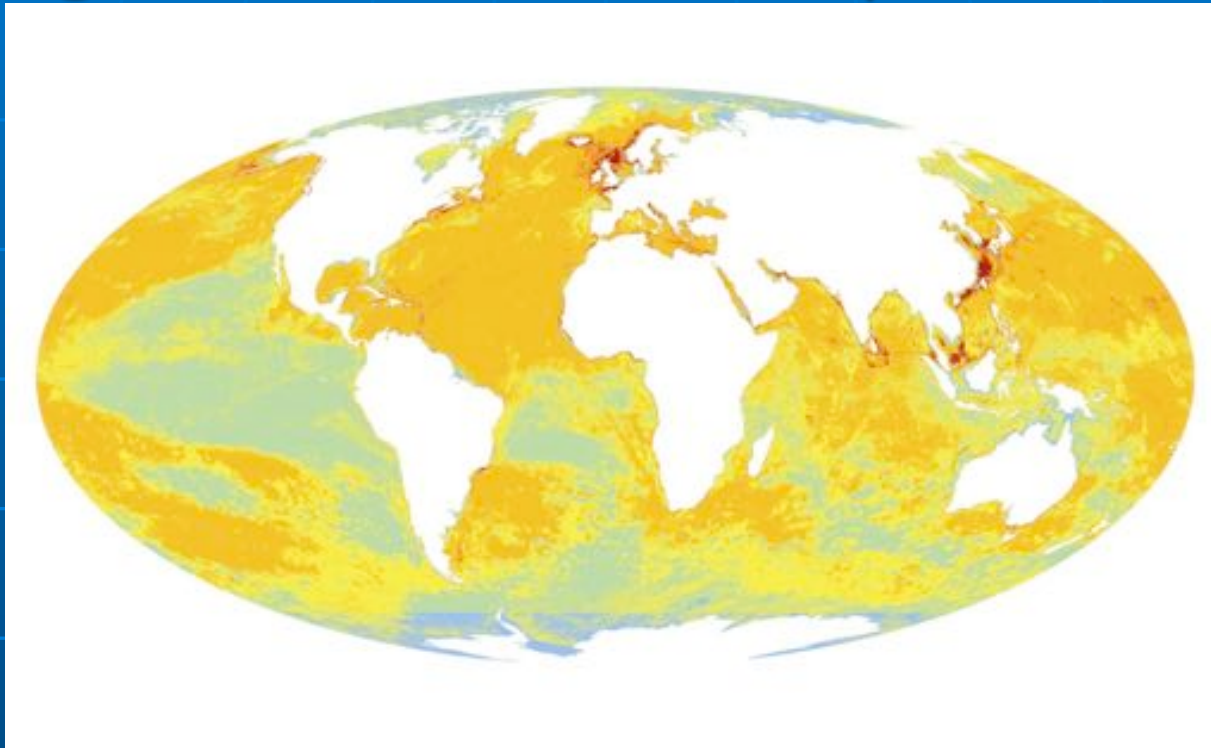


Implementation of Ecosystem-Based Management via Marine Spatial Planning



Larry B. Crowder
Center for Ocean Solutions
Woods Institute for the Environment
Stanford University

Where Are We Now?

