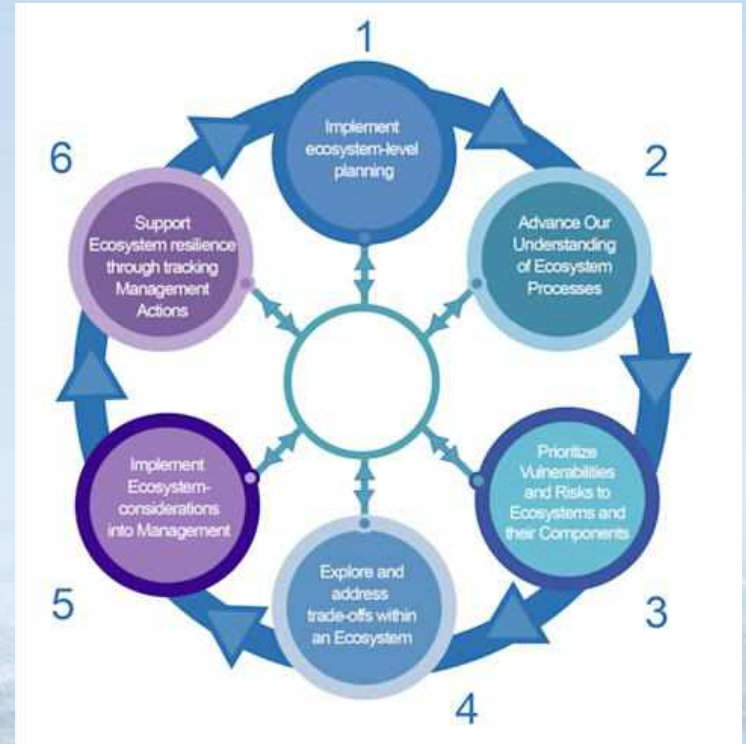


# NOAA Fisheries Ecosystem Based Fisheries Management Framework

Wendy Morrison  
HQ Office of Sustainable Fisheries  
IAATC Workshop  
February 26, 2025

