Climate and Ecosystem Steering Committee Report

Michelle Bachman, NEFMC Staff

NEFMC Meeting
September 24, 2025
Gloucester, MA

New England Fishery Management Council

Reminder: CESC Goal and Objectives

- **Goal:** Provide overarching guidance and support for design and implementation of climate-ready management approaches across the Council's fishery management plans.
  - **Objective 1:** Advise the Council on priorities, processes, and management approaches to address climate change, environmental factors, and ecosystem considerations across fishery management plans;
  - **Objective 2:** Develop recommendations for management approaches that consider tradeoffs related to scientific uncertainty, socioeconomic effects, and ecosystem function and productivity; and
  - **Objective 3:** Evaluate and develop recommendations for governance structures to support climate-resilient and ecosystem-based management approaches.

Steering Committee Membership

Denotes engagement with:
C = Communications Subcommittee
PM = Process Mapping Subcommittee
RP = Risk Policy Working Group
ECCG = East Coast Coordination Group
SSC = Scientific and Statistical Committee

- John Pappalardo* (Chair)
- Geoff Smith* (Vice Chair)
- Katie Almeida, C
- Dr. Joe Caracappa, C, ECCG
- Dr. Jeremy Collie
- Tony DiLernia, C
- Travis Ford, PM, ECCG
- Dr. Lisa Kerr, PM, RP, SSC
- Dr. Gareth Lawson, PM, SSC
- Dr. Kathy Mills, PM
- Dr. Jocelyn Runnebaum, PM
- Dr. Michelle Staudinger, PM, SSC
- Megan Ware*, RP
- Peter Whelan*, PM

- Michelle Bachman – Staff coordinator for CESC, C, PM, ECCG
- Andy Applegate – Ecosystem-Based Management, IRA 3.1, C, RP
- Jonathon Peros – Staff lead for Risk Policy and for the Holistic Strategic Plan contract, RP

