EAST COAST CLIMATE CHANGE SCENARIO PLANNING

Atlantic States Marine Fisheries Commission Scenario Review and Option Generation

November 8, 2022

Scenario Planning: Imagining 2042

Defining Scenarios and Scenario Planning

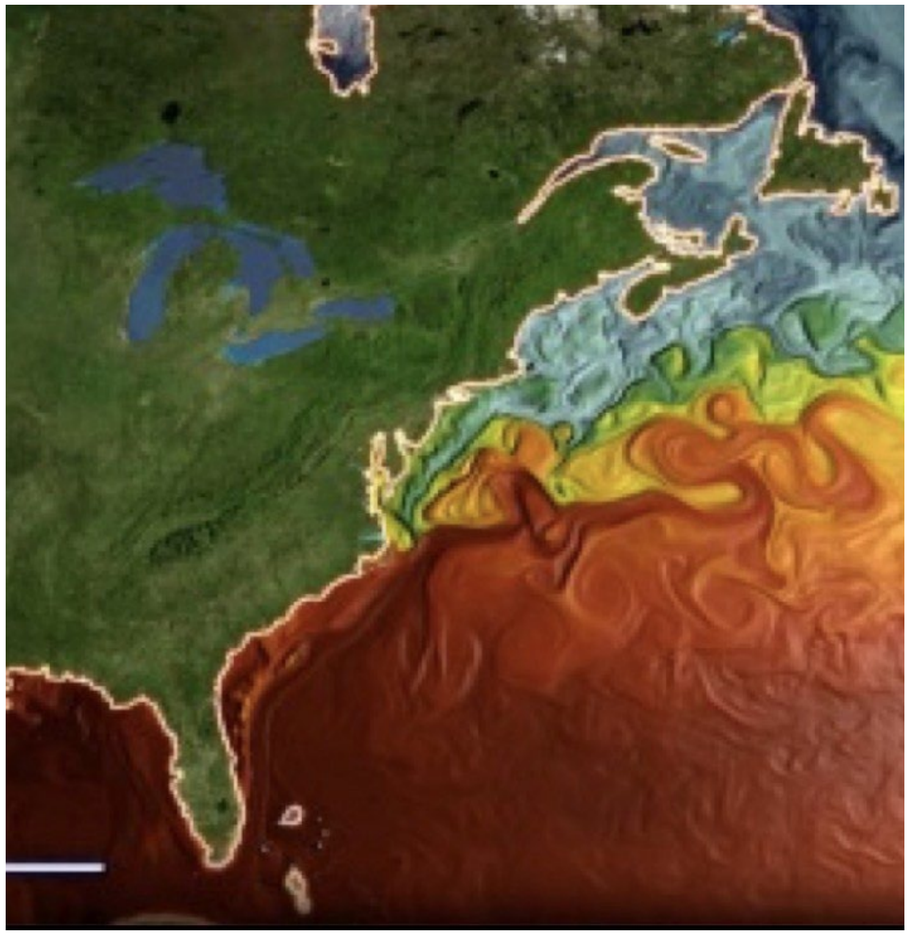
"Scenarios are stories about the ways that the world <u>might</u> turn out tomorrow…"

"Scenario planning uses provocative stories about the future to change the minds and actions of a group of people"

