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Northeast Fisheries
Science Center

Bigelow Contingencies

Kathryn Ford, PEMAD Director
NTAP February 8, 2024

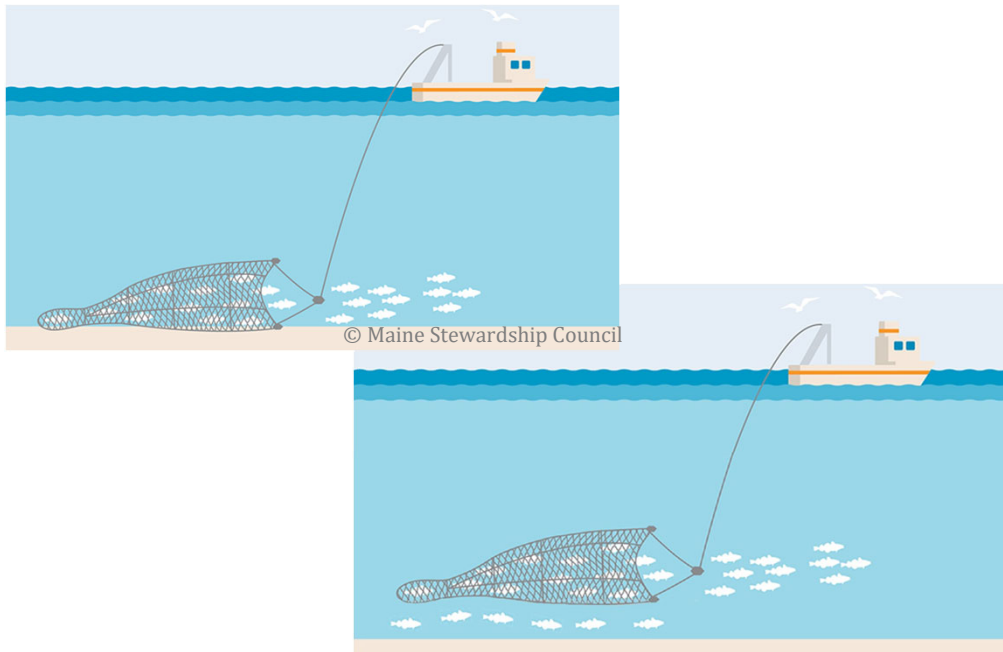
NEFSC Multispecies Bottom Trawl Survey (BTS)

- Monitor ecosystem changes and trends in abundance, distribution, and life history for demersal fish - information for 63 stocks and collects more than 600 species - shelf scale
- Informs status of ecosystem reports, stock assessments and climate assessments
- 120 survey days per year (60 each in fall and spring)
- Uses the **Bigelow** which has a sister ship, **Pisces**, both run by NOAA-OMAO
- Trawl gear designed with NTAP and is also used on SNE/MidA NEAMAP, ChesMMAP, and is expanding to other surveys

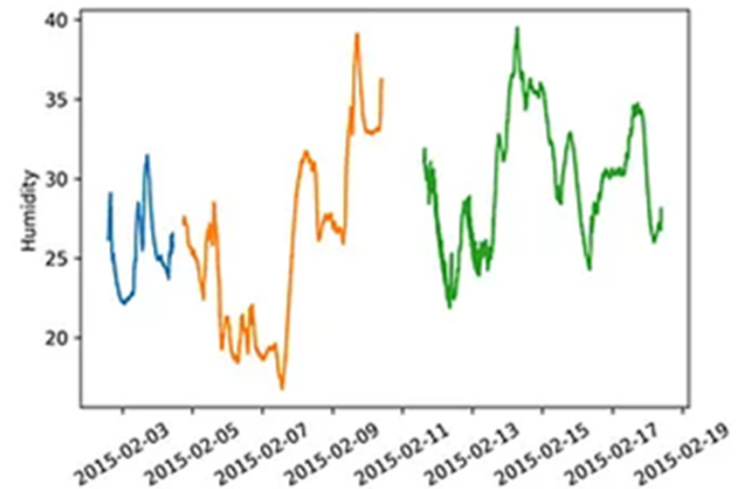


Why is consistency so important?

