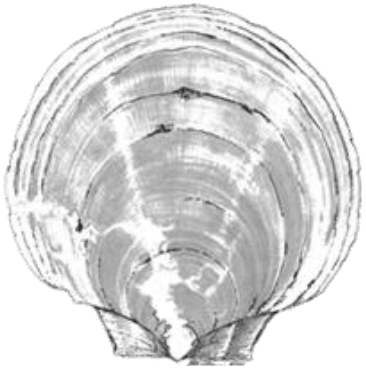
Scallop Fishery Management Plan

Framework Adjustment 38

Including an Environmental Assessment and

Regulatory Flexibility Analysis



Decision Draft

January 16, 2024

Prepared by the

New England Fishery Management Council

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National Marine Fisheries Service

New England
Fishery Management Council

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FRAMEWORK ADJUSTMENT 38 TO THE ATLANTIC SEA SCALLOP FISHERY MANAGEMENT PLAN

Proposed Action: Propose updated fishery specifications for FY 2024 and FY 2025 (default) with corresponding management measures and manage removals from the NGOM management area.

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Abstract: The New England Fishery Management Council, in consultation with NOAA's National Marine Fisheries Service, has prepared Framework Adjustment 38 to the Atlantic Sea Scallop Fishery Management Plan, which includes an Environmental Assessment. The proposed action focuses on setting specifications for Fishing Years 2024 and 2025 (default). The document describes the affected environment and valued ecosystem components and analyzes the impacts of the alternatives on both. It addresses the requirements of the Magnuson Stevens Fishery Conservation and Management Act, the National Environmental Policy Act, the Regulatory Flexibility Act, and other applicable laws.

1.0 EXECUTIVE SUMMARY

Framework 38 (FW38) will set specifications and adjust management measures for the Atlantic Sea Scallop fishery for fishing years (FY) 2024 and 2025 (default) to achieve the objectives of the fishery management plan (FMP). This action is needed to prevent overfishing and improve yield-per-recruit from the fishery, to manage total removals from the Northern Gulf of Maine management area (NGOM), and to improve enforceability of the scallop rotational management program. The Council considered a range of alternatives for this framework.

In Action 1, Overfishing Limit and Acceptable Biological Catch, the Council selected Alternative 4.1.2, update the overfishing limit (OFL) and acceptable biological catch (ABC) for FY 2024 and FY 2025 (default) as preferred. The ABC value for FY 2024 is 21,497 mt, which is higher than the FY 2023 value of 19,828 mt.

In Action 2, Section 4.2.1, the Council developed a closure option for Platts Bank within the NGOM management area to improve the yield-per-recruit of an incoming year class that has substantial scope for growth. The Council's preferred alternative (4.2.1.2) would close roughly 101 square miles (262 km^2) of Platts Bank for two years. Platts Bank is situated east of the Western Gulf of Maine (WGOM) Closed Area off the coast of Maine. This closure would protect a substantial number of small scallops that have not recruited into the fishery. The area would re-open to directed scallop fishing in fishing year 2026.

In Action 2, Section 4.2.2, the Council developed NGOM management measures that were consistent with Amendment 21 to the Scallop FMP. This includes increasing the overall scallop Research Set-Aside (RSA) by 25,000 pounds and setting aside scallops to support monitoring of directed fishing in the management area. The Council's preferred alternative (4.2.2.2.2) would set the overall NGOM Total Allowable Landings (TAL) at 454,152 pounds, and the 2024 NGOM Set-Aside would be set at 420,598 pounds. The 2025 default NGOM Set-Aside would be set at 315,449 pounds.

For Action 3, the Council developed a range of fishery specifications for FY 2024 and default measures for FY 2025 for both limited access and limited access general category vessels. The Council selected Alternative 4.3.3 as the preferred alternative. The preferred alternative would set limited access open area days-at-sea (DAS) allocations at an open area fishing mortality rate of F=0.38, which corresponds to 20 open area days-at-sea for full-time limited access (LA) vessels and 8 DAS for part-time LA vessels in FY 2024. The total landings associated with the preferred alternative are projected to be roughly 27.4 million pounds. The alternative closes the Nantucket Lightship region (NLS-West, NLS-South, NLS-North, NLS-Extension), Area I Sliver, and Area I Quad. All vessels fishing under a scallop declaration would be prohibited from entering or transiting any scallop rotational areas and the WGOM Closed Area. For FY 2024, the Area I Access Area and the Area I Quad Closure would be a corridor for continuous transiting, and transit would be permitted.

The annual projected landings (APL) is calculated by reducing the total landings by set-asides and incidental removals. The APL is then split between the LA (94.5%) and the limited access general category (LAGC) IFQ (5.5%) components. Not including set-asides or incidental catch, the annual projected landings for FY 2024 are estimated to be approximately 25.6 million pounds, with LA harvest around 24.2 million pounds, and LAGC IFQ set at roughly 1.4 million pounds. The observer set aside would be approximately 474,000 pounds, the research set-aside (RSA) would be set at 1.275 million pounds, and landings from incidental limited access permits are estimated to be 50,000 pounds.

The full-time LA possession limit for all access areas open to the fishery under the preferred alternative is set at 12,000 pounds. The preferred alternative would allocate a total of 36,000 pounds to full-time LA vessels, with two 12,000-pound trips allocated to Area II Access Area and one 12,000-pound trip allocated to the New York Bight Access Area. The part-time LA trip limit would be set at 14,400 pounds

and part-time vessels would be able to fish this allocation in Area II and/or the New York Bight access areas.

This action also includes default measures for FY 2025. These default measures were developed to be in place only until a subsequent action implements updated allocations for FY 2025. The FY 2025 default measures under Alternative 4.3.3 would set at 75% of the LAGC IFQ quota and Limited Access DAS allocations from FY 2024.

Action 4 designates where LAGC IFQ access area trips may be taken. The preferred alternative in Action 4 is Alternative 2 (4.4.2), which would allocate a total of 856 trips which would be available to fish at the 800-pound trip limit in Area I Access Area, Area II Access Area, and the New York Bight Access Area. There would not be a specific number of trips allocated to any individual access area. Instead, vessels would be able to fish in any of the three access areas, and when all 856 trips are taken, all three areas would close.

Action 5 determines where vessels can conduct RSA compensation fishing in FY2024. The preferred alternative is Alternative 2 (4.5.2), which would allow compensation fishing in Area II Access Area, areas open to limited access days-at-sea fishing, and up to 25,000 pounds from the NGOM management area.

In Action 6, the Council developed an alternative that considers increasing the vessel monitoring system (VMS) reporting interval for all scallop vessels on declared scallop trips. Under the preferred alternative, Alternative 2 (4.6.2), all scallop vessels with active VMS units would be subject to constant reporting at 5-minute intervals when seaward of the VMS demarcation line on a scallop declaration. When inshore of the VMS demarcation line, vessels would report at a 30-minute interval. The increased VMS reporting rate is not intended to apply to vessels participating in state-waters scallop fisheries and excludes any SES-% VMS code associated with the scallop state water exemption program.

Framework 38			Council Rationale
Action 1: Overfishing Limit (OFL) and Acceptable Biological Catch (ABC)			The Council recommends the updated OFL/ABC values in Alternative 2 as preferred because they are based on the most recent estimates of scallop biomass and are recommended by the SSC. Setting the OFL and ABC using 2023 survey data should reduce the likelihood of overfishing compared to using outdated information. The estimate of scallop biomass is based on annual surveys, and in some cases multiple surveys are conducted in more critical areas. Overall, using the updated OFL and ABC estimates should have positive biological impact on the scallop resource over the long-term because the ABC values were determined based on the most recent scientific information available to prevent overfishing of the scallop resource and to optimize yield-per-recruit.
4.1.1	Alternative 1	No Action for OFL and ABC	
4.1.2	**Alternative 2 (Preferred)**	**Updated OFL and ABC for FY2024 and FY2025**	

Framework 38			Council Rationale
Action 2.1 - Closure of Platts Bank to Protect Small Scallops			The Council recommends a closure option for Platts Bank within the NGOM management area to improve the yield-per-recruit of an incoming year class that has substantial scope for growth. Overall, closing Platts Bank should have a slight positive biological impact on the scallop resource in the NGOM, which would continue to grow and could spawn multiple times before fishing is allowed in the area. The Platts Bank closure is expected to have a negligible economic impact in the short term since the 2024 NGOM TAL is based on older, larger scallops in other parts of the management unit. Closing the area to fishing is expected to allow scallops in the area to grow which could lead to long-term economic and social benefits from harvesting larger scallops. There would be a negligible impact on area swept and protected resources in the short-term.
4.2.1.1	Alternative 1	No Action (No Closure)	
4.2.1.2	**Alternative 2 (Preferred)**	**Closure of Platts Bank to directed scallop fishing, within the Northern Gulf of Maine Management Area (2-year closure)**	

<table>
<tr><td colspan="3">Framework 38</td><td>Council Rationale</td></tr>
<tr><td colspan="3">Action 2.2 – Northern Gulf of Maine TAL Setting</td><td rowspan="5">The Council’s preferred option, Alternative 2, implements an overall cap on landings from the area, and distributes landings across set-aside to support research, monitoring, and a directed LAGC fishery.

The NGOM TAL options developed by the Council are based on conservative F_{TARGET} rates (F=0.18 to F=0.25). The preferred option, Option 2 (F=0.21 using Stellwagen, Ipswich, and Jeffreys Ledge), is expected to result in higher overall landings for the LAGC component compared to the FY 2023. The NGOM set-aside would be 420,598 pounds for FY 2024. The preferred alternative could be expected to result in higher fishery revenue relative to No Action, and similar revenue to FY 2023. Applying a conservative F rate for directed fishing could be expected to have a positive biological impact on the sea scallop resource in the region. Impacts on protected resources could be considered slightly negative.</td></tr>
<tr><td>4.2.2.1</td><td>Alternative 1</td><td>No Action</td></tr>
<tr><td rowspan="3">4.2.2.2</td><td rowspan="3">Alternative 2 (Preferred) - Set NGOM TAL, with set-asides to support research, monitoring, and a directed LAGC fishery</td><td>Option 1: Set NGOM TAL at F=0.18 using Stellwagen, Ipswich, and Jeffreys Ledge</td></tr>
<tr><td>Option 2: Set NGOM TAL at F=0.21 using Stellwagen, Ipswich, and Jeffreys Ledge
(Preferred)</td></tr>
<tr><td>Option 3: Set NGOM TAL at F=0.25 using Stellwagen, Ipswich, and Jeffreys Ledge</td></tr>
</table>

Action 3: 4.3 – Fishing Year 2024& 2025 Specifications and Rotational Management		Council Rationale
4.3.1	Alternative 1 No Action: Default Measures from Framework 36, 18 DAS	A full description of the preferred specifications alternative, Alternative 3, can be found in Section 4.3.3. The overall F rate associated with the Council's preferred alternative is estimated to be F=0.165, which is well below at F=0.45 used for the ABC/ACL. The preferred open area F rate (F=0.38) is also less than the OFL at F=0.61, which is considered the upper limit for fishing mortality as of the 2020 Management Track Assessment (2020). Spatial management is the same in Alternatives 2, 3, and 4. The impacts to the scallop resource, EFH, protected resources, non-target species, as well as the economic, and social impacts of the measures that the Council considered for FY 2024 and FY 2025 vary depending on the number of DAS allocated to the FT LA component. The Council's preferred alternative would allocate 20 DAS. The preferred alternative is expected to result in scallop landings of 27.4 million pounds. Total revenue is estimated to be $383.93 million, which is $26 million less than the highest revenue estimate under consideration. Area swept estimates for Alternative 3 (preferred) are lower than Status Quo and Alternative 4. The bycatch estimates are above and below the anticipated sub-ACLs approved by the Council through groundfish Framework 66 for the preferred alternative. The projections are forecasts with error and should not be interpreted as precise estimates. Review of past estimates has shown that the projections have over- and under-estimated catches. The continued implementation of a reactive accountability measure for northern windowpane flounder, and other factors, was considered in the Council's selection of Alternative 3. A reduction in DAS is expected to have a positive impact on the scallop resource, particularly on Georges Bank open areas, relative to status quo and Alternative 4.
4.3.2	Alternative 2 18 Days At Sea, three access area trips with 12,000-pound trip limit	
4.3.3	**Alternative 3,** **20 Days At Sea, three access area trips with 12,000-pound trip limit** **(Preferred)**	
4.3.4	Alternative 4, 24 Days At Sea, three access area trips with 12,000-pound trip limit	

Action 4: 4.4 – Access Area Trip Allocations to the Limited Access General Category IFQ Component		Council Rationale
4.4.1	Alternative 1 No Action: Default Measures from Framework 36	Under the Council's preferred alternative, Alternative 2, the total number of access area trips allocated to the LAGC IFQ component would be the 800-pound trip equivalent of 5.5% of the access area allocation to the full-time limited access component specified in Section 4.3. Based on the alternatives in Section 4.3, a total of 856 access area trips would be allocated to the LAGC IFQ component. Alternative 2 would make the total LAGC IFQ access area trip allocation available in Area I Access Area, Area II Access Area, and the New York Bight Access Area. There would not be a specific number of trips allocated to an area. Instead, vessels would be able to fish in any of the three access areas, and when all 856 trips are taken, all three areas would close. The preferred alternative increases the opportunity for LAGC IFQ vessels to operate in access areas relative to No Action, and above FY 2023 levels. This option could have potentially slight positive impacts on the resource overall by spreading out fishing effort and providing more access in areas with higher catch rates. It also could potentially reduce total area swept since the LAGC IFQ component would have the opportunity to fish on scallops in access areas. The preferred alternative could be expected to help reduce fishing times and lower trips costs, particularly if the LAGC component elects to fish in the Area I Access Area or the New York Bight Access Area. If LAGC trips are not taken in the access areas, LAGC catch is assumed to come from open areas instead. This could result in lower or higher catch efficiency relative to the access area trips, depending on the open area fished and the resource conditions there. The impacts on non-target species would likely be mixed, as a concentration of fishing in one stock area is likely to reduce effort in other stock areas; however, less adverse impacts to non-target species would be expected in areas with higher scallop catch rates relative to areas with lower scallop catch rates. Allowing the LAGC IFQ component to harvest their share of access area allocations in any open access area (Area I Access Area, Area II Access Area, or New York Bight Access Area) is expected to provide additional flexibility and opportunities for IFQ vessels.
4.4.2	**Alternative 2,** **Update LAGC IFQ Access Area Trip Allocations, Distribute LAGC IFQ Access Area Allocation to Area I, Area II, and the New York Bight** **(Preferred)**	
4.4.3	Alternative 3, Update LAGC IFQ Access Area Trip Allocations, Distribute 50% of LAGC IFQ Access Area allocation to Area I / Area II, and 50% to the New York Bight	

Action 5: 4.5 – Scallop Research Set-Aside Compensation Fishing		**Council Rationale**
4.5.1	Alternative 1 No Action	The Council recommends expanding RSA compensation fishing opportunities to higher density areas (e.g., Area II) and reducing fishing pressure in the open bottom where LPUE has declined. Currently, RSA compensation fishing is only permitted in areas open to Limited Access DAS fishing and up to 25,000 pounds total from the NGOM management area. Allowing RSA fishing in Area II Access Area is expected to allow vessels to target high density areas, which would have a slight positive impact on the resource and swept area because it could reduce fishing effort in open areas on compensation trips.
4.5.2	**Alternative 2,** **Allow RSA Compensation fishing in Area II Access Area** **(Preferred)**	

Action 6: 4.6 – Increase VMS-Reporting Interval For All Scallop Vessels		**Council Rationale**
4.6.1	Alternative 1 No Action, 30-minute VMS reporting rate	The Council recommends increasing the minimum vessel monitoring system (VMS) reporting requirement to a 5-minute interval, from a 30-minute interval, for all vessels seaward of the VMS demarcation line on a scallop declaration (SES-%) excluding vessels participating in the scallop state-waters exemption program. This change is expected to reduce the period in which a scallop vessel can enter an access area or closure undetected in between VMS reports. Overall, Alternative 2 could have a negligible to slight positive effect on the scallop resource by increasing the utility of an important tool used to enforce regulations in the fishery. Increasing VMS reporting rates may deter vessels from attempting to fish inside closed areas illegally, which would improve the quality of information about catch rates and landings data. Alternative 2 is expected to increase VMS costs at the vessel and fleet level due to the increased data transfer of 5-minute VMS reporting.
4.6.2	**Alternative 2,** **5-minute VMS reporting rate when a scallop vessel crosses seaward of the VMS demarcation line on a scallop declaration code (SES-%)** **(Preferred)**	

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2.1 TABLES

2.2 FIGURES

2.3 MAPS

2.4 ACRONYMS

ABC	Acceptable Biological Catch
ACL	Annual Catch Limit
AIM	An Index Method of Analysis
ALWTRP	Atlantic Large Whale Take Reduction Plan
AM	Accountability Measure
ANPR	Advanced Notice of Proposed Rulemaking
AP	Advisory Panel
APA	Administrative Procedures Act
APL	Annual Projected Landings
ASMFC	Atlantic States Marine Fisheries Commission
B_{MSY}	Biomass that would allow for catches equal to Maximum Sustainable Yield when fished at the overfishing threshold (FMSY)
BiOp, BO	Biological Opinion, a result of a review of potential effects of a fishery on Protected Resource species
CAI	Closed Area I
CAII	Closed Area II
CEQ	Council on Environmental Quality
CPUE	Catch per unit of effort
d/K	Discard to kept catch ratio
DAM	Dynamic Area Management
DAS	Day(s)-at-sea
DFO	Department of Fisheries and Oceans (Canada)
DMF	Division of Marine Fisheries (Massachusetts)
DMR	Department of Marine Resources (Maine)
DPWG	Data Poor Working Group
DSEIS	Draft Supplemental Environmental Impact Statement
EA	Environmental Assessment
EEZ	Exclusive economic zone
EFH	Essential fish habitat
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Endangered Species Act
F	Fishing mortality rate
FEIS	Final Environmental Impact Statement
FMP	Fishery management plan
FW	Framework
FY	Fishing year
GARFO	Greater Atlantic Regional Fisheries Office
GARM	Groundfish Assessment Review Meeting
GB	Georges Bank
GIS	Geographic Information System
GOM	Gulf of Maine
GRT	Gross registered tons/tonnage

HAPC	Habitat area of particular concern
HPTRP	Harbor Porpoise Take Reduction Plan
IFM	Industry-funded monitoring
IFQ	Individual fishing quota
INCI	Incidental permit
ITQ	Individual transferable quota
IVR	Interactive voice response reporting system
IWC	International Whaling Commission
LA	Limited access
LAGC	Limited access general category
LOA	Letter of authorization
MA	Mid-Atlantic
MAFAC	Marine Fisheries Advisory Committee
MAFMC	Mid-Atlantic Fishery Management Council
MMPA	Marine Mammal Protection Act
MPA	Marine protected area
MRI	Moratorium Right Identifier
MRIP	Marine Recreational Information Program
MSA	Magnuson-Stevens Fishery Conservation and Management Act
MSY	Maximum Sustainable Yield
NEAMAP	Northeast Area Monitoring and Assessment Program
NEFMC	New England Fishery Management Council
NEFOP	Northeast Fisheries Observer Program
NEFSC	Northeast Fisheries Science Center
NEPA	National Environmental Policy Act
NGOM	Northern Gulf of Maine
NLS-N	Nantucket Lightship North
NLS-S-deep	Nantucket Lightship South Deep
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
OBDBS	Observer database system
OLE	Office for Law Enforcement (NMFS)
OY	Optimum yield
PBR	Potential Biological Removal
PDT	Plan Development Team
PRA	Paperwork Reduction Act
RFA	Regulatory Flexibility Act
RMA	Regulated Mesh Area
RPA	Reasonable and Prudent Alternatives
SA	Statistical Area
SAFE	Stock Assessment and Fishery Evaluation
SAP	Special Access Program
SARC	Stock Assessment Review Committee
SAS	Stock Assessment Subcommittee
SAW	Stock Assessment Workshop
SBNMS	Stellwagen Bank National Marine Sanctuary
SIA	Social Impact Assessment
SNE	Southern New England
SNE/MA	Southern New England-Mid-Atlantic
SSB	Spawning stock biomass

SSC	Scientific and Statistical Committee
TAL	Total allowable landings
TED	Turtle excluder device
TEWG	Technical Expert Working Group
TMS	Ten minute square
TRAC	Transboundary Resources Assessment Committee
USCG	United States Coast Guard
USFWS	United States Fish and Wildlife Service
VMS	Vessel monitoring system
VEC	Valued ecosystem component
VPA	Virtual population analysis
VTR	Vessel trip report
WGOM	Western Gulf of Maine
YPR	Yield per recruit

3.0 BACKGROUND AND PURPOSE

This EA is being prepared using the 2020 CEQ NEPA Regulations as modified by the Phase I 2022 revisions. The effective date of the 2022 revisions was May 20, 2022 and reviews begun after this date are required to apply the 2020 regulations as modified by the Phase I revisions unless there is a clear and fundamental conflict with an applicable statute. This EA began on June 30, 2022 and accordingly proceeds under the 2020 regulations as modified by the Phase I revisions.

3.1 BACKGROUND

This framework adjustment to the Scallop Fishery Management Plan (FMP) sets fishery specifications for fishing year (FY) 2024 and default measures for FY 2025.

The list of measures routinely addressed as part of scallop specifications has increased over the years to include overall annual catch limits and specific allocations for both limited access (LA) and limited access general category (LAGC) vessels. Below is a list of the measures included in scallop fishery specifications:

- Overfishing Limit (OFL) and Acceptable Biological Catch (ABC), which is recommended by the SSC and approved by the Council;
- Annual Catch Limits (ACL) (for both the limited access and limited access general category fisheries, Annual Catch Target (ACT) for the LA fishery; and Annual Projected Landings (APL) for LA and LAGC;
- Allocations for limited access vessels include DAS allocations, access area allocations with associated possession limits;
- Allocations for limited access general category vessels include an overall IFQ for both permit types, as well as a fleet wide, area-specific maximum number of access area trips available for the general category fishery;
- NGOM TAL and NGOM Set-Aside;
- Incidental catch target-TAC; and set-aside of scallop catch for the industry funded observer program and research set-aside program.

3.2 PURPOSE AND NEED

The purpose and need for Framework 38 are described in Table 1.

Table 1. Purpose and need for Framework 38.

Purpose	Need
To set specifications including: OFL, ABC, scallop fishery ACLs and ACTs including associated set-asides, day-at-sea (DAS) allocations, general category fishery allocations, and area rotation schedule and allocations for the 2024 fishing year, as well as default measures for FY 2025 that are expected to be replaced by a subsequent action.	To achieve the objectives of the Atlantic Sea Scallop FMP to prevent overfishing and improve yield-per recruit from the fishery.
To set landing limits in the Northern Gulf of Maine management area based on exploitable biomass.	To manage total removals from the Northern Gulf of Maine management area.
Increase VMS reporting intervals for scallop vessels on declared scallop trips.	To improve enforceability of the scallop rotational management program.

3.3 SUMMARY OF ANNUAL CATCH LIMITS

These specifications include designations of Overfishing Limit (OFL), ABC, ACLs, and Annual Catch Targets (ACT) for the scallop fishery, as well as scallop catch for the Northern Gulf of Maine (NGOM), incidental, and state waters catch components of the scallop fishery. The scallop fishery assessments determine the exploitable biomass, including an assessment of discard and incidental mortality, (mortality of scallops resulting from interaction, but not capture, in the scallop fishery).