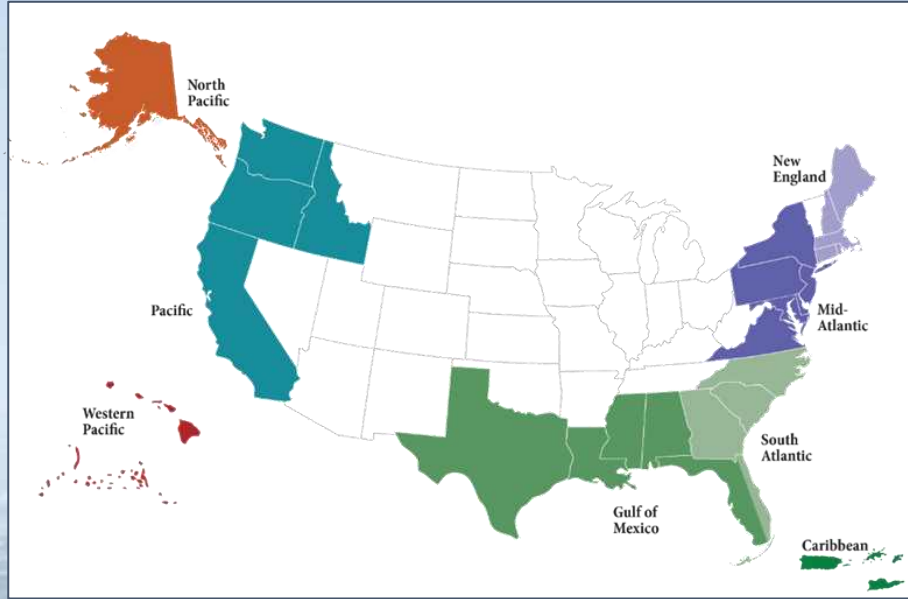


# Today's outline

- Introduction
- History/Source of Framework
- EBFM Framework
- Take-homes



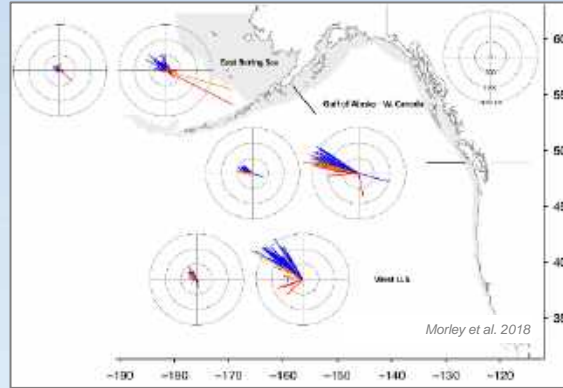
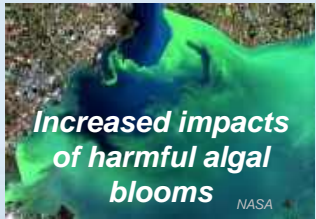
# U. S. Federal Fisheries Management



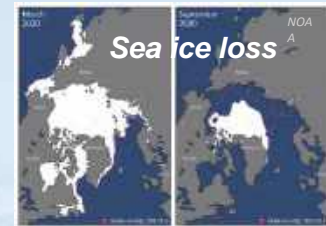
- Managing 460 stocks / stock complexes in 46 fishery management plans
- Main Legislation - Magnuson-Stevens Fishery Conservation and Management Act
- Manage with eight regional fishery management councils



# Ecosystem Based Fisheries Management (EBFM) is the umbrella for addressing many marine resource management challenges



**Shifts in stock distribution and productivity (fish, habitat, protected species)**



# The 6 EBFM Guidelines

Note the interconnected and interdependent nature of the guidelines



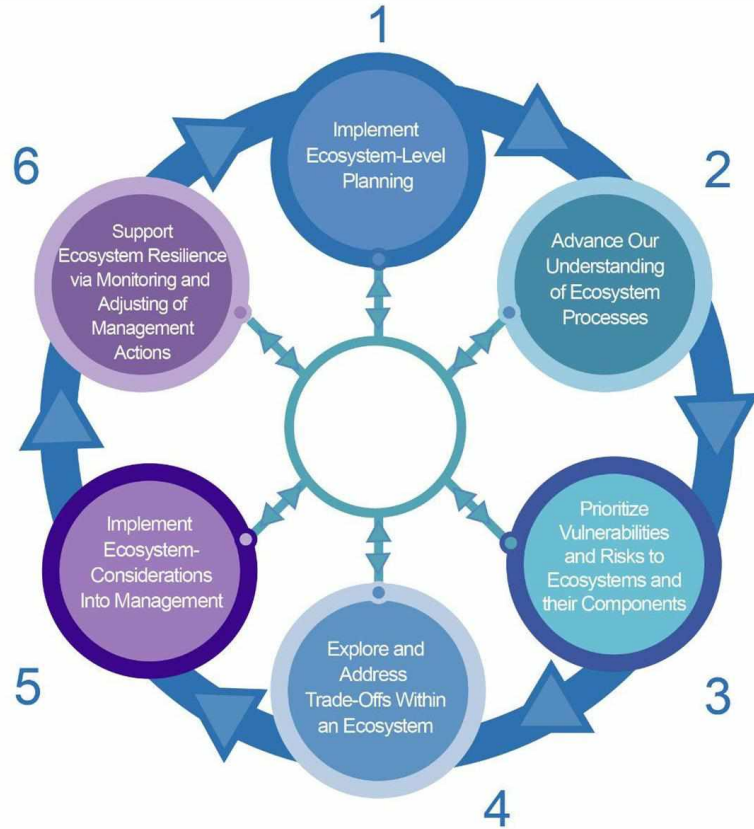
- 1 What are the goals and objectives?**  
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Support Ecosystem Resilience via Monitoring and Adjusting of Management Actions

