

***Atlantic States Marine Fisheries Commission***

**2025 Northern Shrimp Pilot Winter Sampling  
Program Report**



**November 2025**

**Prepared by the Northern Shrimp Technical Committee**



*Sustainable and Cooperative Management of Atlantic Coastal Fisheries*

## SUMMARY

In the absence of a commercial fishery, five trawlers and four trappers participated in a six-week pilot winter sampling program to collect northern shrimp samples in the Gulf of Maine during February – March 2025 under a research set-aside quota of 26.5 mt (or approximately 58,400 pounds). In total, the nine participants caught 70 individual northern shrimp weighing approximately 2.42 pounds, representing less than 1% of the research set-aside quota. However, it should be noted, 12 shrimp reported in Maine were not weighed due to logistical challenges. The weight for these individuals has been estimated. Seven trawl and nine trap samples were collected and evaluated for shrimp size and sex-stage. Catches included mostly assumed 4-year-old Female IIs and females with eggs. Based on the results of the 2025 pilot program, the Northern Shrimp Technical Committee (TC) does not recommend continuing the program in 2026.

## INTRODUCTION

Fisheries for northern shrimp (*Pandalus borealis*) in the Gulf of Maine (GOM) have traditionally been conducted in the winter when egg-bearing (ovigerous) female shrimp move inshore, and sometimes in the spring while the shrimp return offshore after egg hatch. The highest landings historically occurred in the months of January and February (see Table 3 in Eckert *et al.* 2016). Shrimp are caught by trawlers and trappers, with trawlers averaging about 86% of the Maine catch in 2009–2013 (Table 4 in Eckert *et al.* 2016). Shrimp samples from commercial catches have been collected by member states (Maine, New Hampshire, and Massachusetts) each season the fishery was open for over thirty years and have informed annual stock assessment updates.

The winter GOM fishery was closed in 2014 by the Atlantic States Marine Fisheries Commission (Commission) due to low stock abundance and has remained under a moratorium since that time. In the absence of a fishery, the Northern Shrimp Section (Section) approved a pilot winter sampling program for the 2025 fishing year, similar to an earlier winter sampling program which ran from 2014-2017. The purpose of the project was to collect samples like those that might have been collected from commercial shrimp catches if there had been a fishery, to continue the Technical Committee's time series of samples from GOM northern shrimp fishery catches, estimating the winter size (carapace length) and sex-stage composition of the shrimp stock in traditionally fished areas.

At their December 12, 2024, meeting, the Section established a 26.5 mt (or approximately 58,400 pounds) quota under the Northern Shrimp Fishery Management Plan (FMP) research set aside (RSA) program to support data collection during the winter of 2025 (ASMFC 2017). The Section stipulated that preference in selecting trawl participants be given to those willing to use a size-sorting grate for excluding small shrimp. The Section also established the time-period for the project, the number of participants by gear (trawl or trap) and region, the maximum number of trips and trip landings limits for trawlers, and trap limits and weekly landings limits for trappers.

## **METHODS**

### **Trawl Sample Collection**

The coastal spatial range of the GOM northern shrimp commercial trawl fishery was divided into five regions: Massachusetts, New Hampshire, Western Maine (Kittery to Small Point, Phippsburg), Midcoast Maine (Phippsburg to Monhegan Island), and Eastern Maine (east of Monhegan Island). Experienced GOM shrimp trawlers were solicited to participate in the project by e-mail and web announcements. One trawler from Massachusetts, one trawler from Western Maine, two trawlers from Midcoast Maine, and one trawler from Eastern Maine were picked at random from among the qualified applicants from each region except New Hampshire, which received no trawl applicants. The selected vessels were from Gloucester, Massachusetts, Portland, Maine (Western), Bristol, Maine (Midcoast), and Port Clyde, Maine (Eastern), and ranged in length from 42–56 feet (13–17 meters) (Table 1). Through the pilot program, trawlers were permitted to fish once a week, for six weeks, using their standard shrimp nets with a standard Nordmore grate (finfish excluder) or a compound grate (with finfish exclusion and small shrimp exclusion panels). Each trawler observed a 1,200-pound (544 kg) trip landing limit, and all trips were single day trips, with the exception of the Massachusetts vessel. The Massachusetts trawler was allowed multiple trips per week up to 3,600 pounds (1,633 kg). If 3,600 pounds were caught in a single week, the vessel would revert to one trip per week with a landing limit of 1,200 pounds for three weeks. All trawlers could keep or sell their landings to offset fishing expenses. The trawlers made their first trips the week of February 2, 2025, and the last trip was made February 15, 2025. No trawler participated for the full length of the program.

