

Atlantic States Marine Fisheries Commission

Northern Shrimp Advisory Panel

September 12, 2024

1:00 - 4:00 p.m.

Doubletree by Hilton Portland

363 Maine Mall Road

South Portland, Maine

Draft Agenda

The times listed are approximate; the order in which these items will be taken is subject to change; other items may be added a necessary.

1. Welcome/Review Agenda (*G. Libby*) 1:00 p.m.
2. Draft Amendment 4 Public Information Document Discussion (*C. Tuohy*) 1:05 p.m.
 - Overview of Each Issue, Summary of Public Comments, and AP Discussion
3. Discuss Industry-Based Research Program with Technical Committee 2:00 p.m.
 - Technical Committee March 2024 Report
 - Advisory Panel and Technical Committee Discussion and Feedback
4. Other Business/Adjourn 4:00 p.m.

Atlantic States Marine Fisheries Commission

Northern Shrimp Section

*September 13, 2024
9:00 a.m. - 12:00 p.m.*

*Doubletree by Hilton Portland
363 Maine Mall Road
South Portland, Maine*

Draft Agenda

The times listed are approximate; the order in which these items will be taken is subject to change; other items may be added as necessary.

- | | |
|--|------------|
| 1. Welcome/Call to Order (<i>D. Grout</i>) | 9:00 a.m. |
| 2. Section Consent | 9:00 a.m. |
| • Approval of Agenda | |
| 3. Public Comment | 9:05 a.m. |
| 4. Public Comment Summary to Draft Amendment 4 Public Information Document | 9:15 a.m. |
| • Public Comment Summary (<i>C. Tuohy</i>) | |
| • Advisory Panel Report (<i>G. Libby</i>) | |
| 5. Draft Amendment 4 (<i>D. Grout</i>) | 9:45 a.m. |
| • Provide Guidance to the Plan Development Team for Draft Amendment 4 | |
| 6. Review Industry-Based Research Program Discussions | 10:30 a.m. |
| • Advisory Panel and Technical Committee Report | |
| 6. Other Business/Adjourn | 12:00 p.m. |

Atlantic States Marine Fisheries Commission

PUBLIC INFORMATION DOCUMENT

**For Amendment 4 to the
Interstate Fishery Management Plan For**

NORTHERN SHRIMP



June 2024



Sustainable and Cooperative Management of Atlantic Coastal Fisheries

The Atlantic States Marine Fisheries Commission seeks your input on the initiation of Amendment 4 to the Northern Shrimp Fishery Management Plan

The public is encouraged to submit comments regarding this document during the public comment period. Comments must be received by **11:59 PM (EST) on August 16, 2024**. Regardless of when they were sent, comments received after that time will not be included in the official record. The Northern Shrimp Section will consider public comment on this document when developing the first draft of Amendment 4.

You may submit public comment in one or more of the following ways:

1. Attend public hearings pertinent to your state or jurisdiction; please note, some hearings may be held via webinar.
2. Refer comments to your state's members on the [Northern Shrimp Section](#) or [Northern Shrimp Advisory Panel](#), if applicable.
3. Mail or email written comments to the following address:

Chelsea Tuohy
Fishery Management Plan Coordinator
Atlantic States Marine Fisheries Commission
1050 North Highland Street, Suite 200A-N
Arlington, Virginia 22201
Fax: 703.842.0741
comments@asmfc.org (subject line: Northern Shrimp PID)

If you have any questions, please call Chelsea Tuohy at 703.842.0740.

**YOUR
COMMENTS ARE
INVITED**

The Atlantic States Marine Fisheries Commission (Commission) is developing an amendment to revise the Interstate Fishery Management Plan (FMP) for Northern Shrimp. The Commission is responsible for developing FMPs which are based on the best available science and promote the conservation of the stock throughout its range. The states and jurisdictions of Maine, New Hampshire, and Massachusetts participate in the management of this species as part of the Commission's Northern Shrimp Section (Section).

This is your opportunity to inform the Commission about changes observed in the fishery, actions you feel should or should not be taken in terms of management, regulation, enforcement, and research, and any other concerns you have about the resource or the fishery, as well as the reasons for your concerns.

**WHY IS THE
ASMFC
PROPOSING THIS
ACTION?**

The last time a new plan amendment to the Northern Shrimp FMP was adopted was in 2017 (Amendment 3). Since then, the status of the northern shrimp (*Pandalus borealis*) stock has remained unchanged with a depleted stock status and continued fishing moratorium. Given the poor condition of the stock, the Section supported initiation of a new plan amendment to consider several changes to the FMP including to the current management program requirement of annual specifications and addition of management triggers for stock monitoring. Through extending the specifications timeline, the Section may implement an ongoing or multiyear moratorium on harvest rather than meeting annually to implement a new moratorium for the following year, if preferred. A management trigger for the stock could inform when an ongoing or multiyear moratorium should be re-evaluated if improved stock conditions are evident, indicated through recruitment trends or other specified biological indicators. The 2022 and 2023 northern shrimp data updates led the Section to discuss a number of significant challenges facing the northern shrimp resource and its management. Consequently, in December 2023, the Section passed the following motion:

“Move to initiate an amendment to implement an ongoing moratorium until the wake-up index is triggered.”

**WHAT IS THE
PROCESS FOR
DEVELOPING AN
AMENDMENT?**

The publication of this document is the first step of the Commission's formal amendment process. Following this initial phase of information gathering and public comment, the Section will select the range of issues to be addressed through this Amendment, and identify potential management options. Other issues not addressed here can be addressed through a subsequent management document. The Commission will then develop Draft Amendment 4, incorporating the identified management options, for public review. Following that review and public comment, the Commission will specify the management measures to be included in Amendment 4, as well as a timeline

Public Information Document for Northern Shrimp Amendment 4 for Public Comment

for implementation. In addition to issues identified in this Public Information Document (PID), Draft Amendment 4 may include issues identified during the public comment period of the PID.

The timeline for completion of Amendment 4 is as follows. Please note that the timeline is subject to change per the direction of the Section:

June 2024	Section reviews Draft PID and considers approving the PID for public comment
June - August 2024	Public comment on PID <i>Current Step</i>
August 2024	Section reviews public comment; directs Plan Development Team to develop Draft Amendment 4
August - September 2024	Preparation of Draft Amendment 4 with input from Technical Committee and Advisory Panel
September 2024	Section reviews Draft Amendment 4 and considers approving for public comment
October 2024- November 2024	Public comment on Draft Amendment 4
December 2024	Section reviews public comment and selects final measures for Amendment 4; Policy Board and Commission approve Amendment 4

WHAT IS THE PURPOSE OF THIS DOCUMENT?

The purpose of this document is to inform the public of the Commission’s intent to gather information concerning northern shrimp and to provide an opportunity for the public to identify major issues and alternatives relative to the management of this species. Input received at the start of the amendment process can have a major influence in the final outcome of the amendment. This document is intended to solicit observations and suggestions from commercial fishers, the public, and other interested parties, as well as any supporting documentation and additional data sources.

To facilitate public input, this document provides a broad overview of the issues already identified for consideration in the amendment; background information on the northern shrimp population, fisheries, and management; and a series of questions for the public to consider about the management of the species. In general, the primary question on which the Commission is seeking public comment is: **“How would you like management of the northern shrimp fishery to look in the future?”**

WHAT ISSUES WILL BE ADDRESSED? The primary issues considered in the PID are:

1. Specifications timeline
2. Management triggers
3. Any other issues concerning the management of northern shrimp

ISSUE 1: Specifications Timeline Background: The Fishery Management Plan (FMP) for Northern Shrimp (1986) established the requirement for northern shrimp fishing seasons to be set annually by the Section after considering recommendations from the Northern Shrimp Technical Committee (TC). Amendment 1 (2004) and subsequent amendments to the FMP made no changes to the annual specifications requirement, with Amendment 3 (2017) stating, “The Section has the ability to set a closed season annually up to 366 days (i.e., impose a moratorium)”. Based on the current requirements of the FMP, measures subject to annual specification may only be modified through an amendment to the FMP.

Each year, the Section meets in the late fall or early winter to discuss fishery specifications for the upcoming year. However, after the northern shrimp stock collapse in 2013, the Section has implemented a moratorium every year since 2014. Additionally, annual TC data updates indicate the northern shrimp stock continues to be depleted, with environmental conditions remaining unfavorable for northern shrimp in the Gulf of Maine. The 2023 data update for the species found no improvement in status, with indices of abundance, spawning stock biomass (SSB), and recruitment at new time-series lows (ASMFC, 2023). After receiving the results of the 2023 data update, the Section continued the fishing moratorium through the 2024 fishing year.