<https://www.fisheries.noaa.gov/s3/2024-02/Revised-EBFM-Policy-FINAL-2.12.24-508-signed-JC.pdf>

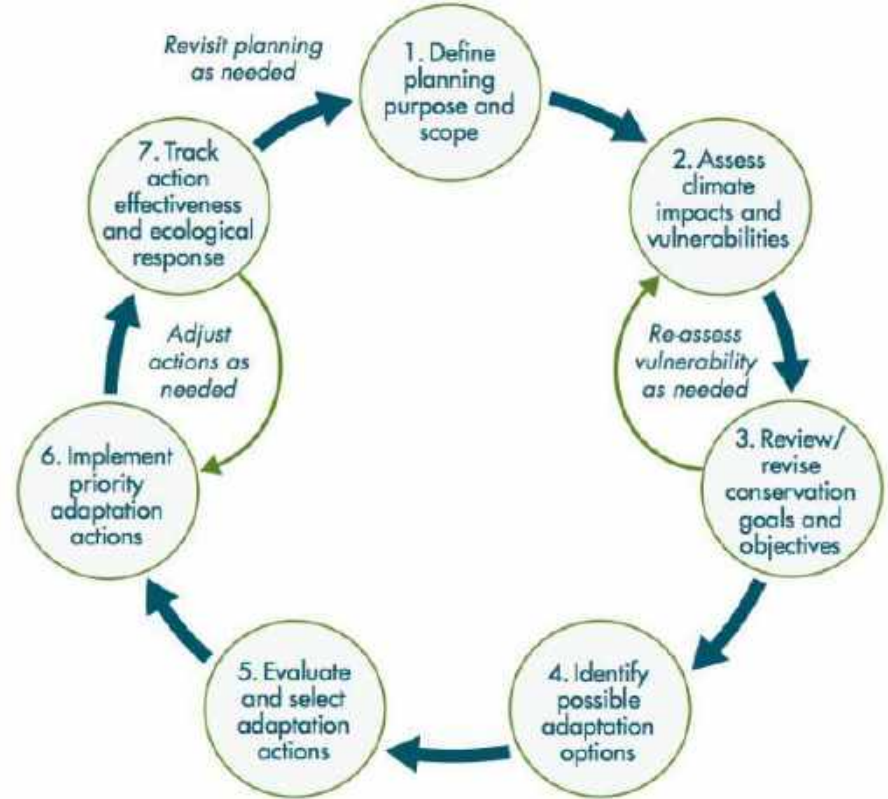
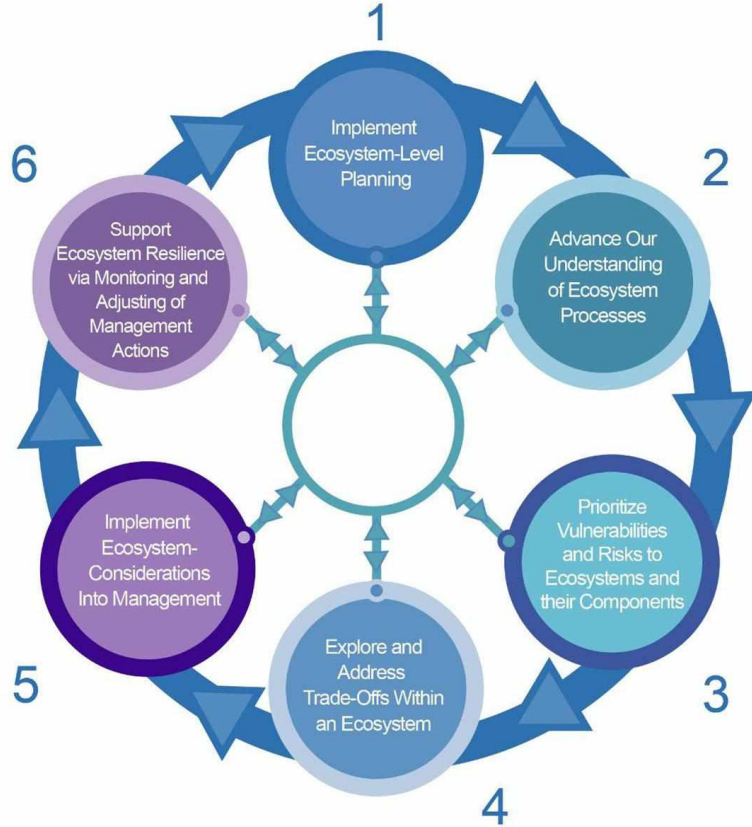
[https://www.fisheries.noaa.gov/s3/2024-10/01-120-01\\_revision\\_final.pdf](https://www.fisheries.noaa.gov/s3/2024-10/01-120-01_revision_final.pdf)