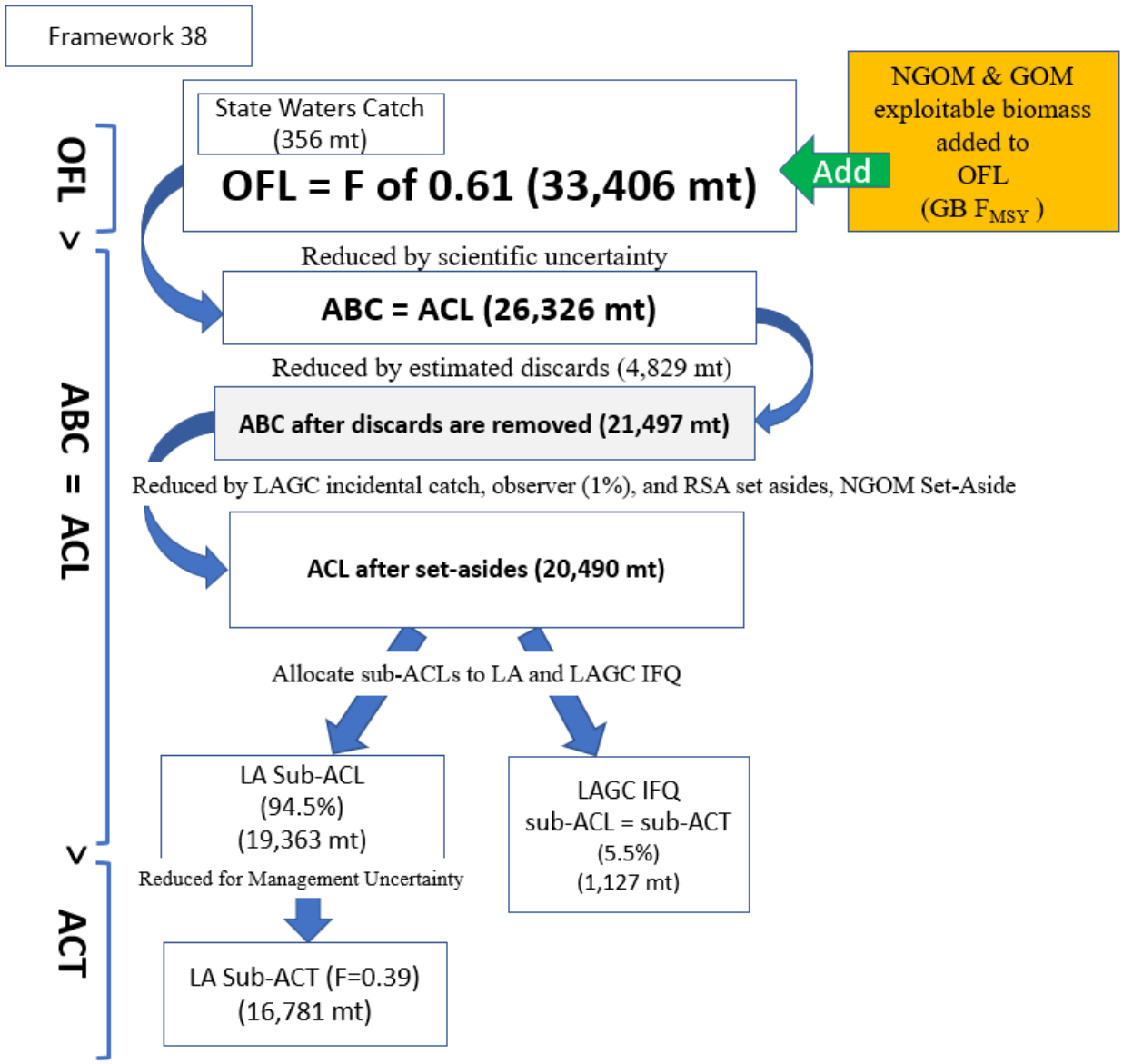
Overfishing Limit. The OFL is specified as the level of catch and associated fishing mortality rate (F) that, above which, overfishing is occurring. The OFL will account for landings of scallops in state waters by vessels without Federal scallop permits. The 2020 stock assessment (NEFSC 2020) set the OFL where F = 0.61.

Acceptable Biological Catch/Annual Catch Limit. The ACL is equal to the ABC in the Scallop FMP. To account for scientific uncertainty, ABC is set at the F that has a 25% probability of exceeding the F associated with OFL (i.e., a 75% probability of being below the F associated with the OFL). The 2020 management track assessment determined that the F associated with the ABC/ACL is F=0.45. As specified in Amendment 21, exploitable biomass from the Northern Gulf of Maine contributes to the overall OFL and ABC. Observer and research set-asides are removed from the ABC (1 percent of the ABC/ACL and 1.275 mil lb. (578 mt), respectively). The NGOM Set-Aside, which is available for directed LAGC fishing, is also removed before calculating the legal limits for LA and LAGC IFQ. The remaining available landings (allocation) is divided between the LA and LAGC fisheries into two sub-ACLs: 94.5% for the LA fishery sub-ACL, and 5.5% for the LAGC fishery sub-ACL. Figure 4 summarizes how the various ACL terms are related in the Scallop FMP.

Annual Catch Targets. For each sub-ACL there is an ACT to account for management uncertainty. For the LA fleet, the ACT has an associated 75% probability that the ACT will not exceed the ABC/ACL. The F associated with the LA ACT is F = 0.39. The major sources of management uncertainty in the LA fishery are carryover provisions including the 10 DAS carryover provision and allowing vessels to fish unused access area allocation from the previous fishing year within the first 60 days of the fishing year. For the LAGC fleet, the ACT is equal to the LAGC fleet's sub-ACL, since this component is managed entirely by quotas and is presumed to have less management uncertainty. The fishery specifications allocated to the fishery may be set at an F rate lower than the ACT, but fishery specifications may not exceed this level.

Annual Projected Landings. The annual projected landings (APL) were developed using a forecasting model (SAMS) of the scallop resource. The APL combines projected landings of exploitable scallops from open area DAS when fishing at an F determined by the Council and expected landings from access areas. The APL is allocated between the Limited Access component (94.5%) and the LAGC IFQ component (5.5%).

Figure 1. Framework 38 ACL flowchart for fishing year 2024 (Alternative 2).



4.0 ALTERNATIVES UNDER CONSIDERATION

The Council considered the alternatives in this section. It did not consider any others because these provide a reasonable range of alternatives to address the purpose and need for action described in Section 3.2.

4.1 ACTION 1 – OVERFISHING LIMIT AND ACCEPTABLE BIOLOGICAL CATCH

4.1.1 Alternative 1 – No Action for OFL and ABC

Under Alternative 1 (No Action), the FY 2024 OFL and ABC would be the default values adopted in Framework 36 (Table 2) that were calculated using survey and fishery data through 2022. These default values would remain in place until a subsequent action replaced them. Alternative 1 is based on the OFL and ABC control rules (Section 3.1) using 2022 survey data.

Rationale: This is the default OFL and ABC specified by the Council through Framework 36, which reflect reference points from the 2020 management track scallop assessment and is based on observations from the 2022 scallop surveys.

Table 2. No Action OFL and ABC for FY 2024 (default) approved through Framework 36 (values in mt).

Fishing Year	OFL (including discards at OFL)	ABC (including discards)	Discards (at ABC)	ABC available to fishery (after discards subtracted)
2024	29,151	23,289	3,083	20,206

Table 3. No Action (default) ACL related values for the scallop fishery based on 2024 OFL and ABC approved through Framework 36.

	FY 2024 (mt)
OFL	29,151
ABC/ACL (discards removed)	20,206
Incidental Catch	23
RSA	578
Observer set-aside	202
ACL for fishery	19,403
Limited Access ACL	18,335
Limited Access ACT	15,891
LAGC Total ACL	1,067
LAGC IFQ ACL	970
LA w/ LAGC IFQ ACL (0.5% of ACL)	97
Annual Projected Landings (APL)**	(*)
Limited Access Projected Landings (94.5% of APL)	(*)
Total IFQ Annual Allocation (5.5% of APL)	
LAGC IFQ Annual Allocation (5% of APL)	
Limited Access with LAGC IFQ Annual Allocation (0.5% of APL)	

* The catch limits for the 2024 fishing year are subject to change through a future specifications action or framework adjustment. This includes the setting of an APL for 2024 that will be based on the 2023 annual scallop surveys.

** The APL value reflects the Council's preferred alternatives for specifications from FW38.

4.1.2 Alternative 2 – Updated OFL and ABC for FY 2024 and FY 2025 (default) (*Preferred alternative*)

Alternative 2 would specify OFLs and ABCs for FY 2024 and default values for FY 2025 (Table 4) using the scallop control rule. Alternative 2 is based on the OFL and ABC control rules (Section 3.1). The fishing mortality rates for OFL and ABC would be based on the results of the 2020 management track assessment for Atlantic sea scallops, with the OFL at F=0.61 and the ABC set at F=0.45.

Once the OFL and ABC are established, the associated ACLs for the fishery can be defined. Table 5 summarizes the various ACL allocations for the fishery based on decisions made in Amendment 15 when ACLs were implemented.

Rationale: This alternative uses the most recent scallop survey data and represents the most up-to-date scientific information available, which is important when setting the OFL and ABC. While the scallop resource is considered healthy, some annual variability in exploitable biomass is anticipated, which is reflected in the updated OFL and ABC.

Table 4. OFL and ABC values for FY 2024 and FY 2025 (default).

Fishing Year	OFL (including discards at OFL)	ABC (including discards)	Discards (at ABC)	ABC available to fishery (after discards removed)
2024	33,406	26,326	4,829	21,497
2025	35,241	27,699	5,113	22,586

Table 5. Alternative 2 – ACL related values for the scallop fishery based on 2024 and 2025 OFL and ABC

	FY 2024 (mt)	FY 2025 (mt)
OFL	33,406	35,241
ABC/ACL (discards removed)	21,497	22,586
Incidental Catch	23	23
RSA	578	578
Observer set-aside	215	226
NGOM set-aside	191	143
ACL for fishery	20,490	21,616
Limited Access ACL	19,363	20,427
Limited Access ACT	16,781	17,703
LAGC Total ACL	1,127	1,189
LAGC IFQ ACL	1,024	1,081
LA w/ LAGC IFQ ACL (0.5% of ACL)	103	108
APL (after set-asides are removed)***	11,609	(*)
Limited Access Projected Landings (94.5% of APL)	10,971	(*)
Total IFQ Annual Allocation (5.5% of APL)****	638	479
LAGC IFQ Annual Allocation (5% of APL)	580	435
Limited Access with LAGC IFQ Annual Allocation (0.5% of APL)	58	44

*The catch limits for the 2025 fishing year are subject to change through a future specifications action or framework adjustment. This includes the setting of an APL for 2025 that will be based on the 2024 scallop surveys.

**As a precautionary measure, the 2025 IFQ annual allocations are set at 75% of the 2024 IFQ Annual Allocations.

***The APL value reflects the Council's preferred alternatives for specifications from FW38.

****Poundage allocations to the LAGC IFQ component are specified in Action 3, 4.3

4.2 ACTION 2 – NORTHERN GULF OF MAINE MANAGEMENT AND TAL SETTING

4.2.1 Closure of Platts Bank to Protect Small Scallops

4.2.1.1 Alternative 1 – No Action

Under Alternative 1, there would be no change to where scallop vessels can fish on declared scallop trips in the NGOM Management Area. Platts Bank would be open to fishing while the management area is open to directed scallop fishing.

4.2.1.2 Alternative 2 – Closure of Platts Bank to directed scallop fishing, within the Northern Gulf of Maine Management Area (2-year closure) (*Preferred alternative*)

Alternative 2 would close Platts Bank to directed scallop fishing in the NGOM Management Area for two years (FY 2024 and FY 2025) to protect small scallops that were observed in 2023 drop camera surveys of this area. The explicit purpose of this closure would be to conserve small scallops. The closure would cover roughly 101 mi^2 (262 km^2) of Platts Bank, which is situated east of the Western Gulf of Maine Closed Area off the coast of Maine. This closure would protect a substantial number of small scallops that have not recruited into the fishery. The closure area is shown in Map 2, and closure coordinates are provided in Table 7.

Rationale: The 2023 SMAST drop camera survey of the Northern Gulf of Maine detected many small scallops on Platts Bank. Alternative 2 closes this part of the NGOM management area to improve the yield-per-recruit of these scallops, while providing access to larger, older scallops that were also observed in the 2023 surveys. Within the NGOM Management Area in FY 2024, directed scallop fishing could be expected on Stellwagen Bank, southern Jeffreys Ledge, and in Ipswich Bay.

Map 1. Platts Bank Scallop Closure under Alternative 2

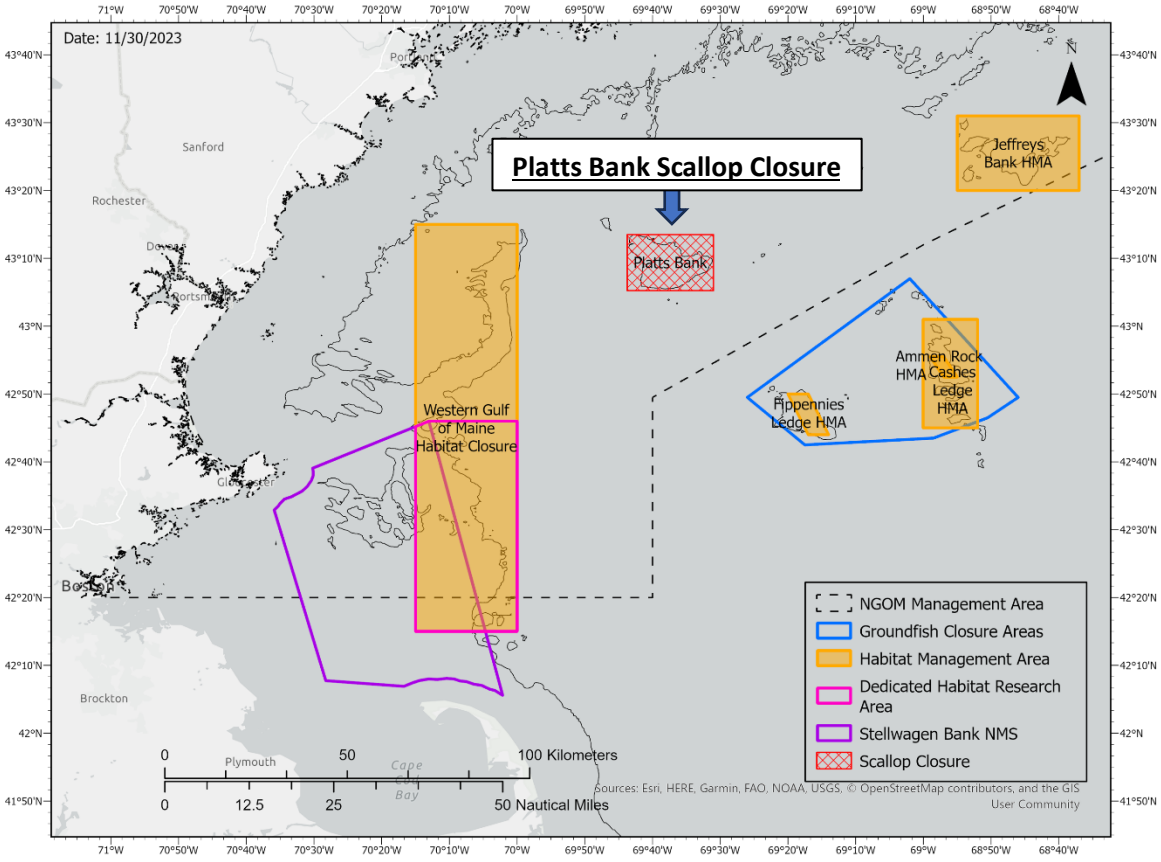


Table 6. Platts Bank Scallop Closure boundaries under Alternative 2

Longitude	***Latitude***
69° 43.8’ W	43° 13.8’ N
69° 31.2’ W	43° 13.8’ N
69° 31.2’ W	43° 5.4’ N
69° 43.8’ W	43° 5.4’ N

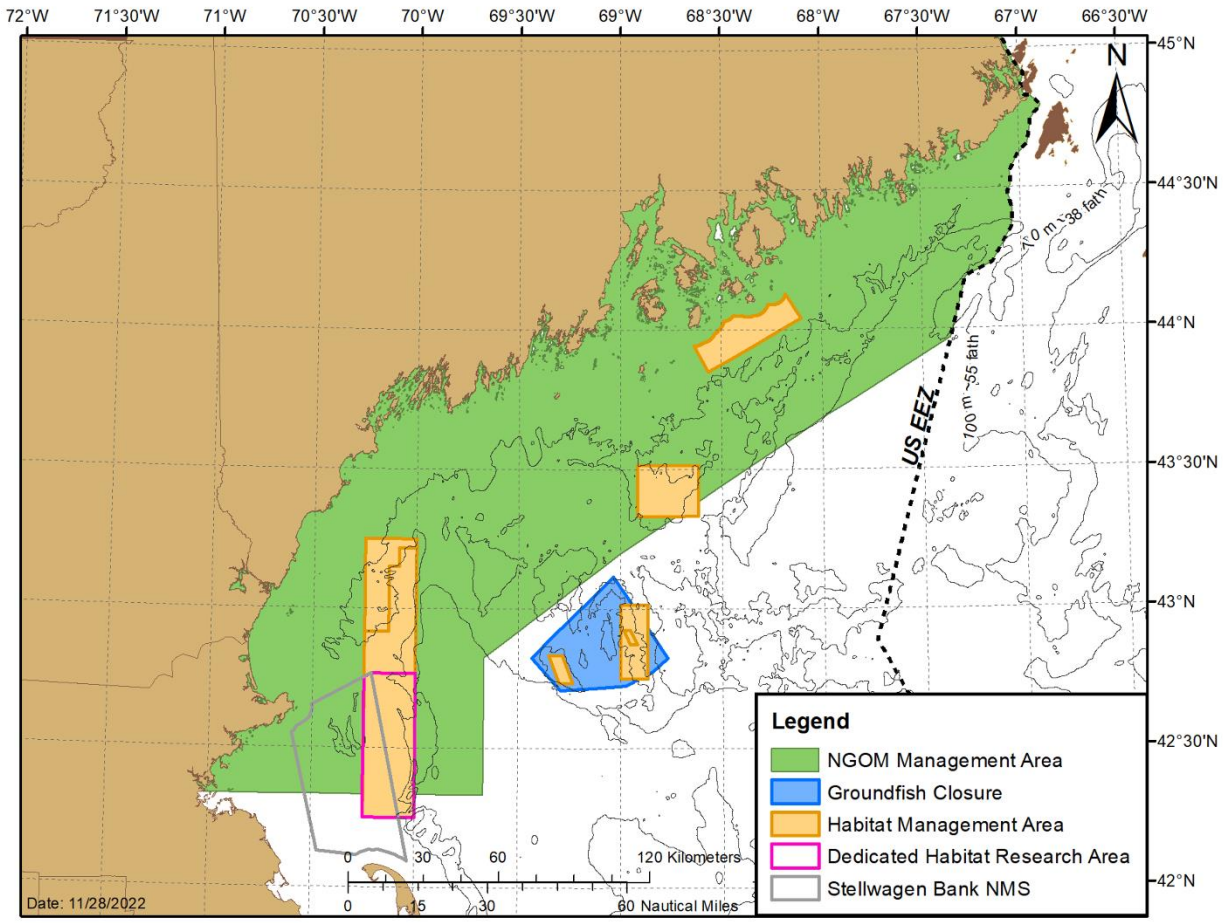
4.2.2 Northern Gulf of Maine TAL Setting

4.2.2.1 Alternative 1 – No Action

Under Alternative 1 – No Action, the FY 2024 default specifications approved in Framework 36 for the NGOM Set-Aside would be in place for the 2024 fishing year. The FY 2024 default NGOM Set-Aside was set at 285,641 pounds, with 25,000 pounds set aside to support the RSA program, and one percent of the NGOM ABC for observers (7,932 pounds). There would be no TAL value specified for FY 2025.

Rationale: Specifying the 285,641-pound NGOM Set-Aside and capping removals in the NGOM is consistent with the management structure established by the Council through Amendment 21 and implemented through Framework 36. This NGOM Set-Aside is the default set by the Council through Framework 36, which is based on 2022 survey information.

Map 2. The Northern Gulf of Maine Management Area relative to scallop closures, groundfish closures, habitat management areas, and the Stellwagen Bank National Marine Sanctuary.



4.2.2.2 Alternative 2 – Set NGOM TAL, with set-asides to support research, monitoring, and a directed LAGC fishery (*Alternative 2 Option 2 preferred)*

Alternative 2 would specify a Northern Gulf of Maine Total Allowable Landings (NGOM TAL) limit for FY 2024 and FY 2025 (default), including set-asides to support research, monitoring, and a directed LAGC fishery. All three options would set the NGOM TAL using estimates of exploitable biomass from Stellwagen Bank, Ipswich Bay, and Jeffreys Ledge.

All options under Alternative 2 would set total allowable landings for all permit categories in the management area, which would be reduced by 25,000 pounds to increase the overall scallop RSA (Table 7). The total allowable landings would also be reduced by 1% of the NGOM ABC (8,554 pounds) to support monitoring the directed scallop fishery in the NGOM (Table 7). The pounds deducted from the NGOM TAL would be added to the fishery-wide set-asides for research and monitoring.

None of the NGOM TAL options of Alternative 2 exceed 800,000 pounds; therefore, the TAL after pounds are deducted for research and monitoring are allocated as NGOM Set-Aside for directed LAGC fishing (Table 7). RSA compensation fishing would be allowed in the NGOM, up to the 25,000-pound limit specified in the options of this alternative.

Fishing year 2025 default measures would be set at 75% of the 2024 NGOM Set-Aside value (Table 7). In 2025, the NGOM contribution to the RSA would be 25,000 pounds, and 1% of the NGOM ABC.

Rationale: Alternative 2 uses data from the 2023 scallop surveys and is expected to promote resource conservation by setting limits on total removals from the NGOM and implementing accountability measures for all permit categories fishing in the area. The NGOM Set-Aside approach preserves and supports a growing directed LAGC fishery in federal waters in the NGOM and distributes the NGOM TAL to all permit types as the scallop biomass in the area grows. While most of the exploitable biomass in the management unit is on Stellwagen Bank, setting the NGOM TAL based on biomass estimates from Stellwagen, Ipswich Bay, and Jeffreys Ledge reflects the ability for vessels to fish within the entire management unit, and sets harvest limits using the scallop biomass from multiple areas.

4.2.2.2.1 Option 1 – Set NGOM TAL at F=0.18 (Stellwagen Bank, Ipswich Bay, Jeffreys Ledge)

The overall NGOM TAL would be set by applying a fishing mortality rate of F=0.18 to the exploitable biomass on Stellwagen Bank, Jeffreys Ledge, and Ipswich Bay. Under Option 1, the TAL for 2024 would be set at 396,391 pounds, and the NGOM Set-Aside would be set at 362,837 pounds. The 2025 default NGOM Set-Aside would be set at 272,128 pounds.

4.2.2.2.2 Option 2 – Set NGOM TAL at F=0.21 (Stellwagen Bank, Ipswich Bay, Jeffreys Ledge) (*Preferred)*

The overall NGOM TAL would be set by applying a fishing mortality rate of F=0.21 to the exploitable biomass on Stellwagen Bank, Ipswich Bay, and Jeffreys Ledge. Under Option 2, the TAL for 2024 would be set at 454,152 pounds, and the NGOM Set-Aside would be set at 420,598 pounds. The 2025 default NGOM Set-Aside would be set at 315,449 pounds.

4.2.2.2.3 Option 3 – Set NGOM TAL at F=0.25 (Stellwagen Bank, Ipswich Bay, Jeffreys Ledge)

The overall NGOM TAL would be set by applying a fishing mortality rate of F=0.25 to the exploitable biomass on Stellwagen Bank, Ipswich Bay, and Jeffreys Ledge. Under Option 3, the TAL for 2024 would be set at 527,346 pounds, and the NGOM Set-Aside would be set at 493,792 pounds. The 2025 default NGOM Set-Aside would be set at 370,344 pounds.

Table 7. Distribution of the NGOM TAL and set-aside for FY 2024, and default NGOM set-aside (2025) for Alternative 2 Options 1 - 3. Values shown in pounds.