2025 Meetings in Review

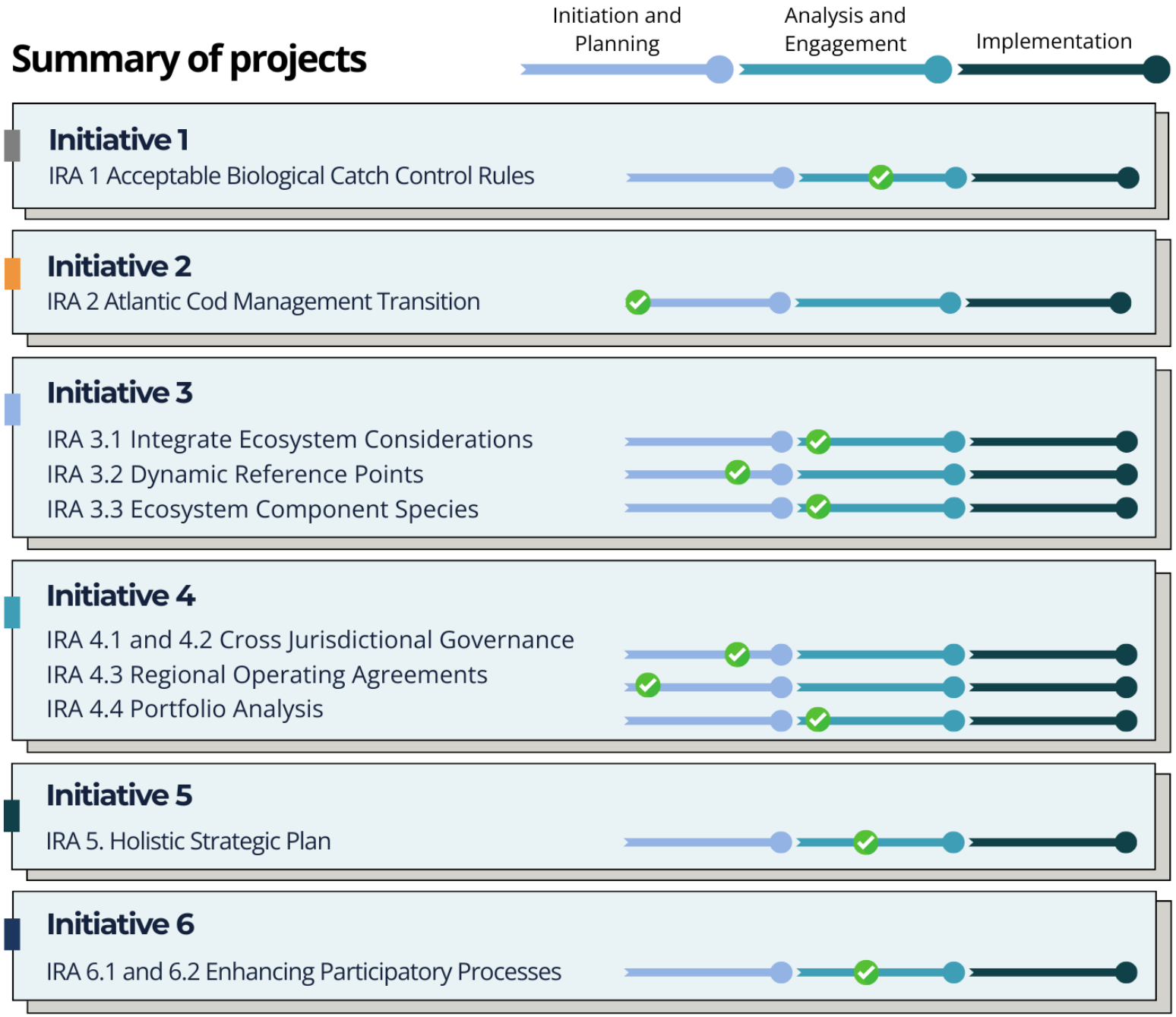
- Met in February, May (hybrid), and September
- Developed SOPPs and established Process Mapping & Communications Subcommittees
- Identified roles
  - Provide support Risk Policy implementation
  - Serve as a clearinghouse for input on State of the Ecosystem report
  - Explore utility of Changing Ecosystems and Fisheries Initiative Products
  - Provide specific input on Inflation Reduction Act-funded projects on request

September 2 Steering Committee webinar

- Received updates on **IRA-funded projects** and provide feedback
- Discussed recent **Process Mapping and Communications sub-committee** activities and provide direction for future work
- Received updates on NOAA science products (**State of the Ecosystem Report**, **Short-form Ecosystem and Socioeconomic Profiles**, **CEFI forecasts**) and provided feedback, discussed opportunities for use in management

https://www.nefmc.org/calendar/sep-2-2025-climate-and-ecosystem-steering-committee-webinar

Summary of projects



As of September 2025:

- Major analytical contracts awarded for (1) ABC Control Rule / Risk Policy, (3.3) Ecosystem Component Species, (4.4) Portfolio Analysis, (5) Holistic Strategic Plan
- Oversight teams for most projects (staff, contractors, CESC members, others)
- Planning 2026 workshops
- As needed, staff / contractors will seek feedback from the Council, Climate and Ecosystem Steering Committee, and other groups

Workshops – 2026 and 2027

- Actively planning for first half of 2026
  - Workshop with Council to review draft Holistic Strategic Plan (IRA 5)
  - Staff-to-staff joint East Coast governance workshops on advisory body use and joint management arrangements (IRA 4.1 and 4.2)
  - Guidance / best management practices for dynamic reference points (IRA 3.2)
- Later in 2026 & 2027
  - Follow up governance workshop
  - Workshop on opportunities for improving management outcomes and resilience in the groundfish fishery (IRA 2)
  - Review and update Council's operating agreement with NOAA Fisheries (IRA 4.3)
  - Engage northeast fishery permit holders to explore opportunities for modernizing the permit system (IRA 4.4)

Next Steps

- Continued progress on contracted and staff directed projects including meetings with project oversight teams
- Continued workshop planning
- Consider alignment of project timelines with future Committee and Council workplans to ensure capacity to apply project results to management actions
- Consider a path forward for Initiative 2, Atlantic Cod Management Transition