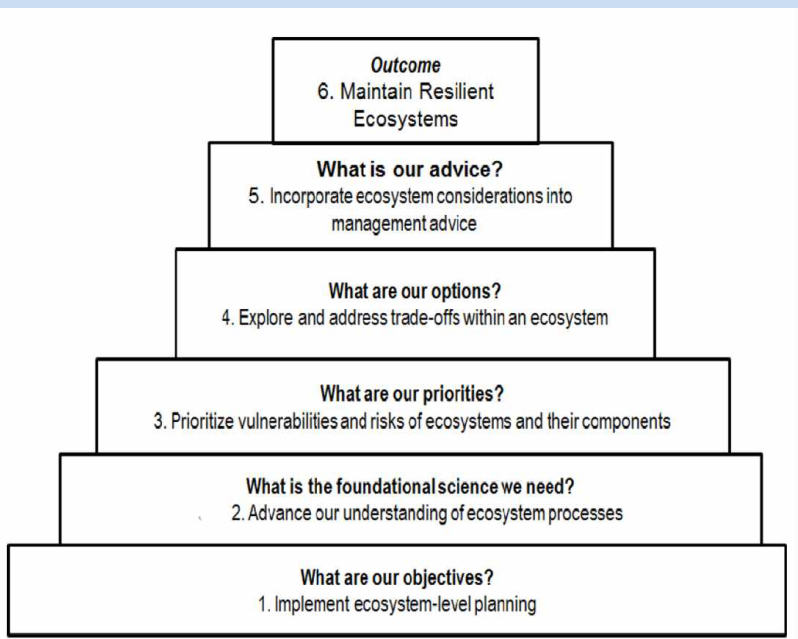
# Guidelines based loosely on Integrated Ecosystem Assessment Process



