

NOAA
FISHERIES

Implementation of The Ecosystem Approach— What is the status of national science that supports policies implementing EA in the Arctic?

Jason S. Link, Phil Mundy

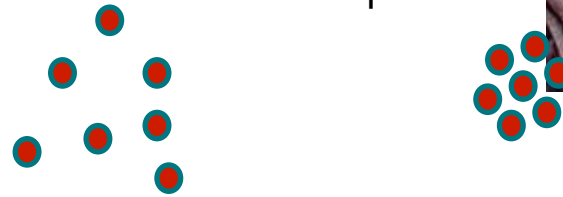
NOAA-National Marine Fisheries Service

Ecosystem Approach to Management and Integrated Ecosystem Assessments

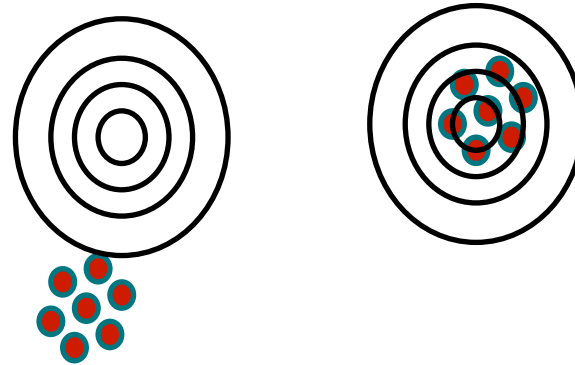
Why EBM/EBFM