Consistent trawl performance
=
consistent catchability, less uncertainty



Consistent time series
=
less extrapolation, less uncertainty



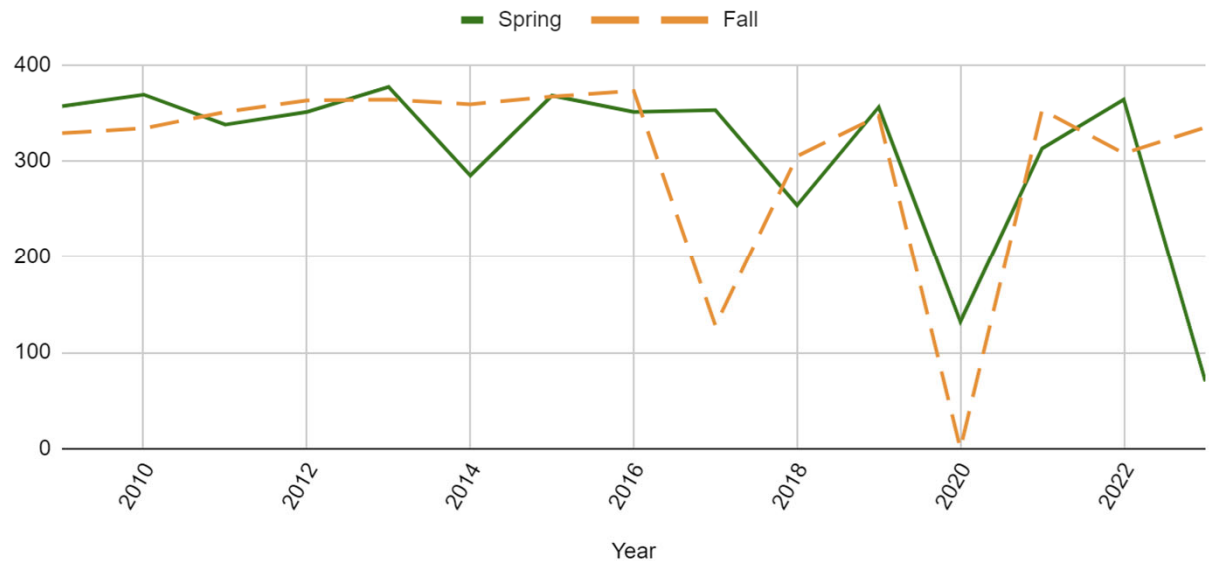
Concerns about Bigelow performance

2009-2015	351 stations (n=15)
2016-2023	266 stations (n=15)*

**295 with COVID impact removed (n=13)*

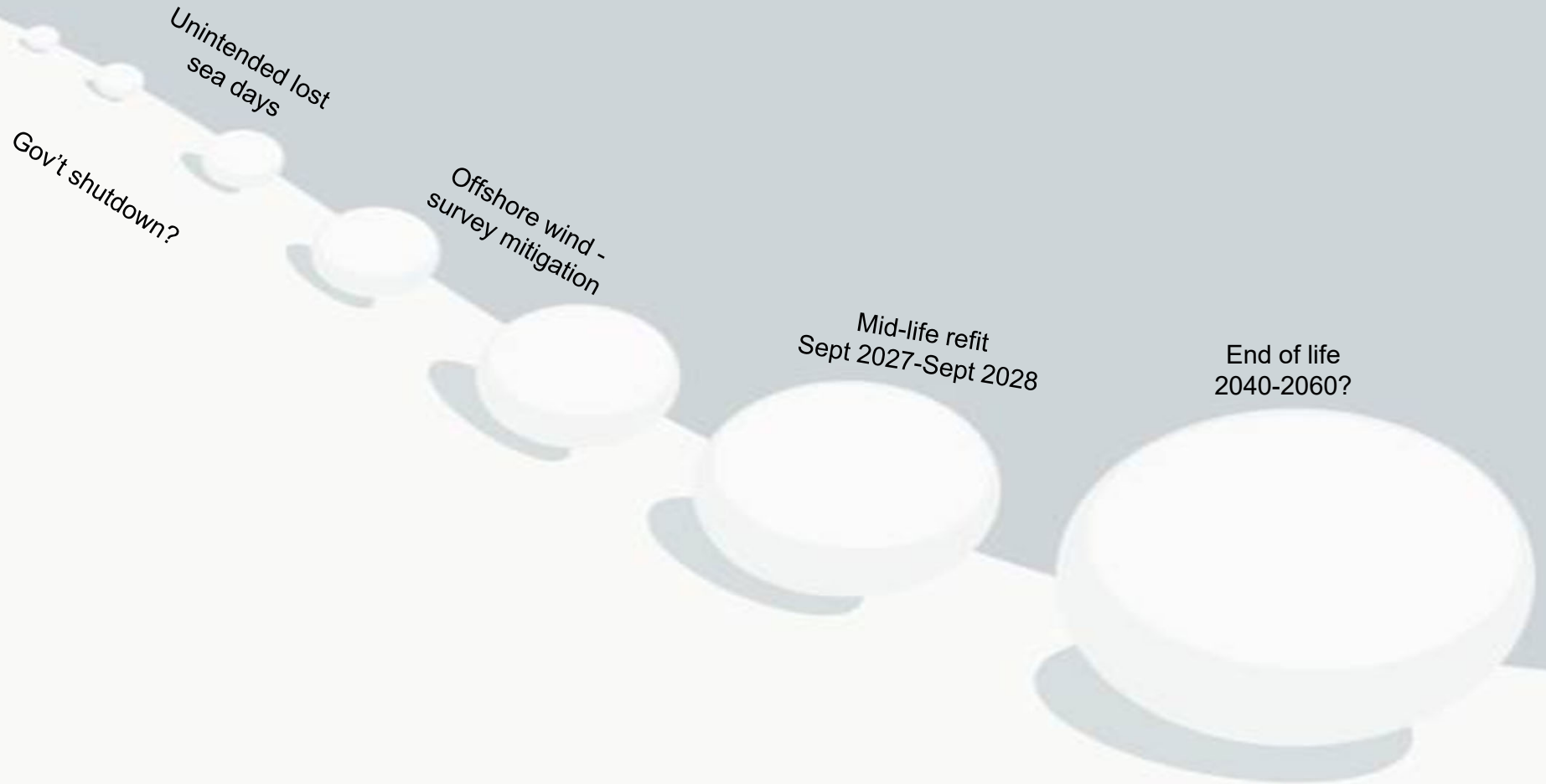
- 30 surveys
- 9 (30%) with <320 stations
- 3 late spring starts
- 3 COVID
- 2 staffing limitations
- 2 ship repairs

Bigelow # of Valid Tows



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Upcoming platform impacts



Contingency planning

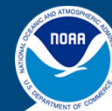


NTAP working group to develop a plan - kickoff Sep 2023

Members: Terry Alexander, Dan Salerno, David Goethel, Vito Giacalone, Eric Reid, Jim Gartland, Sam Novello, Kathryn Ford, Anna Mercer, Phil Politis, Tim Miller (with additional NMFS and OMAO support as needed)

TOR:

Describe vessel platforms that can support completing the NEFSC spring and fall BTS when the Bigelow is unavailable. Assess the viability of the platform(s) and platform deployment needs from logistical and scientific perspectives and identify where additional information is needed to fully develop a given option. Consider options that at a minimum meet stock assessment needs. This effort should produce a relatively high level overview of options and identify information gaps.