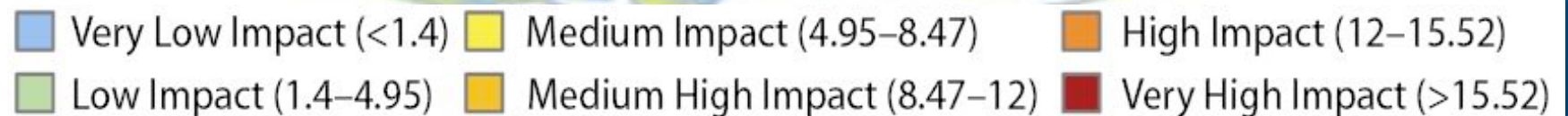
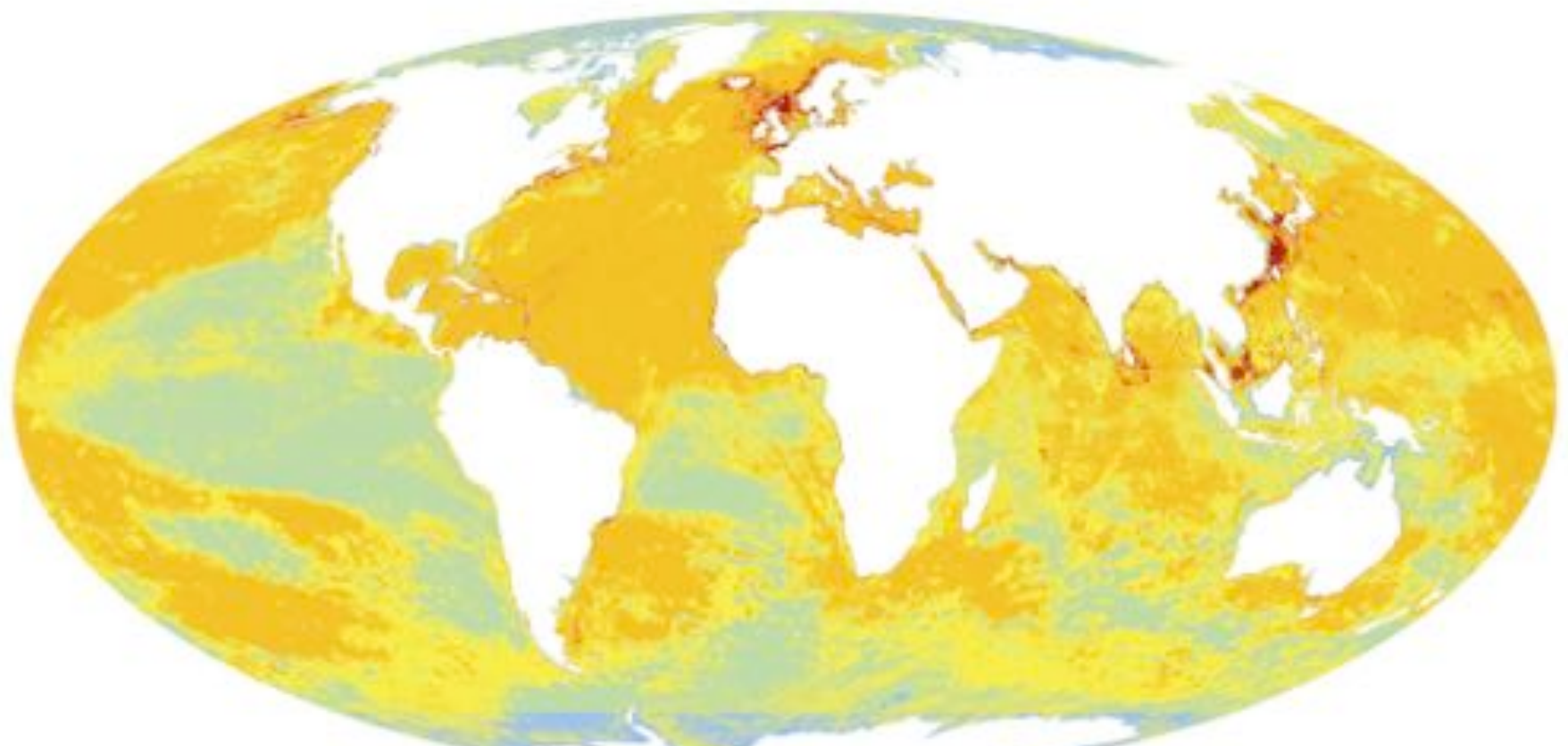
- Degradation of marine ecosystems and services they provide
- Changes driven by synergies among policies, activities, and decisions
- Systems are inherently complex, non-linear, prone to surprises



Causes of Declines in Ocean Ecosystems

- Overfishing: destructive fishing, bycatch
- Pollution (chemical, nutrient, sound)
- Coastal development: loss of critical habitats
- Shipping: invasive species, ship strikes
- Climate change and ocean acidification
- Cumulative effects