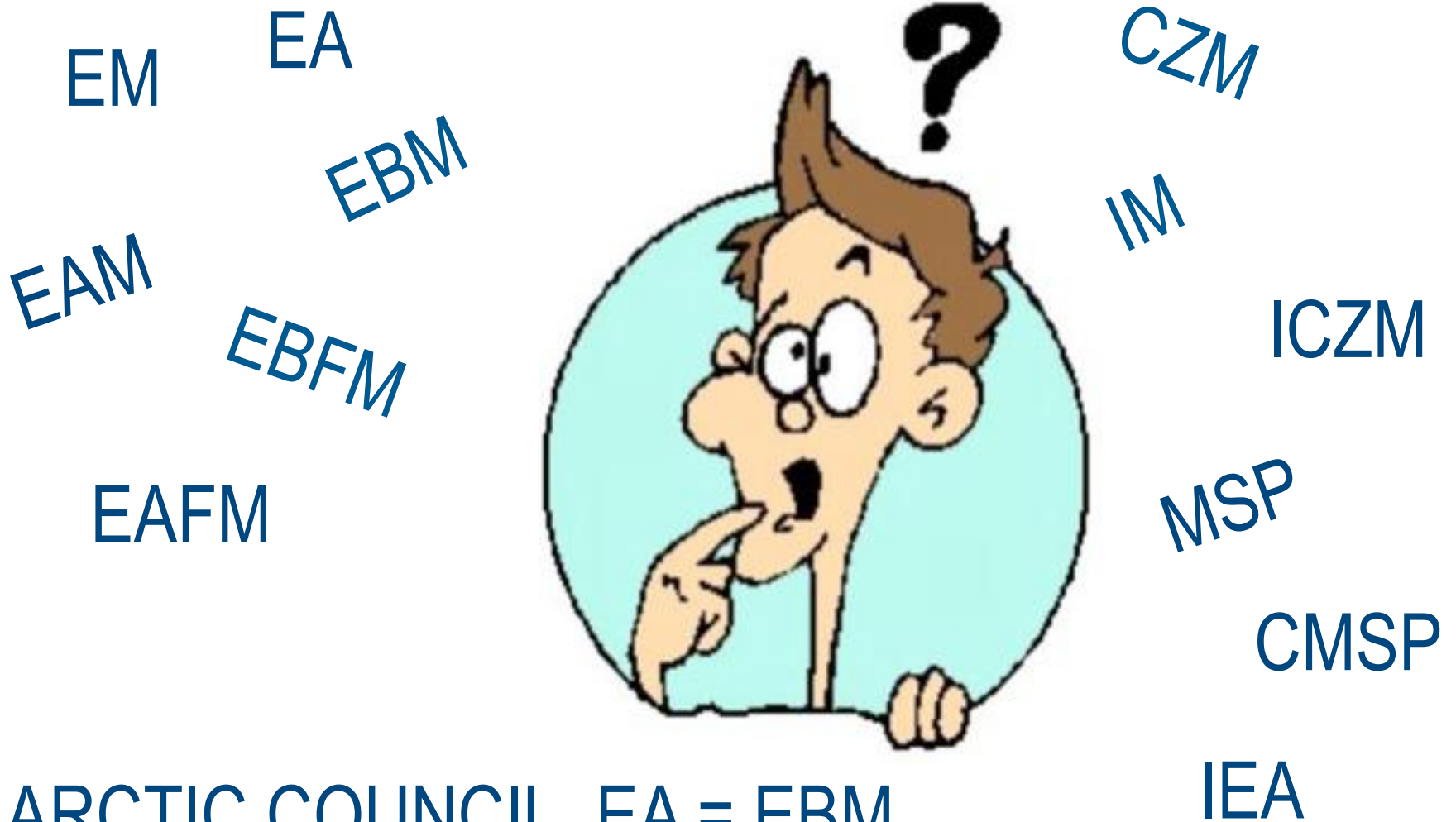
Precision important



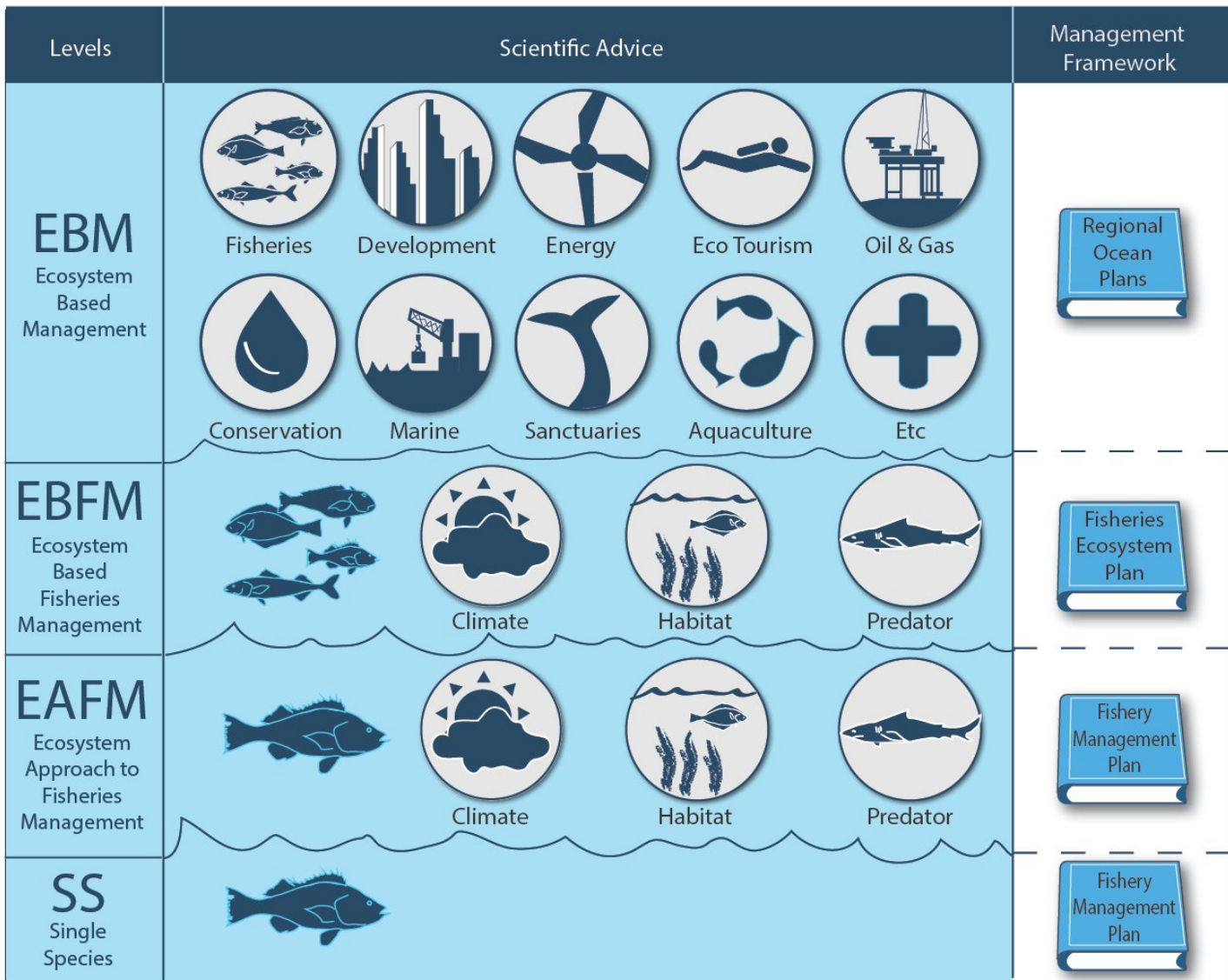
but Accuracy
even more so



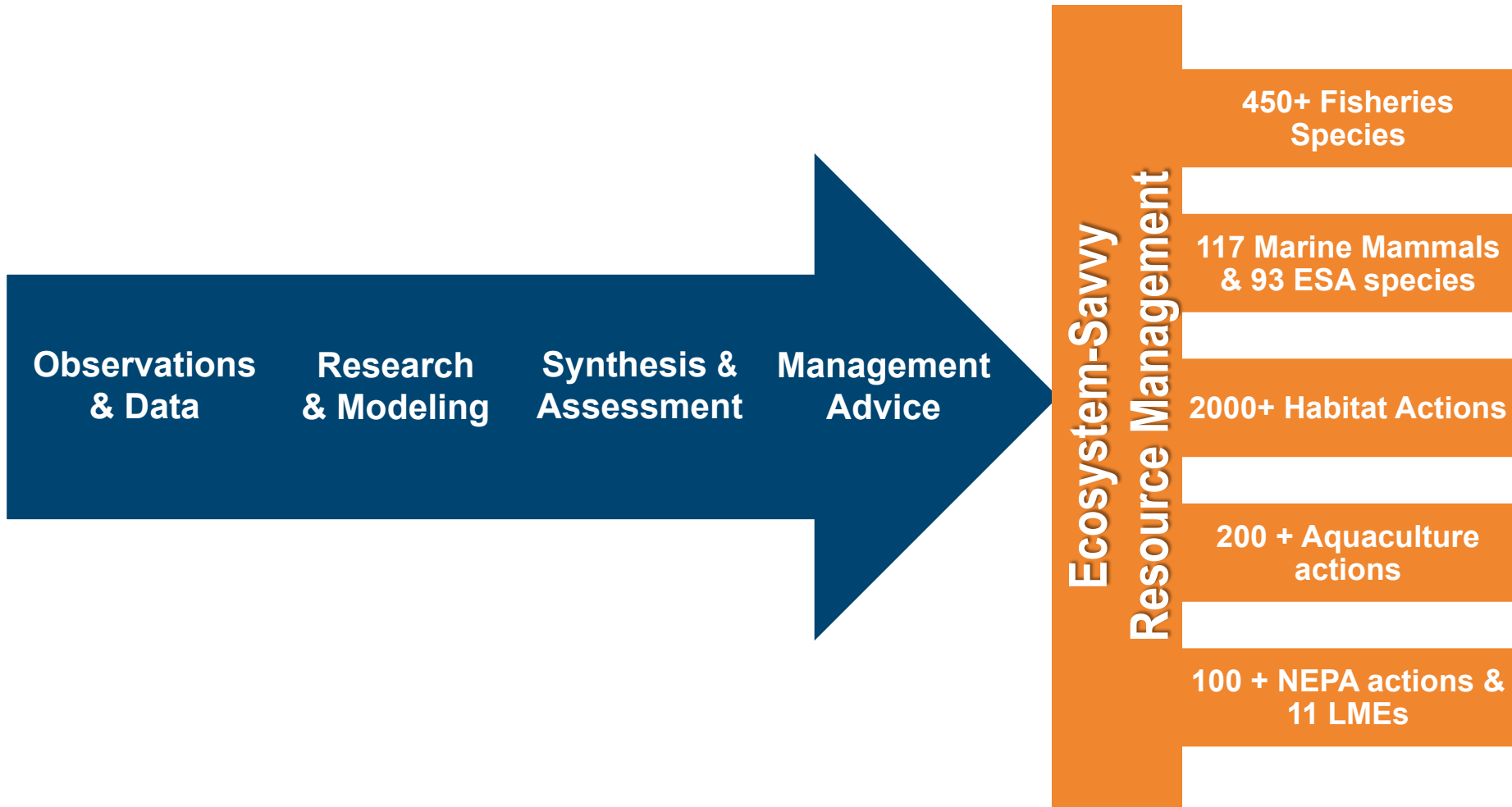
Ecosystem what?



