

# Ecosystem Approaches to Fisheries



Rebecca Lent

Deputy AA for Fisheries

NOAA Fisheries



# Developing an Ecosystem Approach to Fisheries Management (EAF)

Ecosystem approach considers:

- \* *Bycatch or Fishery Interactions*
- \* *Indirect Effects of Harvesting*
- \* *Interactions between Biological and Physical Components*

# Description of Ecosystem Approach

**Management that is adaptive, geographically specified, takes account of ecosystem knowledge and uncertainties, considers multiple external influences, and strives to balance diverse societal objectives.**

**The transition to an ecosystem approach to management needs to be incremental and collaborative.**



# Key Definitions

An *ecosystem* is a geographically specified system of organisms (including humans), the environment, and the processes that control its dynamics.

The *environment* is the biological, chemical, physical, and social conditions that surround organisms.



# Delineation of Ecosystems

Define the scale of an ecosystem based on the spatial extent of the ecosystem characteristics and/or dynamic processes that are to be studied or influenced through management.

Specify ecosystem boundaries based on the geographic distribution of ecosystem characteristics and on management jurisdictions.

Recognizes that this will lead to ecosystems specified at hierarchy scales with boundaries that sometimes overlap.

# Where did EAF come from?



# **EAF is not new**

**Scientifically and for “on the ground” fishery management, fishery interactions (including bycatch), trophic interactions and climate influences have been considered for many decades**

**The focus on EAF at the policy level stems from:**

- Various UN agreements**
- World Summit on Sustainable Development**
- Two Commission Reports**
- NOAA and Councils’ own initiatives**

