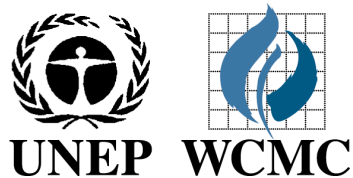


Marine data needs for industry & conservation - synergies and gaps

Proteus annual meeting, Stavanger 15th June

Louisa Wood



Objective

- Provide an overview of similarities in data needs for marine industries and conservation to be effective
- Provide some recent examples of new data products from the conservation community that may be of direct relevance to industry planning
- Highlight some gaps based on these examples

Emergence of marine spatial planning

Sectoral approaches to ocean use ineffective due to
connectedness of marine environment;

+

Marine ecosystem health in decline;

+

Human use of ocean resources expanding;

+

Climate change

=

Growing imperative for effective, spatially efficient,
equitable sustainable use & conservation



Spatial allocation of ocean for conservation: 'traditional' MPAs

- + Humans:** Politics, Economics, Trade-offs, Multiple Use
- + Ecosystems:** Connectedness, Vulnerability, Risk



Spatial allocation of ocean for all uses & sectors

- + Time:** Climate Change, Resilience, New & increased uses

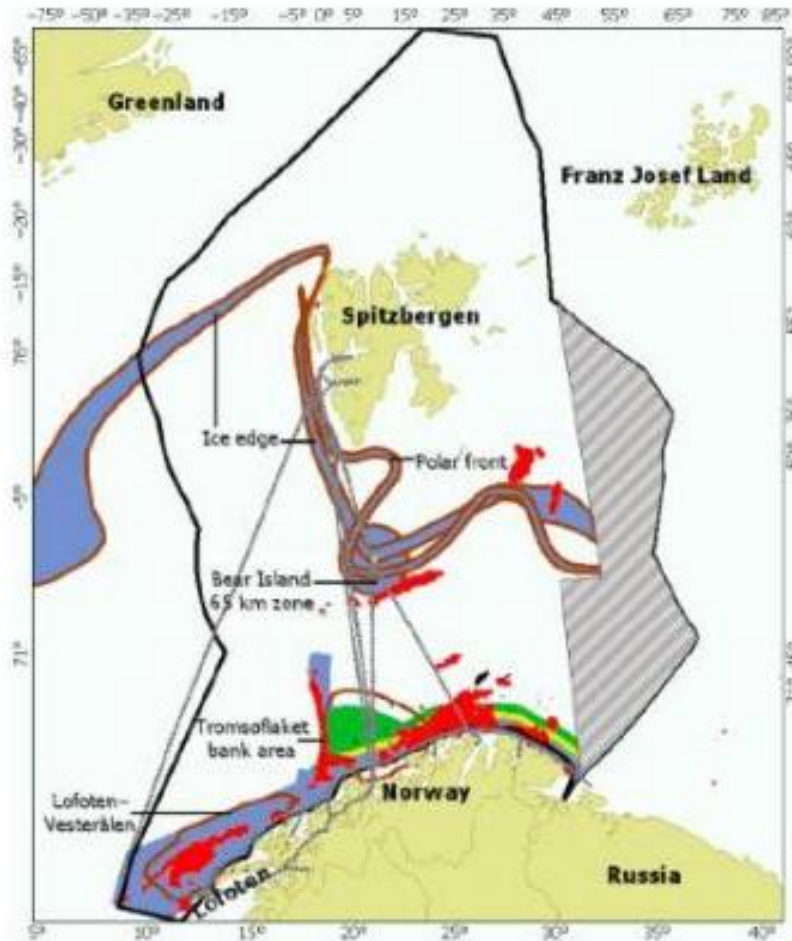


Adaptable spatial allocation of ocean for all uses & sectors

- + ????** We will think of something!

