

Marine Spatial Planning: *An International Perspective*

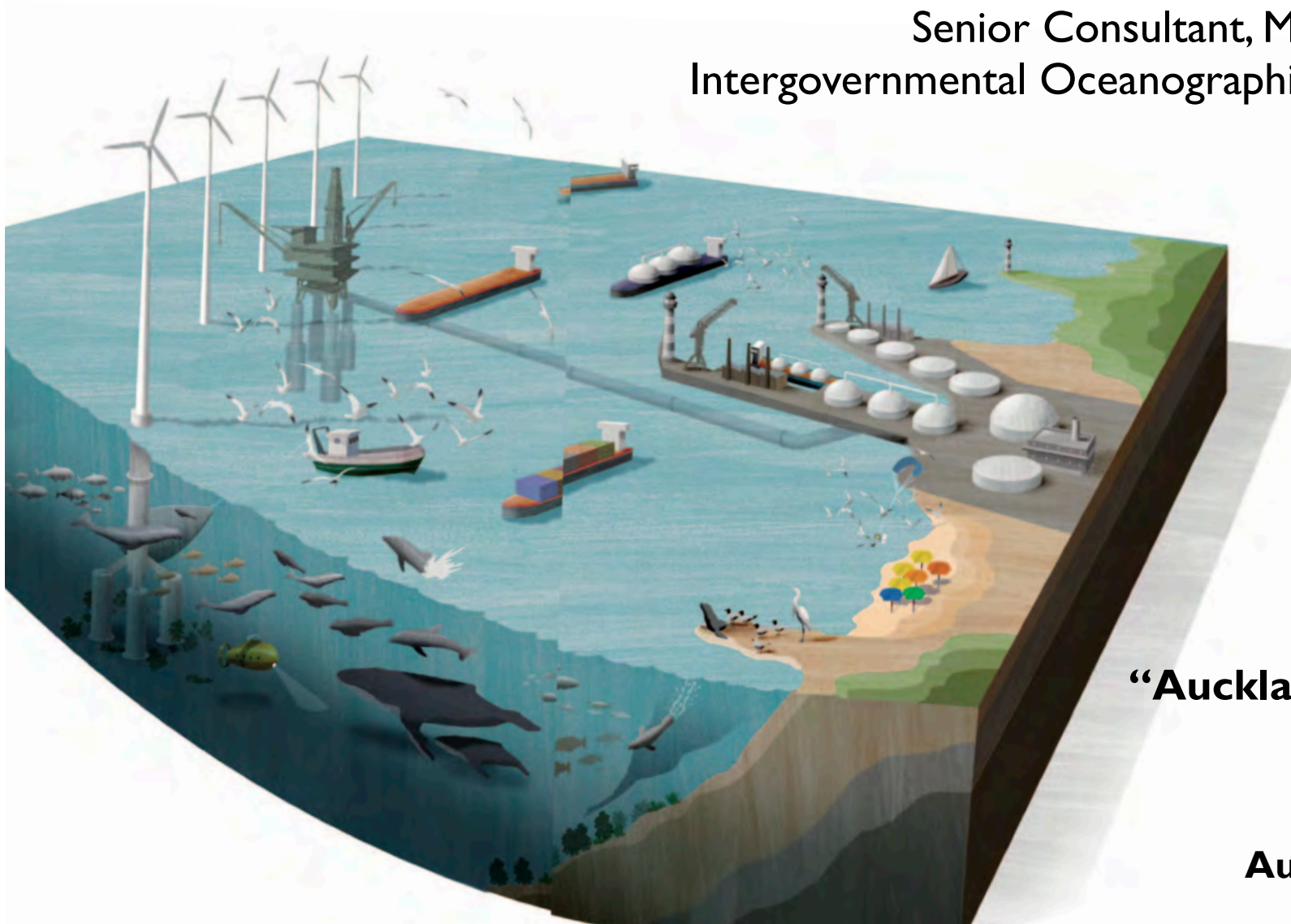
Charles N. Ehler

President, Ocean Visions Consulting and
Senior Consultant, Marine Spatial Planning

Intergovernmental Oceanographic Commission (IOC)

UNESCO

Paris, France



“Auckland Conversations”

10 September 2013

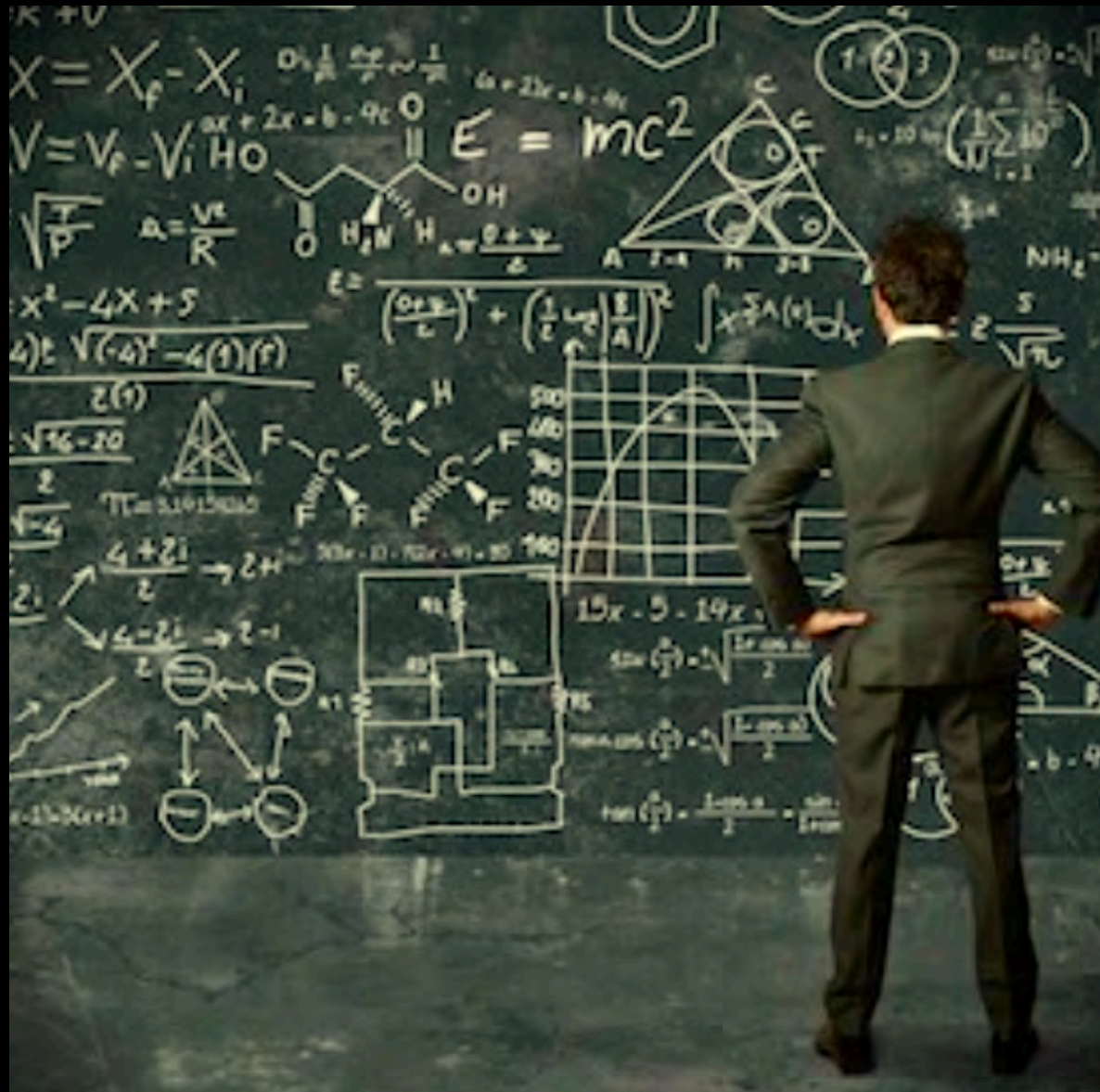
Beca Auditorium

Auckland, New Zealand



**Ehler @ National Oceanic & Atmospheric
Administration, circa 1979**

What Is Marine Spatial Planning?

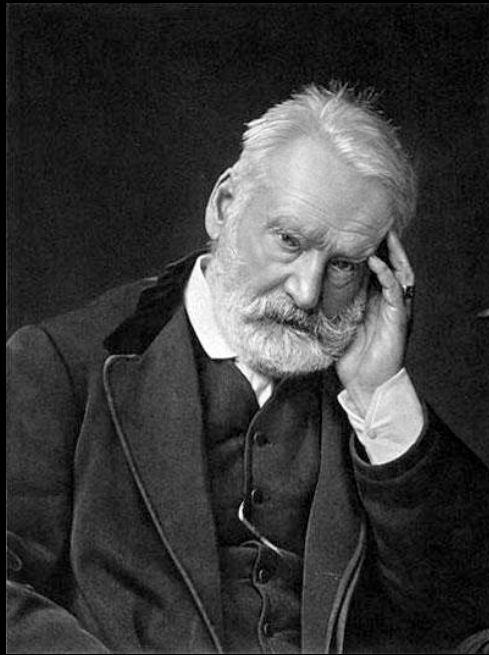


MARITIME SPATIAL PLANNING in the BALTIC SEA



become a
maritime spatialist
within 10 minutes

***“An invasion of armies can be resisted,
but not an idea whose time has come.”***



**Victor Hugo
1802-1885
French Poet
and Novelist**

Marine Spatial Planning
Is an
Idea Whose Time Has Come

What Is Marine Spatial Planning?

Marine spatial planning is also called:

- **Maritime spatial planning (EU)**
- **Marine planning (England)**
- **Integrated management (Norway)**
- **Bioregional planning (Australia)**
- **Ocean management (Massachusetts, USA)**
- **Special area management planning (Rhode Island, USA)**
- *Schemas de mise en valeur de la mer* (France)
- **Marine functional zoning (China)**
- **Marine zoning (Great Barrier Reef Marine Park)**

What's in a Name?

Integrated Coastal Zone Management

Integrated Ocean Management

Ecosystem-based (Ocean) Management

Ecosystem Approach (to Ocean Management)

Marine Protected Area Management

Marine Spatial Planning

What's in a Name?

Integrated Coastal Zone Management

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Marine Protected Area Management

Marine Spatial Planning

It's the Outcomes that Count

Outcomes of MSP

Healthy Marine Ecosystems

Sustainable Fish Populations

Safe Navigation

Sustainable Energy Supply

Robust Coastal Economies

Maintenance of Ecosystem Services

Reduced Conflicts among Uses

Reduced Conflicts between Uses and Nature

Protection of Ecologically-Important Marine Areas

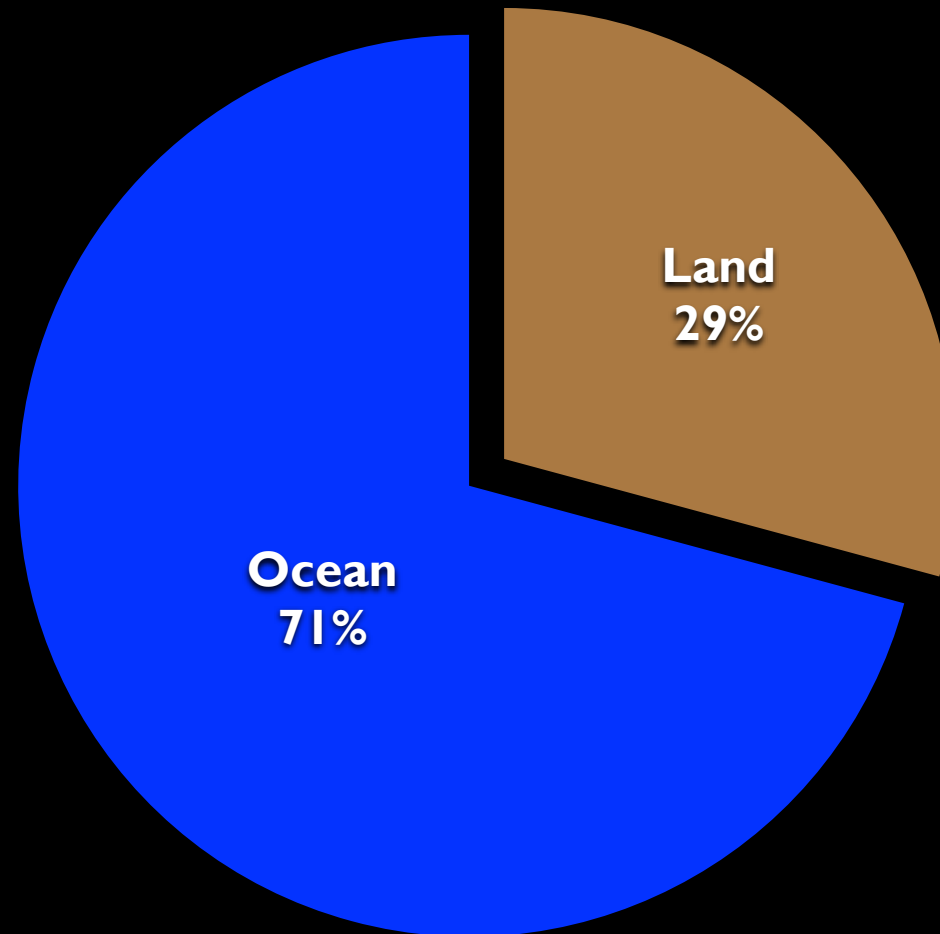
Effectively Managed Network of Marine Protected Areas

