# Progress on Development of Draft

## Addendum XXVII: GOM/GBK Resiliency



American Lobster Management Board August 2, 2021

## Outline

- 1. Background
- 2. Update on action timeline
- 3. Technical considerations
- 4. PDT recommendations for management options
- 5. PDT request for Board guidance
- 6. Next steps

## Background

- August 2017: Board initiated Draft Addendum XXVII to increase the resiliency of the GOM/GBK stock
  - Focus on standardizing measures across LCMAs
- Work on Atlantic Right Whale issues prioritized over Draft Addendum XXVII
- Following 2020 benchmark assessment, Board reinitiated work on Addendum XXVII
- February 2021 Board motion:

"Move to re-initiate PDT and TC work on the Gulf of Maine resiliency addendum. The addendum should focus on a trigger mechanism such that, upon reaching of the trigger, measures would be automatically implemented to improve the biological resiliency of the GOM/GBK stock."

## Background

- Fight Files COMMEN
- May 2021: PDT presented draft structure of options
- Board provided guidance:
  - Prioritize increasing biological resiliency over standardizing measures across LCMAs
  - Consider a tiered approach to trigger levels
  - Include relatively conservative trigger levels to maintain the current abundance regime
- May-July 2021: TC worked on analyses and PDT met to continue development of draft options
  - TC delayed in completing analyses of management options due to competing workloads

## **Updated Action Timeline**



February 2021	Board re-initiated work on Draft Addendum XXVII
Feb-April 2021	PDT and TC developed draft management options
May 2021	Board reviewed and provided guidance on PDT recommendations
May-July 2021	PDT & TC further developed draft options
<b>NA</b>	
→August 2021	Board meeting to receive progress update
→August 2021 Aug-Sept 2021	PDT finalizes Draft Addendum for Board review
→August 2021 Aug-Sept 2021 October 2021	PDT finalizes Draft Addendum for Board review Board meeting to consider Draft Addendum XXVII for public comment
<ul> <li>→August 2021</li> <li>Aug-Sept 2021</li> <li>October 2021</li> <li>Nov-Dec 2021</li> </ul>	Board meeting to receive progress update         PDT finalizes Draft Addendum for Board review         Board meeting to consider Draft Addendum XXVII         for public comment         Public Hearings and Comment Period

## **Technical Analysis in Progress**



- TC is working on analyses to make recommendations on the following issues:
  - Indices for Establishing Triggers
  - Trigger Levels
  - Management Measures to Increase Biological Resiliency

## **Technical Considerations**



#### Indices for Establishing Triggers

- Trigger based on observed change in annual survey indices
  - 1. Spring combined ME/NH and MA trawl survey index
  - 2. Fall combined ME/NH and MA trawl survey index
  - 3. Ventless Trap Survey index
- Single indices by season, survey provided stratum areas, sexes aggregated, constrained to sizes 71-80 mm
  - Focus on sub-legal sizes predictive of SSB trends
- Correlation analysis shows relationship between modeled abundance and the trawl indices

## **Technical Considerations**

#### **Trigger Levels**

- Trigger levels related to model outputs and abundance reference points, and regime shifts
  - Fishery/Industry Target: more proactive/conservative
  - Shift from moderate to high abundance regime
  - Abundance Limit: reactive not proactive
- Proposal for index-based triggers:
  - Management would be triggered if 3 year moving median of 3 indices falls below a certain reference value
  - E.g., median value of 3 years shows 17% decline from 2016-2018 reference value

## Stock Status: GOM/GBK



## **Potential Trigger Levels**

<b>Relation to Reference Point</b>	Decline from 2016-2018 average abundance
Fishery/Industry Target	-17%
Moderate/ High Abundance Regime Shift Level	-32%
75th Percentile of Moderate Abundance Regime	-45%
Abundance Limit	-51%

