



**NOAA  
FISHERIES**

Northeast  
Fisheries  
Science Center

# The Northeast Stock Assessment Process

## Relation to the 2013 Data Collection Program Review



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# What's Ahead

TOR review

Overview of assessment and the assessment process

How we are responding to the 2013 data review

How the 2013 review relates to this one

NEFSC strategic planning update

# Terms of Reference Focus Areas

Monday

TOR 1

Approaches to  
Modeling

Tuesday

TOR 2

Process  
Efficiency

TOR 3

Peer Review

Wednesday

TOR 4

Setting  
Priorities

Wednesday

TOR 5

Achievements

Thursday

TOR 6

Accounting for  
ecosystem &  
climate change

TOR 7

Engagement &  
Communication

TOR 8

Improvement

# NEFSC Assessments and the Magnuson Act

## Requirement

### National Standard 1

*Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the United States fishing industry.*

## Assessment Tasking

Establish overfishing thresholds

Define optimum yield

Provide projections for subsequent years

Consider uncertainty

## Assessment Product

Stock status determination

Determine catch that will maintain OY, or end overfishing/support rebuilding if needed

Estimate future stock size, demographics, and growth under various harvest scenarios

Document in assessment report

# NEFSC Assessments and the Magnuson Act

Requirement

## National Standard 2

*Conservation and management measures shall be based upon the best scientific information available*