Ecosystem Component Species Project (IRA 3.3)

Contractor: Angelia Miller, Maris Collaborative

- **Purpose:** Establish management strategies for ecosystem components (EC) in the New England region
- **Need:** Climate-driven changes in distribution, abundance, and productivity indicate that evaluation of EC status is warranted for several resources
- **Objective:** Analyze factors in MSA and NS Guidelines, as well as changes in environmental drivers and fishery data, to develop criteria and thresholds for designating Ecosystem Component Species (EC Species) within the NEFMC fishery management system
- **Tasks:**
  - Research Ecosystem Component Species application at other Councils
  - Develop criteria / thresholds and then conduct an evaluation of pilot species
- **Next steps:** Can be followed by Council action(s) to designate EC species

Ecosystem Component Species

- Identified at the species or stock level; or grouped in a complex
- Management measures can be adopted to:
  - Collect data, minimize bycatch or bycatch mortality, protect their associated role in the ecosystem and must be consistent with National Standard 9 – Bycatch
- Do not require:
  - ACLs,
  - reference points, or
  - accountability measures

Stocks that a Council or the Secretary has determined do not require conservation and management, but desire to list in an FMP in order to achieve ecosystem management objectives (50 CFR 600.305(d)(13))

Potential List of Focal Species for EC Analysis

Species	FMP
Sand lance	None
Windowpane flounder	Groundfish FMP
Ocean pout	Groundfish FMP
Atlantic wolffish	Groundfish FMP
Thorny skate	Skate FMP
Clearnose skate	Skate FMP
Rosette skate	Skate FMP
Smooth skate	Skate FMP
Offshore hake	Small Mesh FMP
Atlantic salmon	Atlantic salmon FMP

- Proposing a set of species across multiple FMPs that span a range of considerations in terms of stock status, data availability, ecology, current management approaches
  - Not certain how many species will be evaluated during contract / pilot phase
- NEFMC-managed species are either non-targeted, or possession is prohibited
  - Steering Committee expressed concern about designating commercially important species, e.g., halibut
  - Might also consider yellowtail flounder
- Sand lance designated in MAFMC Unmanaged Forage Amendment
  - Steering Committee recommended considering additional forage species – working to develop a short list

Portfolio Analysis Project (IRA 4.4)

Contractor: Dr. Lauran Brewster and Connor Coscino, UMass Dartmouth SMAST

- **Purpose:** This project will evaluate the species portfolio managed by the Council to identify opportunities for increased yield and revenue while minimizing risks, considering biological and sustainability constraints.
- **Goal:** Enhance previous work and improve accessibility and utility for the Council, utilizing desktop modeling and stakeholder engagement to identify key challenges and solutions.
- **Next steps:** This project will be followed by management actions in one or more fishery management plans, as appropriate.
- *Note: this project focuses on commercial harvest*

Focal Species and Fleets for Portfolio Analysis

- List of harvested species and gears is extensive – need to focus analysis
  - What species should be included in overall portfolio?
  - Should the portfolio be configured by gear, or fleet? Other suggestions?
  - What alternative permit structures are being considered?
- Steering Committee feedback
  - Focus on species that have recently been commercially important
  - Include both New England and Mid-Atlantic-managed species given substantial overlap

Recent Subcommittee Work

- Process Mapping work plan includes developing process maps (flowcharts) and identifying on-ramps for climate and ecosystem information
  - June 5: Reviewed draft flowchart, and prioritized completion of specifications flowchart; revised structure and elements of on-ramps table
- Communications Subcommittee revised its work plan on June 5

1. Clarify goals
2. Evaluate lessons learned
3. Create outreach materials
4. Standardize language for CEFI products
5. Describe Risk Policy process
6. Work with IRA Project Oversight Teams on specific opportunities for outreach
7. Plan and host stakeholder engagement sessions

Steering Committee Feedback

- Process Mapping Subcommittee
  - Develop flowcharts for amendment and framework processes, draft on-ramps table
  - Coordinate with national effort as needed
  - Target timing: end of 2025
- Communications Subcommittee
  - Coordinate with Risk Policy Work Group as they develop messaging to support implementation
  - Target timing: as appropriate considering RPWG and IRA 1 project

