Ecosystem-based approaches to fishery management

With an introduction to the New England Council’s pilot project

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EAFM: Presentation Overview

- What is it?
- Why now?
- What’s this pilot project?
- When does something actually happen?
The name game

Fisheries management
Ecosystem management
Ecosystem approach to management
Ecosystem-based fisheries management
Ecosystem approaches to fisheries management
Integrated management
Definitions

• 21 different definitions (and counting)
• All are ecologically based
• Nearly all have “social and economic” caveat
• Most include explicit recognition of people within the ecosystem
NOAA’s definition

- An ecosystem approach to management is a geographically specified and adaptive process which (a) takes account of ecosystem knowledge and uncertainties, (b) considers multiple external influences, and (c) strives to balance diverse societal objectives.

Ecosystems Principals Advisory Panel (1999)
MAFAC definition

- *Ecosystem-based Fisheries Management* occurs when personal, social, political, and management decisions are made considering ecological information.
- An ecosystem-based approach requires attention to ecosystem integrity, interagency cooperation, spatially explicit management measures, and time-series data for multiple species and habitats.

European Fisheries definition

• Ecosystem-based management considers all the components of the ecosystem (biological, chemical and physical) and their interactions. This includes an appreciation of natural ecosystem dynamics AND it explicitly recognizes that man is part of the system and seeks to include stakeholders in setting management goals.

European Fisheries Ecosystem Plan Project (2004)
Ecosystem approaches: Science

- State-of-the-art fishery-dependent effort and observer monitoring supporting spatial management
- Continued reliance on fishery-independent surveys with improved monitoring of survey catchability and calibration to existing time series
- Greater use of cooperative research to address monitoring & research priorities and to encourage industry “ownership” of science supporting management
- Incorporation of formal adaptive science/management approaches for issues without clear resolution
- Development of practical measures of biodiversity to manage for its protection, while minimizing catch foregone
- Incorporation of more complete social and economic data, including costs, revenue and behavioral aspects of effort allocation
Ecosystem approaches: Management

- Explicit incorporation of stakeholder views
  - Objectives
  - Means
- Matching management tools to expected outcomes
  - Feedback/monitoring loop
- Incorporating societal objectives in determining tradeoffs
  - Between fisheries
  - Within multi-species fisheries
We are doing it (kind of)

- Aspects in current management
  - Council process
  - Protected species
  - Bycatch
  - Habitat

Need to take a holistic approach
Drivers

• U.S. Commission on Ocean Policy
  – New, coordinated National Ocean Policy framework to improve decision making
  – Cutting edge ocean data and science translated into high quality info for managers
  – Education to foster marine stewardship
• Pew Oceans Commission
• Action Plan
• MSFCMA, MMPA, ESA
NOAA’s Strategic Goals

- **Ecosystems**: Protect, restore, and manage the use of coastal and ocean resources through ecosystems-based management.
- **Climate**: Understand climate variability and change to enhance society’s ability to plan and respond.
- **Weather and Water**: Serve society’s needs for weather and water information.
- **Commerce and Transportation**: Support the Nation’s commerce with info for safe, efficient, and environmentally sound transportation.
- **Organizational Excellence and Mission Support**: Provide organizational excellence, infrastructure, and mission support.
NOAA Fisheries Strategic Goals

Derive the optimal sustainable value to society and future generations from the regional marine ecosystems under our stewardship

- Ensure sustainability of resources
- Conserve biodiversity
- Maintain economic, social, and cultural access to resources
NEFSC Vision Statement

“Conduct ecosystem-based research and assessments of living marine resources, with a focus on the Northeast Shelf, to promote the recovery and long-term sustainability of these resources, and to generate social and economic opportunities and benefits from their use.”
NEFSC Mission Objectives

• Research and Monitoring
• Scientific Advice
  • Develop and provide the scientific foundation for management programs that has an ecosystem-based framework
  • Enhance society's capability to respond to changing ecosystem conditions and to manage risk by developing science-based decision tools.
• Education and Outreach
Timing

- Management in NE is evolving:
  - From…single species rebuilding
  - To…integrated multi-fishery management
- As stocks grow, interactions will increase
  - Scallops
  - GB Haddock
  - Dogfish

Unique opportunity: Science and management must both be equipped to respond
NEFMC Pilot Project

- 2 million grant in FY 2005 budget
  - NOS
  - NOAA Fisheries
  - Four Councils
    - Gulf Coast FMC
    - South Atlantic FMC
    - Mid-Atlantic FMC
    - New England FMC

- Initiate public participation in developing EAFM
NOS

- Eco-GIS: Working with Councils and NOAA Fisheries to develop GIS tools
  - Aid scientists by increasing use of spatially explicit models
  - Aid managers by increasing integration/visualization
    - Management options
    - Potential outcomes
NOAA’s three themes

- **Enhance Regional Ecosystem Governance Structures through Fishery Management Councils**
  - Determine management objectives, threats, options, and alternatives; evaluate ability of Council’s to expand their role

- **Develop Quantitative Decision Support Tools**
  - Develop tools to aid decision makers in evaluating management options (models and GIS)

- **Conduct Technical Workshops**
  - Establish dialog between science and management in applying ecosystem principles to fisheries; assess state-of-the-art techniques; determine technical needs
NEFMC’s four-prong approach

- Attitudes/values survey
- Regional stakeholder meetings

Both will solicit feedback from stakeholders on:
  - Management objectives
  - Use of management “tools”
  - Balance and tradeoffs within NE fishery

- Technical needs and inventory of information
- Synthesis report
Timeline

- First Ctte meeting in late March/early April
- Survey distributed in June
- Public meetings:
  - First round early summer
  - Second round early fall
- Survey results November ‘05
- Synthesis report Jan-Feb ‘06
The long-term objectives

• Catalog research and analysis needs
• Guidelines for EAFM from agency
• Pilot Fisheries Ecosystem Plan
• Changes to legislation
Final thoughts

• Evolutionary, not revolutionary

• High degree of buy-in
  – The agency has committed to ecosystem approaches for research and management
  – International support

• Opportunities to improve management
  – Stakeholder involvement a linchpin

• Time is right
  – Evolving management objectives