



**NOAA  
FISHERIES**

Northeast  
Fisheries  
Science Center

# Overview of Fishery Monitoring and Assessment in the Northeast

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# Northeast Fisheries Science Center

## Employment

About 500 people  
(FTEs+Contractors)

## Locations

5 states and the District of  
Columbia

## 2011 Spending

~\$70 million



# Vision

- Conduct ecosystem-based research and assessments of living marine resources, with a focus on the Northeast Shelf, to promote the recovery and long-term sustainability of these resources, and to generate social and economic opportunities and benefits from their use.

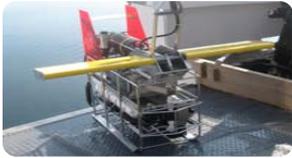
# Mission

- Understand and predict changes to marine ecosystems and their subsystems affecting living marine resources, fisheries, habitats, ecosystem condition, productivity, aquaculture, and the generation of net national benefits.
- Develop and provide the scientific foundation for management programs that has an ecosystem-based framework.
- Enhance society's capability to respond to changing ecosystem conditions and to manage risk by developing science-based decision tools.
- Engage and interact with individuals, partners, schools, communities, and industries to facilitate information flow, to assure coordination and cooperation, and to provide technical assistance in the management of living marine resources and their habitats.

# Four Research Themes



Monitor and assess fish, invertebrate and marine mammal populations, fisheries, marine ecosystems, and the associated natural and human communities that rely on these resources (Core Activities Here)



Understand and forecast effects of environmental change (including climate change) on marine ecosystems



Describe and assess the role of habitats to ensure healthy marine ecosystems and populations of fish, invertebrates, marine mammals, and sea turtles



Understand the anthropogenic and ecological interactions of aquaculture on the continental shelf to ensure a safe and healthy supply of food