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

Fall 2020 – Summer 2021

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

Summer – Fall 2021

Exploration: analyze forces driving change in greater detail

Winter 2022

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

Summer 2022

Application: use scenarios to identify actions and recommen-dations

Fall 2022-Winter 2023

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

Application Phase

Managers' Meetings

September 19
September 20
October 3

Generate ideas

Council & Commission Meetings

ASMFC: Nov 8
SAFMC: Dec 5
NEFMC: Dec 7
MAMFC: Dec 14

Review & generate ideas

Summit Meeting

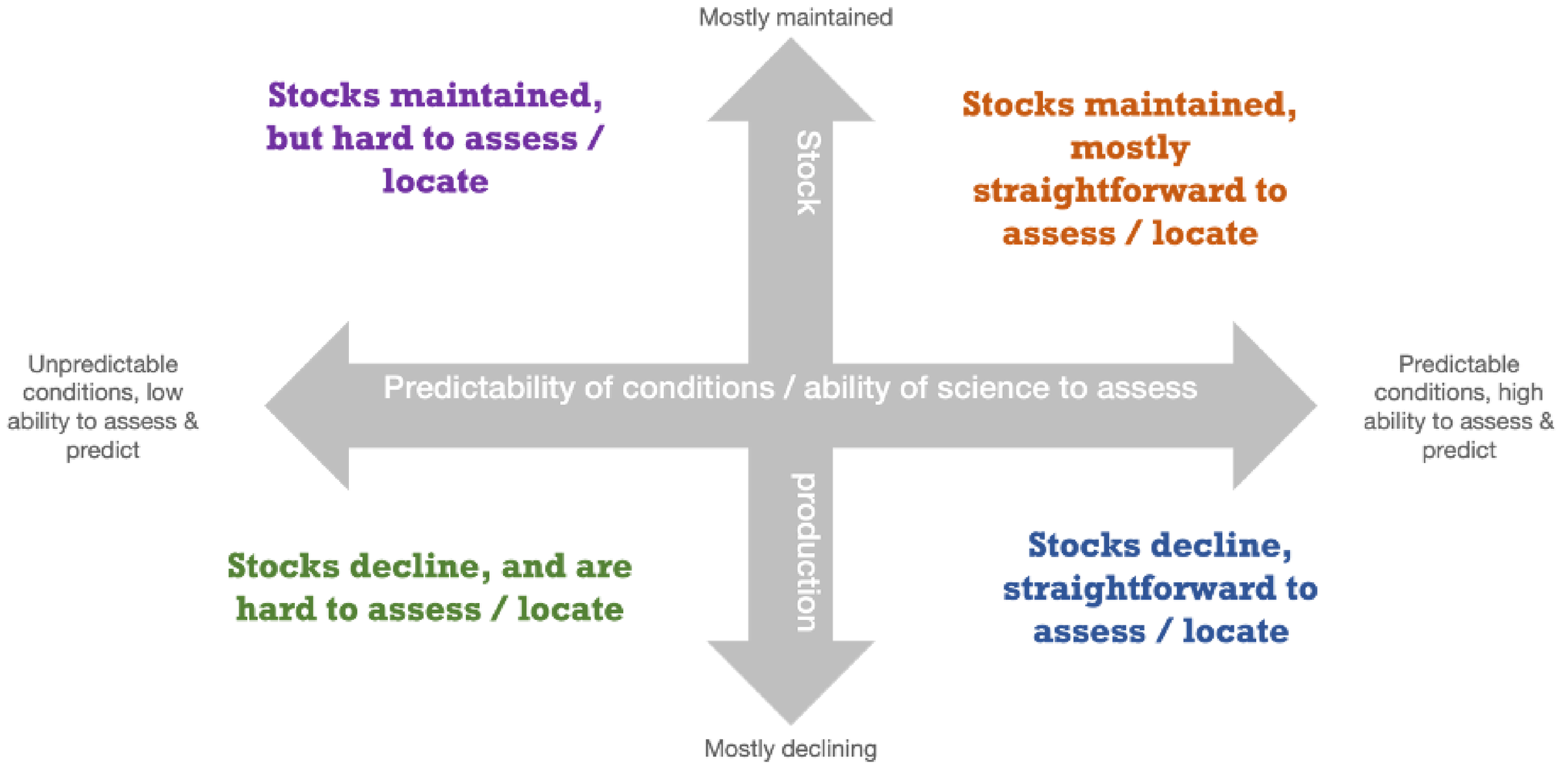
February 2023

Review & prioritize possible actions

Session Objectives

- Review scenarios that paint 4 different pictures of what 2042 might be like
- Comment on the challenges, opportunities and potential actions generated by a selection of fishery managers
- Identify and discuss the most important issues for the Commission to prepare for as climate change continues
- Identify the key discussion topics that should be on the agenda at the February Summit Meeting