Statement of the Problem: The requirement of annual specifications in the Northern Shrimp FMP may no longer be appropriate given the continued poor condition of the stock. The northern shrimp fishery in the Gulf of Maine was first placed under a fishing moratorium in 2014, and has remained in a moratorium since that time due to further decline in SSB and poor recruitment among other negative trends in biological indicators. The Section is interested in considering lengthened specifications setting timelines (e.g., 3, 5, indefinite, or other number of specified years instead of annual). A lengthened specifications setting timeline would allow the Section the flexibility to no longer meet annually if the TC’s annual data update or other evaluation method indicates no improvement in stock conditions and continued poor recruitment to the fishery. However, it is important to note that if the specifications setting timeline is lengthened through Amendment 4 and the Section is not required to meet each year, a member of the Section may call a Section meeting at any time regardless of whether specifications are being set. This process for calling a Section meeting would not be altered

by Amendment 4, and will remain in place with or without a new amendment to the Northern Shrimp FMP.

Public Comment Questions: Is a specifications setting timeline longer than one year appropriate given the status of the northern shrimp stock and fishery? What would an appropriate specifications setting timeline be? Should the Section explore the option of an ongoing or multiyear harvest moratorium?

***ISSUE 2:
Management
Triggers***

Background: In 2022, recognizing the northern shrimp stock has remained at low levels of biomass despite no fishing pressure, the Section tasked the TC to work in collaboration with the Northern Shrimp Work Group to “develop a set of biological indicators along with a threshold that could serve as a trigger to indicate when the northern shrimp stock approaches a healthy population level that may be able to support a viable fishery”. The Section’s motivation behind the TC and Work Group tasking was to explore the potential for the northern shrimp stock in the Gulf of Maine to be placed in an ongoing or multiyear moratorium with annual evaluation of the management trigger. If the trigger, composed of a set of biological indicators, suggested an improvement in the perception of northern shrimp stock status, the Section could then task the TC to conduct a more thorough evaluation of stock health through a full assessment update with projections to inform potential specifications setting in future years. The Section has previously noted that given the continued condition of the stock, a management trigger may be an improved management option moving forward. While the Section has expressed initial support for an ongoing or multiyear moratorium, it is also possible to implement a management trigger under the current annual specifications process, if desired.

The Striped Bass FMP provides an example of management triggers used in action, and includes a recruitment trigger which is intended to identify when the population is entering a period of low recruitment that may make current harvest levels unsustainable. Every year, the Striped Bass TC reviews the young-of-year indices from four major spawning grounds. If any of the indices falls below the recruitment threshold for three consecutive years, the recruitment trigger is tripped, and the fishing mortality target will be changed to an interim lower value that accounts for the new, lower recruitment regime. If current fishing mortality (F) is above the interim F target, management action will be taken to reduce F to the interim F target. For striped bass, the recruitment trigger identifies a period of declining recruitment. For northern shrimp, which is already in a period of low recruitment, a similar approach could alternatively identify a period of increasing recruitment as a trigger for reviewing stock health and potential for sustainable harvest, for example.

Statement of the Problem: Each year, the TC conducts a data update to incorporate the most recent fishery independent surveys and environmental indices into the longstanding timeseries, to apprise managers and stakeholders of current stock trends. A Strict Traffic Light Approach (TLA) is applied to a suite of survey and environmental indicators including: a predation pressure index (PPI) calculated from the Northeast Fisheries Science Center (NEFSC) Fall Survey data, spring bottom temperature from the NEFSC survey, summer bottom temperature from the NEFSC Summer Survey, and winter surface temperature from Boothbay Harbor, ME. In recent years, the PPI has been dropped from the TLA due to an unfilled NEFSC Northern Shrimp TC seat and inability to run the PPI in a way consistent with previous years lacking this representation (ASMFC, 2023). Additionally, beginning in 2024, the NEFSC Summer Survey, which provides the most robust stock abundance data, will be indefinitely postponed.

Despite these challenges, a TC exploration of the impacts of the loss of the Summer Survey found the remaining two surveys, the NEFSC Fall Bottom Trawl Survey and the ME-NH Spring Inshore Trawl Survey, can reliably inform the stock assessment model and annual data updates in the absence of the Summer Survey. Additionally, the TC discussed that the remaining two surveys provide sufficient evidence of northern shrimp recruitment (i.e., year class strength and persistence) and other indicators to inform potential management triggers in the future.

Each year since 2021, the last time a full stock assessment for northern shrimp was completed, the northern shrimp data updates have indicated no improvement in stock status, with indices of abundance, SSB, and recruitment at new time-series lows and continued unfavorable environmental conditions in the Gulf of Maine for northern shrimp (ASMFC, 2021, 2022, & 2023). Given this trend, a management trigger in concert with an ongoing or multiyear moratorium may serve as a more appropriate tool to initiate a re-evaluation of stock status.

A management trigger would define specific management responses tied to definable metrics that indicate changes in northern shrimp biological and/or environmental conditions as opposed to the current system of annual data updates. In the case of annual data updates, the TC provides information about the northern shrimp stock to the Section, but there is no pre-defined management response to data update results. However, if a management trigger were implemented, and the trigger remained un-tripped (no change in stock status), a moratorium would be maintained. On the other hand, if the trigger were to be tripped, it could prompt steps to be taken such as a stock assessment update that would allow the Section to examine the potential for reopening the fishery. If a management trigger were to be implemented, the

TC would continue to provide annual data updates for northern shrimp in addition to trigger reviews.

Specifically, favorable trends in biological indicators such as recruitment could serve as a trigger for the TC to review whether the northern shrimp stock is projected to be able to support a sustainable fishery followed by management response by the Section. An example of a favorable trend may include year-class strength persisting for multiple years, as an indication of potential stock recovery. Recruitment has been identified as a preferred indicator to support a management trigger due to higher northern shrimp landings observed in years following recruitment of dominant year classes that have survived to adulthood.

Public Comment Questions: Should this amendment consider adopting a management trigger for northern shrimp, where a particular set of biological indicators (to be defined) trigger a more thorough evaluation of stock condition and a potential management response? Would recruitment (both in terms of year-class strength and persistence) serve as an effective indicator of northern shrimp stock health to inform a management trigger? What other stock indicators should be relied upon to inform a management trigger for re-evaluation of whether the stock could support a sustainable fishery? Are there any other sources of data that exist now or may exist in the future that could inform the management trigger?

**ISSUE 3:
Other Issues**

Background: The intent of this document is to solicit feedback on a broad range of issues for consideration in the next amendment for northern shrimp. Stakeholder feedback should generally focus on **“How would you like management of the northern shrimp fishery to look in the future?”**

After reading the above issues, are there any other topics that should be addressed in Amendment 4? Some examples may include:

- Impacts due to climate change, including, but not limited to, increased predation due to changing environmental conditions and species distribution shifts;
- Habitat degradation; and
- Research priorities

When providing comment on other management issues, it's important to indicate how the issue can be addressed through Section action.

Public Comment Questions: What other changes should be made to the northern shrimp fishery that are not covered by the topics included in this document?

BACKGROUND *Summary of Fishery Management*

INFORMATION ON THE MGMT & STOCK STATUS OF NOTHERN SHRIMP Before the 2014 fishery moratorium, northern shrimp (*Pandalus borealis*) supported small but valuable commercial and recreational fisheries in New England states. The Commission coordinates interstate management of the species in state waters (0-3 miles from shore), while management authority in the exclusive economic zone (3-200 miles) lies with NOAA Fisheries. The management framework for the species evolved during 1972-1979 under the auspices of the State/Federal Fisheries Management Program. In 1980, this program was restructured as the Interstate Fisheries Management Program (ISFMP) of the Commission. The first Interstate FMP for the species was approved in 1986.

The Commission approved Amendment 1 to the FMP in May 2004. Amendment 1, which replaced the original FMP, established biological reference points for the first time in the shrimp fishery and expanded the tools available to manage the fishery. Amendment 2, which completely replaced Amendment 1 and was approved in October 2011, further expanded the tools available to manage northern shrimp, including options to slow catch rates throughout the season. It also established a threshold level for the fishing mortality reference points; included a more timely and comprehensive reporting system; and allowed for the initiation of a limited entry program to be pursued through the adaptive management addendum process. The goal of Amendment 2 is “to manage the northern shrimp fishery in a manner that is biologically, economically, and socially sound, while protecting the resource, its users, and opportunities for participation.” Addendum I to Amendment 2, approved in November 2012, refined the annual specification process, and allocated the total allowable catch (TAC) to the trawl (87%) and trap (13%) fisheries based on historical landings since 2001.