## **Potential Trigger Levels**



## **Technical Considerations**



#### Management Measures to Increase Biological Resiliency

- Minimum gauge size expected to have the largest impact, even with relatively small changes
  - Increasing min. gauge size would have a short term impact of decrease in numbers landed, but ultimate increase in total weight of landings.
  - Vent size should be changed accordingly with minimum gauge size
- Maximum gauge size effects are less certain
  - Minor changes less likely to be effective due to population size structure
- TC working on updating gauge size changes analysis to provide advice to PDT on measures to increase resiliency

## **Technical Considerations**



#### **Tiered Approach to Triggers**

- PDT members disagreed on a tiered approach with multiple triggers where:
  - more conservative trigger →less restrictive measures
     less conservative trigger → more restrictive measures
- Some concern about the scientific basis for using this approach given uncertainties about the stockrecruit relationship.
- Other PDT members feel it is appropriate to build in multiple triggers in case declines continue

## Current Measures (GOM/GBK)



Mgmt. Measure	Area 1	Area 3	OCC
Min Gauge Size	3 <sup>1</sup> / <sub>4</sub> "	3 <sup>17</sup> / <sub>32</sub> "	3 <sup>3</sup> / <sub>8</sub> "
Vent Rect.	$1^{15}/_{16} \times 5^{3}/_{4}$ "	2 <sup>1</sup> / <sub>16</sub> x 5 <sup>3</sup> / <sub>4</sub> "	$2 \times 5^3/_4$ "
Vent Cir.	2 <sup>7</sup> / <sub>16</sub> "	2 <sup>11</sup> / <sub>16</sub> "	2 <sup>5</sup> / <sub>8</sub> "
V-notch requirement	Mandatory for all eggers	Mandatory for all eggers above 42°30'	None
V-Notch Definition <sup>1</sup> (possession)	Zero Tolerance	<sup>1</sup> / <sub>8</sub> " with or w/out setal hairs <sup>1</sup>	State Permitted fisherman in state waters $1/4$ without setal hairs; Federal Permit holders 1/8 with or w/out setal hairs <sup>1</sup>
Max. Gauge (male & female)	5″	6 <sup>3</sup> / <sub>4</sub> "	State Waters none; Federal Waters 6 <sup>3</sup> / <sub>4</sub> "
Season Closure			February 1-April 30

## **Possible Measures**



#### **Maximum Gauge Size**

	5 in / 127mm	5 ½ in / 140mm	6 in / 152mm	6 ¼ in / 159mm	6 ½ in / 165mm	6 ¾ in / 171mm	None
3 ¼ in / 83mm	LCMA 1						
3 5/16 in / 84mm							
3 3/8 in / 86mm						OCC (federal)	OCC (state)
3 15/32 in / 88mm							
3 17/32 in / 90mm						LCMA 3	
3 19/32 in / 91mm							

Are any of these sizes non-starters for each LCMA?

## **PDT Recommendations**

- THE STATES WITH A
- The PDT proposes Addendum XXVIII options grouped into 4 issues:
  - 1. Standardizing some measures upon final approval of addendum
  - 2. Establishing management triggers to automatically implement measures to increase biological resiliency
  - 3. Management measures that would be automatically implemented at defined triggers
  - 4. Spatial implementation of management measures in LCMA 3

## **Issue 1 Options**

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Option	Description
1	Status Quo: no changes to measures upon final approval of addendum
2	Standardized measures to be implemented upon final approval of addendum
2A	Upon final approval of the addendum implement standardized measures within each LCMA to the most conservative measure where there are inconsistencies in measures for state and federal waters within LCMAs in the GOM/GBK stock. This would result in Outer Cape Cod (OCC) maximum gauge being standardized to 6-3/4" for state and federal waters, and the V-notch definition and requirement being standardized to 1/8" with or w/out setal hairs.
2B	Upon final approval of the addendum, implement a standard V-notch requirement across all LCMAs in the GOM/GBK stock. This would result in mandatory V-notching for all eggers in LCMA 1, 3, and OCC.
2C	Upon final approval of the addendum, standardize regulations across LCMAs in GOM/GBK for issuing trap tags for trap losses, such that there would be no issuance of trap tags before trap losses occur.

