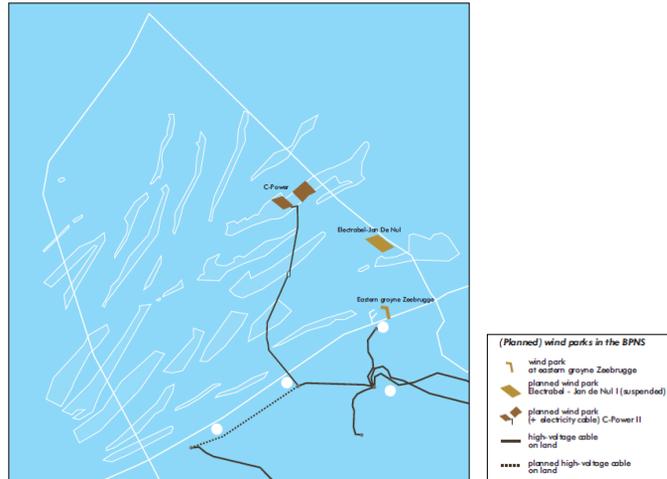




Cables and pipelines



Potential wind farms



Wind farms

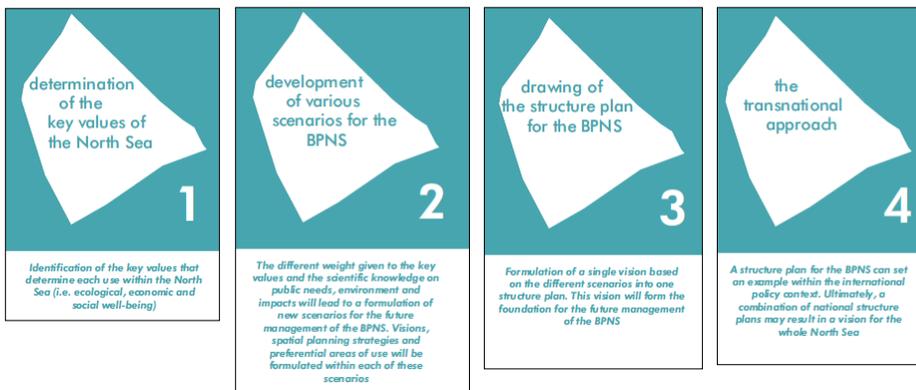
INCOMPATIBLE ACTIVITIES

- shipping. An offshore wind park cannot be constructed in or in the immediate vicinity of recognised shipping routes. The construction and maintenance of the farm will result in additional shipping traffic, which may result in a limited disruption of other shipping traffic. In addition there is a certain risk of collisions, the significance of which depends on the location of the park. The collision risk for the wind park on the Thornton bank is estimated at one accident per 200 years (2);
- sand and gravel extraction. Sand and gravel extraction is not possible in the vicinity of wind parks. The planned wind park on the Thornton bank is located to the east of sand extraction control zone 1 A;
- fishing. Fishing in the vicinity of wind parks is not allowed. Beam trawling will no longer be possible in parts of the channels of the Thornton bank and shrimp fishing on the crest will be prohibited as well. The fishing industry will also experience a certain degree of nuisance during the construction stage;
- military practice and dredging activities are also impossible in (the immediate vicinity of) wind parks.

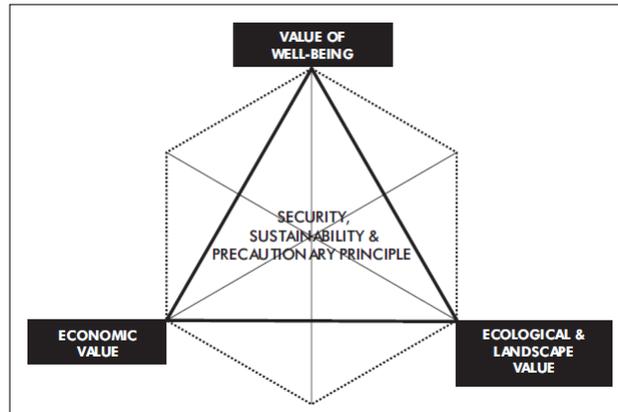
COMPATIBLE ACTIVITIES

- tourism: wind parks may offer new possibilities for divers (specific fauna and flora) and for pleasure cruising;
- aquaculture: wind parks may also offer new aquaculture possibilities: wind parks are suitable for oyster and mussel cultivation and it is also possible to free cultivated fish species in the parks;
- fishing: wind parks may have a 'shelter function' for fish, so that they develop into rich fishing grounds.

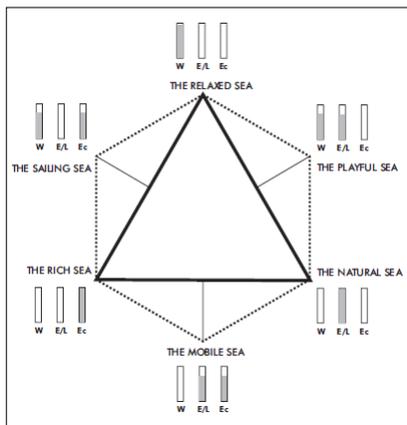
Four steps



Key values



Scenarios

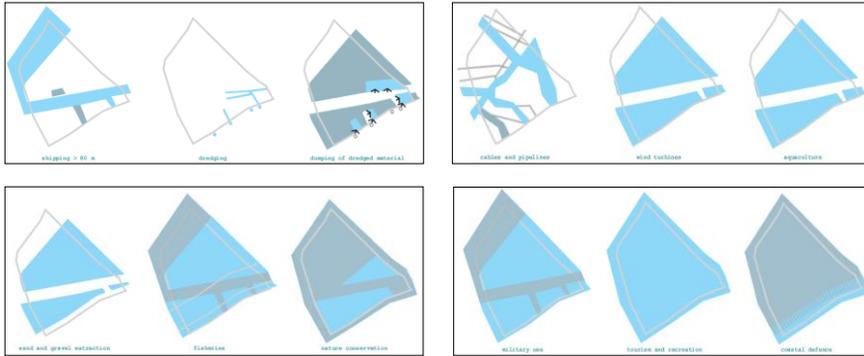


value of wellbeing

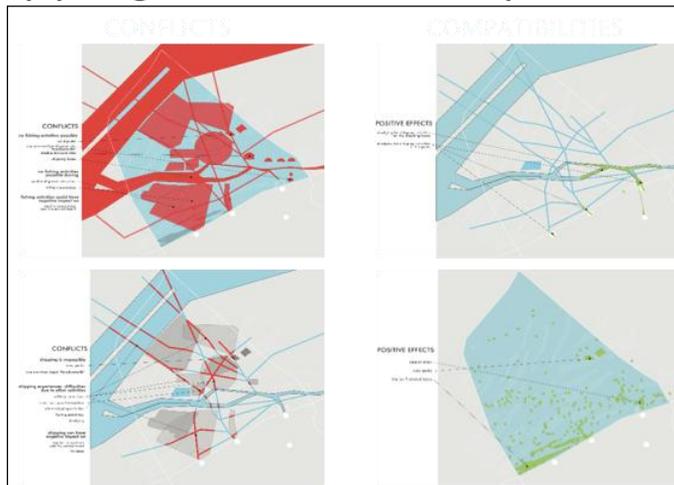
economic value

ecological & landscape value

Planning uses



Mapping Conflicts/Compatibilities



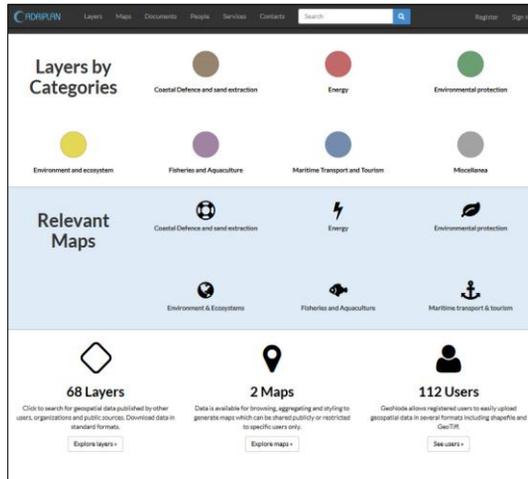
Source: Maes, F., et al., 2005. A Flood of Space, University of Gent

Adriatic Ionian Maritime Spatial Planning (AdriPlan)

AdriPLAN

- ADRIPLAN stands for ADRIatic Ionian maritime spatial PLANning
- funded by the European Commission – DG Maritime Affairs and Fisheries (DG MARE) under the theme
 - "Maritime Spatial Planning (MSP) in the Mediterranean sea and/or the Black sea".
- The total project budget is 1.250.000€,
- the duration of the project is 18 months from 10 December 2013 until 10 June 2015.

AdriPLAN Data Portal



Conclusions

- EBM requires **broader management objectives** than those that solely MPAs can provide
- MSP is the **tool of choice for defining** some wider regimes on the sea
- MSP is more **complex in multiple state seas**, such as the Mediterranean and Adriatic Sea
- But at **State level MSP** appears to be a viable tool.

The Mediterranean

Peter Mackelworth

The Mediterranean

- The Mediterranean Sea is a **hotspot of marine diversity**
- Of the **17,000 marine species** reported to date in this sea approximately **one fifth are considered to be endemic**
- Mediterranean Sea's diverse ecosystems are affected by many anthropogenic threats, some of which began thousands of years ago
 - including **intensifying fishing practices**
 - **resource extraction**
 - increasingly **densely populated coastlines**,
 - **invasive species**
 - **climate change**
- This pressure has resulted in **major alterations of Mediterranean marine ecosystems** and widespread conflict among users

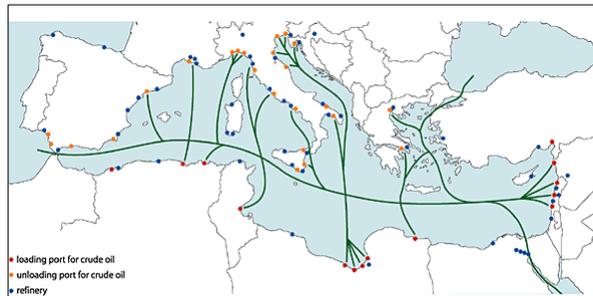
The Mediterranean

- The countries bordering the Mediterranean Sea differ greatly as far as their **internal political systems and levels of economic development** are concerned. The Mediterranean shores also host some areas of sensitive political friction.
- the **regime of transit passage**, as set forth in Arts. 37-44 of the UNCLOS, applies to the **strait of Gibraltar and to several international straits** within the region
- Other **Mediterranean straits are governed by special regimes**, different from transit passage.
- The Mediterranean Sea includes **some major islands** (Sicily, Sardinia, Corsica, Cyprus, Crete) and a **number of smaller islands and islets**.

The Mediterranean

- **Highly populated cities**, ports of worldwide significance and extended industrial areas are located along its shores. Important routes of international navigation pass through the Mediterranean waters.
- The region is of **major strategic importance** with navies of bordering and non-bordering States cruising the Mediterranean
- the Mediterranean is **particularly fragile** because of the **very slow exchange** of its waters through the strait of Gibraltar, is a serious concern.
- Although it covers only **0.8% of the surface of oceans and seas**, about **30% of the world marine trade and 20% of the global volume of fuel** transport passes in the Mediterranean Sea.

Crude oil movements



- The Mediterranean became the **first region** to adopt an action plan in the context of the **UNEP Regional Seas Programme**.
- On 4 February 1975 a policy instrument, the **Mediterranean Action Plan (MAP)**, was adopted by an intergovernmental meeting convened in Barcelona by UNEP.
- One of the main objectives of the MAP was to **promote the conclusion of a framework convention** for the protection of the Mediterranean environment.
- This was done on 16 February **1976** when the Barcelona Convention and two protocols were opened to signature and entered into force on 12 February **1978**

The Barcelona system

the Convention on the Protection of the Mediterranean Sea against Pollution amended in Barcelona on 10 June 1995, changed its name into **Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean;**

1. Protocol for the Prevention and Elimination of Pollution of the Mediterranean Sea by **Dumping from Ships and Aircraft or Incineration at Sea**
2. Protocol Concerning Cooperation in **Preventing Pollution from Ships** and, in Cases of Emergency, Combating Pollution of the Mediterranean Sea
3. Protocol for the Protection of the Mediterranean Sea against **Pollution from Land-Based** Sources and Activities
4. **Specially Protected Areas Protocol**
5. Protocol Concerning Pollution Resulting from **Exploration and Exploitation** of the Continental Shelf, the Seabed and its Subsoil
6. Protocol on the Prevention of Pollution of the Mediterranean Sea by **Transboundary Movements of Hazardous Wastes** and their Disposal
7. Protocol on **Integrated Coastal Zone Management** in the Mediterranean

The Barcelona system

the SPA Protocol

- the previous **1982 Protocol did not cover the high seas**
- the 'new' protocol from **1995 includes the continental shelf** of Mediterranean States parties, since its geographical scope covers all Mediterranean waters, including the seabed and its subsoil
- The extension of the **application of the SPA Protocol to the high seas areas** was seen by its parties as necessary to protect those highly migratory marine species
- due to the **problems arising from the different kinds of national coastal zones** in the region, and the fact that many maritime boundaries have yet to be agreed, the **SPA Protocol includes two disclaimer provisions**

SPA protocol

“Nothing in this Protocol nor any act adopted on the basis of this Protocol shall prejudice the rights, the present and future claims or legal views of any State relating to the law of the sea, in particular, the nature and the extent of marine areas, the delimitation of marine areas between States with opposite or adjacent coasts, freedom of navigation on the high seas, the right and the modalities of passage through straits used for international navigation and the right of innocent passage in territorial seas, as well as the nature and extent of the jurisdiction of the coastal State, the flag State and the port State.

No act or activity undertaken on the basis of this Protocol shall constitute grounds for claiming, contending or disputing any claim to national sovereignty or jurisdiction.”

(Art. 2, paras. 2 and 3, SPA Protocol)

The importance of these disclaimers is that:

- the establishment of **intergovernmental cooperation** in the field of the marine environment **shall not prejudice legal or political claims**
- yet the very **existence of such legal or political claims**, whose settlement is not likely to be achieved in the short term, **should neither prevent nor delay** the adoption of measures necessary for the protection of the marine environment in the Mediterranean.

SPAMI list

Specially Protected Areas of Mediterranean Importance (SPAMI)

*“are of importance for **conserving the components of biological diversity** in the Mediterranean; contain ecosystems **specific to the Mediterranean area** or the **habitats of endangered species**; are of **special interest at the scientific, aesthetic, cultural or educational levels**”.*

- The existence of the SPAMI List **does not exclude** the right of each party to create and manage protected areas **which are not intended to be listed as SPAMIs**, but deserve to be protected under its domestic legislation.