Samples from Massachusetts were delivered to the Massachusetts Division of Marine Fisheries (DMF) Gloucester office and frozen upon arrival. Each sample was collected randomly from a tow's shrimp catch after finfish were discarded, and samples were bagged and kept on ice.

All Maine trawl vessels fished with a compound grate, and the nets and grates were inspected by Maine Marine Patrol for compliance prior to the start of the program. Maine trawlers were to collect one 1-kg random sample from each day's shrimp catch. However, there was no catch observed over 1-kg, so sample sizes were smaller than the methodology set out for the program. All Maine samples were frozen for later delivery to the Maine Department of Marine Resources (DMR). Information such as date, tow duration (hours), begin and end locations, minimum and maximum depths (fathoms), and estimated catch weight was recorded for each tow by the vessel captains in Maine and Massachusetts.

### **Trap Sample Collection**

Shrimp trappers were also invited to participate, and four were picked at random from among the qualified applicants. One from New Hampshire, and three from Midcoast Maine (Table 1). The Midcoast area historically landed more than 90% of GOM trapped shrimp. The trappers could fish up to forty traps, tended (hauled) as often as needed, landing no

more than 500 pounds (227 kg) of shrimp per week and were similarly allowed to keep or sell their landings to offset fishing expenses. Each trapper was asked to combine the catches of all forty traps and collect one randomly chosen 1-kg sample from the day's catch once a week, frozen for later delivery to the Maine DMR and the New Hampshire Fish and Game Department. Other information such as date set, date hauled, haul location, depth (fathoms), and estimated catch weight was recorded for each trap string by the vessel captains. The trappers used their standard wire shrimp traps and a mix of bait in bait bags or wire mesh boxes. Traps were first set out the week of February 2, 2025, and the last hauls were made the week of March 9, 2025.

### **Sample Work-Up**

At the state labs, samples were analyzed following the usual procedures for commercial shrimp samples. Frozen samples were thawed, and non-frozen samples were worked up while they were still fresh. Each trawl or trap sample was weighed and separated by shrimp species. *P. borealis* specimens were counted, measured (dorsal carapace length (CL)), and sexed (male, transitional, or female), and female stage (I, II, or ovigerous) was determined. Female I shrimp have not yet carried eggs, and Female II shrimp are not carrying eggs but have in the past, as determined by the presence/absence of sternal spines (McCrary 1971).

### **Calculations for Trawl Data**

**Catch rates** — Pooled mean catch rates in pound per tow-hour were calculated for each trip and region as the total catch weight of northern shrimp divided by the total number of boat-tow-hours for the trip or region.

**Depth** — The mean depth fished for each tow was found by averaging the minimum and maximum depth for each tow; these were then averaged over all the tows for the trip to give the mean depth for the trip. The mean depths for each trip in a region were then averaged to give the mean depth fished for the region.

**Size-sex-stage distributions** — For samples collected from a tow, the numbers of northern shrimp of each sex, stage, and size (CL in 0.5 mm categories) in each sampled tow were estimated (“raised” or “expanded”) by multiplying the numbers in the sample by the tow catch weight divided by the sample weight.

**Count** — Northern shrimp counts per pound were not calculated as no trip caught over one pound of northern shrimp. Instead, a total northern shrimp count for each trip is listed.

### **Calculations for Trap Data**

**Depth** — The mean depth fished for each vessel-week was found by averaging all the reported depths of each trap string hauled during the week. The mean depths for each vessel-week were then averaged to give the mean depth for the vessel.

**Size-sex-stage distributions** — The numbers of northern shrimp of each sex, stage and size (CL in 0.5 mm categories) in each vessel-week were estimated (“raised” or

“expanded”) by multiplying the numbers in the vessel-week’s sample by the vessel-week’s total catch weight divided by the sample weight.

**Count per pound** — Northern shrimp counts per pound for each vessel-week’s sample were not calculated as no vessel caught over a pound of northern shrimp. Instead, a total northern shrimp count is listed for each trip.