Scenario Framework: East Coast Fisheries in 2040

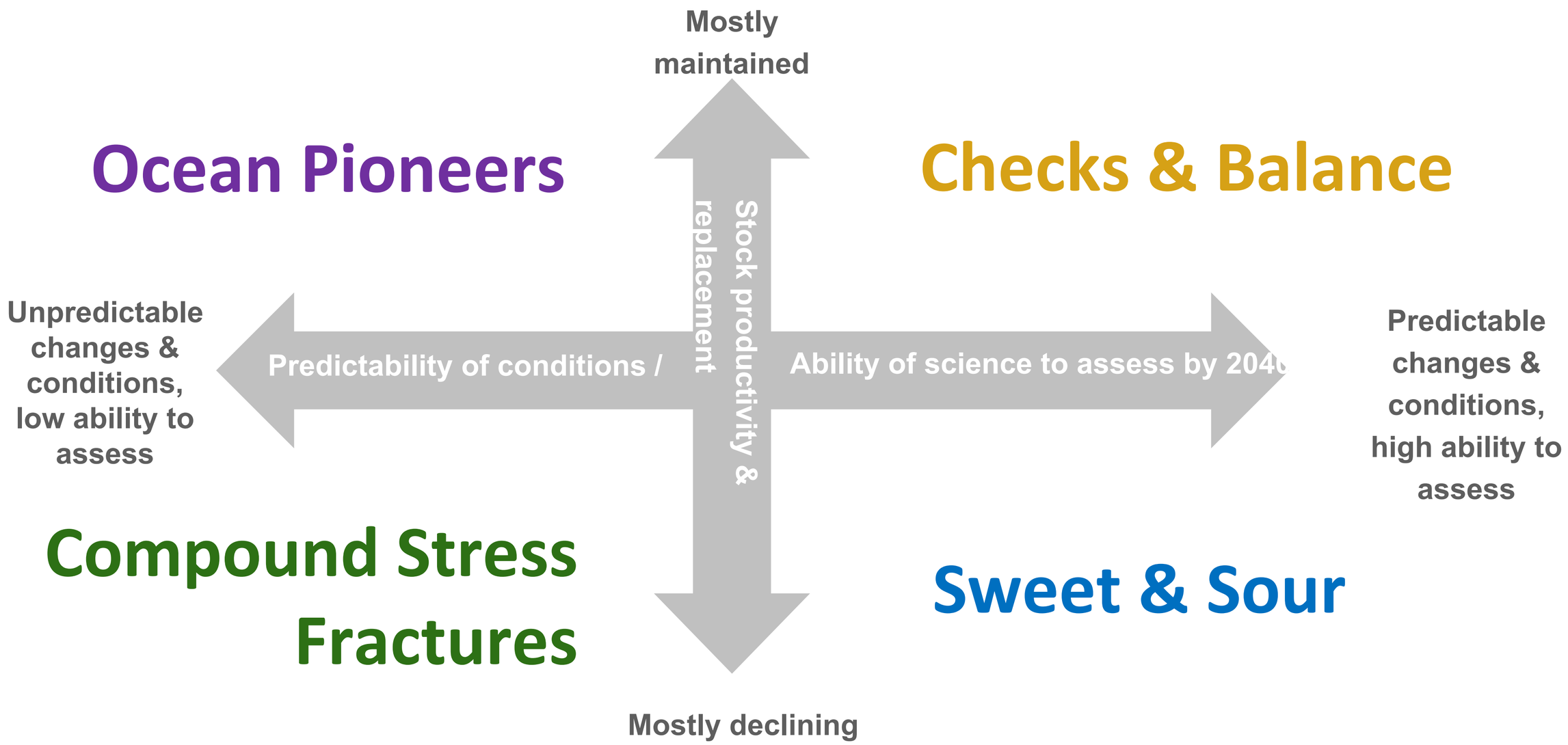


Four Divergent Scenarios, but Some Common Features

What can we be sure of in 2042?

1. Ocean temperatures continue to warm, affecting marine species biology and distribution
2. Regions exhibit differences in seasonal temperature changes
3. Primary production changes differently in different regions
4. Sea levels rise
5. Changing ocean uses create more competition for fisheries
6. Coastal population grows

Scenario Framework: East Coast Fisheries in 2042

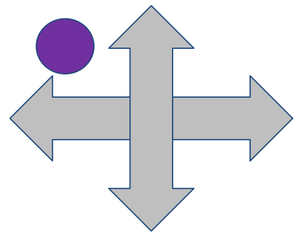


Categories of Actions

1. Management and Industry Adaptability
2. Data & Science
3. Alternative Ocean Uses
4. Cross Jurisdictional Governance & Management