SPAMIs

The procedures for the listing of SPAMIs are specified in detail in the SPA Protocol:

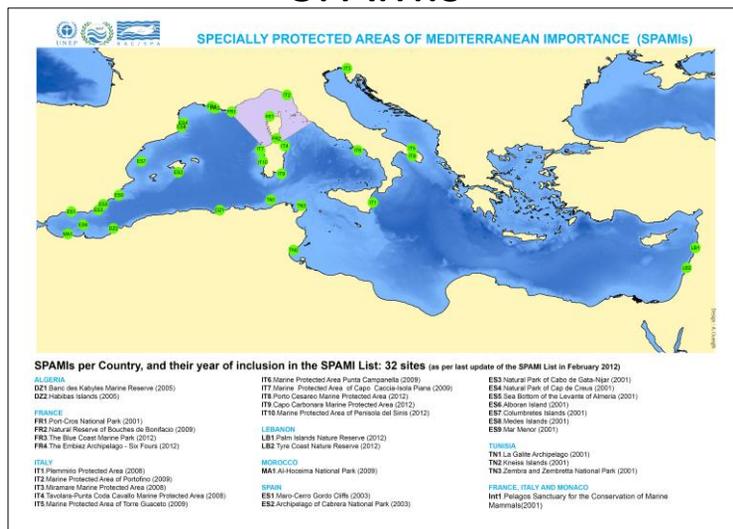
- a) **by the Party** concerned, if the area is situated in a zone already delimited, over which **it exercises sovereignty** or jurisdiction;
 - b) by **two or more neighbouring Parties** concerned if the area is situated, partly or wholly, on the high sea;
 - c) by the neighbouring Parties concerned in areas where the **limits of national sovereignty or jurisdiction have not yet been defined**
- the submission of a joint proposal may become a way to **promote new forms** of cooperation between the States concerned, irrespective of the fact that their maritime boundaries have not yet been defined (Scovazzi & Tani, 2013)

Annexes

The SPA Protocol is completed by three annexes

1. Common **Criteria for the Choice** of Protected Marine and Coastal Areas that Could be Included in the SPAMI List (Annex I)
 2. List of **Endangered or Threatened Species** (Annex II)
 3. List of **Species Whose Exploitation is Regulated** (Annex III)
- There are **32 SPAMIs already established** in the Mediterranean in accordance with article 9 of the SPA and Biodiversity protocol of the Barcelona Convention and the decision of COP17 in February 2012

SPAMIs



SPAMIs

sites included in the SPAMI List must be:

*“provided with **adequate legal status, protection measures and management methods and means**” (para. A, e) and must fulfil at least one of six general criteria (“uniqueness”, “natural representativeness”, “diversity”, “naturalness”, “presence of habitats that are critical to endangered, threatened or endemic species”, “cultural representativeness”).*

*The SPAMIs must be **awarded a legal status guaranteeing their effective long term, protection** (para. C.1) and must have a **management body, a management plan and a monitoring programme** (paras. from D.6 to D.8).*

In addition,

*“in the case of **areas situated, partly or wholly, on the high sea** or in a zone where the limits of **national sovereignty or jurisdiction have not yet been defined**, the legal status, the management plan, the applicable measures and the other elements provided for in Article 9, paragraph 3, of the Protocol will be **provided by the neighbouring Parties** concerned in the proposal for inclusion in the SPAMI List” (para. C.3).332*

SPAMIs

- Once areas are included in the SPAMI List, **all the parties agree:**

*“to recognize the particular **importance of these areas** for the Mediterranean”,*

*“to **comply with the measures applicable** to the SPAMIs and not to authorize nor undertake any activities that might be **contrary to the objectives** for which the SPAMIs were established”. (Art. 8, para. 3, SPA Protocol)*

- This gives to the SPAMIs and the measures adopted for their protection, validity with respect to **all the parties to the SPA Protocol.**

SPAMIs

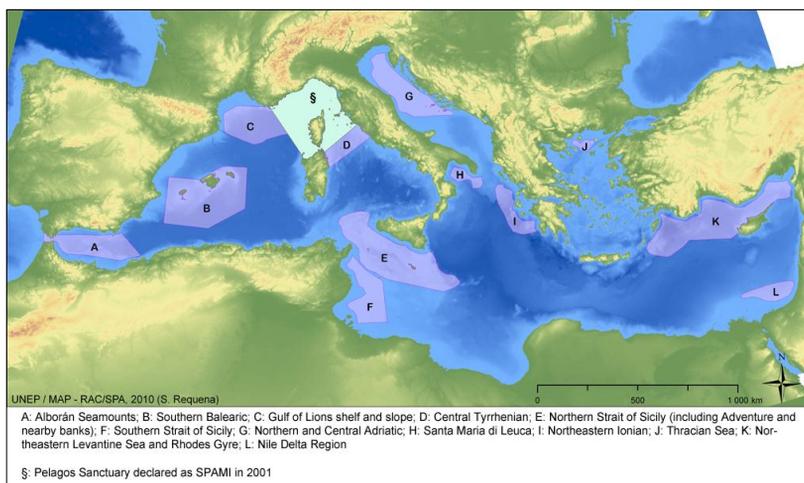
- with regards to ‘third’ party states external to the convention party states shall:

*“invite States that are not Parties to the Protocol and international organizations **to cooperate** in the implementation” Art. 28, para. 1, SPA Protocol*

*“undertake **to adopt appropriate measures**, consistent with international law, to ensure that **no one engages in any activity contrary** to the principles and purposes” Art. 28, para. 2, SPA Protocol*

High seas SPAMIs and the EBSAs

High seas SPAMIs



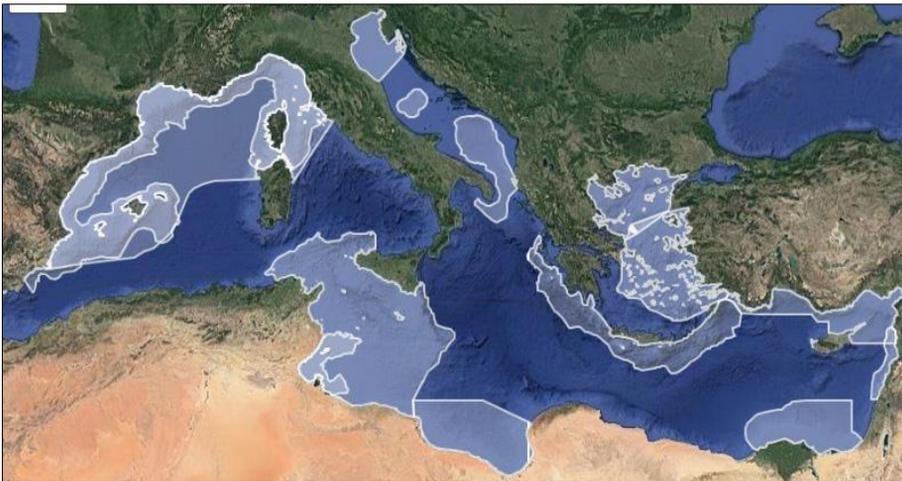
EBSAs and SPAMIs

- In 2008, the ninth meeting of the Conference of the Parties to the **Convention on Biological Diversity** (COP 9) adopted the following **scientific criteria** for identifying ecologically or biologically significant marine areas in need of protection in open-ocean waters and deep-sea habitats
- **Mediterranean EBSAs process** carried out under the regional seas programme

CBD scientific criteria for ecologically or biologically significant areas (EBSAs) (annex I, decision IX/20)

1. Uniqueness or Rarity
2. Special importance for life history stages of species
3. Importance for threatened, endangered or declining species and/or habitats
4. Vulnerability, Fragility, Sensitivity, or Slow recovery
5. Biological Productivity
6. Biological Diversity
7. Naturalness

EBSAs



EBSA process

- A **survey was started by contacting via email** a selection of **experts of Mediterranean** marine ecology, biodiversity, oceanography, and geomorphology, providing them a **standard survey form**.
- Information being obtained include data on **physical oceanography, modelling to pinpoint areas of importance** for select species and ecological integrity, and more detailed information on the distribution and abundance of key marine species.
- Their inputs consist of a **number of polygons**, which have been **combined with other similar inputs deriving from organisations** with a relevant role in the Mediterranean Sea (e.g., ACCOBAMS, GFCM).
- Experts have also **provided scores for a selection of polygons**, based on the stated criteria.
- Each polygon was **assessed taking into consideration CBD criteria for EBSA identification and criteria provided by the SPA/BD Protocol**

Adriatic Sea EBSAs



Northern Adriatic Sea EBSA

- average depth of **35 m** and is strongly **influenced by the Po river** plume.
- mobile **sandy** bottoms, **seagrass meadows**, **hard bottom** associations and unique rocky outcrops called **“trezze”** and **“tegnue”**.
- hosts a population of the **highest density of bottlenose dolphin** (*Tursiops truncatus*) in the Mediterranean
- an **important feeding ground** for the Mediterranean **loggerhead turtle** (*Caretta caretta*)
- it is a nursery area for a number of vulnerable species (**blue shark** (*Prionace glauca*), **sandbar shark** (*Carcharinus plumbeus*), **anchovies** (*Engraulis encrasicolus*), etc.).
- hosts a **strong diversity of benthic and pelagic habitats** due to an important gradient of environmental factors from its western portion to its eastern coasts.
- It is also one of the **most productive areas** in the Mediterranean Sea.

EBSA Criteria

C1: Uniqueness or rarity **Medium**

- The only area in the Mediterranean Sea where rocky outcrops called “trezze” and “tegnue” can be found is in the Northern Adriatic area. The ecological role played by these outcrops in the Northern Adriatic is extraordinary because they are the only hard substrates in the area offering shelter and reproduction sites for a number of fish and invertebrate species, including stocks under stress due to severe fishing pressure (Casellato et al., 2007).
- The Mediterranean subpopulation of Bottlenose dolphin (*Tursiops truncatus*) is present in this area with highest high population density (ACCOBAMS, 2010; Fortuna et al., 2014).
- This area is the northernmost occurrence of the Mediterranean monk seal (*Monachus monachus*).

C2: Special importance for life-history stages of species **High**

- The Northern Adriatic area is an important feeding ground for loggerhead turtles (*Caretta caretta*) (UNEP-MAP-RAC/SPA, 2014b; Fortuna et al., 2014).
- It can serve as a nursery area for blue shark *Prionace glauca*, Thresher shark (*Alopias vulpinus*) and Sandbar sharks (*Carcharinus plumbeus*) (Costantini, Affronte, 2003; Soldo, 2006a; Soldo, 2006b).
- There are breeding colonies of Mediterranean shags (*Phalacrocorax aristotelis desmarestii*), with average counts of 2,000 – 4,000 individuals (with high of 10,000), which includes up to 11% of the entire global population of this subspecies (Cosolo et al, 2012).
- This area is also important for common tern (*Sterna hirundo*) that nests on little islands in the North Adriatic area (Rendić & Sušić, 2003).

C3: Importance for threatened, endangered or declining species and/or habitats **High**

- It is one of the most important breeding area for bottlenose dolphin (*Tursiops truncatus*) (VU/Mediterranean subpopulation-Bearzi et al, 2012)*, and one of the most important feeding areas for sea turtles (*Caretta caretta*) (EN) (UNEP-MAP-RAC/SPA, 2014b; Fortuna et al., 2014). Both species are listed in the Annex II of the SPA/BD Protocol.
- It can serve as a nursery area for sharks (*Prionace glauca*)-listed in the Annex III of the SPA/BD Protocol, thresher shark (*Alopias vulpinus*) (UNEP/MAP-RAC/SPA, 2014a) and sandbar sharks (*Carcharinus plumbeus*) (Costantini, Affronte, 2003; Soldo, 2006a; Soldo, 2006b).
- The area is very important for Mediterranean shags (*Phalacrocorax aristotelis desmarestii*), subspecies which is listed on Annex II of the SPA/BD Protocol and together with common tern (*Sterna hirundo*) which is listed on Annex I of the EU Birds Directive.
- It can serve as a recovery area for the globally critically endangered (CR) Mediterranean monk seal (*Monachus monachus*) (Notarbartolo di Sciara, personal communication).

C4: Vulnerability, fragility, sensitivity, or slow recovery **Medium**

Justification

- The area includes rocky outcrops called “trezze” and “tegnue”, which are very vulnerable to any kind of bottom disturbance (Casellato et al., 2007).
- The area also holds populations of sharks that are vulnerable to high fishing pressure because of their long lifespan and K-selected reproduction.

C5: Biological productivity **High**

- The Northern Adriatic has been recognized as a region of high marine production at several trophic level from phytoplankton to fish (Fonda Umani, 1996)
- Runoff from the Po River influences the productivity of the marine ecosystem and has been linked to anchovy landings during its spawning season in the northern areas (Revelante and Gilmartin 1977).
- Its one of the most productive areas in the Mediterranean sea (Pérès and Gamulin-Brida, 1973). It includes one of the Mediterranean ocean triads. (Agostini and Bakun, 2002).

C6: Biological diversity **Medium**

- The area hosts a strong diversity of benthic and pelagic habitats due an important gradient of environmental factors from its western to its eastern coasts. The area presents a high diversity of environmental conditions that supports a rich biodiversity (Ott, 1992). Numerous studies describe the distribution and abundance of marine fauna and flora of the Adriatic Sea.
- The area hosts seagrass beds, including *Posidonia oceanica*, *Cymodocea nodosa*, *Zostera marina* and *Z. noltii* (Zavodnik, Jaklin, 1990; Turk, 2000; Lipej et al., 2006; Turk and Lipej, 2006).
- Moreover, it is also a strategic area for marine vertebrates conservation, sheltering important seabird populations (Baccetti et al., 2002).
- The area also includes important populations of endangered marine mammals and is a feeding area for loggerhead turtles (*Caretta caretta*). According to UNEP (2011) the Cres-Lošinj Archipelago (Kvarnerić area), which is part of this area, represents the habitat of a resident population of bottlenose dolphin (*Tursiops truncatus*) studied since 1987 (Jones et al., 2011). According to Coll et al. (2010) this area is one of the hotspots of biodiversity in the Mediterranean and hosts a large number of endemic species owing to its higher isolation.

C7: Naturalness **Low**

- The area experiences high anthropogenic pressure, linked mainly to maritime transport, fishery and tourism.