NEFSC – 2026 SOE Updates

- Dr. Caracappa updated the Steering Committee on preparation of the 2026 State of the Ecosystem Report, which is expected to include:
  - Indicators based on ocean forecasts (via CEFI)
  - Revised community indicators (national effort)
  - Net revenue component to profitability indicators (discussed w/SSC)
  - Improved 'fishery stability' language (CESC, SSC Social Science Subctte)
- Highlights section – seeking information on "unusual" or "anomalous" events, things that haven't been seen ever or in a long time, or events that counter the norm: northeast.ecosystem.highlights@noaa.gov
- Want to support the Council's Risk Policy scoring

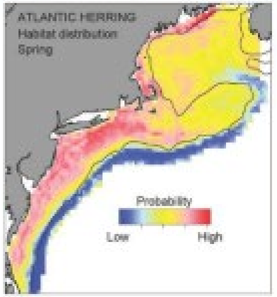
NEFSC– New “snapshot” ESPs

- Ecosystem and Socioeconomic Profiles provide single-stock information w/ ecosystem considerations
  - However, full-length ESPs are time-intensive to develop
- Dr. Caracappa shared examples of short-form ESPs
  - Not necessarily tied to research track process
  - Snapshot of key indicators – still considering which to include
  - Will faster to prepare, easy to reproduce and update year-to-year
- Steering Committee agreed these would be useful, including to SSC
  - Asked if forecasted conditions (e.g., temperature) could be included
  - Consider adding ACL to landings graphic to show utilization
  - Suggested emphasizing the “S” in ESP

Atlantic herring (*Clupea harengus*) Snapshot Ecosystem & Socioeconomic Profile

Summer 2024

This is a short-form update to the full Ecosystem and Socioeconomic Profile [1] highlighting the recent status of environmental and ecological factors. Atlantic herring is an important and valuable New England stock fished primarily by commercial vessels for use as bait (for lobster). The stock is currently overfished but not subject to overfishing.



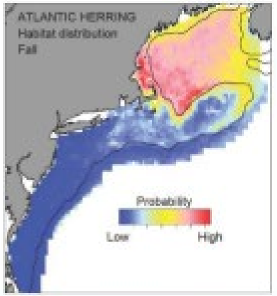


Figure source: https://www.fisheries.noaa.gov/new-england-mid-atlantic/ecosystems/fisheries-habitat-northeast-us-shelf-ecosystem

Recent highlights

2025 Research Track Stock Assessment

- Explored a recruitment index from seabird diet data [2]
- Developed indicators of predation by haddock [3], food availability [4], and temperatures experienced by larvae [5] to test as ecosystem covariates for recruitment but none significantly improved the model [6]

Fishing community observations [7]

- Market processes: increased reliance on menhaden due to declining and inconsistent herring catch, reduced quotas, higher fuel prices, river herring bycatch
- Ecological concerns: warming, changing zooplankton and forage base, haddock predation, altered predator-prey interactions

Commercial Fishery

- Reduced participation, particularly of larger vessels
- Broader market impacts include switch to alternative sources like frozen herring and menhaden

Management

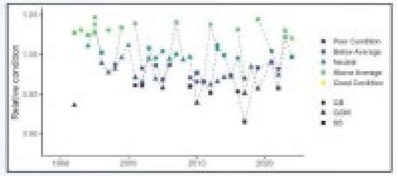
- Still in a period of substantially reduced catch limits
- Frequently changing ABC and sub-ACLs across the management areas
- Several extensions and revisions to the target rebuilding date, currently 2031