# Core Activities

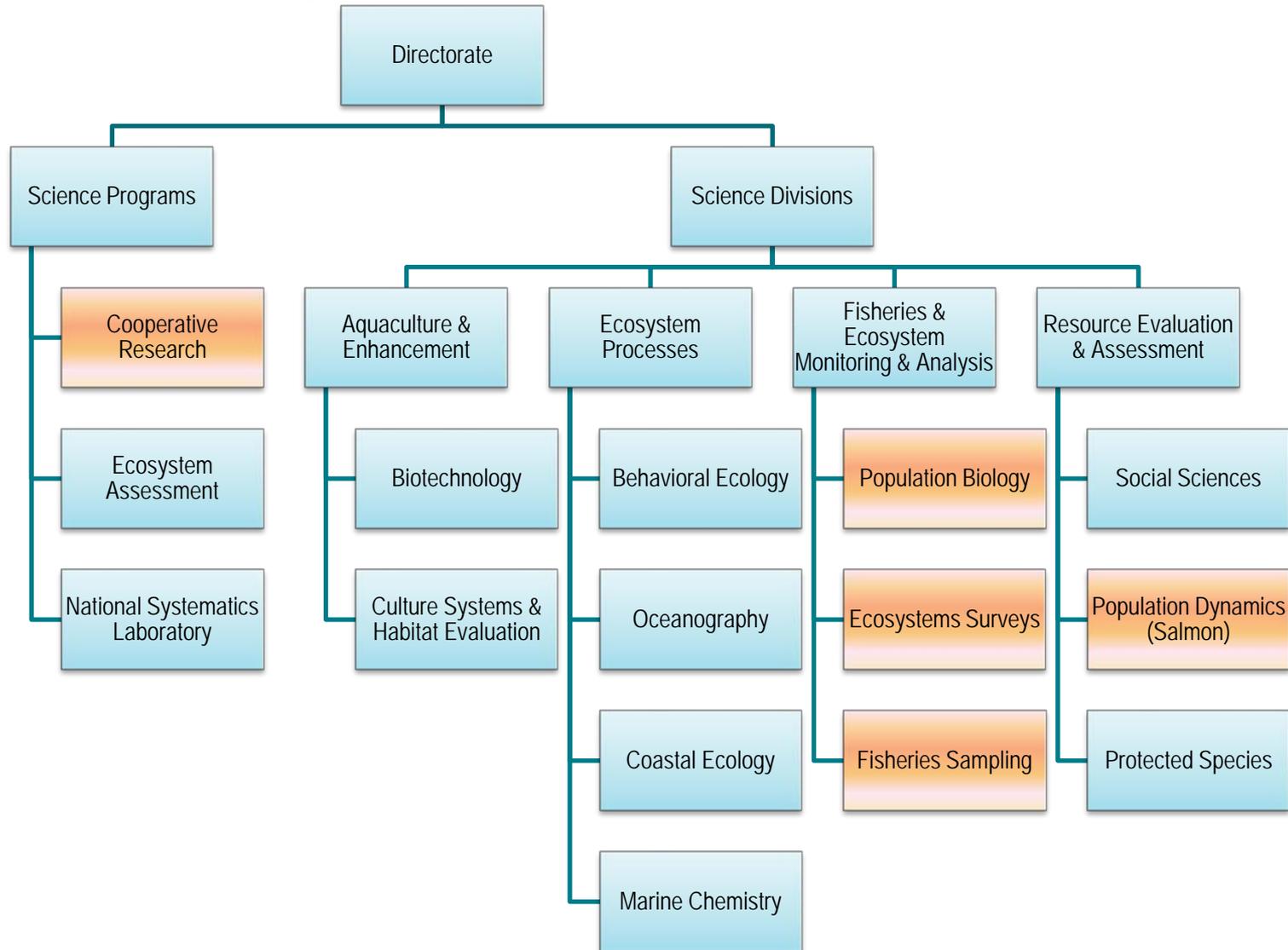


Maintain data collection capabilities for fish, invertebrates, marine mammals, sea turtles and human activities to support single-species, multispecies and ecosystem assessments



Provide data, analyses, and scientific support to NMFS, New England Fishery Management Council, Mid-Atlantic Fishery Management Council, Atlantic States Marine Fisheries Commission, and international treaty organizations

# Science Programs and Divisions



# The Challenges of Monitoring and Stock Assessments

Complexity of the assessment models is complemented by a complex process of acquiring, auditing, and preparing data for use in such models

Results of stock assessment models must ultimately be translated into catch limits and rebuilding strategies through the management process

Stakeholders must have confidence in management advice

# Fishery-Dependent Data Sources

Self-reported commercial landings

Biological samples

Dealer reports

At-sea observers for discards

Recreational landings and discards

State landings

Cooperative research

# Fishery-Independent Data Sources

Bottom trawl surveys

Sea scallop survey

Clam survey

Acoustic survey

Numerous state surveys

# Data Processing

Audit databases for quality control and assurance

Link commercial databases—a critical element!

Process biological samples

Estimate discards: observer-collected samples and landings census

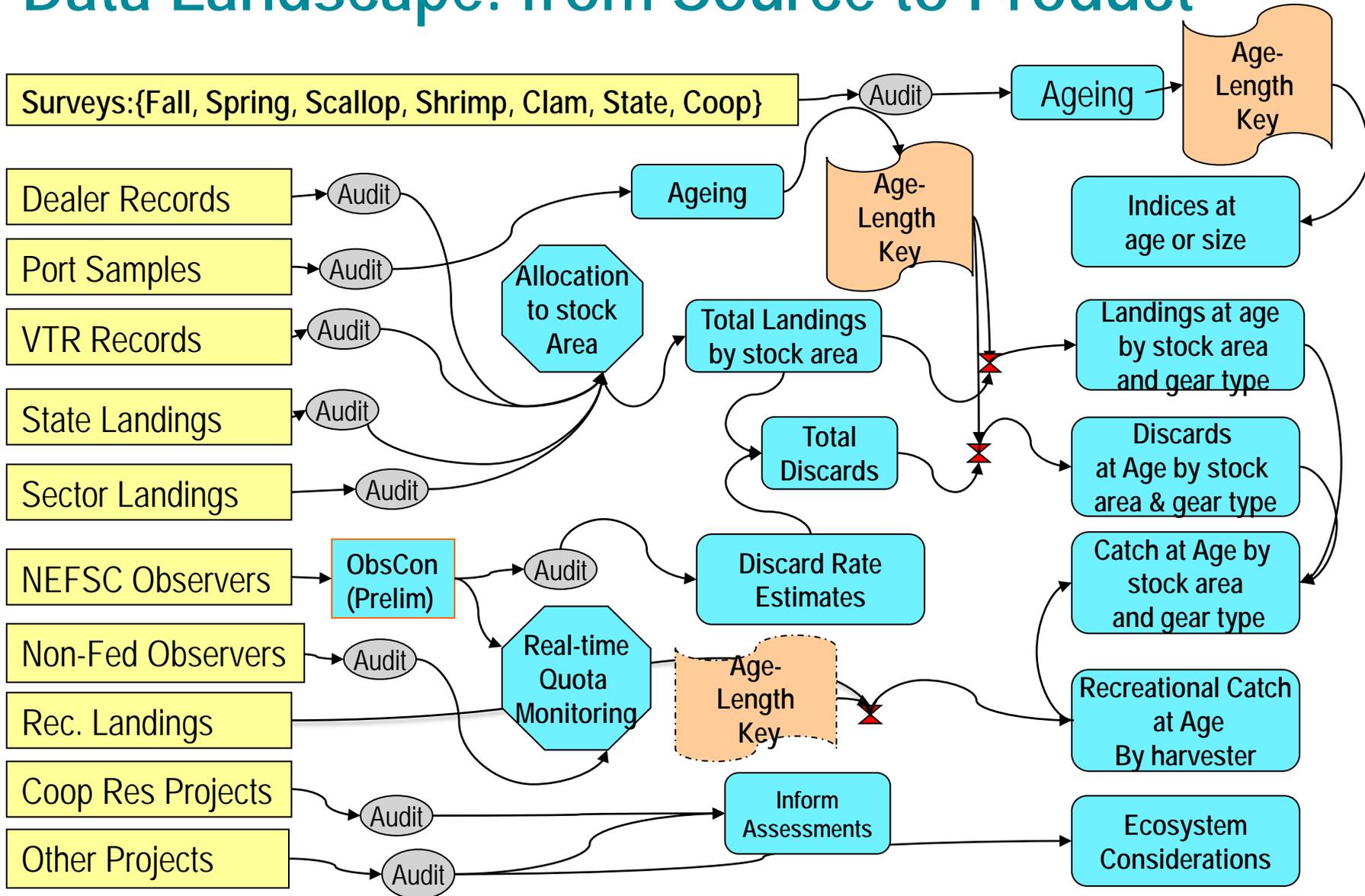
Estimate landings and discards-at-age for commercial catch