ARCTIC COUNCIL, EA = EBM

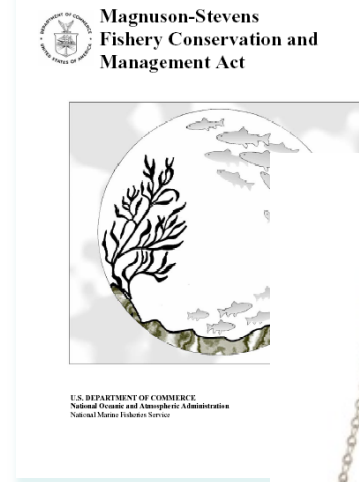


Multiple Mandates, Multiple Objectives, → Multiple Opportunities



Mandates for EBFM/EBM

- Nearly 100 mandates for EBM in US
- Numerous living marine resource mandates (~50) have many existing ecosystem requirements
- EBM is essential to address all mandates simultaneously



Mandates = Ecological Objectives

International EBM Context

- Stockholm Conference on Human Development (1972)
- Convention on International Trade in Endangered Species (1973)
- Bonn Convention on Migratory Species of Wild Animals (1979)
- UN Convention on the Law of the Sea (1982)
- World Commission on Environment and Development (1987)
- UN Convention on Environment and Development (1992)
 - Clearly established the Sustainable Development agenda
- Convention on Biological Diversity (1992)
- Jakarta Mandate (1995)
- FAO Code of Conduct for Responsible Fisheries (1995)
- Reykjavik Conference (2001)
- World Summit on Sustainable Development (2002)...
- Plus IPCC, IUCN, UNEP, UNDP, etc.





Arctic Policies wrt EAM

- Key elements for each member states; e.g.-
 - US Arctic FMP, US NOP
 - Canada's Ocean Policy
 - EU MSFD, GES, EcoQOs; etc.
- Arctic Council explicit adoption of EAM

Data, modeling and research myths for EBFM

Myth 1 –Marine ecosystem-based management lacks universal terminology making it difficult to implement

Myth 2 –There's no clear mandate for EBFM.

