

Proposed National Priority Objectives of Ocean Policy Task Force

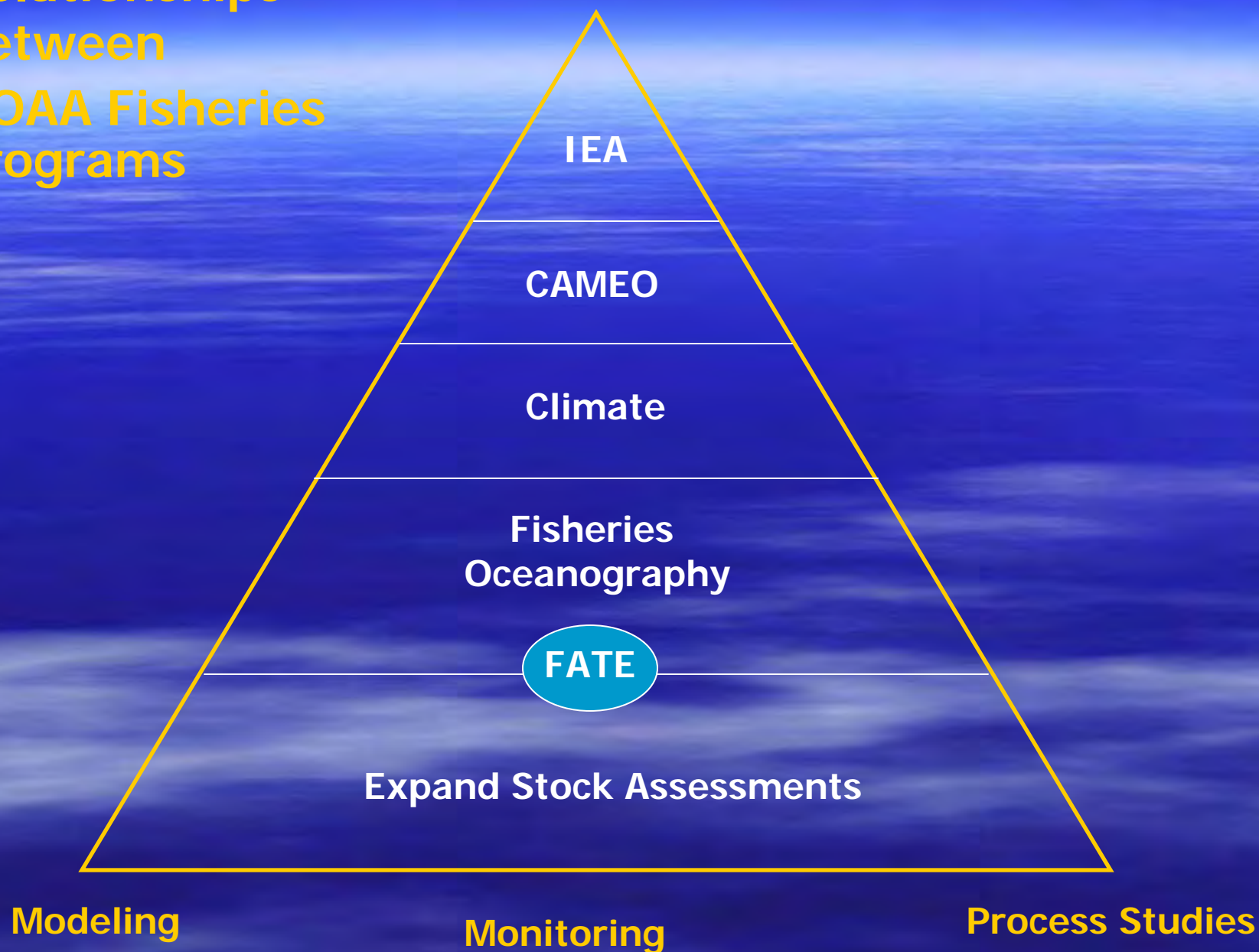
Ecosystem-Based Management: Adopt ecosystem-based management as a foundational principle for the comprehensive management of the ocean, our coasts, and the Great Lakes.

Coastal and Marine Spatial Planning: Implement comprehensive, integrated, ecosystem-based coastal and marine spatial planning and management in the United States.

Inform Decisions and Improve Understanding: Increase knowledge to continually inform and improve management and policy decisions and the capacity to respond to change and challenges. Better educate through formal and informal programs the public about the ocean, our coasts, and the Great Lakes.

Coordinate and Support: Better coordinate and support Federal, State, tribal, local, and regional management of the ocean, our coasts, and the Great Lakes. Improve coordination and integration across the Federal Government, and as appropriate, engage with the international community.