## **Issue 2 Options**

Option	Description
1	Status Quo: no trigger mechanism
2	Trigger level = 17% decline in indices from reference period (approximates Fishery/Industry Target reference point)
3	Trigger level = 32% decline in indices from reference period (approximates abundance levels where regime shift occurred from Moderate to High Abundance Regime)
4	Trigger level = 45% decline in indices from reference period (approximates the 75th Percentile of the Moderate Abundance Regime)
5	Trigger level = 51% decline in indices from reference period (approximates abundance limit reference point)

#### Option to establish 1 or 2 triggers

## **Issue 3 Options**

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Option	Description
1	Automatically implement LCMA-specific measures (can select multiple sub-options)
1A	Upon reaching Triggers 1 and 2, increase minimum gauge and vent sizes in LCMA 1, LCMA 3, and OCC as follows:
1B	Upon reaching Triggers 1 and 2, decrease maximum gauge sizes in LCMA 1, LCMA 3, and OCC as follows:
1C	Upon reaching Triggers 1 and 2, implement the following measures: (Allow for different changes by LCMA, i.e. not all areas have to increase min gauge or decrease max gauge.)
2	Automatically implement standardized minimum gauge size and vent sizes (can select multiple sub-options)
2A	Upon reaching Trigger 1, automatically implement the following minimum gauge and vent sizes for all areas in the GOM/GBK stock:
2B	Upon reaching Trigger 2, automatically implement the following minimum gauge and vent sizes for all areas in the GOM/GBK stock:

## **Issue 3 Options**

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Option	Description
3	Option 3: Automatically implement standardized maximum gauge size (can select multiple sub-options)
3A	Upon reaching Trigger 1, automatically implement the following maximum gauge size for all areas in the GOM/GBK stock
3B	Upon reaching Trigger 2, automatically implement the following maximum gauge size for all areas in the GOM/GBK stock
4	Upon reaching Trigger 1, in addition to the measures specified under Issue 3, implement any measures not selected under Issue 1.

## **Issue 4 Options**

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Option	Description
1	Maintain LCMA 3 as a Single Area (Status Quo)
2	<ul> <li>Split LCMA 3 along the 70°W Longitude Line with an Overlap Area</li> <li>LCMA 3 would be split along the 70°W longitude line to create an eastern section and a western section in LCMA 3 with an overlap area of 30' on either side of the 70°W longitude line. The eastern boundary of the LCMA 3 overlap would be comprised of the area west of the 69° 30' W longitude line. The western boundary of the overlap would be comprised of the area east of 70° 30' W longitude line.</li> <li>LCMA 3 harvesters could elect to fish exclusively in the western or eastern portions of LCMA 3, while being allowed to fish annually in the overlap zone without the need to change their area declaration. In the overlap zone, the fishermen would be held to the management measures of the sub-area declared.</li> </ul>

## **Request for Board Guidance**



- 1. Is the Board still interested in a tiered trigger approach given PDT concerns with tiered approach to management triggers and measures due to uncertainties about the stock-recruit relationship?
- 2. Does the Board wish to remove any of the proposed trigger levels because they are either too aggressive (i.e. the trigger may already be met) or not precautionary enough?
- 3. Are there limitations to the range of gauge sizes the Board is willing to consider as options?
- 4. If a trigger mechanism is implemented through final approval of the addendum, will the states be able write the established triggers into their rulemaking? Or would rulemaking to implement new management measured have to occur *after* a trigger is met?

## **Next Steps**

- August: TC finalizes analysis of options
- August/September: PDT meetings to finalize draft addendum document for public comment
  - Board sub-committee participation
- October: Board considers Draft Addendum 27 for public comment



## **Questions?**

## **Stock Status: SNE**





## Work Group Recommendations on Electronic Vessel Tracking



American Lobster Management Board August 2021

## Background

- At the May 2021 meeting, Board supported implementing vessel tracking requirements for federally permitted lobster and Jonah crab vessels
  - High resolution spatial/temporal data critical to addressing challenges associated stock assessment, protected species interactions, marine spatial planning, and offshore enforcement.
- Formed Work Group
  - Identify objectives, technological solutions, and system characteristics for vessel tracking devices in the federal lobster and Jonah crab fisheries