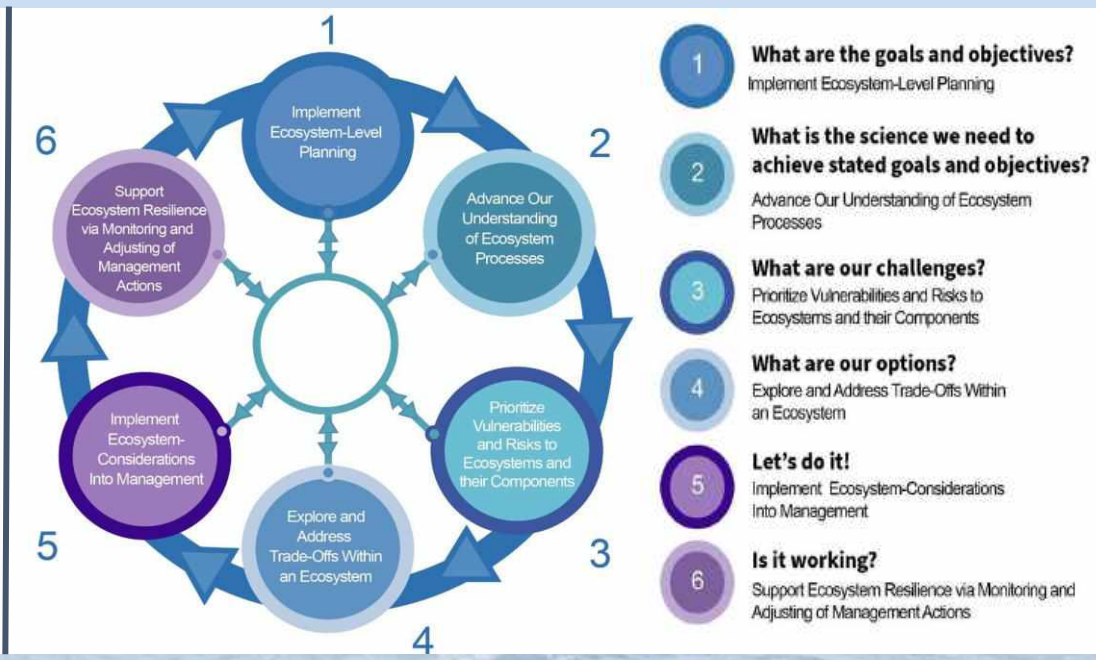
# Guidelines similar to Climate Smart Conservation Cycle



# 2024 Update to our Guidelines



Original 2016 Version

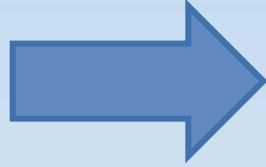


Updated 2024 Version





# Why Need a Framework - Wendy's Perspective (not NMFS)



1

## What are the goals and objectives?

Implement Ecosystem-Level Planning

2

## What is the science we need to achieve stated goals and objectives?

Advance Our Understanding of Ecosystem Processes

3

## What are our challenges?

Prioritize Vulnerabilities and Risks to Ecosystems and their Components

4

## What are our options?

Explore and Address Trade-Offs Within an Ecosystem

5

## Let's do it!

Implement Ecosystem-Considerations Into Management

6

## Is it working?

Support Ecosystem Resilience via Monitoring and Adjusting of Management Actions

- Support council ecosystem planning,
- Update EBFM goals and objectives when needed (new conditions)
- Improve coordination between scientists and managers

Important because without clear goals and objectives:

- Hard to prioritize
- Hard to track progress
- Difficult to ID trade-offs



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- Conduct multi-**disciplinary** science
- Provide regular ecosystem status reports
- Align science to management objectives

Important:

- Ensure there are “on-ramps” for science
- Ensure appropriate scale of results
  - Temporal
  - Spatial

# Why Need a Framework - Wendy's Perspective (not NMFS)

1 **What are the goals and objectives?**  
Implement Ecosystem-Level Planning

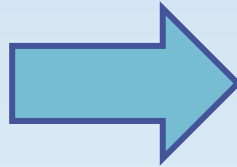
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Implement Ecosystem-Considerations Into Management

6 **Is it working?**  
Support Ecosystem Resilience via Monitoring and Adjusting of Management Actions



- Identify cumulative risks
- Plan for wild-cards
- Prioritize management options that mitigate risk, enhance resilience

Important to be prepared for changes. Many tools exist:

- Vulnerability assessments
- Risk assessments
- Models
- Scenario planning
- Expert opinion



# Why Need a Framework - Wendy's Perspective (not NMFS)

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- Analyze trade-offs, including uncertainty associated with changing environment
- Work to optimize benefits

Potential tools include:

- Models (quantitative [MSE], qualitative)
- Scenario planning
- \*Wind-tunneling (= does management improve future adaptability)



# Why Need a Framework - Wendy's Perspective (not NMFS)

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- Incorporate ecosystem considerations into management decisions
- Integrate advice - (fisheries, habitats, protected species, etc.)
- Monitor ecosystems / ecosystem level reference points

Important for management to be:

- Proactive - plan for changes
- Reactive - respond to changes
- Incorporate flexibility/adaptability where possible