Despite these management efforts, in 2013, the northern shrimp stock collapsed prompting the Section to impose a complete harvest moratorium starting with the 2014 fishing year. This moratorium has been continued in each subsequent year since 2014 and is currently maintained through 2024. Amendment 3 to the FMP, approved in 2017, modified the FMP objectives and provides the flexibility to use the best available information to define the status of the stock and to set the total allowable catch. Additionally, the Amendment implements a state-specific allocation program to better manage effort in the fishery; 80% to Maine, 10% to New Hampshire, 10% to Massachusetts. Furthermore, the amendment strengthens catch and landings reporting requirements, implements mandatory use of size sorting grate systems to minimize harvest of small (presumably male) shrimp, incorporates accountability measures, specifies a maximum fishing season length, and formalizes fishery-dependent monitoring requirements. Addendum I to

Amendment 3, approved in 2018, transferred authority to the states to annually determine the split of northern shrimp quota between gear types.

The Northern Shrimp Technical Committee (NSTC) provides annual data updates and related information to the Section. After considering the data update, TC recommendations, and input from the Northern Shrimp Advisory Panel (AP), the Section annually sets specifications on management measures, or as in recent years, implements a fishing moratorium for up to 366 days.

Summary of Stock Status

The 2021 Northern Shrimp Stock Assessment Update and the 2023 data update contain the latest and best information available on the status of the Gulf of Maine northern shrimp stock for use in fisheries management. The most recent Benchmark Assessment for the stock was completed and approved for management in 2018 using a new statistical catch-at-length model developed in collaboration with the University of Maine (the UME model). The 2021 assessment update presented new data compiled since 2018 and results from the accepted statistical catch-at-length model and traffic light analysis.

The results of the 2021 Northern Shrimp Stock Assessment Update indicated that stock status continued to be poor in both the traffic light approach and the catch-at-length model. SSB was projected to decline from 2021 levels to about 444 mt in 2026, and there was less than a 1% chance that it would be greater in 2026 than in 2021, even under the scenario of zero fishing mortality (Table 1).

Size composition data from both the fishery and summer trawl surveys used in the 2021 assessment update and previous assessments for the species indicate that higher landings have followed the recruitment of strong (dominant) year classes. Low biomass and landings during 1998 – 2004 can be attributed in part to the below-average recruitment of the associated year classes. In 2014, the female population was comprised of the 2009 and 2010 year classes; the 2010 year class was the first of three successive year classes of recruitment failure. The last several year classes have failed to recruit into the fishery; therefore, it is anticipated that the fishery will remain at its current depleted status until recruitment trends improve.

The 2023 data update presented information from the most recent years of fishery independent surveys and environmental indices using the traffic light approach to keep managers and stakeholders informed about current stock trends. Additionally, the 2023 data update for northern shrimp showed no improvement in status, with indices of abundance, SSB, and recruitment at new time-series lows. Recruitment has been below the 20th percentile of the

1984-2017 reference period in 9 of the last 11 years. Figures displaying abundance, total biomass, SSB, recruitment, and environmental conditions from the 2021 Stock Assessment Update and 2023 data update may be found in the figures section below.

Summary of the Fishery

Most northern shrimp fishing in the Gulf of Maine historically was conducted using otter trawls designed for shrimp, although traps were also utilized off the central Maine coast while the fishery was still active. Drastic fluctuations in landings have characterized the Gulf of Maine northern shrimp fishery throughout its history. Annual landings of Gulf of Maine northern shrimp declined from an average of 11,400 metric tons (mt) during 1969-1972 to about 400 mt in 1977, resulting in a closure of the fishery in 1978. The fishery reopened in 1979 and landings increased steadily to over 5,000 mt by 1987. Landings ranged from 2,100 to 6,400 mt during 1988-1995, and then rose dramatically to 9,500 mt in 1996, exceeding the previous high in 1973. Landings subsequently declined from 1997 to 2002, only to increase again between 2003 and 2011, from 1,300 to 6,400 mt, with a slight drop in 2009.

In 2010-2012, the fishery closed early when landings approached the Total Allowable Catch (TAC). In 2011, the fishery closed early due to the TAC being exceeded.

The Section considered several factors in setting the specifications for the 2014 shrimp fishery, and ultimately implemented a harvest moratorium to protect the limited number of spawning females. The Section's deliberation considered the biomass in 2013 that was the lowest value in recent history, estimated at 5.2% of the biomass of the reference period (1985-1994). Additionally, there was recent recruitment failure of three consecutive year classes (2010-2012).

Typically, Maine accounts for about 90% of the landings of northern shrimp. In 2013, the most recent year with landings, Maine landed 84% of the season total, New Hampshire followed with 11% and Massachusetts landed 5% of the season total (Table 1). The proportional distribution of landings among the states was similar between 2003 and 2013, though it has shifted gradually since the 1980's when Massachusetts averaged about 34% of the catch (Table 2).

References

Atlantic States Marine Fisheries Commission (ASMFC). 1986. [Fishery Management Plan for Northern Shrimp](#).

ASMFC. 2017. [Amendment 3 to the Interstate Fishery Management Plan for Northern Shrimp](#).

ASMFC. 2018. [Assessment Report for Gulf of Maine Northern Shrimp - 2018](#)

ASMFC. 2021. [Northern Shrimp Stock Assessment Update 2021](#).

ASMFC. 2023. [Northern Shrimp 2023 Data Update](#).

Tables

Table 1. Projection results from the UME model under different *F* scenarios using recent *M* and recent recruitment. (Source: Northern Shrimp Stock Assessment Update 2021).

Year	Trawl <i>F</i>	Trap <i>F</i>	Trawl Catch	Trap Catch	Total Catch	Probability of SSB being above SSB ₂₀₂₁	SSB (mt)
2022			0 mt (0 lbs)	0 mt (0 lbs)	0 mt (0 lbs)	0%	716
2023			0 mt (0 lbs)	0 mt (0 lbs)	0 mt (0 lbs)	0%	624
2024	<i>F</i> = 0	<i>F</i> = 0	0 mt (0 lbs)	0 mt (0 lbs)	0 mt (0 lbs)	0.08%	507
2025			0 mt (0 lbs)	0 mt (0 lbs)	0 mt (0 lbs)	0.42%	460
2026			0 mt (0 lbs)	0 mt (0 lbs)	0 mt (0 lbs)	0.35%	444
2022			7.1 mt (15,622 lbs)	0.8 mt (1,815 lbs)	7.9 mt (17,437 lbs)	0%	713
2023			6.1 mt (13,343 lbs)	0.7 mt (1,588 lbs)	6.8 mt (14,931 lbs)	0%	618
2024	<i>F</i> = 0.02	<i>F</i> = 0.0024	5.1 mt (11,315 lbs)	0.6 mt (1,323 lbs)	5.7 mt (12,639 lbs)	0.06%	500
2025			4.6 mt (10,103 lbs)	0.5 mt (1,134 lbs)	5.1 mt (11,237 lbs)	0.32%	452
2026			4.3 mt (9,515 lbs)	0.5 mt (1,055 lbs)	4.8 mt (10,570 lbs)	0.27%	436
2022			0 mt (0 lbs)	21.2 mt (46,729 lbs)	21.2 mt (46,729 lbs)	0%	708
2023			0 mt (0 lbs)	18.2 mt (40,162 lbs)	18.2 mt (40,162 lbs)	0%	606
2024	<i>F</i> = 0	<i>F</i> = 0.05	0 mt (0 lbs)	15 mt (33,170 lbs)	15 mt (33,170 lbs)	0.03%	486
2025			0 mt (0 lbs)	12.7 mt (28,094 lbs)	12.7 mt (28,094 lbs)	0.20%	440
2026			0 mt (0 lbs)	11.9 mt (26,188 lbs)	11.9 mt (26,188 lbs)	0.24%	423

Table 2. Total removals in metric tons by season, state, and gear type. Seasons include the previous December. The Maine fishery was "Mixed" until Trawl and Trap landings could be distinguished beginning in 2000. Removals in 2014–2020 are from RSA and winter sampling programs, and include discards. 2009 data for Massachusetts and New Hampshire are combined here to preserve reporting confidentiality. (Source: Northern Shrimp Stock Assessment Update 2021. 2022 and 2023 data collected from ACCSP Date Warehouse)