A Global Perspective

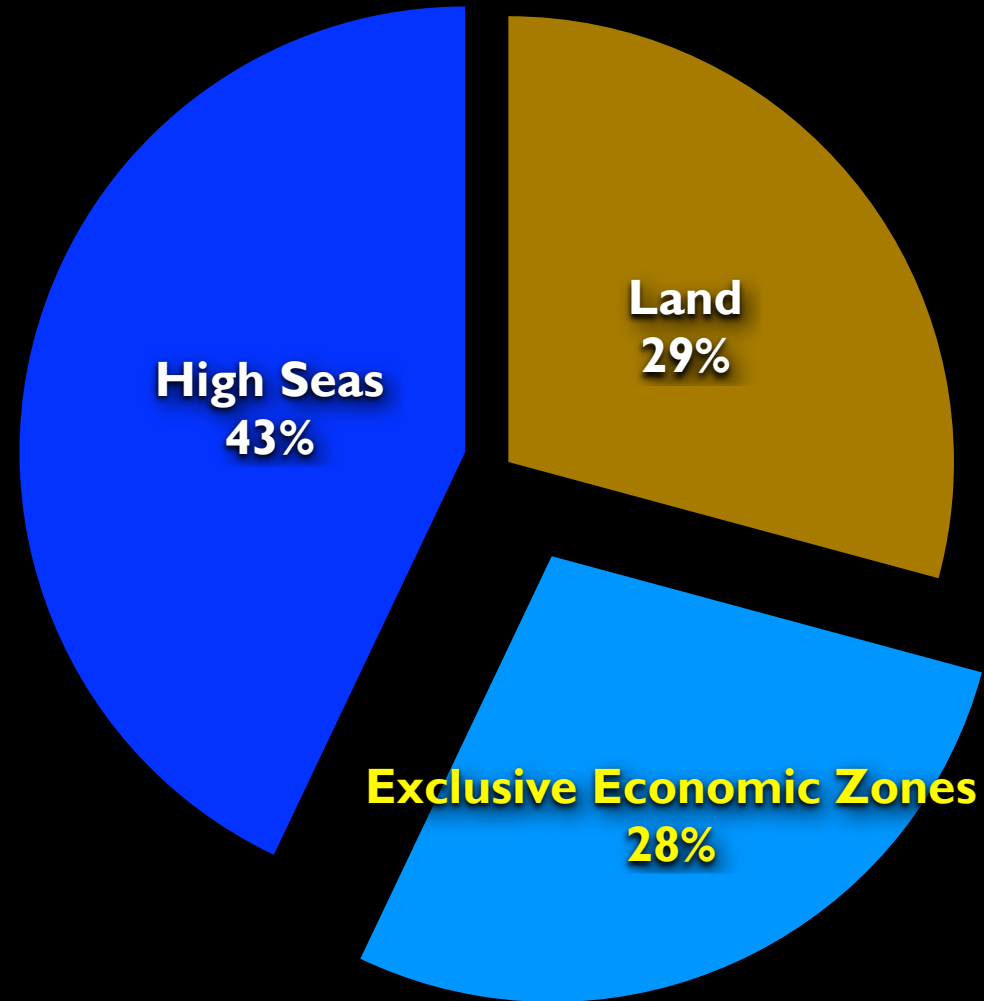
A Global Perspective



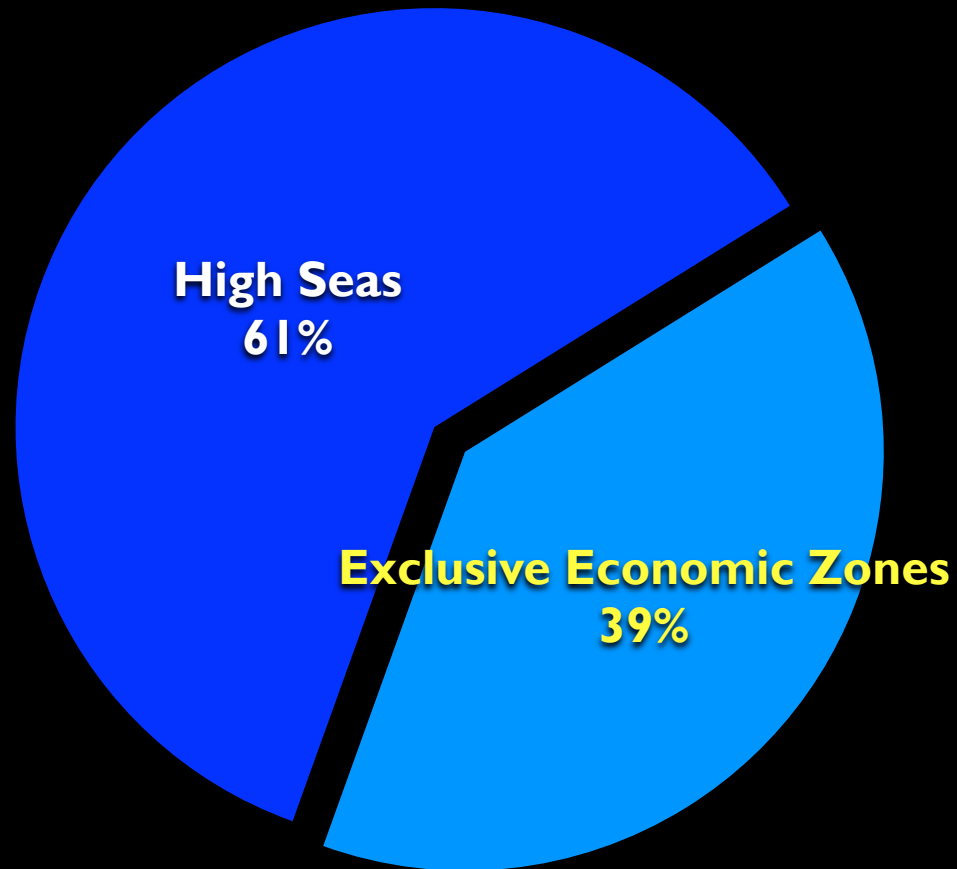
Percentage of All World



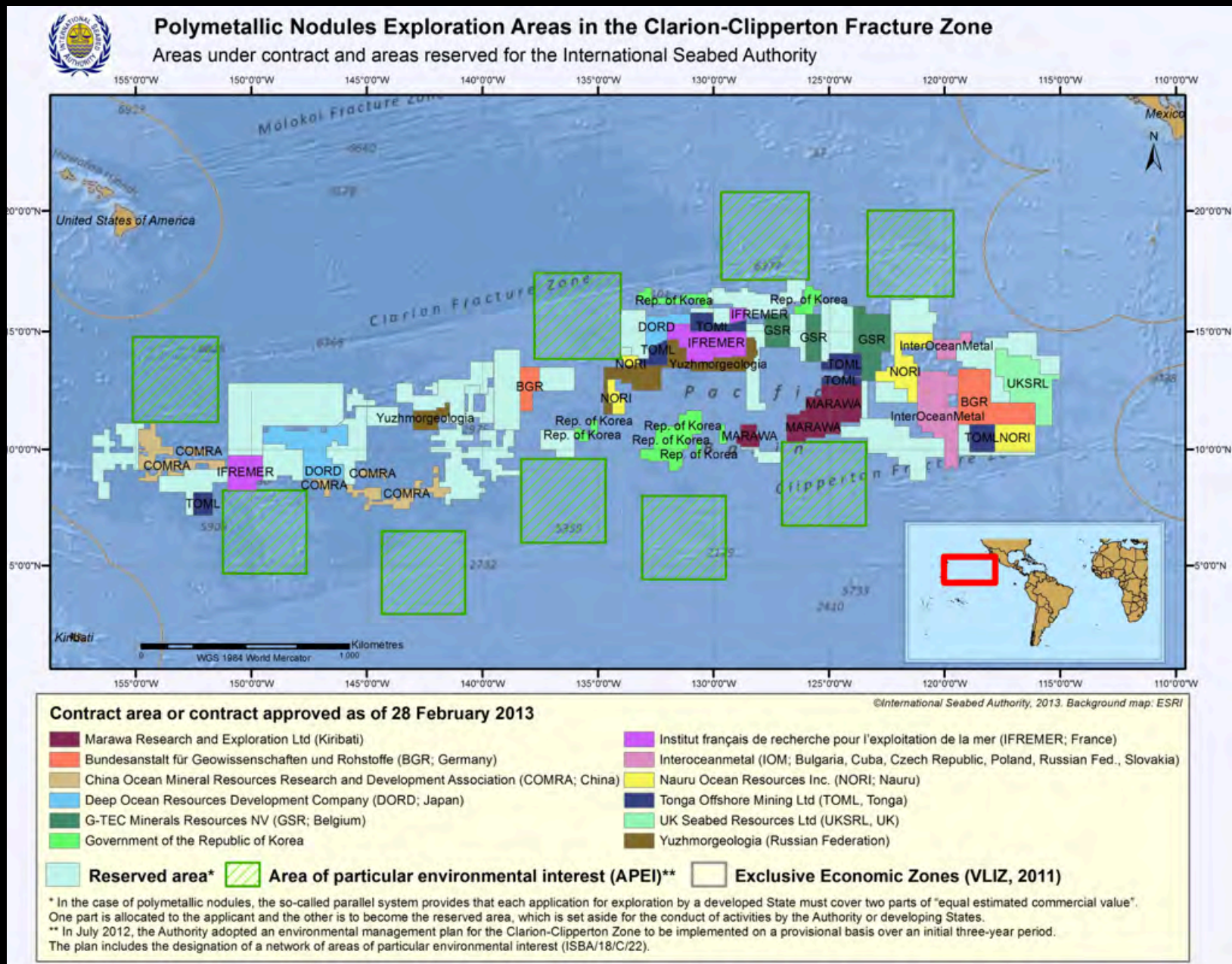
Percentage of All World



Percentage of All Ocean



Ocean Mineral Exploration in the High Seas



What Is an “Exclusive Economic Zone”?

- **The Exclusive Economic Zone (EEZ) is the area beyond and adjacent to the Territorial Sea**
- **The EEZ cannot extend beyond 200 nautical miles (370 km) from the baselines from which the breadth of the Territorial Sea is measured**
- **In colloquial usage, the EEZ can include the Territorial Sea and even the continental shelf beyond 200 nm**

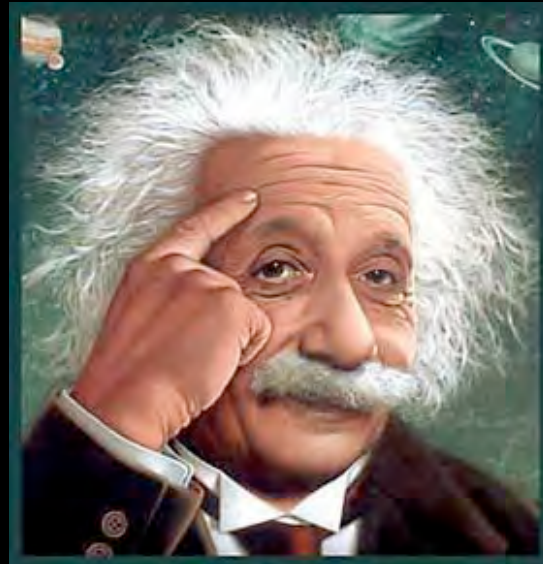
Total (Land & Ocean) Jurisdiction of Countries of the World



Credit: Theo Deutinger & TD Architects

What Is MSP About?

***“If you can’t explain it simply,
you don’t understand it well enough.”***
.”



***Albert Einstein
1879-1995
German/American
Physicist & Philosopher***

What Is Marine Spatial Planning?

Planning

+

Implementation

+

Monitoring

+

Evaluation

+

Adaptation

=

Management

What Does MSP Need?

Political Will

+

Authority

+

Financing

+

**Stakeholder
Engagement**

+

What Does MSP Need?

Political Will

+

Authority

+

Financing

+

**Stakeholder
Engagement**

+

**Clear
Objectives**

+

**Analytical
Capacity**

+

**Best Available
Information**

+

Vision

What Does MSP Need?

Political Will

+

Authority

+

Financing

+

**Stakeholder
Engagement**

+

**Clear
Objectives**

+

**Analytical
Capacity**

+

**Best Available
Information**

+

Vision

= Success

What Is Marine Spatial Planning?

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

Ehler & Douvère 2007
“Visions for a Sea Change”
UNESCO/IOC



Credit: Ministry of Infrastructure & Environment
The Netherlands



UNESCO

Intergovernmental Oceanographic Commission
Website on Marine Spatial Planning

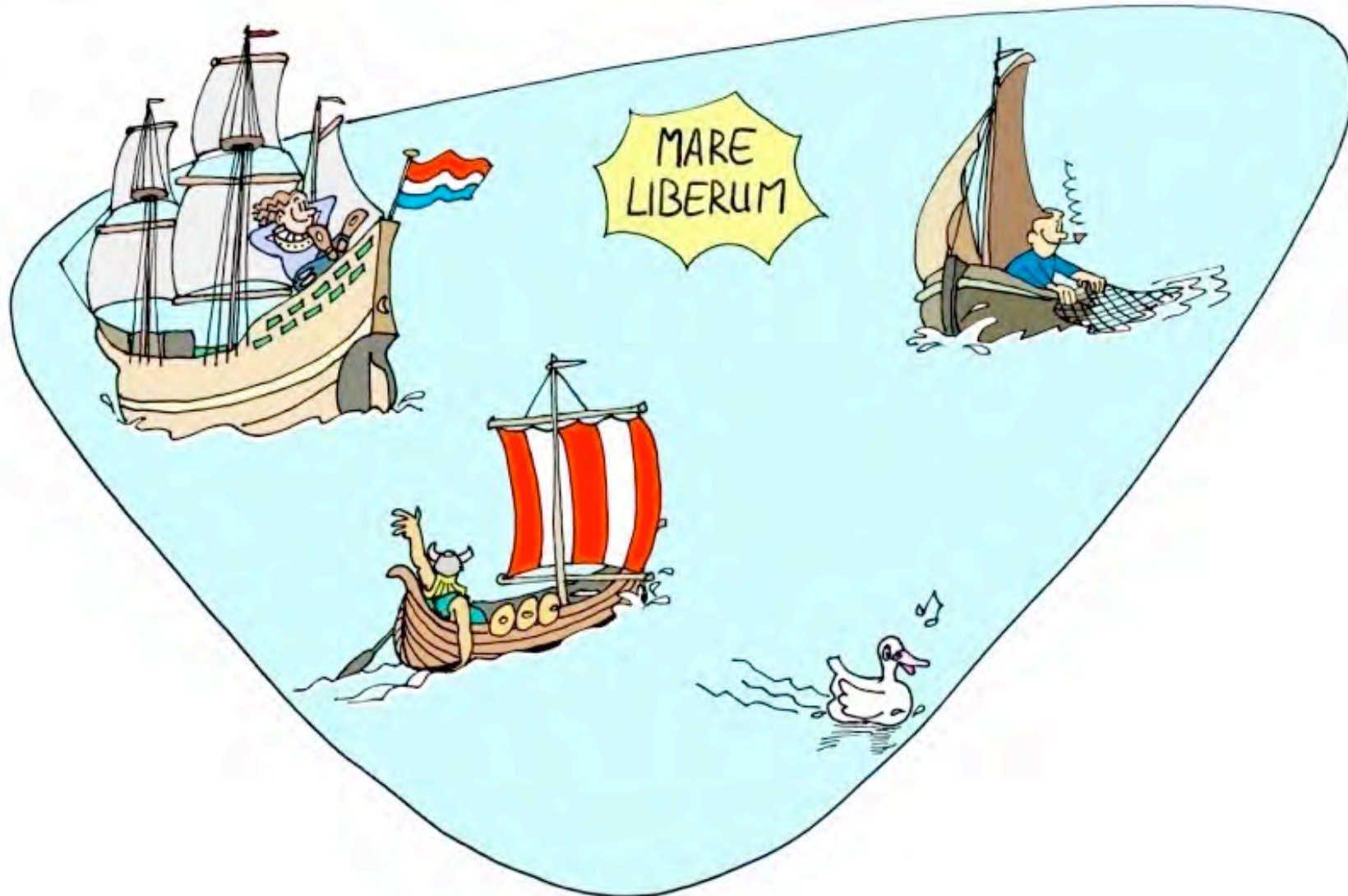
unesco-ioc-marinesp.be/

**Why Do We
Need MSP?**

DAY 44:
STILL STRANDED, WITH
NOTHING BUT FLAT EMPTY
WATER AS FAR AS THE
EYE CAN SEE.