Scenario Descriptions

Ocean Pioneers



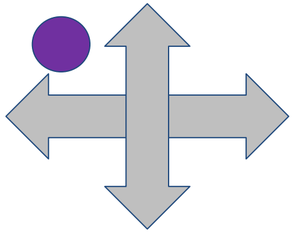
- Crazy ocean conditions & weird weather
- Ocean stocks are resilient, with no damaging climate tipping points

- Seasons and locations of traditional fisheries change unpredictably
- Traditional stock assessments are less reliable
- Real-time data from vessels and other users is more valuable

- Ocean activity (fishing, aquaculture and offshore wind) dominated by entrepreneurs, technology, pioneers
- Winners typically have deep pockets, sharp elbows, new technology and a willingness to take risks

- Uncertainty about how long “abundant” stocks can keep delivering

Ocean Pioneers: Challenges, Opportunities, Potential Actions



- Climate change creates governance ‘turf wars’, requiring organizations to compromise on jurisdictional control

- Without accurate information, decisions might be made on a more qualitative basis

- Current stock assessment process unlikely to work, and could prompt moves towards simpler harvest control rules

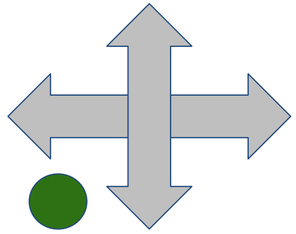
- Vessels and new ocean users offer opportunities for fish & environmental data collection

- ***Do you agree with / recognize the challenges, opportunities and possible actions for this scenario?***

- ***What else is important about this scenario that is not yet covered? What would you add?***

Scenario Descriptions

Compound Stress Fractures



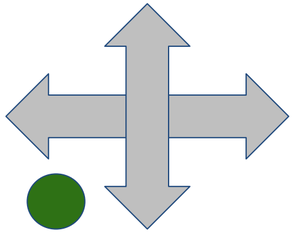
- Unpredictable conditions create negative impacts to marine species
- More pollution affecting estuaries, nearshore habitat
- Diseases are prevalent – several marine heatwaves lead to die-offs

- Costs rise and harvest opportunities fall due to low abundance of traditional stocks
- Operators shift effort to lower trophic level species

- Science unable to help; stock assessments rely on insufficient data
- Low levels of trust between different stakeholder groups

- Government steps in to save a few domestic fisheries
- Fishing no longer the dominant activity in the ocean, competing with other industries for space and attention

Compound Stress Fractures: Challenges, Opportunities, Potential Actions

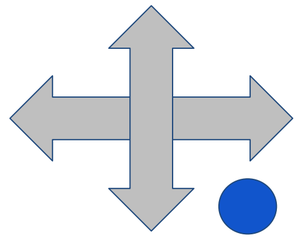


- Consider managing spatially or by species, or both?
- Give specialized fishermen the opportunity to move up & down coast; allow fixed fishermen to move from one species to another
- Consider how to respond when previously reliable indices for managed species are no longer reliable
- Collaborate with other users for real-time monitoring

- ***Do you agree with / recognize the challenges, opportunities and possible actions for this scenario?***
- ***What else is important about this scenario that is not yet covered? What would you add?***

Scenario Descriptions

Sweet & Sour



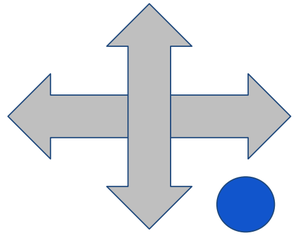
- “Science is good, but the news is bad”
- Declining productivity and abundance; smaller maximum fish size
- Range shifts as species move N and E, but not much range expansion

- In some places, marine wildlife interaction/bycatch challenges addressed through improved forecasts and fishing community innovation
- Successful small-scale fishermen adapt to reduced catch limits and new stocks, supplying limited but lucrative markets

- Some regions struggle to develop effective responses to challenges leading to fleet consolidation, loss of markets to artificially cheap imports, and permanent declines of historic fishing communities.