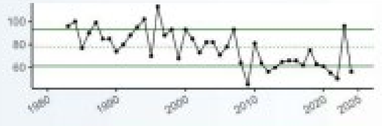
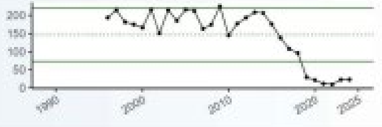
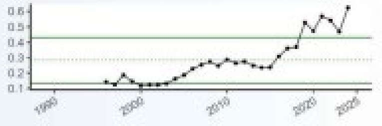
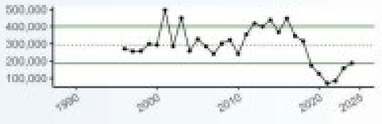
Ecosystem

- Age 3+ adults migrate to the Gulf of Maine for summer/fall spawning.
- Haddock predation on eggs is decreasing
- Development depends on appropriately sized zooplankton prey at the right time in lifecycle; zooplankton communities are changing
- Warming increases herring larval encounters with stressful or lethal surface temperature

NEW ENGLAND RISK POLICY SUMMARY (PLACEHOLDER)

- What type of information is useful to summarize here?
  - –Risks to meeting management objectives
  - –Compile existing risk indicators relevant to the stock
  - –Sources of management and model uncertainty
- Some capacity to develop our own risk indicators and/or provide additional context based on other ecosystem risk indicators
- Is there other information related to stock-level risk that should go here?



Indicator Units	Status In 2024	Implications	Time Series
Winter NAO (Index)	WinterNAO anomalies have been positive in 2024 and 2025	NAO phases impact oceanographic properties of water entering the Gulf of Maine. Easily updatable, data publicly available [8]. Could be replaced by other indices of climate variability or SOE indicators (such as Gulf Stream Index)	
Haddock Predation (Index)	Declining predation on herring eggs	Lower egg predation favors strong year classes. Tailored indicator developed by Micah Dean at MADMF for the RTSA. Alternative indicator:haddock SSB from the stock assessment model	
Optimal larval temperature duration (# of days)	Short duration of optimal larval temperature in fall 2024	Unsuitable conditions for larvae. Easily updatable, data publicly available. Based on larval thermal limits and OISST data, using herring spatial footprint.	
Commercial Landings (millions of lbs)	Well below average	Commercial landings remained relatively static compared to 2023 and are slightly higher than 2020-2022 quantities; however, landings are still well below the historical average as well as the standard deviation from the mean.	
Average Price per lb. (2024 $/lb)	Well above average	Ex-vessel price was well above the historical average in 2024. Given no notable uptick in landings, this increase may be driven in part by supply constraints, particularly for Area A1 which had a 92.1% of its quota landed by December of 2024 [9].	
Active Vessels (# of vessels)	Well below average	The number of active vessels in the herring fishery declined from 2023 to 2024, following an overall decreasing trend since 2017, suggesting overall negative implications for fishing fleet diversity and resilience.	
Average Vessel Revenue (2024 $)	Below average	The average revenue per vessel from herring landings increased slightly from 2023 and has continued a positive trend since 2021. This is most likely due to a lower number of vessels in the fleet and potential increases in effort from those remaining in the fishery to maintain relatively consistent landings relative to previous years.	

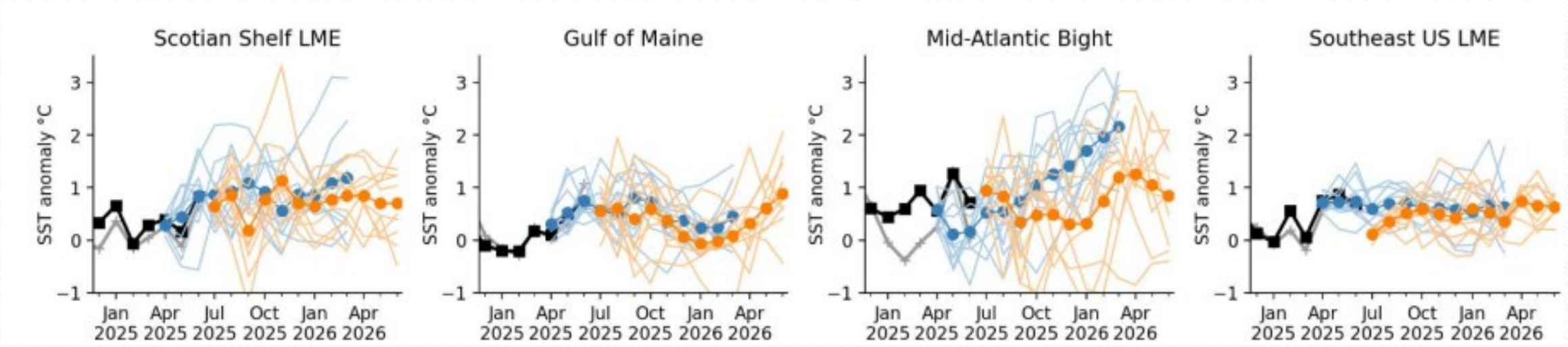
* The y-axis units are included in the "Indicator" column of the table. In all figures, the dashed line represents the time series mean, and the solid green lines indicate ± 1 standard deviation. Commercial data were derived from the commercial dealer database hosted at the Greater Atlantic Regional Office. All dollar values have been adjusted to 2024 real dollars.

