

# FEDERAL ECOSYSTEM-BASED MANAGEMENT TO SUSTAIN MARINE ECOSYSTEM SERVICES: FROM CONCEPT TO PRACTICE

Franklin B. Schwing  
NOAA Fisheries Service  
Office of Science and Technology

# Federal Agencies & Ecosystem Services

Government agencies, in concert with the broader scientific community, are responsible for

- assessing the status of the delivery of ecosystem services in relation to designated objectives and
- advising on appropriate management strategies.

Federal ocean management agencies are moving toward an ecosystem approach

# Ecosystem-Based Management

An integrated approach to management that drives ecosystem-level decisions to protect resilience and ensure health of the system

- Informed by natural and social science
- Emphasizes protection of ecosystem structure, function, and key processes
- Accounts for interconnectedness within and between systems
- Open, flexible, adaptable
- Integrates ecological, social, economic, cultural, and institutional perspectives

# EBM and Ecosystem Services

EBM concerns the sustainable delivery of ecosystem services

EBM balances

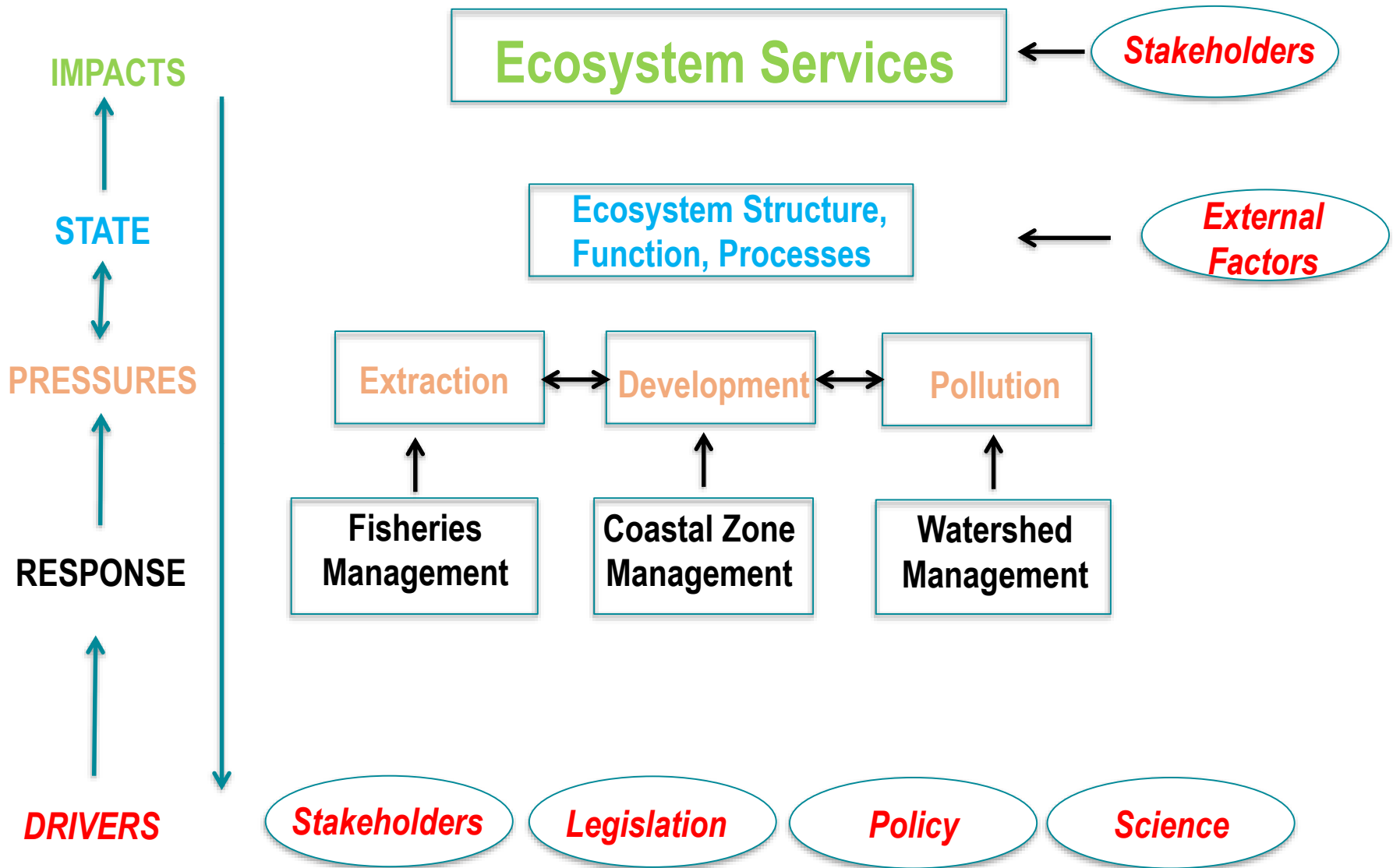
- Intrinsic value of ecosystems and their components
- Human need for ecosystem services
- Responsibility to ensure their sustainability