- Aquaculture becomes prevalent as a mass source of seafood

Sweet and Sour: Challenges, Opportunities, Potential Actions



- Informally work through solutions to determine best approaches before formalizing changes too quickly

- Deliberately make strategic choices around declining stocks

- Further develop climate-informed status reports like State of the Ecosystem / Vulnerability Assessments

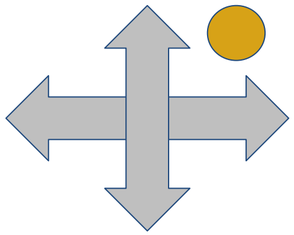
- As aquaculture products increase in popularity, increase efforts to market wild-caught seafood

- ***Do you agree with / recognize the challenges, opportunities and possible actions for this scenario?***

- ***What else is important about this scenario that is not yet covered? What would you add?***

Scenario Descriptions

Checks and Balance



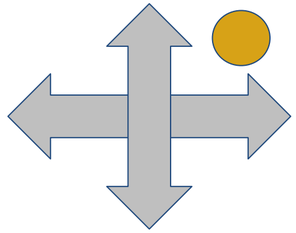
- Predictable changes and tolerable conditions
- Range expansion as stocks move predictably north & east

- Better pollution reduction, habitat protection and restoration reverse habitat damage and loss

- Science capacity booms, delivering effective ocean monitoring, real-time catch reporting, food web/population monitoring and bycatch avoidance
- Investment in other ocean/coastal uses leads to competition (e.g. aquaculture) and collaboration (e.g. fisheries science is boosted by wind energy installations)

- Recreational sector is healthy thanks to stable productivity and increased coastal wealth, but gentrification creates concerns over accessibility

Checks and Balance: Challenges, Opportunities, Potential Actions

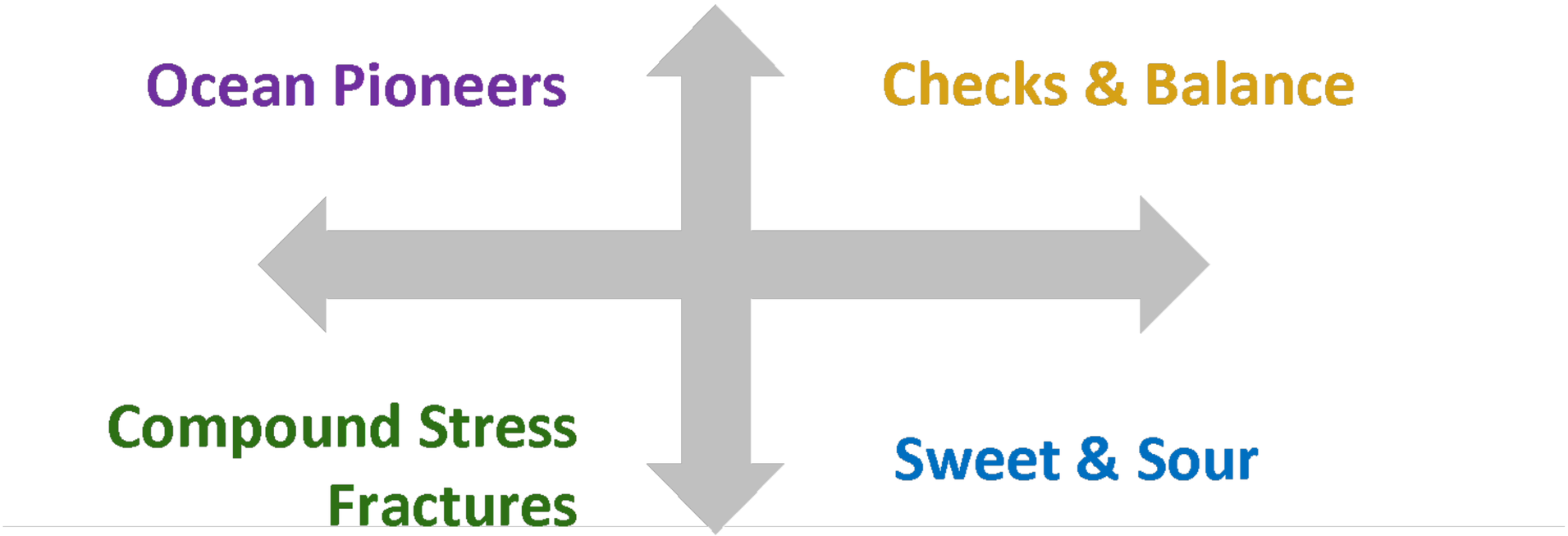


- Focus on access and participation from small fleets and low-income recreational fishermen
- Focus on joint management of stocks rather than switching from one management body to another
- More emphasis on new technology, biological sampling in ports
- Consider how new ocean users have a seat at the table