## RESULTS

### **Trawl Catches and Samples**

**Catches, effort, and samples:** The five trawlers fished from the ports of Gloucester, MA (1), Portland, ME (1) (Western), South Bristol, ME (2) (Midcoast), and Port Clyde, ME (1) (Eastern) (Table 1). They each made one to two fishing trips when weather allowed, for a total of nine trips. Summaries of their results are in Tables 2–3. A total thirty-four northern shrimp weighing and estimated 1.20 pounds (0.0005 mt) were caught in trawls, or 0.0019% of the 26.5 mt total RSA. Three samples were collected from the Massachusetts boat and four from the Maine boats, for a total of seven samples collected and analyzed. Fishing dates are listed in Table 2. In Maine, all trawl vessels ceased fishing after the second week of the program due to the lack of shrimp and the high cost of continued participation. Additionally, persistent winter storms and strong winds made it difficult for trawl vessels to fish multiple weeks (weeks three and four), further reducing possible effort. In Massachusetts, the trawler ceased fishing after the second trip completed on February 3, 2025.

**Trawl catch rates:** Northern shrimp catch rates throughout the program were extremely low, from a low of 0 lbs./hr. (0 kg/hr.) to a high of 1.27 lbs./hr. (0.58 kg/hr.) (Table 2).

**Trawl depths:** Mean trip depths varied from 40 to 80 fa (73–146 m).

### **Trap Catches and Samples**

**Catches, effort, and samples:** The three Maine trappers fished from the ports of South Bristol and Pemaquid (Midcoast Maine) and the New Hampshire trapper fished from Portsmouth collecting a total of nine samples. Data collected by vessel and week are listed in Table 4. There were 477 trap-hauls made during twenty-five trips in total. No trappers caught their weekly limit, and a total of 36 northern shrimp weighing an estimated 1.22 pounds were caught in traps.

**Trap catch rates:** The pooled mean northern shrimp catch rate was extremely low at 0.002 lbs./trap-haul (0.0009 kg/trap-haul) (Table 4).

**Trap Depths:** Mean depths for vessel-weeks varied from 30 to 45 fa (55–82 m) (Table 4).

### **Total Sex-Stage Composition**

Across all trawl and trap samples, ovigerous females made up 26% of the northern shrimp catch by count with Female IIs making up 74% of the catch, many of them showing evidence of having recently released eggs. Males were 0% percent of the catch, and 0% of the catch were transitional and Female I (which have not carried eggs yet). It should be noted that an additional 12 shrimp were reported as caught in Maine, but were not sampled due to logistical challenges, such as weather disruptions. In one instance, a participant held off submitting a sample in hopes of catching more shrimp on a subsequent trip, but weather conditions prevented further fishing.

## **DISCUSSION**

The 2025 pilot winter sampling program provided seven research samples analyzed from nine trawl trips by five vessels, and nine trap samples from twenty-five trips by four vessels. Despite their efforts, only 70 individual northern shrimp were caught over the six-week program. Trawlers ceased fishing after week 2, initially due to persistent winter storms and unfavorable weather conditions in weeks 3 and 4. Continued participation was further constrained by the financial burden of operating a trawl vessel in the absence of viable catch. Additionally, poor weather conditions, including frequent winter storms and strong winds, limited fishing opportunities for multiple weeks. However, even with the bad weather, exceptionally low catch levels observed throughout the program reinforce concerns about the viability of the northern shrimp stock in the Gulf of Maine. Results of the program are congruent with the most recent stock assessment for northern shrimp showing stock status continues to be poor (ASMFC 2024). Given the results of the program and the continued poor condition of the northern shrimp stock, the Technical Committee recommends the program not continue in 2026.

## **ACKNOWLEDGEMENTS**

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## **LITERATURE CITED**

- ASMFC. 2017. Amendment 3 to the Interstate Fishery Management Plan for Northern Shrimp. Atlantic States Marine Fisheries Commission. Arlington, VA. 102 pp. <https://asmfc.org/resources/management-plan/northern-shrimp-amendment-3/>
- ASMFC. 2024. Northern Shrimp Stock Assessment Update 2023. Atlantic States Marine Fisheries Commission. Arlington, VA. 111pp. <https://asmfc.org/resources/stock-assessment/northern-shrimp-stock-assessment-update-2024/>