## **Proposed Objective**

- Proposed objective of requiring tracking devices for federally (and dually) permitted vessels in the federal lobster and Jonah crab fisheries:
  - Collect high-resolution spatial and temporal data to characterize effort in the federal American lobster and Jonah crab fisheries for management and enforcement needs
  - These data will improve stock assessment, inform discussions and management decisions related to protected species and marine spatial planning, and enhance offshore enforcement

## **Data Needs**



- <u>Stock assessment</u>: Improved spatial resolution of harvest data will improve size composition data used in stock assessment models to estimate exploitation and reference abundance.
- <u>**Right whales and protected resources</u>**: Current models used to assess the location of vertical lines in the fishery and their associated risk to right whale could be significantly improved with data collected through vessel tracking. Biological Opinion outlines additional risk reductions in the US lobster fishery starting in 2025; need updated data and models before this time.</u>
- <u>Marine Spatial Planning (including protected areas</u>): Need to record the footprint of the US lobster fishery as spatial allocation discussions occur as a result of emerging ocean uses such as aquaculture, marine protected areas, and offshore energy development. January 2021 Executive Order included a goal of protecting 30% of US waters by 2030.
- <u>Offshore enforcement</u>: Locating offshore gear is a challenge, particularly in LCMA 3. Vessel tracking could provide gear location to enforcement to improve efficiency and efficacy.

## **Work Group Recommendations**



- WG recommends the Board initiate an addendum to consider implementing electronic tracking requirements for federally permitted vessels in the lobster and Jonah crab fishery.
  - Implement tracking data collection under the authority of the Atlantic Coastal Fishery Cooperative Management Act (ACFCMA)
  - Provides needed process and flexibility for information collection and sharing
  - Operating under ACFCMA allows tracking data to be stored directly to ACCSP, which facilitates data access for state fishery management agencies and enforcement

#### **Recommended Specifications**



- Minimum reporting rate of one ping per minute for at least 90% of the fishing trip
  - Can distinguish lobster fishing activity from transiting activity
     & allows the calculation of number of traps per trawl.
- Cellular tracking devices are the preferred technology over satellite systems
- Devices should meet minimum technological standards defined by ACCSP and its partners to ensure data needs are consistently met, while providing flexibility for technology to evolve and improve
  - E.g. power systems capable of running the device at the specified ping rate, precision and accuracy requirements, distinction between a tracker unit and a vessel/permit

## **Additional Considerations**

- Law Enforcement Committee should be consulted on several issues:
  - when tracking devices would need to remain active
  - dockside communication
  - tamper-proof features (i.e., affixing the device to the vessel).
- Need to determine how tracking should be applied to the mobile gear fleet (different ping rate may be more appropriate for these vessels)
- Technical staff from the states and ACCSP should draft data reporting, management, and dissemination processes and standards for vessel track data collected under the proposed requirements.
- Addendum should address a process to approve devices for use in the fishery

## **Additional Considerations**



- What is the desired timeline for implementation?
  - If initiated now, addendum could be completed by February 2022 at the earliest
  - How does this overlap with timeline for mandatory eVTR for lobster permit holders?
- How much lead time is needed to develop systems for data collection/management?
- What are the time/resource requirements for ACCSP (e.g. program development, data management, program maintenance)?
- What are the time/resource requirements for states?
- Who will provide tech support to harvesters?
- Who will pay for tracking devices?

## **Board Action**

- Board action for consideration:
  - Consider initiating an addendum which considers implementing a requirement for electronic vessel tracking for federally permitted lobster and Jonah crab vessels.



