

Ecosystem-Based Approach to Fisheries Management: Getting Beyond the Conceptual Phase



NOAA / AOML



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Ecosystem Management: Broadly Defined

- Scientific Consensus Statement:
(March 2005, COMPASS)
 - “Ecosystem-based management is an integrated approach to management that considers the entire ecosystem, including humans. The goal of ecosystem-based management is to maintain an ecosystem in a healthy, productive and resilient condition so that it can provide the services humans want and need. Ecosystem-based management differs from current approaches that usually focus on a single species, sector, activity, or concern; it considers the cumulative impacts of different sectors.”



Redefining Fisheries Management

- Current management schemes may or may not be compatible
 - Single-species management
 - Optimum Yield (OY) or Maximum Sustainable Yield (MSY)
 - Total Allowable Catch (TAC)
 - Quotas
 - Individuals Fishing Quotas (IFQ)
 - Effort management and limitation





What is to be Managed?: Eliminating Ambiguities

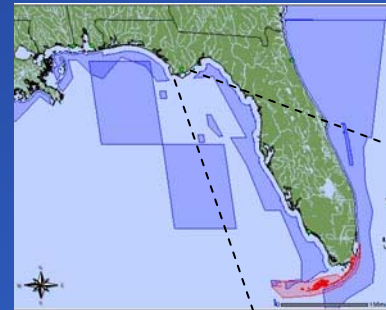
- Goals/Objectives explicitly stated:
 - Fisheries or habitat
 - Top-Predator (indicator species)
 - Predator-Prey (trophic structure)
 - Critical Habitat (for various life stages)
 - Multi-species (related/unrelated)
 - Fish Population Sustainability
 - Fisheries Economic Value



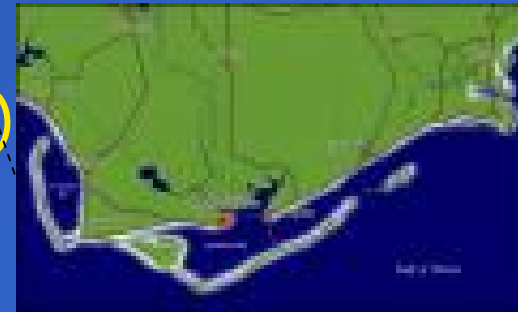
Managing to Scale: How low do you go?

➤ Defining spatial scale imperative:

- Large Marine Ecosystems (LME)
 - Southeast U.S. Continental Shelf
 - Gulf of Mexico
- Regional (within LME)
- State (within region)
- Local (within state)
- Specific Habitats (within local)



<http://www.mpa.gov>



<http://www.apalachicolabay.org>



Applying Ecosystem Approach in Florida

- Is Florida heading in the right direction?
 - Strong collaboration between management and scientists, other government agencies (*e.g.*, NMFS, NPS), Fishery Management Councils
 - Developing broad public participation
 - Management zoning (*e.g.*, FKNMS, gear/species zones, Tortugas and Biscayne Bay – proposed)
 - Florida Oceans and Coastal Council



Applying Ecosystem Approach in Florida

- What are some of Florida's challenges?
 - Some fisheries depleted and/or over exploited
 - Expand inter-governmental coordination (local, state and federal)
 - Increasing human activities and impacts
 - Habitat loss/degradation



EPA photo: Key West (1972)



<http://www.southpointehomes.com>



Applying Ecosystem Approach: Research Needs in Florida

- What do managers need to manage?
 - Life history data on non-target species and more robust data on target species
 - Habitat linkages
 - Incidental mortality and bycatch of target and non-target species
 - Consequences of fishing to ecosystem
 - Habitat quality effects to species/ecosystems
 - Continued habitat monitoring/mapping



<http://www.beautifuldestin.com> (Destin Charter Fleet)



Case Study: Red Drum

➤ Research needs

- Predator-prey interactions and population effects
- Incidental mortality and bycatch at all stages
- Water/habitat quality impacts
 - nutrients, contaminants, HABs, industrial
 - nurseries, estuaries



<http://www.fishteezer.com>



<http://www.science.nasa.gov>



Examples Ecosystem-based Approach in Florida

- Management zonings
- Coral reef and seagrass mapping
- Fisheries and habitat monitoring
- Red tide research
- Workgroups & advisory boards
- Public participation
- Broad & diverse collaboration



DMFM photo



Towards Ecosystem-based Fisheries Management



- Getting beyond the concept
 - Applying current knowledge differently
 - Expanding research to overcome gaps
 - Reorienting fishery strategies
 - Defining clear objectives and goals
 - Public participation and acceptance
 - Devising administrative mechanisms
 - Implementing and monitoring

A background image of a blue sky with light, wispy clouds and a blue ocean with a bright sun reflection on the left side. The word "QUESTIONS?" is written in yellow, bold, sans-serif capital letters in the center of the image.

QUESTIONS?