NOAA Response to SAB/ESMWG Report on EBFM

A Presentation to the
NOAA Science Advisory Board

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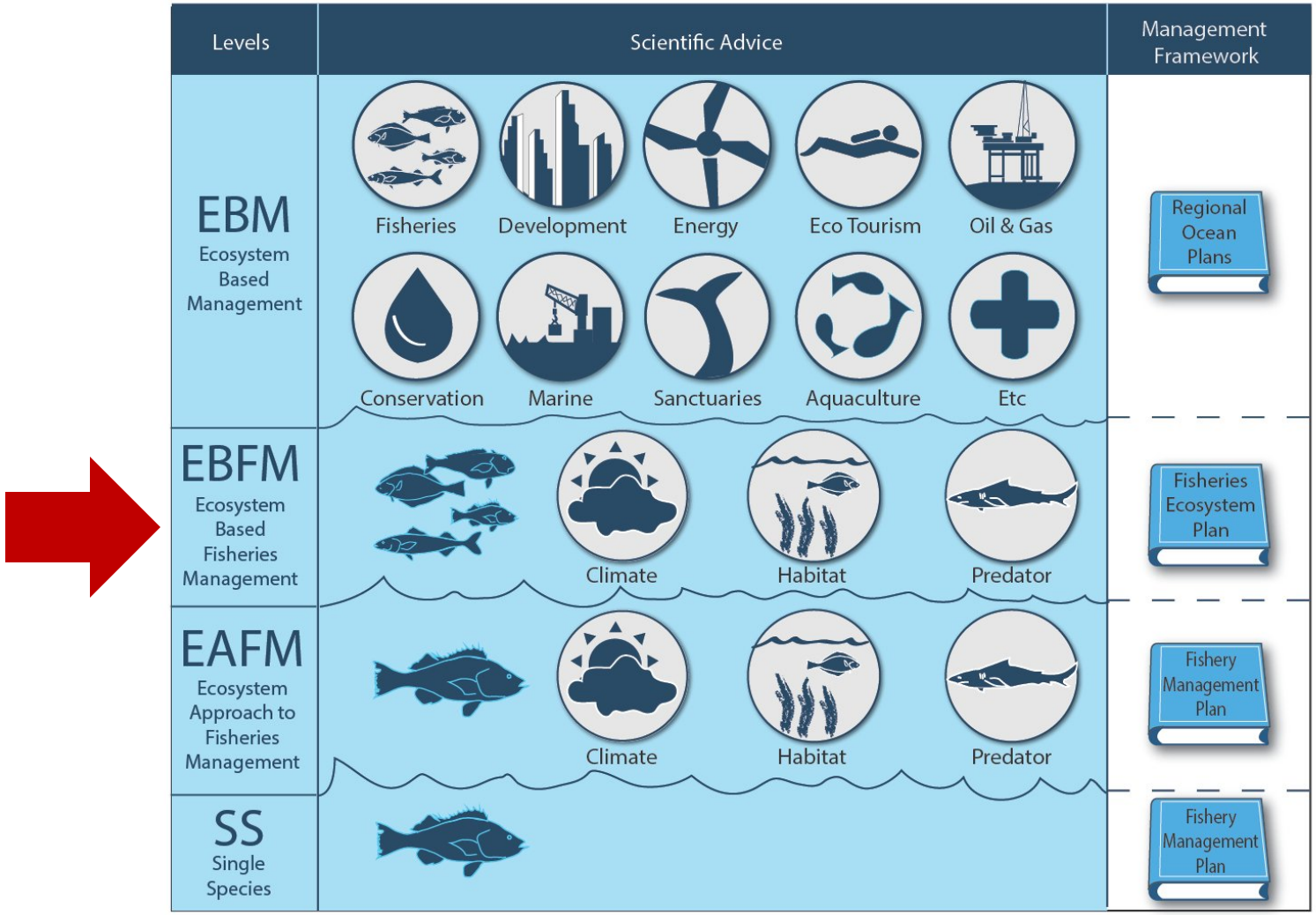
Purpose

- Present the NOAA Response to the SAB Report:

Exploration of Ecosystem Based Fishery Management in the United States

EBFM on a Continuum



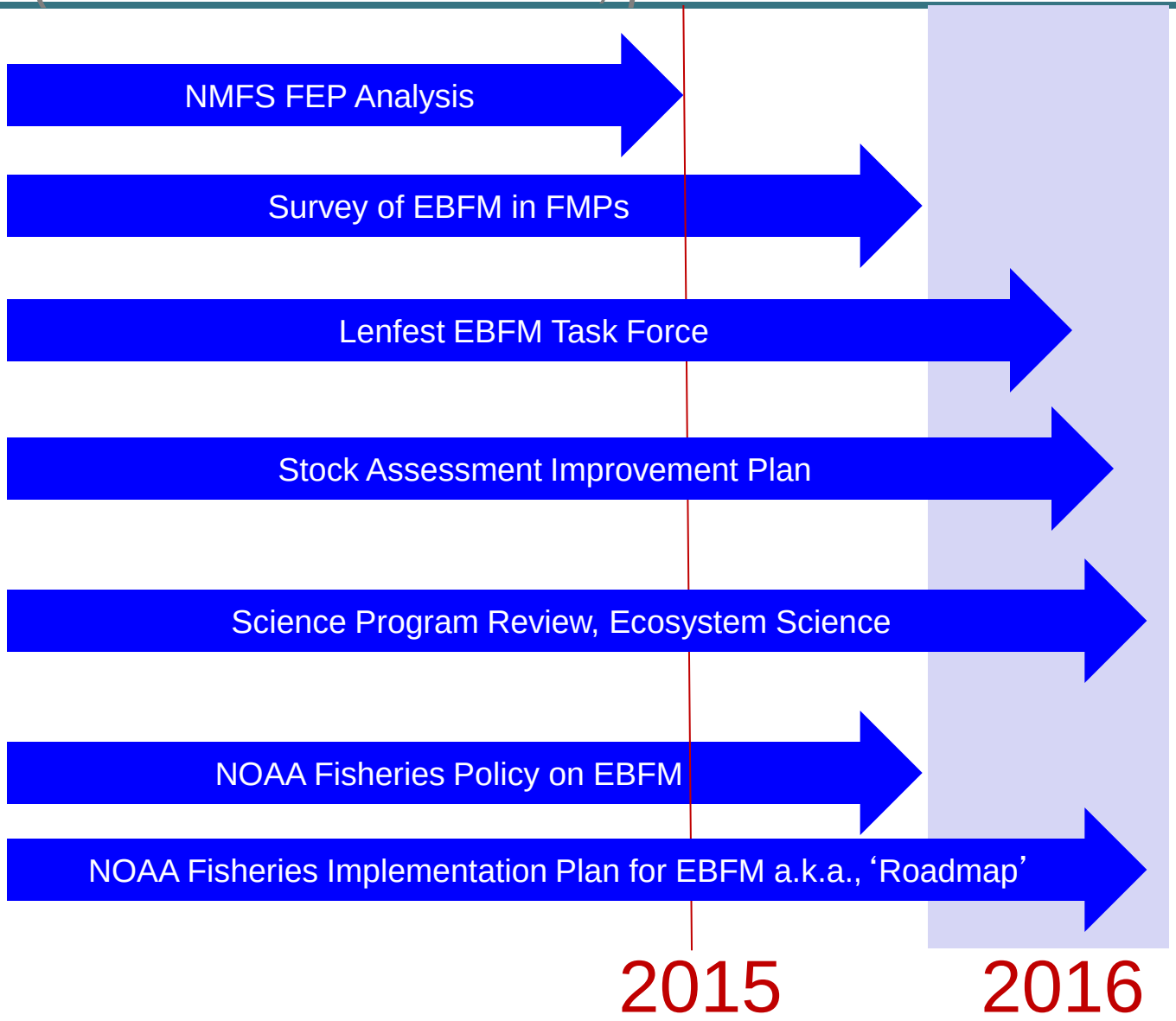
Issue

Respond to 7 Recommendations from the SAB Report:

1. Support Council processes for ecosystem science (via needs assessment, performance evaluation)
2. Invest to understand fishery management as coupled socio-ecological system
3. Facilitate cross-region and Council interactions
4. Invest in tools for assessing trade-offs
5. Assess and implement best practices for coordinating and integrating ecosystem science
6. Develop training and capacity building for long term EBFM
7. Continue to lead international efforts to use EBFM

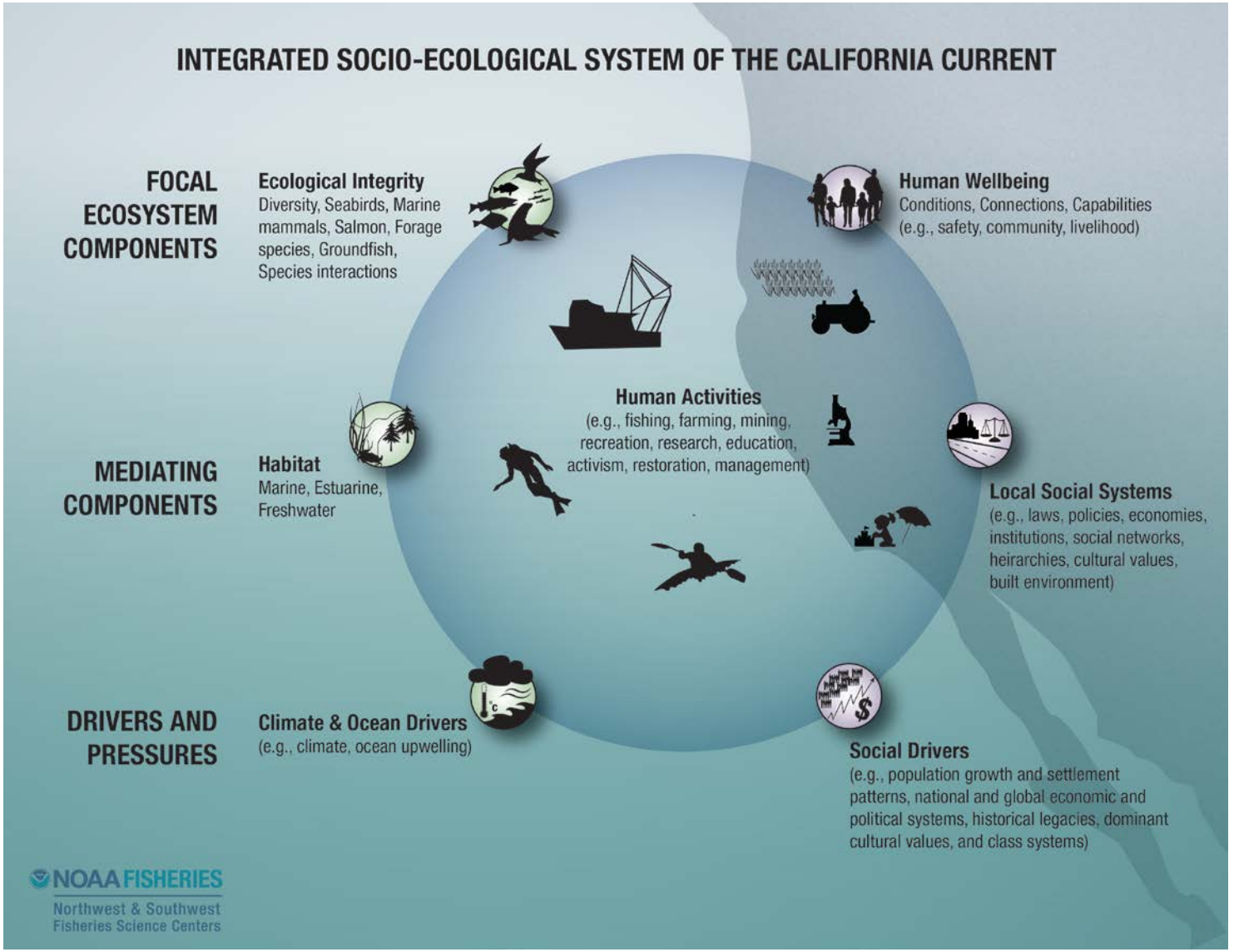
Recommendation 1

Support Council processes for ecosystem science (via needs assessment, performance evaluation)