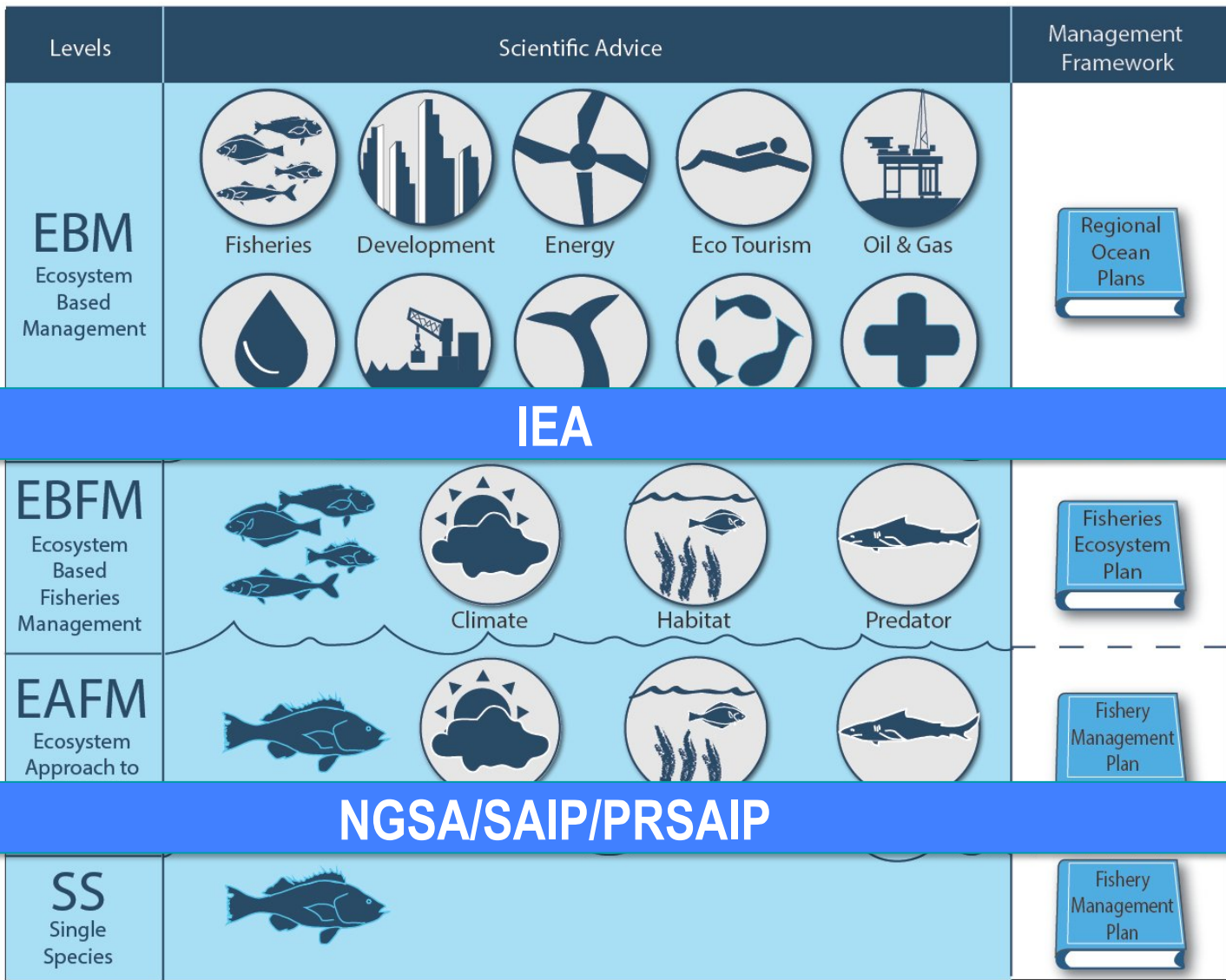
Myth 3 –EBFM requires extensive data and complicated models.

Myth 4 –EBFM results will always be conservative and restrictive.

Myth 5 –EBFM is a naïve attempt to describe a complex system.

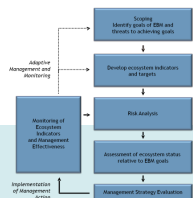
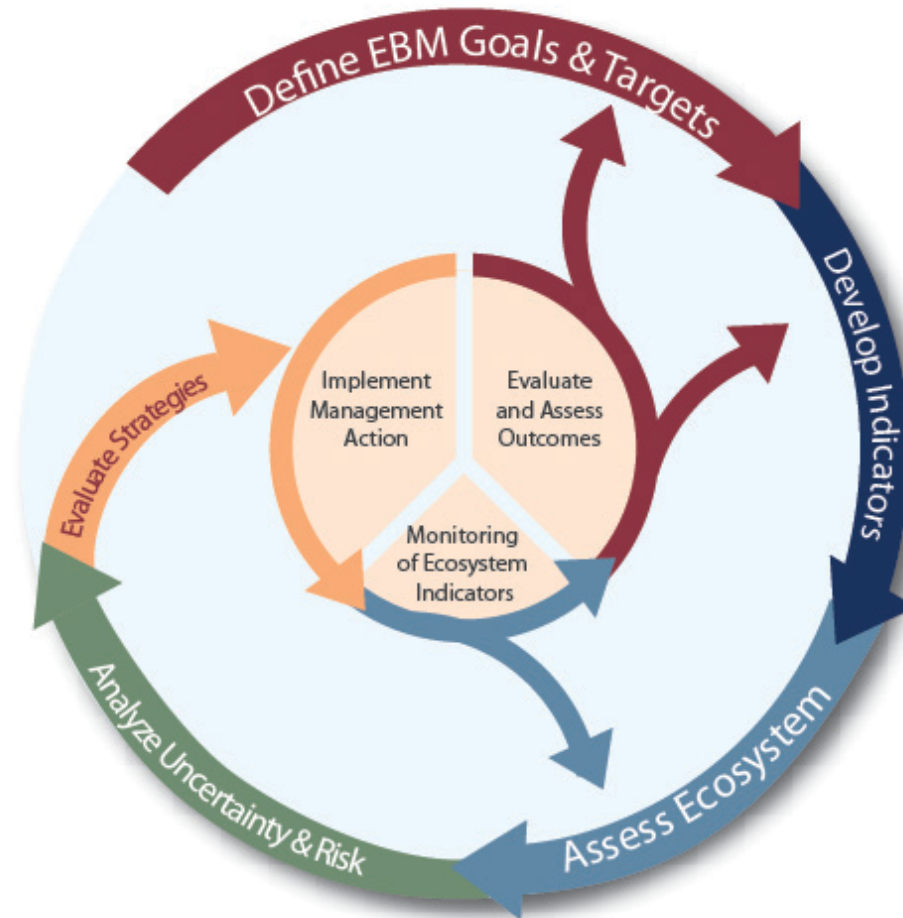
Myth 6 –There aren't enough resources to do EBFM.