# Why Need a Framework - Wendy's Perspective (not NMFS)

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- Evaluate ecosystem resilience
- Evaluate community well-being
- Track performance

Important to:

- Track what is working or not
- Revisit and revise management at appropriate intervals



# Take Homes - Having a Framework is Useful!

- Environmental changes could be overwhelming without a framework
- The process helps prioritize biggest challenges
- Framework ensures a solid link between science & management & helps to identify clear on-ramps for science and external input
- Framework creates loop needed for updating management through time



# Questions?

[Wendy.Morrison@noaa.gov](mailto:Wendy.Morrison@noaa.gov)

**Thank you to all who have made this  
work possible!**





# List of Management Tools (not comprehensive)

## Strategic Planning Tools

- Scenario planning
- Ecosystem models and maps
- Management strategy evaluation
- Ecosystem risk assessments
  - Species vulnerability assessments
  - Community vulnerability assessments
- Ecosystem status reports
- Ecosystem indicators



# List of Management Tools (not comprehensive)

## Tactical Adaptation Tools

- Protecting and restoring habitat
- Revise catch limits for new conditions
  - Environmental informed assessments
  - Improve risk management tools
- Revise allocations to match new conditions
- Change size limits/gear requirements when bycatch/interactions change
- Revise spatial and temporal management tools



# Example - East Coast Scenario Planning Process

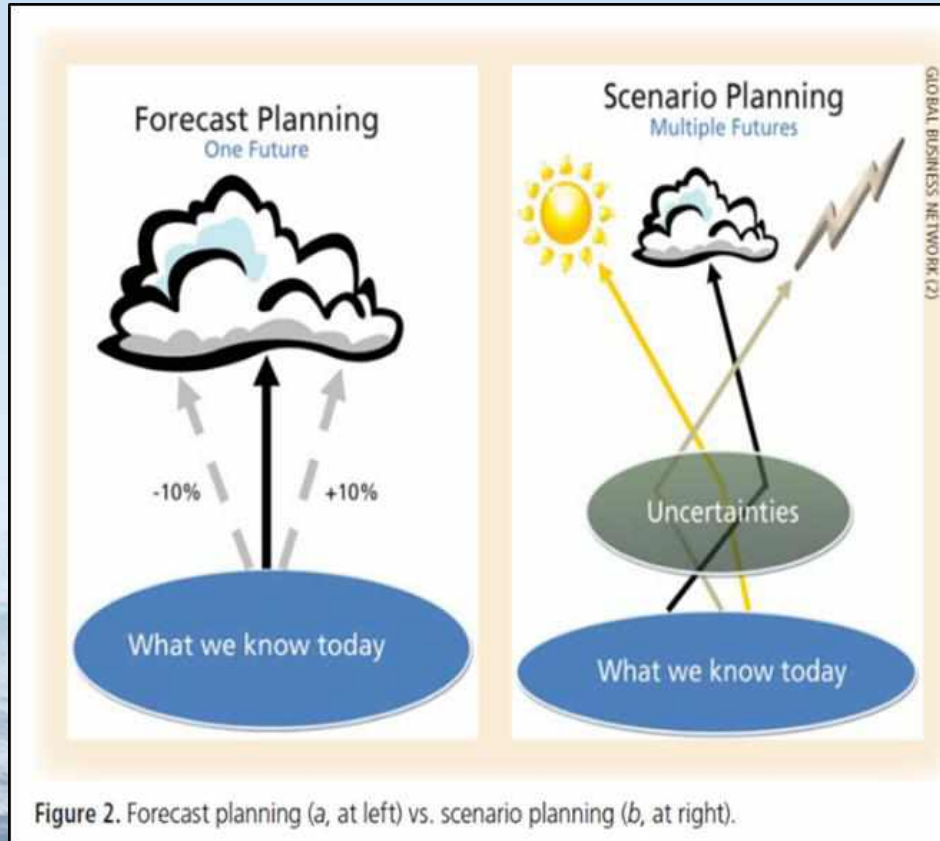


Figure 2. Forecast planning (a, at left) vs. scenario planning (b, at right).