Assessment  
Tasking

Use best  
scientific  
information  
available

Ensure peer  
review

Involve SSCs

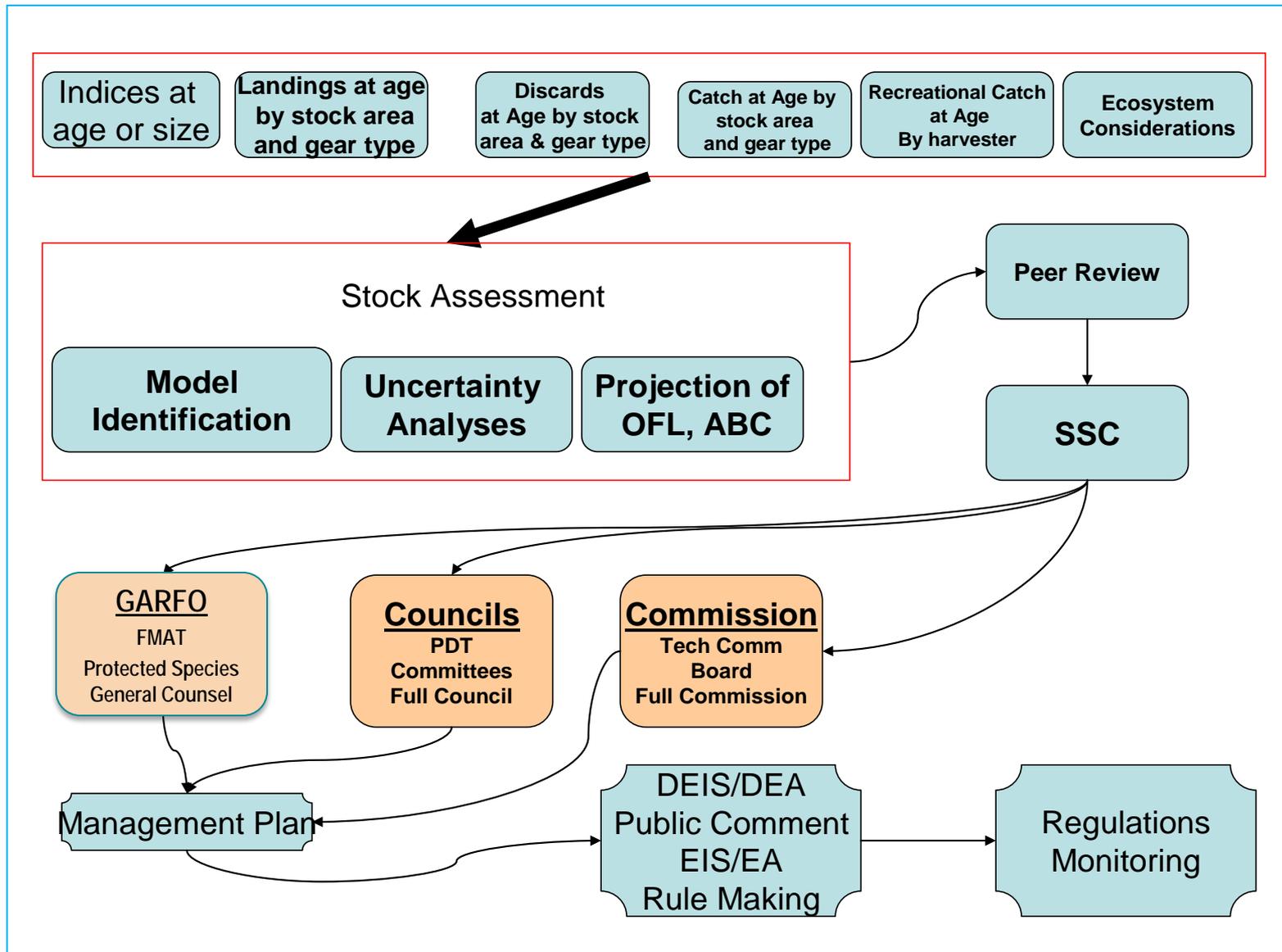
Assessment  
standards

Relevant,  
Transparent, Timely,  
Verified, Validated

Reviewer selection  
criteria, consistent  
with the Information  
Quality Act

Assist in peer  
review, may serve  
as reviewer, provide  
recommendations to  
council

# Benchmark Assessment Flowchart



# Sample Benchmark Assessment Timeline

## Lead Players

NRCC

Councils & Commission

Stakeholders

NEFSC

GARFO

SAW/SARC

## Action

- Management concern identified
- Issues prioritized & assessment scheduled
- Industry meeting
- Data meeting
- Model meeting
- Peer review meeting
- Catch recommendations
- Develop management measures
- Develop regulations
- Implementation effective

# Sample Benchmark Assessment Timeline

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# Types of Northeast Fishery Stock Assessments

## Updates

- Provide updated survey/catch data & key indices
- Assessment model and projections of overfishing limit

## Operational Assessments

- Use existing models with newly accrued data

## Benchmark

- All assessment elements are evaluated
- New models, methods, data tested
- External peer review

## Research Track

- Develop models and methods responsive to changes in data, methods, or hypotheses

Least Complex

Transboundary  
Resource  
Assessment  
Committee

- Joint assessment with Canada for transboundary stocks

Most Complex

# Challenge: NE assessment model types are numerous and varied

61 stocks

63 models

24 age-based

7 Index

9 length-based

1 delay difference

2 aggregate biomass

15 index & catch

5 No assessment

# Challenges for Fishery Monitoring and Stock Assessments

Assessment models are varied and complex

Acquiring, auditing, and preparing data for use is complex

Assessment must be relevant and useful to managers

People must have confidence in the results

# Data Collection Programs Reviewed in 2013



**Ecosystem Survey:** random-stratified standardized fishery independent data collection



**NE Fishery Observer Program:** Fishery-dependent catch monitoring and data collection



**Age Growth and Reproduction:** Biological sample processing, analysis, and archiving



**Port sampling:** Biological sampling and data collection for landed catch



**Cooperative Research:** industry-based resource data collection and technology development

# Progress on 2013 Data Review Recommendations on Fishery-Dependent Data Programs

2014 TORs  
2,3,5

## Recommendation

- Gain efficiencies in fishery-based monitoring and sampling

## Action: Working Group Tasking

- Probability-based approach to commercial sampling
- Unique identifier to link vessel trip and catch data
- Applying Management Strategy Evaluation

## Action: Expand Observer Coverage

- Implement SBRM
- Work with councils on productive deployments
- Expand use of industry-funded fishery monitoring

## Effect on Stock Assessments

- Data available faster
- Less analysis required to correct for data errors and biases
- Better evaluation of sampling strategies when change is required or proposed

# Progress on 2013 Data Review Recommendations on Fishery-Independent Data Programs

2014 TORs 2,4,5

## Recommendation

- Better integrate state-gathered survey data
- Make better use of pelagic and benthic survey methods
- Improve utility of data gathered through cooperative research

## Actions

- Add a TOR on state surveys to each benchmark assessment
- Review & evaluate pelagic and benthic survey methods
- Project plan for cooperative research data reporting
- Expand industry-based surveys to cover more areas, gears, and species

## Effect on Stock Assessments

- More data available
- More refined assessment for a particular species possible
- Wider area and more species covered

