EAST COAST CLIMATE CHANGE SCENARIO PLANNING

Mid-Atlantic Fishery Management Council Update
April 5, 2022

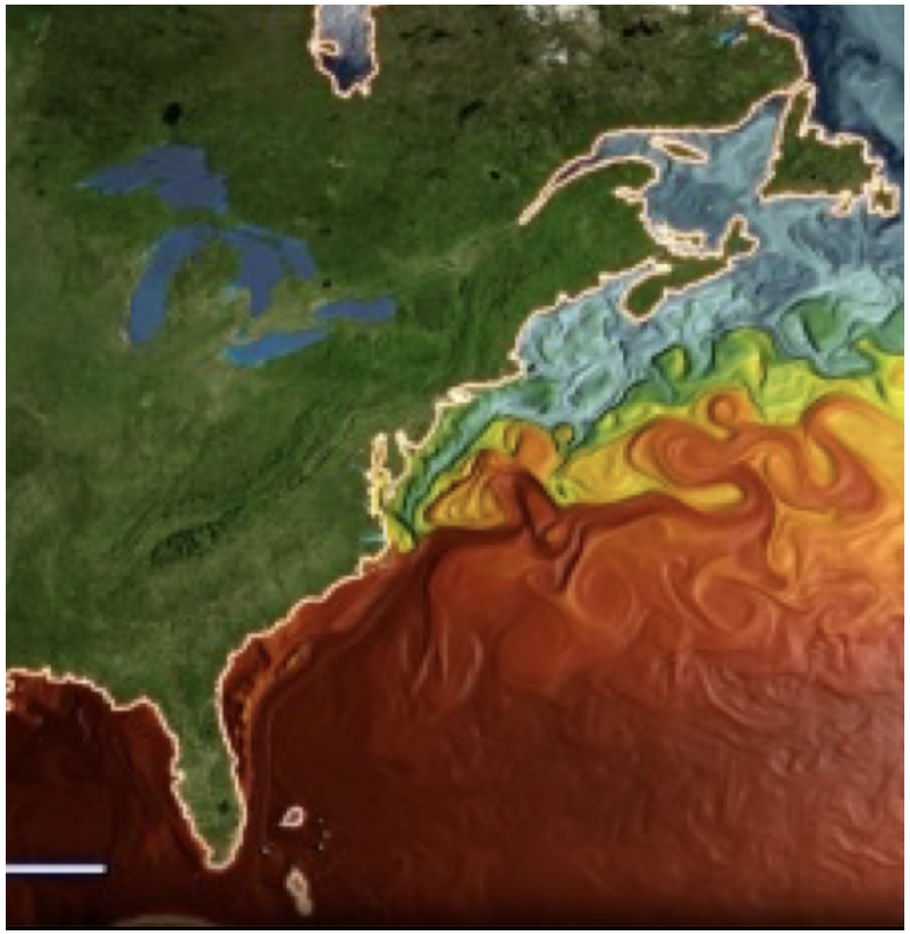
Initiative Update

1 **Summarize work undertaken since December 2021 update to Council**

2 **Discuss activities for the next phase of the initiative: Scenario Creation**

Initiative Objectives

1. Explore how East Coast fishery governance and management issues will be affected by climate driven change in fisheries, particularly changing stock availability and distributions.
2. Advance a set of tools and processes that provide flexible and robust fishery management strategies, which continue to promote fishery conservation and resilient fishing communities, and address uncertainty in an era of climate change.



East Coast Scenario Planning Initiative Timeline

Steps in this Multi-Year Initiative

Orientation: establish draft objectives, expected outcomes and project focus

Scoping: reach out to stakeholders to gather input on forces of change that could affect fisheries over the next 20 years

Exploration: analyze forces driving change in greater detail

Creation: conduct work-shop sessions to construct and discuss scenarios

Application: use scenarios to identify actions and recommen-dations

Monitoring: identify key indicators to monitor change and outline next steps

Fall 2020 – Summer 2021

Summer – Fall 2021

Winter 2022

Summer 2022

Fall 2022-Winter 2023

Scoping Highlights (Summer-Fall 2021)

Scoping activities :

- Introductory materials (website, brochures, videos)
- 3 introductory webinars (over 250 attendees)
- Online questionnaire (383 responses)

Identified range of oceanographic, biological, social & economic **drivers of change** over next 20 years

Final scoping summary available at https://www.mafmc.org/climate-change-scenario-planning

EAST COAST CLIMATE CHANGE SCENARIO PLANNING

An initiative designed to prepare fishing communities and fishery managers for an era of climate change

Starting in 2021, the management bodies shown on the right are collaborating on a multi-year scenario planning initiative along the entire US Atlantic seaboard.