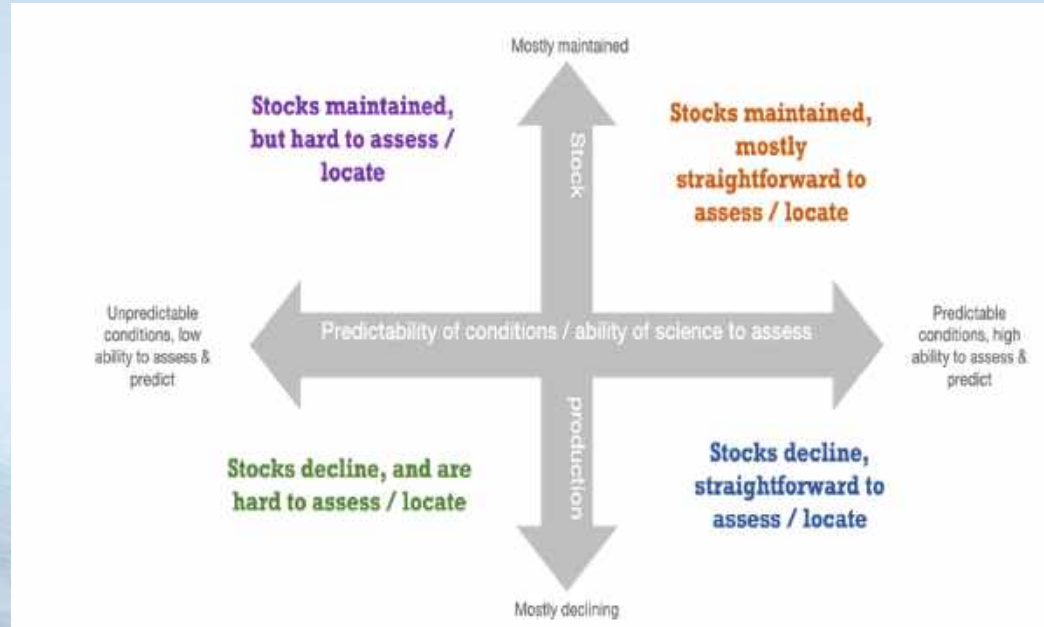
Source: Weeks et al. 2011, Park Science



# Example - East Coast Scenario Planning Process

## East Coast Scenario Planning Project

- Described 4 plausible futures with different challenges
- Identified potential management approaches = successful in any of the futures
- Created new group to implement the ideas generated



# Example - East Coast Scenario Planning Process

Case study	Guideline 1: <b>Ecosystem-level planning</b>	Guideline 2: <b>Advance understanding of ecosystem processes</b>	Guideline 3: <b>Prioritize vulnerabilities and risks</b>	Guideline 4: <b>Explore and address trade-offs</b>	Guideline 5: <b>Implement ecosystem considerations into management</b>	Guideline 6: <b>Support ecosystem resilience</b>
NOAA, ASMFC, and Fishery Mgmt. Councils on Atlantic Coast conduct climate change scenario planning	East Coast mgmt. organizations develop scenario planning framework, draft focal question, and outline objectives	Participant input on how climate change and other factors are affecting fisheries now, and what is anticipated over the next 20 years	Participants review and prioritize major regional drivers of physical, biological, social, and economic change, variability, and uncertainty	Workshop develops scenarios about potential futures and adaptability; managers devise possible actions and strategies for each scenario	Planning Summit develops mgmt. and governance actions; East Coast Climate Coordination Group (EC3G) formed to oversee priorities and implementation	Monitoring of outcomes; Formation of new management group (EC3G) will help to address emerging issues and build pathways of communication



Source: Harvey et al. In Progress