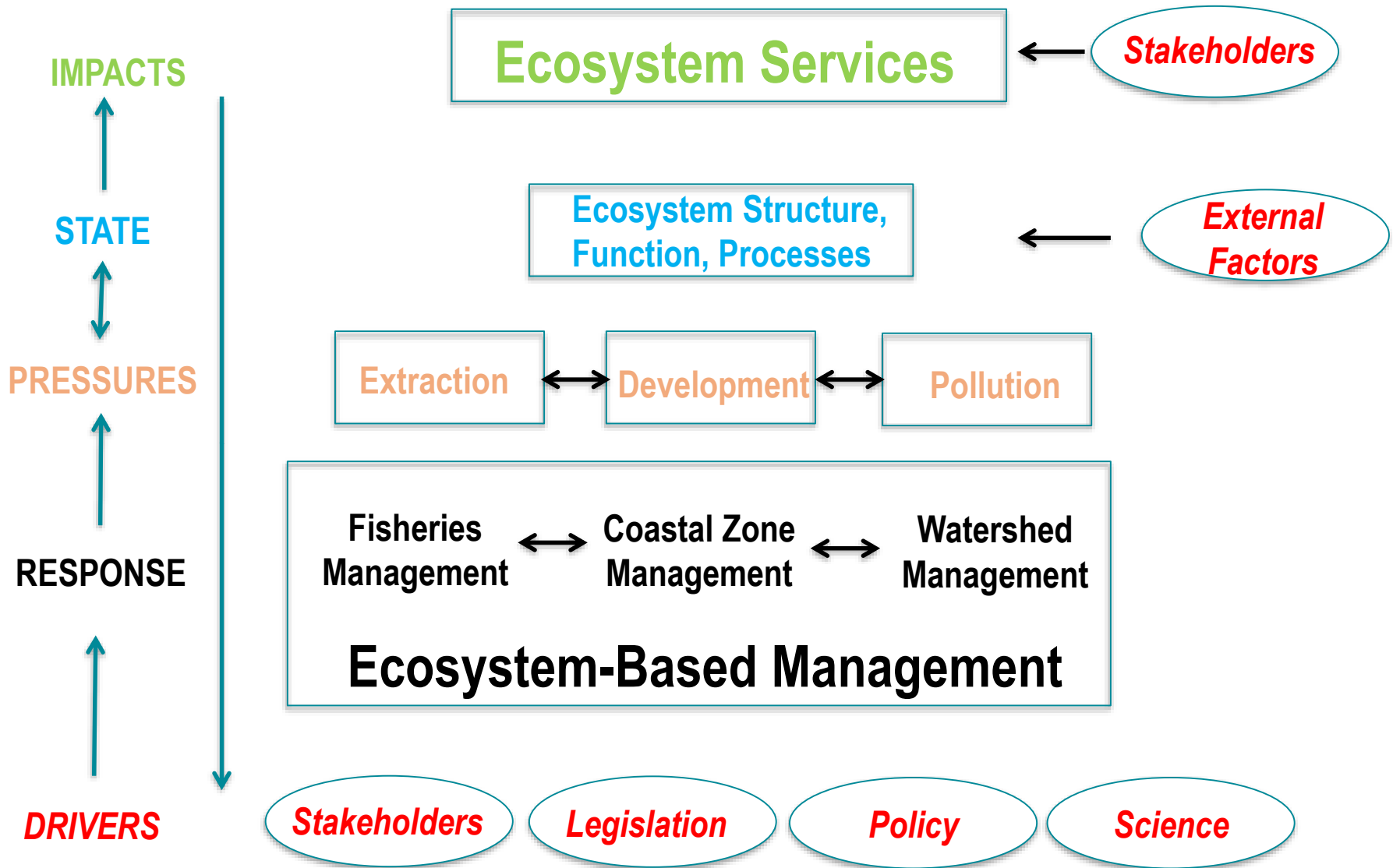
# EBM vs. Current Management

New approach to inter-agency consultation and inter-governmental interactions

Considers managing whole ecosystem rather than individual components or uses

- Includes humans as part of ecosystem
- Cross-sectoral, considers sectoral interactions
- Manages cumulative impacts
- Recognizes need for trade-offs





# CHALLENGES

Transition to ecosystem approaches that consider all ecosystem aspects

- Transition to operational management