Other considerations for the Mediterranean

GFCM

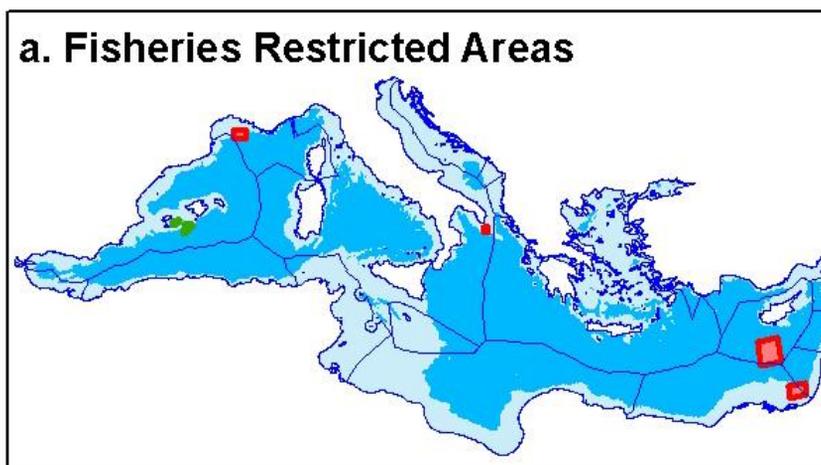
- **general fisheries council for the Mediterranean** (GFCM) established in 1949 under the UN FAO, reorganised in 1998.
- coordinates activities related to **fishery management, regulation and research** in the Mediterranean and Black Seas and connecting waters.
- **twenty-four members**, including one non-Mediterranean State (Japan) and the European Union.
- the GFCM Agreement includes both the **high seas and marine areas under national sovereignty** or jurisdiction.
- The GFCM has the purpose of promoting the **development, conservation, rational management and best utilization** of all marine living resources, as well as the sustainable development of aquaculture in the area falling under its competence

GFCM – continental shelf MPAs

- In 2006, three Mediterranean areas were declared as **fisheries restricted areas** to protect corals, cold hydrocarbon seeps and seamounts:
 - **Lophelia reef** off Capo Santa Maria di Leuca
 - The Nile delta area cold **hydrocarbon seeps**
 - The Eratosthenes **Seamount**
- In 2009, on the advice of its Scientific Advisory Committee the **GFCM** agreed to ban the use of towed, fixed gears and longlines for **demersal resources** in the **Eastern Gulf of Lions**
 - and a fisheries restricted area where gear shall not exceed the level of fishing effort applied in 2008

GFCM

(Micheli et al 2013)



ACCOBAMS

- ACCOBAMS is a regional treaty which applies to both Mediterranean and Black Seas. The main obligations of the parties to ACCOBAMS are to

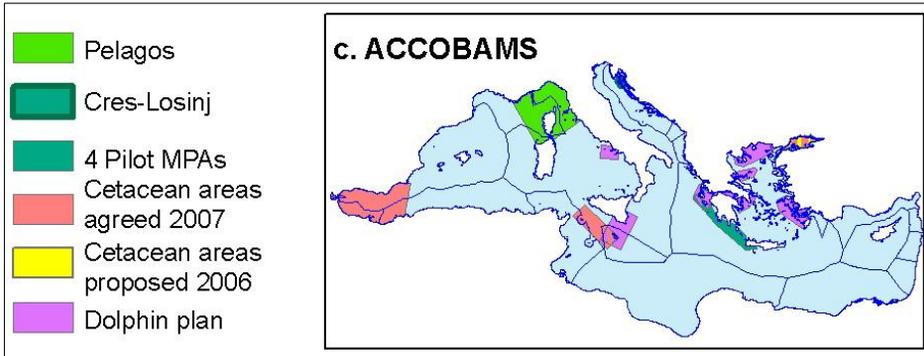
*“take **co-ordinated measures** to achieve and maintain a **favourable conservation status for cetaceans**” and to “**prohibit and take all necessary measures to eliminate, where this is not already done, any deliberate taking of cetaceans**”. Art II, para 1 ACCOBAMS*

- ACCOBAMS provides, that the parties shall endeavour to **establish and manage specially protected areas for cetaceans** corresponding to the areas which serve as their habitats or provide important food resources for them

ACCOBAMS

- In **2007 the Meeting of the parties to ACCOBAMS** adopted Resolution 3.22, which recommends to the parties to give full consideration to the creation of eighteen marine protected areas for cetaceans
- in the **Alboran Sea**, in the **North-East Adriatic**, in the **Strait of Sicily**, in the **Eastern Ionian Sea** and the Gulf of Corinth, in the **Northern Sporades**, in the **Northern Aegean Sea**, in the **Dodecanese**.
- This approach was confirmed in Resolution 4-15 (*Marine Protected Areas of Importance for Cetacean Conservation*), whereby the Meeting of the Parties held in 2010

“encourages the States concerned to promote the institution of the areas of special importance for cetaceans in the ACCOBAMS area, as listed in the Annex to this Resolution and to ensure their effective management” (para. 5).



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PLOS ONE

Setting Priorities for Regional Conservation Planning in the Mediterranean Sea

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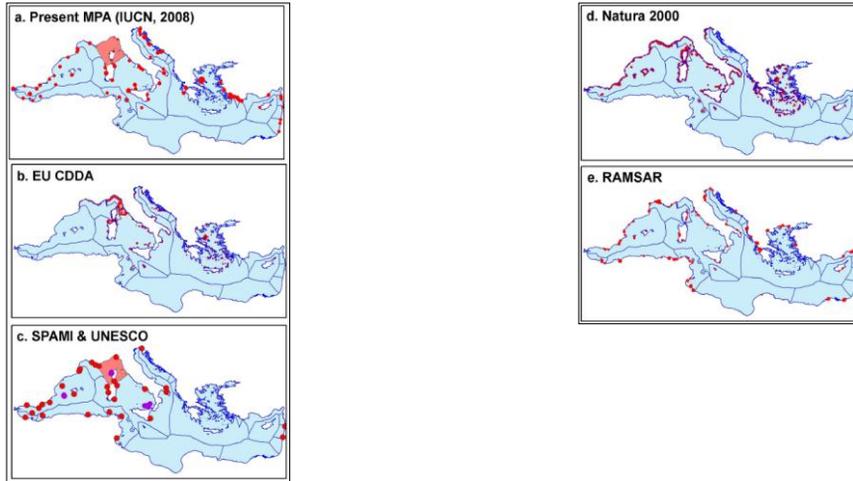
Micheli et al 2013

- Review of **6 existing and 12 proposed** conservation initiatives for the Mediterranean
 - indicates the **gaps in conservation and management** planning
 - **wide diversity** in the plans and their methods
- **10% of the Mediterranean is consistently** identified among the proposals
 - an additional 10% is identified **by at least 5 different proposals**
- **collective prioritised action** is required for the northern and western basin
- **information based planning** is required for the southern and eastern basins

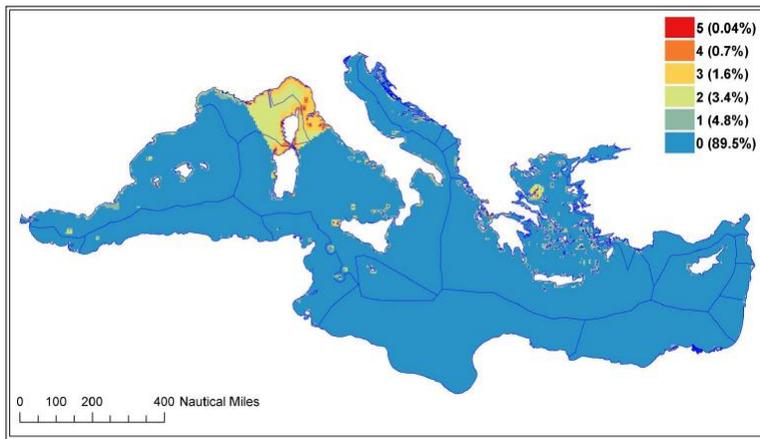
Existing conservation plans

Name	Lead organisation	Motivation	Approach	Criteria	Planning tool	% of the Mediterranean
National initiatives – present MPAs	Governmental	Legally binding	Mainly biodiversity	Various	Mainly expert judgement	3.8%
EU – nationally designated sites	Governmental	Legally binding	Mainly biodiversity	Mainly biodiversity	Expert judgement	1.3%
UNESCO – Marine World Heritage Sites	Inter-governmental	Legally binding	Cultural and biodiversity	Various	Expert judgement	NA
Barcelona Convention	Inter-governmental	Legally binding	Mainly biodiversity	Various	Expert judgement	NA
EU – Natura 2000 network	Inter-governmental	Legally binding	Biodiversity	Biodiversity	Expert judgement	1.3%
Ramsar	Inter-governmental	Legally binding	Biodiversity	Biodiversity	Expert judgement	0.1%

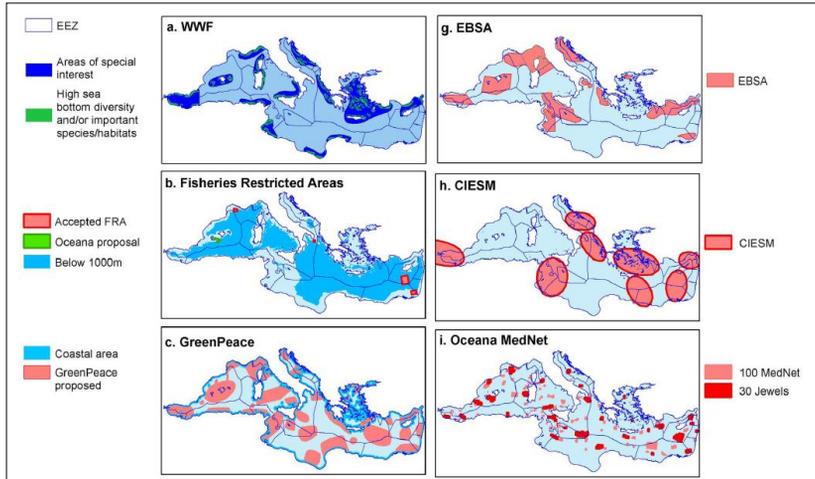
Existing conservation plans



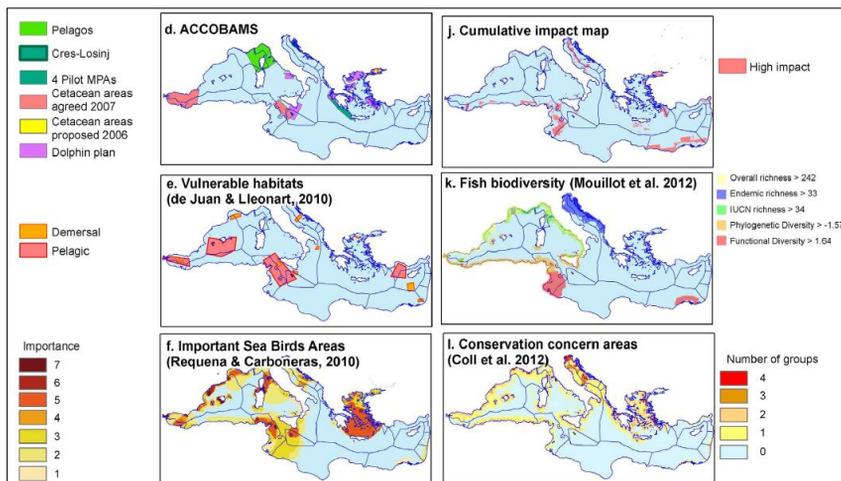
Existing conservation plans

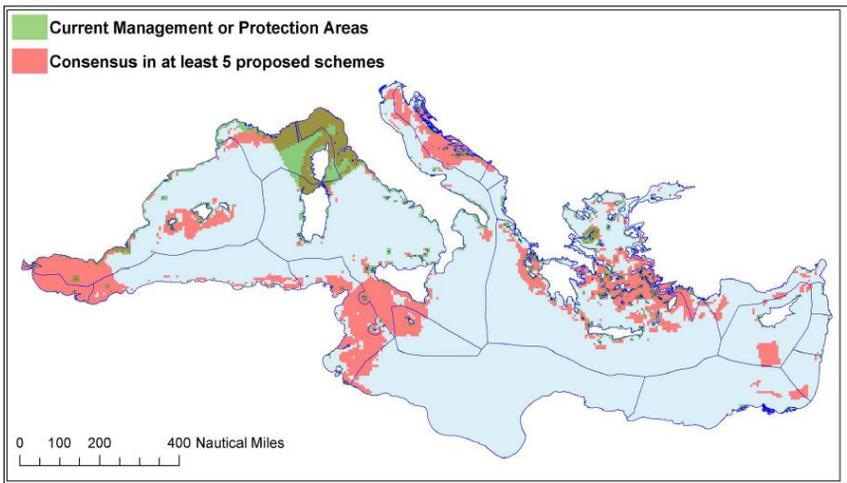
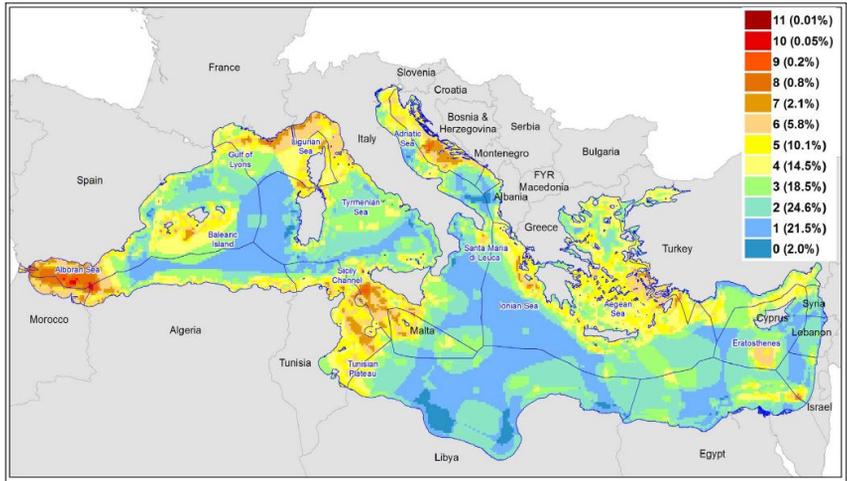


Proposed conservation priority plans



Proposed conservation priority plans





Conclusions

- The Mediterranean has a **strong instrument for marine conservation** – the Barcelona convention and its protocols
- however the Mediterranean is a **complex system and decisions take time**
- there are **multiple research groups working separately** in the region
- there is **enough data to take conservation forward** without more planning and monitoring for the **north and west**
- **but not for the south and east**

Large Areas of Marine Management (LAMMs)

Peter Mackelworth

Formal protection

- The **formal protection** of the sea was considered to be the **jurisdiction of global instruments**, such as
 - the UN Convention on the Law of the Sea (**UNCLOS**),
 - the Convention on Biological Diversity (**CBD**),
 - the **Global Programme of Action for the Protection** of the Marine Environment from Land-based Activities,
 - the UN Framework **Convention on Climate Change**,
 - the UN **Fish Stocks Agreement**,
 - UN **Regional Seas agreements**,
 - the **FAO Code of Conduct for Responsible Fishery** Practices

“...the problems of ocean space are closely interrelated and need to be considered as a whole” (UNCLOS, 1982)

Ecosystem-based Management

Ecosystem Approach

- Recently, marine environmental concerns have shifted towards a **more holistic ecosystem approach** calling for a comprehensive look at **all dimensions of environmental problems** (Laffoley et al., 2004).
- Effectively addressing wide-ranging threats to the oceans requires **comprehensive management at large scale**. There is a need to pursue new approaches for the sustainable use of marine resources.
- Amongst these, **Marine Spatial Planning (MSP)** has become a widely accepted practice especially over the past fifteen years
- In recognition of the **environmental and governance complexity** of the marine environment management of marine spaces **must often extend across administrative, jurisdictional and even sovereign state borders**.