## **Questions?**





## Jonah Crab Pre-Assessment Data Workshop and Report



## Outline

- Background
- Need for Coastwide Stock Assessment
- Evaluation of Available Data Sources
- Potential Stock Assessment Approaches
- Research Recommendations
- Recommendation on Stock Assessment Schedule

## Background



- TC meetings in August 2017 and April 2020 to discuss Jonah crab research and available data
  - Identified data limitations, but also need for a more in-depth data review to determine feasibility of a stock assessment
- The Board tasked the TC in August 2020 with conducting a pre-assessment workshop to report out on potential stock assessment approaches supported by available data
- Virtual workshop held November 2020, and 3 webinars conducted in February and June 2021
- Report developed from workshop and webinar discussions and was included in meeting materials



- Increasing trend in landings driven in part by target shifting from lobster and increasing price, abundance?
- Need for science-based management advice in light of Canadian Jonah crab stock declines





#### **Evaluation of Available Data Sources**

• Life History Data

Indices of Abundance

• Fishery Removals



## Life History Data

- Best available information
  - Size-at-maturity– Juvenile growth
- Data limitations
  - Adult growth
  - Longevity
  - Natural mortality



## **Indices of Abundance**

 31 surveys encountering Jonah crab considered

- Issues limiting utility of surveys for providing indices of abundance
  - Spatial coverage
  - Time series
  - Catchability



Survey	Time Series	Carapace Widths	Sex	Unlikely to Provide an Index of Abundance for Assessment	Reason
ME Urchin Survey	2004-present	Y	Y	Y	SS
ME VTS	2011-present	Y (2016)	Y (2016)	Y	SS
NH VTS	2009-present	Y (2015)	Y (2015)	Y	SS
Normandeau VTS	1982-present	Y	Y	Y	SS
MA VTS	2007-present	Y	Y (2015)	Y	SS
SMAST VTS	2019	Y	Y	Y	SS, TS
CFRF VTS	2014-present	Y	Y		
CFRF SNE Cooperative VTS	2014-2018	Y	Y	Y	SS, TS
RI VTS	2006-present	Y	Y	Y	SS
NY VTS	2006-2010	N	N	Y	TS
NJ Fixed Gear Survey	2016-present	Y	Y	Y	TS
DE Structure Oriented Survey	2018-present	Y	Y (2020)	Y	TS
CFRF-South Fork Wind Farm Cox's Ledge/RI Sound Trawl	2020-present	Y	Y	Y	SS, TS
Coonamessett Farm Foundation Scallop Dredge	2010-present	N	N	Y	TS
ME/NH Trawl Survey	2001-present	Y	Y (2004)		
MA DMF Trawl Survey	1978-present	Y	Y (1981)		
RI Trawl Survey	2015-present	Y	Y	Y	TS
URI GSO Trawl Survey	2016-present	Y	Y	Y	TS
CT Trawl Survey	1979-present	Y	Y	Y	SS, CR
NY Trawl Survey	2017-present	Y	Y	Y	TS
NJ DFW Ocean Trawl Survey	1989-present	Y	Y (2021)		
NEAMAP Trawl Survey	2007-present	Y	Y	Y	CR
NEFSC Trawl Survey	1969-present	Y	Y		



## Indices of Abundance

 18 of 23 surveys considered unlikely to provide an index for near-term assessment



## **Indices of Abundance**

Survey	Time Series	Carapace Widths	Unlikely to Provide an Index of Abundance for Assessment	Reason
ME DMR Settlement Survey -	2001-present	v		
Statistical Area 511	2001 present	•		
ME DMR Settlement Survey -	2000-procept	v		
Statistical Area 512	2000-present	I		
ME DMR Settlement Survey -	1090 procept	v		
Statistical Area 513	1969-present	ř		
NH F&G Settlement Survey	2009-present	Y		
Normandeau Plankton Survey	1982-present	N	Y	SID
MA DMF Settlement Survey	2011-present	Y		
RIDEM DMF Settlement	1000 procent	v		
Survey	1990-bresent	ř		
UMaine Deepwater	2007 procest	V	, v	тс
Collectors	2007-present	Y	Y Y	15

 2 of 8 surveys reviewed unlikely to provide an index for nearterm assessment

## **Fishery Removals**

- Landings
  - Three main issues discussed
    - Species misidentification
      - Anticipated to be a minor issue due to scale of Jonah crab landings relative to total *Cancer* crab landings
    - Underreporting
      - Anticipated to be a minor issue following stricter reporting requirements and increases in harvest volume and value (≈mid-2000s)
    - Landings units
      - Corrected where encountered
  - 2006 likely to be reliable start year for total landings time series
  - Seasonal and spatial (stat area) data available for this time series if needed