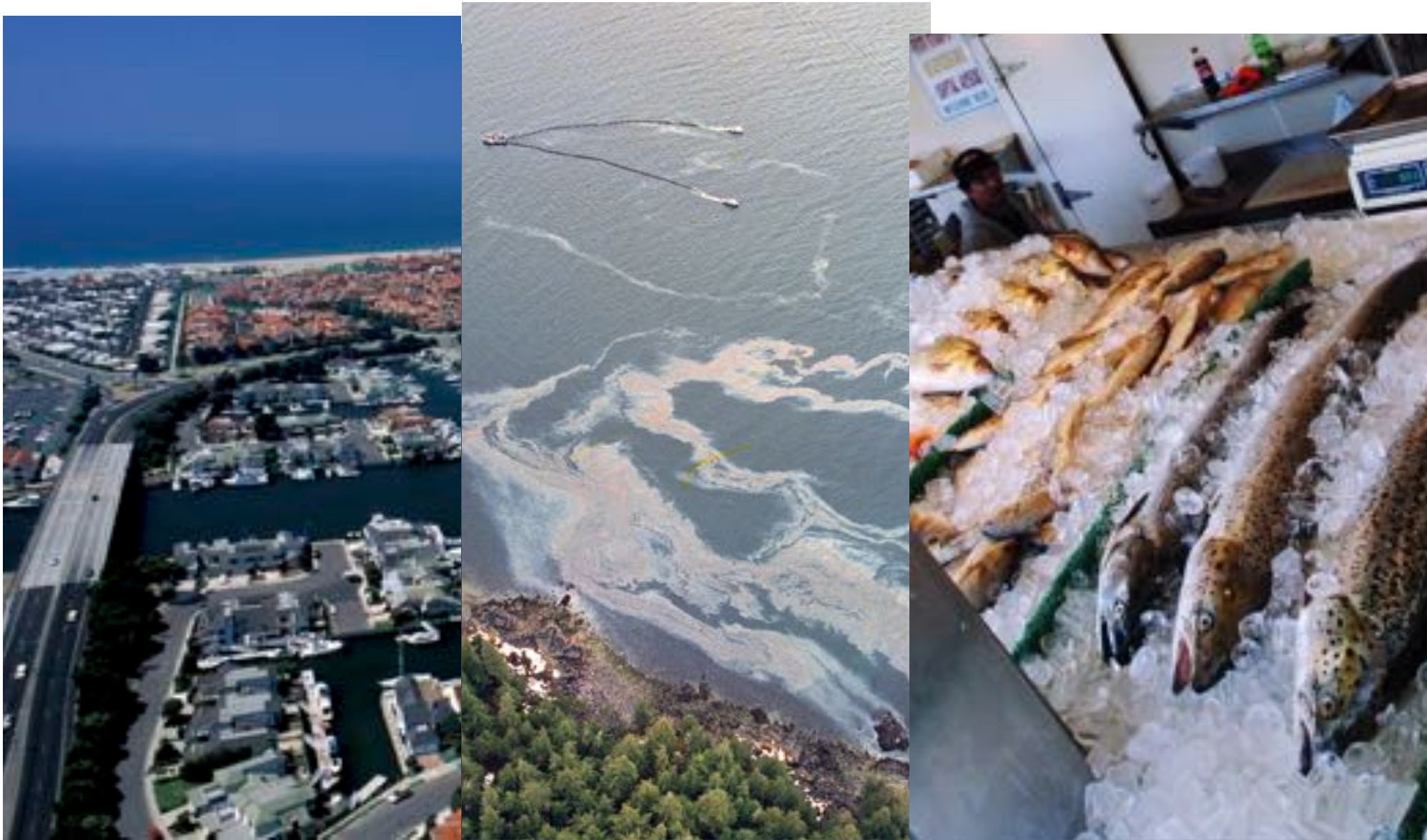
Global Cumulative Impact Scores



Halpern et al. 2008 Science



Ocean resources are valuable... and more and more people are looking for space in the ocean



Many human uses of the ocean and coasts bring unwanted consequences.