Section	4.2.2.2.1	4.2.2.2.2	4.2.2.3
	Option 1	(*Preferred*) Option 2	Option 3
Fishing Mortality Rate	F=0.18	F=0.21	F=0.25
Area(s) Fished	Stellwagen, Ipswich, Jeffreys	Stellwagen, Ipswich, Jeffreys	Stellwagen, Ipswich, Jeffreys
2024 Total Allowable Landings	396,391	454,152	527,346
1% NGOM ABC for Observers	8,554	8,554	8,554
2024 RSA Contribution	25,000	25,000	25,000
2024 NGOM Set-Aside	362,837	420,598	493,792
2025 Default NGOM Set-Aside	272,128	315,449	370,344

4.3 ACTION 3 – FISHERY SPECIFICATIONS AND ROTATIONAL MANAGEMENT

Allocations to the LA (94.5%) and LAGC IFQ (5.5%) components are based on Annual Projected Landings (APL). A summary of APL estimates for the specification alternatives considered in this action is provided in Table 8.

Table 8. Comparison of allocations and DAS associated with each specification alternative in Framework 38 (4.3.3 Preferred). Values shown in pounds.

Alternative	Run	Overall F	Open Area F	DAS	Annual Projected Landings	APL with Set-Asides removed	LA APL (94.5%)	LAGC IFQ APL (5.5%)	LAGC IFQ only (5%)	LA with IFQ (0.05%)
4.3.1	No Action	0.073	0.36	18	14,399,272	12,600,300	11,907,284	693,017	630,015	63,002
4.3.2	18DAS 3x12k	0.156	0.34	18	26,165,343	24,366,371	23,026,221	1,340,150	1,218,319	121,832
4.3.3 *(preferred)*	20DAS 3x12k	0.165	0.38	20	27,392,436	25,593,464	24,185,823	1,407,641	1,279,673	127,967
4.3.4	24DAS 3x12k	0.18	0.46	24	29,733,304	27,934,332	26,397,944	1,536,388	1,396,717	139,672
4.3.5	Status Quo	0.18	0.51	26.3	27,113,331	25,314,359	23,922,069	1,392,290	1,265,718	126,572

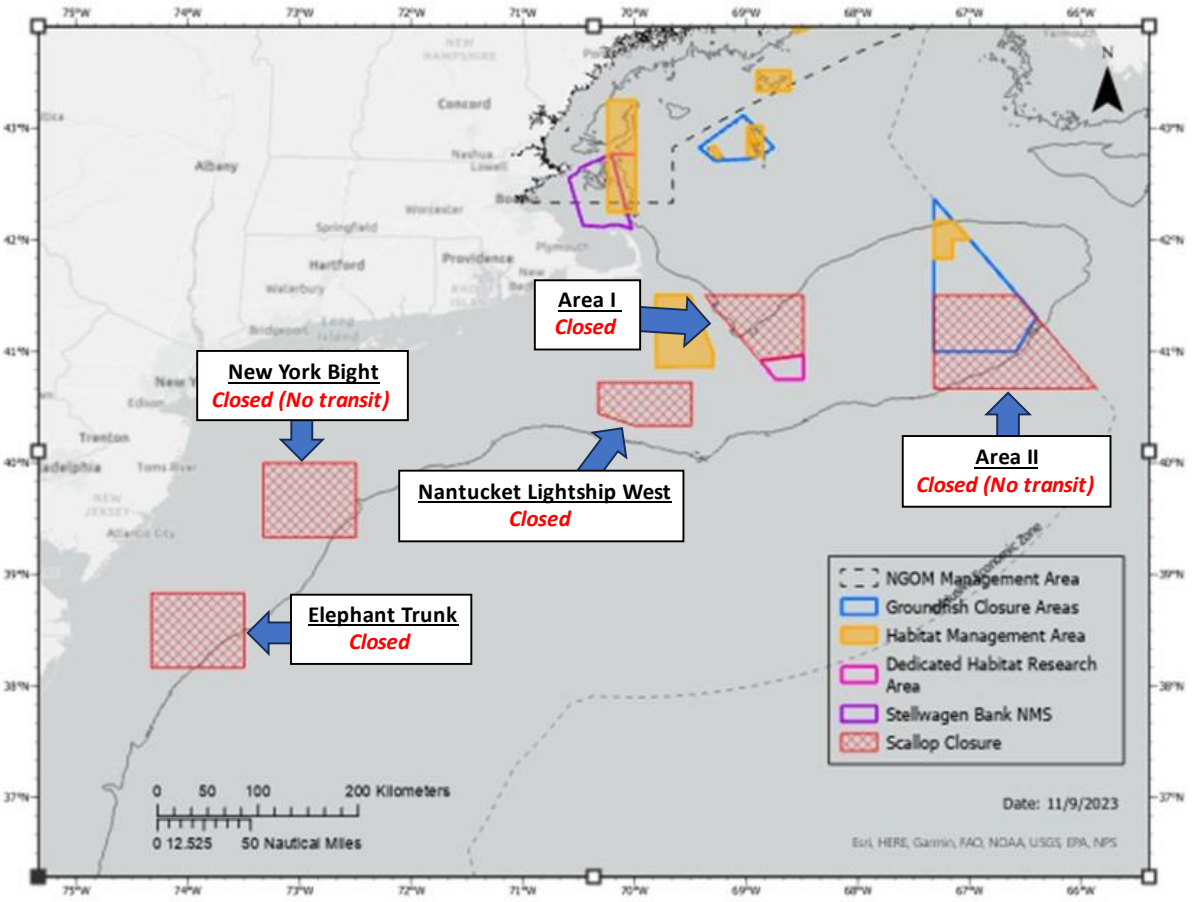
4.3.1 Alternative 1 – No Action (Default Measures)

Under Alternative 1 – No Action, the default specifications approved in Framework 36 would be in place for the 2024 fishing year, and there would be no allocations specified for the 2025 fishing year. Default measures approved in Framework 36 include full-time Limited Access DAS set at 18, which would be 75% of the DAS allocated for FY 2023. Part-time Limited Access vessels would receive 7.2 DAS, and Occasional Limited Access vessels would be allocated 1.5 DAS.

Under the FW36 default measures for FY 2024, the total LAGC IFQ allocation would be 942,884 pounds, which is equivalent to 75% of the total LAGC IFQ allocation for FY 2023.

The target TAC for vessels with an LAGC Incidental permit would be 50,000 pounds.

Map 3. Spatial management under Alternative 1 (No Action).



4.3.2 Alternative 2 – 18 Days At Sea with three access area trips with 12,000-pound trip limit

Alternative 2 would allocate full-time limited access vessels a total of 18 days-at-sea and three access area trips with a possession limit of 12,000 pounds. Two trips would be allocated to Area II Access Area, and one trip would be allocated to the New York Bight Access Area (

Map 4). The total access area allocation would be 36,000 pounds per full-time limited access vessel. The Area II boundary would remain as specified in FY 2023 in Framework 36 (Table 10). The New York Bight boundary would be the same as the New York Bight Closure that is in place for FY 2023. Coordinates of the Area II and the New York Bight boundaries under this alternative are provided in Table 11.

Alternative 2 would close the following areas for the entirety of FY 2024: Area I-Sliver, the Nantucket Lightship West, the Nantucket Lightship North, the Nantucket Lightship South, and the Nantucket Lightship Extension. An additional area within Area I (i.e., Area I-Quad) would be closed to protect transplanted scallops related to an ongoing RSA project. This closure would remain in place for 1 year, and then revert to being part of the Area I Access Area. Vessels would be able to transit the closure area. Coordinates for these closure areas are provided in Table 11. All vessels fishing under a scallop declaration would be prohibited from entering or transiting any scallop rotational areas and the Western Gulf of Maine Closure. For FY 2024, the Area I-Access and Area I-Quad would be corridor for continuous transiting (

Map 4). Continuous transit means that a vessel has fishing gear stowed and travels through an area with a direct heading, consistent with navigational safety, while maintaining expeditious headway throughout the transit without loitering or delay.

The specific allocations associated with Alternative 2 include:

- The FY 2024 Annual Projected Landings (APL) for this alternative are 26,165,343 pounds before set-asides are accounted for (i.e., RSA, observer). The Research Set-Aside, Observer Set-Aside, and incidental catch total for 2024 is 816 mt or 1.8 million pounds. The NGOM Set-Aside would be additive to these APL values based on the Council preferred option in Action 2 (Section 0).
- The APL after set-asides are removed would be 24,366,371 pounds.
- The LAGC IFQ (5.5%) allocation would be 1,340,150 pounds. The LAGC IFQ only (5% of the APL) allocation would be set at 1,218,319 pounds.
- FY 2025 default measures under Alternative 2 would allocate 75% of FY 2024 days at sea for the limited access component and 75% of FY 2024 quota allocations to the LAGC IFQ component. No default access area trips would be allocated for FY 2025 under this alternative. The FY 2025 default LAGC IFQ quota (5.5%) would be set at 75% of the FY 2023 value, which would be 1,005,113 pounds.
- FY 2024 and FY 2025 (default) day at sea allocations for full-time, part-time, and occasional permits under Option 1 are shown in Table 9.
- For FY 2024, an allocation of 18 days at sea to full time limited access vessels which is expected to result in an average open area fishing mortality rate of F=0.34.
- Total access area allocations for the part time (PT) limited access component would be set at one 14,400-pound trip, and one 3,000-pound trip for occasional limited access vessels. The LA PT trip limit would be set at 14,400 pounds and PT vessels could fish the allocation in either or the open access areas (Area II and New York Bight). The occasional LA trip limit would be set at 3,000 pounds and occasional vessels would be able to fish their allocation in either open access area (Area II and New York Bight).

- FT LA vessels would be allowed to exchange access area allocations in all areas at increments of 6,000 pounds. All access area allocations could be exchanged at an increment of 6,000 pounds regardless of the initial allocation; for example, 6,000 pounds from Area II could be exchanged for 6,000 pounds from the New York Bight. There would be no change to how part-time vessels can exchange trips – those exchanges would still be done as 1:1 at the possession limit for this alternative (i.e., 14,400 pounds).
- The LAGC incidental target TAC would be set at 50,000 lbs.
- Allocated LA access area trips would be available in the same access areas defined by Framework 38 for FY 2024 and the first 60 days of FY 2025, even if the area is scheduled to close in FY 2025 (Table 10). Vessels planning to fish FY 2024 access area allocation must start their trip (i.e., position on their VMS unit seaward of the demarcation line) by 23:59 on May 30, 2025.

Table 9. Summary of LA DAS allocations for each permit type at 18 DAS for FT LA vessels.

	FY 2024	FY 2025
FT LA	18	13.5
PT LA	7.2	5.4
Occasional	1.5	1.12

Map 4. Spatial management under Alternatives 2, 3 and 4.

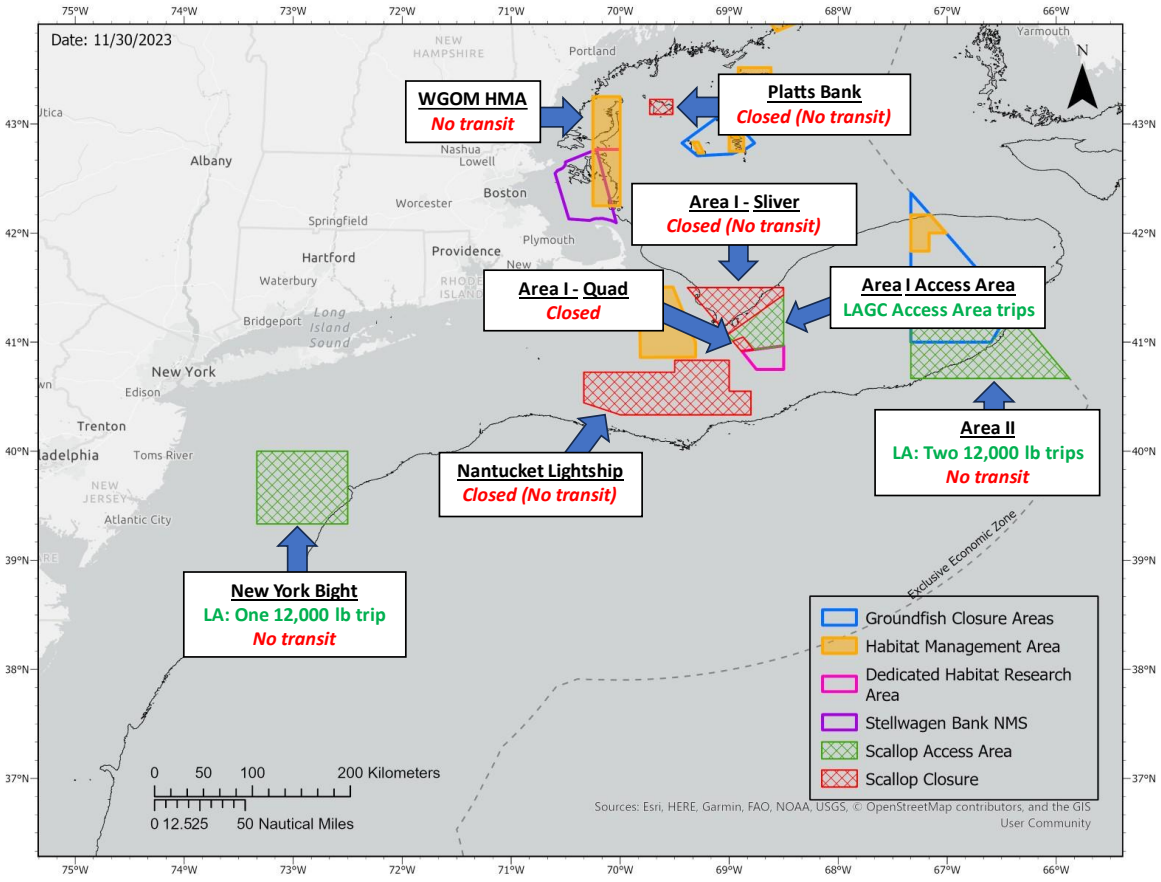


Table 10. Scallop Access Areas under Alternatives 2, 3, and 4 in FY 2024 and FY 2025 (default)

Area	Latitude	Longitude
Area I – Access Area	40° 58.2′ N	68° 30.0′ W
	40° 55.8′ N	68° 46.8′ W
	41° 3.0′ N	68° 52.2′ W
	41° 0.6′ N	68° 58.2′ W
	41° 4.2′ N	69° 1.2′ W
	41° 25.8′ N	68° 30.0′ W
Area II – Access Area	40° 40.2′ N	67° 19.8′ W
	41° 30.0′ N	67° 19.8′ W
	41° 30.0′ N	66° 34.8′ W
	40° 40.2′ N	65° 52.8′ W
New York Bight	39° 19.8′ N	72° 30.0′ W
	39° 19.8′ N	73° 19.8′ W
	40° 0.0′ N	73° 19.8′ W
	40° 0.0′ N	72° 30.0′ W

Table 11. Scallop Closures under Alternatives 2, 3, and 4 in FY 2024 and FY 2025 (default)

Area	Latitude	Longitude
Platts Bank	43° 13.8′ N	69° 43.8′ W
	43° 13.8′ N	69° 31.2′ W
	43° 5.4′ N	69° 31.2′ W
	43° 5.4′ N	69° 43.8′ W
Area I - Sliver	41° 30.0′ N	68° 30.0′ W
	41° 25.8 N	68° 30.0′ W
	41° 4.2′ N	69° 1.2′ W
	41° 30.0′ N	69° 22.8′ W
Area I - Quad	40° 55.2′ N	68° 53.4′ W
	41° 0.6′ N	68° 58.2′ W
	41° 3.0′ N	68° 52.2′ W
	40° 55.8′ N	69° 46.8′ W
Nantucket Lightship	40° 49.8′ N	69° 0.0′ W
	40° 49.8′ N	69° 30.0′ W
	40° 43.2′ N	69° 30.0′ W
	40° 43.2′ N	70° 19.8′ W
	40° 26.4′ N	70° 19.8′ W
	40° 19.8′ N	70° 0.0′ W
	40° 19.8′ N	68° 48.0′ W
	40° 33.0′ N	68° 48.0′ W
	40° 33.0′ N	69° 0.0′ W

Rationale: The 2023 scallop surveys suggest that Area II and the New York Bight access areas hold higher densities of larger scallops and can support rotational fishing in 2024. The continued expansion of the Area II boundary to include Closed Area II Extension will allow the fishery to target relatively high densities of exploitable biomass and to spread effort out across a larger area. Most scallops in Area II Access Area are exploitable and have supported access area fishing for several years. The New York Bight has been closed for two years, and surveys suggest that it can support a 12,000pound trip.

Closures of the Area I-Sliver and Nantucket Lightship Region are anticipated to optimize growth of juvenile scallops on Georges Bank with the expectation of supporting scallop fishing in the future. Scallops in the Area I-Sliver are in high densities and are likely to recruit to the 4" ring in time for the 2025 fishing year. A potentially strong recruitment event was observed in the Nantucket Lightship region, but the scallops were too small to be included in survey biomass estimates for 2023 (i.e., less than 40 mm). The growth potential for these juveniles is high if they survive over the next several years. Closing the NLS region to scallop fishing is intended to support the growth of this cohort of scallops in the absence of fishing pressure.

The Area I Quad closure is currently being used for research purposes in the absence of fishing during fishing year 2023. The establishment of a one-year closure does not obligate the Council to facilitate or support this or other research projects in this area in any way.

Prohibiting vessels on declared scallop trips from entering or transiting scallop rotational areas (unless otherwise specified) and the Western Gulf of Maine Closure would reduce the likelihood of fishing occurring inside these areas.

Allocating 18 days at sea to the full-time Limited Access component is expected to reduce fishing pressure in open areas compared to recent fishing years.

The 2023 surveys of the Mid-Atlantic Bight region observed a substantial drop in biomass across the region, including a mortality event in the Elephant Trunk area. While projections based on 2022 survey data suggested that the Elephant Trunk may have been able to support access area fishing, observations from the 2023 surveys showed a decline in abundance and biomass. Given the changed perception of biomass, the Elephant Trunk is a candidate for re-opening as open bottom and would provide more open area for vessels to fish under days-at-sea management or when fishing IFQ on open trips.

There is not enough exploitable biomass in Area I to support a full or partial trip for the full-time limited access fleet in FY 2024. Making this area eligible (minus the Area I Quad closure) for only LAGC IFQ AA trips will give the LAGC IFQ component an inshore area of GB to fish access area trips. This also creates a foundation for several alternatives in Section 4.4, which considers redistributing some or all Area II LAGC AA trips to Area I.

4.3.3 Alternative 3 – 20 Days At Sea with three access area trips with 12,000-pound trip limit (*Preferred alternative*)

Alternative 3 would allocate full-time limited access vessels a total of 20 days-at-sea and three access area trips with a possession limit of 12,000 pounds. Two trips would be allocated to Area II Access Area, and one trip would be allocated to the New York Bight Access Area (Map 3). The total access area allocation would be 36,000 pounds per full-time limited access vessel. The Area II boundary would remain as specified in FY 2023 and include Closed Area II Southwest, Closed Area II Extension, and Closed Area II East (

Map 4). The New York Bight boundary would be the same as the New York Bight Closure that is in place for FY 2023. Coordinates of the Area II and the New York Bight boundaries under this alternative are provided in Table 10.

Alternative 3 would close the following areas for the entirety of FY 2024: Area I-Sliver, the Nantucket Lightship West, the Nantucket Lightship North, the Nantucket Lightship South, and the Nantucket Lightship Extension. An additional area within Area I (i.e., the Area I Quad) would be closed to protect transplanted scallops related to an ongoing RSA project. This closure would remain in place for 1 year, and then revert to being part of the Area I Access Area. Coordinates for these closure areas are provided in Table 11.

All vessels fishing under a scallop declaration would be prohibited from entering or transiting any scallop rotational areas and the Western Gulf of Maine Closure. For FY 2024, the Area I-Access and the Area I Quad would be corridors for continuous transiting, and transit would be permitted (

Map 4). Continuous transit means that a vessel has fishing gear stowed and travels through an area with a direct heading, consistent with navigational safety, while maintaining expeditious headway throughout the transit without loitering or delay.

The specific allocations associated with Alternative 3 include:

- The FY 2024 Annual Projected Landings (APL) for this alternative are 27,392,436 pounds before set-asides are accounted for (i.e., RSA, observer). The Research Set-Aside, Observer Set-Aside, and incidental catch total for 2024 is 816 mt or 1.8 million pounds. The NGOM Set-Aside would be additive to these APL values based on the Council preferred option in Action 2 (Section 0).
- The APL after set-asides are removed would be 25,593,464 pounds.
- The LAGC IFQ (5.5%) allocation would be 1,407,641 pounds. The LAGC IFQ only (5% of the APL) allocation would be set at 1,279,673 pounds.
- FY 2025 default measures under Alternative 2 would allocate 75% of FY 2024 days at sea for the limited access component and 75% of FY 2024 quota allocations to the LAGC IFQ component. No default access area trips would be allocated for FY 2025 under this alternative. The FY 2025 default LAGC IFQ quota (5.5%) would be set at 75% of the FY 2023 value, which would be 1,055,730 pounds.
- FY 2024 and FY 2025 (default) day at sea allocations for full-time, part-time, and occasional permits under Option 1 are shown in Table 12.
- For FY 2024, an allocation of 20 days at sea to full time limited access vessels is expected to result in an average open area fishing mortality rate of F=0.38.
- Total access area allocations for the part time (PT) limited access component would be set at one 14,400-pound trip, and one 3,000-pound trip for occasional limited access vessels. The LA PT trip limit would be set at 14,400 pounds and PT vessels could fish the allocation in either or the open access areas (Area II and New York Bight). The occasional LA trip limit would be set at 3,000 pounds and occasional vessels would be able to fish their allocation in either open access area (Area II and New York Bight).
- FT LA vessels would be allowed to exchange access area allocations in all areas at increments of 6,000 pounds. All access area allocations could be exchanged at an increment of 6,000 pounds regardless of the initial allocation; for example, 6,000 pounds from Area II could be exchanged for 6,000 pounds from the New York Bight. There would be no change to how part-time vessels can exchange trips – those exchanges would still be done as 1:1 at the possession limit for this alternative (i.e., 14,400 pounds).
- The LAGC incidental target TAC would be set at 50,000 lbs.
- Allocated LA access area trips would be available in the same access areas defined by Framework 38 for FY 2024 and the first 60 days of FY 2025, even if the area is scheduled to close in FY 2025 (Table 10). Vessels planning to fish FY 2024 access area allocation must start their trip (i.e., position on their VMS unit seaward of the demarcation line) by 23:59 on May 30, 2025.

Table 12. Summary of LA DAS allocations for each permit type at 20 DAS for FT LA vessels.

	FY 2024	FY 2025
FT LA	20	15
PT LA	8	6
Occasional	1.67	1.25

Rationale: The 2023 scallop surveys suggest that Area II and the New York Bight access areas hold higher densities of larger scallops and can support rotational fishing in 2024. The continued expansion of the Area II boundary to include Closed Area II Extension will allow the fishery to target relatively high densities of exploitable biomass and to spread effort out across a larger area. Most scallops in Area II Access Area are exploitable and have supported access area fishing for several years. The New York Bight has been closed for two years, and surveys suggest that it can support a 12,000-pound trip.

Closures of the Area I-Sliver and Nantucket Lightship Region are anticipated to optimize growth of juvenile scallops on Georges Bank with the expectation of supporting scallop fishing in the future. Scallops in the Area I-Sliver are in high densities and are likely to recruit to the 4" ring in time for the 2025 fishing year. A potentially strong recruitment event was observed in the Nantucket Lightship region, but the scallops were too small to be included in survey biomass estimates for 2023 (i.e., less than 40 mm). The growth potential for these juveniles is high if they survive over the next several years. Closing the NLS region to scallop fishing is intended to support the growth of this cohort of scallops in the absence of fishing pressure.

The Area I Quad closure is currently being used for research purposes in the absence of fishing during fishing year 2023. The establishment of a one-year closure does not obligate the Council to facilitate or support this or other research projects in this area in any way.

Prohibiting vessels on declared scallop trips from entering or transiting scallop rotational areas (unless otherwise specified) and the Western Gulf of Maine Closure would reduce the likelihood of fishing occurring inside these areas.