Recommendation 2

Invest to understand fishery management as coupled socio-ecological system



Recommendation 3

Facilitate cross-region and Council interactions

- NOAA supports national-level meetings aimed at facilitating the interaction between science and management
  - National Stock Assessment Workshop
  - National Ecosystem Modeling Workshop
  - National Scientific and Statistical Committee meetings
- Climate is a good example of cross cutting support

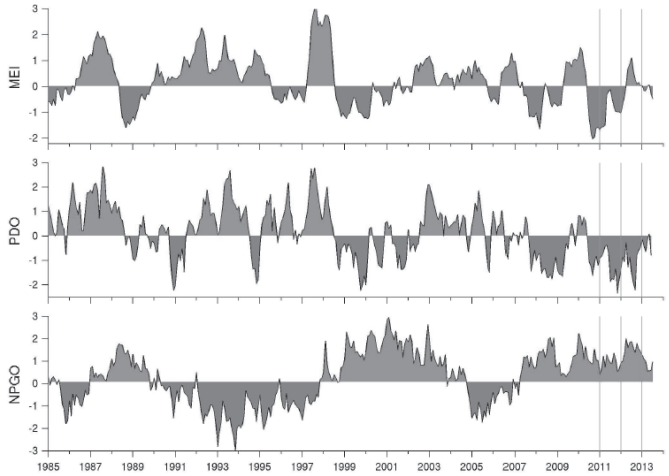
Recommendation 4

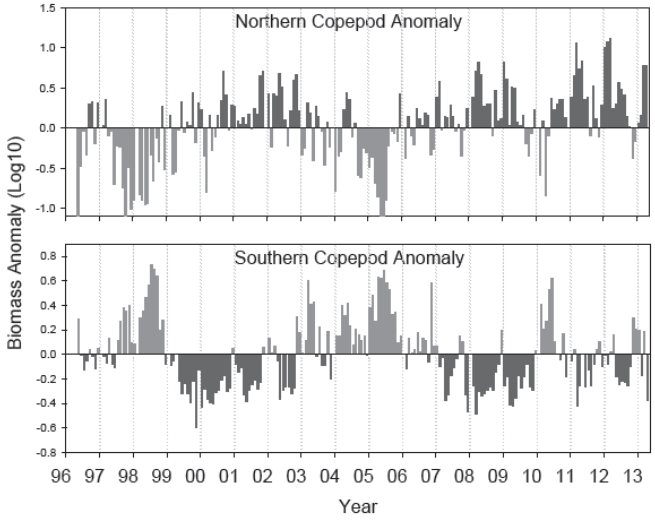
Invest in tools for assessing trade-offs