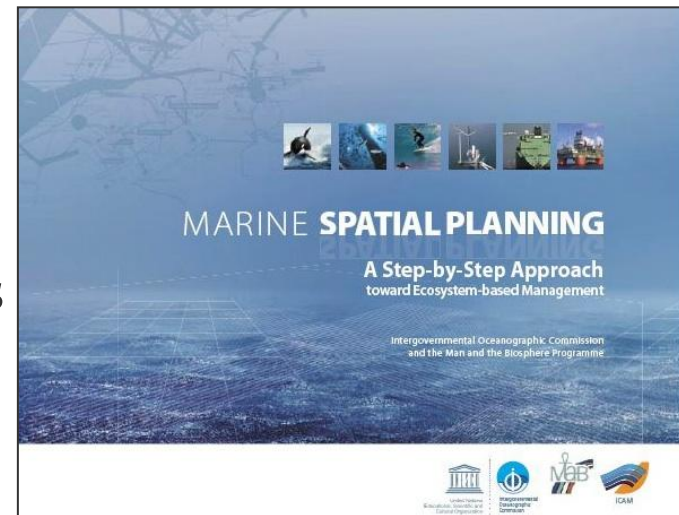


Barents Sea-Lofoten Area Integrated Management Plan



MSP as a process: where data fit in

1. Identify need & establish authority
2. Secure financial support
3. Pre-plan the process
4. Organise stakeholder participation
5. Define & analyse existing conditions
6. Define & analyse future conditions
7. Prepare & approve plan
8. Implement & enforce plan
9. Monitor and evaluate performance
10. Adapt the process



Most elements of this process are emulated in standard EIA and SEA protocols

Data required for MSP

- **Areas of ecological importance** – critical ecosystems, protected areas, other types of spatial regulation
- **Areas of human use**
- **Oceanographic and Environmental features**

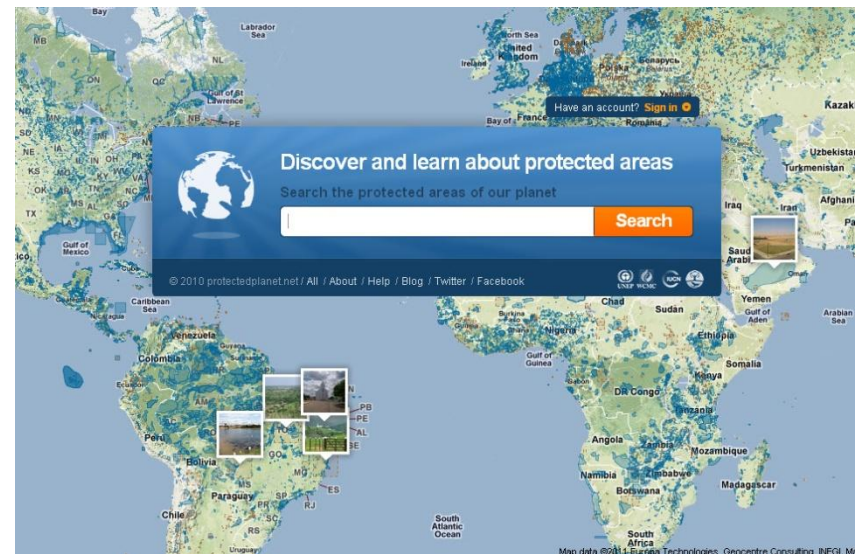
These data needs also apply to the business sector for:

- Coastal Sensitivity Mapping;
- EIA & SEA;
- Industry association environmental commitments, standards, safeguard policies;
- Risk assessment;
- Contingency planning; etc

Example: Marine Protected Areas (synergy)

Convention on Biological Diversity:

- COP10 target of 10% of marine ecological regions in protected areas or other effective area-based conservation measures by 2020



Example: Area-based conservation measures (gap)

- IMO – Particularly Sensitive Sea Areas
- Fisheries closures / regulatory areas
- Regional Seas Convention MPAs
- Ecologically and Biologically Significant Areas
- Vulnerable Marine Ecosystems

These areas are not all equal:

They do not affect industry or conservation objectives in the same way.