- Clark, S.H., S.X. Cadrin, D.F. Schick, P.J. Diodati, M.P. Armstrong, and D. McCarron. 2000. The Gulf of Maine northern shrimp (*Pandalus borealis*) fishery: a review of the record. *J. Northw. Atl. Fish. Sci.* 27: 193–226.
- Eckert, R., K. Whitmore, A. Richards, M. Hunter, K. Drew, and M. Appelman. 2016. Stock Status Report for Gulf of Maine northern shrimp — 2016. Atlantic States Marine Fisheries Commission. 81 pp. <https://asmfc.org/resources/stock-assessment/stock-status-report-for-the-gulf-of-maine-northern-shrimp-2016/>
- Hunter, M. 2014. Winter 2014 test tows for Gulf of Maine northern shrimp. Maine Department of Marine Resources. 14pp.
- Hunter, M. 2016. 2016 winter sampling for Gulf of Maine northern shrimp. Maine Department of Marine Resources. 32pp.
- McCrary, J.A. 1971. Sternal spines as a characteristic for differentiating between females of some Pandalidae. *J. Fish. Res. Board Can.*, 28: 98–100.
- Richards A. 2012. Phenological shifts in hatch timing of northern shrimp *Pandalus borealis*. *Marine Ecology Progress Series* 456: 149–158.
- Whitmore, K, A. Richards, R. Eckert, M. Hunter, M. Hawk, and K. Drew. 2013. Assessment report for Gulf of Maine northern shrimp — 2013. Atlantic States Marine Fisheries Commission. 86 pp. <https://asmfc.org/resources/stock-assessment/assessment-report-for-gulf-of-maine-northern-shrimp-2013/>
- Whitmore, K, A. Richards, R. Eckert, M. Hunter, M. Hawk, and K. Drew. 2014. Stock Status Report for Gulf of Maine northern shrimp — 2014. Atlantic States Marine Fisheries Commission. 75 pp. <https://asmfc.org/resources/stock-assessment/stock-status-report-for-gulf-of-maine-northern-shrimp-2014/>
- Whitmore, K, A. Richards, R. Eckert, and M. Hunter. 2015. 2015 winter sampling for Gulf of Maine northern shrimp. Atlantic States Marine Fisheries Commission. 30 pp.

## TABLES AND FIGURES

**Table 1.** Participants selected for the 2025 pilot winter sampling program.

<b>Participant</b>	<b>Home Port</b>	<b>Gear</b>	<b>Assigned Region</b>
<b>Adam Gamage</b>	South Bristol	Trap	East of Monhegan
<b>Andrew House</b>	South Bristol	Trap	Southport to Monhegan
<b>William McLain</b>	Pemaquid	Trap	West of Southport
<b>Justin Libby</b>	Port Clyde	Trawl	Eastern
<b>Dana Hammond II</b>	South Bristol	Trawl	Mid-Coast
<b>Robert Tetrault II</b>	Portland	Trawl	Western
<b>David Osier</b>	South Bristol	Trawl	Mid-Coast
<b>Chris Adamaitis</b>	Portsmouth	Trap	New Hampshire
<b>Joseph Jurek</b>	Gloucester	Trawl	Massachusetts

**Table 2.** Summary statistics for the trawl data by region, vessel, and trip: northern shrimp catch (lbs.), number of tows, total towing time, mean depth, mean bottom temperature (where available), northern shrimp catch rate, number of samples collected for the states, and northern shrimp count.

Region	Vessel	Date	Northern Shrimp Catch Weight (lbs.)	Tows (count)	Tow Time (hours)	Avg. Depth (fathoms)	Bottom Temp. (C)	Rate (lbs./hour)	Samples (Count)	Northern Shrimp Count
Western ME	Robert Michael	2/5/2024	0.06	2	1.83	60		0.033	1	2
	Robert Michael	2/15/2024	0.00	3	1.92	48		0.000	0	0
Midcoast ME	Blue Water III	2/5/2025	0.29	2	2.92	47		0.099	1	8
	Blue Water III	2/12/2025	0.24	3	6.20	80		0.039	1	7
	Nicole Leigh	2/12/2025	0.12	1	0.98	69	41.2	0.122	1	3
Eastern ME	Capt'n Lee	2/5/2025	0.42	1	0.33	40		1.273	0	12
	Capt'n Lee	2/15/2025	0.00	1	2.27	63		0.000	0	0
Massachusetts	F/V Mystique Lady	2/2/2025	0.07	2	1.30	44		0.056	1	2
	F/V Mystique Lady	2/3/2025	0.00	2	1.73	60		0.000	2	0
<b>Totals and Averages</b>	<b>n/a</b>	<b>n/a</b>	<b>1.20</b>	<b>17</b>	<b>19.48</b>	<b>56.78</b>	<b>41.2</b>	<b>0.180</b>	<b>7</b>	<b>34</b>

**Table 3.** Summary statistics for the trawl data by region: number of vessel captains participating, number of fishing trips, number of tows, northern shrimp catch (lbs.), total towing time, northern shrimp catch rate, mean depth, number of samples collected for the states, and northern shrimp catch count.