Ecosystem Based Management

- Scientists have been advocating an **ecosystem-level approach to land management** since the early 1950s (Leopold, 1949; Grumbine, 1994).
- The conviction of the need for EBM has grown over the years, but there is **continued confusion about what constitutes “true” EBM** and how to translate it into management actions in ocean and coastal waters (McLeod & Leslie (eds.), 2009).
- Holistic approaches treat species, other natural commodities, and humans as **components of larger ecosystems**, and seek to **integrate ecological, social, economic and institutional** components (Christiansen et al., 1996).

Ecosystem-based Management

*“Ecosystem-based management is an **integrated approach to management that considers the entire ecosystem, including humans.***

*The goal of ecosystem-based management is to maintain an ecosystem in a **healthy, productive and resilient condition** so that it can **provide the services humans want and need.***

*Ecosystem-based management differs from **current approaches that usually focus on a single species, sector, activity or concern; it considers the cumulative impacts of different sectors.**”*

Scientific Consensus Statement on
Marine Ecosystem-based Management 2005

Ecosystem-based Management

- Emphasizes **protection of ecosystem** structure, functioning and key processes
- Ensures **interconnectedness** within and among systems (air, land and sea)
- Integrates **ecological, social, economic, and institutional** perspectives
- Is **place-based or area-based**, focusing on specific ecosystems

www.compassonline.org

EBM Concepts v. Reality

- **Scientists define EBM differently than managers**
- **Inconsistent terminology** inhibits communication
- Management objectives often **miss critical ecological factors** emphasized by scientists
- Commitment to **finance EBM** is missing
- **Clear approach and toolkit for EBM** are lacking

Source: Arkema, K., et al., 2006. Marine Ecosystem-based management: from characterization to implementation. *Frontiers in Ecology and Environment*.

*Large areas of marine management
(LAMMs)*

LAMMS

- **Large areas of marine management (LAMMs)** provide a **broad framework** for the development of regional norms reinforced through **soft law mechanisms** for informal rule making and compliance.
- The role of **all transnational participants**:
 - **companies, secretariats, non-governmental organisations, national governments and local communities**, need to be integrated into management decisions.

Soft Law

- Generally the term is used to refer to **quasi-legal instruments** which **do not have any legally binding force**, or whose binding force that is considered to be weaker than the binding force of traditional or 'hard law'
 - International law can also be considered as 'soft' due to the **absence of an independent judiciary** with supporting enforcement powers.
- the term **'soft law'** covers elements such as:
 - Most **Resolutions and Declarations of the UN General Assembly**;
 - **Action plans**, such as Agenda 21 is a **non-binding, voluntarily implemented action plan** of the United Nations with regard to sustainable development;
 - **Joint statements, codes of conduct, codes of practice, memorandums of agreement** and memorandums of understanding, for example;
 - And, other **non-treaty obligations**

Soft Law

- It **avoids immediate and uncompromising commitments** made under treaties,
- potentially **faster route to legal commitments** than the slow pace of customary international law.
- Many soft laws are **designed to be aspirational**, providing opportunities for **pressure to be applied on groups** that are not committed to hard law.
- they often **capture the imagination of citizens** who begin to **believe in these soft law instruments** as if they were **legally binding**.
 - In turn, this **ultimately impacts governments** which are forced to take into account the **wishes of citizens, NGOs, courts and even corporations**.
 - These groups begin to refer to these soft laws so frequently and with such importance that **they appear to be legal norms** (Abbott and Snidal, 2000).
- **support hard law through the application of opinio juris, 'an opinion of law'**, which analyse the application or interpretation of a treaty.

Soft Law

- In a regional setting, informal commitments can be used to **introduce sub-national regional objectives** which might not reflect the national priorities but may allow the **integration of local community values** this may result in the recognition of local norms.
- Informal agreements may also be used to introduce **international values or norms**
- There are a **number of variables**, including **transactions costs, uncertainty**, implications for **national sovereignty**, divergence of preferences, and power differentials that influence the form of soft law to be selected
 - Soft law is also a tool for **altering power dynamics** between states.
 - Powerful states **may use non-binding agreements** in negotiations to coerce others into broad agreement

Soft Law

- Soft law is **not the solution to all of the problems** faced by international environmental agreements.
- In many instances **soft law can be contradictory and lack coordination** with existing legal commitments
- negotiating parties **are aware of its potential** as a form of the **stealth application** of legislation (Hori, 2015).
 - negotiating parties are aware that soft law has a **potential to turn into something binding therefore** negatively affect the negotiation process leading to the **'watered down'** of agreements.

LAMMs

- **International and regional governance** of marine resources there is a **growing focus on methods to manage large areas** through a **mix of formal and informal** rules and institutions.
 - They are delineated on **ecological criteria or on political and strategic criteria** or a combination of the two.
 - LAMMs are **not protected areas *per se*** but can provide overarching frameworks for the definition of consistent spatial planning and protected area networks.
- LAMMs tend to have **various organisations and governments** that **manage conservation initiatives or contribute** in some manner to their governance.
 - **Five examples** are highlighted here, **three are promoted by transnational organisations** and the other two are promoted by **international NGOs**.

LAMMs

- There are **multiple challenges** in the implementation of LAMMs. They encompass:
 - the **complexity of the marine environment**, much of which is hidden beneath the waves;
 - possible **cultural and linguistic differences**;
 - possible **differing political and legal systems**;
 - inadequate **availability of data and scientific** understanding.
- One advantage of the LAMM scale is the possibility to **concentrate cooperation at the regional ecosystem scale**.
- In some instances while proponents may have potentially **different aspirations**, unequal personnel, technology, financial and institutional capacity there may be options to **create new institutions to build on mutually important factors** for the regional ecosystem.
- Regional cooperation through **independently facilitated programmes** can provide a basis for states to **begin dialogue and develop cooperative** programmes.

LAMMs

Large Areas of Marine Management	Organisation
Regional Seas	United Nations Environment Programme (UNEP)
Marine Ecoregions	World Wide Fund for Nature (WWF), The Nature Conservancy (TNC)
Seascapes	Conservation International (CI)
Large Marine Ecosystems	National Oceanic and Atmospheric Administration (NOAA), United States Agency for International Development (USAID)
International Waters	Global Environmental Fund (GEF)
Examples of Large Areas of Marine Management (LAMMs) and their associated governance	

UNEP Regional Seas Programme

The UNEP Regional Seas programme

- Initiated in 1974, now with **18 regional programmes** covering nearly all of the world's marine ecosystems, including the open-ocean.
- Initially they were **developed to counter the risk of pollution**, with biodiversity as a lower priority.
- **All of the oceans** have some Regional Seas Programmes in them and **more than 140 countries** take part.
- Thus, the **geographic scope** of application of Regional Seas far exceeds that of the other approaches

Regional Seas



Regional Seas

- Each of the regional seas programmes is **coordinated through a Secretariat, or a regional coordinating body**
- 14 of the 18 programmes have **adopted legally binding conventions**.
- All of the programmes are **financed through the party states** and consequently **work at national level**.
- The programmes **build upon existing levels of governance** and are therefore **dependent on the internal governance structures** of the party states.
- There are **many different ecosystems** within a Programme and **management is not so much ecosystem-based as a regionally based coordination of government and non-governmental activities** for sustainable development and conservation of coastal and marine resources.

Regional Seas

- Regional Seas Programmes are used by **development agencies, banks and NGOs** as the **basis for their support** to some conservation planning and implementation.
- Usually these initiatives are of regional significance but implementation takes place at country level (Micheli et al., 2014).
- The philosophy of the Programme is to **fulfil the UNEP responsibilities** for contributing to **targets of Agenda 21**, the **World Summit on Sustainable Development** and the **Millennium Development Goals**.
- The Regional Seas Programmes also **provide the framework** for the development of MPAs.
 - in **the Mediterranean Sea**, the Protocol Concerning Specially Protected Area and Biological Diversity in the Mediterranean (**SPA protocol**) of the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (**Barcelona, 1976; amended in 1995**) provides for the definition of Specially Protected Areas of Mediterranean Importance (**SPAMIs**)

Marine Ecoregions

Marine Ecoregions

- An **ecoregion** is an area often covering thousands of square kilometres, crossing national borders, the boundaries of which are sharply defined, but **encompass important areas for ecology and evolutionary processes**.
- Approaches vary between institutions and regions, and are quite **strongly influenced by local context**.
- In 2001 the World Wide Fund for Nature (WWF) **selected 238 priority ecoregions**, of which **43 are marine**, as part of their biodiversity vision.
- The aim of the WWF is to **conserve entire Ecoregions**, although conservation action is normally **coordinated at country level**, it may **include the work of other NGOs** for the promotion of large-scale approach to conservation.
- One of the **central aspects** of the WWF ecoregion approach is to **establish well-managed representative networks of MPAs**.

WWF Global 200

- **MARINE ECOREGIONS**

- Temperate Shelves and Seas

- Mediterranean

- (199) Mediterranean Sea - Albania, Algeria, Bosnia and Herzegovina, Croatia, Cyprus, Egypt, France, Gibraltar (United Kingdom), Greece, Israel, Italy, Lebanon, Libya, Malta, Monaco, Morocco, Slovenia, Spain, Syria, Tunisia, Turkey, Yugoslavia

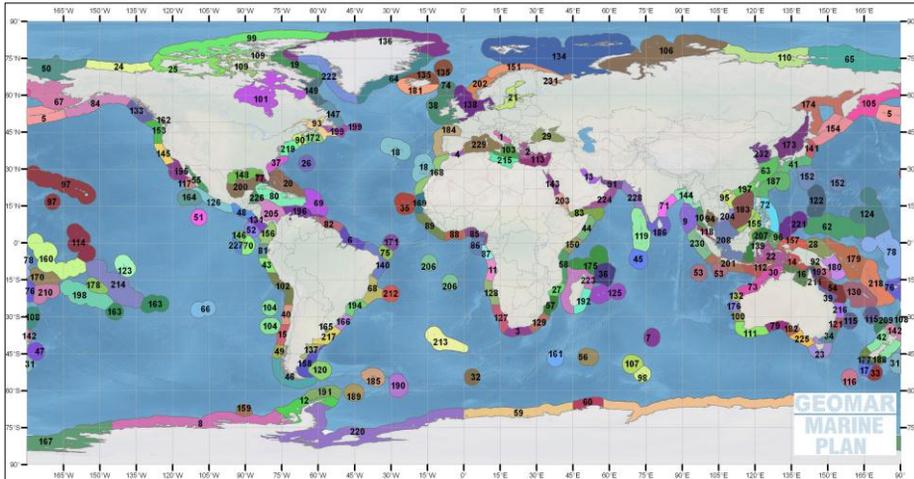
Global 200

- Relative to most terrestrial and freshwater ecoregions, marine ecological and biogeographic units are **more spatially and temporally dynamic** (Sherman et al., 1990) and therefore more challenging to delineate.
- **Marine ecoregions** derived from a **synthesis of global and regional spatial plans**, review of the **available literature** and **consultations with experts**.
 - Kelleher et al. (1995), Sherman et al. (1990), Longhurst (1998), and Bailey (1998) served as the primary sources for the Global 200.
- The marine part of the Global 200 **does not cover deep water ecosystems**
- biogeographic units **are not as finely resolved** as the maps used in the freshwater or terrestrial analyses.
- the delineation of marine ecoregions is intended to highlight **general regions within which characteristic animals, plants, ecological interactions, and biophysical processes occur**.

Marine Ecoregions

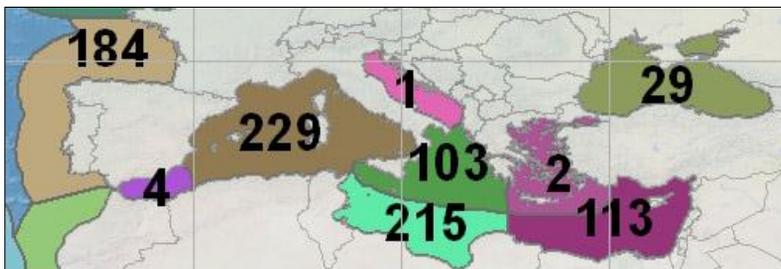
- The Nature Conservancy (TNC) also uses ecoregions through its 'Conservation by Design' approach which **combines global habitat assessments and eco-regional assessments** to define conservation priorities.
- TNC makes **less use of expert opinion** and puts more emphasis on compiling **large amounts of information in databases**, as tools to support decision-making.
- TNC open to criticism for being **dominated by biological science**
- Shift towards issues of **governance and inter-sectoral coordination**.
 - There has been a subtle shift from addressing stakeholder needs in order to achieve biodiversity objectives to **pursuing a suite of objectives, one of which is biodiversity conservation** (Bernsted Smith and Kirkman, 2010).
- **Both organisations** focus on **site specific or large migratory species**, and seek to **build coalitions of governmental and NGOs**, through **Memoranda of Understanding (MoUs)**, to achieve shared conservation objectives.