- Incorporating science into decision making
- Moving from single sector to full ecosystem management



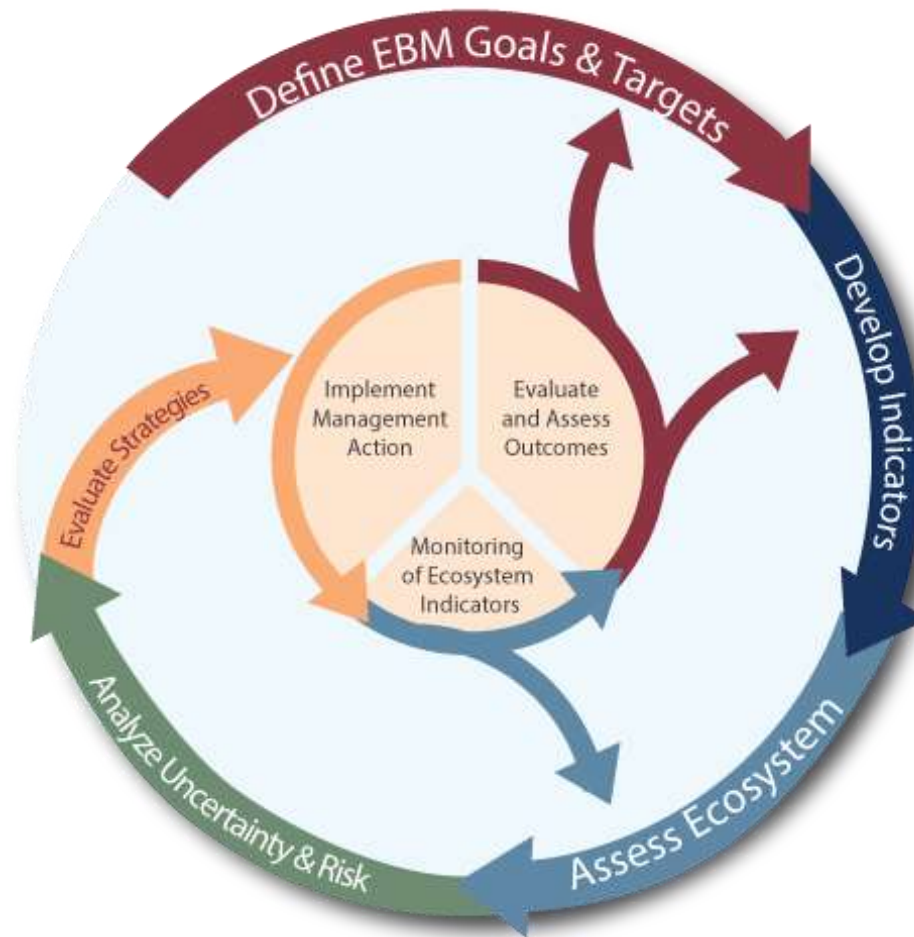
# Transition to Operational Management

- Focus on real risks, promote resilience
- Define & address objectives – community consensus
- Use existing vehicles (statutes, governances)
- Provide managers clear guidance, best practices, decision support tools
- Make informed decisions based on accepted concepts, scientific information
- Address impacts and trade-offs of decisions