Relationships Between NOAA Fisheries Programs



Fisheries and the Environment FATE

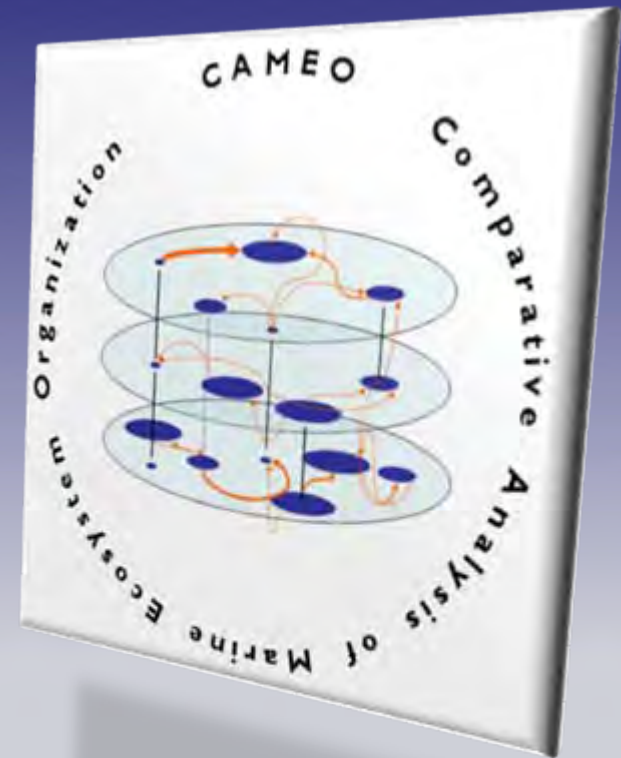
The Fisheries and the Environment Program provides the information necessary to effectively adapt management to mitigate the ecological, social, and economic impacts of major shifts in the productivity of living marine resources.

Approach

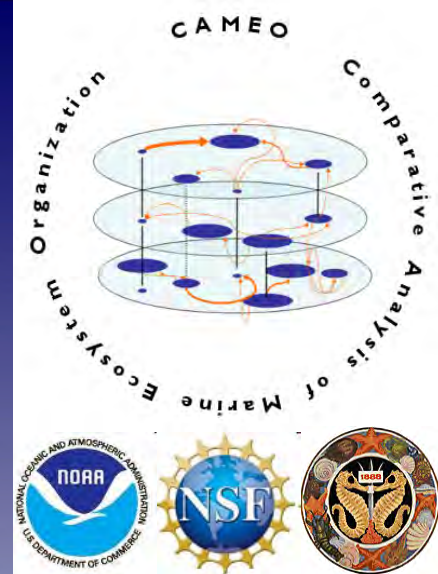
- Analysis of the response of fish & shellfish, marine mammals to environmental change
- Development of ecosystem indicators
- Incorporation of ecosystem indicators in stock assessments
- Construction of next generation forecasting tools
- Modest field work

CAMEO

Comparative Analysis
of Marine Ecosystem
Organization



What is CAMEO?



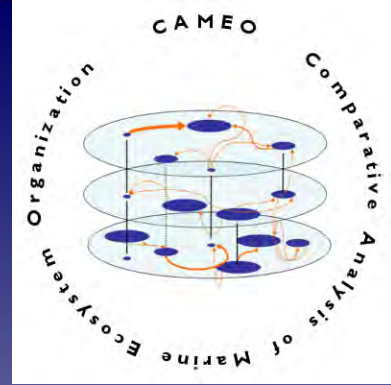
Research Program jointly funded by NOAA and NSF

Science Planning Office at Marine Biological Laboratory

Brings together oceanography and fisheries science

Projects are conducted as joint efforts between federal and academic scientists

Practical Outcomes



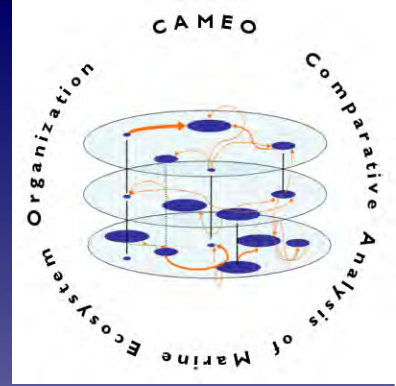
Ecosystem-based approaches emphasize interactions among components and the impacts that various human activities have on productivity and organization

Forecasting these impacts requires understanding complex dynamics controlling:

- productivity of various trophic levels
- predator-prey interactions
- connectivity of sub-populations
- impacts of climate variation
- anthropogenic pressures



Current Program Priorities



Development of strategies and methodologies for comparative analyses

Development of models that address key scientific questions by comparing ecosystems and ecosystem processes.

Retrospective studies a comparative approach.

Interdisciplinary research using comparative approaches to link marine ecosystem research with the social and behavioral sciences in new and vital ways.