# **FAO Framework for Making Ecosystem Approaches to Fisheries Management (EAF) Operational**

**Develop, Implement, Evaluate and Modify**

**\*Objectives, Indicators, Targets**

**\* Process (steps)**

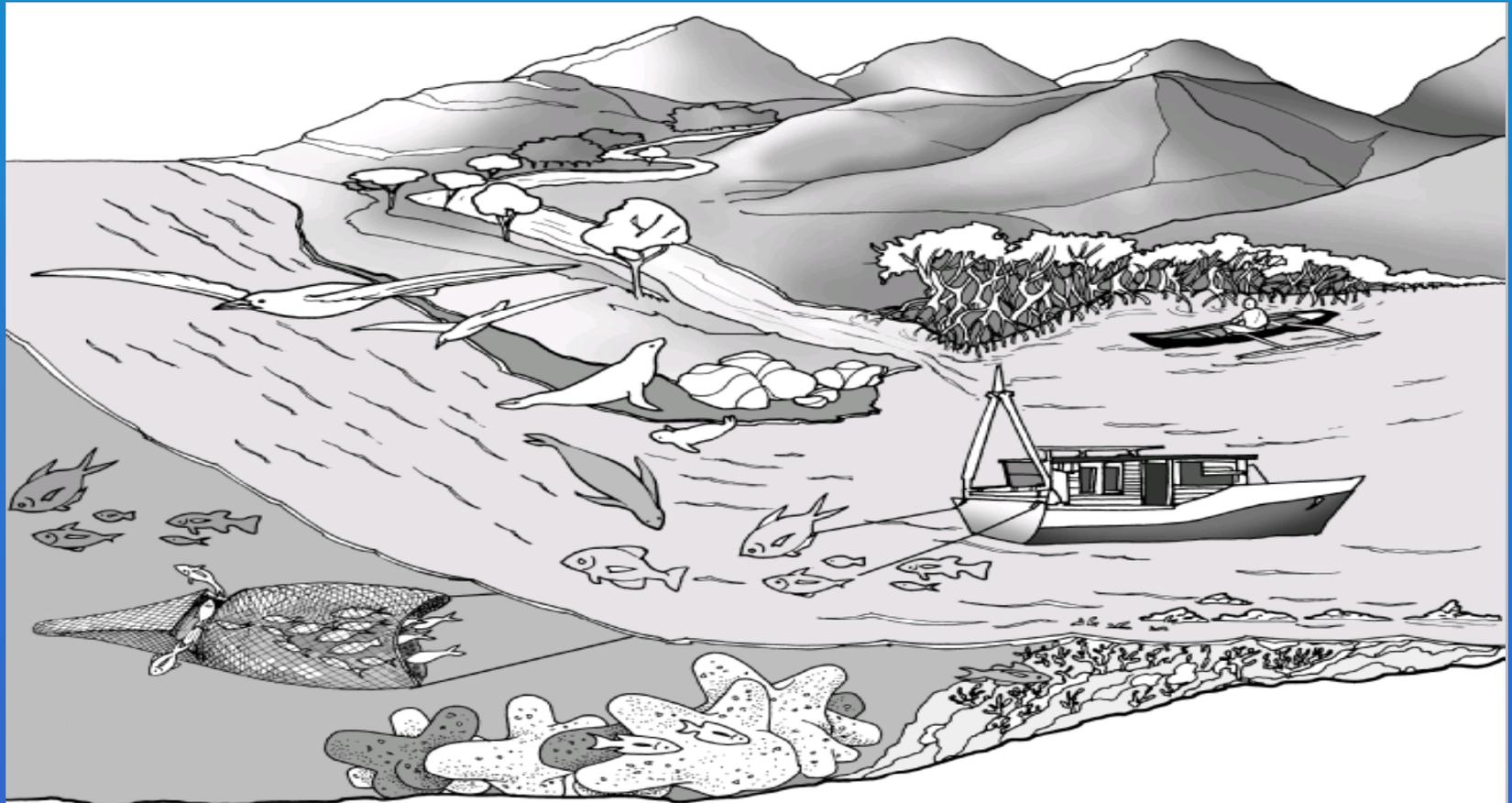
**\* Performance Measures**

**\* Adaptation**



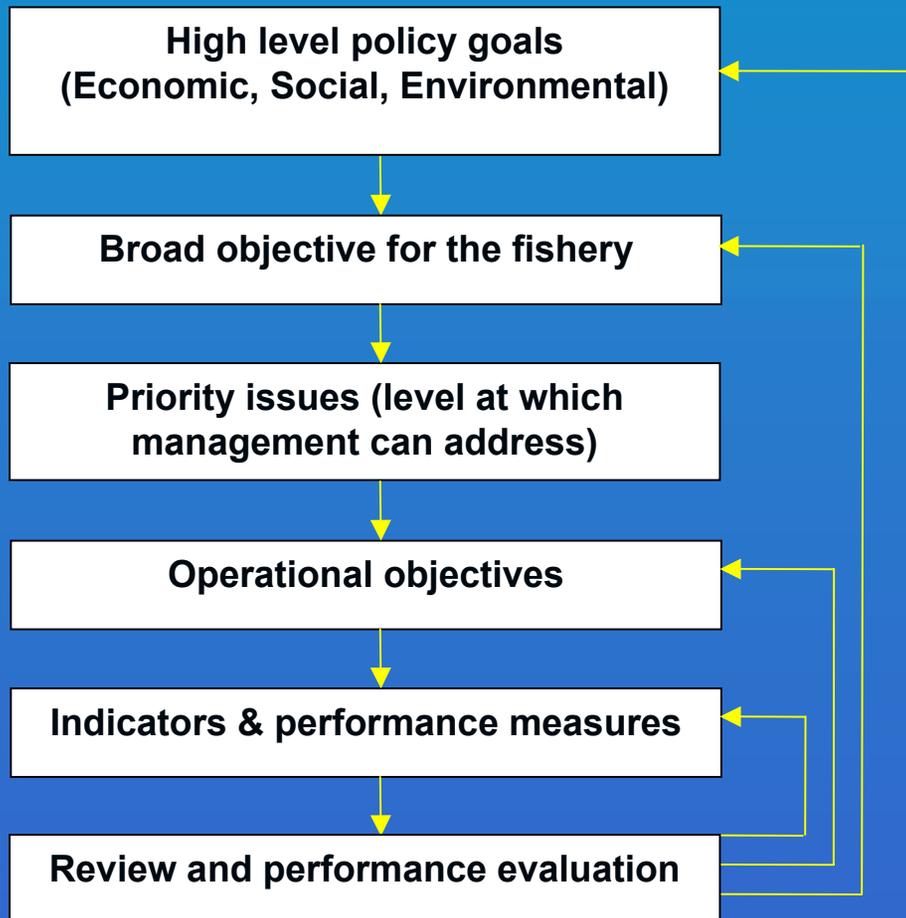
# FAO Framework

Uses quantitative indicators and performance measures  
in management of target species and ecosystem  
impacts



# EAF Management Plan Sequence

The process of 'unpacking' the high level objectives into operationally meaningful objectives and measurable indicators



# What Should Be Included?

**Broad objectives need to address at least:**

- ▶ **The major problems:**

- ▶ Overfishing, rebuilding, bycatch, capacity, restoring protected spp, habitat protection, ecological relationships, biodiversity

- ▶ **Process**

- ▶ maintain inter-generational equity
- ▶ use of precaution in decision making
- ▶ maximize benefits to society from all uses

# Example: Solving the problem of Pelagic Longline Turtle Bycatch



# **Example: Western Pacific FMC Coral Reef Ecosystem FMP**

- \* Sustainable fisheries, protection of coral reef ecosystems, network of MPAs**
- \* Permit and reporting requirement for harvest of coral reef resources**
- \* Minimize impacts on coral reef habitat ,adaptive management approach with frameworking**

# Example: New England Groundfish

- ▶ **Achieve F & biomass objectives for highly mixed complex of 19 stocks**
- ▶ **Complex interactions with other fisheries**
- ▶ **Consider predator/prey & competition**
- ▶ **Manage habitat Impacts of mobile gears**
- ▶ **DAS control and closed areas primary measures**

# Many other examples . . .

- EFH work
- Salmon habitat/watershed issues
- Various area-based management measures
- And many more . . . Especially with improved NEPA

# Important to remember

- Ecosystems include people – so multidisciplinary
- EAM involves more issues, therefore more constituents
- Includes non-consumptive uses
- MPAs are not synonymous with EAM

# The way forward

- EAM not entirely new
- Continuum from single species to EAM
- Anywhere on the continuum, still need to make difficult and controversial decisions
- NOAA Fisheries and the Councils are poised to take a lead role
- . . . . *So, are we there yet?*

*We've never been  
closer!*

**THANKS!**