Fishing communities and managers have always faced a world of uncertainty. Ocean conditions change frequently and often unpredictably. Adapting to fierce storms, fish showing up in new places or disappearing from accustomed ones, unusually warm (or cold) water, and other changes have always been a part of life for those on or around the ocean.

The coming decades promise to be more challenging than the past. Climate change is a growing threat to marine fisheries worldwide. On the East Coast of the United States, some species have already experienced climate-related shifts in distribution, abundance, and productivity. A continuation – or acceleration – of these changes has the potential to strain existing fisheries management and governance systems.

In an era of climate change, we cannot be exactly sure of the conditions we might face in 20 years' time. But one thing is certain: all those involved in fisheries need to prepare for different, unexpected futures.

HOW YOU CAN GET INVOLVED

Attend a kick-off webinar

Complete a questionnaire

Keep informed

See Page 4 for more details.

1

Exploration Phase: Drivers of Change Webinars

Oceanographic Drivers of Change

February 14, 2022

1. Ocean temperature
2. Currents
3. Long term cycles
4. Cold pool
5. Water chemistry
6. Primary production
7. Extreme weather
8. Sea level rise

Biological Drivers of Change

February 23, 2022

7. Distribution changes
8. Productivity changes
9. Seasonal timing
10. Habitat vulnerability
11. Disease & Harmful Algal Blooms

Social & Economic Drivers of Change

March 2, 2022

12. Population growth & demographics
13. External cost factors
14. Infrastructure and working waterfronts
15. Consumer demand and market dynamics
16. Technological change
17. Competing ocean uses
18. Social vulnerability & environmental justice

Exploration Phase: Drivers of Change Webinars

Oceanographic Drivers of Change

February 14, 2022

269 attendees

Dr. Charlie Stock, NOAA GFDL

Zack Klyver, Blue Planet
Dr. Sang-Ki Lee, NOAA AOML
Dr. Shannon Mesek, NEFSC
Dr. Vince Saba, NESFC
Capt. Chris Roebuck (unable to attend)

Biological Drivers of Change

February 23, 2022

215 attendees

Dr. Janet Nye, UNC

Dr. Mandy Karnauskas, SEFSC
Capt. Ira Laks, Jupiter, FL
Dr. John Manderson, Consultant
Dr. Malin Pinsky, Rutgers