Estimate numbers-at-age for fishery independent data

Identify and distill relevant environmental data

Summarize relevant cooperative research projects

# Data Landscape: from Source to Product



# Assessment, Review and Management Process

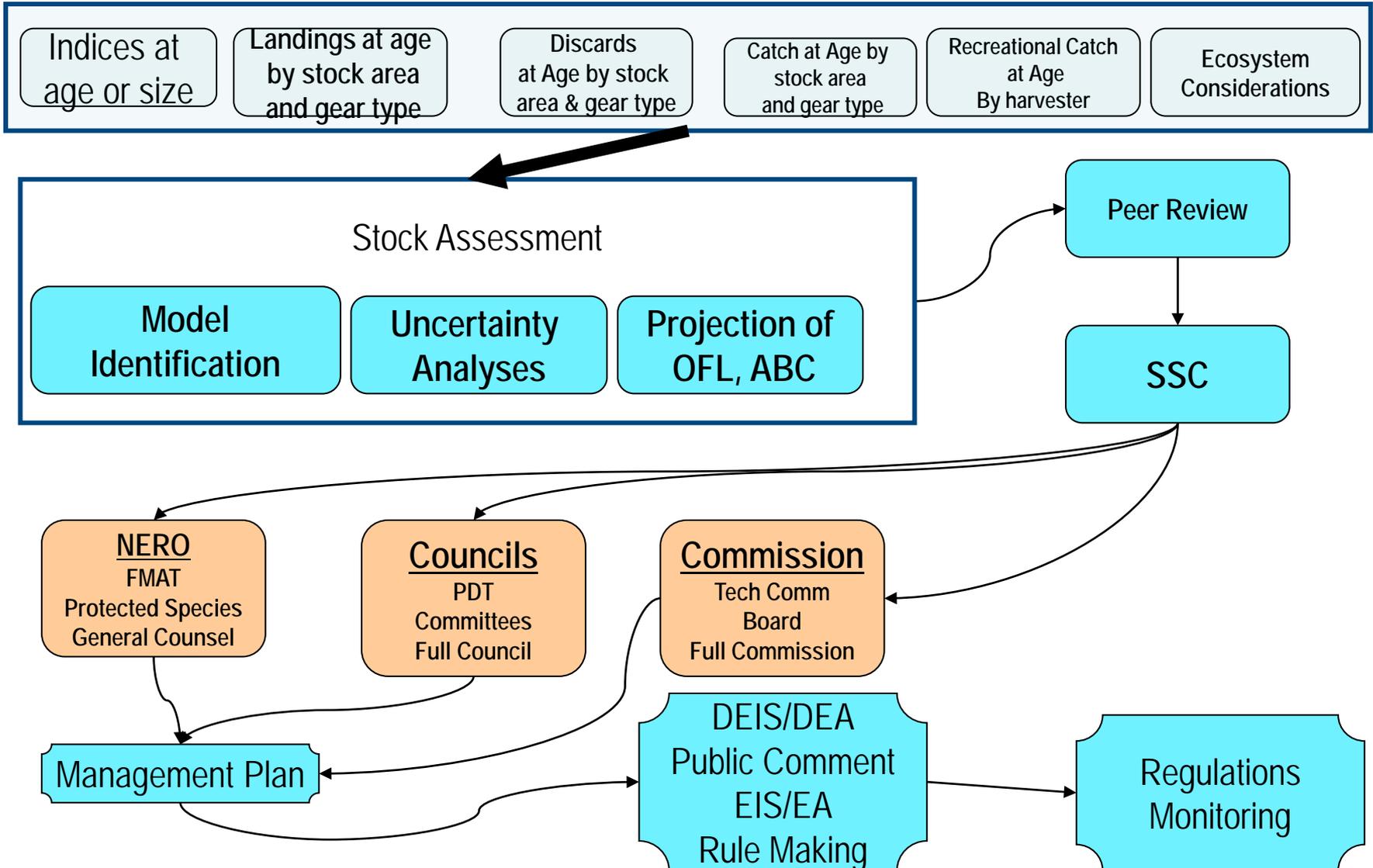
Stock Assessment

Peer Review

Council Process

Regulatory Process

# How science informs management



# Overview of This Week

Fishery Independent Data (Monday)

Fishery Dependent Data (Tuesday)

Integration of Data for Stock Assessments (Wednesday)

Review (Thursday)

Overarching Focus on:

- Strengths
- Challenges
- Suggestions for Improvement