Marine Ecoregions



Mediterranean

- | | | |
|-----------------------|-------------------------------|---|
| 1 Adriatic Sea | 103 Ionian Sea | 184 South European Atlantic Shelf |
| 2 Aegean Sea | 113 Levantine Sea | 215 Tunisian Plateau / Gulf of Sidra |
| 4 Alboran Sea | 168 Saharian Upwelling | 229 Western Mediterranean |
| 29 Black Sea | | |



Seascapes

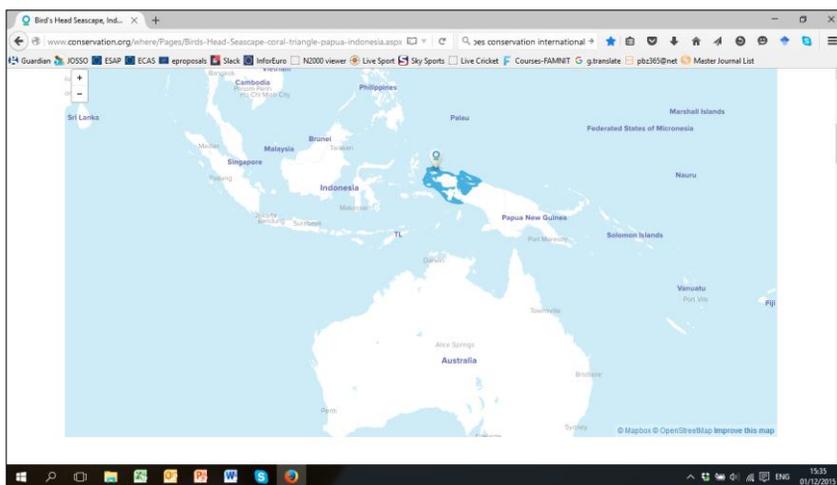
Seascapes

*'Large, multiple-use marine areas, **defined scientifically and strategically**, in which government authorities, private organizations, and other **stakeholders cooperate** to conserve the diversity and abundance of marine life and to promote human well-being'* (Atkinson et al., 2011)

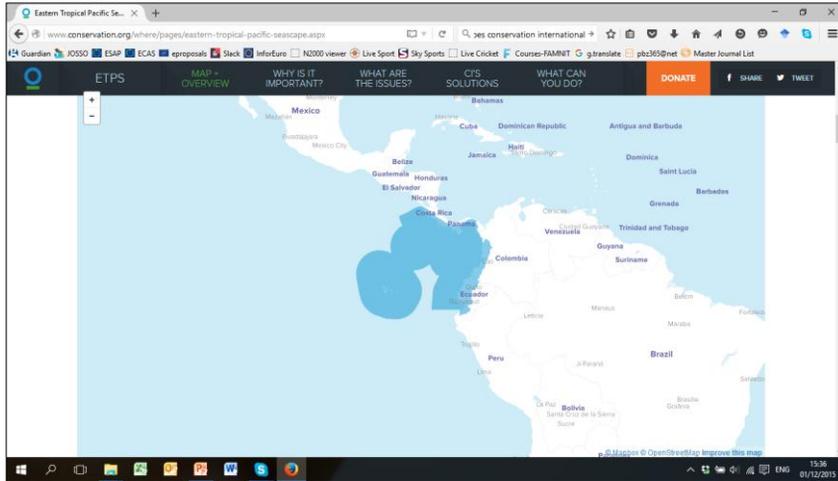
Seascapes

- **Conservation International (CI)** for its **four big initiatives** as a framework for facilitating sustainable multilevel governance and the promotion of MPA networks.
- It was **applied to three very different areas of ocean**, in terms of size and political complexity.
- the main characteristics as a **combination of ecological and strategic considerations**, i.e. the inclusion of specific administrative and ongoing projects

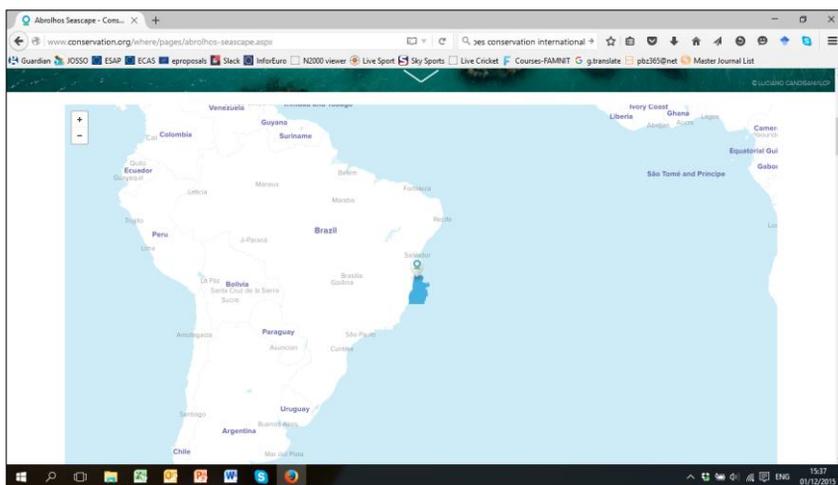
Bird's head seascape



Eastern tropical pacific seascape



Abrolhos seascape



Sula-sulawesi seascape



CI definition

*“Seascapes are **large, multiple-use marine areas, defined scientifically and strategically**, in which government authorities, private organisations, and other stakeholders **cooperate to conserve the diversity and abundance of marine life and to promote human well-being.**”*

*Seascapes typically have **high biological diversity, ecological and economic connectivity, and aesthetic and cultural value.** Seascapes may include government-authorized protected areas for addressing special management needs and provide an opportunity for government agencies to **coordinate their efforts voluntarily** to secure more effective regional management programs.*

*Seascapes define places where **conservation goals and human well-being** can be secured **through partnerships** between governments, local communities, and non-government and private organisations.”*

Seascapes

- The Seascope **approach seeks to coordinate governments, NGOs and corporations to improve governance** of these regions.
- The programme **stresses the development of good governance** from local to national through to Seascope-wide as the **central long-term aim** of each initiative (Atkinson et al., 2011).
- This is achieved through the **nine essential elements** that are adapted according to the local context.

Seascapes

1. An enabling **framework of laws, conventions, regulations** and policies that facilitates marine conservation
2. **Ecosystem-based management** of marine ecosystem and species at larger scales
3. **Adequate institutions and capacity** including personnel, infrastructure and equipment
4. Private sector **engagement** that are compatible with conservation
5. Social and political **support as an integral part of sustainable development** includes broad **ownership of conservation** programs
6. Maintain **critical habitats, ecological processes** and **environmental quality**
7. Threatened **species recovery** and **no increase in threatened species** in the Seascope.
8. **Human well-being benefits** improve the social economic and cultural well-being
9. **Sustainable financing and market mechanisms** for Seascope-wide coordination, cooperation and ecological monitoring.

Large Marine Ecosystems

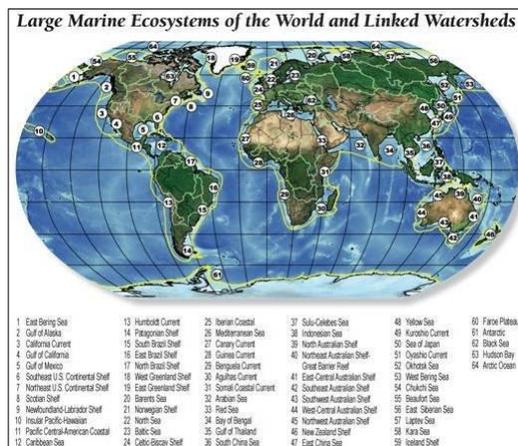
Large Marine Ecosystems (LMEs)

- **Driven by the investment decisions** of the institutional parents of the concept, in this case the National Oceanographic and Atmospheric Administration (NOAA) and the United States Agency for International Development (USAID).
- The LME concept has become important for **NOAA's international outreach and capacity-building** efforts.
- There are now **64 LMEs globally** and they cover all marine habitats (Bensted-Smith & Kirkman, 2010).
- They provide a **solid ecological base promoting scientific research and are highly science orientated** operating at higher institution and national government level with less operation at local level.
- Their focus has been **limited with regards to governance**, however recently the development of the Begula Current Commission is the first intergovernmental agreement based on the LME platform (Sherman, 2014).

LME

- The LME concept has been **adopted as a standard term by governments**, international organizations and scientists worldwide (Mahon et al., 2010).
- The UNEP has adopted the LME as the **basic unit for its Regional Seas EBM activities** (Sherman & Hempel (eds.), 2008).
- The LME approach **involves both a mapping unit and an information database** which appeals to organisations like UNEP and the Global Environment Facility (GEF), which seek **consistent information and methodologies** for their global programmes.
- LME projects are focused on **ecosystem-based strategies** to recover depleted fisheries, reduce coastal pollution, and restore damaged habitats.
- The GEF has **now funded projects in 16 LMEs and 110 countries** under its “International Waters” programme.

LME



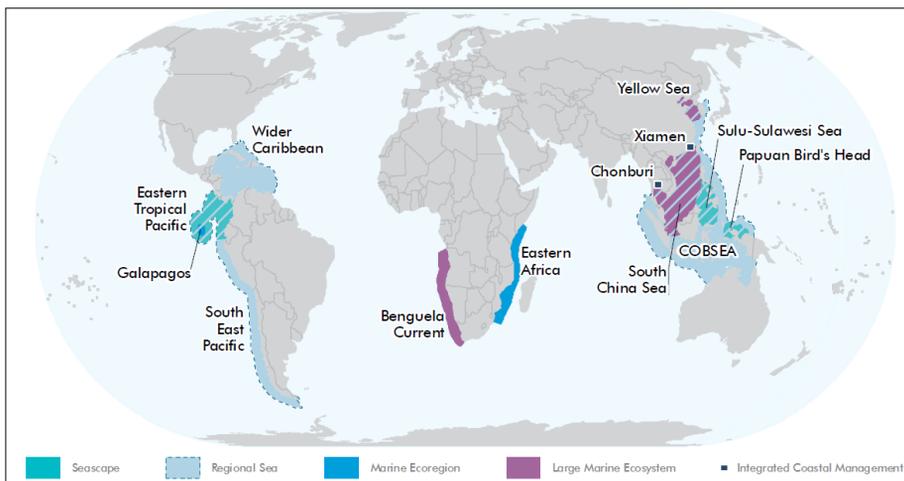
International Waters

International Waters

- The Global Environment Facility (GEF) is a partnership for international cooperation in which **183 countries work together with international institutions, NGOs and the private sector**, to address global environmental issues.
- The Rio Summit of 1992 **Chapters 17 and 18 of Agenda 21** addressed coastal and **marine waters and freshwater respectively** and provided the background for the development of the International Waters (IW) Operational Strategy focal area.
- The GEF IW focal area has a **strong regional focus** recognising that most freshwater and marine systems are **inherently transboundary in nature**.
- **Regional collective action is an essential approach** in combating environmental issues related to all water resources (Söderbaum & Granit, 2014).

International Waters

- The creation of **regional institutions and governance frameworks** is essential for the development of regional cooperation.
- One important aspect is to **synchronise national and regional concerns, incentives and benefits**.
- The regional and local focus **allows for greater flexibility** in comparison to the national or global focus (Söderbaum & Granit, 2014).
- With completion of the IW enabling activities GEF is now looking to support countries in reforms, investments and management programmes to develop **sustainable transboundary water systems**.
- Part of this activity would be to fulfil goals for Millenium Development Goals (MDGs) and World Summit on Sustainable Development (*WSSD*) targets using it as **an important tool for fostering peace, security and stability among nations** (GEF, 2005).



Conclusion

Conclusions

- the LAMM frameworks provide the **overarching platform for states to cooperate** without having to go through a formal global procedure.
- **Local context** appears to be an **important issue for defining the success or failure**
- **5 examples** here are not the only ones and are **not mutually exclusive**:
 - the **Regional Seas Programme** bases most of its work at **state level and has institutional credibility** with the national governments that are part of the programme. However the programme remains **fairly narrowly focussed on the political aspect of conservation developing agreements**, protocols and unified policies, but not developing capacity and promoting governance.

- The **LME framework is the basis for the EBM activities** for the Regional Seas Programme, while firmly focussed on knowledge generation, also **lacks much attention on the governance aspect**.
- The **GEF IW programme** is strongly focussed on **regional and local governance** and **creating 'identity' around the resource** under focus for conservation aiming to lead to regional cooperation and region forming
- **The Seascapes and Marine Ecosystem frameworks are NGO led** and focus on more holistic ecosystem based management strategies, **building partnerships at multiple levels** and looking to build capacities within the regions in which they focus. They have **flexibility associated** with the **funding they receive** from the foundations which support their work.

Conclusions

- Where the **different frameworks have come together**, such as the **Papuan Bird's Head Seascape**, integration has worked successfully and now this region is noted for its potential to be a **model for EBM integrating** development with conservation
- While the **NGOs can act as champions** for a region they often maintain a central role and there remain issues over the possibility for **local 'ownership' of projects** in the long-term, especially regarding funding and decision making.
- it is clear that **local context, related to local leadership, buy in, political support and capacity** have significant effects on the success of these LAMMs.
- **Generally it takes a mixture of hard and soft law** to effectively manage the conservation of healthy oceans, including **transboundary marine protected areas** and transboundary agreements and conventions.
- A weakness of the LAMM programmes, as soft law frameworks, is the **absence of binding agreements and little recourse for enforcement**. However **other forms of persuasion** can be applied, including financial, media and peer pressure.

PETER JONES & PETER MACKELWORTH

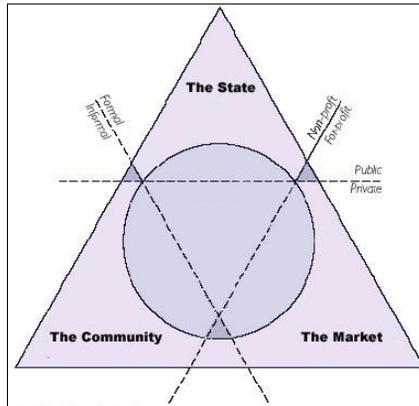
GOVERNING MARINE PROTECTED AREAS – GETTING THE BALANCE RIGHT

Governance

- Calls to **adopt an ecosystem approach** to the management of our seas, including the designation of MPAs, are both **causing and reflecting the growing extension of societal concerns** to our seas... ...particularly in relation to **fish stocks** and **biodiversity declines**
- While there is a need to **designate more MPAs** to address these concerns and ensure we have **'good enough'** science to know how to design MPA networks, we also need to focus on:
- **how do we effectively govern MPAs that are currently in place?**

Governance

- we are increasingly focussing on how to **develop co-management** of MPAs **balancing the role** of the state, market forces and civil society
- in addition there is recognition in governance debates that there is a need to move beyond ideological arguments and **develop governance models and approaches** that combine the role of states, markets and people



Governance

- In the context of discussions on how we might manage human affairs and activities in a manner that considers their impacts on our environment, eg sustainable development, these **debates can be considered in terms of three perspectives or discourses**:-

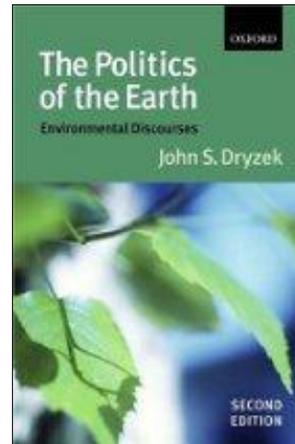
Administrative rationality (State control)

Economic rationality (Market forces)

Deliberative rationality (Public interests)

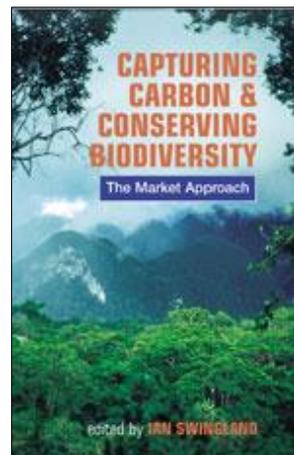
Administrative rationality

- **Expert knowledge** guides decisions through state controlled bureaucracies
- This calls for a **strong central government** which controls closely the decision-making process
- **highly technical information** controlled by state institutions