Allocating 20 days at sea to the full-time Limited Access component is expected to reduce fishing pressure in open areas compared to recent fishing years.

The 2023 surveys of the Mid-Atlantic Bight region observed a substantial drop in biomass across the region, including a mortality event in the Elephant Trunk area. While projections based on 2022 survey data suggested that the Elephant Trunk may have been able to support access area fishing, observations from the 2023 surveys showed a decline in abundance and biomass. Given the changed perception of biomass the Elephant Trunk is a candidate for re-opening as open bottom and would provide more open area for vessels to fish under days-at-sea management or when fishing IFQ on open trips.

There is not enough exploitable biomass in Area I to support a full or partial trip for the full-time limited access fleet in FY 2024. Making this area eligible (minus the Area I Quad closure) for only LAGC IFQ AA trips will give the LAGC IFQ component an inshore area of GB to fish access area trips. This also creates a foundation for several alternatives in Section 4.4, which considers redistributing some or all Area II LAGC AA trips to Area I.

4.3.4 Alternative 4 – 24 Days At Sea with three access area trips with 12,000-pound trip limit

Alternative 4 would allocate full-time limited access vessels a total of 24 days-at-sea and three access area trips with a possession limit of 12,000 pounds. Two trips would be allocated to Area II Access Area, and one trip would be allocated to the New York Bight Access Area (Map 4). The total access area allocation would be 36,000 pounds per full-time limited access vessel. The Area II boundary would remain as specified in FY 2023 in Framework 36 (Map 4). The New York Bight boundary would be the same as the New York Bight Closure that is in place for FY 2023. Coordinates of the Area II and the New York Bight boundaries under this alternative are provided in Table 10.

Alternative 4 would close the following areas for the entirety of FY 2024: Area I-Sliver, the Nantucket Lightship West, the Nantucket Lightship North, the Nantucket Lightship South, and the Nantucket Lightship Extension. An additional area within Area I (i.e., the Area I Quad) would be closed to protect transplanted scallops related to an ongoing RSA project. This closure would remain in place for 1 year, and then revert to being part of the Area I Access Area. Coordinates for these closure areas are provided in Table 11.

All vessels fishing under a scallop declaration would be prohibited from entering or transiting any scallop rotational areas and the Western Gulf of Maine Closure. For FY 2024, the Area I-Access and the Area I-Quad would be corridors for continuous transiting (

Map 4). Continuous transit means that a vessel has fishing gear stowed and travels through an area with a direct heading, consistent with navigational safety, while maintaining expeditious headway throughout the transit without loitering or delay.

The specific allocations associated with Alternative 3 include:

- The FY 2024 Annual Projected Landings (APL) for this alternative are 29,733,304 pounds before set-asides are accounted for (i.e., RSA, observer). The Research Set-Aside, Observer Set-Aside, and incidental catch total for 2024 is 816 mt or 1.8 million pounds. The NGOM Set-Aside would be additive to these APL values based on the Council preferred option in Action 2 (Section 0).
- The APL after set-asides are removed would be 27,934,332 pounds.
- The LAGC IFQ (5.5%) allocation would be 1,536,388 pounds. The LAGC IFQ only (5% of the APL) allocation would be set at 1,396,717 pounds.
- FY 2025 default measures under Alternative 2 would allocate 75% of FY 2024 days at sea for the limited access component and 75% of FY 2024 quota allocations to the LAGC IFQ component. No default access area trips would be allocated for FY 2025 under this alternative. The FY 2025 default LAGC IFQ quota (5.5%) would be set at 75% of the FY 2023 value, which would be 1,152,291 pounds.
- FY 2024 and FY 2025 (default) day at sea allocations for full-time, part-time, and occasional permits are shown in Table 13.
- For FY 2024, an allocation of 24 days at sea to full time limited access vessels which is expected to result in an average open area fishing mortality rate of F=0.46.
- Total access area allocations for the part time (PT) limited access component would be set at one 14,400-pound trip, and one 3,000-pound trip for occasional limited access vessels. The LA PT trip limit would be set at 14,400 pounds and PT vessels could fish the allocation in either or the open access areas (Area II and New York Bight). The occasional LA trip limit would be set at 3,000 pounds and occasional vessels would be able to fish their allocation in either open access area (Area II and New York Bight).
- FT LA vessels would be allowed to exchange access area allocations in all areas at increments of 6,000 pounds. All access area allocations could be exchanged at an increment of 6,000 pounds

regardless of the initial allocation; for example, 6,000 pounds from Area II could be exchanged for 6,000 pounds from the New York Bight. There would be no change to how part-time vessels can exchange trips – those exchanges would still be done as 1:1 at the possession limit for this alternative (i.e., 14,400 pounds).

- The LAGC incidental target TAC would be set at 50,000 lbs.
- Allocated LA access area trips would be available in the same access areas defined by Framework 38 for FY 2024 and the first 60 days of FY 2025, even if the area is scheduled to close in FY 2025 (Table 10). Vessels planning to fish FY 2024 access area allocation must start their trip (i.e., position on their VMS unit seaward of the demarcation line) by 23:59 on May 30, 2025.

Table 13. Summary of LA DAS allocations for each permit type at 24 DAS for FT LA vessels.

	FY 2024	FY 2025
FT LA	24	18
PT LA	9.6	7.2
Occasional	2	1.5

Rationale: The 2023 scallop surveys suggest that Area II and the New York Bight access areas hold higher densities of larger scallops and can support rotational fishing in 2024. The continued expansion of the Area II boundary to include Area II Extension will allow the fishery to target relatively high densities of exploitable biomass and to spread effort out across a larger area. Most scallops in Area II Access Area are exploitable and have supported access area fishing for several years. The New York Bight has been closed for two years, and surveys suggest that it can support a 12,000-pound trip.

Closures of the Area I-Sliver and Nantucket Lightship Region are anticipated to optimize growth of juvenile scallops on Georges Bank with the expectation of supporting scallop fishing in the future. Scallops in the Area I-Sliver are in high densities and are likely to recruit to the 4" ring in time for the 2025 fishing year. A potentially strong recruitment event was observed in the Nantucket Lightship region, but the scallops were too small to be included in survey biomass estimates for 2023 (i.e., less than 40 mm). The growth potential for these juveniles is high if they survive over the next several years. Closing the NLS region to scallop fishing is intended to support the growth of this cohort of scallops in the absence of fishing pressure.

The Area I Quad closure within Area I is currently being used for research purposes in the absence of fishing during fishing year 2023. The establishment of a one-year closure does not obligate the Council to facilitate or support this or other research projects in this area in any way.

Allocating 24 days at sea to the full-time Limited Access component would provide stability in DAS allocations.

Prohibiting vessels on declared scallop trips from entering or transiting scallop rotational areas (unless otherwise specified) and the Western Gulf of Maine Closure would reduce the likelihood of fishing occurring inside these areas.

The 2023 surveys of the Mid-Atlantic Bight region observed a substantial drop in biomass across the region, including a mortality event in the Elephant Trunk area. While projections based on 2022 survey data suggested that the Elephant Trunk may have been able to support access area fishing, observations from the 2023 surveys showed a decline in abundance and biomass. Given the changed perception of biomass, the Elephant Trunk is a candidate for re-opening as open bottom and would provide more open area for vessels to fish under days-at-sea management or when fishing IFQ on open trips.

There is not enough exploitable biomass in Area I to support a full or partial trip for the full-time limited access fleet in FY 2024. Making this area eligible (minus the Area I Quad closure) for only LAGC IFQ AA trips will give the LAGC IFQ component an inshore area of GB to fish access area trips. This also creates a foundation for several alternatives in Section 4.4, which considers redistributing some or all Area II LAGC AA trips to Area I.

4.3.5 Status Quo

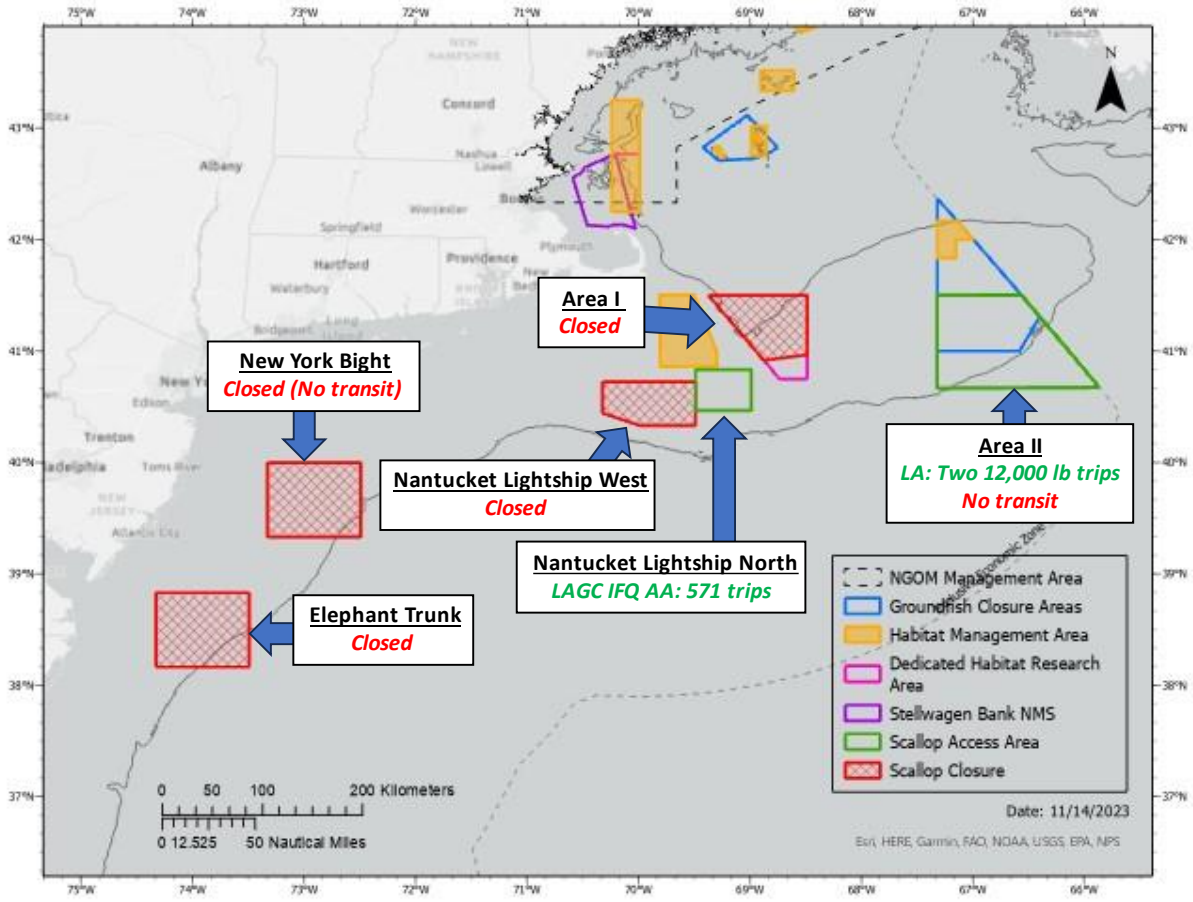
A description of the Framework 36 preferred specification measure is provided in the alternatives section of Framework 36 to provide continuity and context for the reader but is not an option proposed for Council decision. The allocations and spatial management measures that were approved for FY 2023 though Framework 36 are presented for a "status quo" comparison with updated spatial management alternatives. The impact analyses in this action (Section 6.0) include the impacts of "no change" to the spatial management scenarios because it is a more realistic comparison than to No Action (Section 4.3.1), which only captures trade-offs between the default measures approved in FW36 (i.e., partial allocations).

In Framework 38, the Status Quo run that is presented deviates from the modeling assumptions made in FW36 due to changes in scallop biomass and observations of incoming year classes. Therefore, Status Quo should not be considered an exact comparison to the FY 2023 approach to spatial management.

Framework 36 allocated full-time limited access vessels a total access area allocation of 24,000 pounds per vessel and set the access area possession limit at 12,000 pounds per trip. The Council allocated trips to Area II-Access Area (two FT LA trips) (Map 5).

Fishing the open bottom at an F=0.51 with the 2023 spatial management would result in an allocation of 26.3 DAS in FY 2024 (vs. 24 DAS in FY 2023). Applying status quo spatial management in FY 2023 would be expected to result in an APL of 27 million pounds after set asides are removed, which is roughly 4% greater than the 26 million pound APL associated with the same spatial management and open area F applied for FY 2023.

Map 5. Status Quo spatial management (FW36 allocations for FY 2023).



4.4 Action 4 – Access Area Trip Allocations to the LAGC IFQ Component

4.4.1 Alternative 1 – No Action (Default measures from FW36)

Alternative 1 would set LAGC IFQ access area trips at 0, which is the number of trips specified through default measures in Framework 36.

Rationale: Framework 36 default measures did not allocate any access area trips to the LA or LAGC IFQ components.

4.4.2 Alternative 2 – Update LAGC IFQ Access Area Trip Allocations, Distribute LAGC IFQ Access Area Allocation to Area I,

Area II, and the New York Bight Access Areas (*Preferred alternative*)

Under Alternative 2, the total number of access area trips allocated to the LAGC IFQ component would be the 800-pound trip equivalent of 5.5% of the access area allocation to the full-time limited access component specified in Section 4.3. Based on the alternatives in Section 4.3, a total of 856 access area trips would be allocated to the LAGC IFQ component.

Alternative 2 would make the total LAGC IFQ access area trip allocation available in Area I, Area II and the New York Bight. There would not be a specific number of trips allocated to Area I, Area II or the New York Bight, but rather, vessels would be able to fish in any of these areas and trips would be counted against the total trip allocation. Once the total trip allocation is projected to have been taken, these areas would be closed to LAGC IFQ access area fishing for the remainder of the fishing year.

Rationale: The Council's preferred alternative creates access area fishing opportunities for the FT LA component in Area II, which is on eastern Georges Bank, and in the New York Bight. In the past, the Council has distributed the portion of Area II LAGC IFQ access area trips to nearshore areas to provide fishing opportunities to this component of the fishery, which is made up of smaller day-boats. Allowing LAGC IFQ access area trips to be fished in Area I, Area II, and the New York Bight provides access area fishing opportunities in both nearshore and offshore areas, though LAGC IFQ activity in Area II is expected to be limited given its distance from shore. While biomass in Area I is too low to support access area effort by the LA component, larger scallops do exist in this area that could make LAGC IFQ trips viable. This is a unique approach, first used in FW36, that creates more flexibility for LAGC IFQ access area fishing.

4.4.3 Alternative 3 – Update LAGC IFQ Access Area Trip Allocations, Distribute 50% of LAGC IFQ Access Area allocation to Area I / Area II, and 50% to the New York Bight

Under Alternative 3, the total number of access area trips allocated to the LAGC IFQ component would be the 800-pound trip equivalent of 5.5% of the access area allocation to the full-time limited access component specified in Section 4.3. Based on the alternatives in Section 4.3, a total of 856 access area trips would be allocated to the LAGC IFQ component.

Alternative 3 would make 50% of the total LAGC IFQ access area trip allocation available in Area I or Area II and 50% of the trip allocation in the New York Bight. There would be 428 trips available to be fished in Area I/Area II. There would not be a specific number of trips allocated to Area I or Area II, but rather, vessels would be able to fish in either of these areas and trips would be counted against the total trip allocation.

Alternative 3 would also allocate 428 trips to the New York Bight. Once the total trip allocation is projected to have been taken from the New York Bight or Area I/Area II, the area would be closed to LAGC IFQ access area fishing for the remainder of the fishing year.

Rationale: Given the outlook for FY 2024, access area fishing opportunities for the FT LA component are limited to Area II, which is on eastern Georges Bank, and in the New York Bight. In the past, the Council has distributed the portion of Area II LAGC IFQ access area trips to nearshore areas to provide fishing opportunities to this component of the fishery, which is made up of smaller day-boats. Allowing LAGC IFQ access area trips to be fished in either Area I or Area II would provide the LAGC IFQ component with an inshore area of Georges Bank to fish, along with the flexibility to fish further offshore in Area II

where catch rates may be higher. While biomass in Area I is too low to support access area effort by the LA component, larger scallops do exist in this area that could make LAGC IFQ trips viable. This is a unique approach, first used in FW36, that creates more flexibility for LAGC IFQ access area fishing. Alternative 3 specifically allocates IFQ trips to access areas in the Mid-Atlantic and on Georges Bank to disperse LAGC IFQ effort and to afford IFQ vessels the opportunity to fish a set number of trips in both regions.

4.5 ACTION 5 – SCALLOP RESEARCH SET-ASIDE COMPENSATION FISHING

4.5.1 Alternative 1 – No Action

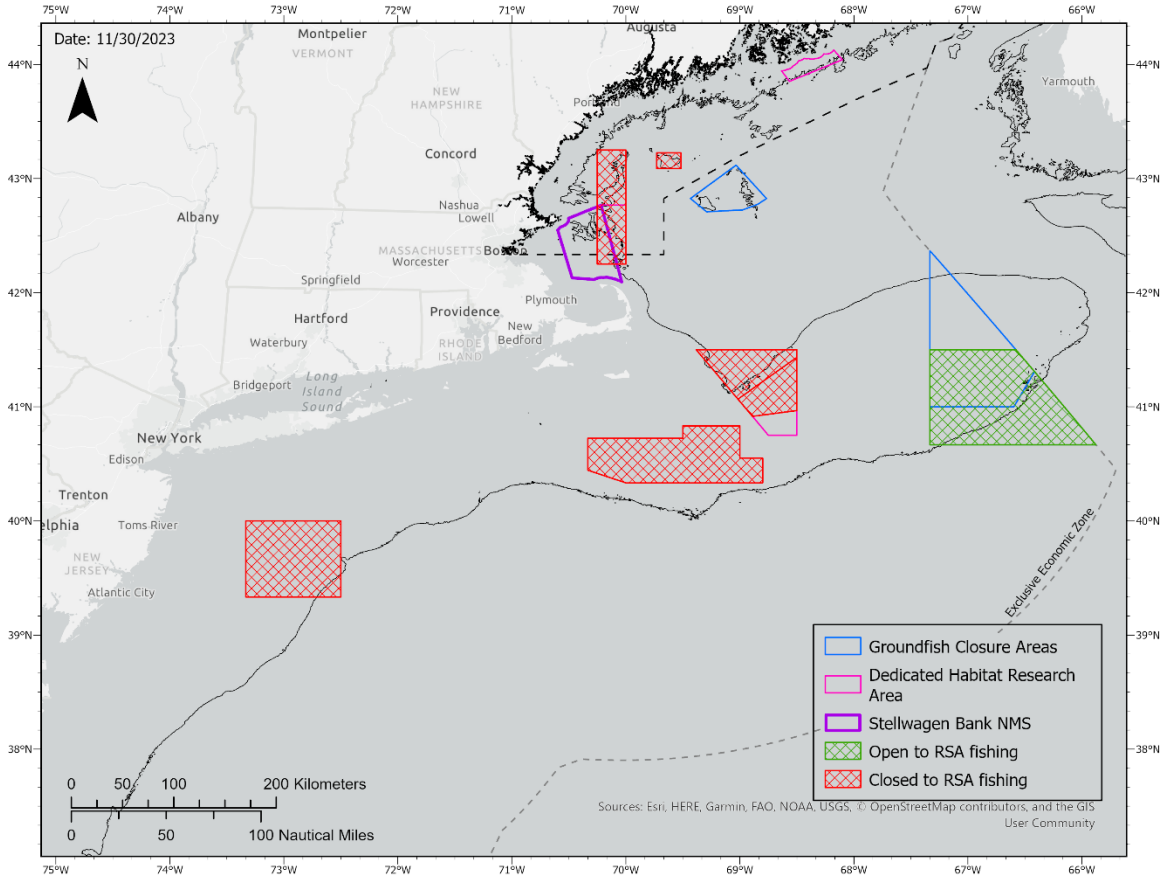
Under No Action, Research Set-Aside (RSA) compensation fishing would be restricted to areas open to LA DAS fishing, and up to 25,000 pounds of RSA harvest from the Northern Gulf of Maine Management Unit. Vessels with RSA poundage would not be allowed to harvest RSA compensation from access areas.

4.5.2 Alternative 2 – Allow RSA Compensation fishing in Area II Access Area (*Preferred alternative*)

Under Alternative 2, RSA compensation fishing would be permitted only in Area II Access Area, areas open to LA DAS fishing, and up to 25,000 pounds of RSA harvest from the NGOM. RSA compensation fishing would not be permitted in the New York Bight access area, Area I, or any areas closed to scallop fishing.

Rationale: Alternative 2 would support the RSA program by expanding RSA compensation fishing opportunities to higher density areas (e.g., Area II) and reducing fishing pressure in the open bottom where LPUE has declined.

Map 6. RSA compensation fishing under Alternative 2, in addition to areas open to LA DAS fishing and up to 25,000 pounds from the NGOM Management Area.



4.6 Action 6 – Increase VMS-Reporting Interval For All Scallop Vessels

4.6.1 Alternative 1 – No Action

Alternative 1 would not increase the VMS reporting rate requirements for federally permitted scallop vessels. Scallop vessels would continue to report at a 30-minute rate, unless otherwise exempted or subject to a higher minimum VMS reporting due to participation in other fisheries.

4.6.2 Alternative 2 – 5-minute VMS reporting rate when a scallop vessel crosses seaward of the VMS demarcation line on a scallop declaration code (SES-%) (*Preferred alternative*)

Under this option, all scallop vessels with active VMS units would be subject to constant reporting at 5-minute intervals when seaward of the VMS demarcation line on a scallop declaration. When inshore of the VMS demarcation line, vessels would report at a 30-minute interval. The increased VMS reporting

rate is not intended to apply to vessels participating in state-waters scallop fisheries and excludes any SES-% VMS code associated with the scallop state water exemption program.

Rationale: VMS is used in the scallop fishery as an enforcement tool. Increasing the VMS reporting rate to 5-minutes on declared scallop trips will improve enforcement of access area and closure boundaries by substantially reducing the window in which a vessel can enter a closed area or access area undetected. VMS is also an important source of fishery effort data for the scallop fishery. Increasing the VMS reporting rate in the scallop fishery will improve data quality by increasing the spatial resolution of the data, which could lead to more effective management and enforcement.

5.0 AFFECTED ENVIRONMENT

5.1 INTRODUCTION

The Affected Environment is described in this action based on valued ecosystem components (VECs), including target species, non-target species, predator species, physical environment, and Essential Fish Habitat (EFH), protected resources, and human communities. VECs represent the resources, areas and human communities that may be affected by the alternatives under consideration in this amendment. VECs are the focus since they are the "place" where the impacts of management actions occur.

5.2 ATLANTIC SEA SCALLOP RESOURCE

5.2.1 Stock Status

The sea scallop resource was assessed through a management track assessment in 2020 (NEFSC 2020).

Overfishing is occurring if F is above F_{MSY}, and the stock is considered overfished if biomass is less than ½ B_{MSY}. The 2020 Management Track updated reference points and increased F_{MSY} to 0.61 and increased B_{MSY} to 102,675 mt (½ B_{MSY} = 51,329 mt). The 2020 management track assessment concluded that the scallop stock is neither overfished nor did it experience overfishing in 2019 (i.e., the terminal year of the assessment).