Social & Economic Drivers of Change

March 2, 2022

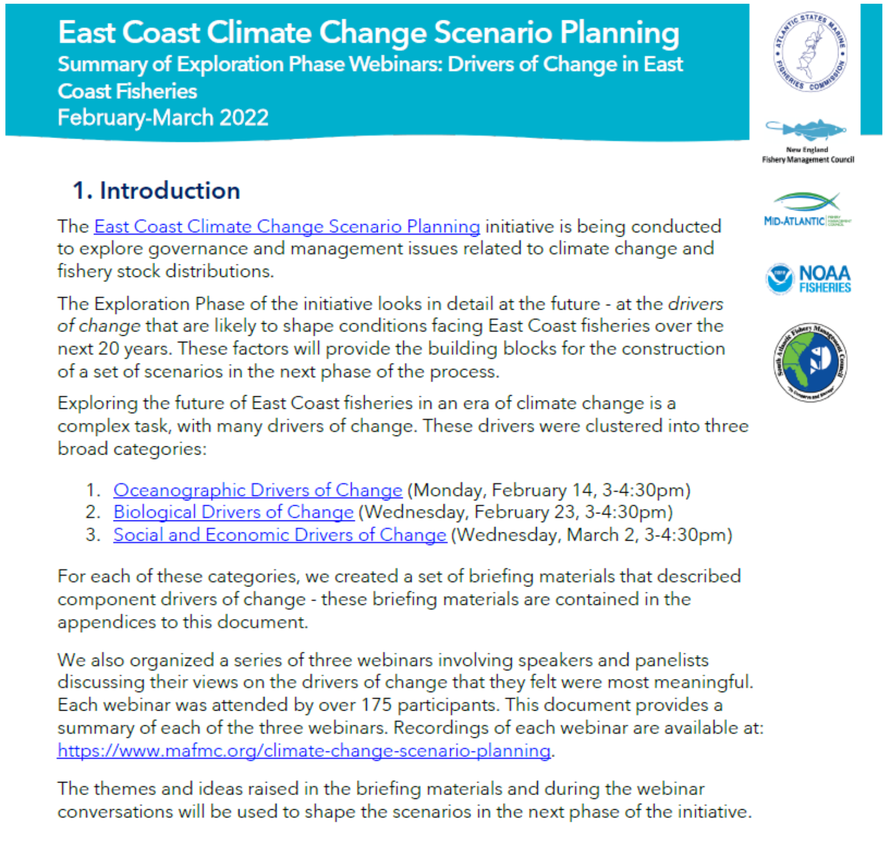
176 attendees

Dr. Doug Lipton, NOAA

Dr. Matt Cutler, NEFSC
Dr. Kathy Mills, GMRI
Rick Robins, RWE
Capt. Tom Roller, Beaufort NC
Dr. Matt McPherson, SEFSC

Exploration Phase: Drivers of Change Webinars

Exploration phase summary now posted to: https://www.mafmc.org/climate-change-scenario-planning



East Coast Climate Change Scenario Planning
Summary of Exploration Phase Webinars: Drivers of Change in East Coast Fisheries
February-March 2022

1. Introduction

The East Coast Climate Change Scenario Planning initiative is being conducted to explore governance and management issues related to climate change and fishery stock distributions.

The Exploration Phase of the initiative looks in detail at the future - at the *drivers of change* that are likely to shape conditions facing East Coast fisheries over the next 20 years. These factors will provide the building blocks for the construction of a set of scenarios in the next phase of the process.

Exploring the future of East Coast fisheries in an era of climate change is a complex task, with many drivers of change. These drivers were clustered into three broad categories:

1. Oceanographic Drivers of Change (Monday, February 14, 3-4:30pm)
2. Biological Drivers of Change (Wednesday, February 23, 3-4:30pm)
3. Social and Economic Drivers of Change (Wednesday, March 2, 3-4:30pm)

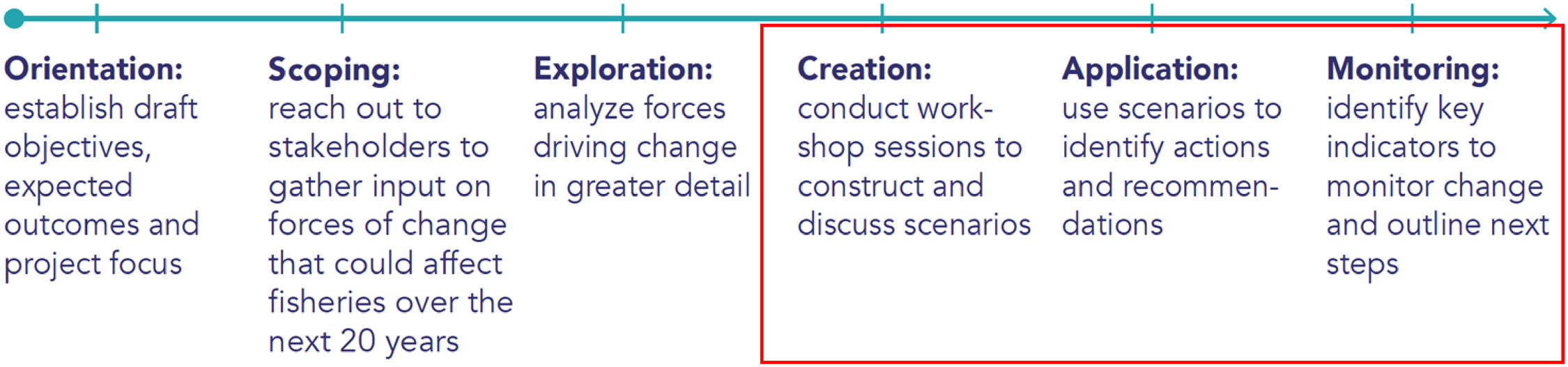
For each of these categories, we created a set of briefing materials that described component drivers of change - these briefing materials are contained in the appendices to this document.

We also organized a series of three webinars involving speakers and panelists discussing their views on the drivers of change that they felt were most meaningful. Each webinar was attended by over 175 participants. This document provides a summary of each of the three webinars. Recordings of each webinar are available at: https://www.mafmc.org/climate-change-scenario-planning.