Integrated Ecosystem Assessments

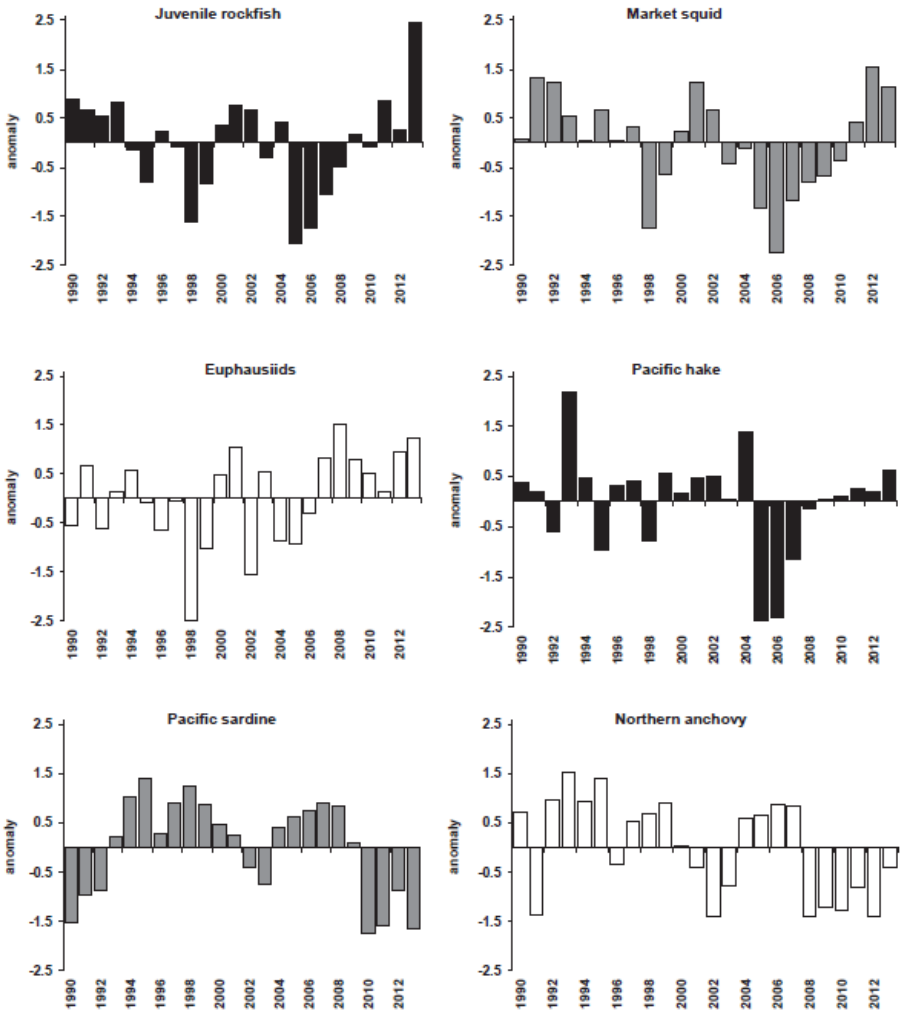
Recommendation 5

Assess and implement best practices for coordinating and integrating ecosystem science





Ecosystem Status Reports



Recommendation 5

Assess and implement best practices for coordinating and integrating ecosystem science

Climate Vulnerability Assessments

Stock Status (Status)	2.7	1.0
Other Stressors (Other)	2.8	1.7
Population Growth Rate (Pop Growth)	2.8	1.8
Spawning Cycle (Spawning)	2.5	2.2
Complexity in Reproduction (Repr Complx)	2.7	1.9
Early Life History Requirements (ELH)	2.6	1.2
Sensitivity to Ocean Acidification (OA)	1.1	2.0
Prey Specialization (Prey)	1.1	3.0
Habitat Specialization (Hab)	2.6	3.0
Sensitivity to Temperature (Sens Temp)	1.3	3.0
Adult Mobility (Adult Mobil)	1.2	3.0
Dispersal & Early Life History (Dispersal)	1.1	2.6
Sensitivity Score	Moderate	

FOR EXAMPL

Vulnerability

Sensitivity \ Exposure	Low	Moderate	High	Very High
Very High	Moderate	High	Very High	Very High
High	Low	Moderate	High	Very High
Moderate	Low	Moderate	Moderate	High
Low	Low	Low	Low	Moderate

Exposure

Sea Surface Temperature (SST)	4.0	3.0
Var. in Sea Surface Temperature (Var SST)	1.0	3.0
Salinity (Salinity)	1.6	3.0
Var. Salinity (Var Sal)	1.2	3.0
Air Temperature (Air Temp)	4.0	3.0
Var. Air Temperature (Var Air Temp)	1.0	3.0
Precipitation (Precip)	1.3	3.0
Var. in Precipitation (Var Precip)	1.4	3.0
Ocean Acidification (OA)	4.0	2.0
Var. in OA (Var OA)	1.0	2.2
Currents (Currents)	2.4	1.0
Sea Level Rise (Sea Level)	0.0	0.0
Exposure Score	Very High	