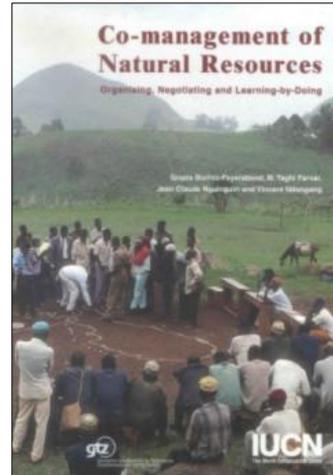
Economic rationality

- Market forces guide and implement decisions through **consumer preferences** and the **marketization of government**
- Increasing calls for **deregulation, privatisation** and the assignation of **values and property rights** to natural resources



Deliberative rationality

- When stakeholder reach decisions through **dialogue and negotiation** and are more **willing to cooperate** in implementing such decisions
- emphasises the **role of civil society**, people individually and collectively through networks
- this perspective increasingly recognises that people are **affected by various structures**, such as states & markets, the emphasis is on civil society rather than structures



Co-management

- Co-management serves as a **new framework** for the debate over how **PAs should be governed**
- What **relative emphasis** should be placed on?
 - **state control**
 - **market incentives**
 - **participation of civil society?**
- **All three approaches have a role** and very few PAs can be successfully governed solely through one approach

Getting the balance right



Getting the balance right

- study was developed as a means of **systematically analysing and comparing MPA governance** in a representative range of **case studies** from around the world, with a view to **identifying 'good practice'** and assessing its transferability to other MPAs in comparable contexts.
- **twenty case studies** from around the world were analysed, they provide examples from a range of governance approaches and contexts
- **five categories of 'incentives'** for management cooperation were highlighted

Case studies



Case studies

1 Great Barrier Reef Marine Park (Australia);

2 Darwin Mounds Marine Special Area of Conservation (UK);

3 North East Kent European Marine Site (UK);

4 Wash & North Norfolk Coast European Marine Site (UK);

5 US National Marine Sanctuaries (US);

6 Californian MPAs under the Marine Life Protection Act (US);

7 Sanya Coral Reef National Marine Nature Reserve (China);

8 Seaflower MPA (Colombia);

9 Galápagos Marine Reserve (Ecuador);

10 Karimunjawa Marine National Park (Indonesia);

11 Wakatobi National Park (Indonesia);

12 Tubbataha Reefs Natural Park (Philippines);

13 Ha Long Bay UNESCO World Heritage Site (Vietnam);

14 Os Minarzos Marine Reserve of Fisheries Interest (Spain);

15 Isla Natividad MPA (Mexico);

16 Great South Bay Private Marine Conservation Area (US);

17 Chumbe Island Coral Park (Tanzania);

18: Baleia Franca Environmental Protection Area (Brazil);

19 Pirajubaé Marine Extractive Reserve (Brazil);

20 Cres-Lošinj Special Zoological Reserve (Croatia)

Incentives for management cooperation

Incentives

Incentive	Definition	Relevant governance mode
Economic	Using economic and property rights approaches to promote the fulfilment of MPA objectives.	Market based
Interpretative	Promoting awareness of the conservation features of the MPA, the related objectives for conserving them and the policies for achieving these objectives, and promoting support for related measures.	Supporting all three approaches
Knowledge	Respecting and promoting the use of different sources of knowledge (local-traditional and expert-scientific) to better inform MPA decisions.	Supporting all three approaches

Incentives

Incentive	Definition	Relevant governance mode
Legal	Establishment and enforcement of relevant laws , regulations etc. as a source of 'state steer' to promote compliance with decisions and thereby the achievement of MPA obligations	Top-down (state steer)
Participative	Providing for users, communities and other interest groups to participate in and influence MPA decision-making that may potentially affect them in order to promote their 'ownership' of the MPA and thereby their potential to cooperate in the implementation of decisions.	Bottom-up (people steer)

Case study incentives

- Case study participants examined **how different incentives were used and combined** to support the effective governance of their MPA, and **which incentives** were needed to **make governance more effective**.
- The MPAG framework included **several individual incentive types** within each category
 - **ten economic** incentives
 - **four interpretative** incentives
 - **five knowledge** incentives
 - **eight legal** incentives
 - **six participative** incentives

Metrics

- Thus a **structured approach to gathering** information on the **context of each case study** was devised, including:
 - **key socio-economic metrics**,
 - the **objectives of the MPA** in question,
 - the **main drivers and conflicts** that need to be addressed,
 - the **governance approach**,
 - and the **effectiveness of the MPA governance approach** in terms of fulfilling the MPA's objectives.
- It is important to recognise that, for the purposes of this MPA governance analysis, **effectiveness in achieving the conservation objectives** for the MPA was primary concern

Goals

- focus on case study **analyses that seek 'good practice'** through combinations of governance approaches appropriate to a given context
 - governance approaches that are **effective in 'getting the balance right'** between these the three governance approaches
 - and effective in **addressing basic conflicts** between the **conservation** of marine biodiversity and the **exploitation** of marine resources

Economic

Incentive category	Incentives (and the number of MPA case studies that cited them)
Economic	<p>1.1 Promoting economically and ecologically sustainable resource use, through spill-over effects and enhancing direct and indirect use values from resources (13)</p> <p>1.2 Green marketing of products and services from the MPA (7)</p> <p>1.3 Measures to reduce the 'leakage' of the economic benefits from the MPA away from local people (4)</p> <p>1.4 Providing economic compensation for restricted users for profits foregone (3)</p> <p>1.5 Payments for the flow of ecosystem services provided by the MPA (0)</p> <p>1.6 Allocation or reinforcement of community/user property rights (7)</p> <p>1.7 Promoting alternative livelihoods (6)</p> <p>1.8 Improvements in local infrastructure and living standards (7)</p> <p>1.9 Protection from incoming users (4)</p> <p>1.10 Funding from private or NGO sources to promote the effectiveness of the MPA through the use of various incentives, provided that this funding does not lead to 'institutional capture' – undue influence on MPA</p>

Interpretative

Incentive category	Incentives (and the number of MPA case studies that cited them)
Interpretative	<p>2.1 Public communication, education and awareness raising on the importance/vulnerability of marine ecosystems and the benefits of the MPA e.g. through newsletters, web sites, education programmes, media campaigns etc. (20)</p> <p>2.2 Role of celebrity 'champions' (3)</p> <p>2.3 Promoting recognition of the potential benefits from well-managed MPAs e.g. spill-over to surrounding fisheries, enhanced resilience, ecosystem services (10)</p> <p>2.4 Promoting recognition of MPA regulations and restrictions, including boundaries (4)</p>

Knowledge

Incentive category	Incentives (and the number of MPA case studies that cited them)
Knowledge	<p>3.1 Integration of local/traditional/indigenous knowledge in MPA decision-making (9)</p> <p>3.2 Maximising scientific knowledge to guide/inform MPA decision-making and monitoring/evaluation (15)</p> <p>3.3 Promoting mutual respect and collective learning between different knowledge owners e.g. scientists and local resource users (10)</p> <p>3.4 Developing mechanisms for independent advice &/or arbitration in the face of conflicting information &/or uncertainty (3)</p> <p>3.5 Agreed basis for the role of precautionary approaches in the face of uncertainty (2)</p>

Legal

Incentive category	Incentives (and the number of MPA case studies that cited them)
Legal	<p>4.1 International-regional-national-local regulatory obligations that require effective MPA conservation, including the potential for top-down interventions (10)</p> <p>4.2 Clarity and consistency in defining the legal objectives of MPAs, general and zonal restrictions, jurisdictional boundaries, and roles/responsibilities of different authorities and organisations (9)</p> <p>4.3 Effective judicial system for penalising transgressors (3)</p> <p>4.4 Legal provisions to ensure public rights and transparency in MPA management (7) 4.5 Legal or other official basis for cross-sectoral/cross-jurisdictional restrictions to support the achievement of MPA objectives (6)</p> <p>4.6 Performance standards/conditions/criteria/requirements related to the MPA's conservation objectives and attached to user/property rights, participatory governance structures, etc. (4)</p> <p>4.7 Scope for flexibility – adaptive management and local discretionary action, maintaining building on and working through local customary institutions, provided that this does not undermine the fulfilment of conservation objectives (3)</p> <p>4.8 Ensuring that sufficient national-local-state capacity, political will, surveillance technologies and financial resources are available to enforce all restrictions equitably on all local and incoming users, including addressing driving forces – pressures from immigration, corporate mass tourism, fisheries market forces etc. (7)</p>

Participative

Incentive category	Incentives (and the number of MPA case studies that cited them)
Participative	5.1 Participative governance structures and processes such as user committees, public consultations, participative GIS planning etc., including training to support such processes (15)
	5.2 Participative enforcement , e.g. peer enforcement, community rangers and wardens etc. (3)
	5.3 Building trust/social capital between different actors (7)
	5.4 Transparent participation and decision-making processes (7)
	5.5 Clear rules on the means and degree of participation from different groups, and the unbiased representation of all user groups in participation processes (3)
	5.6 Bringing in ' neutral ' facilitators to facilitate participative processes (3)

- **Five broad approaches to MPA governance** can be recognised in the 20 case studies examined to date.
- This categorisation is based on the **defining characteristics and attributes of MPA governance**, particularly the **allocation of authority and responsibilities** between different parties and/or actors involved in governing MPAs

Government led

<i>MPA governance approach</i>	<i>Case Study MPA name</i>	<i>Country</i>	<i>Effectiveness¹</i>	<i>National Per Capita GDPUS\$²</i>	<i>GDP annual growth rate (%)²</i>	<i>State capacity³</i>	<i>HDI (world ranking)⁴</i>
(I) Managed primarily by the government under clear legal framework	Great Barrier Reef Marine Park	Australia	3	38,200	2.4	1.65	0.935 (2)
	Darwin Mounds Marine Special Area for Conservation	UK	3	36,700	0.7	1.48	0.847 (26)
	North East Kent European Marine Site	UK	3	36,700	0.7	1.48	0.847 (26)
	Wash & North Norfolk Coast European Marine Site	UK	3	37,000	0.7	1.48	0.847 (26)
	National Marine Sanctuaries	USA	3	47,500	0.4	1.36	0.899 (4)
	California MPAs under the MLPA (Marine Life Protection Act)	USA	Too early to assess	47,500	0.4	1.36	0.899 (4)

Government led

- characterised by having a **well-established legal framework**, with clearly **defined MPA objectives, responsibilities of different government agencies**, and **rights and obligations of the public**.
 - **Legal incentives are the key influence** in most MPA-related processes, ensuring that the **statutory conservation objectives** are fulfilled in MPA decision-making.
- the legal framework also **provides a basis for the participation** of local people who directly and indirectly use the MPA, promoting **transparency, equity and compliance** in achieving statutory MPA objectives.
- The case studies in this category show that having a **strong legal framework** does not reduce **opportunities for user participation**.

Government led

- five case studies in **three countries** (Australia, the UK and the US)
- The three countries represented have relatively **high per capita GDPs** (average US\$41,300), **state capacities** (average +1.5) and **HDI** (average 0.894), while the **MPAs have a relatively high effectiveness (average 3)**.
- most appropriate to more **economically developed countries** with **strong state-federal governance frameworks**, and well-established legal and judicial frameworks
- key weaknesses of this governance approach is related to the **complex jurisdictional and bureaucratic systems**. The **responsibilities for fisheries and marine conservation** are under different government authorities and jurisdictions. **Cross-sectoral and cross jurisdictional integration** is a major challenge to MPA governance systems.

Decentralised governance

<i>MPA governance approach</i>	<i>Case Study MPA name</i>	<i>Country</i>	<i>Effective-ness¹</i>	<i>National Per Capita GDPUS\$²</i>	<i>GDP annual growth rate (%)²</i>	<i>State capacity³</i>	<i>HDI (world ranking)⁴</i>
(II) Managed by the government with significant decentralisation and/or influences from private organisations	Sanya Coral Reef National Marine Nature Reserve	China	2	6,000	9.0	-0.47	0.655 (89)
	Seaflower MPA	San Andres Archipelago, Colombia	1	9,200	2.4	-0.38	0.685 (79)
	Galápagos Marine Reserve	Ecuador	1	7,500	6.5	-0.86	0.692 (77)
	Karimunjawa Marine National Park	Indonesia (Coral Triangle)	2	3,900	6.1	-0.50	0.593 (108)
	Wakatobi National Park	Indonesia (Coral Triangle)	2	3,900	6.1	-0.50	0.593 (108)
	Tubbataha Reefs Natural Park	Philippines (Coral Triangle)	3	3,300	3.8	-0.48	0.635 (97)
	Ha Long Bay World Heritage Site	Vietnam	2	2,800	6.2	-0.56	0.566 (113)

Decentralised governance

- characterised by a **sharing of authority and responsibilities** between central/federal governments and **lower levels of government**, or between government agencies and **NGOs/private entities**.
- MPAs are managed in accordance with **formal regulations and/or through partnerships and negotiations** between different parties.
- A variety of governance incentives are employed in MPAs adopting this approach, which include
 - the provision of **alternative livelihoods** to local communities
 - **re-investing tourism revenue** to support both MPA management and community development
 - **promoting community participation** in park planning, monitoring and enforcement

Decentralised governance

- seven case studies in **six countries** (China, Colombia, Ecuador, Indonesia, the Philippines and Vietnam) within this governance approach category.
- The six countries represented all have relatively **low per capita GDPs** (average US\$5,400) **state capacities** (average -0.54) and **HDIs** (average 0.638), while the MPAs have a **medium effectiveness (average 1.9)**
- This approach would thus seem to be characteristic of **less economically developed countries** undergoing various forms of decentralisation, where there is a degree of commitment to conserve marine biodiversity and promote sustainable fisheries but a **relatively weak state capacity**.
- weaknesses include the **lack of political will and capacity** for the effective enforcement of MPA regulations and **equity in the sharing of benefits** derived from the MPA.