Figure 2. Fully recruited annual fishing mortality rate for scallops from 1975 - 2019

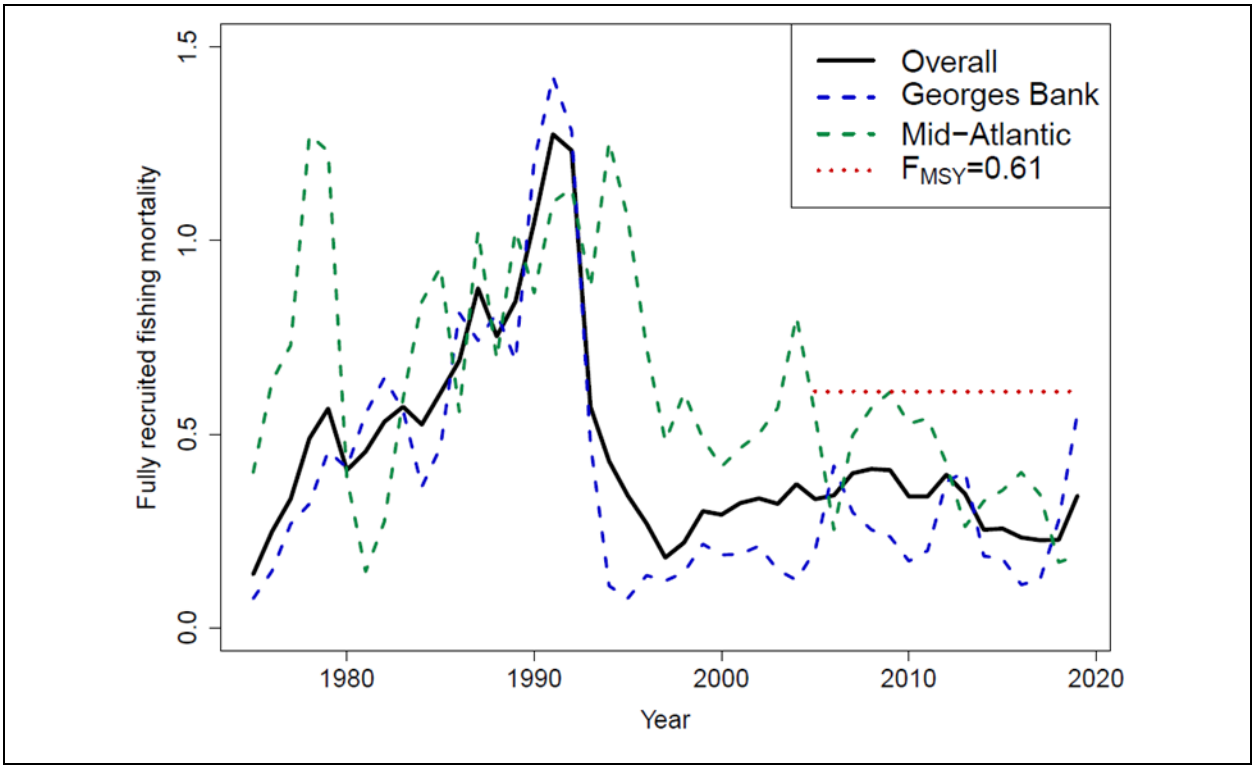


Table 14. Atlantic sea scallop stock status from recent assessments.

	Definition in Scallop FMP	SARC 50 (2010)	SARC 59 (2014)	SARC 65 (2018)	2020 Management Track
OFL	F_{MSY}	F=0.38	F=0.48	F=0.64	F=0.61
ABC=ACL	25% probability of exceeding the OFL	F=0.32	F=0.38	F=0.51	F=0.45
B_{MSY}	B_{TARGET}	125,358 mt	96,480 mt	116,766 mt	102,657 mt
1/2 B_{MSY}	$B_{THRESHOLD}$	62,679 mt	48,240 mt	58,383 mt	51,329 mt
MSY		24,975 mt	23,798 mt	46,531 mt	32,079 mt
Overfished?	$B < B_{THRESHOLD}$	No	No	No	No
Overfishing?	$F < F_{THRESHOLD}=F_{MSY}$	No	No	No	No

5.2.1.1 Seasonal Meat Yield

Scallop meat yield is known to vary seasonally, corresponding with spawning cycles that can occur twice per year (i.e., in the fall and spring). Scallops typically can lose up to 20% of their meat yield when they spawn (NEFSC 2018). Fishing mortality is correlated with seasonal meat yield trends, particularly in access areas where vessels do not have a time penalty when fishing; for example, vessels fishing during the time of year with low meat yield would need to harvest more scallops compared to when meat yield is high.

A wide range of studies have focused on meat yield and spawning trends for Atlantic sea scallops. Appendix II of the 2018 benchmark assessment for scallops (SARC 65, NEFSC 2018) focused on shell height to meat weight relationships and accounted for seasonal meat yield anomalies for the Mid-Atlantic and Georges Bank regions. For Georges Bank and the Mid-Atlantic, meat yield peaked between May and July (Figure 3). Lower meat yields were estimated for both regions in the fall through early spring.

Figure 3. Mean monthly meat weight anomalies on Georges Bank (left) and Mid-Atlantic (right) open areas from GAM predictions (source: SARC 65 Appendix II).

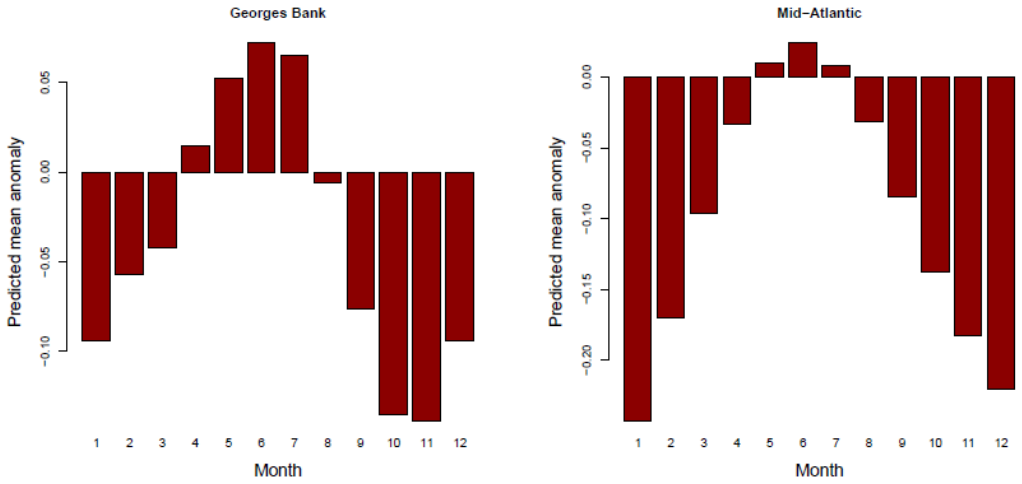


Figure App A2-7: Mean monthly meat weight anomalies on Georges Bank (left) and Mid-Atlantic (right) open areas from GAM predictions.

5.2.2 Summary of 2023 Scallop Surveys

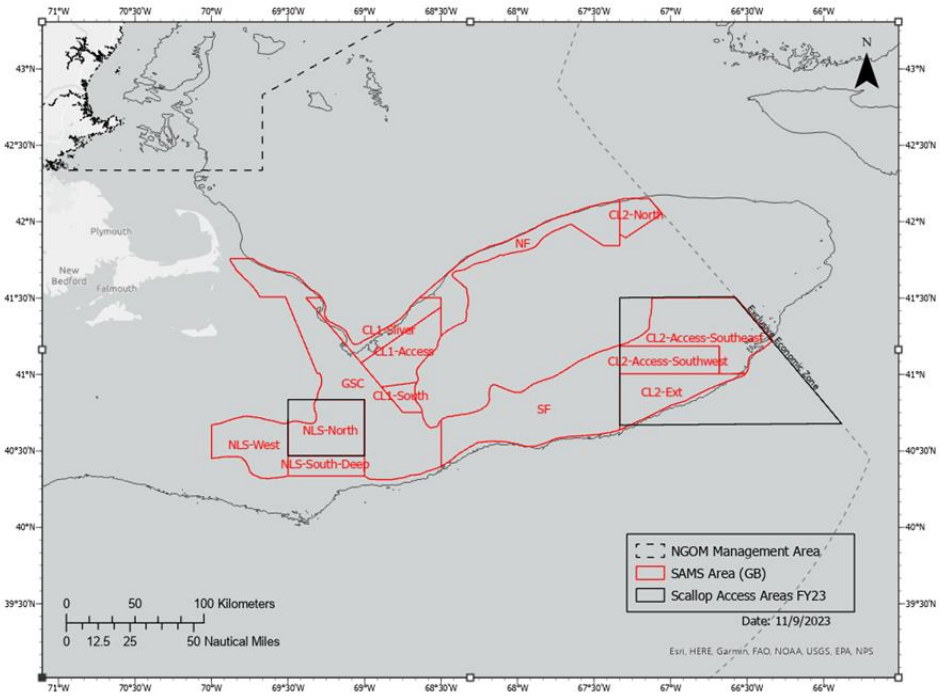
A summary of findings from the 2023 scallop surveys, including biomass estimates and observations of recruitment can be found in the memo to the October 4, 2023 memo to the SSC.

The strongest signal of new recruitment observed in the 2023 surveys was in the Nantucket Lightship region. The 2023 surveys continued to observe a large year class of scallops in the Area I - Sliver.

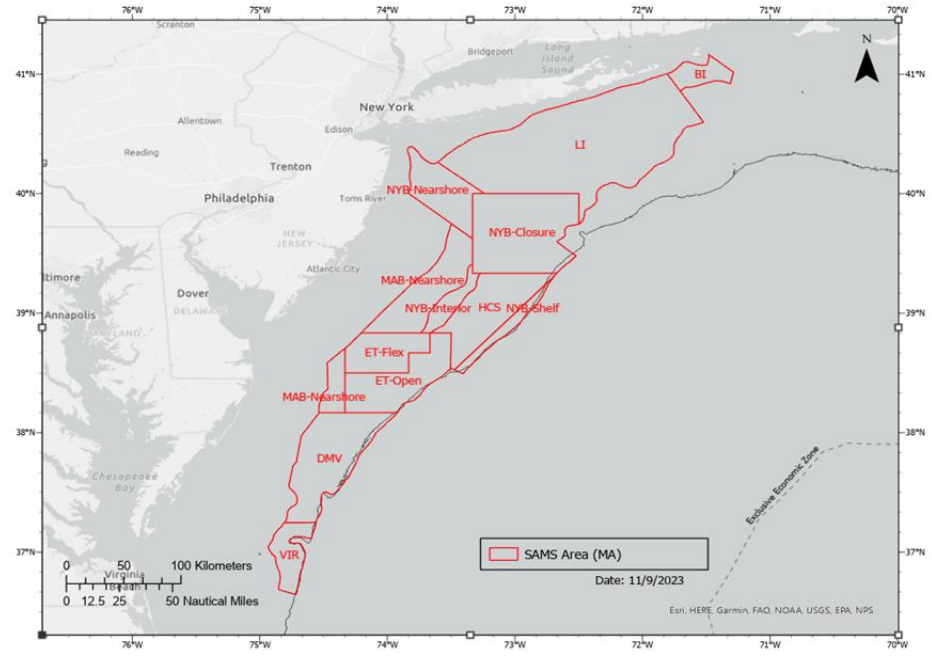
Table 15. 2023 Combined survey abundance and biomass estimates

		Dredge				DropCam				Habcam				Mean			
Region	Subarea	Num	Bmsmt	SE	MeanWt	Num	Bmsmt	SE	MeanWt	Num	Bmsmt	SE	MeanWt	Num	Bmsmt	SE	MeanWt
GB	CL1ACC	6	230	83	39.7	75	1761	1969	23.6					40	996	985	24.8
GB	CL1-Sliver+S	2473	23816	9558	9.6	1558	14705	10140	9.4					2016	19260	6967	9.6
GB	CL-2(N)	334	11968	4729	35.8	424	12457	4529	29.4					379	12213	3274	32.2
GB	CL-2SE	713	13544	1503	19.0	451	9051	1282	20.1	681	12313	314	18.1	615	11636	667	18.9
GB	CL-2SW	44	1501	93	34.3	45	1407	480	30.9	85	2015	127	23.7	58	1641	168	28.3
GB	CL2Ext	391	7202	891	18.4	373	6700	1540	18.0	563	6495	228	11.5	442	6799	598	15.4
GB	SF	452	6105	376	13.5	554	5368	3261	9.7	630	7277	248	11.6	545	6250	1097	11.5
GB	NLSAccN	50	1083	100	21.5	119	3114	2344	26.1					85	2099	1173	24.7
GB	NLSAccS-Deep	22	291	71	13.1	31	739	1437	24.0	19	229	22	12.1	24	419	480	17.5
GB	NLS-W	21	312	47	15.2	78	914	821	11.7					49	613	411	12.5
GB	NF	79	1336	372	16.9	312	4964	1745	15.9					195	3150	892	16.1
GB	GSC	282	6893	1368	24.4	2033	15360	21187	7.6					1157	11126	10616	9.6
GB	**TOTAL**	**4866**	**74282**	**10906**	**15.3**	**6052**	**76540**	**24541**	**12.6**	**1978**	**28329**	**478**	**14.3**	**5606**	**76202**	**13324**	**13.6**
MAB	BI	32	518	108	16.4					26	473	11	18.2	29	496	54	17.2
MAB	LI	219	4438	180	20.3					249	4481	34	18.0	234	4459	92	19.1
MAB	NYB	65	755	60	11.7					55	767	48	13.9	60	761	38	12.7
MAB	NYB_Closure	316	5943	392	18.8					361	7434	143	20.6	338	6689	209	19.8
MAB	MAB_Nearshore	27	285	44	10.5					38	441	7	11.6	33	363	22	11.1
MAB	HCS	58	866	62	15.0					158	1898	15	12.0	108	1382	32	12.8
MAB	ET	119	1511	76	12.7					197	2176	16	11.0	158	1844	39	11.7
MAB	DMV	19	103	11	5.5									19	103	11	5.5
MAB	VIR	12	51	9	4.1									12	51	9	4.1
MAB	**TOTAL**	**865.3**	**14469**	**462**	**16.7**					**1084**	**17670**	**157**	**16.3**	**990**	**16146**	**244**	**16.3**
GOM	Cashes					4.6	69.6	69.0	15.0					5	70	69	15.0
GOM	Fippennies					42.3	831.1	197.0	19.7					42	831	197	19.7
GOM	Ipswich Federal					8.0	115.0	29.6	14.4					8	115	30	14.4
GOM	Ipswich State					1.8	21.5	10.0	11.8					2	22	10	11.8
GOM	Jeffreys					7.4	152.4	41.0	20.5					7	152	41	20.5
GOM	Jeffreys-WGOM					35.3	621.2	137.2	17.6					35	621	137	17.6
GOM	Platts					18.4	77.8	32.2	4.2					18	78	32	4.2
GOM	Stellwagen NGOM					40.0	1070.5	512.6	26.8					40	1070	513	27
GOM	Stellwagen South					46.2	424.5	99.9	9.2					46	425	100	9
GOM	WGOM					41.2	1644.8	343.4	39.9					41	1645	343	40
NGOMOpen						*151.3*	*2037*	*552*	*13.5*					*151*	*2037*	*552*	*13.4619*

Map 7. The 2023 Georges Bank SAMS areas used for projections in FW38.



Map 8. The 2023 Mid-Atlantic SAMS Areas used for projections in FW38.



5.2.3 2022 Biomass Projections

A description of biomass projections can be found in the October 4, 2023 memo to the SSC

5.3 NON-TARGET SPECIES

Non-target species (sometimes referred to as incidental catch or bycatch) include species caught by scallop gear that are both landed and discarded, including small scallops. There are several measures in place that were designed to reduce bycatch including gear modifications, limits on effort, seasonal restrictions etc. In general, rotational area management is designed to improve and maintain high scallop yield, while minimizing impacts on groundfish mortality and other finfish catches. Access programs may even reduce fishing mortality for some finfish species because the total amount of fishing time in access areas is low compared with fishing time in open areas due to differences in LPUE. Incidental catch is sometimes higher in access areas compared to open areas, but in general total scallop landings are also usually higher in access areas.

Potential non-target species caught incidentally in the scallop fishery were identified in Amendment 15 and previous scallop framework actions based primarily on discard information from the 2009 SBRM report (NEFSC 2009) and various assessments such as GARM III and the Skates Data-poor Workshop. See Table 16 for the current status of these species, which has been updated based on Northeast Fisheries Science Center (NEFSC) assessment results through 2023[1], Draft Skate FW12 (Section 5.1.2), and Monkfish FW13 (Section 6.1.2).

[1] NEFSC stock assessment results and supporting documentation can be accessed through the Stock Assessment Support Information (SASINF) portal at: https://apps-nefsc.fisheries.noaa.gov/saw/sasi/sasi_report_options.php

Table 16. Status of non-target species known to be caught in scallop fishing gear, updated with assessment results through 2023.

Species or FMP	*Stock*	*Overfished?*	*Overfishing?*
Summer flounder (fluke)	Mid-Atlantic Coast	No	No
Monkfish	GOM/Northern GB	Unknown	Unknown
Monkfish	Southern GB/MA	Unknown	Unknown
Northeast Skate Complex	Barndoor skate	No	No
Northeast Skate Complex	Clearnose skate	No	No
Northeast Skate Complex	Little skate	No	Yes
Northeast Skate Complex	Rosette skate	No	No
Northeast Skate Complex	Smooth skate	No	No
Northeast Skate Complex	Thorny skate	Yes	No
Northeast Skate Complex	Winter skate	No	Yes
Multispecies	*Windowpane - GOM/GB	Yes	No
Multispecies	*Windowpane - SNE/MA	Unknown	No
Multispecies	Winter flounder - GB	No	No
Multispecies	Winter flounder - GOM	Unknown	No
Multispecies	Winter flounder - SNE/MA	No	No
Multispecies	Yellowtail flounder - CC/GOM	No	No
Multispecies	*Yellowtail flounder - GB	Yes	Unknown
Multispecies	*Yellowtail flounder - SNE/MA	Yes	No
Atlantic Surfclam	Mid-Atlantic Coast	No	No
Ocean Quahog	Atlantic Coast	No	No

* Stock has scallop fishery sub-ACL.

Updates available through NMFS's Stock Assessment Support Information (SASINF) portal: https://apps-nefsc.fisheries.noaa.gov/saw/sasi/sasi_report_options.php

Stock status information also available at the NMFS Stock SMART portal: https://www.st.nmfs.noaa.gov/stocksmart?app=browse-by-stock

5.3.1 Bycatch Species with sub-ACL Allocations

The only bycatch species with sub-ACLs for the scallop fishery are in the Northeast Multispecies plan: Georges Bank yellowtail flounder (GB yellowtail), Southern New England/Mid-Atlantic yellowtail flounder (SNE/MA yellowtail), southern windowpane flounder, and northern windowpane flounder. Table 17 summarizes anticipated catch limits of these four flatfish stocks for FY 2023 and projected scallop fishery bycatch for FY 2023 based on the range of specification alternatives in Action 4 (Section 4.3). More detailed information on bycatch projections is provided in Section 6.3. Table 18 summarizes sub-ACLs, projected bycatch, and realized bycatch from the scallop fishery from FY 2013 – FY 2022, as well as projected bycatch and sub-ACL allocations for FY 2023. Out year bycatch projections can be uncertain because they are based on anticipated fishing behavior provided by SAMS model outputs; considering this, projections should be reviewed cautiously as past estimates have been both overestimated and underestimated relative to actual catch. A complete summary of all catch in the multispecies fishery can be found at: https://www.greateratlantic.fisheries.noaa.gov/ro/fso/reports/h/nemultispecies.html

Table 17. Comparison of 2024 Scallop Fishery flatfish sub-ACLs (mt) with the range of bycatch projections associated with specification alternatives in Section 4.3.

	OFL	US ABC	Scallop sub-ACL	Bycatch Projections
Stock	**2024**	**2024**	**2024**	**2024**
GB Yellowtail Flounder	Unknown	168	11	26
SNE/MA Yellowtail Flounder	Unknown	Unknown	2	3
Northern Windowpane Flounder	Unknown	136	26.6	76-87
Southern Windowpane Flounder	284	213	71.3	10-13

Table 18. Comparison of recent flatfish sub-ACLs, scallop bycatch projections, and realized catch, FY 2013-FY 2024. Values are shown in mt.

FY		GBYT	SNE/MA YT	SWP	NWP
2013	sub-ACL	41.5	43.6	183	
	Projected	85.3	66	N/A	
	Actual	37.5	48.6	129.1	
2014	sub-ACL	50.9	66	183	
	Projected	62.4 - 103.7	61.1 - 67.7	74.4	
	Actual	59	63	136	
2015	sub-ACL	38	66	183	n/a
	Projected	27.9 - 48.6	54	134	45 - 94
	Actual	29.8	34.6	210.6	114.6
2016	sub-ACL	42	32	209	n/a
	Projected	26.3	40.4	179.2	88.1
	Actual	2	10.8	84.4	n/a
2017	sub-ACL	32	34	209	36
	Projected	62.8 - 63.2	10.66 - 11.9	77.85 - 85.08	102.1 - 103.33
	Actual	52.6	4.3	143.9	44.1
2018	sub-ACL	33	5	158	18
	Projected	11.7	4.2	261.7	50.7
	Actual	12.7	2.6	157.1	22.3
2019	sub-ACL	17	15	158	18
	Projected	11.48	2.9	64.03	8.02
	Actual	1.7	2.1	57.7	25.4
2020	sub-ACL	19	2	143	12
	Projected	23	2	143	33
	Actual	1.5	1	86	35
2021	sub-ACL	12	2	129	31
	Projected	16	3	72	29
	Actual	29	1	26	123
2022	sub-ACL	19	2	129	33
	Projected	15 - 19	2 - 3	73 - 81	86 - 111
	Actual	7.8	0.2	10.5	101.1
2023	sub-ACL	16.5	2	129	31
	Projected	32-45	3	38-41	106-126
	Actual				
2024	sub-ACL	11	2	71.3	26.6
	Projected	25.9 - 26.4	2.5 - 3.3	10.2 - 12.9	76.2 - 86.8
	Actual				

5.4 PROTECTED SPECIES

The following protected species are found in the environment in which the sea scallop fishery is prosecuted. Some are listed under the Endangered Species Act of 1973 (ESA) as endangered or threatened, while others are identified as protected under the Marine Mammal Protection Act of 1972 (MMPA). An update and summary are in Table 19 to facilitate consideration of the species most likely to interact with the scallop fishery relative to the preferred alternative.

Table 19. Protected species that may occur in the affected environment of the sea scallop fishery.

Species	Status	Potentially impacted by this action?
Cetaceans		
North Atlantic right whale (*Eubalaena glacialis*)	Endangered	No
Humpback whale, West Indies DPS (*Megaptera novaeangliae*)	Protected (MMPA)	No
Fin whale (*Balaenoptera physalus*)	Endangered	No
Sei whale (*Balaenoptera borealis*)	Endangered	No
Blue whale (*Balaenoptera musculus*)	Endangered	No
Sperm whale (*Physeter macrocephalus*	Endangered	No
Minke whale (*Balaenoptera acutorostrata*)	Protected (MMPA)	No
Pilot whale (*Globicephala spp.*)[1]	Protected(MMPA)	No
Risso's dolphin (*Grampus griseus*)	Protected (MMPA)	No
Atlantic white-sided dolphin (*Lagenorhynchus acutus*)	Protected (MMPA)	No
Short Beaked Common dolphin (*Delphinus delphis*)	Protected (MMPA)	No
Spotted dolphin (*Stenella frontalis*)	Protected (MMPA)	No
Striped dolphin (*Stenella coeruleoalba*)	Protected (MMPA)	No
Bottlenose dolphin (*Tursiops truncatus*)[2]	Protected (MMPA)	No
Harbor porpoise (*Phocoena phocoena*)	Protected (MMPA)	No
Sea Turtles		
Leatherback sea turtle (*Dermochelys coriacea*)	Endangered	Yes
Kemp's ridley sea turtle (*Lepidochelys kempii*)	Endangered	Yes
Green sea turtle, North Atlantic DPS (*Chelonia mydas*) (*Chelonia mydas*)	Threatened	Yes
Loggerhead sea turtle (*Caretta caretta*), Northwest Atlantic Ocean DPS	Threatened	Yes
Hawksbill sea turtle (*Eretmochelys imbricate*)	Endangered	No
Fish		
Shortnose sturgeon (*Acipenser brevirostrum*)	Endangered	No
Oceanic whitetip shark (*Carcharhinus longimanus*)	Endangered	No
Giant Manta Ray (*Manta birostris)*	Threatened	No
Atlantic salmon (*Salmo salar*)	Endangered	No
Atlantic sturgeon *(Acipenser oxyrinchus)*		
Gulf of Maine DPS	Threatened	Yes
New York Bight DPS, Chesapeake Bay DPS, Carolina DPS & South Atlantic DPS	Endangered	Yes
Cusk (*Brosme brosme*)	Candidate	Yes
Pinnipeds		
Harbor seal (*Phoca vitulina*)	Protected (MMPA)	No
Gray seal (*Halichoerus grypus*)	Protected (MMPA)	No
Harp seal (*Phoca groenlandicus*)	Protected(MMPA)	No

Hooded seal (Cystophora cristata)	Protected (MMPA)	No
Critical Habitat		
North Atlantic Right Whale	ESA Designated	No
Northwest Atlantic Ocean DPS of Loggerhead Sea Turtle	ESA Designated	No

***Notes*:**
[1] There are 2 species of pilot whales: short finned (*G. melas melas*) and long finned (*G. macrorhynchus*). Due to the difficulties in identifying the species at sea, they are often just referred to as *Globicephala spp*.
[2] This includes the Western North Atlantic Offshore, Northern Migratory Coastal, and Southern Migratory Coastal Stocks of Bottlenose Dolphins.