There is a shared need for better data on regulations & their implications

Example: Critical habitat extent (~gap)

CBD	MEA	WSSD	RAMSAR
★ Coral Reefs ✓	Coral Reefs	Coral Reefs	Coral Reefs
★ Mangroves ✓	Mangroves	Mangroves	Mangroves
○ ★ Seagrasses ✓	Seagrasses	Seagrasses	Seagrasses
○ ★ Saltmarshes ✓	Saltmarshes		

Deep seabed:	Near-shore:	Wetlands:	Wetlands:
★ Cold water corals ✓	○ ★ Beaches and dunes	○ ★ Tidal mudflats	○ ★ Deltas ✓
★ Cold seeps	○ ★ Estuaries		○ ★ Estuaries ✓
○ ★ Hydrothermal vents	★ Kelp forests		★ Near-shore areas
★ Seamounts ✓	○ ★ Lagoons		○ ★ Tidal flats
★ Sponge reefs	○ ★ Mudflats ✓		

○ = EU Habitats Directive Annex 1
 ✓ = Data available through UNEP-WCMC

Critical Habitat Health (~gap)

Coral Health Index: present state

Core metrics identified:

- Live coral
- Live crustose and coralline algae
- Fish assemblage biomass
- Abundance of *Vibrio* bacteria

Equally weighted and averaged to give
CHI score

**But these also need to be assigned
to a consistent layer of extent**

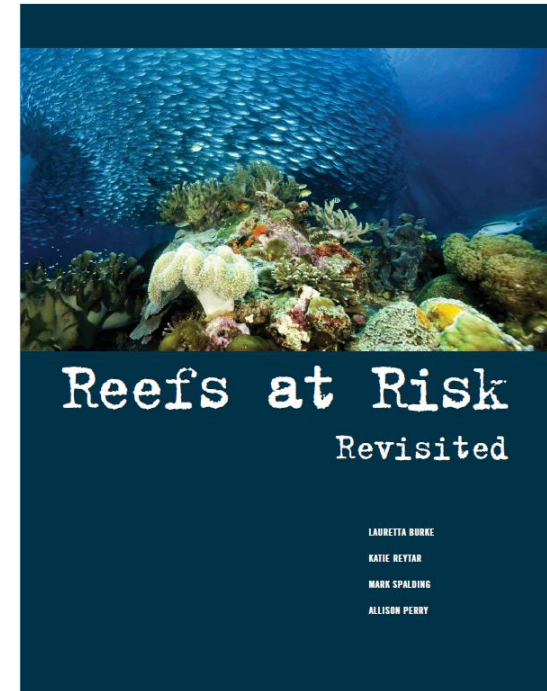


Present and Future States Reefs at Risk 2011 (synergy)