Season	Maine			Massachusetts Trawl	New Hampshire Trawl	Total Trawl	Total Mixed	Total Trap	Total
	Trawl	Mixed	Trap						
1985		2,946.4		968.8	216.7	1,185.5	2,946.4	0.0	4,131.9
1986		3,268.2		1,136.3	230.5	1,366.8	3,268.2	0.0	4,635.0
1987		3,680.2		1,427.9	157.9	1,585.8	3,680.2	0.0	5,266.0
1988		2,258.4		619.6	157.6	777.2	2,258.4	0.0	3,035.6
1989		2,384.0		699.9	231.5	931.4	2,384.0	0.0	3,315.4
1990		3,236.3		974.9	451.3	1,426.2	3,236.3	0.0	4,662.5
1991		2,488.6		814.6	282.1	1,096.7	2,488.6	0.0	3,585.3
1992		3,070.6		289.3	100.1	389.4	3,070.6	0.0	3,460.0
1993		1,492.5		292.8	357.6	650.4	1,492.5	0.0	2,142.9
1994		2,239.7		247.5	428.0	675.5	2,239.7	0.0	2,915.2
1995		5,013.7		670.1	772.8	1,442.9	5,013.7	0.0	6,456.6
1996		8,107.1		660.6	771.7	1,432.3	8,107.1	0.0	9,539.4
1997		6,086.9		366.4	666.2	1,032.6	6,086.9	0.0	7,119.5
1998		3,481.3		240.3	445.2	685.5	3,481.3	0.0	4,166.8
1999		1,573.2		75.7	217.0	292.7	1,573.2	0.0	1,865.9
2000	2,249.5		266.7	124.1	214.7	2,588.3	0.0	266.7	2,855.0
2001	954.0		121.2	49.4	206.4	1,209.8	0.0	121.2	1,331.0
2002	340.8		50.8	8.1	53.0	401.8	0.0	50.8	452.7
2003	987.0		216.7	27.7	113.0	1,127.7	0.0	216.7	1,344.4
2004	1,858.7		68.1	21.3	183.2	2,063.2	0.0	68.1	2,131.4
2005	1,887.1		383.1	49.6	290.3	2,227.1	0.0	383.1	2,610.1
2006	1,928.0		273.6	30.0	91.1	2,049.1	0.0	273.6	2,322.7
2007	3,986.9		482.4	27.5	382.9	4,397.3	0.0	482.4	4,879.7
2008	3,725.0		790.7	29.9	416.8	4,171.7	0.0	790.7	4,962.4
2009	1,936.3		379.4	MA & NH:	185.6	2,121.8	0.0	379.4	2,501.2
2010	4,517.9		1,203.5	35.1	506.8	5,059.9	0.0	1,203.5	6,263.3
2011	4,644.4		925.3	196.4	631.5	5,472.2	0.0	925.3	6,397.5
2012	2,026.8		193.1	77.8	187.8	2,292.4	0.0	193.1	2,485.4
2013	269.5		20.2	18.9	36.9	325.3	0.0	20.2	345.5
2014	0.3		0.0	0.0	0.0	0.3	0.0	0.0	0.3
2015	5.6		0.5	0.6	0.0	6.2	0.0	0.5	6.7
2016	7.4		4.1	0.0	1.8	9.2	0.0	4.1	13.3
2017	24.1		7.1	0.9	0.5	25.5	0.0	7.1	32.6
2018	0.1		0.0	1.9	1.1	3.1	0.0	0.0	3.1
2019	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
2020	0.0		3.1	0.0	0.0	0.0	0.0	3.1	3.1
2021	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
2022	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
2023	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0

Figures

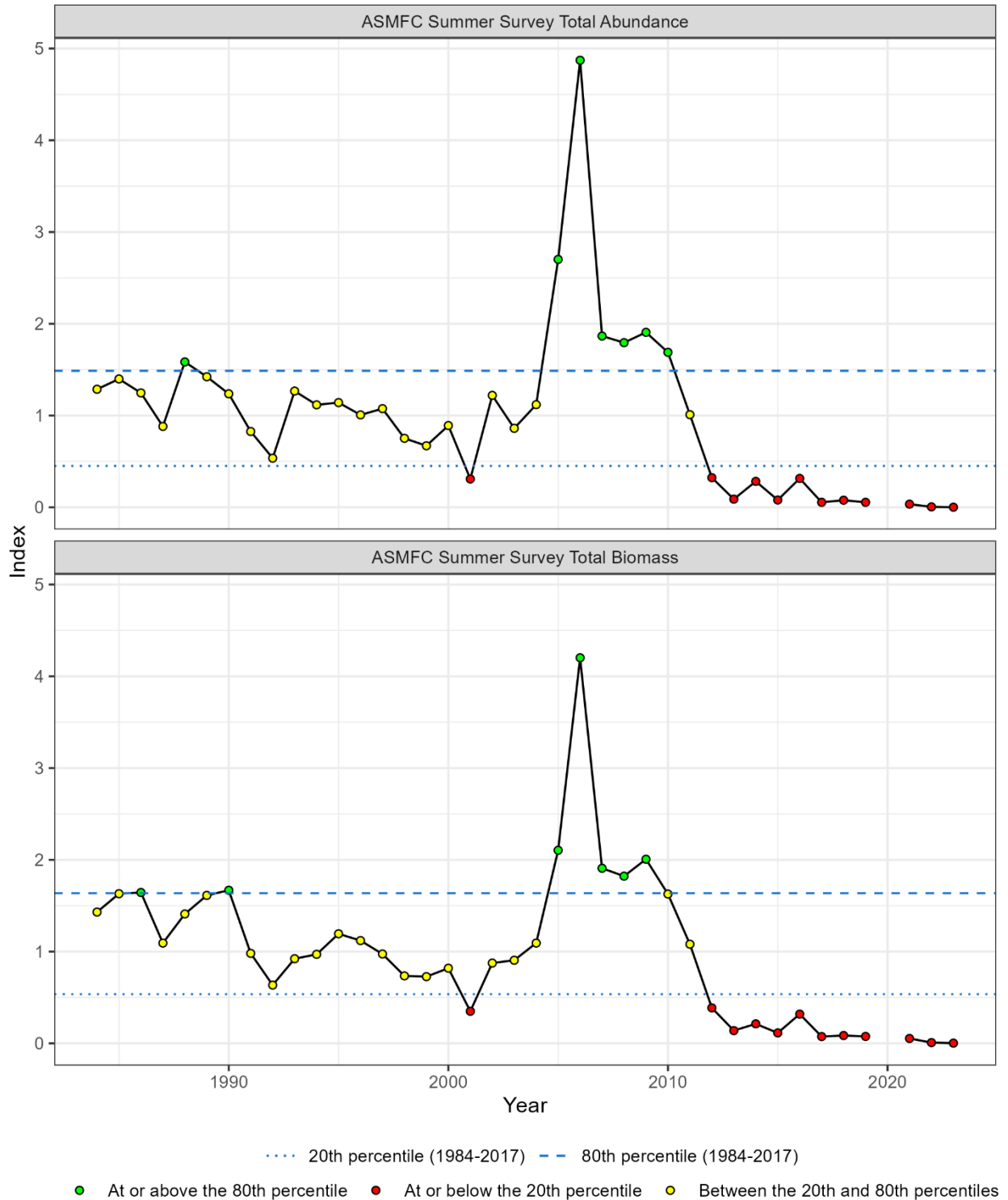


Figure 1. Traffic light analysis for the model-based index of Gulf of Maine northern shrimp from the Summer Survey 1984-2022 for total abundance (top) and total biomass (bottom). The 20th percentile of the time series from 1984-2017 delineated an adverse state, and the 80th percentile of the time series from 1984-2017 delineated a favorable state. (Source: 2023 Data Update for Northern Shrimp).



Figure 2. Traffic light analysis of recruitment (top) and spawning biomass (bottom) of Gulf of Maine northern shrimp from the Summer Survey 1984-2022. The 20th percentile of the time series from 1984-2017 delineated an adverse state, and the 80th percentile of the time series from 1984-2017 delineated a favorable state. (Source: 2023 Data Update for Northern Shrimp).