In Table 19, note that cusk, a NMFS "candidate species" under the ESA, occur in the affected environment of the scallop fishery. Candidate species are those petitioned species that NMFS is actively considering for listing as endangered or threatened under the ESA and also include those species for which NMFS has initiated an ESA status review through an announcement in the Federal Register. Once a species is proposed for listing the conference provisions of the ESA apply (see 50 CFR 402.10); however, candidate species receive no substantive or procedural protection under the ESA. As a result, cusk will not be discussed further in this section. However, additional information on cusk can be found at: https://www.fisheries.noaa.gov/endangered-species-conservation/candidate-species-under-endangered-species-act.

5.4.1 Species and Critical Habitat Not Likely to be Impacted by the Alternatives Under Consideration

Based on available information, it has been determined that this action is not likely to impact any ESA listed or non-listed species of marine mammals (large whales, small cetaceans, or pinnipeds), or ESA-listed species of shortnose sturgeon, giant manta rays, oceanic white-tip sharks, Atlantic salmon, or hawksbill turtles. Further, this action is not likely to adversely modify or destroy designated critical habitats for the Northwest Atlantic Ocean DPS of loggerhead sea turtles or North Atlantic right whales. This determination has been made because either the occurrence of the species is not known to overlap with the scallop fishery and/or there have never been documented interactions between the species and the scallop fishery[2]. In the case of critical habitat, this determination has been made because the scallop fishery will not impact the essential physical or biological features of North Atlantic right whale or loggerhead (Northwest Atlantic Ocean DPS) critical habitat, and therefore, will not result in the destruction or adverse modification of either species designated critical habitat (NMFS 2014; NMFS 2015a,b; NMFS 2021).

5.4.2 Species Potentially Impacted by the Alternatives Under Consideration

ESA-listed species of sea turtles and Atlantic sturgeon are the only protected species in the affected environment of the scallop fishery that have the potential to be adversely impacted by this fishery and the proposed Alternatives (Table 19). To assist in making this determination, the NMFS NEFSC observer/sea sampling database, and the June 17, 2021, Biological Opinion issued by NMFS on the operation of the scallop fishery was referenced (NMFS 2021). The 2021 Opinion, which considered the best available information on ESA listed species and observed or documented ESA listed species interactions with gear types used to prosecute the scallop fishery (e.g., scallop dredge and bottom trawl), concluded that the scallop fishery, as

[2] Marine Mammal Stock Assessment Reports (SARs) for the Atlantic Region; MMPA List of Fisheries (LOF); NMFS 2021; NMFS Observer Program, unpublished data; NMFS NEFSC reference documents (marine mammal serious injury and mortality reports).

authorized under the Scallop FMP: 1) may adversely affect, but is not likely to jeopardize the continued existence of the Northwest Atlantic Ocean distinct population segment (DPS) of loggerhead, leatherback, Kemp's ridley, and the North Atlantic DPS of green sea turtles, or the five listed DPSs of Atlantic sturgeon; and, 2) is not likely to adversely affect designated critical habitat for North Atlantic right whales or loggerhead (Northwest Atlantic Ocean DPS) sea turtles. The Opinion included an incidental take statement authorizing the take of specific numbers of ESA listed species of sea turtles and Atlantic sturgeon over a five-year period. Reasonable and prudent measures and terms and conditions were also issued with the incidental take statement to minimize impacts of any incidental take.

To understand the potential risks that the alternatives pose to these listed species, it is necessary to consider (1) species occurrence in the affected environment of the fishery and how the fishery will overlap in time and space with this occurrence; and (2) records of protected species interaction with particular fishing gear types. In the sections below, information on sea turtle and Atlantic sturgeon occurrence in the affected environment of the scallop fishery, in addition to species interactions with scallop fishery gear, are provided.

5.4.2.1 Sea Turtles

5.4.2.1.1 Status and Trends

Four sea turtle species have the potential to be impacted by the proposed action: Northwest Atlantic Ocean DPS of loggerhead, Kemp's ridley, North Atlantic DPS of green, and leatherback sea turtles (Table 16). Although stock assessments and similar reviews have been completed for sea turtles none have been able to develop a reliable estimate of absolute population size. As a result, nest counts are used to inform population trends for sea turtle species.

For the Northwest Atlantic Ocean DPS of loggerhead sea turtles, there are five unique recovery units that comprise the DPS. Nesting trends for each of these recovery units are variable; however, Florida index nesting beaches comprise most of the nesting in the DPS (https://myfwc.com/research/wildlife/sea-turtles/nesting/beach-survey-totals/). Overall, short-term trends for loggerhead sea turtles (Northwest Atlantic Ocean DPS) have shown increases; however, over the long-term the DPS is considered stable (NMFS 2021).

For Kemp's ridley sea turtles, from 1980 through 2003, the number of nests at three primary nesting beaches (Rancho Nuevo, Tepehuajes, and Playa Dos) increased 15 percent annually (Heppell et al. 2005); however, due to recent declines in nest counts, decreased survival of immature and adult sea turtles, and updated population modeling, this rate is not expected to continue and therefore, the overall trend is unclear (NMFS and USFWS 2015; Caillouett et al. 2018). In 2019, there were 11,090 nests, a 37.61% decrease from 2018 and a 54.89% decrease from 2017, which had the highest number (24,587) of nests; the reason for this recent decline is uncertain (see NMFS 2021). Given this and continued anthropogenic threats to the species, according to NMFS (2021), the species resilience to future perturbation is low.

The North Atlantic DPS of green sea turtle, overall, is showing a positive trend in nesting; however, increases in nester abundance for the North Atlantic DPS in recent years must be viewed cautiously as the datasets represent a fraction of a green sea turtle generation which is between 30 and 40 years (Seminoff et al. 2015). While anthropogenic threats to this species continue, taking into consideration the best available information on the species, NMFS (2021), concluded that the North Atlantic DPS appears to be somewhat resilient to future perturbations.

Leatherback turtle nesting in the Northwest Atlantic is showing an overall negative trend, with the most notable decrease occurring during the most recent time frame of 2008 to 2017 (NW Atlantic Leatherback Working Group 2018). The leatherback status review in 2020 concluded that leatherbacks are exhibiting an overall decreasing trend in annual nesting activity (NMFS & USFWS 2020). Given continued anthropogenic threats to the species, according to NMFS (2021), the species' resilience to additional perturbation both within the Northwest Atlantic and worldwide is low.

5.4.2.1.2 Occurrence and Distribution

Below is a summary of the occurrence and distribution of sea turtles in the affected environment of the scallop fishery. Further background information on the range-wide status of affected sea turtles species, as well as a description and life history of each of these species, can be found in a number of published documents, including the NMFS Biological Opinion on the Scallop FMP (NMFS 2021); sea turtle status reviews and biological reports (Conant *et al.* 2009; Hirth 1997; NMFS & USFWS 1995; 2007a; b; 2013; 2015; Seminoff *et al.* 2015; TEWG 1998; 2000; 2007; 2009), and recovery plans for the loggerhead sea turtle (Northwest Atlantic DPS; NMFS & USFWS 2008), leatherback sea turtle (NMFS & USFWS 1992; 1998b; 2020), Kemp's ridley sea turtle (NMFS & USFWS 2011), and green sea turtle (NMFS & USFWS 1991; 1998a).

5.4.2.1.2.1 Hard-shelled sea turtles

Distribution. In U.S. Northwest Atlantic waters, hard-shelled turtles commonly occur throughout the continental shelf from Florida to Cape Cod, MA, although their presence varies with the seasons due to changes in water temperature (Braun-McNeill *et al.* 2008; Braun & Epperly 1996; Epperly *et al.* 1995a; Epperly *et al.* 1995b; Mitchell *et al.* 2003; Shoop & Kenney 1992; TEWG 2009). While hard-shelled turtles are most common south of Cape Cod, MA, loggerhead sea turtles are known to occur in the Gulf of Maine, feeding as far north as southern Canada. Loggerheads have been observed in waters with surface temperatures of 7°C to 30°C, but water temperatures ≥11°C are most favorable (Epperly *et al.* 1995b; Shoop & Kenney 1992). Sea turtle presence in U.S. Atlantic waters is also influenced by water depth. While hard-shelled turtles occur in waters from the beach to beyond the continental shelf, they are most commonly found in neritic waters of the inner continental shelf (Blumenthal *et al.* 2006; Braun-McNeill & Epperly 2004; Griffin *et al.* 2013; Hawkes *et al.* 2006; Hawkes *et al.* 2011; Mansfield *et al.* 2009; McClellan & Read 2007; Mitchell *et al.* 2003; Morreale & Standora 2005).

Seasonality. Hard-shelled sea turtles occur year-round in waters off of, and south of, Cape Hatteras, North Carolina. As coastal water temperatures warm in the spring, loggerheads begin to migrate to inshore waters of the southeast United States and also move up the Atlantic Coast (Braun-McNeill & Epperly 2004; Epperly *et al.* 1995a; Epperly *et al.* 1995b; Epperly *et al.* 1995c; Griffin *et al.* 2013; Morreale & Standora 2005), occurring in Virginia foraging areas as early as late April and on the most northern foraging grounds in the GOM in June (Shoop & Kenney 1992). The trend is reversed in the fall as water temperatures cool. The large majority leave the GOM by September, but some remain in Mid-Atlantic and Northeast areas until late fall. By December, most sea turtles have migrated south to waters offshore of North Carolina, particularly south of Cape Hatteras, and further (Epperly *et al.* 1995b; Griffin *et al.* 2013; Hawkes *et al.* 2011; Shoop & Kenney 1992). Based on this information, as well as review of observed sea turtle interactions with bottom tending gear in the affected environment of the scallop fishery (see Figure 23), hard-shelled sea turtles are most likely to be present in areas that overlap with the scallop fishery in the Mid-Atlantic between May and October and to a lesser extent, November and December (see Section 4.3.2.1 of Framework 26 for complete summary of information). In the portion of the scallop fishery operating in the NGOM, hard-shelled sea turtles are most likely to be present, and overlap with the scallop fishery from June through September; however, their presence, albeit lower, is still possible from October through December (NMFS 2021).

5.4.2.1.2.2 Leatherback sea turtles

Leatherback sea turtles also engage in routine migrations between northern temperate and tropical waters (Dodge *et al.* 2014; James *et al.* 2005; James *et al.* 2006; NMFS & USFWS 1992). Leatherbacks, a pelagic species, are also known to use coastal waters of the U.S. continental shelf (Dodge *et al.* 2014; Eckert *et al.* 2006; James *et al.* 2005; Murphy *et al.* 2006). Leatherbacks have a greater tolerance for colder water in comparison to hard-shelled sea turtles. They are also found in more northern waters (i.e., Gulf of Maine) later in the year (i.e., similar time frame as hard-shelled sea turtles), with most leaving the Northwest Atlantic shelves by mid-November (Dodge *et al.* 2014; James *et al.* 2005; James *et al.* 2006).

5.4.2.1.3 Gear Interactions

As in Section 5.4.2.1.2, sea turtles are widely distributed in the waters of the Northwest Atlantic, although their presence varies with the seasons due to changes in water temperature (Braun-McNeill & Epperly 2004; Braun-McNeill *et al.* 2008; Braun & Epperly 1996; Dodge *et al.* 2014; Epperly *et al.* 1995a; Epperly *et al.* 1995b; Griffin *et al.* 2013; James *et al.* 2005; James *et al.* 2006; Mitchell *et al.* 2003; Morreale & Standora 2005; NMFS & USFWS 1992; Shoop & Kenney 1992; TEWG 2009). Thus, sea turtles often occupy many of the same ocean areas used for commercial fishing and therefore, interactions with fishing gear is possible. In the sea scallop fishery, dredge and trawl gear are used to target scallops and are known to pose a risk to sea turtles (Epperly *et al.* 2002; Haas *et al.* 2008; Henwood & Stuntz 1987; Lutcavage *et al.* 1997; Murray 2011; NMFS 2012; Sasso & Epperly 2006; Warden 2011a; c).

5.4.2.1.3.1 Sea Scallop Dredge Gear

Kemp's ridley, green, loggerhead, and unknown sea turtle species have been documented interacting with sea scallop dredge gear; loggerhead sea turtles are the most commonly taken species (FMRD 2016; 2017; 2018; Murray 2015a; 2021) . There is insufficient data available to conduct a robust model-based analysis to estimate sea turtle interactions with scallop dredge gear outside the Mid-Atlantic. As a result, the bycatch estimates and the discussion below are based on observed sea turtle interactions in scallop dredge gear in the Mid-Atlantic. Two regulations have been implemented to reduce serious injury and mortalities to sea turtles resulting from interactions with sea scallop dredges:

1. **-Chain mat modified dredge** (71 FR 50361, August 25, 2006; 71 FR 66466, November 15, 2006; 73 FR18984, April 8, 2008; 74 FR 20667, May 5, 2009; 76 FR 22119, April 21, 2015): Requires federally permitted scallop vessels fishing with dredge gear to modify their gear by adding an arrangement of horizontal and vertical chains (referred to as a "chain mat"). The purpose of the chain mat is to prevent capture in the dredge bag and injury and mortality that results from such capture. Note, however, that although the chain mat is expected to reduce the impact of sea turtle takes in dredge gear, it does not eliminate the take of sea turtles; and
2. **Turtle Deflector Dredge** (77 FR 20728, April 6, 2012; 76 FR 22119, April 21, 2015)**:** All limited access scallop vessels, as well as Limited Access General Category vessels with a dredge width of 10.5 feet or greater, must use a Turtle Deflector Dredge (TDD) to deflect sea turtles over the dredge frame and bag rather than under the cutting bar, so as to reduce sea turtle injuries due to contact with the dredge frame on the ocean bottom (including being crushed under the dredge frame).

As of May 2015, both gear modifications are now required in waters west of 71°W from May 1 through November 30 each year (76 FR 22119, April 21, 2015). It should be noted, although the chain mat and TDD modifications are designed to reduce the serious injury and mortality to sea turtles interacting with dredge gear, it does not eliminate the take of sea turtles.

Murray (2015a) estimated loggerhead interactions in the Mid-Atlantic scallop dredge fishery from 2009-2014. The average annual estimate of observable turtle interactions in scallop dredge gear was 11 loggerhead sea turtles per year (95% CI: 3-22; Murray 2015a). When the observable interaction rate from dredges without chain mats, was applied to trips that used chain mats and TDDs, the estimated number of loggerhead interactions (observable and unobservable but quantifiable) was 22 loggerheads per year (95% CI: 4-67; Murray 2015a). These 22 loggerheads equate to 2 adult equivalents per year, and 1-2 adult equivalent mortalities (Murray 2020a; Murray 2015a; 2021).

Most recently, Murray (2021) estimated loggerhead interactions in the Mid-Atlantic scallop dredge fishery from 2015-2019. The average annual estimate of loggerhead sea turtle interactions (observable and inferred) in scallop dredge gear was 155 loggerhead sea turtles per year (95% CI: 3-22; Murray 2015a), with 53 of these interactions being lethal. These 155 loggerheads equate to 31 adult equivalents per year, and 11 adult equivalent mortalities (Murray 2021). The estimated number of interactions from 2015-2019 is higher than in 2009-2014; however, Murray (2021) notes that there could be a number of reasons for this higher estimate. This includes, a higher number of dredge hours in the Mid-Atlantic (greater effort) between 2015-2019 compared to 2009-2014,

as well as the analyses using a different method to estimate interactions compared to previous years estimates (i.e., used a stratified ratio estimator instead of a generalized additive model; Murray 2021).

Recently, Precoda et al. (2023), examined the assumptions of the approach currently used to estimate loggerhead interactions in the Mid-Atlantic scallop dredge fishery (i.e., Murray 2021). Precoda et al. (2023) concluded that while the approach may overestimate "unobservable" interactions in some years, there was no evidence to suggest that the approach results in an underestimation of loggerhead interactions in the scallop dredge fishery. In addition, Precoda et al. (2023) noted that changes in environmental and/or fishing conditions may help to explain annual variations in loggerhead interactions with the scallop fishery, and therefore, are important considerations when modeling interaction rates in the fishery.

5.4.2.1.3.2 Sea Scallop Trawl Gear

Bottom trawl gear poses an injury and mortality risk to sea turtles (Sasso and Epperly 2006; NMFS Observer Program, unpublished data). Since 1989, the date of our earliest observer records for federally managed fisheries, sea turtle interactions with trawl gear have been observed in the Gulf of Maine, Georges Bank, and/or the Mid-Atlantic; however, most of the observed interactions have been observed south of the Gulf of Maine (Murray 2008; Murray 2015b; Murray 2020; NMFS Observer Program, unpublished data; Warden 2011 a, b). As few sea turtle interactions have been observed in the Gulf of Maine, there is insufficient data available to conduct a robust model-based analysis and bycatch estimate of sea turtle interactions with trawl gear in this region. As a result, the bycatch estimates and discussion below are for trawl gear in the Mid-Atlantic and Georges Bank.

Murray (2020) provided information on sea turtle interaction rates from 2014-2018 (the most recent five-year period that has been statistically analyzed for trawls). Interaction rates were stratified by region, latitude zone, season, and depth. The highest loggerhead interaction rate (0.43 turtles/day fished) was in waters south of 37º N during November to June in waters greater than 50 meters deep. The greatest number of estimated interactions occurred in the Mid-Atlantic region north of 39º N, during July to October in waters less than 50 meters deep. Within each stratum, interaction rates for non-loggerhead species were lower than rates for loggerheads (Murray 2020).

Based on Murray (2020)[3], from 2014-2018, 571 loggerhead (CV=0.29, 95% CI=318-997), 46 Kemp's ridley (CV=0.45, 95% CI=10-88), 20 leatherback (CV=0.72, 95% CI = 0-50), and 16 green (CV=0.73, 95% CI=0-44) sea turtle interactions were estimated to have occurred in bottom trawl gear in the Mid-Atlantic region over the five-year period. On Georges Bank, 12 loggerheads (CV=0.70, 95% CI=0-31) and 6 leatherback (CV=1.0, 95% CI=0-20) interactions were estimated to have occurred from 2014-2018. An estimated 272 loggerhead, 23 Kemp's ridley, 13 leatherback, and 8 green sea turtle interactions resulted in mortality over this period (Murray 2020b). Subsequently, Linden (2020) partitioned out the sea turtle takes that were estimated to have occurred in trawls catching scallops between 2014-2018 using effort data from Vessel Trip Reports (VTRs) and estimated interaction rates from Murray (2020) (Table 20).

[3] (Murray 2018; 2020b) estimated interaction rates for each sea turtle species with stratified ratio estimators. This method differs from previous approaches (Murray 2015b; Murray & Orphanides 2013b; Warden 2011b), where rates were estimated using generalized additive models (GAMs). Ratio estimator results may be similar to those using GAM or generalized linear models (GLM) if ratio estimators are stratified based on the same explanatory variables in a GAM or GLM model (Murray 2007; Murray & Orphanides 2013b; Orphanides 2010).

Table 20. Estimated sea turtle takes attributed to scallop trawls between 2014–2018. Mean with lower and upper 95% confidence intervals presented for each species (Linden 2020; NMFS 2021).

Sea Turtle Species	Mean	lower	upper
Loggerhead	6.60	1.34	12.83
Kemp's ridley	0.89	0.41	1.51
Leatherback	0.18	0.00	0.43
Green	0.26	0.00	0.76

5.4.2.2 Atlantic Sturgeon

5.4.2.2.1 Status and Trends

Atlantic sturgeon, from any DPS, are identified as having the potential to be impacted by the proposed action (Table 30). The ASMFC released a new benchmark stock assessment for Atlantic sturgeon in October 2017 (ASMFC 2017). Based on historic removals and estimated effective population size, the 2017 stock assessment concluded that Atlantic sturgeon at both coastwide and DPS level are depleted relative to historical levels. The 2017 stock assessment also concluded that a variety of factors (i.e., bycatch, habitat loss, and ship strikes) continue to impede the recovery rate of Atlantic sturgeon (ASMFC 2017).

5.4.2.2.2 Atlantic Sturgeon Distribution

Below is a summary of the occurrence and distribution of Atlantic sturgeon in the affected environment of the scallop fishery. Additional information on the biology, status, and range wide distribution of each distinct population segment of Atlantic sturgeon can be found in 77 FR 5880 and 77 FR 5914 (finalized February 6, 2012), NMFS (2021), as well as the Atlantic Sturgeon Status Review Team's (ASSRT) 2007 status review of Atlantic sturgeon (ASSRT 2007) and the Atlantic States Marine Fisheries Commission 2017 Atlantic Sturgeon Benchmark Stock Assessment and Peer Review Report (ASMFC 2017).

The marine range of U.S. Atlantic sturgeon extends from Labrador, Canada, to Cape Canaveral, Florida. All five DPSs of Atlantic sturgeon have the potential to be located anywhere in this marine range (ASMFC 2017; ASSRT 2007; Dadswell 2006; Dadswell *et al.* 1984; Dovel & Berggren 1983; Dunton *et al.* 2012; Dunton *et al.* 2015; Dunton *et al.* 2010; Erickson *et al.* 2011; Kynard *et al.* 2000; Laney *et al.* 2007; O'Leary *et al.* 2014; Stein *et al.* 2004b; Waldman *et al.* 2013; Wirgin *et al.* 2015a; Wirgin *et al.* 2015b; Wirgin *et al.* 2012). In fact, several genetic studies, have been conducted to address DPS distribution and composition in marine waters (Dunton *et al.* 2012; O'Leary *et al.* 2014; Waldman *et al.* 2013; Wirgin *et al.* 2015a; Wirgin *et al.* 2015b; Wirgin *et al.* 2012). These studies show that Atlantic sturgeon from multiple DPSs can be found at any single location along the Northwest Atlantic coast, with the Mid-Atlantic locations consistently comprised of all five DPSs (Damon-Randall *et al.* 2013; Dunton *et al.* 2012; O'Leary *et al.* 2014; Waldman *et al.* 2013; Wirgin *et al.* 2015a; Wirgin *et al.* 2015b; Wirgin *et al.* 2012).