# Transition to Operational Management: Federal Approach

- Define objectives
- Describe Federal action
- Identify and classify key services at location
- Assess impact of Federal action on services
- Integrate analyses into decision making

# Integrated Ecosystem Assessment



INTEGRATED ECOSYSTEM ASSESSMENT

# Incorporating Science into Decision Making

- Make science part of policy
- Build management from a foundation of best available science and information
- Create Eco-savvy management
- Develop management-savvy integrative scientists

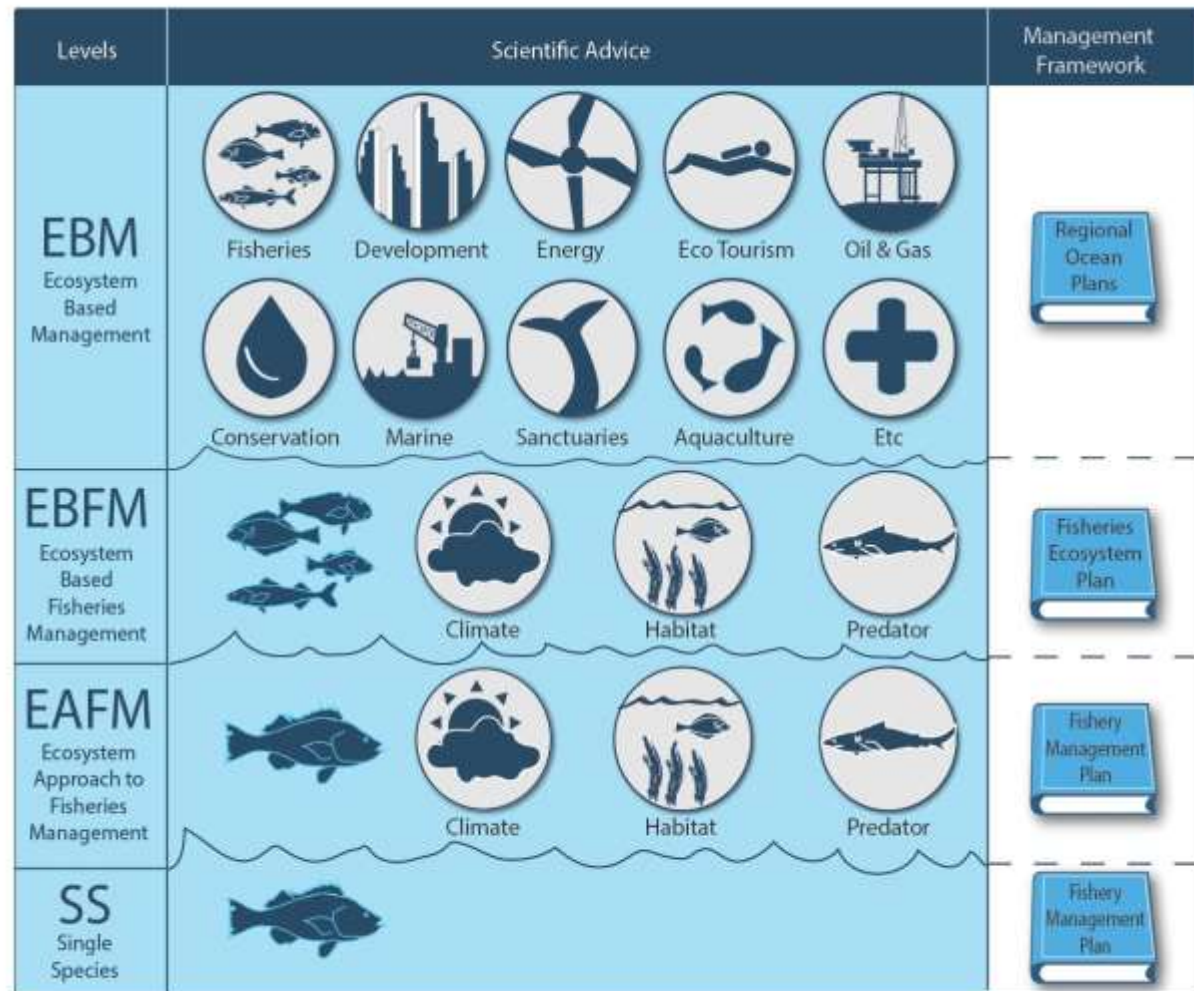
# Incorporate science into decision making: Federal Actions