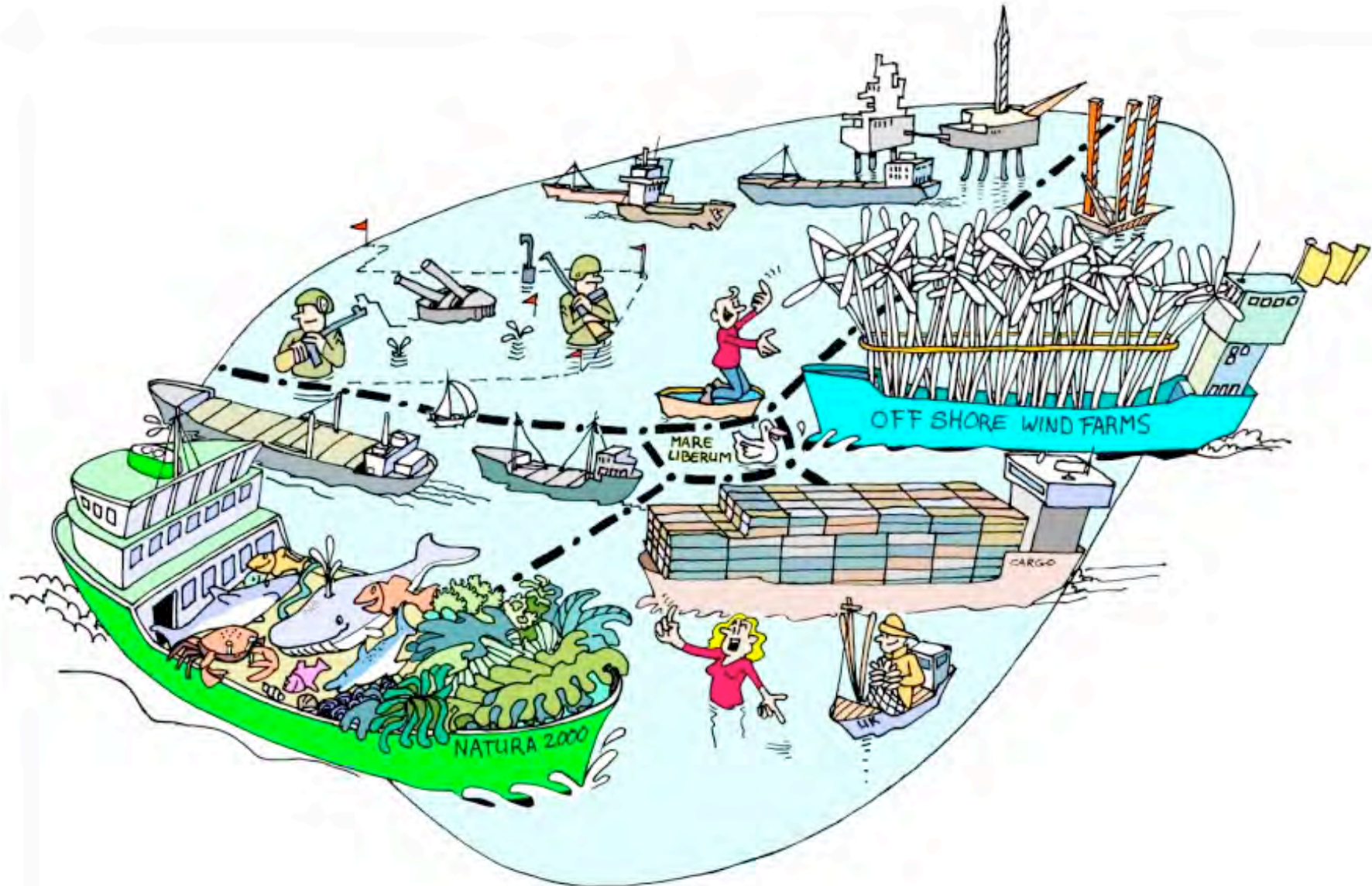


Why Marine Spatial Planning?



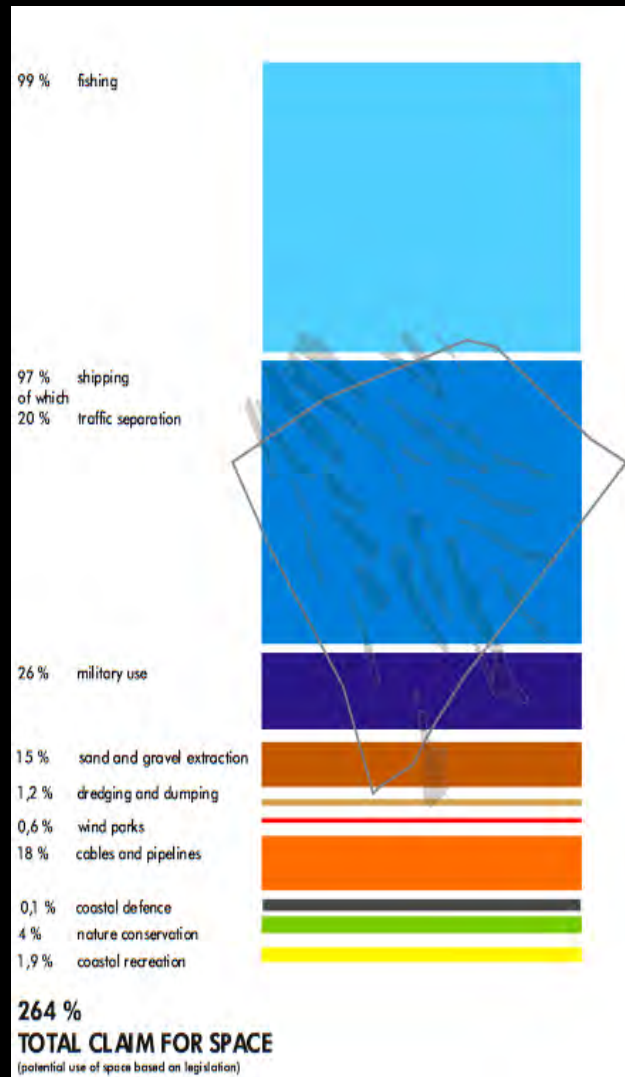
Source: Rijkswaterstaat, Netherlands

Why Marine Spatial Planning?



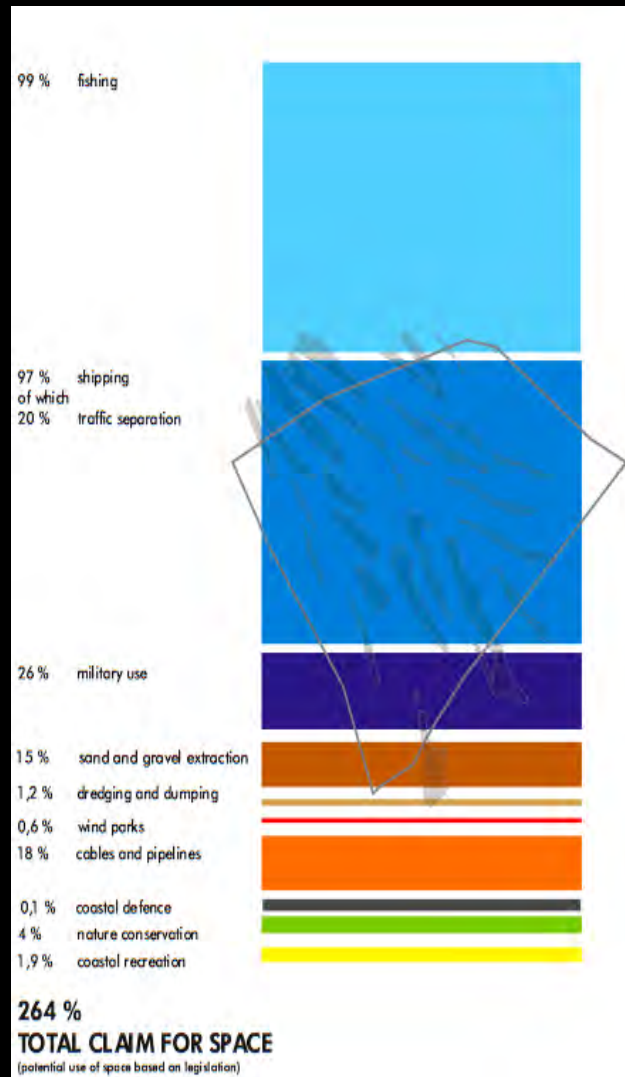
Source: Rijkswaterstaat, Netherlands

The Spatial Problem



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

The Spatial Problem



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

What Are the Drivers of MSP?

Marine Conservation



© Mark Van Coller/Solent

Offshore Wind Energy



Map 1. Functions on the North Sea



What Is MSP?

UNESCO Guide to MSP



Available at: unesco-ioc-marinesp.be

What Is Marine Spatial Planning?

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

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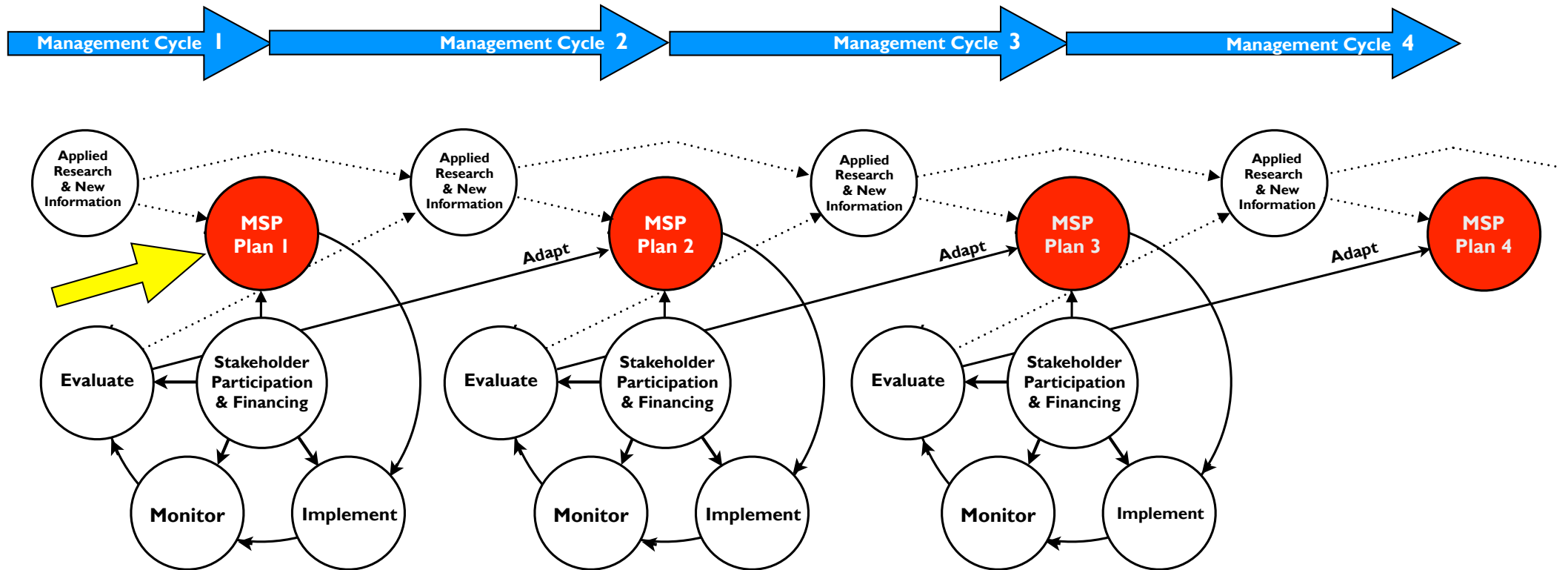
Credit: Ministry of Infrastructure & Environment
The Netherlands

What Is a Marine Spatial Plan?