Based on fishery-independent and dependent surveys, and data collected from genetic, tracking, and/or tagging studies in the marine environment, Atlantic sturgeon appear to typically occur inshore of the 50 meter depth contour; however, Atlantic sturgeon are not restricted to these depths, as excursions into deeper continental shelf waters have been documented (Altenritter *et al.* 2017; Breece *et al.* 2016; Breece *et al.* 2018b; Collins & Smith 1997; Dunton *et al.* 2010; Erickson *et al.* 2011; Ingram *et al.* 2019; Novak *et al.* 2017; Rothermel *et al.* 2020; Stein *et al.* 2004a; b; Wippelhauser *et al.* 2017). In addition to depth, numerous studies have demonstrated that temperature is a key variable in Atlantic sturgeon presence and distribution in the marine environment (Altenritter *et al.* 2017; Breece *et al.* 2018b; Erickson *et al.* 2011; Ingram *et al.* 2019; Novak *et al.* 2017; Rothermel *et al.* 2020; Wippelhauser *et al.* 2017). Data from fishery-independent and dependent surveys, and data collected from genetic, tracking, and/or tagging studies also indicate that Atlantic sturgeon make

seasonal coastal movements from marine waters to river estuaries in the spring and from river estuaries to marine waters in the fall; however, there is no evidence to date that all Atlantic sturgeon make these seasonal movements and therefore, may be present throughout the marine environment throughout the year (Altenritter *et al.* 2017; Breece *et al.* 2018b; Dunton *et al.* 2010; Erickson *et al.* 2011; Ingram *et al.* 2019; Novak *et al.* 2017; Rothermel *et al.* 2020; Wippelhauser 2012; Wippelhauser *et al.* 2017). When in the marine environment, Atlantic sturgeon presence and distribution in nearshore or offshore environments also appears to be seasonally variable; with preference for shallow, coastal waters in the spring, more offshore waters in the late fall-winter, and mouths of estuaries in the summer. Residency times in these areas of the marine environment are variable, with suitable environmental conditions (e.g., depth and temperature) dictating residency in an area (Altenritter *et al.* 2017; Breece *et al.* 2018b; Erickson *et al.* 2011; Ingram *et al.* 2019; Novak *et al.* 2017; Rothermel *et al.* 2020; Wippelhauser *et al.* 2017).

(Collins & Smith 1997; Dunton *et al.* 2010; Erickson *et al.* 2011; Stein *et al.* 2004a; b; Timoshkin 1968)

5.4.2.2.3 Gear Interactions

According to the NMFS Biological Opinion on the sea scallop fishery issued on June 17, 2021, it was determined that some small level of bycatch may occur in the scallop fishery; however, the incidence rate is likely to be very low. Review of available observer data from 1989-2019 confirms this determination. No Atlantic sturgeon have been reported as caught in scallop bottom trawl gear where the haul target or trip target is scallops. However, NEFOP observer data has recorded one (1) Atlantic sturgeon interaction with scallop dredge gear targeting Atlantic sea scallops; this sturgeon was released alive (NMFS 2021).

5.5 Physical Environment and Essential Fish Habitat

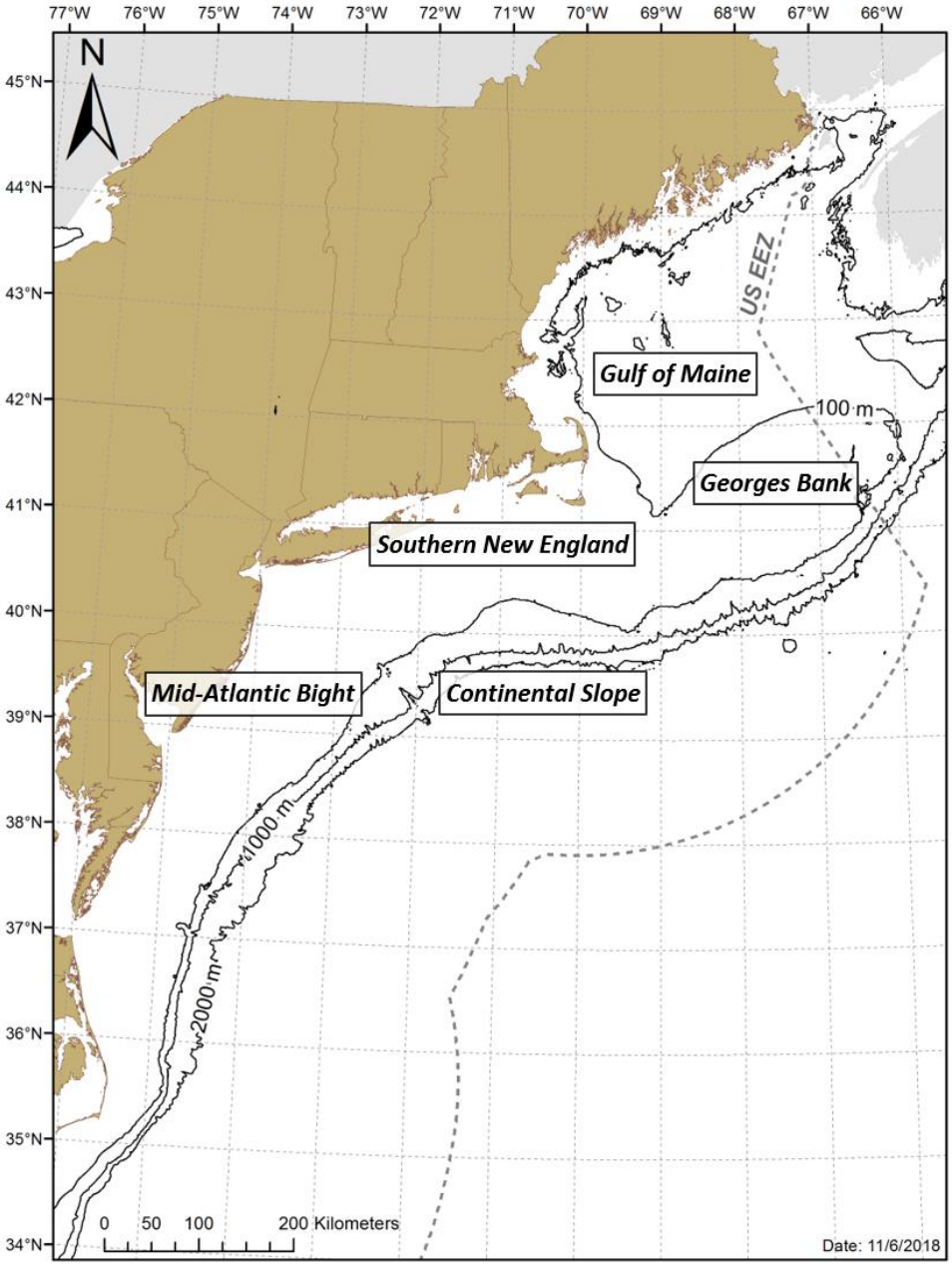
The Northeast U.S. Shelf Ecosystem includes the area from the Gulf of Maine south to Cape Hatteras, extending from the coast seaward to the edge of the continental shelf, including the slope sea offshore to the Gulf Stream to a depth of 2,000 m (Map 9) (Sherman *et al.* 1996). Four distinct sub-regions are identified: the Gulf of Maine, Georges Bank, the Mid-Atlantic Bight, and the continental slope. The physical oceanography and biota of these regions were described in the Scallop Amendment 11. Much of this information was extracted from Stevenson *et al.* (2004), and the reader is referred to this document and sources referenced therein for additional information. Primarily relevant to the scallop fishery are Georges Bank and the Mid-Atlantic Bight, although some fishing also occurs in the Gulf of Maine.

The Atlantic sea scallop fishery is primarily prosecuted in concentrated areas in and around Georges Bank and off the Mid-Atlantic coast, in waters extending from the coast out to the edge of the continental shelf. Atlantic sea scallops occur primarily in depths less than 110 meters on sand, gravel, shells, and cobble substrates (Hart & Chute 2004). This area, which could potentially be affected by the preferred alternative, has been identified as EFH for various species. These species include American plaice, Atlantic cod, Atlantic halibut, Atlantic herring, Atlantic sea scallop, Atlantic surfclam, Atlantic wolfish, barndoor skate, black sea bass, clearnose skate, haddock, little skate, longfin squid, monkfish, ocean pout, ocean quahog, pollock, red hake, redfish, rosette skate, scup, silver hake, spiny dogfish, summer flounder, thorny skate, white hake, windowpane flounder, winter flounder, witch flounder, winter skate, and yellowtail flounder. EFH designations for NEFMC-managed species are provided here. Table 21 describes information on the geographic area, depth, and EFH description MAFMC-managed species.

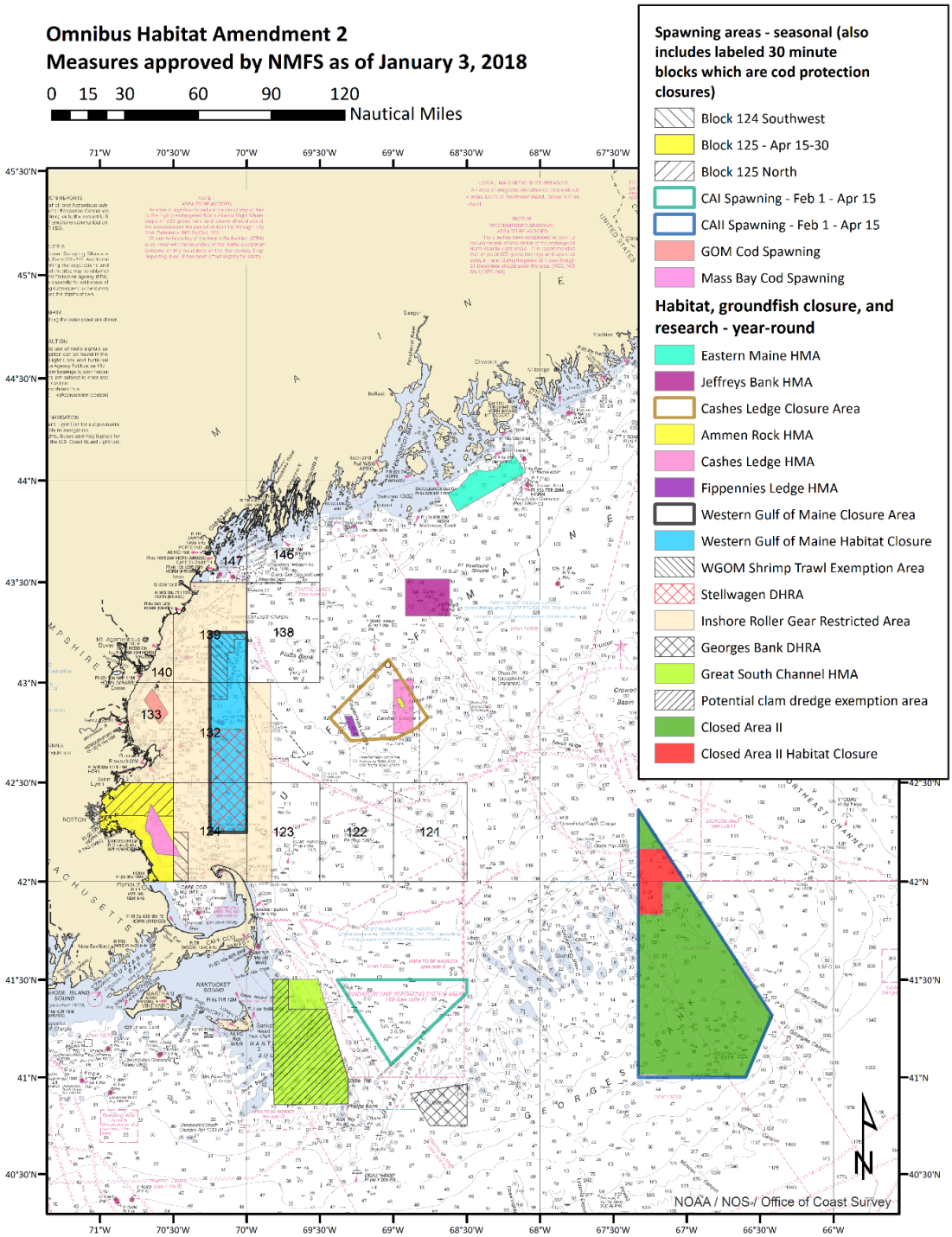
Another purpose of OHA2 was to evaluate existing habitat management areas and develop new habitat management areas. To assist with this effort, an analytical approach was developed to characterize and map habitats and to assess the extent to which different habitat types are vulnerable to different types of fishing activities. This body of work, termed the Swept Area Seabed Impact approach, includes a quantitative, spatially referenced model that overlays fishing activities on habitat through time to estimate both potential and realized adverse effects to EFH. The approach is detailed in this document, available on the Council webpage: Appendix D: SASI Approach. The model has since been updated and is referred to as the Fishing Effects model. More

information is available here. A final decision regarding OHA2 was published by the NMFS on January 3, 2018, with implementation of the amendment on April 9, 2018. Map 10 shows the approved habitat management areas and seasonal spawning areas. For more detailed descriptions of the approved OHA2 areas the reader is referred to the Council website (OHA2 Action Page).

Map 9. Northeast U.S. Shelf Ecosystem and geographic extent of the US sea scallop fishery.



Map 10. Approved OHA2 measures, including year-round spatial management areas and seasonal spawning areas. Note the scallop fishery is exempt from the Inshore Roller Gear Restricted Area (shown in tan blocks) and CAI and CAII seasonal closures.



Map credit - New England Fishery Management Council, January 4, 2018

Table 21. Geographic distributions and habitat characteristics of Essential Fish Habitat designations for benthic fish and shellfish species managed by the Mid-Atlantic fishery management councils in depths less than 100 meters in the Greater Atlantic region, updated January 2018. These designations are currently under review but changes are not expected to be finalized during FY 2024.

Species	Life Stage	Geographic Area	Depth (m)	Habitat Type and Description
Atlantic surfclam	Juveniles and adults	Continental shelf from southwestern Gulf of Maine to Cape Hatteras, North Carolina	Surf zone to about 61, abundance low >38	In substrate to depth of 3 ft
Black sea bass	Juveniles and adults	Continental shelf and estuarine waters from the southwestern Gulf of Maine and Cape Hatteras, North Carolina	Inshore in summer and spring	Benthic habitats with rough bottom, shellfish and eelgrass beds, man-made structures in sandy-shelly areas, also offshore clam beds and shell patches in winter
Longfin inshore squid	Eggs	Inshore and offshore waters from Georges Bank southward to Cape Hatteras	Generally, <50	Bottom habitats attached to variety of hard bottom types, macroalgae, sand, and mud
Ocean quahogs	Juveniles and adults	Continental shelf from southern New England and Georges Bank to Virginia	9-244	In substrate to depth of 3 ft
Scup	Juveniles	Continental shelf between southwestern Gulf of Maine and Cape Hatteras, North Carolina and in nearshore and estuarine waters between Massachusetts and Virginia	No information	Benthic habitats, in association with inshore sand and mud substrates, mussel and eelgrass beds
Scup	Adults	Continental shelf and nearshore and estuarine waters between southwestern Gulf of Maine and Cape Hatteras, North Carolina	No information, generally overwinter offshore	Benthic habitats
Summer flounder	Juveniles	Continental shelf and estuaries from Cape Cod, Massachusetts, to Cape Canaveral, Florida	To maximum 152	Benthic habitats, including inshore estuaries, salt marsh creeks, seagrass beds, mudflats, and open bay areas
Summer flounder	Adults	Continental shelf from Cape Cod, Massachusetts, to Cape Canaveral, Florida, including shallow coastal and estuarine waters during warmer months	To maximum 152 in colder months	Benthic habitats
Spiny dogfish	Juveniles	Primarily the outer continental shelf and slope between Cape Hatteras and Georges Bank and in the Gulf of Maine	Deep water	Pelagic and epibenthic habitats

Spiny dogfish	Female sub-adults	Throughout the region	Wide depth range	Pelagic and epibenthic habitats
Spiny dogfish	Male sub-adults	Primarily in the Gulf of Maine and on the outer continental shelf from Georges Bank to Cape Hatteras	Wide depth range	Pelagic and epibenthic habitats
Spiny dogfish	Female adults	Throughout the region	Wide depth range	Pelagic and epibenthic habitats
Spiny dogfish	Male adults	Throughout the region	Wide depth range	Pelagic and epibenthic habitats
* Unless otherwise noted, common temperature and salinity ranges were derived primarily from inshore and offshore trawl survey data (mostly fall and spring). Temperature and salinity information is meant to supplement the EFH text descriptions; it is not prescriptive.				

5.6 HUMAN COMMUNITIES

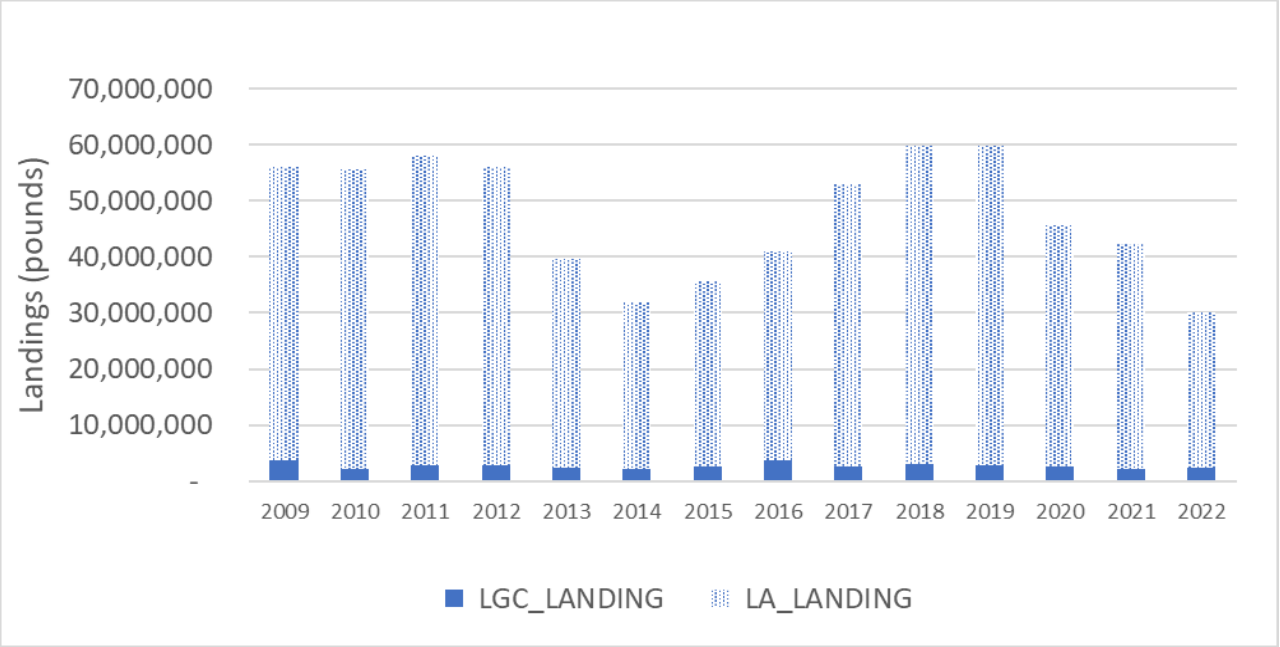
5.6.1 Economic Trends in the Sea Scallop Fishery

5.6.1.1 Trends in landings, prices and revenues

During FY 2009-2022, scallop landings ranged from about 32 to 60 million pounds. In FY 2022, the total scallop landings decreased to about 30 million pounds, i.e., about 33 percent decrease from 2021 landings. Most of the scallop landings were attributed to limited access (LA) vessels. While landings in FY 2020 partly declined due to Covid-19 for the health safety concern of harvesting crews beside a lower projected landing in FW33, landings in more recent years continued to decline due to lower recruitments. Landings from LA vessels decreased from roughly 57 million pounds in 2019 to about 43 million pounds in 2020; 40 million pounds in 2021; and 30 million pounds in 2022 (Figure 4 and Table 22).

Landings by the LAGC vessels declined after 2009 with the implementation of Amendment 11, which transitioned the open access general category fishery to a limited access program and capped overall catch of this component at 5.5% of the ACL. Landings by the LAGC fishery (i.e., IFQ, NGOM and incidental permits) slightly decreased from 2.83 million pounds in 2019 to about 2.69 million in 2020 (Figure 4 and Table 22). The landings in 2021 further declined by about 17% to 2.24 million pounds compared to the 2020 landings. In 2022, LGC landings slightly ticked up to 2.4 million pounds compared to FY 2021.

Figure 4. Scallop landings by permit category, FY 2009-FY 2022.



Note: LGC only landing (IFQ or NGOM but excludes INCI); LA landing = (SC_% =T).

Scallop landings, revenue, and ex-vessel price per pound have fluctuated over FY 2009-FY 2022. Landings and revenue are closely related in that increases in overall landings drives increases in overall revenue. Variability in ex-vessel price is correlated with landings volume – for example, upward trends in landings have led to downward trends in average ex-vessel price per pound (Figure 5 and Table 22). Interannual variability in landings, revenue, and average ex-vessel price per pound over the past ten fishing years is in Figure 5 and Table 22.

Overall scallop price (in 2022 dollars) decreased to about $14.1 per pound in 2022 compared to $17.15 per pound in 2021, i.e., scallop price declined by about 17.42% in 2022 compared to 2021. Scallop revenue fell significantly to about $430 million in 2022 compared to about $737 million in 2021. The fall in scallop revenue in 2022 was due to both decline in landings and prices compared to 2021. While increase in scallop price and revenue in 2021 was due to strong demand for scallop consumption in the U.S., but the demand appears to have waned out to some degree in 2022. Per capita scallop consumption has fallen in 2022 compared to 2021. Continued inflationary pressure in the general economy may have led some consumers seeking other substitutes leading to a downward pressure on scallop prices in 2022 (Figure 5 and Table 22).

The average annual scallop revenue per vessel for both full-time (FT) and full-time small dredge (FT-SMD) fluctuated with annual landings during 2009-2022. Average revenue per FT vessel substantially decreased from $2.18 million in 2021 to $1.26 million in 2022. Similarly, average revenue for FT-SMD vessels also decreased from $1.59 million per vessel in 2021 to $0.92 million per vessel in 2022 (Figure 6, Table 23). The average scallop revenue per FT vessel peaked at $2.27 million (in 2022 dollars) in 2011 as a result of higher landings combined with an increase in ex-vessel prices but declined to lowest $1.26 million in 2022.

The revenue per vessel by IFQs vessel has increased over time since 2011. The revenue per boat peaked at about $387,000 in 2016 but declined to around $262,000 in 2018. The revenue per vessel has gradually increased to about $304,000 in 2019, $330,000 in 2020, $343,000 in 2021. But the revenue per vessel declined to $312,000 in 2022 (Figure 8). While revenues depend on scallop prices, the LAGC scallop price in turn largely dependent on the landing volume of the LA component rather than LAGC landings alone.

Figure 5. Trends in total scallop revenue and ex-vessel price per pound (both in 2022 $) by fishing year (LA & LAGC fisheries)

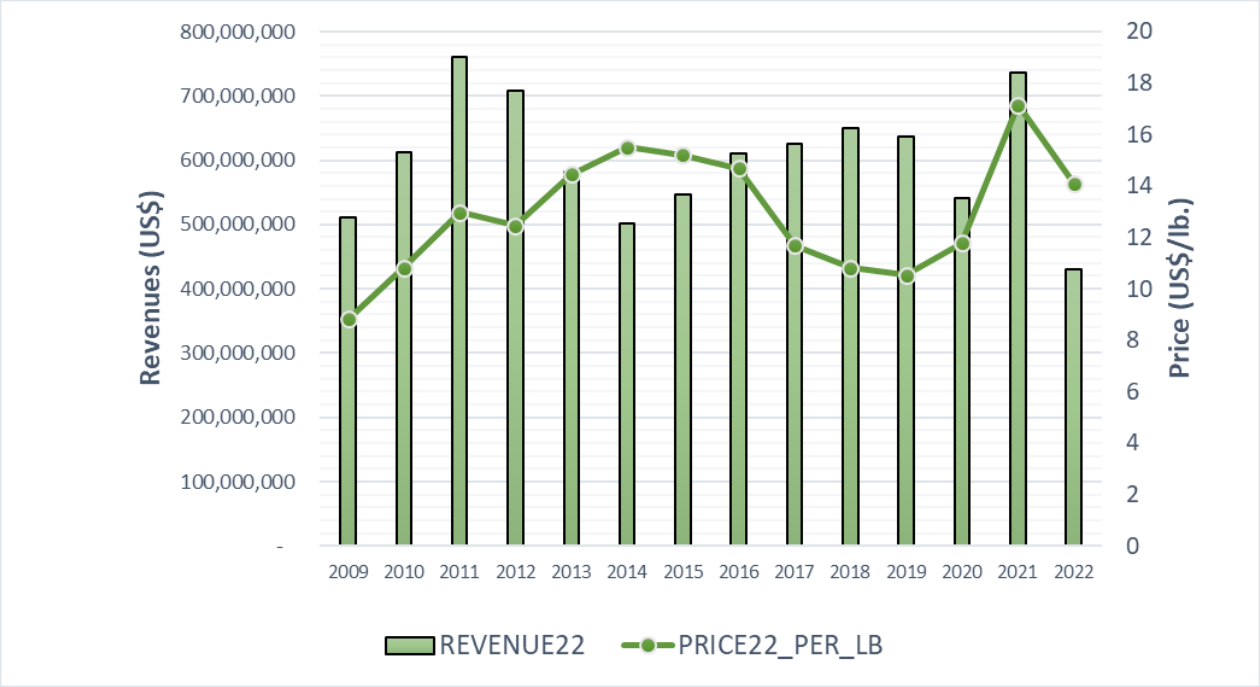


Table 22. Sea scallop landings (also by permit category), revenues, and average prices (FY 2009-FY 2022).