- Leadership and collaboration
- Science framework & guidance
- Training
- Pathways and tools to inform decision-making based on sound science
- Pilot projects

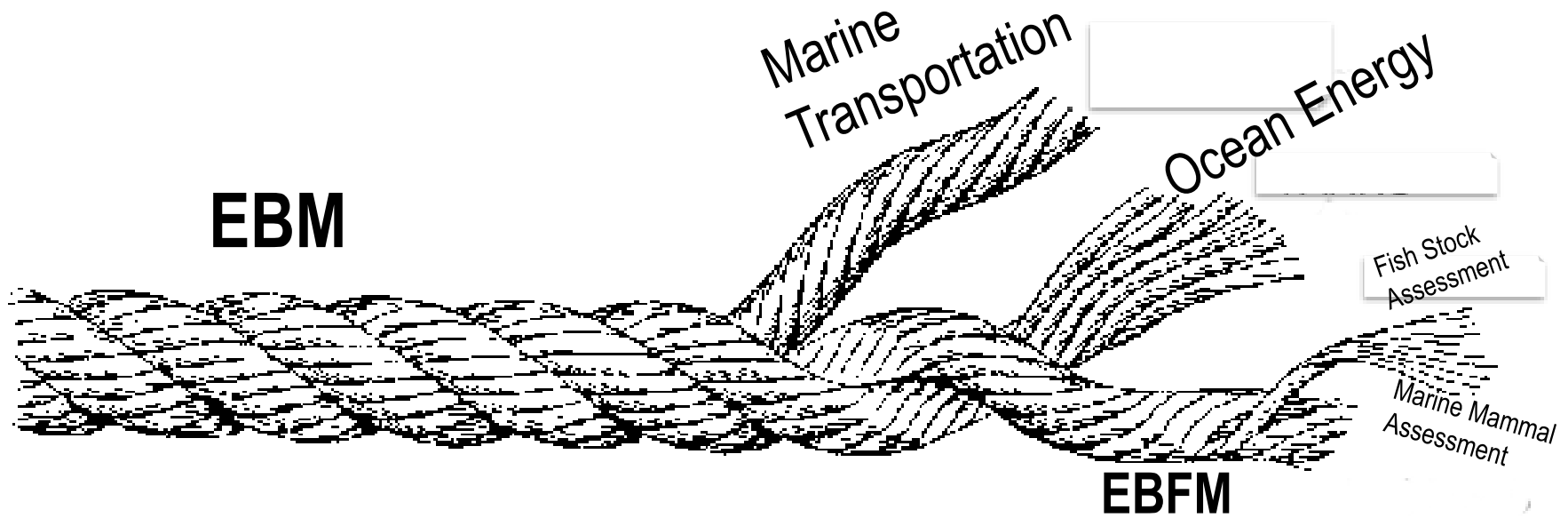
# Move from Single Sector to Full Ecosystem Management

- Manage multiple activities for common outcome(s)
- Activities managed in context of all human-ecosystem interactions
- Cross-sectoral approach to facilitate planning and coordinate sector policy implementation
- Account for change and make trade-off decisions

# Ecosystem-Based Fisheries Management (EBFM)



# EBM "ROPE"





# Looking Ahead

- EBM implementation among Federal agencies is long-term & requires sustained leadership & stakeholder support
- Increasing & sustaining awareness among Federal resource managers integral to successful EBM
- Ecosystem approach will enhance collaboration, leverage opportunities, and improve decision making
- Working with partners and stakeholders key to effective and efficient implementation