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Draft contingency plan outline

1. Background
2. Contingency options
3. Programmatic needs
4. Discussion of other options
5. Next steps



Section 2: Bigelow Contingencies Options

1. Pisces
2. NEFSC vessel calibrated to Bigelow
3. Industry based vessel(s) calibrated to Bigelow
4. Industry based survey (IBS) not calibrated to Bigelow (parallel, separate survey)



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Option 1: Pisces

- Pisces is sister ship to Bigelow
- It was used in 2017 when Bigelow had engine problems
- Concerns: It is not currently ready to trawl
- Ideally would use it regularly to maintain readiness
- Progress update: Readiness plan has been drafted and is being refined with NMFS and OMAO
 - Next winter dry dock for Bigelow is Jan/Feb 2026
 - Bigelow mid-life refit starts Sept 2027 (est.)



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Option 2: NEFSC vessel calibrated to Bigelow

- Replace the Gloria Michelle with a 90-95' foot vessel that can tow the same gear and stations as the BTS
- Calibrate to Bigelow
- Use when Bigelow sea days are reduced
- Ideally would use it regularly to maintain readiness
- Concerns: multiple vessels introduce uncertainty; calibration expensive and inexact
- Progress update: Drafted memo, started identifying potential vessels



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Option 3: industry vessel calibrated to Bigelow

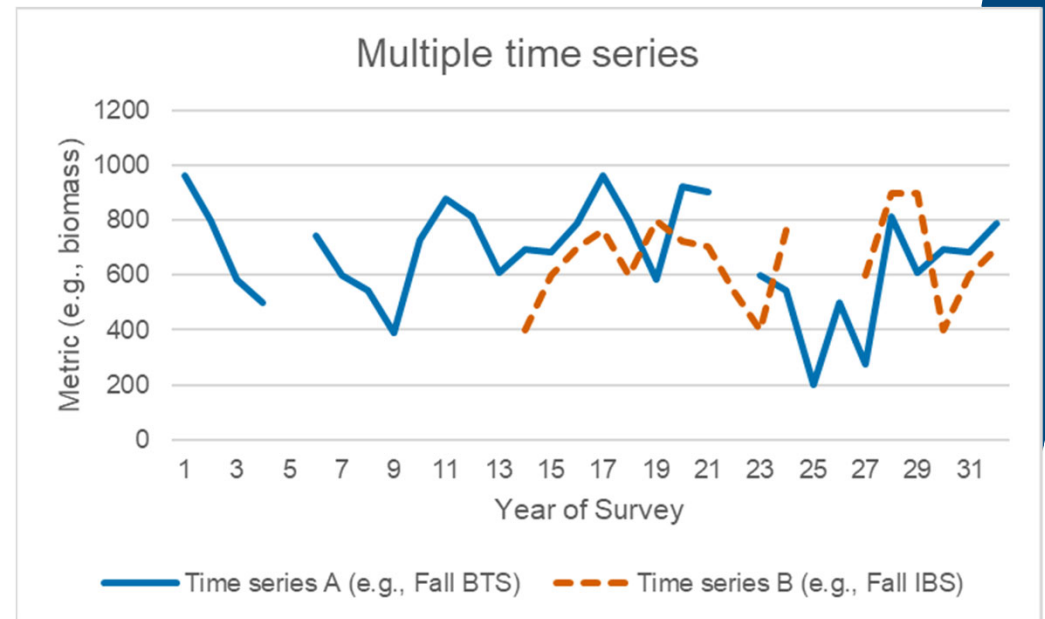
- Identify an industry vessel (or more than one) that can be calibrated to Bigelow and used when Bigelow sea days are reduced
- Ideally would use it regularly to maintain readiness
- Concerns: multiple vessels introduce uncertainty; calibration expensive and inexact; programmatically more challenging than NEFSC vessel option
- Progress update: no progress (but informed by Option 4 conversations)



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Option 4: Industry-based survey (IBS) not calibrated to Bigelow