A “marine spatial plan” is:

- **Integrated and multi-objective**, including all important economic sectors; economic and social objectives as well as ecological ones
- **Strategic and future-oriented**, considering alternative means to achieve a vision
- **Continuing and adaptive**, with an emphasis on performance monitoring and evaluation—and learning by doing
- **Participatory**, building a broad base of stakeholders to ensure long-term support
- **Ecosystem-based**, with a focus on maintaining ecosystem services over time

The Continuing Marine Spatial Management Cycle



**Why Are
Space & Time
Important?**

**The Oceans Are NOT
Homogeneous**

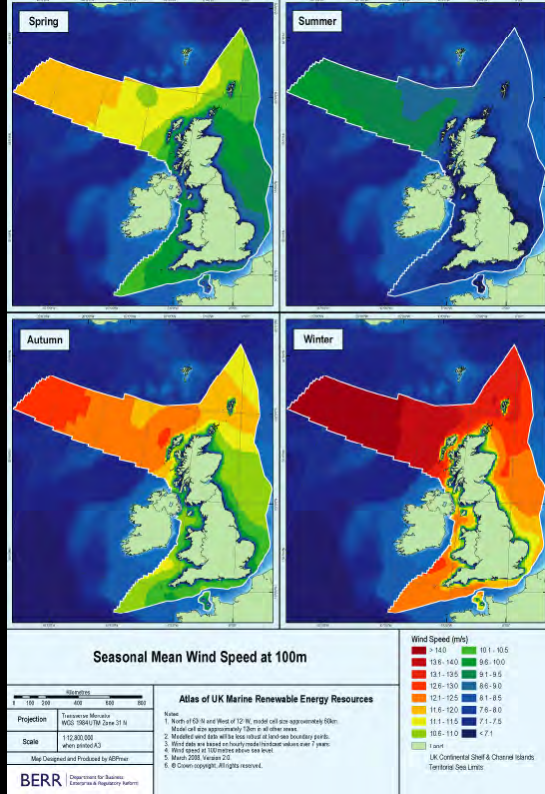
**Some Areas Are More
Ecologically Important
than Others**



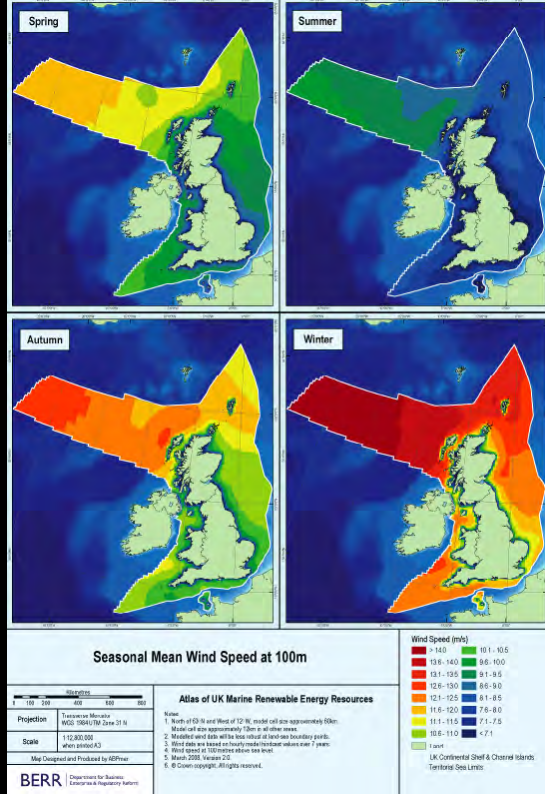
Some Areas Are More **Ecologically Important** than Others

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





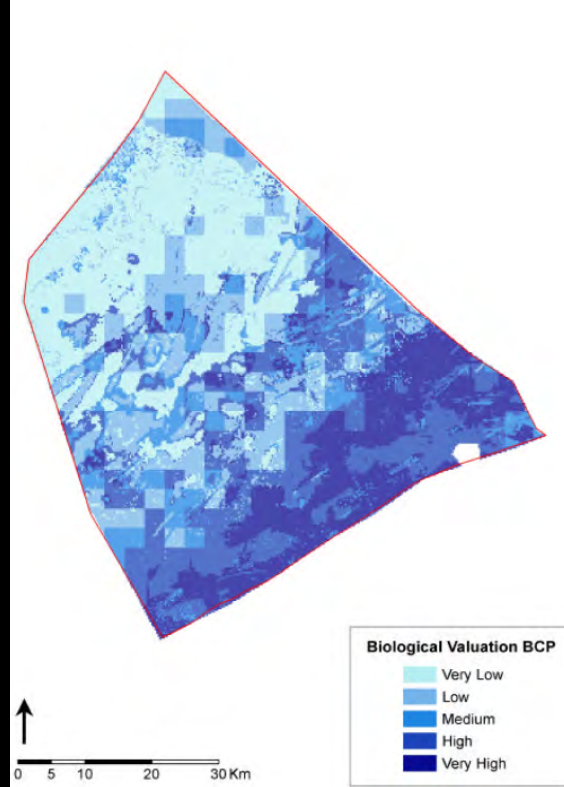
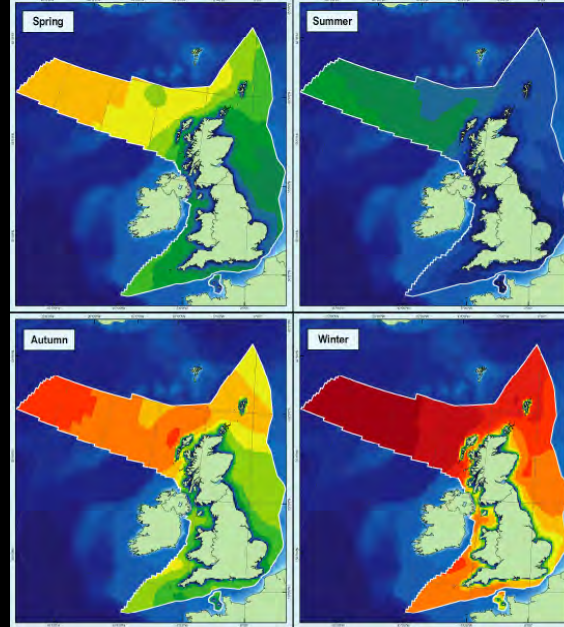
Some Areas are More Economically Important than Others

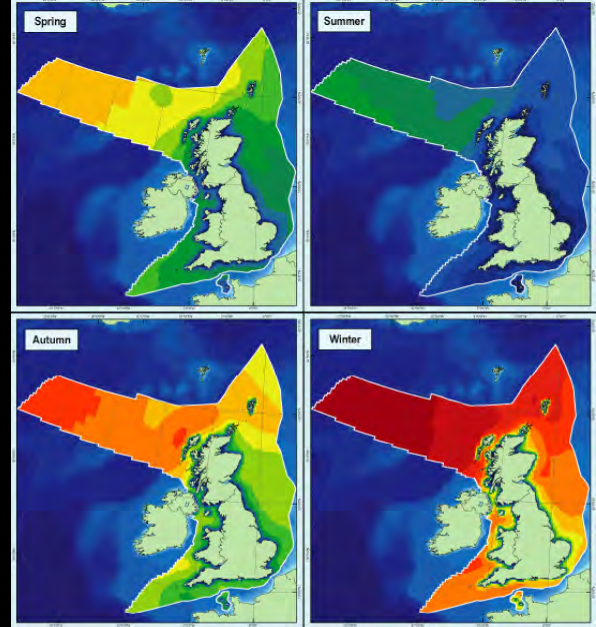


Some Areas are More Economically Important than Others

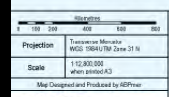
- Oil & Gas Deposits
- Sand & Gravel Deposits
- Fishing Grounds
- Transportation Routes
- Areas of Sustained Winds
- Areas of Sustained Waves

Effective Marine Spatial Planning Should Address Spatial and Temporal Heterogeneity





Seasonal Mean Wind Speed at 100m

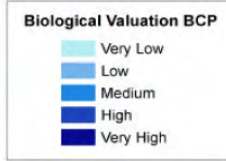
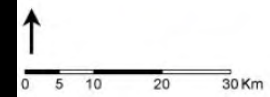
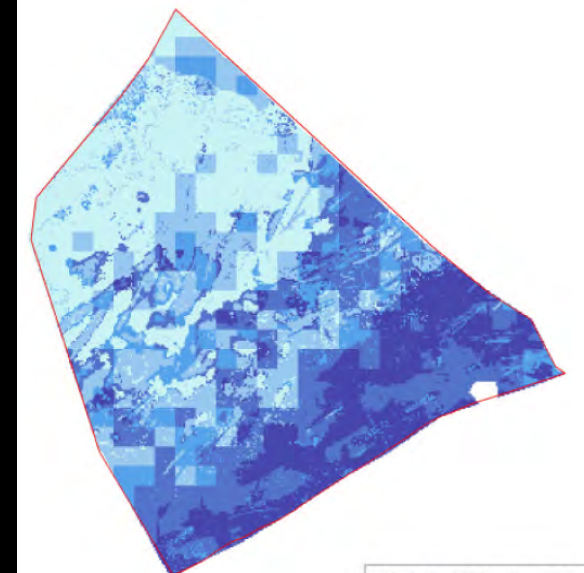
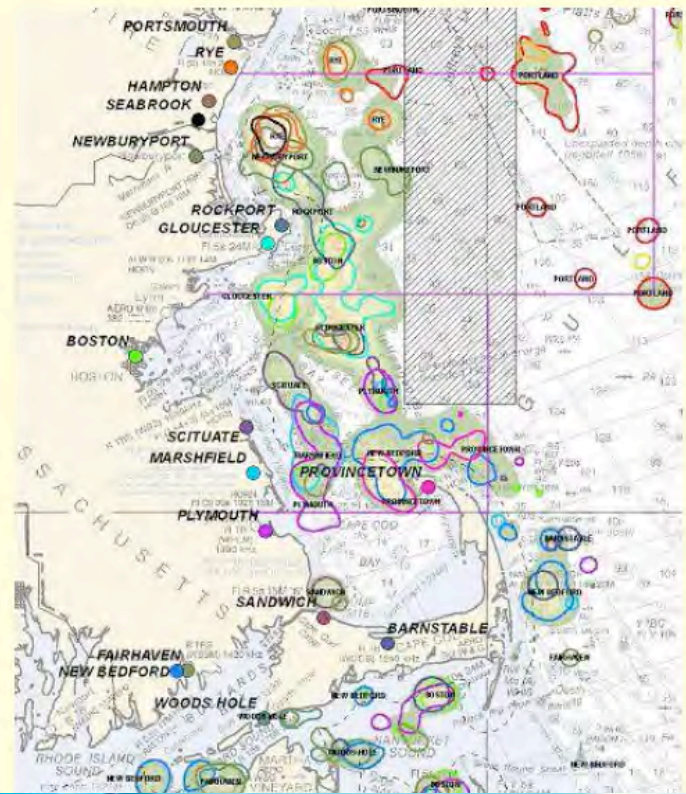


Atlas of UK Marine Renewable Energy Resources

Notes:
 1. North of 53°N and West of 12°W, model cell size approximately 60m.
 2. Model cell size approximately 12m to 60m elsewhere.
 3. Modified wind data with the loss of all land sea boundary points.
 4. Wind speed are based on hourly model data but are averaged over 7 years.
 5. Wind speed at 102 metres above sea level.
 6. March 2006, Version 2.0.
 © Crown copyright. All rights reserved.



BERR



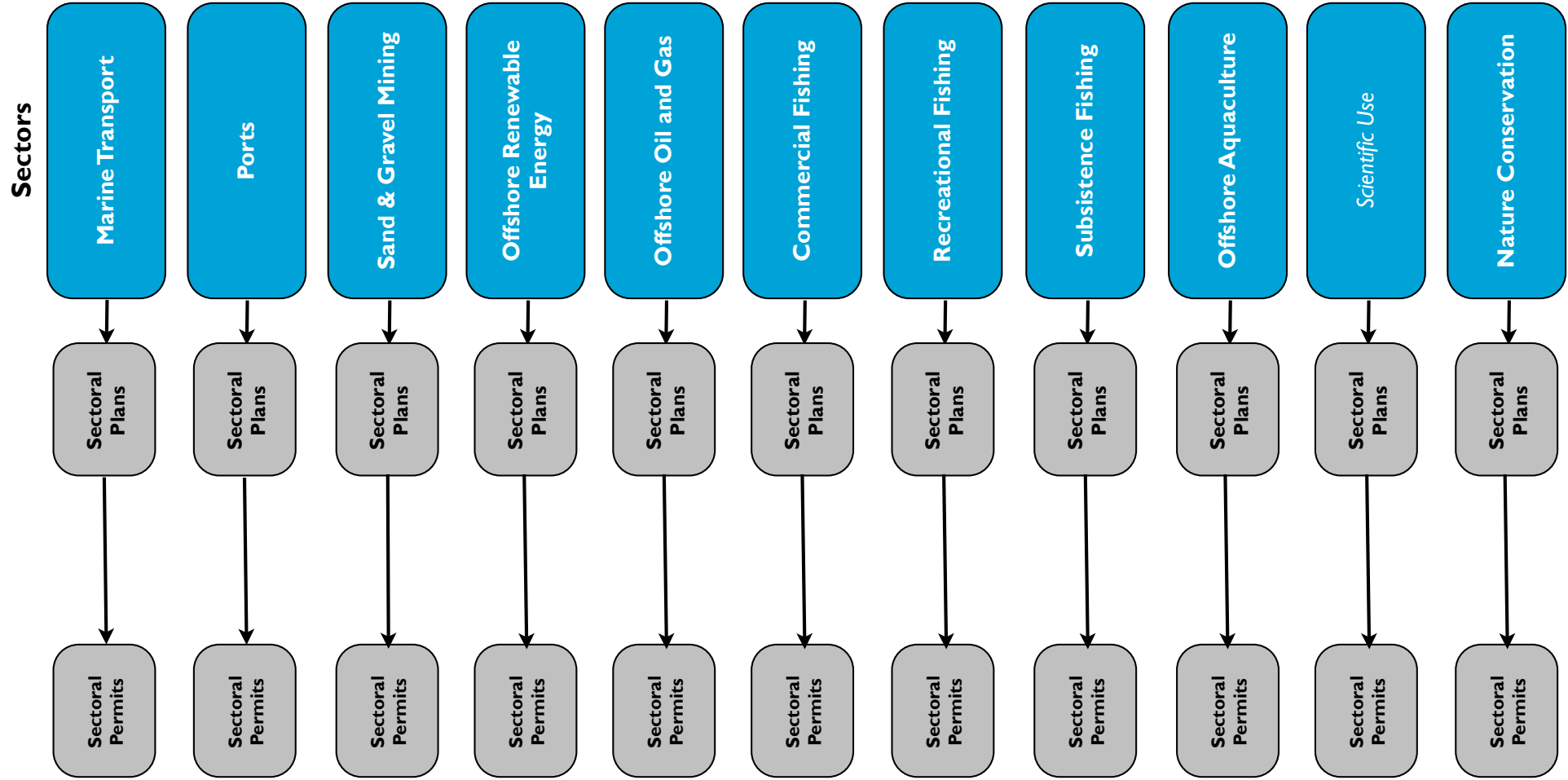
How Does MSP Work?