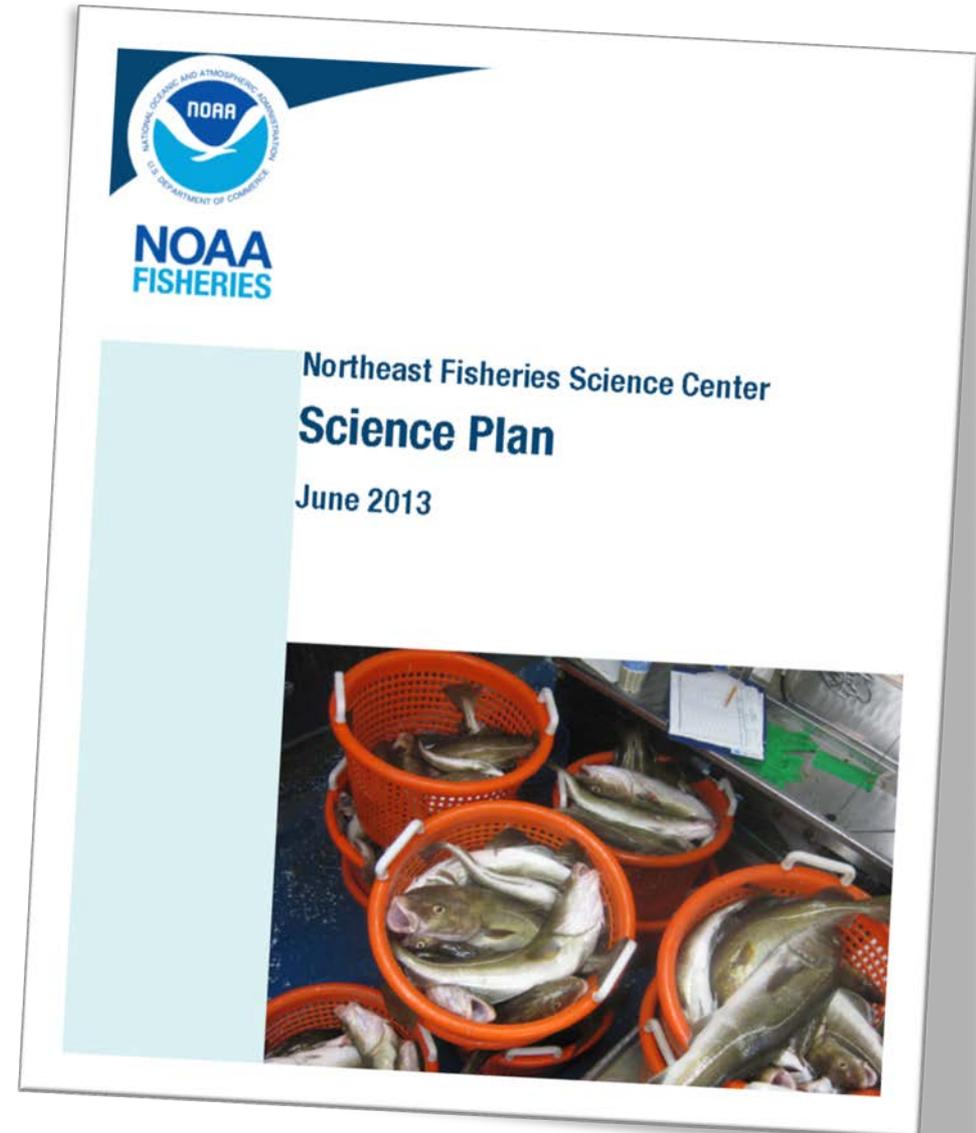
# Progress on 2013 Data Review Recommendations on Fishery-Independent Data Programs

Recommendation	Actions	2014 TOR 8 Effect on Stock Assessments
<ul style="list-style-type: none"><li>Free more staff to focus on improving both assessments and the scientific foundation for fishery management</li></ul>	<ul style="list-style-type: none"><li>Workload analysis</li><li>Add issue as TOR to 2014 Program Review</li></ul>	<ul style="list-style-type: none"><li>More confidence in results</li><li>Better chance of resolving recurring issues like retrospective patterns</li></ul>

# Strategic Planning Update

Realignment of science program is expected

Draft plan in 2014,  
effective in 2016



# Science Programs and Divisions