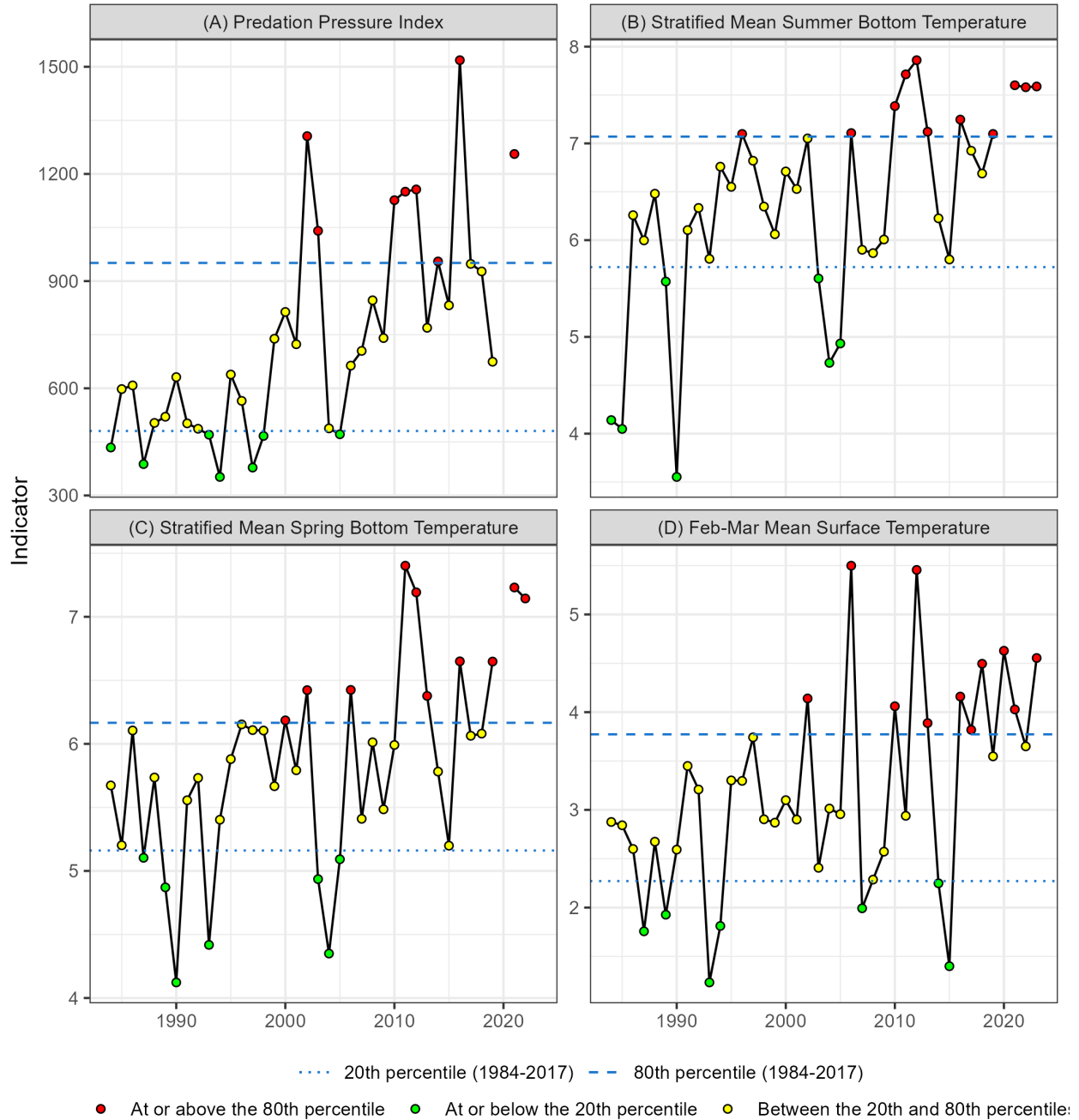


Figure 3. Traffic light analysis of environmental conditions in the Gulf of Maine, including predation pressure (A), summer bottom temperature from the Summer Survey (B), spring bottom temperature from the NEFSC Spring survey shrimp strata (C), and winter sea surface temperature from Boothbay Harbor (D). The 20th percentile of the time series from 1984-2017 delineated a favorable state, and the 80th percentile of the time series from 1984-2017 delineated an adverse state. (Source: 2023 Data Update for Northern Shrimp).

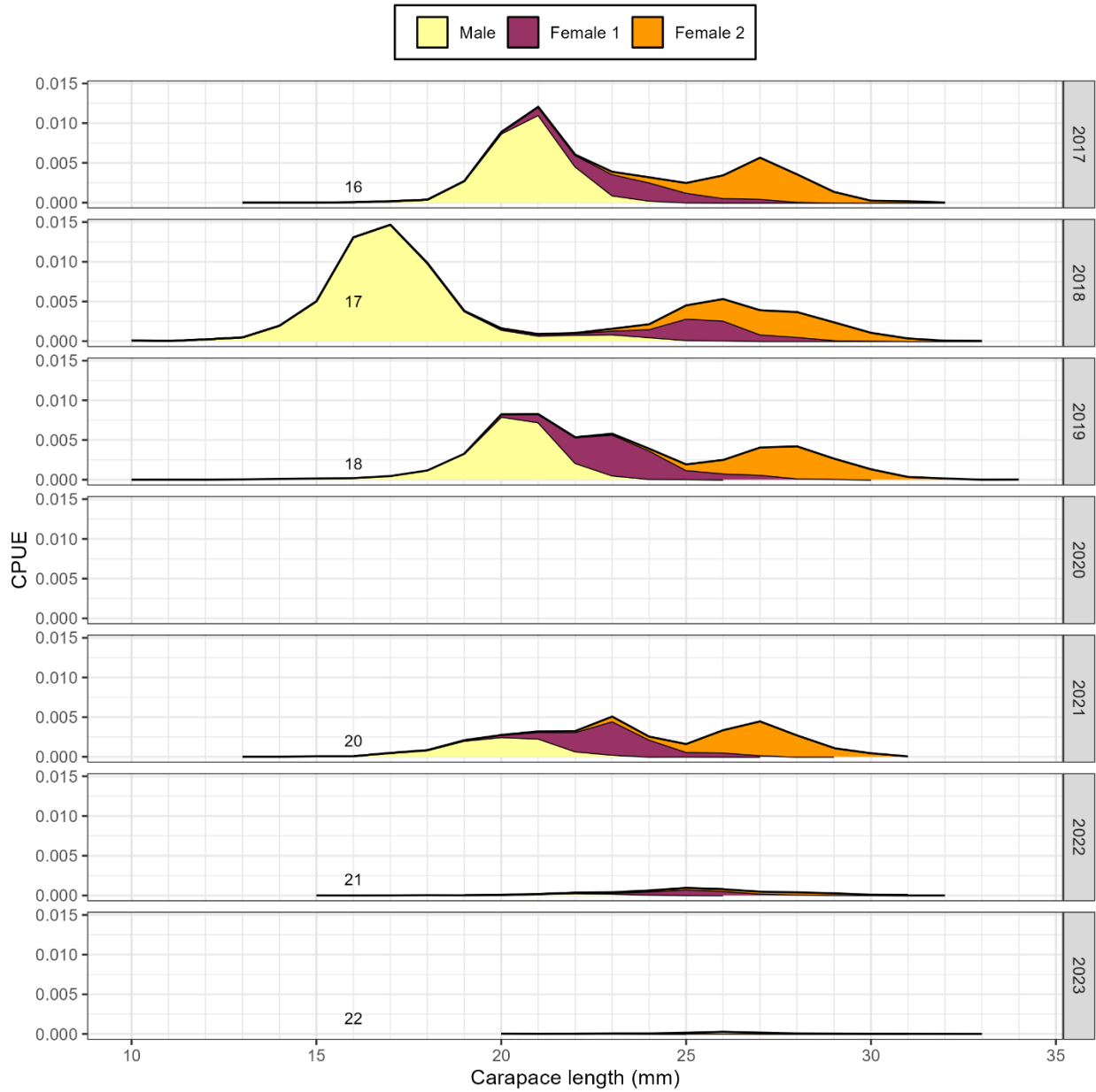


Figure 4. Gulf of Maine northern shrimp abundance from the Summer Survey by year, length, and development stage for 2017 – 2023. Two-digit years are year class at assumed age 1.5. (Source: 2023 Data Update for Northern Shrimp).