***“I am rather like a mosquito in a nudist camp;
I know what I ought to do, but
I don’t know where to begin.”***

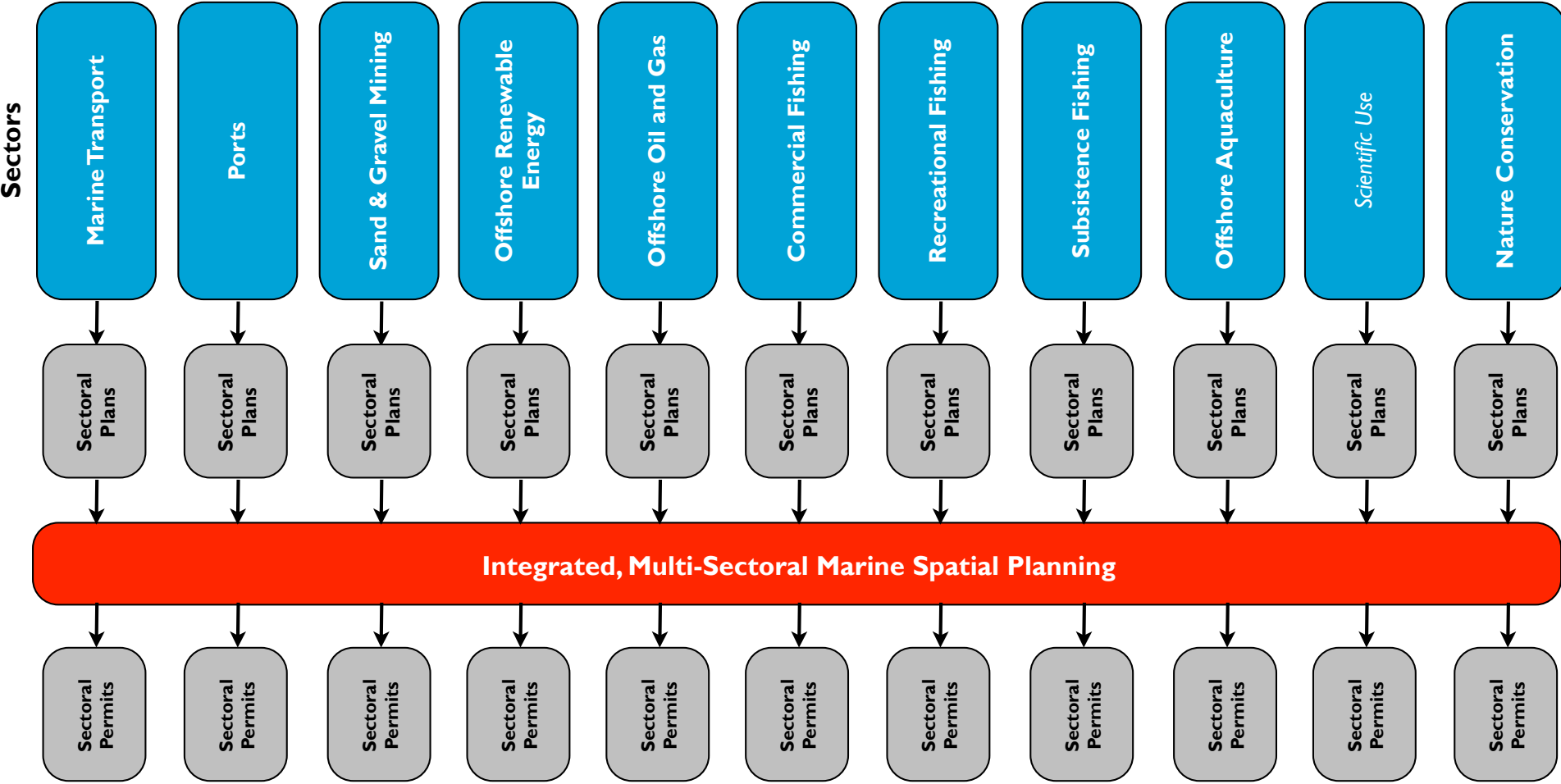


***Stephen F. Bayne, Jr.
1908 -1974
American Bishop
Anglican Church***

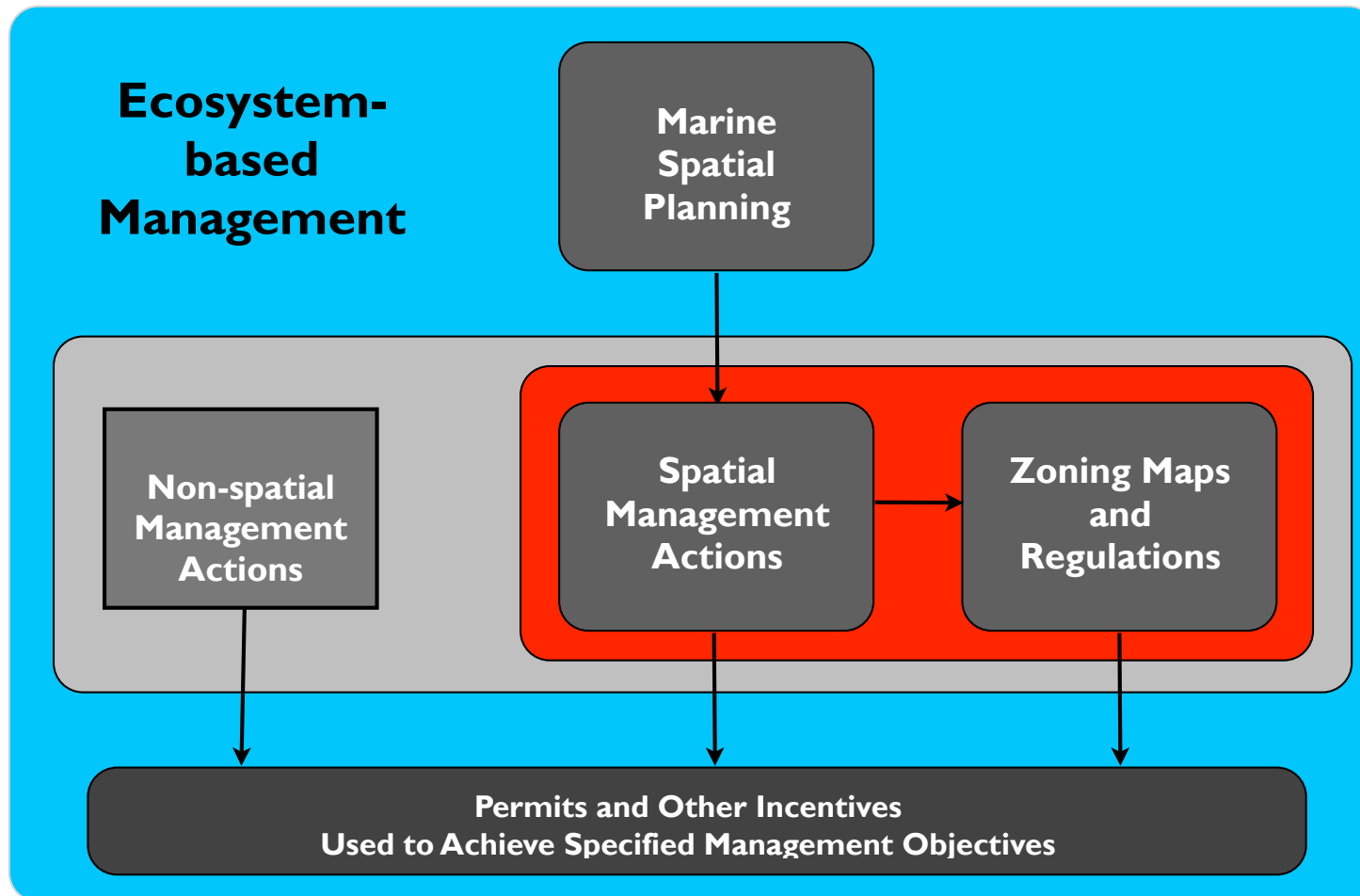
Single-Sector Planning and Permitting



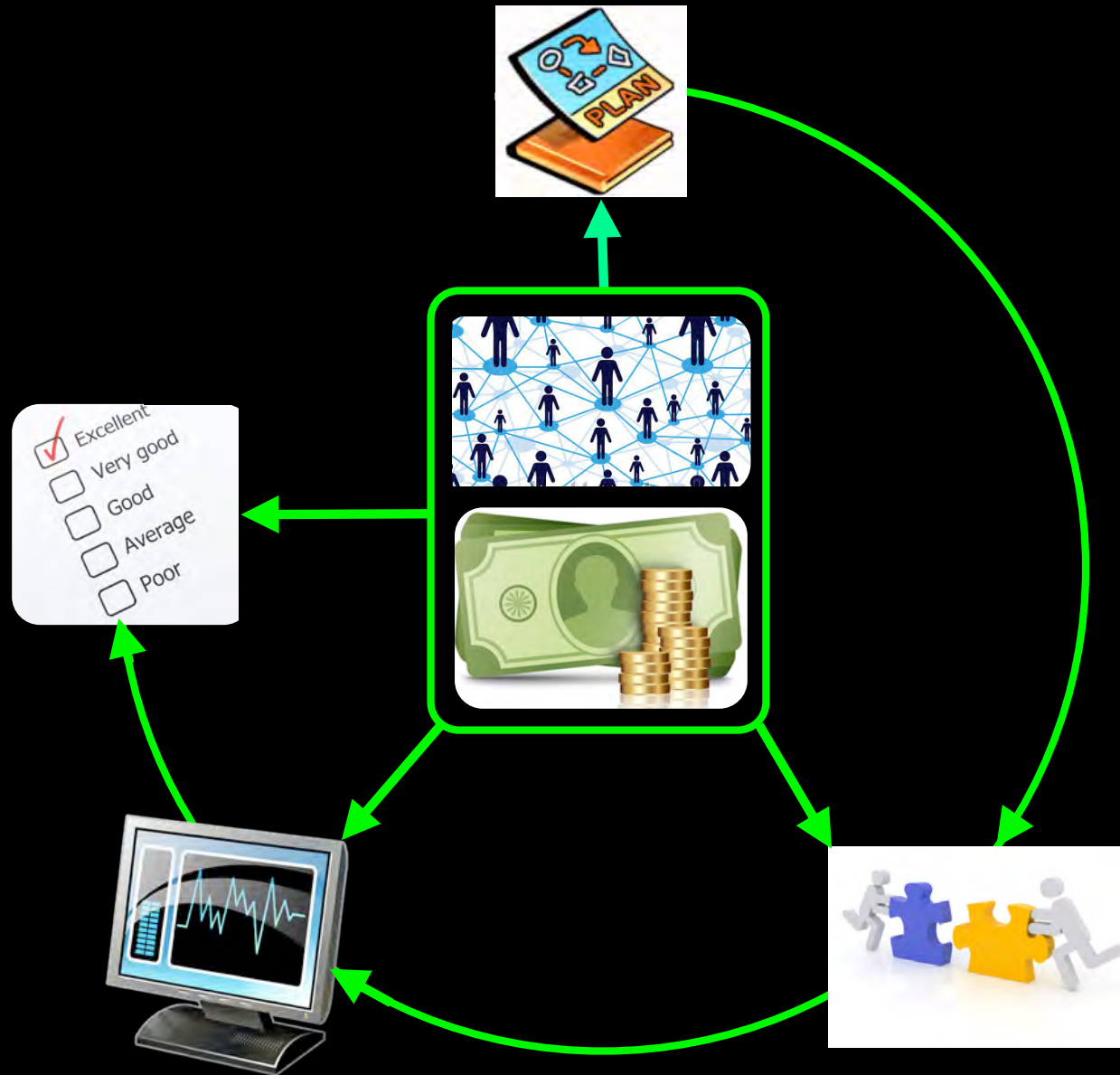
Relationship Between Multi-Sector MSP and Single-Sector Planning and Permitting