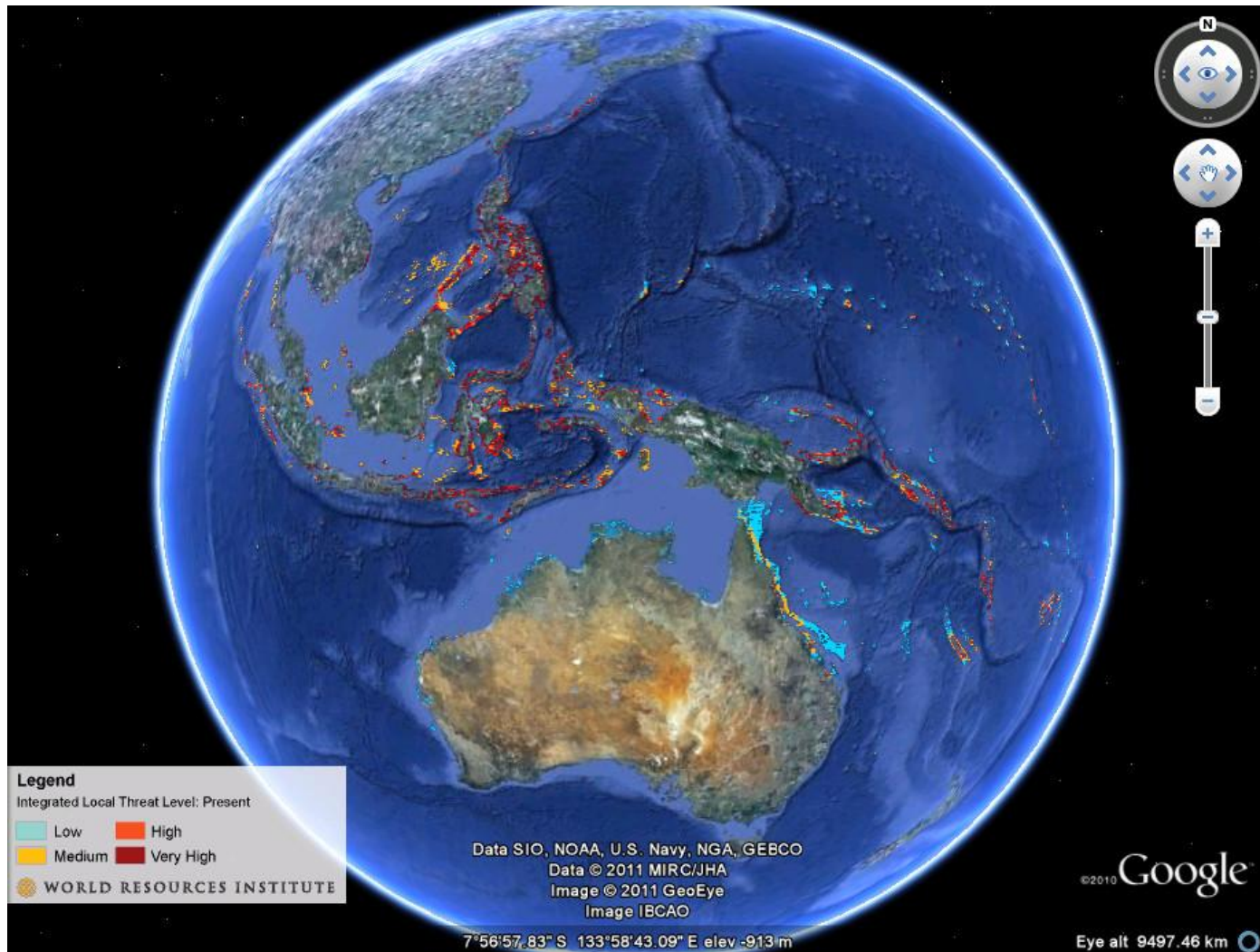
A global, map-based analysis of threats to coral reefs, present and future:

Cumulative impact assessment:

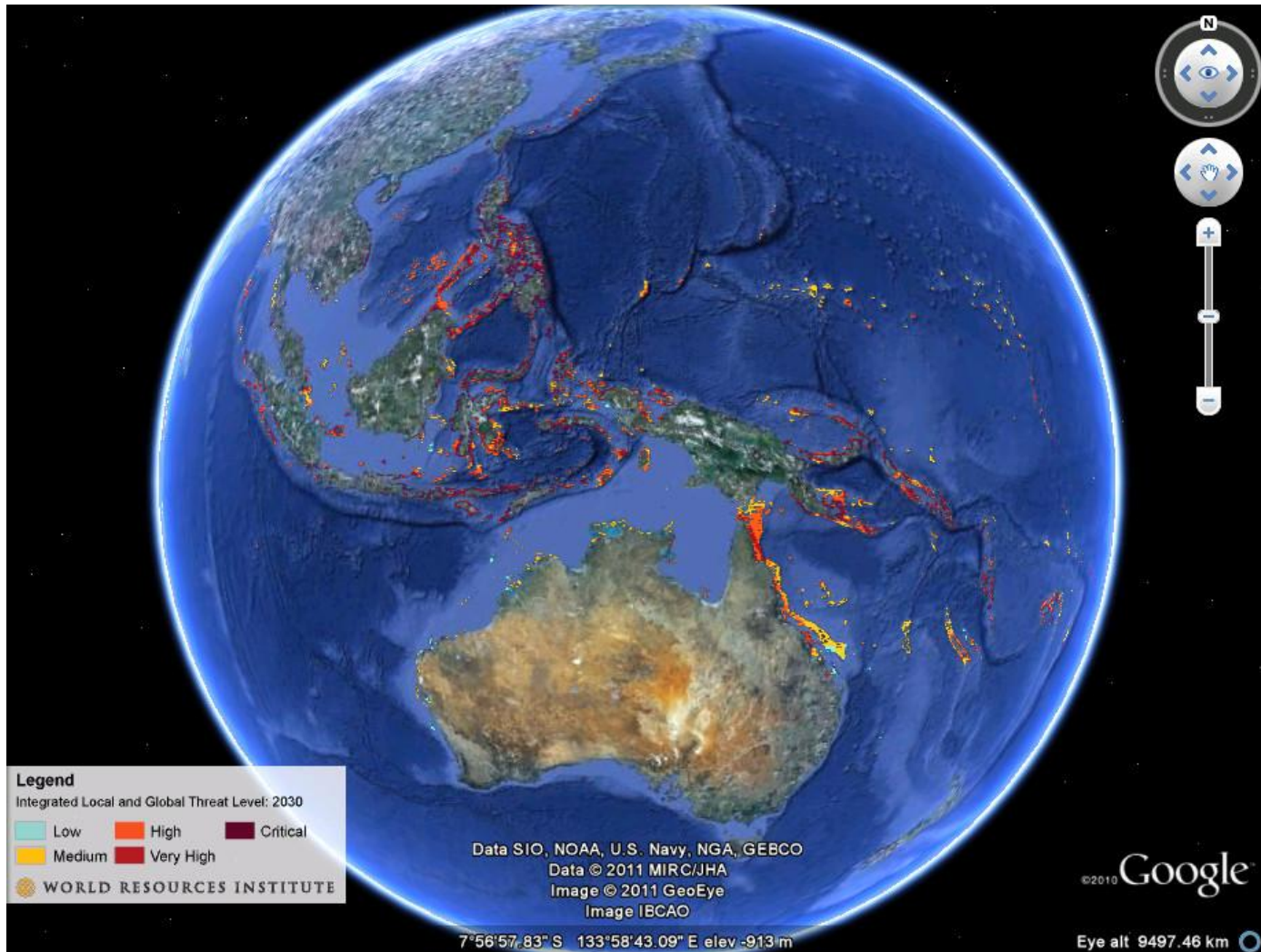
- Fisheries
- Pollution
- Coastal development
- Climate change (thermal stress)