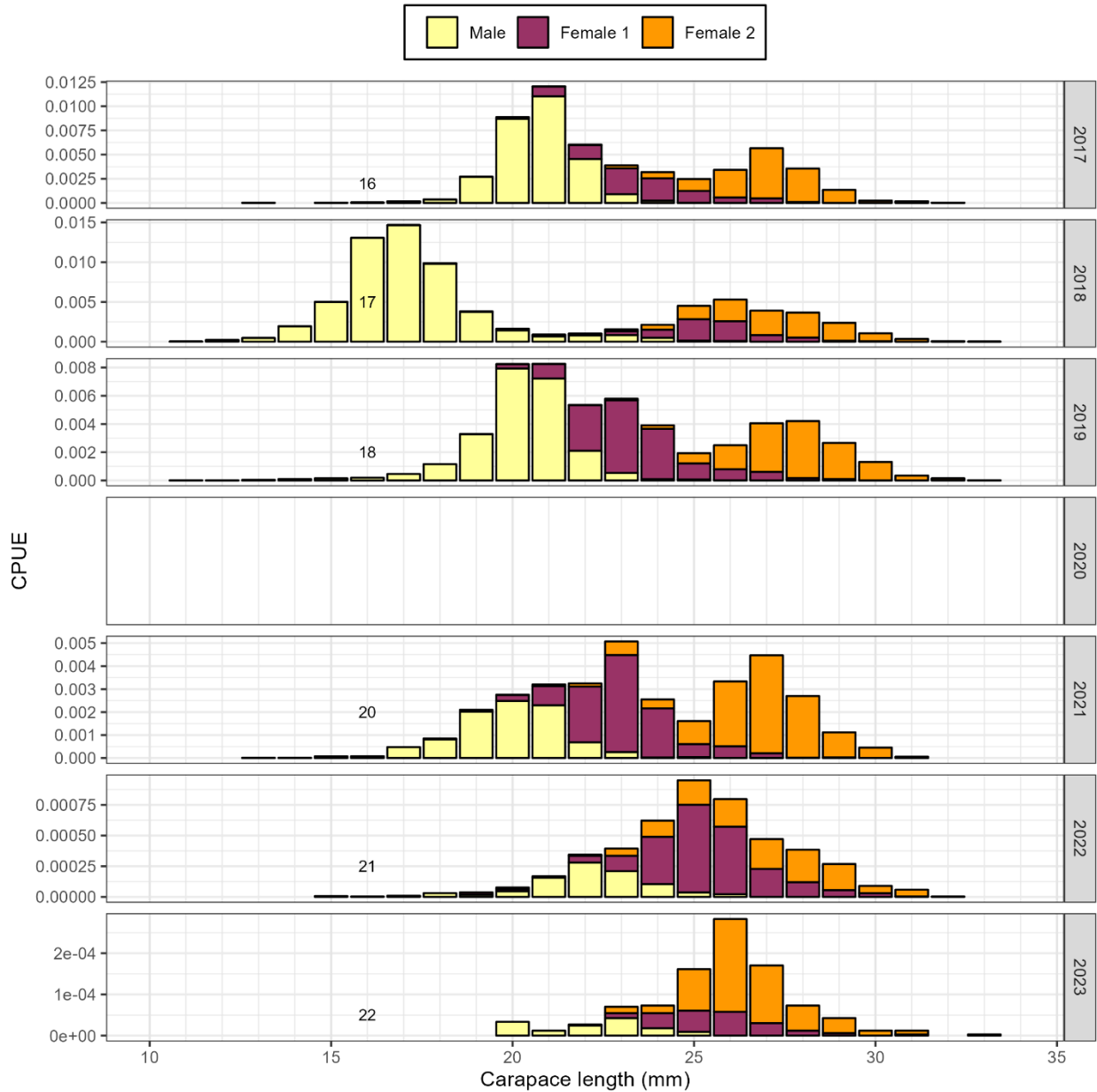


Figure 5. Gulf of Maine northern shrimp abundance from the Summer Survey by year, length, and development stage for 2017 – 2023 with different y-axes to show detail; note difference in scale from year to year. Two-digit years are year class at assumed age 1.5. (Source: 2023 Data Update for Northern Shrimp).



Atlantic States Marine Fisheries Commission

1050 N. Highland Street • Suite 200A-N • Arlington, VA 22201
703.842.0740 • 703.842.0741 (fax) • www.asmfmc.org

MEMORANDUM

TO: Northern Shrimp Section

FROM: Chelsea Tuohy, FMP Coordinator

DATE: August 30, 2024

SUBJECT: Public Comment on the Public Information Document for Draft Amendment 4 to the Interstate Fishery Management Plan for Northern Shrimp

The following pages represent a draft summary of all public comments received by the Atlantic States Marine Fisheries Commission (Commission) on the Public Information Document (PID) for Draft Amendment 4 to the Interstate Fishery Management Plan (FMP) for Northern Shrimp as of 11:59 PM (EST) on August 16, 2024 (closing deadline).

Comment totals for the PID are provided in the table below, followed by summaries of the state public hearings, and written comments sent by organizations and individuals. A total of four written comments were received. These included 1 letter from an organization and the remainder from individual stakeholders. Four public hearings were held (three virtual and one in-person) and the total public attendance across the hearings was twenty-four, though some individuals attended multiple public hearings. Eleven public comments were provided during the public hearings.

The following pages are intended to give the Northern Shrimp Section (Section) an overview of comments provided on each issue presented in the PID. Additional comments that did not specify the position of the commenter are included in the public hearing summaries and written comments. The summary tables and public hearing summaries are followed by the letters and emails sent by individuals and organizations.

Public Comment Summary Table

Table 1. All public comment received by individuals and organizations and number of people who provided comments during the public hearings.

Written Public Comment Received		
Organization Letters		1
Individual Comments		3
<i>Total Written Comment</i>		4
Public Hearing	# Public Attendees*	# Commentors**
New Hampshire and Massachusetts (July 29, Webinar)	9	0
Maine (July 30, Webinar)	6	1
Maine (July 31, In-Person)	12	9
Maine, New Hampshire, and Massachusetts (August 1, Webinar)	3	1
<i>Total</i>	24	11

**Some people attended multiple hearings. Public attendees do not include state staff, Commission staff, or Commissioners/Proxies.*

***Some individuals and organizations provided comments at multiple hearings.*

Overview of Written Comments

Four written comments were received for the PID. Three comments supported the development of an industry-based survey or research program. Specifically, commentors noted: concerns with the current gear used in research surveys contributing to northern shrimp stock monitoring, the benefits of industry buy-in to the management process through an industry-based program, and abundance of northern shrimp in the Gulf of Maine seen on the water and not reflected in the current surveys. In addition, written comments expressed support for the continuation of annual specifications, the addition of management triggers to the FMP, including temperature data in future management triggers, and a winter recreational trap fishery.

Public Hearing Summaries

Northern Shrimp Public Information Document for Draft Amendment 4 Public Hearing

Webinar Hearing

July 29, 2024

9 Public Participants

Commissioners & Proxies: Cheri Patterson (NH), Dennis Abbot (NH), Robert Glenn (MA), Doug Grout (NH), Nichola Meserve (MA)

ASMFC & State Staff: Chelsea Tuohy (ASMFC), Emilie Franke (ASMFC), Corrin Flora (ME), Tracy Pugh (MA), Kelly Whitmore (MA)

Hearing Overview

- No comments were provided.
- Questions were raised regarding if aquaculture has been explored as a means to support the stock and if industry collected data could be used in future trigger mechanisms.

**Northern Shrimp Public Information Document for Draft Amendment 4 Hearing
Attendance, July 29, 2024**

First Name	Last Name	Email Address
Cheri	Patterson	cheri.patterson@wildlife.nh.gov
Chris	Nunan	remington1238@yahoo.com
Emilie	Franke	efranke@asmfc.org
Doug	Grout	groutnhfish@gmail.com
Corrin	Flora	corrin.flora@maine.gov
Bob	Glenn	robert.glenn@mass.gov
Gary	Libby	portclydecowboy@gmail.com
Dennis	Abbott	swamper199@gmail.com
Jerry	Leeman	jerryleeman@fishermenstewardship.org
Tracy	Pugh	tracy.pugh@mass.gov
John	Borden	johnmborden@comcast.net
Nichola	Meserve	nichola.meserve@mass.gov
Emily	Coffin	emilyc@mainecoastfishermen.org
Delayne	Brown	delayne.t.brown@wildlife.nh.gov
Virginia	Olsen	Volsen@district4.net
Kassaye	Workagegn	kassayebalkew@gmail.com
Kelly	Whitmore	kelly.whitmore@mass.gov
Rick	Trundy	rtrundy67@gmail.com

Northern Shrimp Public Information Document for Draft Amendment 4 Public Hearing
Webinar Hearing
July 30, 2024
6 Public Participants

Commissioners & Proxies: Megan Ware (ME), Doug Grout (NH)

ASMFC & State Staff: Chelsea Tuohy (ASMFC), Tracey Bauer (ASMFC), Corrin Flora (ME), Elija Bates (ME), Kelly Whitmore (MA)

Hearing Overview

- 1 comment was provided.
- Questions were raised regarding if an industry-based research program needed to be added to the draft amendment text and if temperature trends were being considered in future management triggers for the stock.

Summary of Comments

Jerry Leeman (New England Fishermen’s Stewardship Association)

- Supports continuation of annual specifications.
- Supports an industry-based research program.
- The three surveys used for the stock assessment have three separate protocols and timelines. Fears if the Section chooses to implement an ongoing or multi-year moratorium, they may be missing upticks in the stock.
- This year, fishermen are witnessing a cooling trend in the Gulf of Maine. Most of the lobstermen and groundfishermen are seeing an uptick of krill and shrimp in lobster traps and we could be missing windows of data.

**Northern Shrimp Public Information Document for Draft Amendment 4 Hearing
Attendance, July 30, 2024**

First Name	Last Name	Email Address
Tracey	Bauer	tbauer@asmfc.org
Rick	Trundy	rtrundy67@gmail.com
Terry	Alexander	jlinc1000@aol.com
Gary	Libby	portclydecowboy@gmail.com
Jerry	Leeman	jerryleeman@fishermenstewardship.org
Corrin	Flora	corrin.flora@maine.gov
Kelly	Whitmore	kelly.whitmore@mass.gov
Evan	Balzano	evan@mainecoastfishermen.org
Carly	Lovas	clovas@gmri.org
Megan	Ware	megan.ware@maine.gov
Doug	Grout	groutnhfish@gmail.com
Elija	Bates	elija.d.bates@maine.gov

Northern Shrimp Public Information Document for Draft Amendment 4 Public Hearing
Lincoln County Regional Planning Commission – Wiscasset, Maine
July 31, 2024
12 Public Participants

Commissioners & Proxies: Megan Ware (ME), Allison Helper (ME)

ASMFC & State Staff: Corrin Flora (ME)

Hearing Overview

- Nine comments were provided.
- One comment supported the continuation of annual specifications. Commentors feel it is important to talk about the data on an annual basis and engage the public.
- Eight comments supported an industry-based research program and questioned the efficiency of gear configurations on the suspended summer survey and ongoing fall and spring surveys.
- Many commentors emphasized the annual variability of shrimp.