We welcome your observations! Please contact northeast.ecosystem.highlights@noaa.gov with any on-the-water insights or changes observed in the Atlantic herring fishery and nefsc.esp.leads@noaa.gov with questions or comments on the information presented in this report.

CEFI Forecasts

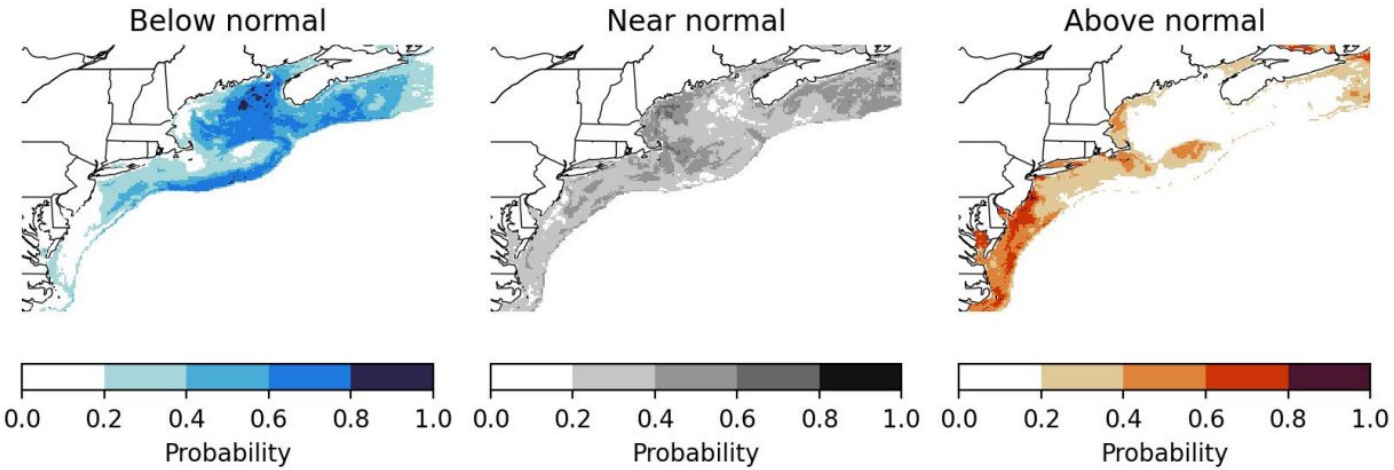
Dr. Andrew Ross, NOAA GFDL

- Now producing seasonal (to 1 year, run every 3 months) and decadal (to 10 years, run every year) forecasts
  - Decadal now includes biogeochemistry
  - Seasonal forecasts prototype operational