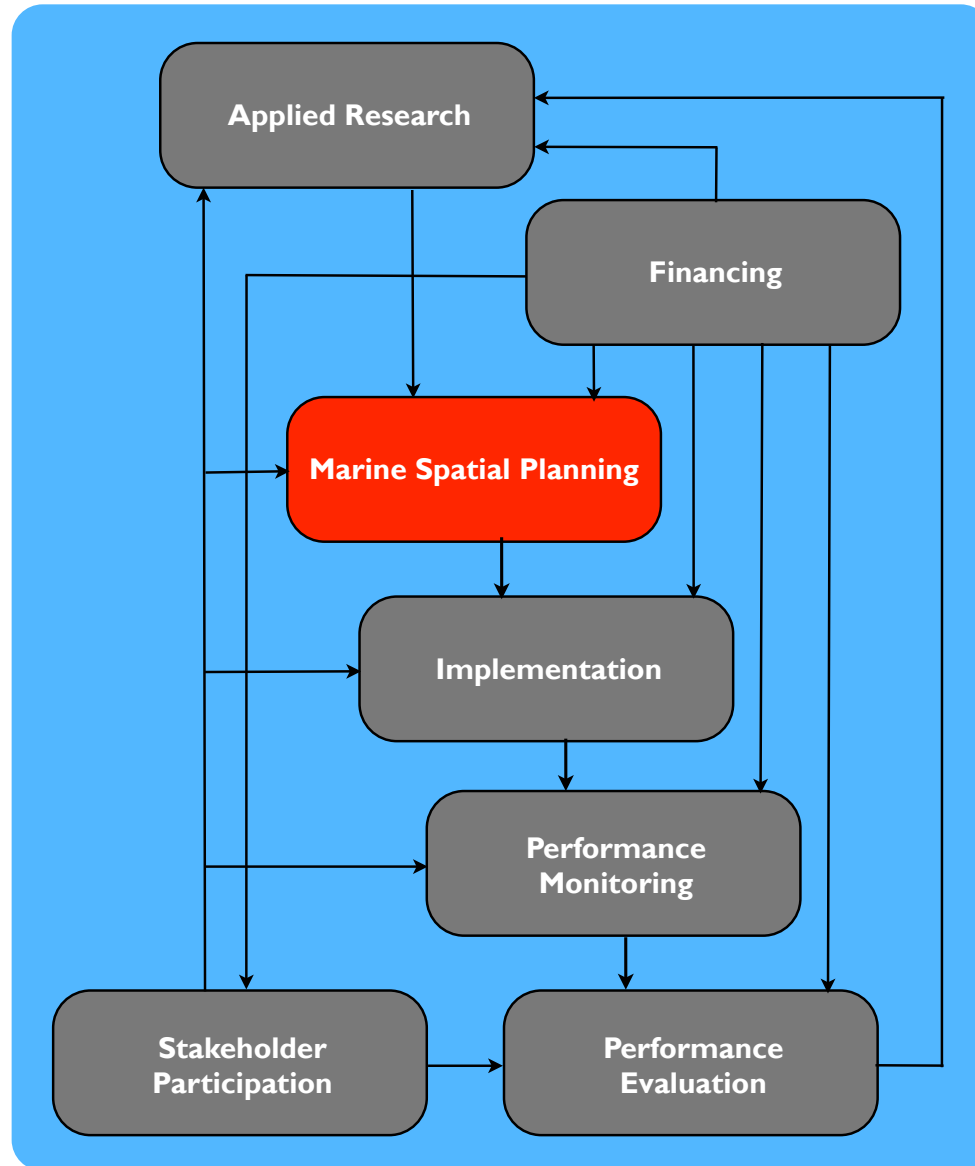
Outputs of Marine Spatial Planning



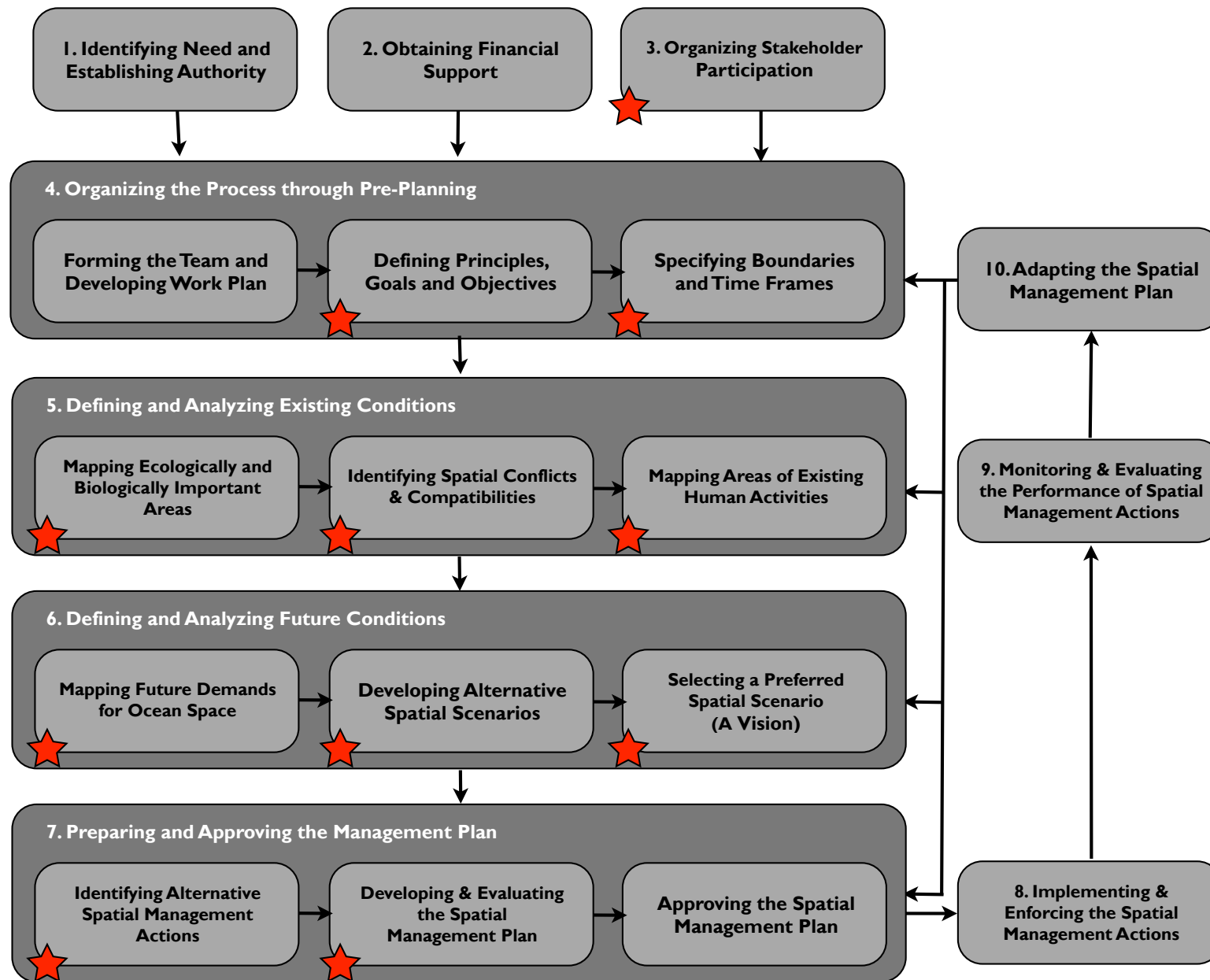
The Marine Spatial Management Cycle



Elements of the Marine Spatial Management Process



A Step-by-Step Approach to Marine Spatial Management



Note: The star symbol (★) indicates a step in the MSP process in which stakeholders should be actively engaged.

Four Fundamental Questions

I. **Where Are We Today?**

✓ *Baseline characterization*

Four Fundamental Questions

1. **Where Are We Today?**

✓ *Baseline characterization*

2. **Where Do We Want to Be?**

✓ *Objectives/outcomes*

✓ *Alternative spatial scenarios and a vision*

Four Fundamental Questions

1. **Where Are We Today?**

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3. **How Do We Get There?**

✓ *Management plan*

Four Fundamental Questions

1. **Where Are We Today?**

✓ *Baseline characterization*

2. **Where Do We Want to Be?**

✓ *Objectives/outcomes*

✓ *Alternative spatial scenarios & a vision*

3. **How Do We Get There?**

✓ *Management plan*

4. **What Have We Accomplished?**

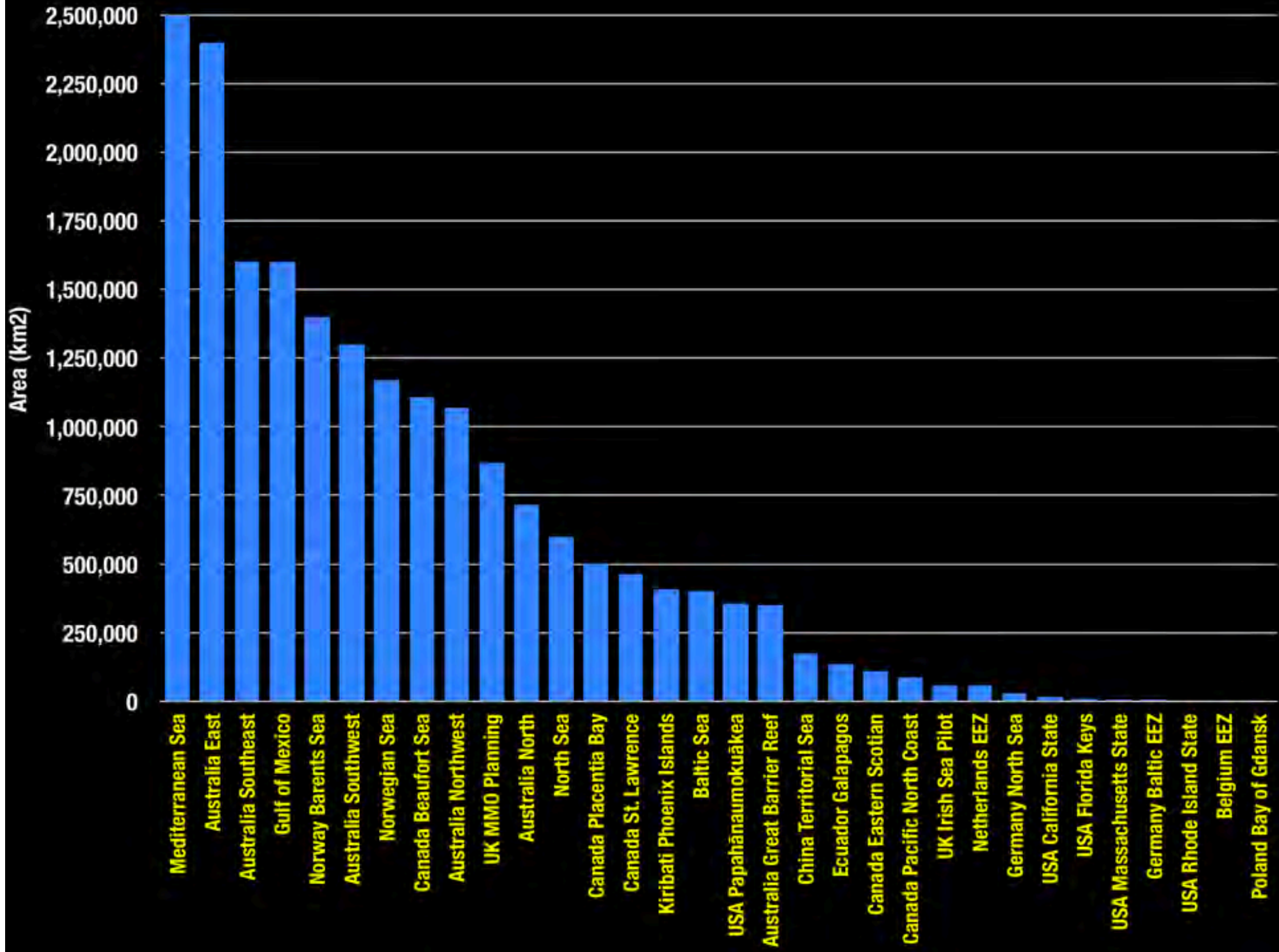
✓ *Monitoring and evaluation*

Where Is MSP Happening?

Global Status of Marine Spatial Planning

Countries that Have Implemented MSP and Are Currently Revising First-Generation Plans	Countries that Will Develop Marine Spatial Plans by 2025	Countries that Could Also Develop Marine Spatial Plans by 2025
<ul style="list-style-type: none"> • Belgium • The Netherlands • Norway (Barents and Norwegian Seas) • USA (Massachusetts) 	<ul style="list-style-type: none"> • USA (Mainland, Hawaii, Alaska) • Canada (East & West Coast EEZs) • United Kingdom [England (10 regions), Scotland, Wales, N. Ireland] 	<ul style="list-style-type: none"> • Russia (Arctic Ocean) • Greenland (Arctic Ocean) • Canada (Arctic Ocean) • Indonesia • Thailand
Countries that Have Approved Marine Spatial Plans	OTHER COASTAL COUNTRIES OF THE EU	
<ul style="list-style-type: none"> • Australia (5 Bioregional Plans Covering Entire Australian EEZ) • Germany (North Sea EEZ, Baltic Sea EEZ, and 3 State-Level Plans Covering German Territorial Sea) • USA (Rhode Island and Oregon) • China (9 Provincial-Level Plans Covering Chinese Territorial Sea) • Canada (Beaufort Sea) 	<ul style="list-style-type: none"> • Ireland • Sweden • Denmark • Finland • Poland • Estonia • Latvia • Lithuania • France (Continental EEZ only) • Portugal (Azores) • Spain • Italy • Greece • Ireland • Cyprus • Croatia • Malta • Slovenia • Bulgaria • Romania 	<ul style="list-style-type: none"> • Malaysia • Philippines • Cambodia • Papua New Guinea • Solomon Islands • France (New Caledonia) • Kiribati • Fiji • Palau • Madagascar • Seychelles • Japan • Chile • Argentina • Bahamas • Barbados
Countries that Have Completed (but Not Approved) Marine Spatial Plans	<ul style="list-style-type: none"> • Israel • South Africa • Vietnam • New Zealand • Brazil • Mexico (Gulf of Mexico and Pacific EEZs) • Costa Rica • Bermuda 	

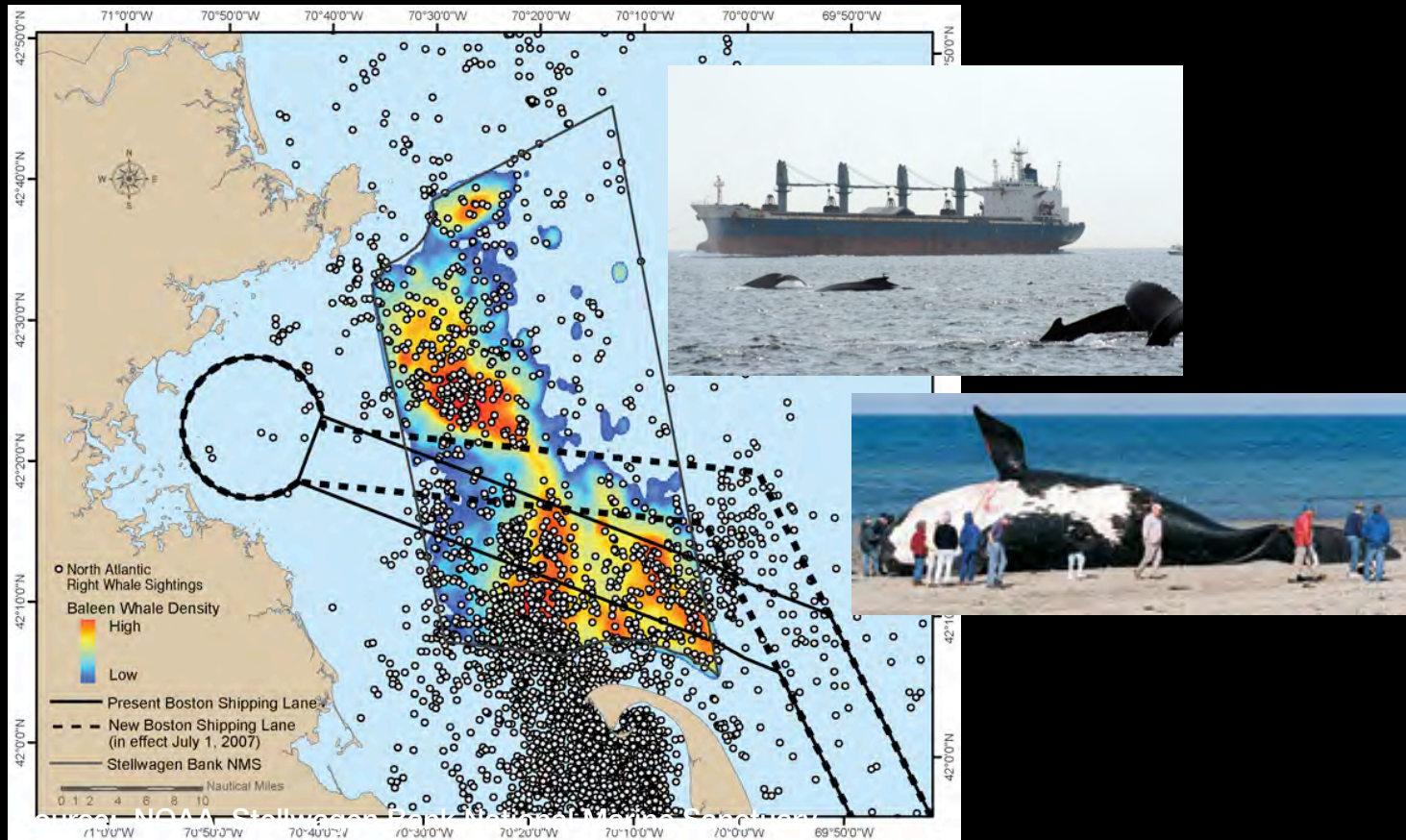
What Is the Scale of MSP?