NOT FINAL DATA

Recommendation 6

Develop training and capacity building for long term EBFM

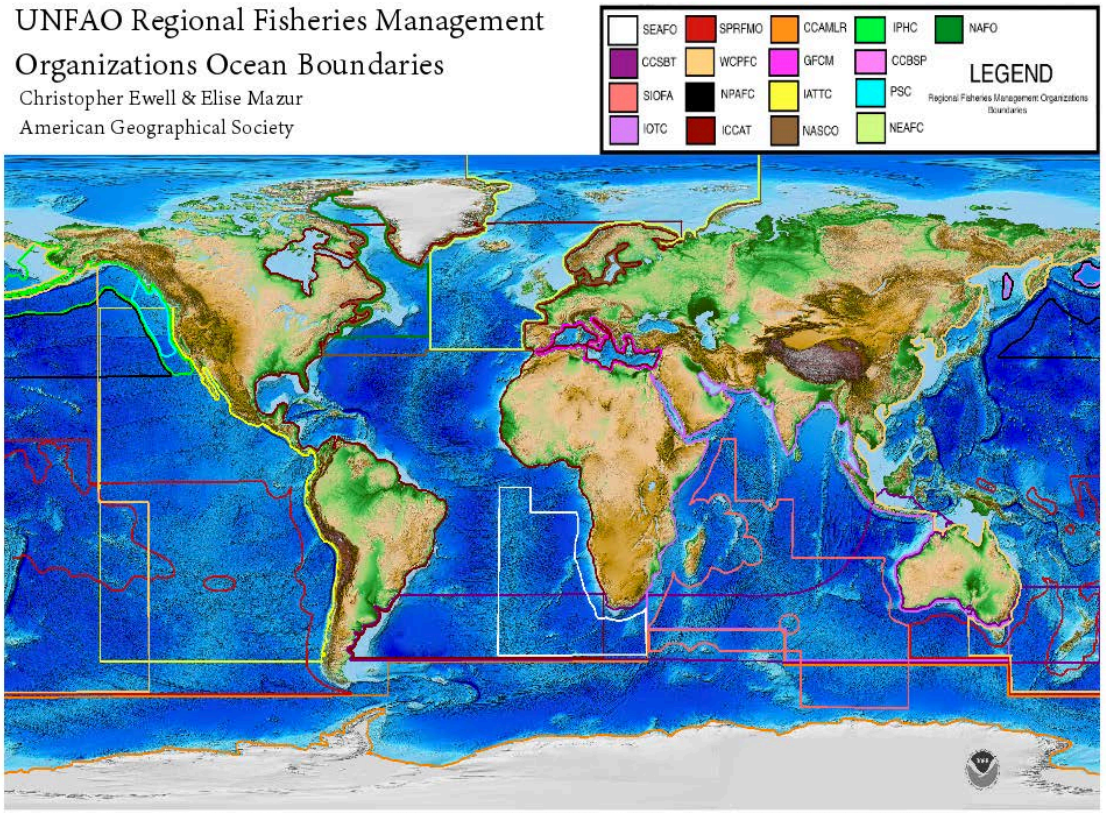
- NOAA Fisheries staff key Council EBFM committees
- New communications tools have been developed to visualize and illustrate aspects of EBFM
  - Serious Games project with Woodrow Wilson Center
- Population and Ecosystem Dynamics Fellowship Program
  - Graduate students with NOAA Fisheries mentors
  - Many fellows pursue careers at NOAA
- QUantitative Ecology and SocioEconomics Training (QUEST) Program
  - NOAA Fisheries
  - Build capacity in ecosystem modeling
  - Important skills for long term advancement of EBFM

Recommendation 7

Continue to lead international efforts to use EBFM

NOAA at the center of many recent International Conferences on EBFM:

- Atlantis Summit
- International Society of Ecological Modeling Meeting / NOAA National Ecological Modeling Workshop
- ICES/FAO Conference on EBFM to review the state of the art and steps to make it operational in



Boundaries from: Sarika Cullis-Suzuki, Daniel Pauly, Failing the high seas: A global evaluation of regional fisheries management organizations, Marine Policy, Volume 34, Issue 5, September 2010, Pages 1036-1042, ISSN 0308-597X, http://dx.doi.org/10.1016/j.marpol.2010.03.002. (http://www.sciencedirect.com/science/article/pii/S0308597X10000540)

Desired Outcome

- Informational – Does not require an SAB Response

Draft EBFM Policy

NOAA Fisheries will implement Ecosystem-Based Fisheries Management (EBFM) to best inform decisions that optimize the benefits from marine fisheries by evaluating trade-offs among and between fisheries (commercial, subsistence and recreational), protected resources, biodiversity, and habitats, while maintaining resilient and productive ecosystems.