Separate time series - parallel/complementary survey



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Council motions

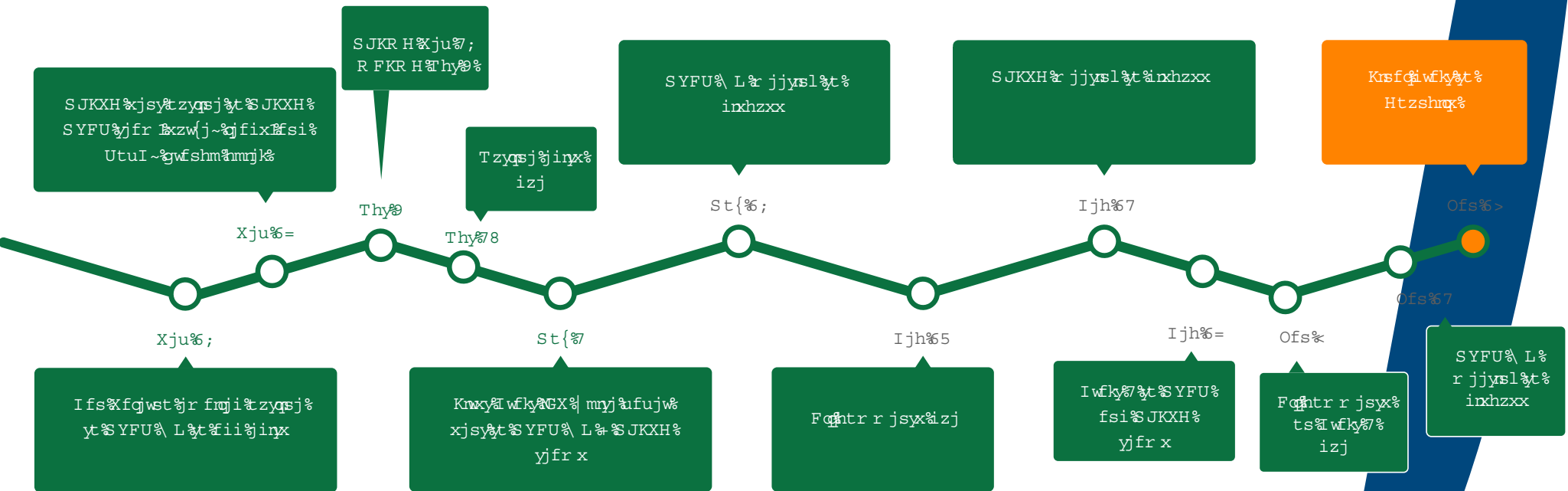
NEFMC and MAFMC passed motions (supported by ASMFC) in Sep/Oct 2023:

The Council request the Northeast Fisheries Science Center (NEFSC) to develop a white paper to be submitted to the New England Fishery Management Council by January 12, 2024, outlining an industry-based survey that is complementary to the spring and autumn Bottom Trawl Survey.



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IBS white paper development



Basic description of the proposed IBS

- Design
 - Same geographic range, seasons, strata, and station allocation as NEFSC survey
 - Aim for 24 hour sampling, determine if 12 hour per vessel is feasible
- Gear
 - Same gear as NEFSC survey (flexibility on doors, no autotrawl)
 - Net mensuration for tow evaluation
- Sampling
 - Station data, water quality data, gear performance & net spread
 - Catch - total number, biomass, composition; age, sex, maturity, stomach contents (preserved)
 - Determine additional biological sampling of catch during pilot survey



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Basic description of the proposed IBS

- Vessels
 - Appropriate length and horsepower to sample in open ocean conditions and tow gear at 3 knots for 20 minutes
 - Sufficient winch capabilities for towing the standardized gear package across the survey area
 - Necessary deck space for processing stations and catch processing
 - Capacity for CTD casts to 200 fm (365 m). Placement of the CTD on the trawl net would be considered.
 - Appropriate vessel crew for the length of the sampling day
 - Space for 1 spare net (2 or 3 may be needed if multi-week surveys legs are being done)
 - Capable of using appropriate doors
 - If 24-hour operations are being done, appropriate number of bunks for vessel and science crews