Comparison of Marine Protected Areas



Integrated Ecosystem Assessments

Integrated Ecosystem Assessment (IEA):

- “A synthesis and quantitative analysis of information on relevant physical, chemical, ecological and human processes *in relation to specified ecosystem management objectives*”.

An IEA:

- Incorporates multiple indicators of the physical environment, human factors affecting ecosystems, and the abundance and production of ecosystem goods and services,
- Is geographically specified,
- Establishes target levels and thresholds for important ecosystem components,
- Evaluates the impacts of management options and risks of not attaining target ecosystem states.



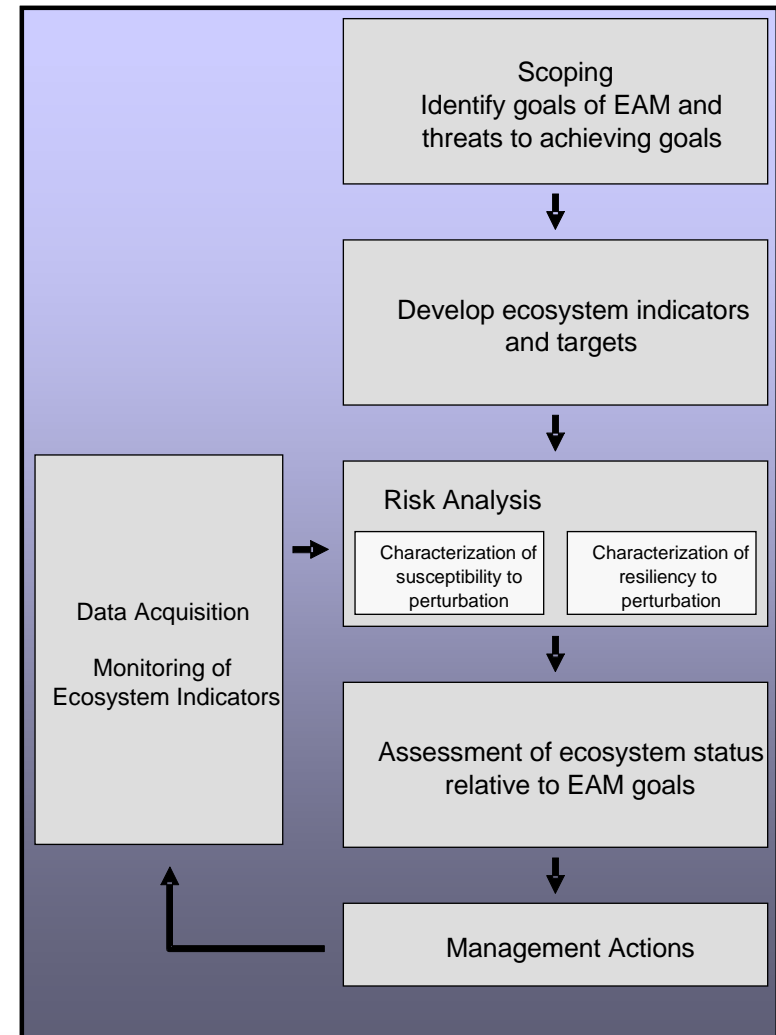
Dimensions and Outcomes of IEAs

An IEA addresses five dimensions:

- Status of the topic being considered
- Causes and consequences of the status
- Forecast of future status with and without management action
- Costs and benefits of possible management actions
- Evaluation of past management actions' success or failure

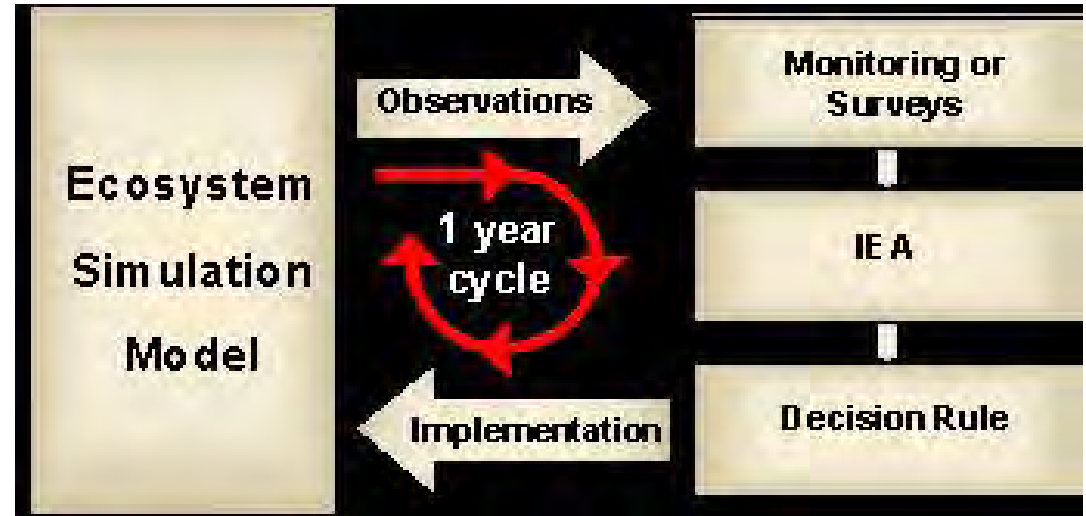
A successful IEA:

- Responds to policy-relevant questions
- Quantitatively identifies uncertainties in existing data and information
- Includes public participation and peer review
- Integrates data across multiple disciplines
- Uses existing high-quality data and information
- Forecasts future conditions and outcomes

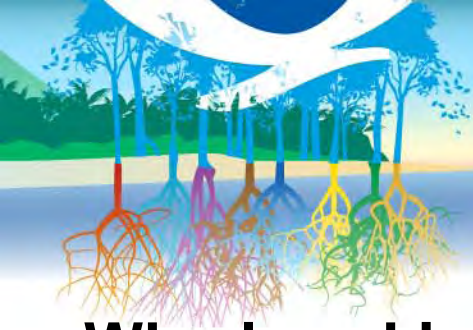


IEAs as a Management Tool

- Will incorporate economic and social aspects of an ecosystem into management plans
- Improve ability to evaluate the effects of various management strategies
- Improved knowledge and forecasting will improve decision making capabilities



A schematic of the ecosystem model is used to simulate the ecosystem. The ecosystem is then “sampled”, an IEA is performed and a management strategy is implemented. The cycle is the repeated, and ultimately, the potential outcomes of a range of management strategies can be estimated.



IEA Activities

Who is asking for IEAs?

- Fishery Management Councils
- National Marine Sanctuaries
- NGOs
- Academia
- Utilities
- States and Public Ocean Governance Initiatives (e.g. West Coasts Governors' agreement and the Puget Sound Partnership)
- Coastal and native fishing communities

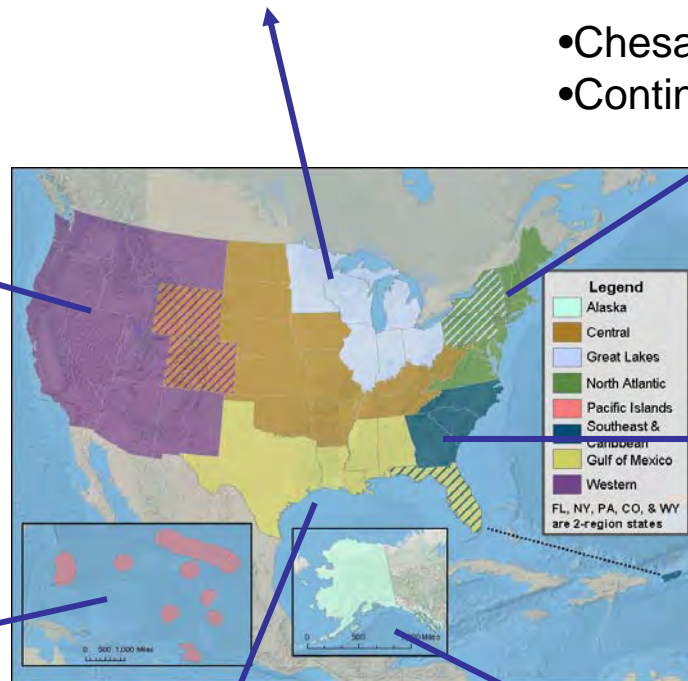
What are the underlying management questions?

- Effects of climate-change on coastal erosion
- Melting permafrost
- Invasive species
- Loss of sea ice and native subsistence
- Potential effects of fishing on marine food webs
- Social and economic costs associated with climate mitigation
- Baseline or status of habitats, indicators of ecosystem health and resilience
- Effects of previous management decisions

IEA Efforts at the Regional Level

- Center for Excellence of Great Lakes and Human Health
- 5 year project examining multiple stressors on Saginaw Bay, Lake Huron
- Developing an “Adaptive Integrative Framework”

- California Current IEA
- Puget Sound Partnership
- Virtual Data Assembly Center
- NMSPs are completing condition reports, built upon the DPSIR
- Completed the first dedicated IEA module for the CCLME



- Chesapeake Bay IEA
- Continental Shelf Modeling Efforts

- Developing a data-management framework
- Developing Regional Ecosystem Data Management data catalog and portal

- Hawaiian Archipelago Marine Ecosystem Research (HAMER) Plan

- Data Portal
- Conceptual Model of Gulf of Mexico
- Ecosystem Data Assembly Center

- Bering Sea Indicators work to integrate activities