Current work

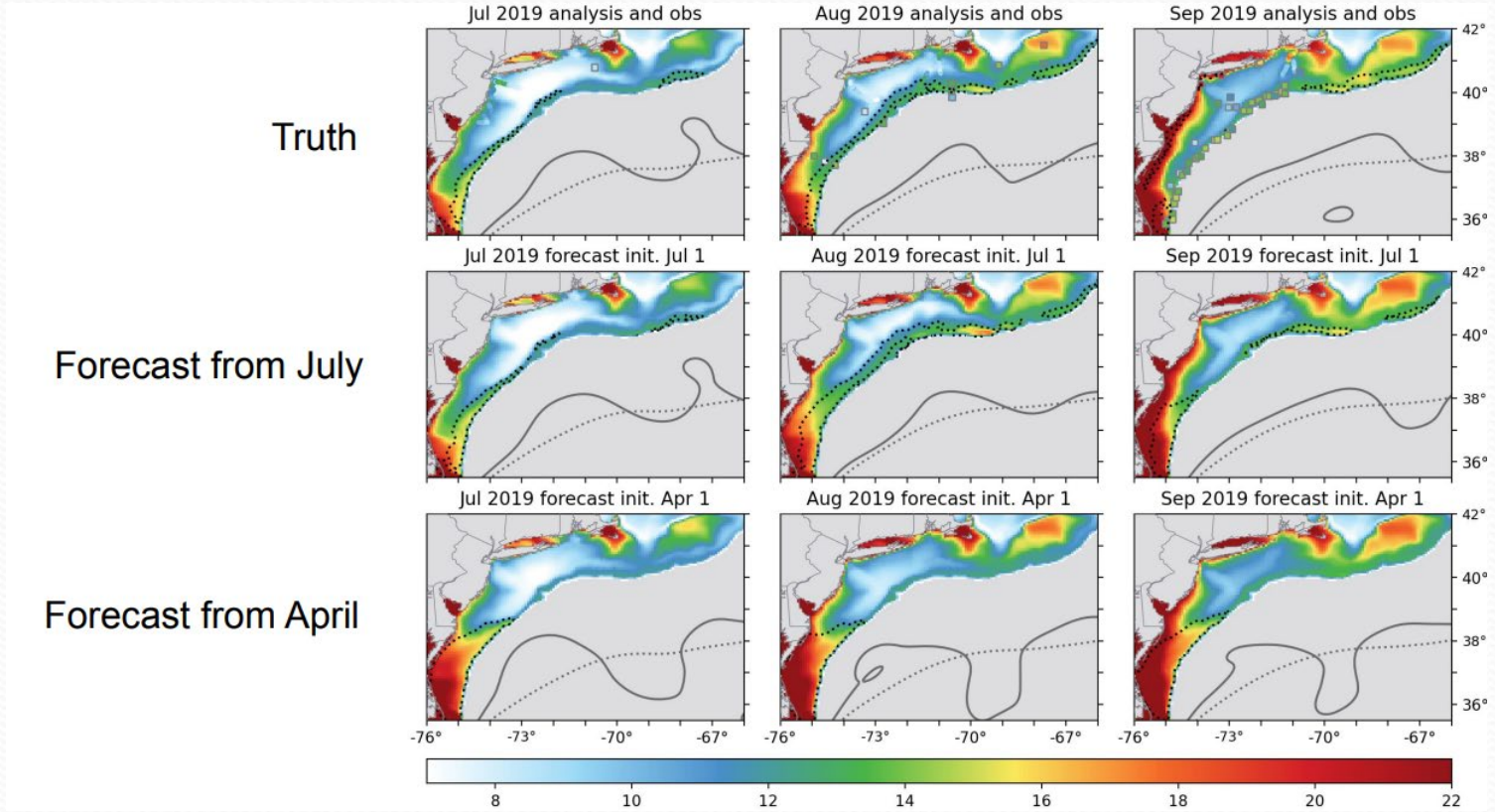
- Rapid assessment – are forecasts accurate?
- How to provide information about uncertainty?
- How to present information in SOE report
- Launch biogeochemistry products next year
- Will release projections (to end of century) in coming months



For more details, visit
https://psl.noaa.gov/cefi_portal/

Steering Committee feedback

- Appreciated opportunity to learn more about forecasts
- Could envision application of seasonal forecast to decision making, assessment of risk
- Suggested applying seasonal forecasts to scallop catch advice and rotational management as a test case



Questions?