The themes and ideas raised in the briefing materials and during the webinar conversations will be used to shape the scenarios in the next phase of the initiative.

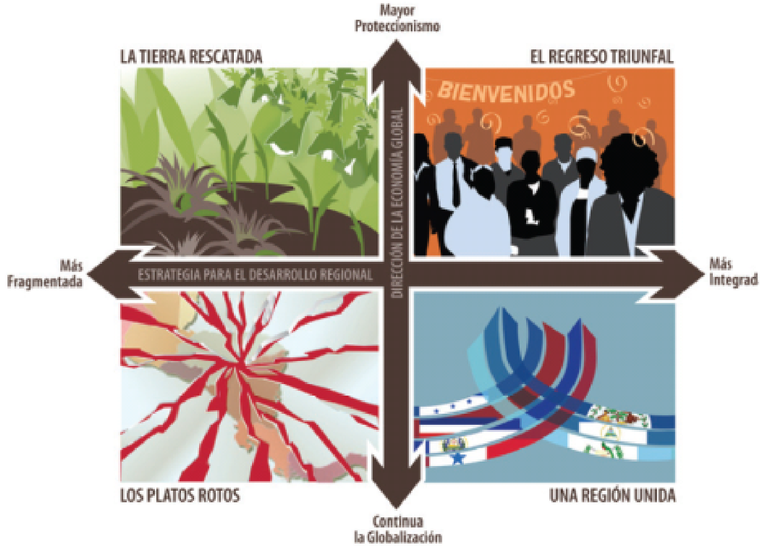
Next Phases: Scenario Creation, Applications, Monitoring

Steps in this Multi-Year Initiative



Scenario Creation Workshop: June 2022

- Create 3-5 different scenarios to consider how climate change might affect East Coast fisheries in the next 20 years
- Different possible combinations of oceanographic, biological, and socioeconomic conditions
- Plausible, challenging, relevant, memorable stories that describe what we **might** face over the next 20 years



Scenario Creation Workshop: June 21-23, 2022

- 2.5 day in person workshop
- Approximately 75 participants to be selected based on responses to **online application – now available at** https://www.mafmc.org/climate-change-scenario-planning
- Strive for balance across stakeholder groups, regions, involvement in current process & new voices
- Partial webinar streaming (plenary discussions only)

Following the Workshop: Scenario “Deepening”: Late Summer 2022

- A series of ‘scenario deepening’ webinars: seek comment on scenarios created at the workshop, adding details so that the storylines are fleshed out and as relevant as possible
- **Opportunity for involvement** for those unable to attend the workshop

Application Phase: Fall 2022-Winter 2023

Use scenarios as a **platform** to discuss future fishery governance and management issues:

- How well would our current systems work if these new scenario conditions were to occur?
- What would need to change to better prepare for these scenario possibilities?
- What are the tools and processes that need to be advanced now to ensure that fisheries are governed and managed effectively in an era of climate change?

Application Phase: Fall 2022-Winter 2023

- Working sessions to be held in a variety of locations and formats, including as part of Council/Commission meetings as appropriate
- **Involvement of managers key at this stage**
- Summit meeting held in late Fall, bringing together representatives from each working session. Task to review ideas and suggestions and decide upon adaptations and new tools that are suitable and feasible to implement

Project Outputs

- ❑ **A set of scenarios** a few stories that describe – in qualitative terms – different ways in which a changing climate might affect the future of East Coast fisheries
- ❑ **A better understanding** of the challenges and opportunities facing fishery management in the future
- ❑ **A set of near-term and long-term management priorities** that help achieve fishery management objectives under a range of different future conditions
- ❑ **Policy recommendations** for broader governance changes that improve our ability to adapt to future scenarios
- ❑ **A list of** data gaps, research needs, and monitoring needs for changing conditions
- ❑ **A framework** for ongoing conversation and idea generation for all stakeholders to use

- https://www.mafmc.org/climate-change-scenario-planning
- Core Team:

Organization	Representative
MAFMC	Kiley Dancy
ASMFC	Toni Kerns
NMFS GARFO	Travis Ford
NEFMC	Deirdre Boelke
NMFS NEFSC	Sean Lucey
SAFMC	Roger Pugliese
NMFS SERO	Karla Gore
NMFS HQ	Wendy Morrison
Process Facilitator	Jonathan Star, Scenario Insight