## **Fishery Removals**

Biosampling

#### Best coverage occurred in core statistical areas (537, 526, 525) since 2014

 Time series still too short for use in population dynamics modeling approaches

		537					526						525						
Year	Quarter	Quarter SEA		SEA PORT TOTAL SEA PORT TOTAL		DTAL	SEA		PORT		TOTAL								
		Trips	Samples	Trips	Samples	Trips	Samples	Trips	Samples	Trips	Samples	Trips	Samples	Trips	Samples	Trips	Samples	Trips	Samples
2013	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	4	0	0	2	714	2	714	0	0	0	0	0	0	0	0	0	0	0	0
2014	1	3	459	2	2,600	5	3,059	1	3	0	0	1	3	0	0	0	0	0	0
2014	2	3	273	0	0	3	273	0	0	0	0	0	0	0	0	0	0	0	0
2014	3	13	959	0	0	13	959	0	0	0	0	0	0	7	694	0	0	7	694
2014	4	5	211	0	0	5	211	1	632	0	0	1	632	11	966	0	0	11	966
2015	1	2	543	0	0	2	543	7	4,727	1	754	8	5,481	3	310	0	0	3	310
2015	2	9	842	2	2,561	11	3,403	6	836	2	1,268	8	2,104	9	854	0	0	9	854
2015	3	12	8,085	0	0	12	8,085	3	531	0	0	3	531	4	1,357	0	0	4	1,357
2015	4	14	12,497	5	3,322	19	15,819	4	3,206	1	455	5	3,661	4	1,258	0	0	4	1,258
2016	1	7	1,280	3	2,227	10	3,507	0	0	3	1,608	3	1,608	4	383	1	82	5	465
2016	2	7	2,353	3	1,710	10	4,063	3	3,601	4	2,290	7	5,891	11	1,172	0	0	11	1,172
2016	3	11	1,612	1	760	12	2,372	2	130	1	640	3	770	6	263	0	0	6	263
2016	4	8	792	1	584	9	1,376	0	0	0	0	0	0	1	50	0	0	1	50
2017	1	3	182	0	0	3	182	1	101	0	0	1	101	1	67	0	0	1	67
2017	2	1	52	0	0	1	52	2	69	0	0	2	69	2	368	0	0	2	368
2017	3	9	2,285	0	0	9	2,285	4	306	0	0	4	306	9	388	0	0	9	388
2017	4	6	212	0	0	6	212	0	0	0	0	0	0	5	244	0	0	5	244
2018	1	5	463	0	0	5	463	0	0	0	0	0	0	2	86	0	0	2	86
2018	2	3	280	0	0	3	280	8	550	1	1,608	9	2,158	3	134	0	0	3	134
2018	3	11	563	0	0	11	563	7	449	0	0	7	449	2	101	0	0	2	101
2018	4	12	687	1	641	13	1,328	9	594	0	0	9	594	2	87	Ó	0	2	87
2019	1	4	545	0	0	4	545	2	337	1	711	3	1,048	2	159	1	626	3	785
2019	2	11	787	1	714	12	1,501	4	296	0	0	4	296	0	0	0	0	0	0
2019	3	13	600	1	14	14	614	10	870	1	570	11	1,440	1	52	0	0	1	52
2019	4	16	861	3	1,034	19	1,895	6	554	2	718	8	1,272	0	0	0	0	0	0

## **Possible Assessment Approaches**



- Stock indicators
  - Outputs: Annual indicator values relative to time periodbased reference values
  - Use for other ASMFC species: American lobster, spot, Atlantic croaker
- Index-Based Methods
  - Outputs: Stock status based on an ad hoc, historical time period or sustainable catch levels
  - Use for other ASMFC species: Horseshoe crab
- Data available
- Numerous options and flexibility
- Limited outputs

## **Other Assessment Approaches**

- Biomass Dynamics-Based Data Poor Models
- Biomass Dynamics Models
  - Data available
  - Potential assumption violations