NOAA's Integrated Ecosystem Assessment (IEA) Program

IEAs Provide an Analytical Framework to Implement EBM





Are there common Ecological Objectives

- At the highest levels of national policy, **YES**
 - e.g. prevent overfishing, protect biodiversity, reduce pollutants, achieve food security, etc.
 - High level policies (mandates), are unpacked to provide (quantitative) specific control rules
- How did we get them in one example, US EBFM?

Why an EBFM Policy Statement?

- Clarify, solidify, and document NMFS' commitment to EBFM
- Establish a framework of guiding principles to enhance and accelerate the implementation of EBFM within NMFS
- Key Issues:
- Relate EBFM to existing legal authorities and requirements for LMR management
- Identify elements of a systematic approach



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<http://www.nmfs.noaa.gov/op/pds/documents/01/01-120.pdf>

EBFM Guiding Principles

Outcome

6. Maintain Resilient Ecosystems

What is our advice?

5. Incorporate ecosystem considerations into management advice

What are our options?

4. Explore and address trade-offs within an ecosystem

What are our priorities?

3. Prioritize vulnerabilities and risks of ecosystems and their components

What is the foundational science we need?

2. Advance our understanding of ecosystem processes

What are our objectives?

1. Implement ecosystem-level planning



6 Guiding Principles, with Core Components are:

- 1. Implement ecosystem-level planning**
 - Engagement Strategy
 - Fishery Ecosystem Plans
- 2. Advance our understanding of ecosystem processes**
 - Conduct Science to Understand Ecosystems
 - Ecosystem Status Reports
- 3. Prioritize vulnerabilities and risks of ecosystems and their components**
 - Ecosystem-level Risk Assessment
 - Managed Species, Habitats & Communities Risk assessment
- 4. Explore and address trade-offs within an ecosystem**
 - Modeling Capacity
 - Management Strategy Evaluations
- 5. Incorporate ecosystem considerations into management advice**
 - Ecosystem-level Reference Points
 - Incorporate Ecosystem Considerations for Living Marine Resources
 - Systematic Advice for Other Management Considerations
- 6. Maintain resilient ecosystems**
 - Evaluate Resilience



6 Elements of the Ecosystem Approach (PAME EA-EG)

1. Identify the ecosystem
2. Describe the ecosystem
3. Set ecological objectives
4. Assess the ecosystem
5. Value the ecosystem
6. Manage human activities

The system of knowledge

The regulatory process



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Lessons Learned

- National consistency, regional flexibility both key
- Climate and human dimensions critical to consider
- Integration across multiple dimensions – programs, themes, and sectors – remains challenging
- Fora for national and international partnerships key
- Maintain “can-do” attitude to find solutions

<http://www.st.nmfs.noaa.gov/ecosystems/ebfm/index>