Summary of Comments

Gary Libby

- Opposed to increasing specifications timeline.
- Concerned current surveys do not reflect the true abundance of northern shrimp due to gear inefficiencies.
- Supports an industry-based research program specifically in the winter months.

Glen Libby

- Supports an industry-based research program.
- There can be big spikes in northern shrimp, but the time of year and time of day is important to properly assess species abundance when sampling.
- Concerned the current data from surveys is not sufficient for use in future management triggers.

George Prince

- Supports an industry-based research program.
- Does not trust the current survey configurations and emphasized the need for a data collection program that utilizes the knowledge and experience of the people who fished for shrimp in the past.

Jerry Leeman (New England Fishermen's Stewardship Association)

- Supports an industry-based research program.
- Noted industry boats and survey boats have large differentials in catch ability for northern shrimp. Additionally, noted concerns with the current survey boats not being configured to catch shrimp.
- Concerned generational knowledge of northern shrimp fishing will be lost and the next generation will not have the knowledge or experience to catch shrimp.

Tom Spear

- Supports an industry-based research program.
- Noted shrimp are not available in the spring and fall and emphasized the need for a winter sampling program that includes people with shrimping experience collecting the data.
- Concerned with New Hampshire and Massachusetts voting on the Northern Shrimp Section dues to these states not having the same weight in the fishery as Maine.

Troy Benner

- Supports an industry-based research program.
- Emphasized good data needs good gear and the current surveys are not configured to catch shrimp.
- Noted a cooling trend in the Gulf of Maine this year comparable to when the fishery was active 20 years ago.

Derryl Chadwhick

- Supports and industry-based research program in the winter months.

Dale Moore

- There are good years and bad years for shrimp and the shrimp regulated themselves.

Lee More

- Supports and industry-based research program.
- Noted the importance of including industry in the science.

Public Information Document for Northern Shrimp Amendment 4

Atlantic States Marine Fisheries Commission

July 31, 2024

Maine

-- PLEASE PRINT CLEARLY --

<u>Name</u>	<u>Company/Organization</u>	<u>City, State</u>
GARY Libby	R+B Fisheries	Port Clyde me.
GEORGE PRANGE	F/V PROVIDOR	HARPSWELL, ME.
Glen Libby	Port Clyde Fresh Catch	Port Clyde, ME
Jerry Leeman	NEFSA	HARPSWELL, ME
Tom Spear	F/V Nancy Elaine	Cushing, ME
Zach Spear	F/V Lil' Biggah buggah	CUSHING, ME
Troy Benner	F/V OCEAN SPRAY	New Harbor, ME
Allison Hepler	Maire Leg.	WOODWICH MAINE
Lee Moore	F/V EVERETT + OAKLEE	Newcastle, ME
Dale Moore		New Harbor, ME
Justin Libby	F/V Capt'n Lee	Port Clyde, ME
Emily Coffin	Maine Coast Fishermen's Assoc.	Brunswick, ME
Danny L Chadula	FV White gear	Pennequin'd

Northern Shrimp Public Information Document for Draft Amendment 4 Public Hearing
Webinar Hearing
August 1, 2024
3 Public Participants

Commissioners & Proxies: Megan Ware (ME)

ASMFC & State Staff: Chelsea Tuohy (ASMFC), Emile Franke (ASMFC), Corrin Flora (ME)

Hearing Overview

- One comment was provided

Summary of Comments

Eben Nieuwkerk

- Supports and industry-based research program.
- Noted the variability of fish stocks in the Gulf of Maine. You can't tow the same piece of bottom every year and expect it to do the same thing.
- This year, a boat engaged in a scallop industry-based research program using camera drops found northern shrimp and scallops with the cameras. There were about 35 shrimp in a 5x5 area.
- Three or four years ago participated in a dogfish research program to determine what dogfish were eating and found about 15-20% of dogfish diet was northern shrimp. Concerned about the massive population of dogfish eating northern shrimp and causing poor year classes.
- Many lobstermen have been seeing shrimp this year.
- Concerned about the amount of derelict lobster gear in the Gulf of Maine that would inhibit an industry-based research program.

**Northern Shrimp Public Information Document for Draft Amendment 4 Hearing
Attendance, August 1, 2024**

First Name	Last Name	Email Address
Emilie	Franke	efranke@asmfc.org
Gary	Libby	portclydecowboy@gmail.com
Eben	Nieuwkerk	fvrestless@icloud.com
Megan	Ware	megan.ware@maine.gov
Chris	Landry	clandry109@gmail.com
Corrin	Flora	corrin.flora@maine.gov

From: Gary Libby <portclydecowboy@gmail.com>
Sent: Saturday, June 22, 2024 3:35 PM
To: G2W2 <G2W2@asmfc.org>
Subject: [External] Amendment 4

We need to have the industry do the surveys. If there is a lack of funds for a survey and industry members have volunteered their time and boats for this.

I don't understand how the fishery will wake up without quality data collection.

This is what concerns me the most. I don't think a moratorium is managing this fishery, we have been under a moratorium for too long.

I believe fisherman can produce data that will help answer the question, how many shrimp are available and is it enough to allow a Shrimp fishery going forward.

Thank you for your consideration

Gary Libby , Port Clyde Maine

-----Original Message-----

From: herrickj01930@yahoo.com <herrickj01930@yahoo.com>
Sent: Friday, July 12, 2024 2:27 PM
To: Chelsea Tuohy <CTuohy@ASMFC.org>
Subject: [External] Northern shrimp PID

Chelsea and others,

What about a recreational shrimp trap fishery for the winter months? We catch them inshore in small quantities but they are tasty!

Thanks,

John Herrick

Sent from my iPhone

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

-----Original Message-----

From: Nicholas Wood <woodn68@icloud.com>

Sent: Saturday, July 13, 2024 10:09 AM

To: Comments <comments@asmfc.org>

Subject: [External] Shrimp population

I'm not informed enough to know where your source of information comes from to determine the shrimp population but i live in downeast maine and the shrimp are so thick that they spill out of lobster gear from 400 ft piles of them. If im not taken seriously i would be happy to video and give gps locations. But to say there are no shrimp is ridiculous. This happens all year long there are that many.

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Robert Beal, Executive director
Atlantic States Marine Fisheries Commission
1050 N. Highland Street, Suite 200 A-N,
Arlington, VA 22201



Dear Director Beal,

The Maine Coast Fishermen's Association (MCFA) is an industry-based non-profit that is dedicated to restoring the fisheries of the Gulf of Maine and preserving Maine's iconic fishing communities for future generations. We believe strongly in stewardship of our oceans and responsible use of resources to ensure long lasting, equitable access to the marine environment for the purpose of feeding people and sustaining the local economy. In response to the Atlantic States Marine Fisheries Commission's (ASMFC) Public Information Document for Amendment 4 to the Fishery Management Plan for Northern Shrimp, we would like to offer our input on the timelines, triggers, and other aspects of shrimp stock management in the upcoming years.

MCFA would like to express our support for the ASMFC and its role in overseeing the resources we all depend on. Interstate cooperation is vital to the strength of our resources and local economies. We value the coordination in each fishery management plan and rely on the Commission to ensure equitable access and science-based management. Below are our comments on the recent Northern Shrimp Public Information Document:

1. Specifications

We support the continuance of annual Northern Shrimp Section meetings. A lengthened timeline and dismissal of annual meetings denies the public the opportunity to weigh in on a historically important fishery. Currently, fishermen out on the water report seeing shrimp and this year's cold water intrusion into the Gulf of Maine could indicate a positive opportunity for current and future recruitment. Without regular meetings, the ASMFC is signaling the death of this fishery which we do not believe is not appropriate at this time. If the ASMFC does not intend to manage this fishery into the future, a collective conversation about where this management should move would be an appropriate next step.

2. Management Triggers

MCFA is in favor of implementing management triggers for the Northern Shrimp fishery, regardless of the movement to a multi-year moratorium or the continuance of annual meetings. Although a moratorium has been in place for years now, the environment is undergoing change at a rapid rate. This year, the Gulf of Maine saw an unexpected cold water intrusion, which could encourage Northern Shrimp stock recruitment. We support the use of biological indicators such as eDNA or stock surveys as well as environmental indicators such as temperature readings. Monitoring the shrimp stock with science beyond stock accounting could both satisfy shrimp fishermen who want continued research and serve as a platform for fresh data collection. For example, MCFA partnered with the Ocean Data Network this summer to collect bottom temperature readings from our mobile groundfish fleet. In the future, this data could be used to monitor for favorable shrimp habitat factors in lieu of the summer and winter surveys. Northern shrimp could still provide us with valuable insights into our ocean climate. Ultimately, as long as the moratorium remains and fishermen still report seeing shrimp, a management trigger should be in place.