- ***Do you agree with / recognize the challenges, opportunities and possible actions for this scenario?***
- ***What else is important about this scenario that is not yet covered? What would you add?***

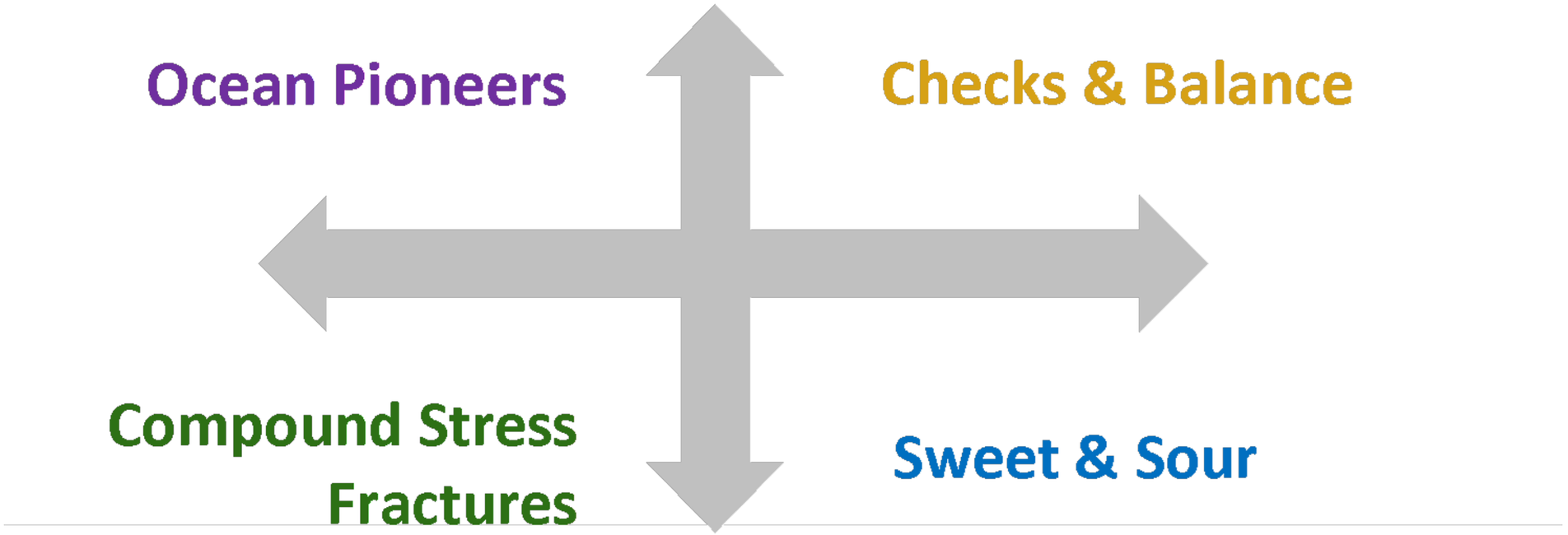
Polling Question

1. Which scenario is closest to describing the situation as you see it today?

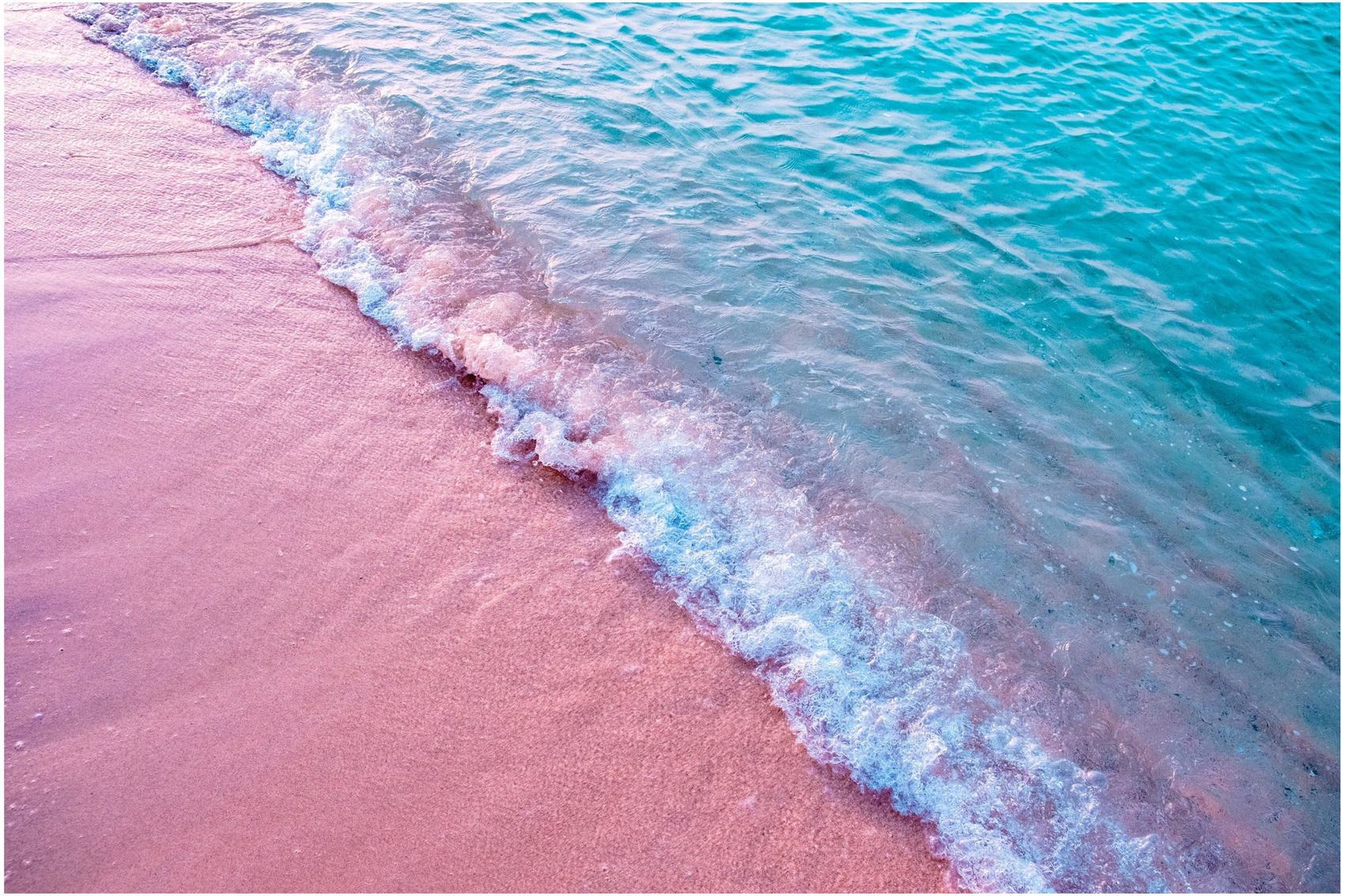


Polling Question

2. Which scenario do you believe is most likely to play out by 2042?



BREAK



‘Placing Bets’ Across A Scenario Matrix

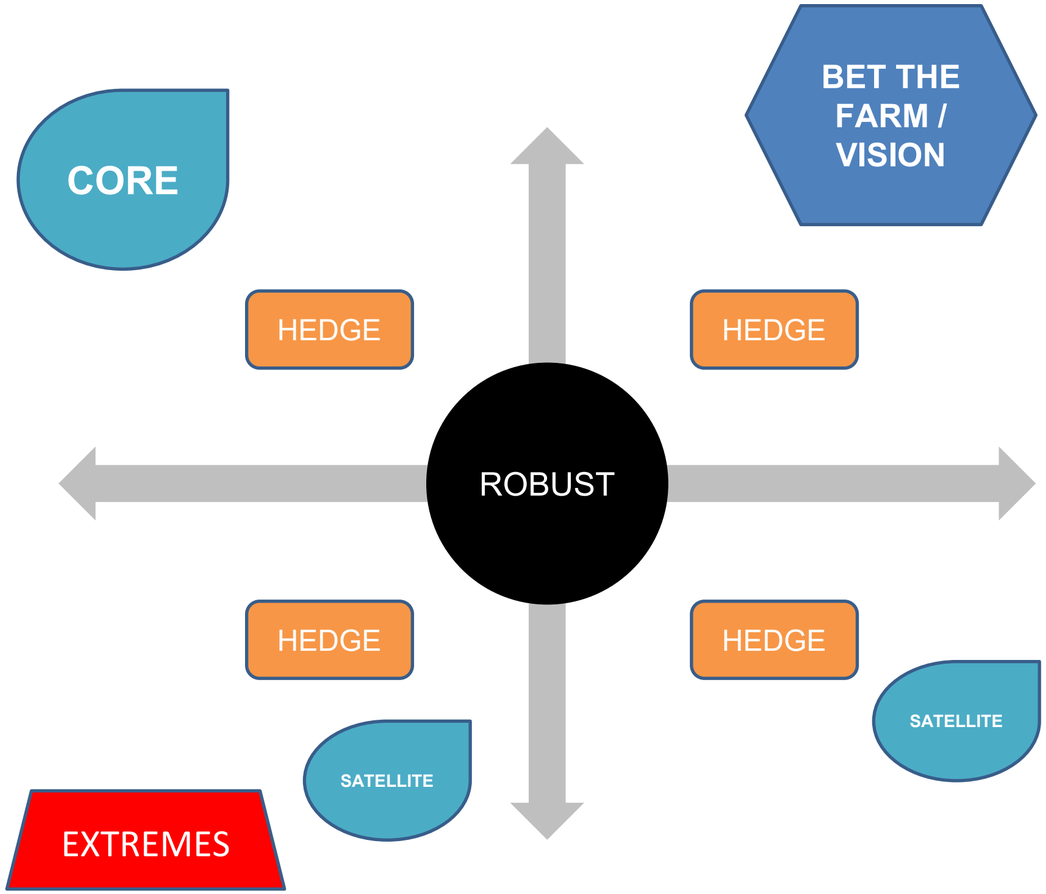
ROBUST: Pursue those options that would work out well (or at least not hurt you too much) in any of the four scenarios

HEDGE: Make several distinct bets of relatively equal size, then wait and see what happens

BET THE FARM/VISIONING: Make one clear bet that a certain future will happen — and then do everything you can to help make that scenario a reality

CORE/SATELLITE: Place one major bet, with one or more small bets as a hedge against uncertainty (experiments)

EXTREMES: Prepare for, or prevent, a worst-case scenario



Recurring Ideas and Main Takeaways