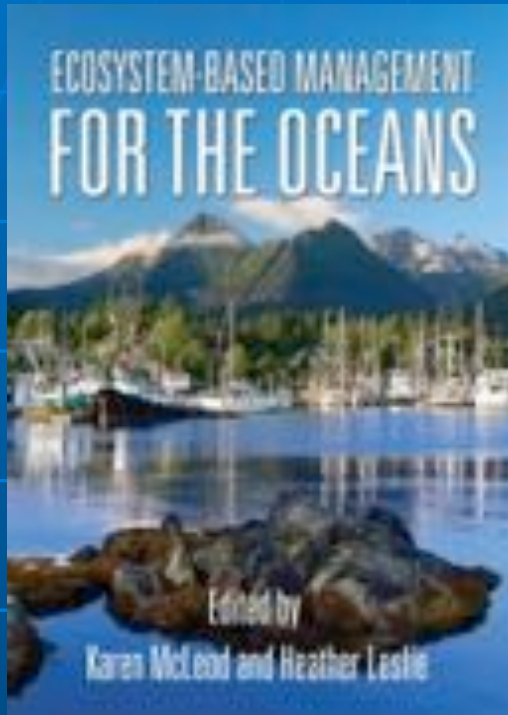
Current ocean management can be chaotic...

Ecosystem-Based Management for the Oceans

- Considers the entire ecosystem, **including humans**
- Integrated approach that focuses on **cumulative impacts** of multiple sectors and deals with **trade-offs** among activities
- Goal: To maintain an ecosystem in a healthy, productive, and **resilient** condition so that it can provide the services **humans** want and need
- *Adapted from 2005 Consensus Statement (compassonline.org)*



What is Ecosystem-Based Management?



May 2009

What are the "vital signs" for a healthy marine ecosystem?

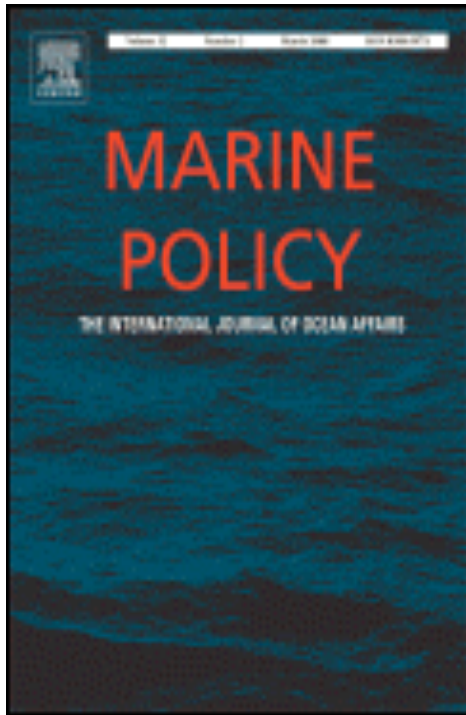
Protects ecosystem structure, functioning and key processes

Recognizes interconnections within and among systems

Integrates ecological, social, economic, and institutional perspectives

Is place-based or area-based

Adapted from 2005 Consensus Statement (compassonline.org)



F. Douvère F. & C. Ehler, eds. (2008)
The role of marine spatial planning in
implementing ecosystem-based sea use
management
Marine Policy 32(5)



Ocean Policy Task Force - Overview

THE WHITE HOUSE
Office of the Press Secretary

For Immediate Release June 12, 2009

June 12, 2009

MEMORANDUM FOR THE HEADS OF EXECUTIVE DEPARTMENTS AND AGENCIES

SUBJECT: NATIONAL POLICY FOR THE OCEANS, OUR COASTS,
AND THE GREAT LAKES

The oceans, our coasts, and the Great Lakes provide jobs, food, energy resources, ecological services, recreation, and tourism opportunities, and play critical roles in our Nation's transportation, economy, and trade, as well as the global mobility of our Armed Forces and the maintenance of international peace and security. We have a stewardship responsibility to maintain healthy, resilient, and sustainable oceans, coasts, and Great Lakes resources for the benefit of this and future generations.