3. Other

Many Maine fishermen are eager to participate in an industry-based survey because they both care about maintaining a heritage fishery and they see quantities of shrimp as they target other species. We have heard expressions of frustration with the gear used in previous surveys. The gap between scientists and fishermen is unfortunately wide; a sanctioned industry based survey would help rebuild trust and limit future outcry against Northern Shrimp management decisions. This is a great opportunity to partner with industry toward a common goal. This January, the New England Fishery Management reintroduced conversation around the use of cooperative research in order to better their data streams and improve trust between managers and fishermen. There are willing captains ready to make it happen.

We support thriving fisheries and fishing communities. It is vital that we do what we can to keep our industry strong, diverse, and flexible. If shrimp return in commercial quantities to the Gulf of Maine, we need to have fishermen who know how to catch them. Environmental uncertainties could bring a beloved fishery back. Thank you for your time and attention to this matter.

Sincerely,

Emily Coffin

Initial Investigation of the Potential for a Northern Shrimp Industry-Based Research Program in the Gulf of Maine

Northern Shrimp Technical Committee

March 2024

Committee Members in Attendance: Chelsea Tuohy (ASMFC), Katie Drew (ASMFC), Lulu Bates (ME), Matthew Lee (NH), Tracy Pugh (MA)

Background

In December 2023, the Northern Shrimp Section (Section) tasked the Northern Shrimp Technical Committee (TC) to:

“Investigate an industry-based research program. The TC should weigh:

- Information that would provide utility to management and science (indicators of stock abundance? Summer sampling given residency of shrimp in offshore waters? Other TC suggestions).
- Appropriate methodology to support that research goal, including breadth of sampling in time and place, and across years.
- Approximate estimate of cost, if possible.

The Section indicates that an industry-based research program would operate under a catch cap. As conversations progress, the TC should collaborate with the AP to get feedback on research priorities and metrics.”

The TC met on March 5, 2024 to begin investigating a potential industry-based research program and agreed on two possible paths forward.

Option 1: Industry-Based Summer Survey

First, the TC discussed a summer sampling program to replace the Northeast Fisheries Science Center (NEFSC) Summer Survey, starting a new time series for the northern shrimp stock in the Gulf of Maine. However, the TC noted that a summer industry-based sampling program would require considerable staff time and funding making it difficult to implement and sustain. A new summer survey for northern shrimp would benefit science through the creation of a new long-term time series to replace the long running NEFSC Summer Survey time series, which provides the most robust stock abundance data given the location of shrimp in offshore waters during the summer season.

The Atlantic States Marine Fisheries Commission (Commission) does not allocate funds to a shrimp survey, leaving the cost of such a program up to the states of Maine, New Hampshire, and Massachusetts. There are currently two remaining surveys collecting information on northern shrimp, the Maine-New Hampshire Inshore Trawl Survey and the NEFSC Fall Bottom Trawl Survey. The Maine-New Hampshire Survey ran at an estimated cost of \$800,000 in 2023 including the cost for staff time. The Maine-New Hampshire Trawl Survey runs twice a year for

five weeks at a time, but data for northern shrimp is only used from the spring leg of the survey due to the species' presence inshore during the spring season.

The Maine-New Hampshire Survey is a collaborative research project using a commercial fishing vessel as the platform. The boat owner, captain, and crew have been actively involved in the design and implementation of this survey. In this case, only one vessel is used for all sampling in all years, to maintain consistency in the time series. The TC noted it would be very challenging to coordinate and standardize survey methods across multiple vessels to start a new time series based on an industry-based summer survey.

The TC listed a number of pros and cons associated with Option 1 (industry-based summer survey) as detailed below:

Pros: An industry-based summer survey would provide the most useful information for the stock assessment, providing detailed information on recruitment, spawning stock biomass (SSB), and total abundance during a time of year when juveniles and adults are fully mixed in the offshore areas.

Cons: Without the ability to calibrate between the NEFSC Summer Survey and the new industry-based survey, data from the new survey would not be useful for the assessment for approximately 5-10 years; high associated costs including significant staff time; higher barrier to entry for industry participants (would require fishing during the summer, when industry members are targeting other species); significant challenges with standardization if the intent is to use more than one vessel.

Option 2: Limited Winter Sampling Program

The second industry-based research program the TC discussed was the potential for a limited winter sampling program where a select number of vessels would be allowed to fish in specified strata during the winter, along the lines of the industry proposal put forward by the Advisory Panel (AP) in December 2023. Vessel catch would be periodically sampled by state staff in order to collect length frequency and catch per unit effort (CPUE) data. The catch and length frequency data could be used directly in the stock assessment model as was done with the previous research set aside (RSA) program. The commercial CPUE time series is not used in the assessment model, but was used in the traffic light approach in previous years. While the commercial CPUE is not as useful for tracking abundance as the fishery-independent surveys, comparing the commercial CPUE from a winter sampling program to the commercial CPUE from previous RSA programs and the historical fishery would be easier than comparing the fishery-independent surveys to a new industry-based survey. Aside from the samples taken by state staff, industry participants would be allowed to sell their catch from participation in the program. The TC noted assignment of state staff time to take samples from such a program would likely be minimal and funding for such a program would need to come almost entirely from the industry.

The TC recommended consulting with industry to gauge interest in the Option 2 survey logistics before continued development of Option 2. Setting requirements for the timing and spatial extent of the sample trips will be necessary; a few vessels fishing only on known concentrations of shrimp is not informative about the overall abundance and distribution of northern shrimp in the Gulf of Maine. Critical pieces of data would include search time and documentation of zero catch tows. During the previous RSA program, the TC and Section were interested in capturing egg drop timing, and in some years had to pay for industry members to take trips, resulting in very structured opportunities for when participants could go out. Members of industry expressed that given these constraints, it was difficult to hone in on where the shrimp were and time a trip with the weather. Option 2, like the previous RSA, would seek to distribute effort over a wide spatial area, but would not be seeking data on egg drop timing and would not be limited by the need to pay for trips, which may allow for additional flexibility. To determine sample locations, the TC proposed looking into old Vessel Trip Report (VTR) data to distribute effort of the program. Additionally, the TC briefly discussed the potential for a vessel tracking requirement to aid in the calculation of CPUE and locate shrimp during the winter season. Finally, the TC noted that more work would need to be done to determine gear requirements for the research fishery, specifically, if both trappers and trawlers would be allowed to participate. The TC also stressed the importance of meeting with the AP before any survey is further developed to decide jointly on the metrics of what a “successful” winter sampling program would be, including what catch rates would represent a healthy, commercially viable population, to avoid moving the goalposts after the data are collected.

The TC listed a number of pros and cons associated with Option 2 (limited winter sampling program) as detailed below:

Pros: Significantly lower cost to the states than Option 1; data could be used in the stock assessment indicators immediately; lower barrier to entry.

Cons: Data would be less useful in the long term to the stock assessment compared to Option 1; continuation would be contingent upon industry participation and self-funding

Implementing a Catch Cap

The TC held preliminary discussions about implementing a catch cap on an industry-based research program using the projections from the most recent stock assessment, the [2021 Northern Shrimp Stock Assessment Update](#). These projections indicated with no fishing pressure, there was a low probability of 2026 SSB being above 2021 SSB. However, the projections also indicated including fishing pressure from the research trawl and trap fishery only decreased the probability of 2026 SSB being above 2021 SSB by 0.08% (0.27% with the research fishery included compared to 0.35% with no fishing pressure). The TC discussed that any removals of northern shrimp would likely continue to depress SSB, but the difference between 5 metric tons of removals and no removals may be negligible depending on the Section’s risk tolerance. Overall, the TC agreed to use the projections from the previous stock assessment to set a catch cap on the research fishery if there was AP interest and Section approval.

Next Steps

In the spring or summer of 2024, the TC and AP will meet jointly to discuss the industry-based research program options investigated in this document. At this meeting, the two bodies shall discuss the pros and cons of each option and the AP will provide input on their preferred option. The bodies shall also discuss the metrics associated with each option such as how to define a successful survey and what is required of industry participants by the TC (e.g., spatial extent, search time, gear configuration, etc.) to collect necessary data to support the research goals of each option. After this joint meeting, the TC and AP will present the results of the industry-based research program investigation to the Section for further consideration. An industry-based research program will not be implemented until directed by the Section and fully developed by the TC with feedback from the AP. This investigation is not meant to implement an industry-based program, but explore options for future consideration.