## **Other Assessment Approaches**

- Collie-Sissenwine Analysis
- Statistical Catch-at-Length Model

- Potential data limitations
- Most robust outputs

## **Research Recommendations**



## **High Priority**

- Information should be collected to help delineate stock boundaries (e.g. genetics). Identification of stock boundaries is an essential step in stock assessment that will inform many subsequent steps including development of input data and identification of methods applicable to the stock(s). Note: Some genetic research is currently being conducted by the Gloucester Marine Genomics Institute that may address this recommendation.
- Female migration pathways/seasonality and larval duration and dispersal need to be researched. Anecdotal information suggests seasonal aggregations in inshore areas, but research would help to understand these mechanisms and inform stock boundaries.
- Inter-molt duration of adult crabs is currently unknown and growth increment data for mature crabs is limited. These data will be necessary to transition to size- or age-based assessment methods.

## **Research Recommendations**



## **High Priority**

- Develop fisheries-independent surveys (e.g. trap survey) to index post-settlement Jonah crab abundance from offshore areas where most of the fishery is executed.
- Increase fisheries-dependent monitoring of the offshore fleet. Sampling intensity by statistical area should be based on landings.
- Reproductive studies pertaining to male-female spawning size ratios, the possibility of successful spawning by physiologically mature but morphometrically immature male crabs, and potential for sperm limitations should be conducted.
- The amount of directed commercial effort on Jonah crabs vs. lobster should be quantified on a per trip basis.

## **Stock Assessment Schedule**

- Tarthates commiss
- The TC recognizes Jonah crab is a data-poor species with limited assessment options, but also pressing needs for a formal stock assessment
- The NRCC and ASMFC stock assessment schedules currently include a placeholder for a 2023 Jonah crab assessment
- The TC recommends conducting a near-term stock assessment to be completed in 2023



## **Questions?**





## Management Strategy Evaluation for American Lobster



American Lobster Management Board August 2, 2021

## May 2021 Board Meeting



- TC presented lobster MSE recommendations
  - Prioritize two-phase GOM/GBK MSE
  - Form a steering committee to further guide development of a MSE
  - Convene management objectives and goals workshop
- Board postponed further consideration of MSE development until August 2021 meeting

Prioritize work on Draft Addendum XXVII

## **Steering Committee**

- Complete additional scoping including format of stakeholder outreach and identifying funding and personnel
- Steering Committee charge would be to develop comprehensive work plan to ensure successful process, not direct content within MSE process
- MSE start date depends on completion of management workshop and outcome of steering committee findings

## **Steering Committee Roles**

- Reps from Board, TC, ASMFC Staff, industry stakeholders, Committee on Economics and Social Sciences, Assessment and Science Committee
- Need to have some members with MSE experience
- Ideally  $\leq$  12 members

## **Management Workshop**

- Need Board and stakeholder input
- Big picture goals, both short and long term to guide the focus of the two phases
- E.g. Menhaden Management Objectives Workshop
- Should be conducting parallel to steering committee work so final recommendations are relevant to objectives and goals for the future of the lobster fishery

## **Next Steps**

- TO STATES MATHINE
- Move forward with development of steering committee?
  - Staff to work with Board and TC members to populate steering committee
  - Board review and consensus of steering committee membership following completion of Addendum XXVII

## **Suggested Timeline**



August-October 2021	<ul> <li>Staff begin to work with Board and TC members to populate MSE steering committee</li> <li><i>Finish development of Draft Addendum 27</i></li> </ul>
October 2021	<ul> <li>Board approves Draft Addendum 27 for public comment</li> </ul>
November- December 2021	<ul> <li>Staff continue reaching out to populate MSE steering committee</li> <li><i>Public hearings for Draft Addendum 27</i></li> </ul>
February 2022	<ul> <li>Board considers approval of MSE steering committee membership</li> <li>Board considers final approval of Draft Addendum 27</li> </ul>
Spring 2022	<ul><li>MSE steering committee meets</li><li>Conduct goals and objectives workshop</li></ul>