Ocean Pioneers:

Checks & Balance:

Mostly maintained

- challenges of the **current cross-jurisdictional structure**
- mechanics of **changing management responsibilities**
- making **decisions with less clarity and certainty**
- fishery management is sure to involve more **collaboration**
- suitable balance of **funding and attention in data and science**
- current **stock assessment processes and methods**
- **increased flexibility needs around permitting and landing**
- investigate **spatial planning and ocean zoning**
- **maintaining and increasing shoreside access and increased participation**

Unpredictable changes & conditions, low ability to assess

Predictable changes & conditions, high ability to assess

Mostly declining

Compound Stress Fractures:

Sweet and Sour:

Recurring Ideas and Main Takeaways

Do you agree with these 9 ‘recurring issues’?

Which are most important for the Commission to address to be prepared for climate change over the decades ahead?

Are there other (scenario-specific) potential actions that we should pay attention to?

Key Discussion Topics for the Summit Meeting

- What are the big questions that this conversation raises for the **Commission** that you would like to see addressed at the Summit meeting?

- What are the big questions this raises for **East Coast Fishery Management in general** (i.e. all Councils/ Commission) that you'd like to see addressed at the Summit meeting?

- What **specific recommendations** would you propose be considered at Summit?

- As we prepare for the Summit Meeting, what should the Core Team be mindful of?

Next Steps: Summit Meeting

Date: February 15-16

- Review ideas and findings from Commission and Council discussions
- Identify potential actions for further consideration

Potential Actions may include both near-term and long-term priorities, and fall into categories such as:

- Actions that could be undertaken by individual management bodies
- Multi-region or coastwide coordinated changes, with no legislative changes
- Recommendations that would require legislative change
- Federal policy changes (non-legislative)
- Guiding principles to evaluate future management actions in light of climate resilience/adaptability