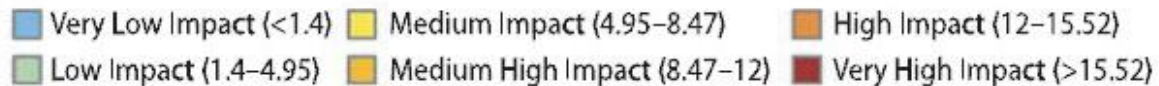
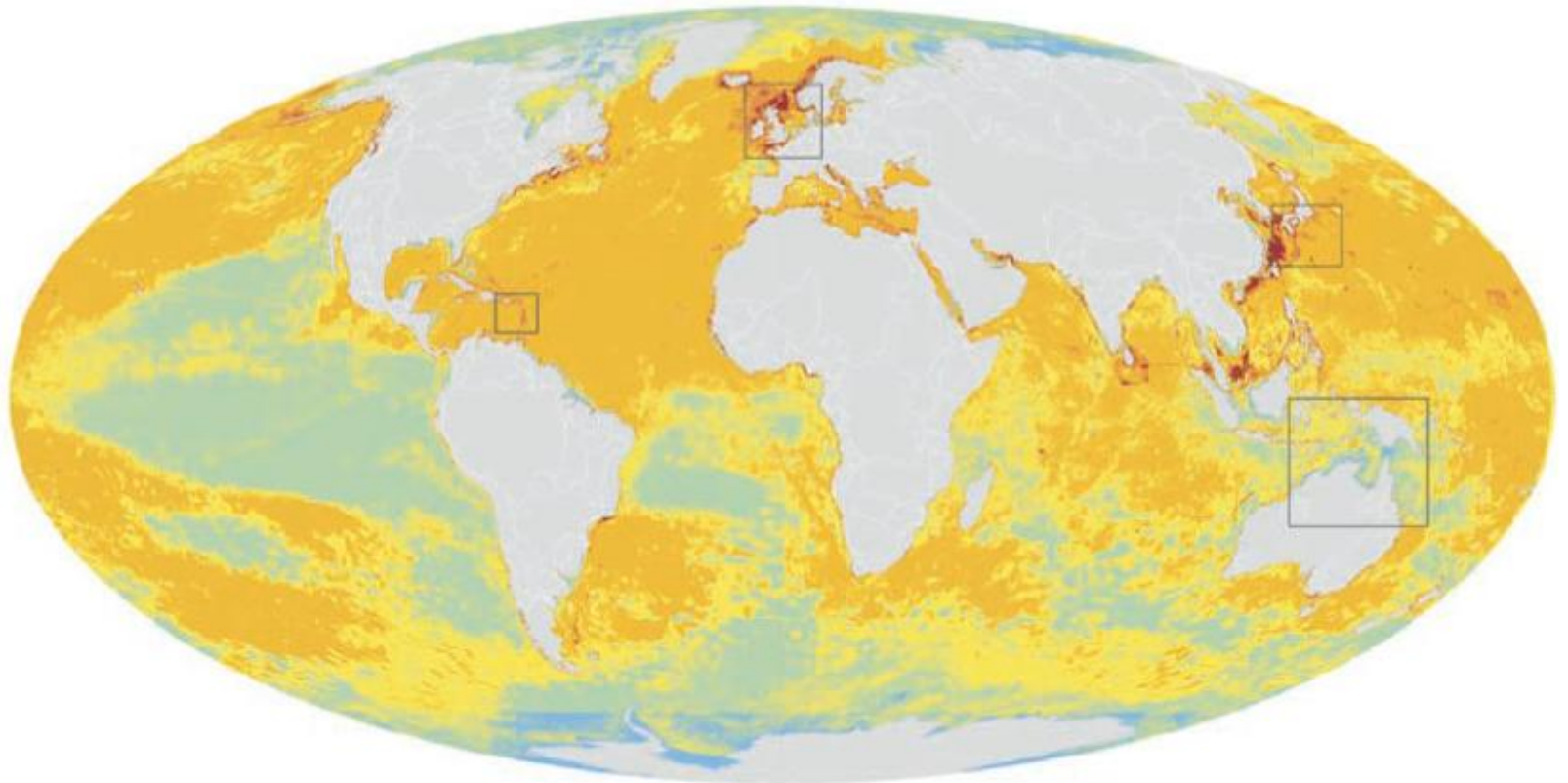
Local threats to coral reefs in 2010



Local threats to coral reefs in 2030



Cumulative Impact Assessment (synergy)



Source: Halpern et al (2008) Science

Ocean Health Index (synergy)

- A 'Dow Jones' for the Ocean
- Establish a new world standard for measuring ocean health
- Influence decision-makers and raise global awareness to generate positive and dramatic
- Multi-partner Initiative
- First version launch planned Feb 2012
- **Underpinned by reliable data**

Opportunities now