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Basic description of the proposed IBS

- Data management
 - Electronic data collection and management
 - Availability to stock assessments 4 weeks after survey concludes
 - Data available for use in stock assessments after 3-10 years of survey effort
- Program management
 - Third party operated as starting point BUT other options described



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Differences between IBS & BTS

- Program management relies on a third party (not NEFSC)
- Potential use of multiple vessels
- Potential use of different doors
- Smaller wire diameter
- No autotrawls
- Specific towing protocols may need to differ (have to determine during pilot study)
- Potentially less biological sampling of fishes (potentially less age, sex, or maturity; no or less stomach contents; no or fewer special sampling requests)
- Plankton sampling to be determined
- No acoustic sampling (no ADCP, no EK80)
- 12/24 hour day



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Next steps

1. Finish the contingency plan
 - o Flesh out options 1, 2, and 3
2. Explore connections with offshore wind – work with NEFSC survey & assessment working group
3. Plan out a pilot survey to be on the water in FY2025



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ASMFC Motion 1/25/2024

Move to recommend to task NTAP and the NTAP Industry Based Survey (IBS) Working Group to develop an outline detailing a proposal to conduct an IBS Pilot Program to test the viability of the program as presented in the "Proposed Plan for a Novel Industry Based Bottom Trawl Survey" white paper with a particular focus on adapting Section 2 "Survey Design Elements" to current Industry platform capabilities. Delivery date for the outline should be in time for further discussion at the Spring 2024 meeting cycle for the Commission and both the Mid-Atlantic and New England Councils in April 2024.

Motion made by Mr. Reid and seconded by Mr. Keliher. Motion carried by consent.



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NEFMC Motion, 1/30/2024

Move to recommend to task NTAP and the NTAP Bigelow Contingency Working Group to develop an outline detailing a plan to conduct a multi-vessel IBS Pilot Program to test the viability of the program as presented in the "Draft Proposed Plan for a Novel Industry-Based Multispecies Bottom Trawl Survey on the Northeast U.S. Continental Shelf" white paper with a particular focus on refining Section 2 "Survey Design Elements," considering NEAMAP protocols and current Industry platform capabilities. A progress report on the draft plan should be presented in time for further discussion at the April 2024 meetings of the NEFMC and MAFMC, and the spring 2024 meeting of ASMFC.

Motion made by Mr. Salerno and seconded by Mr. Pappalardo. Motion carried by unanimous consent with one abstention (Pentony).



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MAFMC Motion, 2/7/2024

Move to recommend to task NTAP and the NTAP Bigelow Contingency **Plan** working group to develop an outline detailing a plan to conduct a multi-vessel IBS pilot program to test the viability of the program presented in the “Draft Proposed Plan for a Novel Industry-Based Multispecies Bottom Trawl Survey on the Northeast U.S. Continental Shelf” white paper with a particular focus on refining section 2 “Survey Design Elements”, considering NEAMAP protocols and current industry platform capabilities. A progress report on the draft plan should be presented in time for further discussion at the April 2024 meetings of the NEFMC and MAFMC, and the spring 2024 meeting of ASMFC.

Motion made by Mr. Hughes. Motion carried by unanimous consent.



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Questions & Discussion

MAFMC Apr 9-11 Atlantic City

NEFMC Apr 16-18 Mystic

ASMFC Apr 29-May 2

- develop an outline detailing a plan for a pilot IBS
- give a progress report on the draft plan at April meetings

- What are key needs? (e.g., flesh out rest of contingency plan; potential process; where does wind fit in)
- When should the Working Group meet?



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There are many ways to improve fisheries data



Add data

Survey where/how Bigelow can't:

- finer scale
- hard bottom
- shallow water
- target 1 species

Add resilience

Contingencies

- Sister ship Pisces
- Other ships

Some stations

All stations

Reduce uncertainty

Gear research

- catchability studies
- restrictor rope