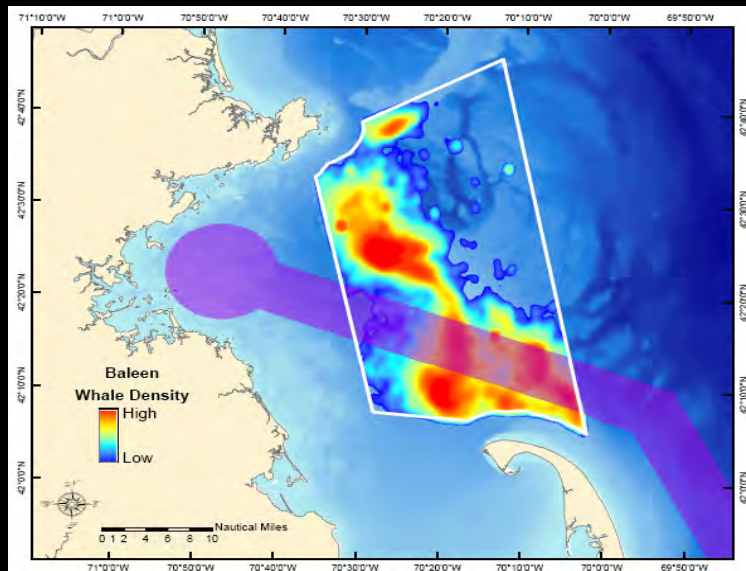
Examples?

**A Simple Example of a
Spatial Management Measure
Balancing Ecological, Economic
and Social Objectives
Stellwagen Bank National
Marine Sanctuary, USA**

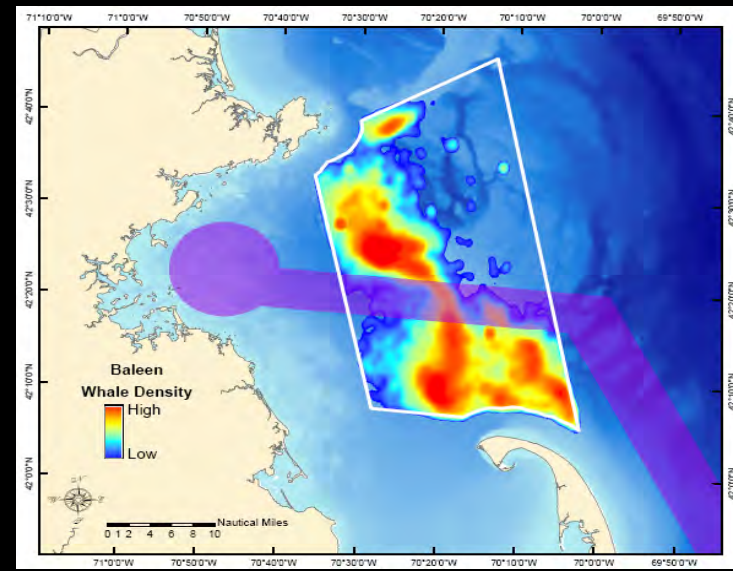
Endangered Right Whales v. Shipping



Goal: Shift TSS to Area Where Whale Density Is Lower



Baleen Whale Distribution: 1979-2004

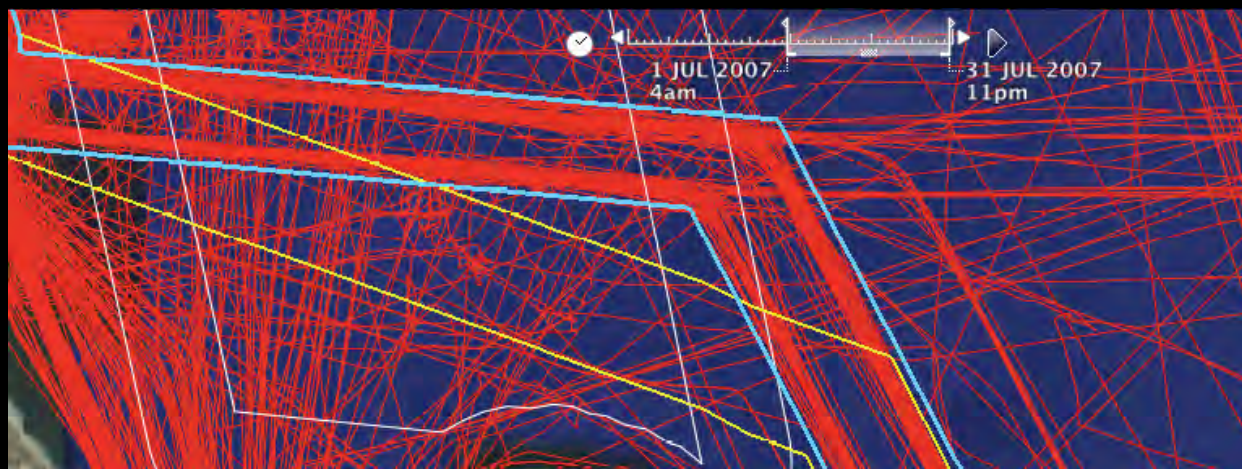


Compliance with New TSS

Pre-Implementation

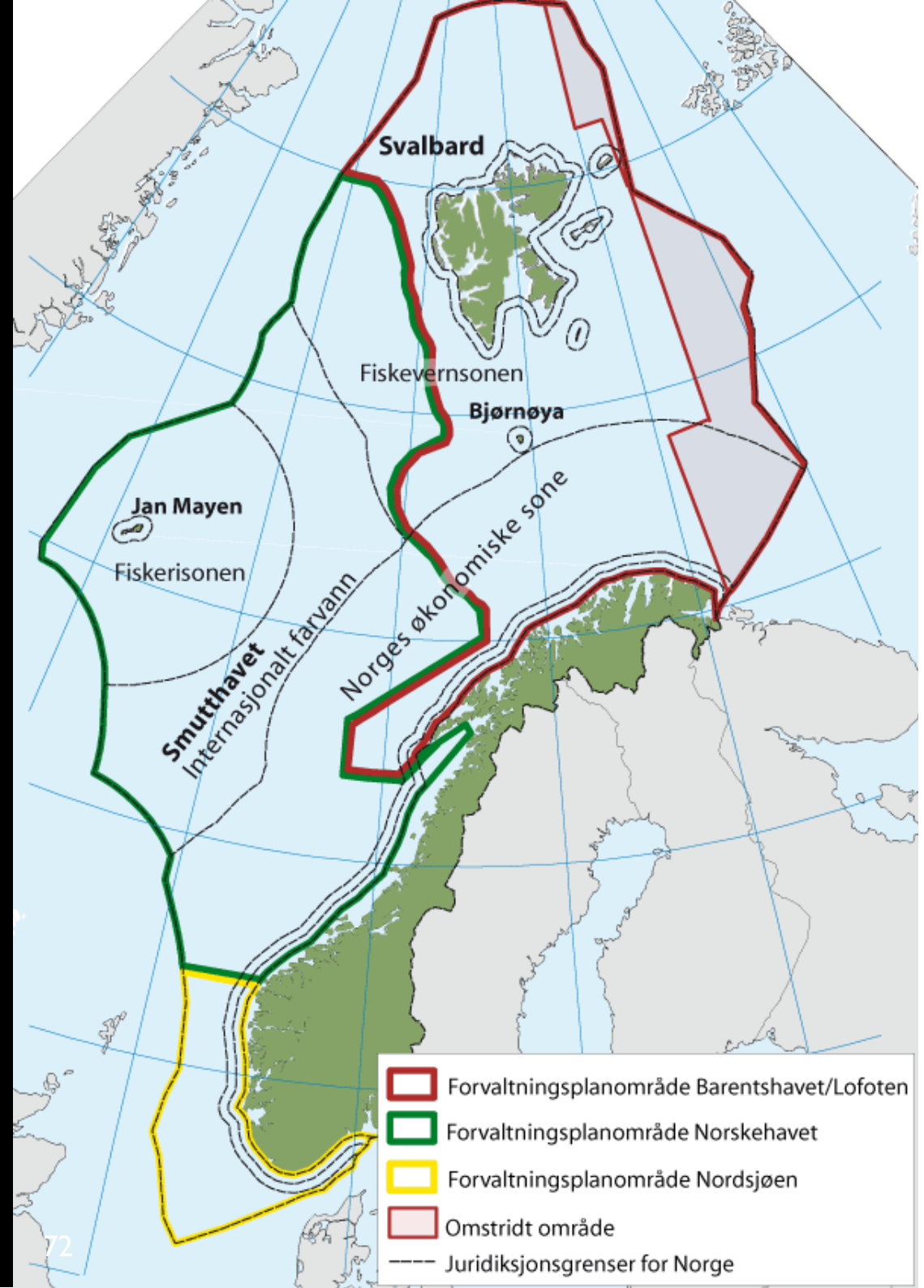


Post-Implementation



Norway

Norway
Exclusive
Economic Zone
2.4 million sq km





DET KONGELIGE
MILJØVERNDEPARTEMENT

The Royal Norwegian Ministry of the Environment

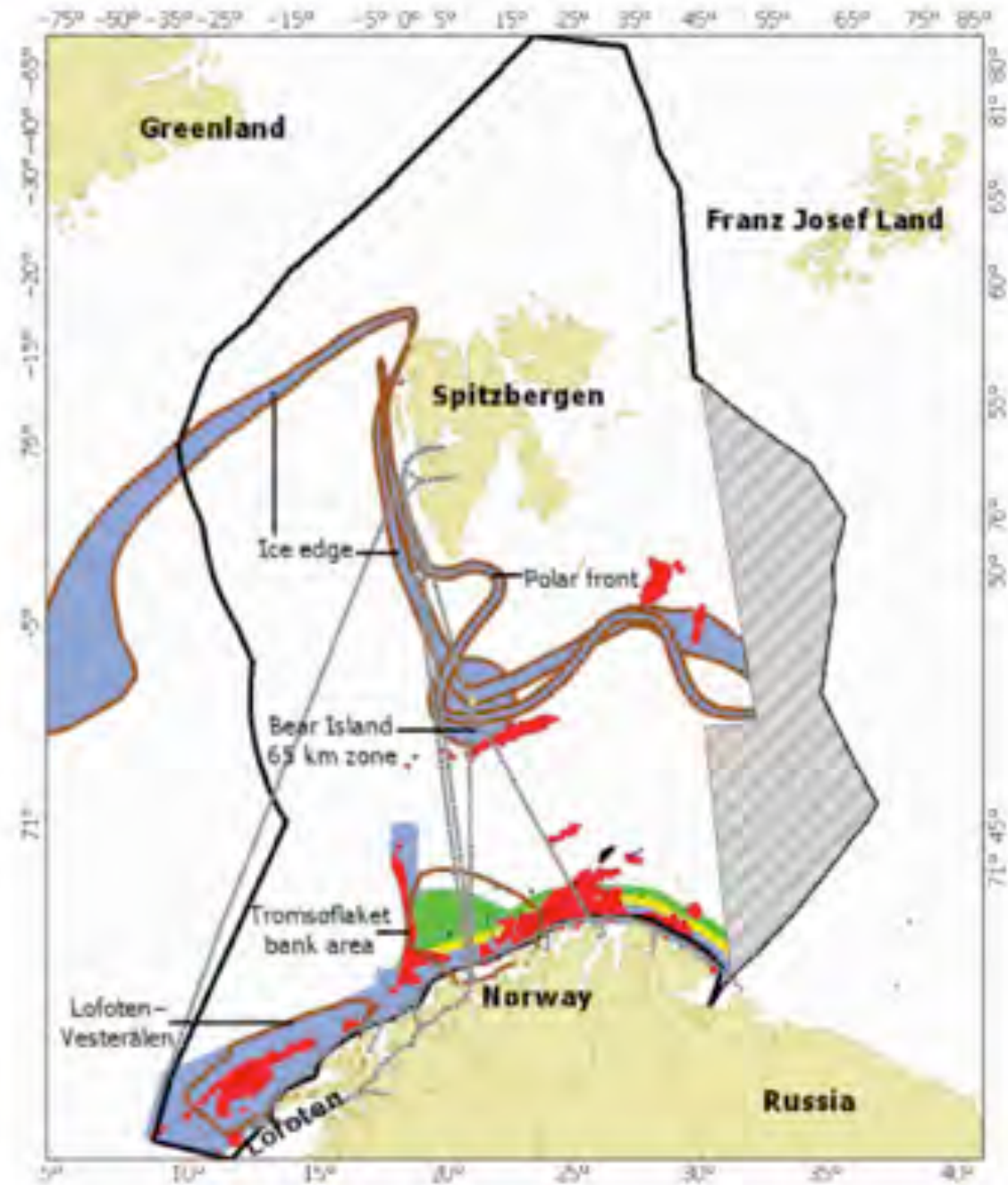
Report No. 8 to the Storting

(2005–2006)

Integrated Management of the Marine
Environment of the Barents Sea and the
Sea Areas off the Lofoten Islands

Norway
Barents Sea and
Sea Areas off
Lofoten Islands
2005-2006

Norway Barents Sea and Sea Areas off Lofoten Islands 2005-2006



Meld. St. 10 (2010–2011) Report to the Storting (white paper)