Community led

<i>MPA governance approach</i>	<i>Case Study MPA name</i>	<i>Country</i>	<i>Effectiveness¹</i>	<i>National Per Capita GDP US\$²</i>	<i>GDP annual growth rate (%)²</i>	<i>State capacity³</i>	<i>HDI (world ranking)⁴</i>
(III) Managed primarily by local communities under collective management arrangements	Os Minarzos Marine Reserve	Spain	3	34,600	0.9	0.95	0.861 (20)
	Isla Natividad MPA	Mexico	3	14,300	1.3	-0.14	0.745 (56)

Community led

- characterised by **local communities taking a lead** in the conservation and sustainable management of marine resources.
- Community organisations granted a **significant level of autonomy** to collectively decide the rules governing MPA management.
- **External organisations**, government and NGOs, may have an important role in **enabling, reinforcing and ensuring efforts** are consistent with existing legal and policy objectives at a national or supranational level, including fisheries and biodiversity conservation obligations.
- **All categories of incentives are employed**, examples include
 - the **allocation and reinforcement of territorial user rights** for fishers
 - **promoting respect and collective learning** between scientists and local users,
 - the **integration of local knowledge** in MPA design and monitoring processes

Community led

- two case studies in **two countries** (Spain and Mexico)
- The two countries **significantly differ** in their socio-economic contexts, with **per capita GDPs (US\$) of 34,600 and 14,300**, and **state capacities of +0.95 and -0.14** , the MPAs have a relatively high effectiveness (3).
- This approach would thus seem to be **opportunistic**, but effective in certain contexts, particularly when **communities are empowered to develop and enforce rules** for managing common pool resources
- they are **vulnerable to changes** in the wider socio-economic and political environment.
- In both case studies **legal incentives are cited as being needed** to reinforce community rights and current management arrangements

Private led

<i>MPA governance approach</i>	<i>Case Study MPA name</i>	<i>Country</i>	<i>Effective-ness¹</i>	<i>National Per Capita GDPUS\$²</i>	<i>GDP annual growth rate (%)²</i>	<i>State capacity³</i>	<i>HDI (world ranking)⁴</i>
(IV) MPAs managed primarily by the private sector and/or NGOs granted with property-management rights	Great South Bay Marine Conservation Area	USA	2	47,500	0.4	1.36	0.899 (4)
	Chumbe Island Coral Park	Tanzania	4	1,400	7.1	-0.29	0.392 (148)

Private led

- characterised by **non-governmental and/or private organisations** taking the main responsibility for MPA management and enforcement.
- Such organisations **work independently** but often **collaborate with public institutions** to enhance conservation efforts.
- A variety of incentives are used to steer MPA management in this category
 - reinvesting **profits generated from ecotourism to support MPA management** and community development in a sustainable manner
 - providing **environmental education to community members**, students and tourists
 - developing **participative governance structures and processes** that bring together community, government and NGO representatives in MPA initiatives

Private led

- **two case studies** in two countries (the US and Tanzania)
- The two countries represented are **heterogeneous**, with the **highest and the lowest figure** for per capita GDPs (US\$47,500 and 1,400), **state capacities** of +1.36 and -0.29, and **HDIs** of 0.899 and 0.392, respectively.
- it is notable the **Great South Bay Marine Conservation Area** (US) has an effectiveness **score of 2**, the **Chumbe Island Coral Park** (Tanzania) has the highest effectiveness score of all the **case studies, at 4**.
- This indicates that such **private-led MPAs can be highly effective**, even in challenging contexts, this is attributable to the **very strong leadership** role of the founder of the Chumbe Island Coral Park, with measures that spread the MPA's benefits to local communities.
- privately managed MPAs are also **vulnerable to changes in the political and economic** environment

No framework in place

<i>MPA governance approach</i>	<i>Case Study MPA name</i>	<i>Country</i>	<i>Effectiveness¹</i>	<i>National Per Capita GDPUS\$²</i>	<i>GDP annual growth rate (%)²</i>	<i>State capacity³</i>	<i>HDI (world ranking)⁴</i>
(V) No clearly recognisable effective governance framework in place	Baleia Franca Environmental Protection Area	Brazil	1	10,200	5.1	0.04	0.693 (73)
	Pirajubá Marine Extractive Reserve	Brazil	0	10,200	5.1	0.04	0.693 (73)
	Cres-Lošinj Special Zoological Reserve	Croatia	1	18,400	2.4	0.38	0.765 (51)

No framework in place

- MPA governance is undermined by a **lack of political will, leadership and state capacity** at all levels to develop effective governance structures and processes that would support the achievement of any MPA objective
- often in the face of **strong driving forces**. Few incentives are successfully applied to address conflicts and steer MPA processes
- three MPAs in **two countries** (Brazil and Croatia)
- The two countries represented have **medium per capita GDPs** (US\$) of 10,300 and 18,600 and **state capacities** of +0.04 and 0.38, while the MPAs have a **low effectiveness** (0-1).
- the limited use of **economic and legal incentives** in MPAs in this category is most notable, as they are important elements of the MPA governance framework in the other categories examined

Most cited

Most frequently cited as being used in MPAG case studies is:

1. the use of **communication, education and awareness-raising programmes** to promote appreciation of the importance and vulnerability of marine ecosystems and the benefits of the MPA (**interpretative incentive 2.1**).
2. **maximising scientific knowledge** to guide/inform MPA decision-making and monitoring-evaluation (**knowledge incentive 3.2**),
3. establishing **participative governance structures** and processes (**participative incentive 5.1**)
4. **funding from private or NGO sources** to promote the effectiveness of the MPA (**economic incentive 1.10**).

Least cited

In contrast, the four incentives most frequently cited as being needed to improve MPA governance are **all legal incentives**

1. ensuring **sufficient state capacity, political will and surveillance** resources are available to enforce all restrictions (**legal incentive 4.8**)
2. This is followed by legal or other official basis for **cross-sectoral/cross jurisdictional restrictions** (**legal incentive 4.5**)
3. **clarity and consistency** in defining the legal objectives, restrictions, boundaries and responsibilities (**legal incentive 4.2**)
4. international-local regulatory obligations that require effective MPA conservation, including the **potential for top-down interventions** (**legal incentive 4.1**).

Conclusions

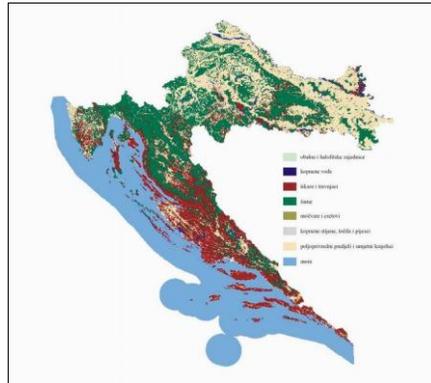
- regardless of the MPA governance approach adopted (i.e. government-led, decentralised, private or community-led), **resilience in MPA governance systems derives from employing a diversity of inter-connected incentives.**
- The significance of **institutional diversity to governance systems parallels that of species diversity** to ecosystems, conferring resilience to the overall social-ecological system.
- in the face of strong driving forces, rather than relying on particular types of incentives and institutions, it is important to recognise that the **key to resilience is diversity**, both of species in ecosystems and of institutions in governance systems.

Cres-Lošinj MPA

Peter Mackelworth

Croatian PA system

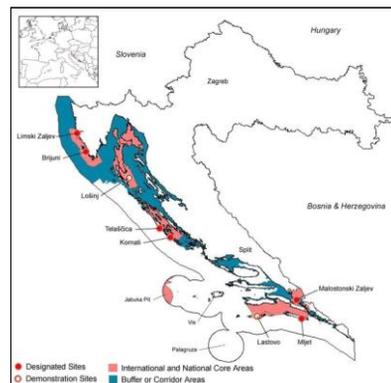
- Protected areas suffer from same issues worldwide
 - Inadequate financing
 - Lack of benefit to local communities
 - Inconsistent enforcement
 - Lack of professional capacity and knowledge
- Designated on an 'ad hoc' basis
 - Little consultation or planning
 - Poorly networked
 - 'Inherited' from the SFR Yugoslavia



Croatian National Ecological Network

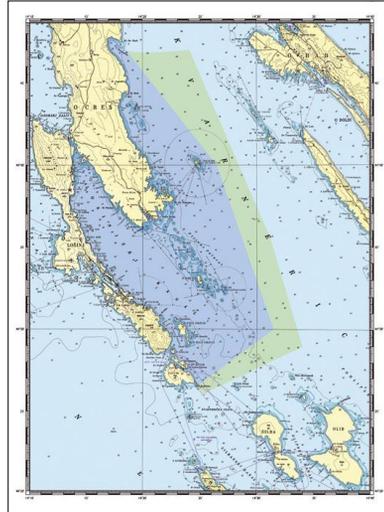
Croatian MPAs

- Over **one third** of the national territory is marine:
 - **Less than 1.4%** of the Croatian territorial sea is under protection.
 - Yet, terrestrial area under protection amounts to **9.4% of the total landmass** (SINP, 2008).
 - There are **seven PAs with a marine component**, however in most cases conservation of marine biodiversity was not their original primary goal.
 - **High tourism pressure**



Cres-Lošinj MPA

- In total there are **three variants** of the dating back to **1992**
 - Balenović *et al.*, 1992;
 - Bearzi, 1995;
 - Mackelworth *et al.*, 2002.
- The primary conservation objective was the presence of a population of **bottlenose dolphins** (*Tursiops truncatus*) in the region
 - Protected under national and international law.
- Due to the **significant economic** importance of this area for tourism and local fishery
 - Proposed as **multiple-use** under IUCN guidelines.



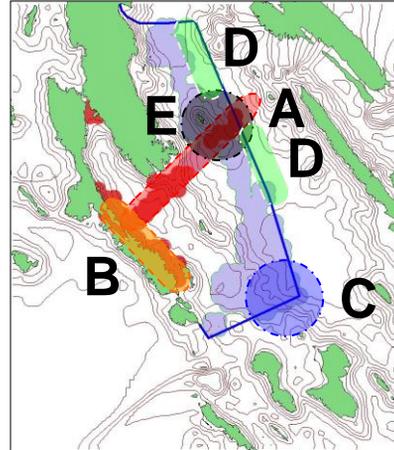
Critical Habitats Report (2003)

- The **2002** proposal up-dated previous ones with the **newly ratified international laws**
- The proposal was **adopted by the ACCOBAMS** as a pilot area for the Mediterranean
- **Critical habitats** report funded by Principality of Monaco and undertaken in cooperation with State Institute for Nature Protection (SINP) and other Croatian Institutions
 - **Biological** data
 - **Socio-economic** data
 - National **policy** and law
 - **International** policy and law



Biological data - dolphins

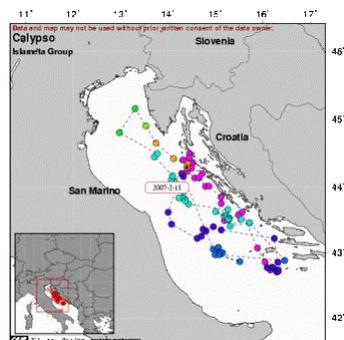
- Long-term distribution patterns
 - Areas of attraction identified as **important habitats**
- Anthropogenic disturbance
 - **Sea ambient noise**
 - **Behavioural** reactions to physical disturbance
- Genetic diversity
 - **Gene flow**



Biological data - turtles

Adriatic Marine Turtle Programme (CNHM)

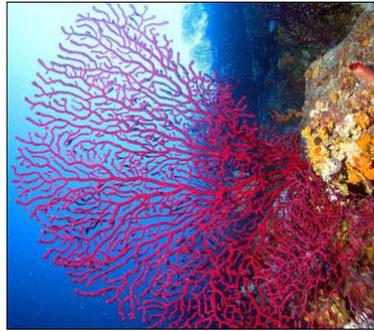
- **Loggerhead turtle** distribution
 - < 50m depth for foraging
- **By-catch in** fishing nets
 - High catch rates in trawlers, low mortality
 - Low catch rate in gill nets, high mortality
- **Tagging**
 - Satellite and recovery tags



Resource data - Benthos

Natural History Museum, Rijeka

- Submarine area around **Cutin islands** under threat Project funded by principality of **Monaco**
- Damage from **divers** and '**ghost**' nets
- **Delicate gorgonia**, *Paramurcia clavata* and coral *Corallium rubrum*



Resource data - seabirds

University of Trieste

- Nesting & Brooding Bird Species
 - Nesting of **Common European Shag** (University of Trieste)
 - Oruda and Palacol islands
- Major issues related to disturbance



Resource data – Cultural heritage

- Apoksimenos, **original Greek statue**
 - Discovered near the island of **Orjule** in 2001
 - **One of only 5** original Greek statues that exist
- Many other **wrecks** and **relics**
 - Under threat from illegal collection and disturbance



Social Characteristics - Islands

- **Limited** natural resources
 - Related to size and insularity
- **Limited** human resources
 - Migration
- Often **reliant** on the marine environment
 - Tourism
 - Fishery
 - Local and visitor recreation
 - Waste disposal



Lošinj Society

Islands are particularly **vulnerable** to demographic change

- **Border position** of Lošinj has led to significant changes in the make up of the island population:
 - WWII – Migration of the **Italian minority** and non-socialists
 - Development of **mass tourism** facilities in 1960s and 1970s - Only 1 person in 3 born on the island in the 1971 census, Yugoslavs
 - Conflict of the 1990s – migration of **internal Croats**
- Loss of **knowledge** of local systems especially **ecological** use patterns

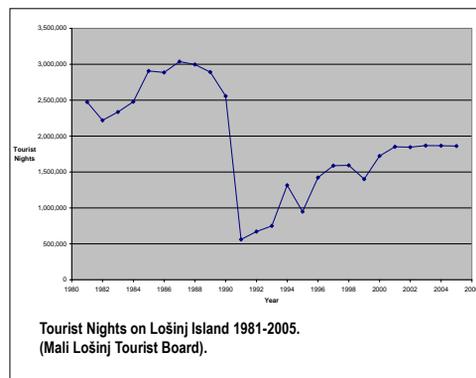
Lošinj Economy

Tourism is a **fickle** business:

Often based on **perception**

- Tourism and related services generate **88%** of the total revenue
- And account for **82%** of the employment

(Držvni zavod za statistiku, 2005)



'Lošinj the island of dolphins'

The **environment** is tourism's resource
(Butler, 1991)

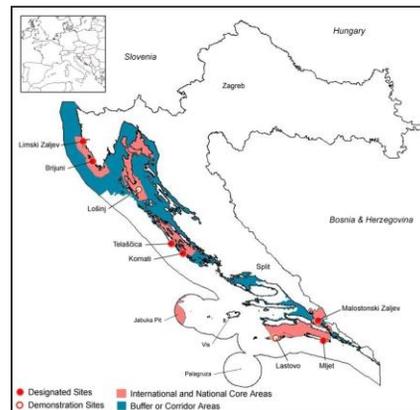
- Tying **economics** with environment:
 - Promoting higher **quality** tourism
 - Higher **expenditure** per person
 - **Specialist** tourism
 - **'Whale'** watching
 - **Protected** area visitation
- **'Pristine'** environment? Or the **perception** of a pristine environment



Institutional Influences

Integrated planning

- **Local** planning schemes
- **County** planning schemes
- **National** Strategies & Action Plans
 - Pilot MPA for cetaceans
- **Networks**
 - CRO-NEN (National Ecological Network)



Integration of authorities & laws

– International

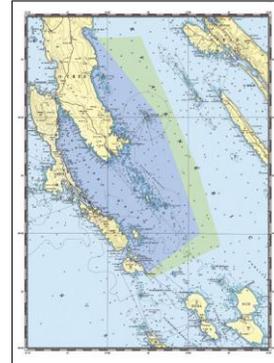
- ACCOBAMS / CMS
- Berne / Habitats Directive / NATURA 2000
- Barcelona / SPAMI