Yet, the oceans, coasts, and Great Lakes are subject to substantial pressures and face significant environmental challenges. Challenges include water pollution and degraded coastal water quality caused by industrial and commercial activities both onshore and offshore, habitat loss, fishing impacts, invasive species, disease, rising sea levels, and ocean acidification. Oceans both influence and are affected by climate change. They not only affect climate processes but they are also under stress from the impacts of climate change. Renewable energy, shipping, and aquaculture are also expected to place growing demands on ocean and Great Lakes resources. These resources therefore require protection through the numerous Federal, State, and local authorities with responsibility and jurisdiction over the oceans, coasts, and Great Lakes.

To succeed in protecting the oceans, coasts, and Great Lakes, the United States needs to act within a unifying framework under a clear national policy, including a comprehensive, ecosystem-based framework for the longterm conservation and use of our resources.

In order to better meet our Nation's stewardship responsibilities for the oceans, coasts, and Great Lakes, there is established an Interagency Ocean Policy Task Force (Task Force), to be led by the Chair of the Council on Environmental Quality. The Task Force shall be composed of senior policy-level officials from the executive departments, agencies, and offices represented on the Committee on Ocean Policy established by section 3 of Executive Order 13364 of December 19, 2004. This Task Force is not meant to duplicate that structure, but rather is intended to be a temporary entity with the following responsibilities:

more

(OVER)

"We have a stewardship responsibility to maintain healthy, resilient, and sustainable oceans, coasts and Great Lakes resources for the benefit of this and future generations."

"To succeed in protecting the oceans, coasts and Great Lakes, the U.S. needs to act within a unifying framework under a clear national policy, including a comprehensive, ecosystem-based framework for the long term conservation and use of our resources."



Ocean Policy Task Force - Proposed Nine Priority Objectives

How we do business:

1. ***Ecosystem-Based Management***
2. ***Coastal and Marine Spatial Planning***
3. *Inform Decisions and Improve Understanding*
4. *Coordinate and Support*

Areas of Special Emphasis:

1. *Resiliency and Adaptation to Climate Change and Ocean Acidification*
2. *Regional Ecosystem Protection and Restoration*
3. *Water Quality and Sustainable Practices on Land*
7. *Changing Conditions in the Arctic*
9. *Ocean, Coastal, and Great Lakes Observations and Infrastructure*

How are we initially defining health?

A healthy marine ecosystem is one that can sustainably deliver a range of societal benefits both now and in the future.



Public goals

-
- A healthy ocean is one that sustainably delivers a range of benefits to people, now and in the future. These benefits include:
 -
 - **SEAFOOD PROVISION**: Maximize the amount and sustainability of seafood harvested from wild-caught and cultured stocks.
 - **SUBSISTENCE**: Minimize the loss of opportunities for sustainable subsistence fishing.
 - **NATURAL PRODUCTS**: Maximize the amount and sustainability of harvest of natural products (excluding food), such as wood, shells, pharmaceuticals, and the aquarium trade.
 - **CARBON STORAGE**: Minimize the loss of carbon storing habitats, including mangroves, salt marshes, seagrass beds, and wetlands.
 - **COASTAL PROTECTION**: Minimize the loss of biogenic habitats that protect coastal areas from inundation and erosion.
 - **SENSE OF PLACE**: Minimize the loss of species and habitats that hold special importance and/or cultural values for people.
 - **LIVELIHOODS**: Minimize the loss of coastal and ocean-dependent livelihoods (jobs & wages) and economies (revenue).
 - **TOURISM AND RECREATION**: Maximize sustainable tourism and recreational opportunities.
 - **CLEAN WATERS**: Minimize the pollution of estuarine, coastal and marine waters to maintain aesthetic values and avoid detrimental effects to human health or wildlife.
 - **BIODIVERSITY**: Minimize the loss of species and habitat degradation.



Why CMSP Is Important



"Coastal and marine spatial planning may sound like the stuff of policy wonks, but it is actually vital to anyone who works or plays on the oceans. In fact, coastal and marine spatial planning is an essential tool for anyone who depends on the oceans for sustainable jobs, healthy seafood, clean energy, recreation or vibrant coastal communities."

- Dr. Jane Lubchenco, NOAA Administrator and member of the Interagency Ocean Policy Task Force December 14, 2009