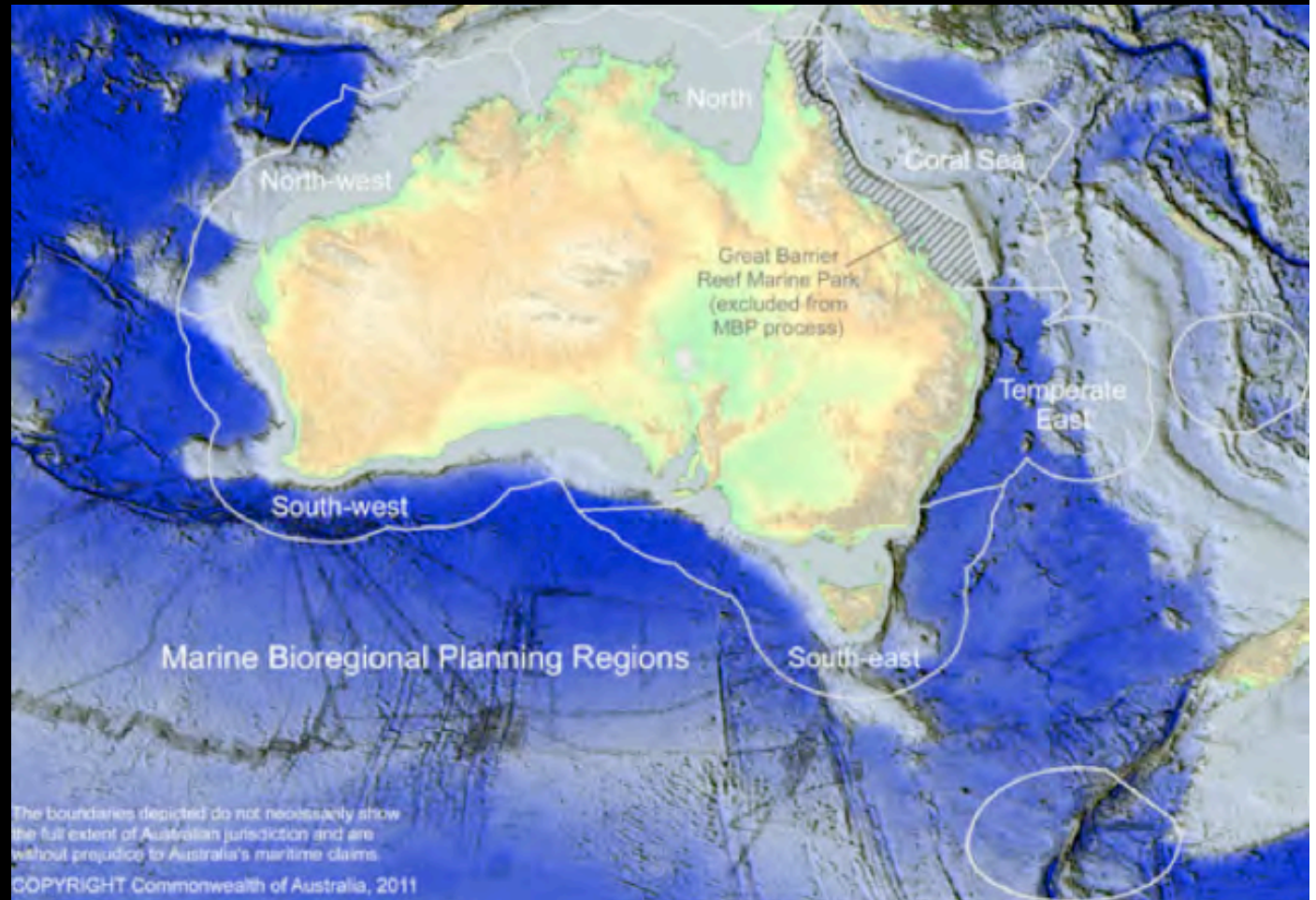
First update of the Integrated Management
Plan for the Marine Environment of the
Barents Sea–Lofoten Area

Norway
Barents Sea and
Sea Areas off
Lofoten Islands
Update
2010-2011



Australia

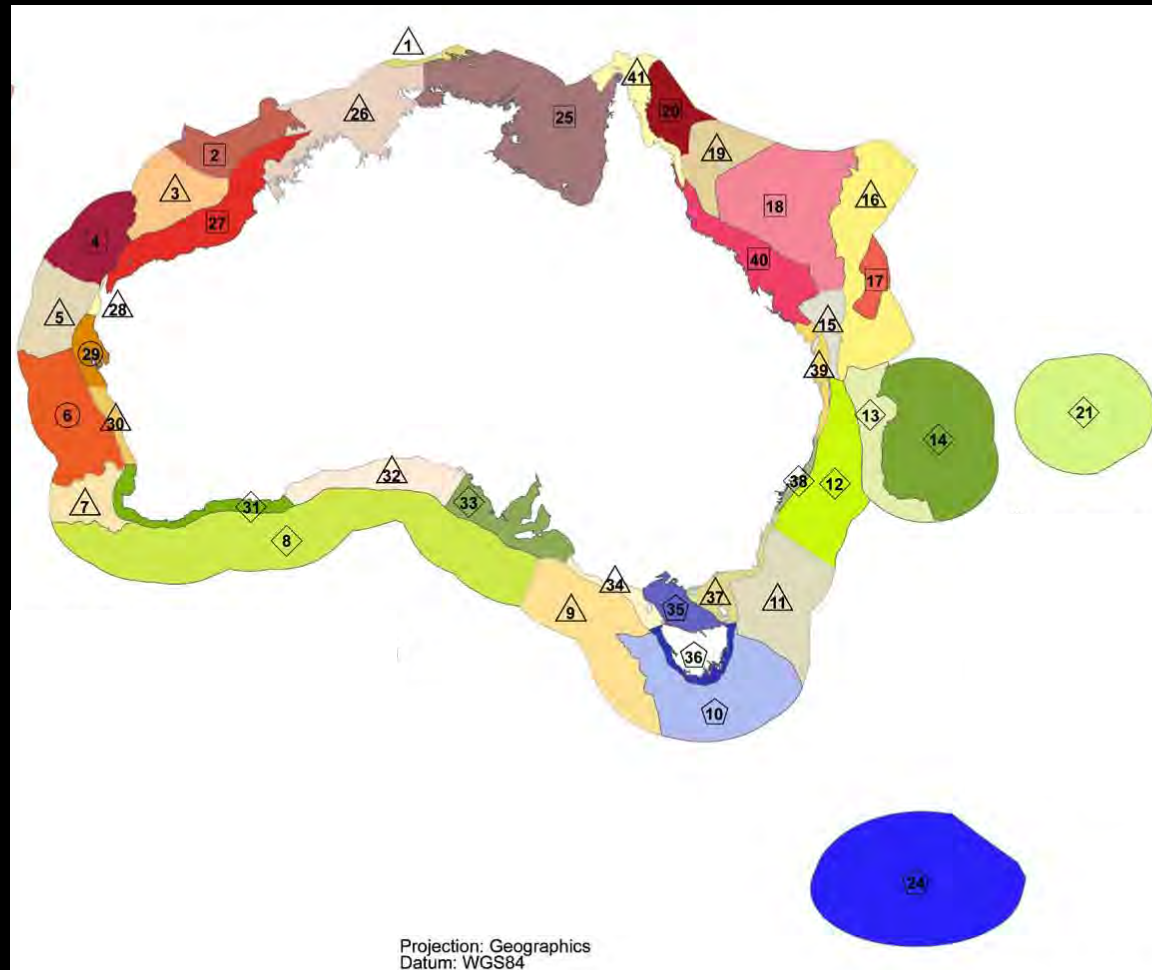
Australia
Exclusive
Economic Zone
6 million sq km



Australia
Exclusive
Economic Zone
6.0 million sq km

Southeast	1,600,000
Southwest	1,300,000
Northwest	1,000,000
North	625,000
Temperate East	1,470,000
Coral Sea	972,000
[Great Barrier Reef	347,000]

Australian Provincial Bioregions

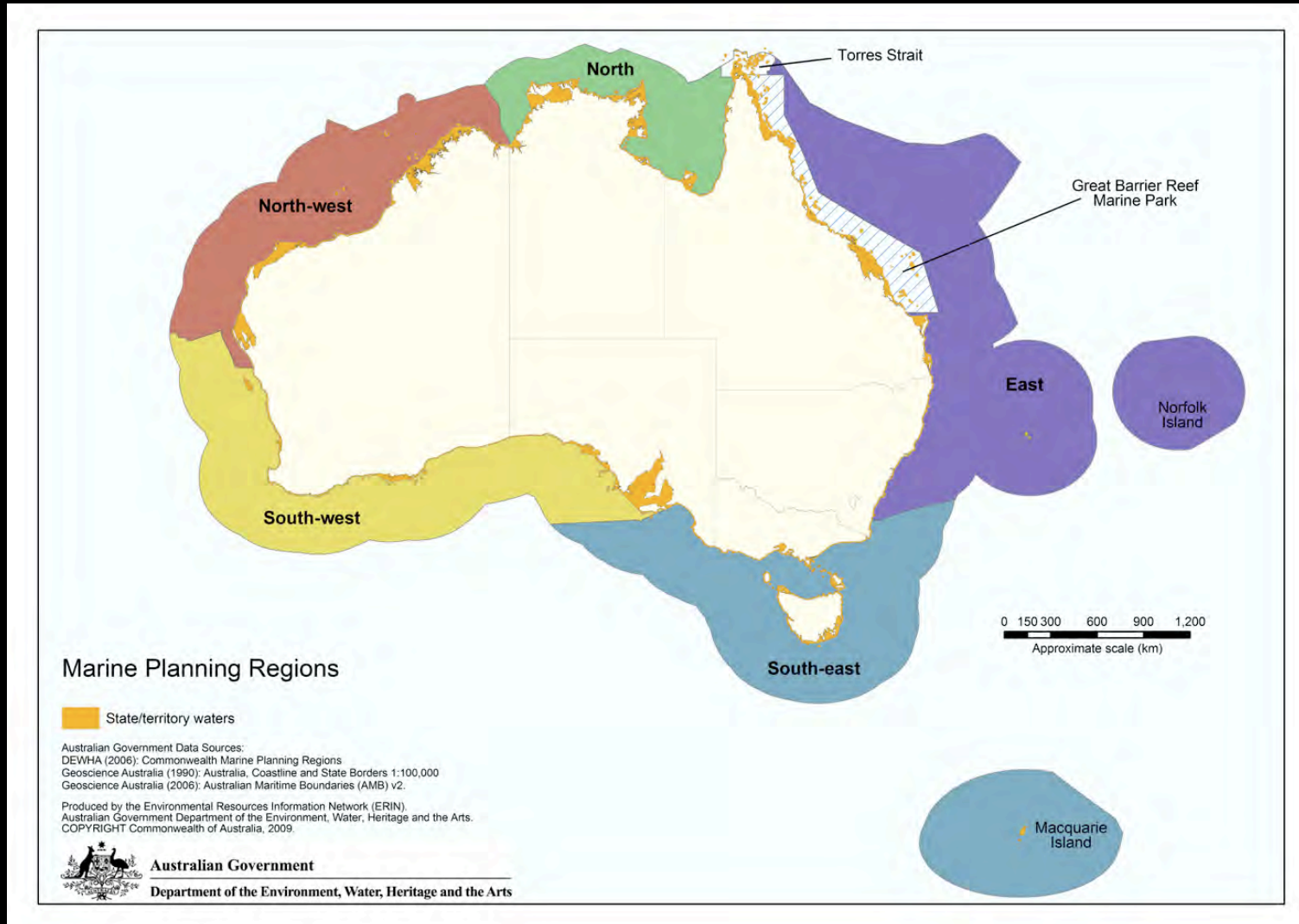


2006

Integrated Marine and Coastal Regionalization of Australia 4.0

(A spatial framework for classifying the marine environment into regions that make sense ecologically at a scale useful for regional planning)

Australian Marine Bioregions



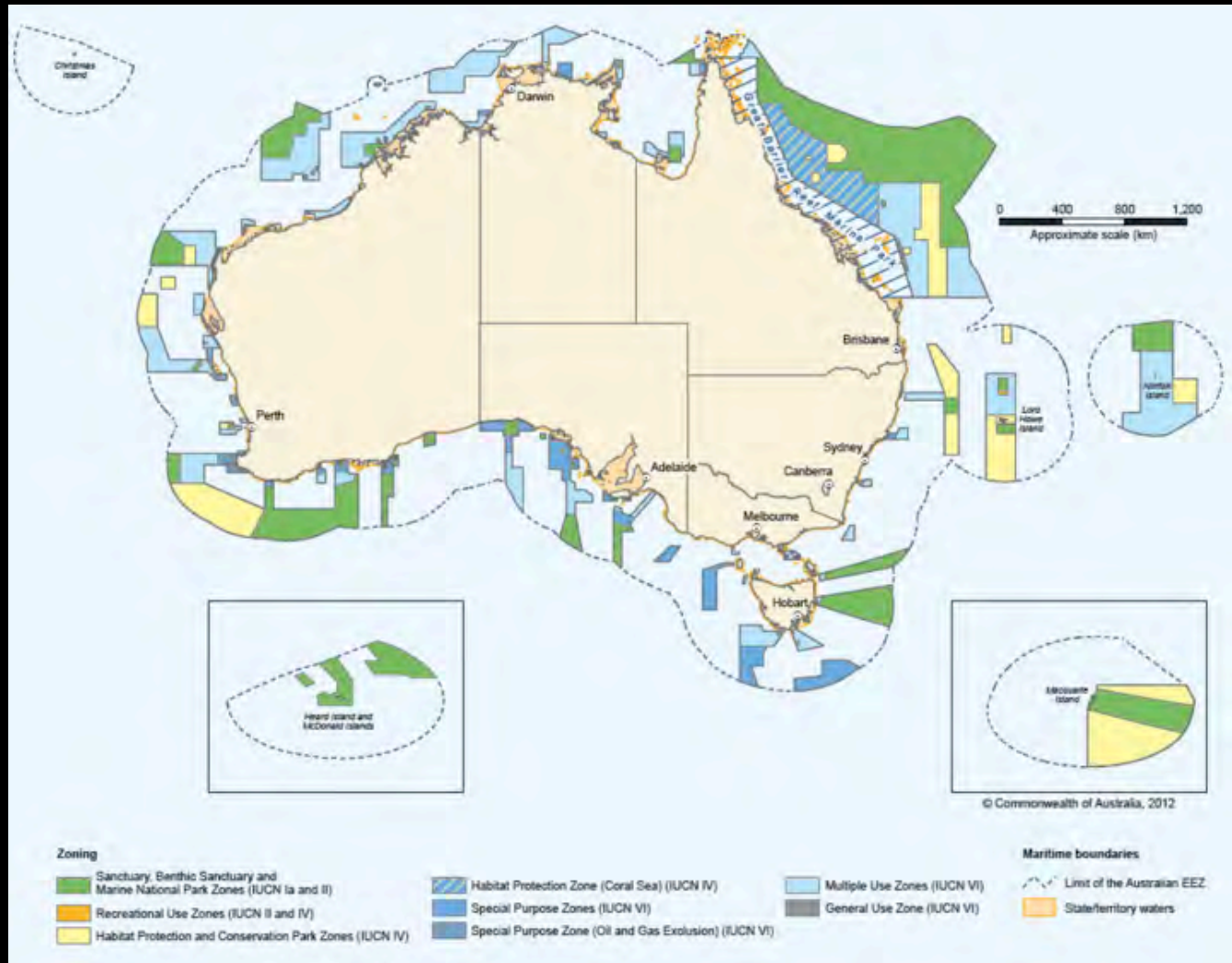
Australian Marine Bioregional Plans

Bioregional Profile

Bioregional Plan

	Southeast	Southwest	Northwest	North	East
	None	2007	2008	2008	2009
	2004	2011	2011	2011	2012

Australia National System of Marine Reserves 3.1 million sq km





UNESCO

Intergovernmental Oceanographic Commission
Website on Marine Spatial Planning

unesco-ioc-marinesp.be/

Think
Simple

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My UNESCO work on Marine Spatial Planning has been sponsored generously since 2006 by the Gordon and Betty Moore Foundation, Palo Alto, California, USA

Thank you