– National

- Directorate for Nature Protection
- Competent Authority – Ministry of Culture

– Local

- Local by-laws / Integration with jurisdictions
- Voluntary Code of Conducts



Critical Threats

– Direct threats highlighted as:

- Uncontrolled **recreational boat** traffic
- Development of a **400 berth** Marina in the village of Nerezine
- Use of **illegal methods** in the pelagic blue fish industry
- General **illegal** fishing

– Indirect threats

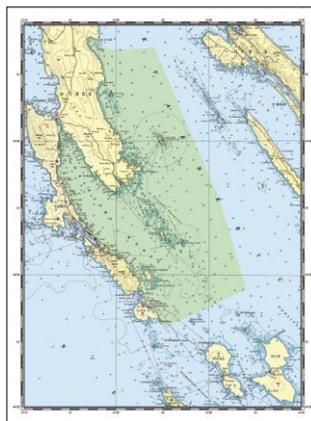
- General **uncontrolled** tourism
- **Competition** for fish resources



Lošinj Special Marine Reserve

The **2002 proposal** submitted to the Ministry with support of the CNHM

- **Multiple Use** Marine Protected Area
 - **Largest area** under protection in the Croatian Adriatic - 525km²
- **Special Marine Reserve** designation
 - **Combine** conservation with local needs
 - **Island** based management board and management plan



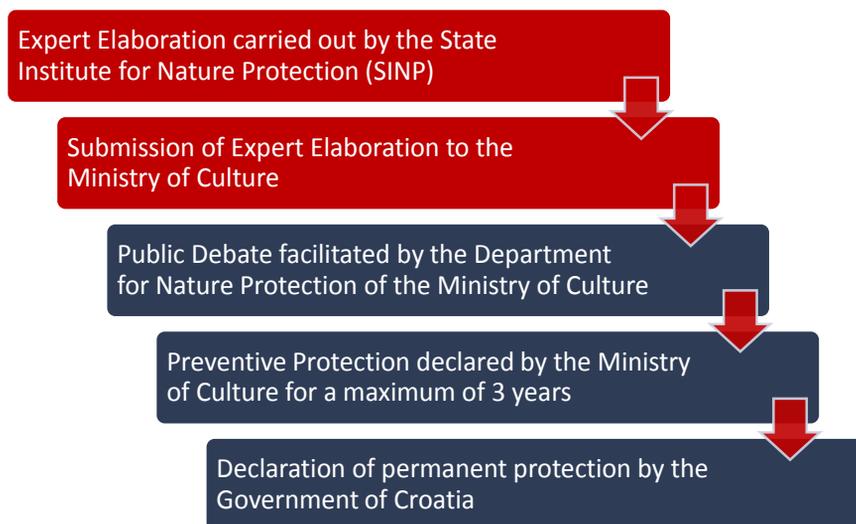
Protection Process



Expert Elaboration

- Carried out by the **State Institute for Nature Protection (SINP)** (Maričević, 2006).
 - Based on the findings of the critical habitats report (2003)
- Confirmed that the designation type '**Special Zoological Reserve**' was appropriate
 - Potential for the development of **zoning** with the area
 - Potential for the development of a **local** management board and plan
- Request for preventive protection (PP) submitted to the Ministry of Culture in **October 2005**

Protection Process



Protection Process

- Between October 2005 and July 2006 the recommendation for **PP** was being considered;
- At the same time the **building permit** for Nerezine Marina was also at the Ministry;
- Relations between researchers, fishermen and the local community were **positive**;
 - **Cooperative projects** investigating shark and turtle populations with the local fishermen;
 - The island was being marketed by the tourist board and local authorities as **'the island of dolphins'**;

On 26th July 2006 Preventive Protection was declared



Protection Process



Preventive Protection

- In **July 2006 PP was declared** and remained in place until **July 2009**;
 - PP limits the use of the area to **only those activities** being undertaken at the time of the declaration.
 - **No new activities** are allowed without consent from the competent authority.
- Declaration of PP **halted the Marina** development;
 - PP required that a **new EIA** be carried out before a construction permit could be issued

Preventive Protection

- However the **abrupt declaration** of the MPA and **absence of consultation** created opposition in stakeholder groups where cooperation had existed;
- This was provoked by **misinformation and rumour**, that the Ministry chose to ignore rather than address;
 - The MPA would **stop all fishing and tourism**, despite documented information promoting the multiple use designation.

Regional Park

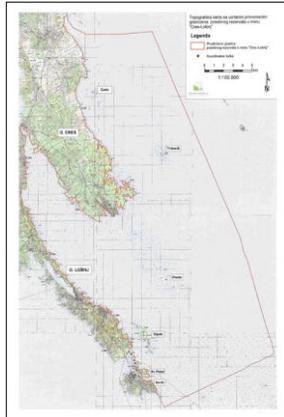
- As preventive protection expired in 2009 the SINP undertook **28 interviews** with stakeholders.
- SINP **proposed to change** the MPA from Special Reserve to Regional Park.
 - Special Reserve category is regarded as **too strict** for this area;
 - MPA is relatively **large** and regional park is more appropriate;
 - There was a **strong resistance** from the local community

Regional Park

- The new expert elaboration suggested that a regional park, with **proper zoning** and appropriate measures, had the potential to equally protect the dolphins
 - But, with **fewer potential consequences** for the local community (Fabrio-Čubrić *et al.*, 2009).
 - Management would remain at **county level** rather than at local or national level.

Change of area under protection

Special Zoological Reserve 2006-
2009 – 525km sq.



Regional Park – 463km sq.



Special Zoological Reserve to Regional Park

- Change of designation type **may not** fundamentally change conservation in practice as:
 - **No internal bylaws** were proposed
 - **No management board** appointed
 - **No management plan** drawn up.
- Any **conservation action** would be better than none.

Special Zoological Reserve to Regional Park

- **However**, the change in the borders of the PA to accommodate economic development along the coast
 - Allow the development of the **Marina in Nerezine** without a new EIA
- Moving **conservation boundaries** for economic reasons is in contravention of the Habitats Directive which states that changes can only be made for:

'imperative reasons of overriding public interest'
(Article 6.4).

Lessons learnt

- Providing **opportunities for the participation** of local communities in the conservation process,
 - Identify and deflect **potential conflicts**.
- Seeking in depth local community opinions **takes a time and financial commitment**.
- It is **easier** to take the input of the objecting **vocal minority**, who seek authority attention, than to access the silent majority.
- However do you get the **whole story**?

Public Meeting – Role Play

Protection Process



What options for Lošinj MPA?

1. Close the area
2. Make zones
3. Remove the MPA altogether

Close the area

Positive

- Clearly defined
- 'Expert decision'

Negative

- Everybody gives something up
- No further input from stakeholders

Make zones

Positive

- Further input from stakeholders

Negative

- Time consuming
- Potential for Everybody loses something

No protected area

Positive

- No control
 - Everybody is free to continue there use of the sea area
 - No monitoring
 - No 'big brother'

Negative

- No control
 - Everybody is free to continue there use of the sea area
 - Complete use of the resource and eventual exhaustion

Creating a Management Board

Interest Groups/Stakeholders

1. Fishermen
2. Tourists
3. Tourist agency and tourist board
4. Researchers
5. Authorities

Fishermen

- Local
 - Professional
 - Trawlers
 - Gill-net
- External
 - Professional
 - Purse seiners
 - Amateur
 - Visitors
- Illegal



Fishermen

- Tourism is related to market and fish prices
- Island image affects the quality and quantity of the tourists visiting the island
- Dolphins 'stealing' from the nets
- Dolphins damaging the nets
- Alternative employment opportunities, financial support for job change
- External fishers excluded - 'local protectionism'
- NTZs help protect fish stocks

Tourists

- Specialist tourism
 - Diving
 - Wind-surfing
 - Kayaking
 - Whale-watching
 - Speed boating
 - Water skiing
- Mass
 - Sea, Sun and Sand

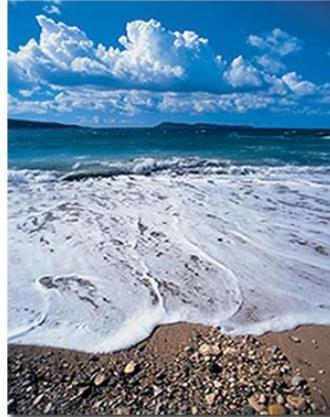


Tourists

- Specialist tourism –NTZs encourage diving tourism in particular
- Reduced speed limits
- Less boats and disturbance can improve the Lošinj experience
- More dolphins, increasing the chance of meeting dolphins
- More exclusivity – reduced mass tourism
- Higher prices?

Tourist Agencies & Tourist Board

- Specialist
 - Catering for special tourists
- Camp-sites
 - Catering for low price tourists
- Authority
 - Promoting the area generally



CROATIA *The Mediterranean As It Once Was*

Tourist Agent & Tourist Board

- Island image and the improvement of tourism quality
- Control of tourism may exclude traditional tourists
- Alternative tourism, greater income per person
- Possibilities and costs for 'responsible' development
- Competition with other tourist areas
- Sustainable development means less money for developers
- More work

Researchers

- Environmentalists
 - Professional researchers
 - Activists
 - Local
 - National
 - International



Researchers

- Motivation
- Who provides your funding?
- Personal life in local community, how will the local community perceive your actions
- Can protection also require restrictions on researchers
- What can be gained by closure or zoning?
- MPA means more work

Authorities

- Local
 - Short-termism
- National
 - Different ministries
- International
 - General market and international agreement considerations



Authorities

- International legal responsibilities
- Legal responsibilities to citizens
- Short-termism and re-election
- National and international Image
- Financing
- Lobbying and political will of stakeholders
- Less development means less money
- MPA means more work

Governance framework

Drivers/Conflicts

- Tourism
 - Marine traffic (personal watercraft) increases by 400% in summer; Informal '*Dolphin watching*'
 - Tourism development - Marina Nerezine
 - EU harmonisation - EA Directive; Habitats Directive
- Transportation
 - Ferry lines; informal 'taxi boats' to smaller islands
- Fishery
 - Island fishers and externals utilise the area
 - General increase in pelagic fishery

How have incentives been used to address the conflicts?

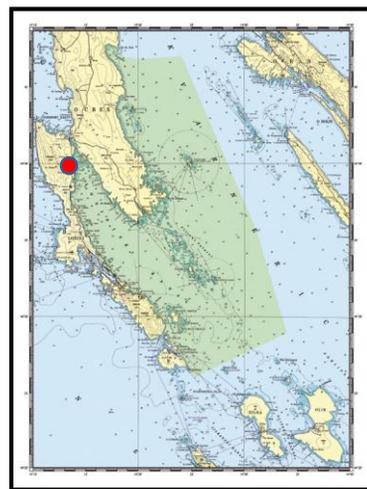
Economic incentives

- No take micro-zones as alternative to MPA
- *'Lošinj the island of dolphins'* tourism strategy
- Marketing of *'sustainably fished'*
- No collective benefit - all individual
- No re-investment
- Local protectionism - rejected
- No operating budget

Marina Nerezine

Economic incentives

- Village of 300 permanent inhabitants
- Plans for 400 berth marina



How have incentives been used to address the conflicts?

Interpretative incentives

- Media
 - Initially supportive
 - Later some article exacerbated conflicts between stakeholders
- Promoting benefits
 - Local protectionism was rejected
 - Ties to development of Marina Nerezine

How have incentives been used to address the conflicts?

Interpretative incentives

- Church Newsletter
 - ‘instead endangered dolphins, we can talk about endangered islanders’
- Veterinary Faculty
 - Counter information



How have incentives been used to address the conflicts?

Knowledge incentives

- Nature of cetaceans
 - Increased uncertainty due to movement; contradictory information sought
- Absence of knowledge of fish stocks
 - Only informal unsubstantiated information available

How have incentives been used to address the conflicts?

Knowledge incentives

- Local Ecological Knowledge
 - Cooperative work with fishers
 - Shared knowledge with boat operators
- Workshops
 - Hosted by NGOs and perceived to be biased towards conservation
 - Absence of Ministry undermined workshop legitimacy

How have incentives been used to address the conflicts?

Legal incentives

- Law for Nature Protection lacks definition
 - Has not been tried and tested in litigation
- Legal process is time consuming - years between complaints and court time
- Lack of capacity and no political will to follow through
- Demarcation follows defined municipality boundaries to encourage local authority to take over management

How have incentives been used to address the conflicts?

Legal incentives

- International legislation
 - Bern convention/Habitats directive
 - ACCOBAMS - pilot site
- The role of the EU
 - The accession process

How have incentives been used to address the conflicts?

Participative incentives

- From 2001 - 2005 initial dialogue between SINP and stakeholders facilitated by NGOs
- Post July 2006 '*preventative protection*' no real dialogue
- March 2009 strategic stakeholder interviews
 - Since that point no further dialogue or information

How have incentives been used to address the conflicts?

Participative incentives

- Who participates?
 - Local population - petition against, led by local police
 - Croatian people as a whole - 10,000 signatures on petition led by animal protection NGOs
- Accessing the silent majority...

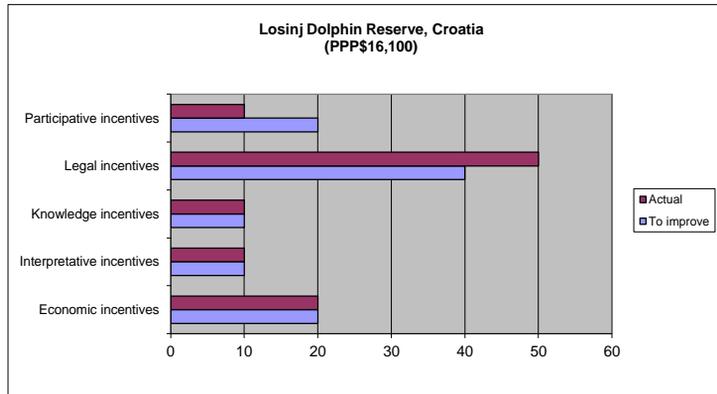
Relative contributions

	Actual
Economic Incentives	20
Interpretative Incentives	10
Knowledge Incentives	10
Legal Incentives	50
Participative Incentives	10
<i>Total</i>	100

Relative contributions

	To improve
Economic Incentives	20
Interpretative Incentives	10
Knowledge Incentives	10
Legal Incentives	40
Participative Incentives	20
<i>Total</i>	100

Relative contributions



Defining Issues

- Economic (Nerezine) vs. Biological Diversity
- Local vs. National vs. International
- No management board
- No management plan
- No funding
- No information

Conclusion

1. Semantics
 - Name of the 'reserve'
2. Confusion over competent authority
 - Ministry of Culture
3. Local government
 - Local electioneering/corruption
4. Role of international organisations
 - EU/ACCOBAMS - habitats directive
5. Misinformation
 - Contradictory information based on professional jealousy