Region	Vessels	Trips	Tows	Northern Shrimp Catch Weight (lbs.)	Tow Time (hours)	Avg. Rate (lbs./hour)	Avg. Depth (fathoms)	Samples	Total Northern Shrimp Count
<b>Maine (Western)</b>	Robert Michael	2	5	0.06	3.75	0.020	55	1	2
<b>Maine (Midcoast)</b>	Blue Water III	2	5	0.53	9.12	0.058	64	2	15
<b>Maine (Midcoast)</b>	Nicole Leigh	1	1	0.12	0.98	0.120	69	1	3
<b>Maine (Eastern)</b>	Capt'n Lee	2	2	0.42	2.60	0.178	54	0	12
<b>Massachusetts</b>	Mystique Lady	2	4	0.07	3.03	0.574	52	3	2
<b>Totals and Averages</b>	<b>n/a</b>	<b>9</b>	<b>17</b>	<b>1.20</b>	<b>19.48</b>	<b>0.190</b>	<b>58.8</b>	<b>7</b>	<b>34</b>

**Table 4.** Summary statistics for trap data: number of trips, northern shrimp catch (lbs.), number of traps hauled, mean depth, number of samples collected, and northern shrimp count.

Region	Vessel	Week of	Trips	Northern Shrimp Catch Weight (lbs.)	Trap Hauls	Depth (fathoms)	Rate (lbs./trap-haul)	Samples	Northern Shrimp Catch Count
<b>New Hampshire</b>	Rough Times	2/2/2025	1	0.00	40	41.7	0.000	1	0
	Rough Times	2/9/2025	1	0.00	40	36.6	0.000	1	0
	Rough Times	2/16/2025	1	0.00	5	40.0	0.000	0	0
	Rough Times	2/23/2025	1	0.06	40	36.6	0.001	1	2
	Rough Times	3/9/2025	1	0.00	40	30.0	0.000	0	0
<b>Midcoast: East of Monhegan (Maine)</b>	Tory Lyn	2/2/2025	2	0.00	20	31.0	0.000	0	0
	Tory Lyn	2/9/2025	1	0.00	19	33.0	0.000	0	0
	Tory Lyn	2/16/2025	1	0.00	19	32.0	0.000	0	0
	Tory Lyn	3/9/2025	1	0.00	19	32.0	0.000	0	0
<b>Midcoast: Southport to Monhegan (Maine)</b>	Betty Lew	2/2/2025	3	0.00	20	37.0	0.000	0	0
	Betty Lew	2/9/2025	1	0.10	20	37.0	0.005	1	3
	Betty Lew	2/16/2025	1	0.00	20	37.0	0.000	0	0
	Betty Lew	3/9/2025	1	0.00	20	37.0	0.000	0	0
<b>Midcoast: West of Southport (Maine)</b>	Sheila & Ivy	2/2/2025	3	0.00	37	40.0	0.000	0	0
	Sheila & Ivy	2/9/2025	1	0.00	18	42.0	0.000	0	0
	Sheila & Ivy	2/23/2025	1	0.15	20	45.0	0.008	1	4
	Sheila & Ivy	3/2/2025	1	0.26	20	35.0	0.013	1	7
	Sheila & Ivy	3/9/2025	3	0.65	60	38.0	0.011	3	20
<b>Totals and Averages</b>	<b>n/a</b>	<b>n/a</b>	<b>25</b>	<b>1.22</b>	<b>477</b>	<b>36.7</b>	<b>0.002</b>	<b>9</b>	<b>36</b>

**Table 5.** Summary statistics for trap data: number of trips, number of trap-hauls, northern shrimp catch (lbs.), mean depth, number of samples collected, and northern shrimp catch count.

Port	Vessel	Trips	Trap Hauls	Northern Shrimp Catch Weight (lbs.)	Avg. Depth (fathoms)	Samples	Northern Shrimp Catch Count
Maine (Midcoast)	Tory Lyn	5	77	0.00	32	0	0
Maine (Midcoast)	Betty Lew	6	80	0.10	37	1	3
Maine (Midcoast)	Shelia & Ivy	9	155	1.06	40	5	31
New Hampshire (Portsmouth)	Rough Times	5	165	0.06	37	3	2
<b>Totals and Averages</b>		<b>25</b>	<b>477</b>	<b>1.22</b>	<b>36.5</b>	<b>9</b>	<b>36</b>