Fish Year	Landings (pounds)			Total Revenues		Price per pound	
	LGC	LA	Total landings	Nominal $	Real $ (in 2022$)	Real $ (in 2022$)	Price (Nominal $)
2009	3,765,498	52,301,210	56,066,708	$372,538,290	$510,326,425	$8.81	$6.43
2010	2,176,421	53,502,413	55,678,834	$453,655,482	$613,047,949	$10.82	$8.01
2011	2,876,064	55,277,566	58,153,630	$578,711,169	$761,462,064	$12.97	$9.86
2012	2,897,587	53,222,797	56,120,384	$552,769,693	$708,679,094	$12.46	$9.72
2013	2,372,607	37,221,866	39,594,473	$459,432,949	$581,560,695	$14.46	$11.43
2014	2,177,549	29,713,331	31,890,880	$401,510,760	$501,888,450	$15.50	$12.40
2015	2,492,802	33,056,153	35,548,955	$437,143,932	$546,429,915	$15.21	$12.17
2016	3,611,174	37,358,052	40,969,226	$493,734,421	$609,548,667	$14.68	$11.89
2017	2,695,546	50,366,902	53,062,448	$519,841,358	$626,314,890	$11.68	$9.70
2018	3,035,292	56,764,997	59,800,289	$552,162,845	$649,603,347	$10.81	$9.19
2019	2,831,163	57,088,022	59,919,185	$553,506,651	$636,214,541	$10.54	$9.17
2020	2,690,329	42,895,068	45,585,397	$476,533,997	$541,515,906	$11.78	$10.37
2021	2,244,217	39,991,097	42,235,314	$685,367,303	$736,954,089	$17.15	$15.95
2022	2,395,273	27,648,224	30,043,497	$429,926,463	$429,926,463	$14.10	$14.10

Table 23. Average scallop landings and revenues (in 2022 dollars) per vessel for FT and FT SMD vessels.

Fish Year	Landings in lbs.		Average Landings per vessel (lbs.)		Average Revenue per vessel (in 2022 dollars)	
	FT	FT SMD	FT	FT SMD	FT	FT SMD
2009	41,411,655	7,298,416	169,027	137,706	$1,511,839	$1,157,978
2010	42,779,955	6,792,986	169,762	130,634	$1,846,484	$1,378,614
2011	44,097,327	7,309,724	175,687	140,572	$2,275,846	$1,828,844
2012	42,749,294	7,063,239	169,640	135,832	$2,117,779	$1,654,379
2013	30,791,957	4,094,184	123,168	78,734	$1,786,060	$1,099,511
2014	24,836,675	3,179,401	98,951	61,142	$1,535,930	$924,520
2015	27,036,665	4,079,589	108,581	78,454	$1,655,648	$1,149,483
2016	29,781,474	4,821,326	119,126	92,718	$1,771,315	$1,247,942
2017	39,668,120	7,173,447	157,413	137,951	$1,828,724	$1,584,432
2018	45,463,988	7,861,387	183,323	145,581	$1,981,683	$1,562,894
2019	44,174,333	9,036,925	177,407	167,350	$1,863,458	$1,724,730
2020	34,571,542	5,849,129	138,286	106,348	$1,619,978	$1,201,365
2021	31,729,538	5,610,754	125,911	102,014	$2,178,405	$1,586,398
2022	22,321,610	3,710,898	90,006	70,017	$1,256,700	$917,412

Figure 6. Trends on average scallop landings per full-time vessel by permit category.

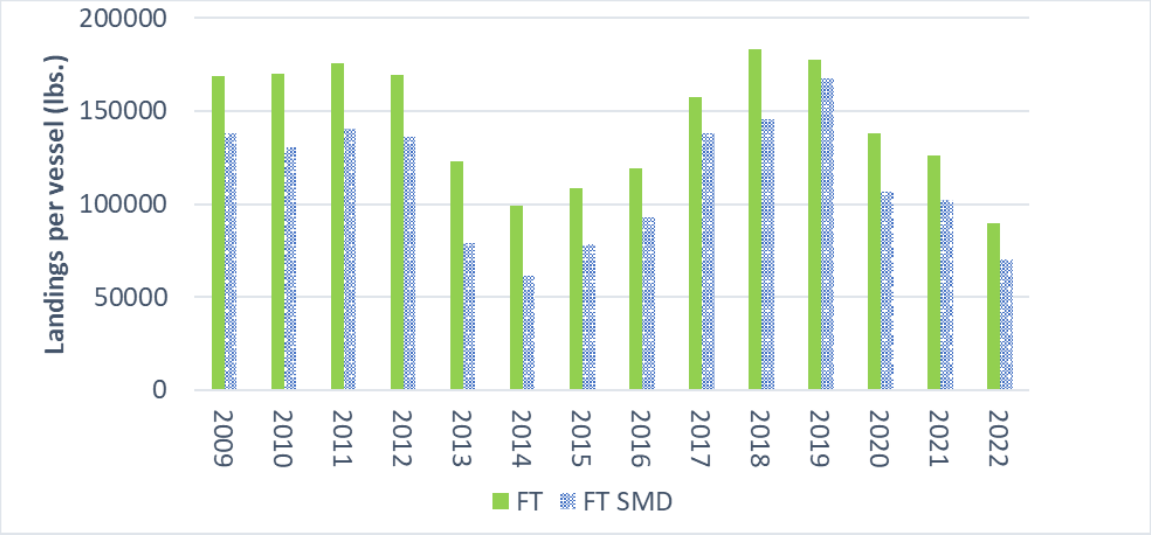


Figure 7. Trends in average scallop revenue per full-time vessel by permit category (in 2022 dollars)

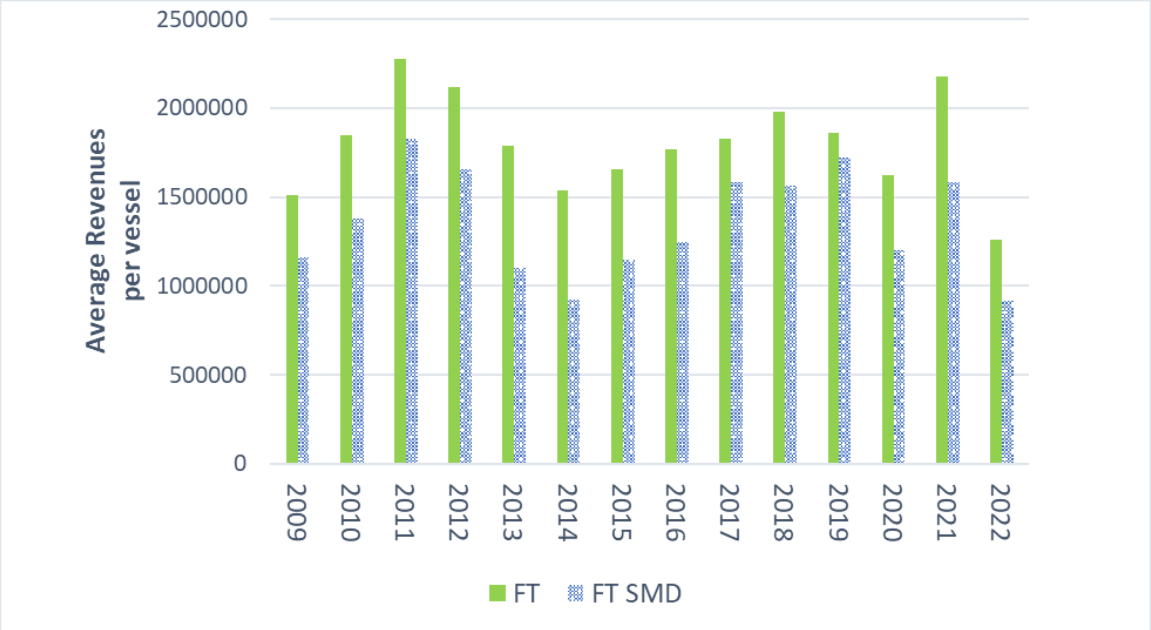
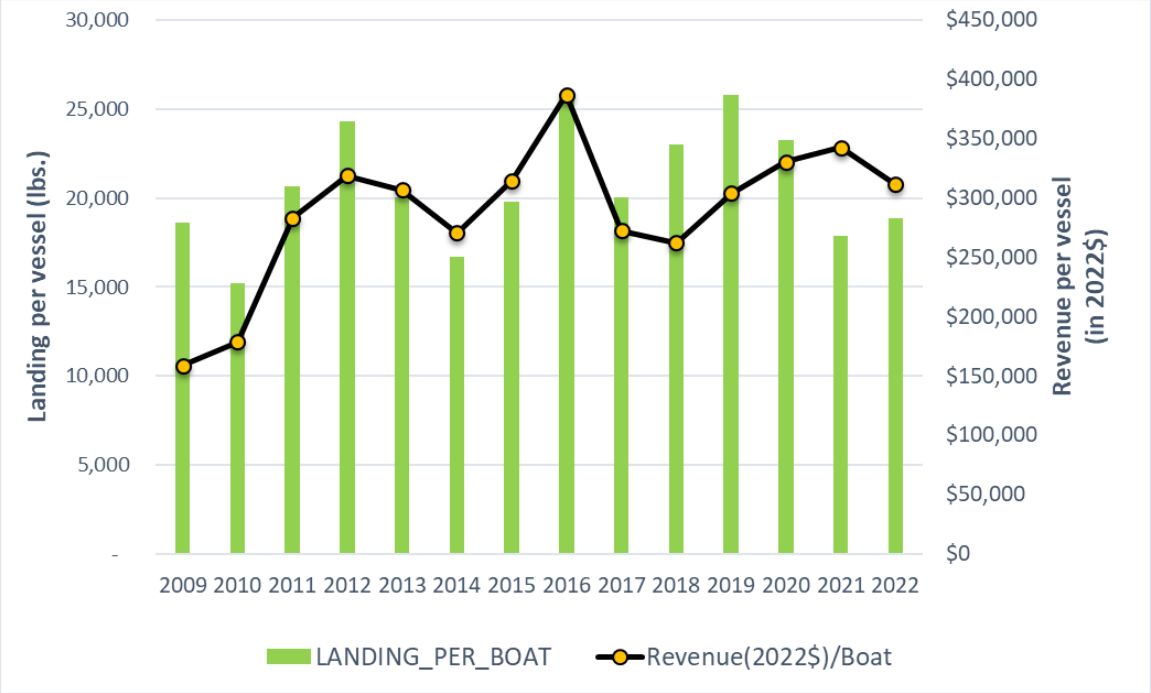


Figure 8. Average scallop landings and scallop revenue per vessel (in 2021 dollars) for LAGC-IFQ only boats



5.6.1.1.1 Trends in landings by permit category for limited access vessels

Most LA category effort is from vessels using scallop dredges, including small dredges. There are 11 full-time limited access vessels authorized to use a trawl (FT-NET; Table 24). shows that the percentage of landings by

FT trawl permits has remained around 3% of total limited access scallop landings in recent years (Table 25).[4] About 80% of the scallop pounds were landed by vessels with full-time dredge (FT) permits and 13% landed by vessels with full-time small dredge (FT-STD) permits in 2022. Including the FT-NET vessels that use dredge gear, the percentage of scallop pounds landed by dredge gear amounted to about 96% of the total scallop landings during FY 2009-2022.

Table 24. Scallop landings (lb) by limited access vessels by permit category

Fish Year	'FT'	'FT-SMD'	'FT-NET'	'PT'	'PT-SMD'	Total (lb.)
2009	41,411,655	7,298,416	1,847,312	226,968	1,516,859	52,301,210
2010	42,779,955	6,792,986	1,788,545	238,648	1,902,279	53,502,413
2011	44,097,327	7,309,724	1,937,170	211,192	1,722,153	55,277,566
2012	42,749,294	7,063,239	1,756,899	210,977	1,442,388	53,222,797
2013	30,791,957	4,094,184	1,226,997	154,673	954,055	37,221,866
2014	24,836,675	3,179,401	880,098	107,759	709,398	29,713,331
2015	27,036,665	4,079,589	933,717	140,919	865,263	33,056,153
2016	29,781,474	4,821,326	1,279,350	199,145	1,276,757	37,358,052
2017	39,668,120	7,173,447	1,740,087	218,980	1,566,268	50,366,902
2018	45,463,988	7,861,387	1,619,563	-	1,820,059	56,764,997
2019	44,174,333	9,036,925	1,954,719	-	1,922,045	57,088,022
2020	34,571,542	5,849,129	1,283,172	-	1,191,225	42,895,068
2021	31,729,538	5,610,754	1,418,312	-	1,232,493	39,991,097
2022	22,321,610	3,710,898	899,976	-	715,740	27,648,224

Table 25. Percentage of scallop landings by limited access vessels by permit category

Fish Year	'FT'	'FT-SMD'	'FT-NET'	'PT'	'PT-SMD'
2009	79.18	13.95	3.53	0.43	2.9
2010	79.96	12.7	3.34	0.45	3.56
2011	79.77	13.22	3.5	0.38	3.12
2012	80.32	13.27	3.3	0.4	2.71
2013	82.73	11	3.3	0.42	2.56
2014	83.59	10.7	2.96	0.36	2.39
2015	81.79	12.34	2.82	0.43	2.62
2016	79.72	12.91	3.42	0.53	3.42
2017	78.76	14.24	3.45	0.43	3.11
2018	80.09	13.85	2.85	-	3.21
2019	77.38	15.83	3.42	-	3.37
2020	80.6	13.64	2.99	-	2.78
2021	79.34	14.03	3.55	-	3.08

[4] There were only 11 FT trawl permits in 2015. VTR data during 2009-2013 showed that over 90% of the scallop pounds by the FT trawl permitted vessels were landed using dredge gear (10 vessels) since these vessels are allowed to use dredge gear even though they have a trawl permit. All part-time trawl and occasional trawl permits were converted to small dredge vessels.

2022	80.73	13.42	3.26	-	2.59

5.6.1.1.2 Trends in landings for the Limited Access General Category IFQ component

Beginning FY 2010, the LAGC IFQ component was allocated 5% of the estimated scallop catch resulting in a decline in landings by the general category vessels[5] compared to years prior. The Council's IFQ program report presented in June 2017 provides a detailed review of the trends of the IFQ fishery during 2010-2015. Table 5 presents the number of LAGC IFQ-only permits (i.e., excluding LA vessels with IFQ permits) and their scallop landings during 2009-2022. In FY 2022, the landings by LAGC IFQ vessels slightly decreased to 1.8 million pounds compared to 2.03 million pounds in FY 2021.

Table 26. Active LAGC IFQ vessels and landings (excluding LA vessels w/ IFQ permits), FY 2009 to FY 2022.

Fish Year	No. of Permit (IFQ only)	IFQ only landings (lb)	Fish Year	No. of Permit (IFQ only)	IFQ only landings (lb)
2009	202	3,759,904	**2016**	135	3,493,944
2010	143	2,170,666	**2017**	129	2,588,370
2011	139	2,870,826	**2018**	123	2,828,934
2012	118	2,869,312	**2019**	101	2,605,933
2013	115	2,302,402	**2020**	106	2,466,480
2014	126	2,103,751	**2021**	114	2,038,782
2015	122	2,413,760	**2022**	96	1,811,457

5.6.1.2 Trends in effort allocations and LPUE

With the implementation of Amendment 10, LA vessels were allocated days-at-sea (DAS) for open areas and area specific access area trips with no open area trade-offs.[6] Total DAS usage for the LA component averaged about 25,000 days during 2009-2012, ranged from 16,000 to 19,000 days during 2013-2015, and has increased to around 23,400 days during 2016-2018. During 2019-2021, total DAS in the LA fleet is over 25,000 (Figure 9).[7] Between 2009 and 2021, total DAS usage by all LA vessels have ranged from just over 27,000 DAS (in 2010) to just over 16,000 DAS (in 2014) (Figure 9). LA DAS usage is driven by the number of open-area DAS allocated to the FT LA fleet, the number of access area trips allocated to FT LA vessels, and LPUE in access areas. While LPUE increased from FY 2016 to FY 2018, increasing in access area allocations contributed to total days fished. LPUE for LA vessels kept declining from FY 2019 to FY 2021. Figure 10 shows that LPUE for full-time dredge (FT) vessels has been consistently higher than LPUE for full time small dredge (FT-SMD) vessels, and that LPUE for both categories has trended in a similar manner between 2009 and 2021. In FY

[5] The general category scallop fishery has always been a comparatively small but diverse part of the overall scallop fishery. Beside LAGC-IFQ permits, there is also a separate limited entry program for general category fishing in the Northern Gulf of Maine (NGOM). Furthermore, a separate limited entry incidental catch permit (INCI) was adopted that will permit vessels to land and sell up to 40 pounds of scallop meat per trip while engaged in other fisheries. During the transition period to the full implementation of Amendment 11, the general category vessels were allocated 10% of the scallop TAC.

[6] Although the vessels could no longer use their access area allocations in the open areas, Amendment 10 and Frameworks 16 to 18 continued to include an automatic DAS charge of 12 DAS for each access area trip until it was eliminated by NMFS.

[7] The total day-at-sea (TDAS) includes transit time and the time spent in scallop fishing in both open and access areas. LPUE estimates derived is, thus, for all areas.

2021, LPUE for FT and FT-SMD vessels were 1,699 pounds per day and 1,178 pounds per day, respectively. LPUEs have trended down since FY 2019 and are near the lowest level (Figure 10).

DAS for LAGC IFQ vessels (IFQ only) declined substantially by about 40 percent from its highest level at 7,524 DAS in 2016 to 4,606 DAS in 2021. LPUE for LAGC IFQ vessels was lower during the 2013-2017 time period compared to the FY 2009-2012 time period. LPUE for LAGC IFQ vessels increased from 477 pounds per day in 2016, to 697 pounds per day in 2019 but declined to 663 pounds per day in 2021 (Figure 11).

Figure 9. Total DAS-used (Date landed – Date sailed) and LPUE by all LA vessels (includes LA vessels with LAGC permit)

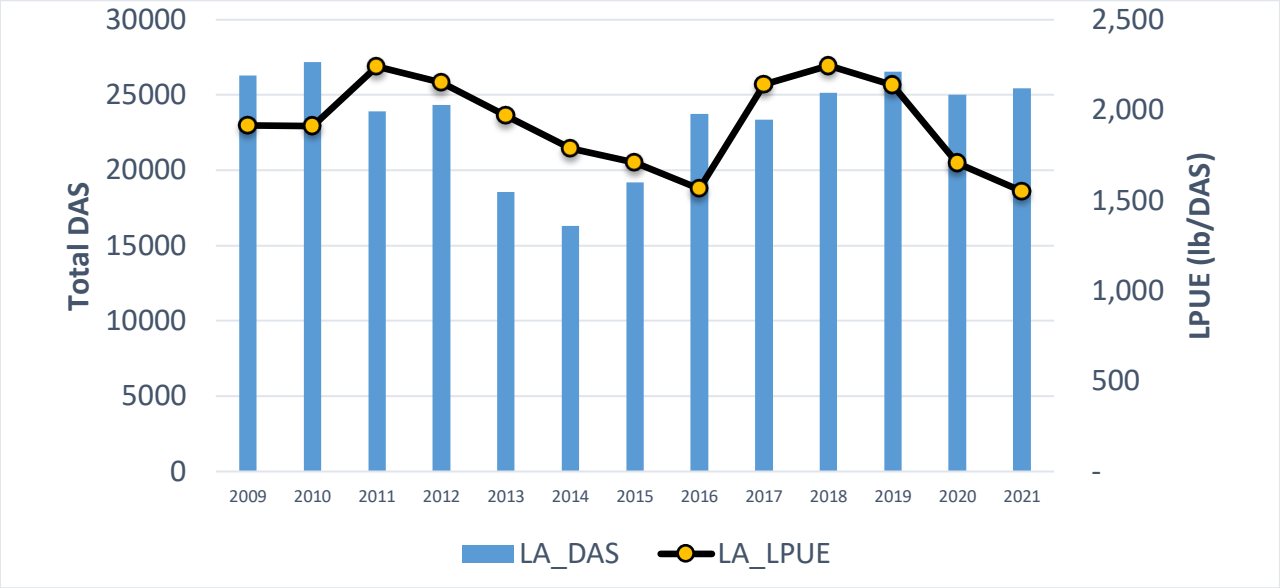


Figure 10. LPUE for full-time LA vessels by permit category (includes steam time)

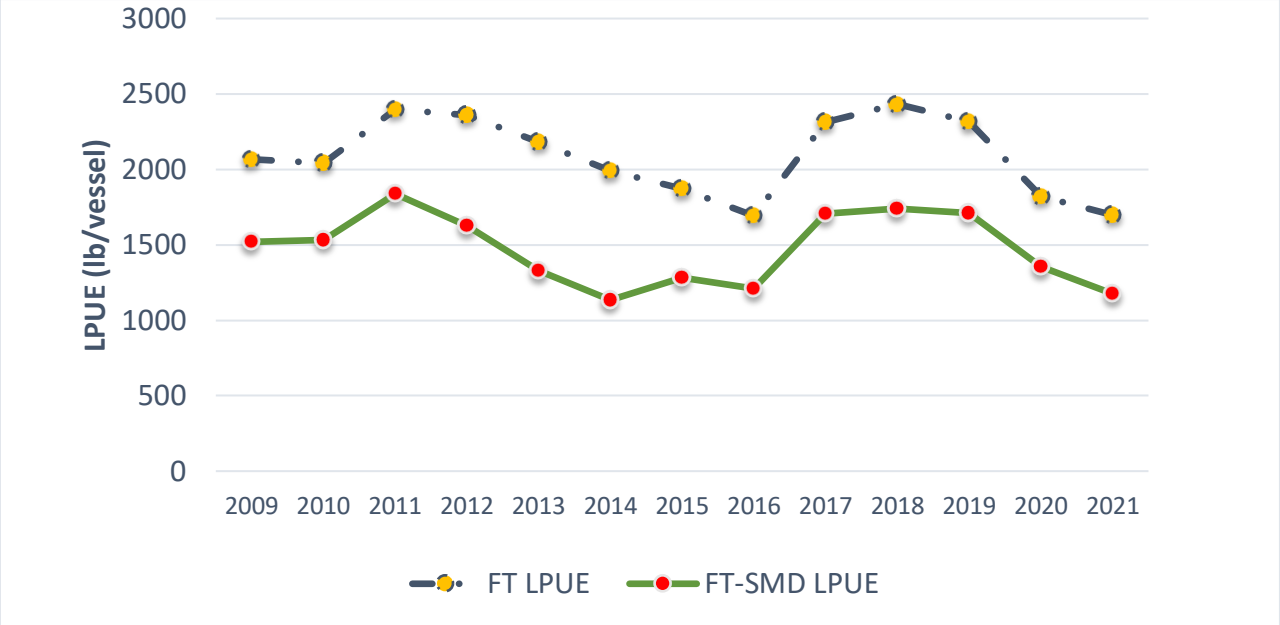


Figure 11. LPUE and DAS-used for LAGC-IFQ only vessels (includes steam time, excludes LA vessels with IFQ permit)

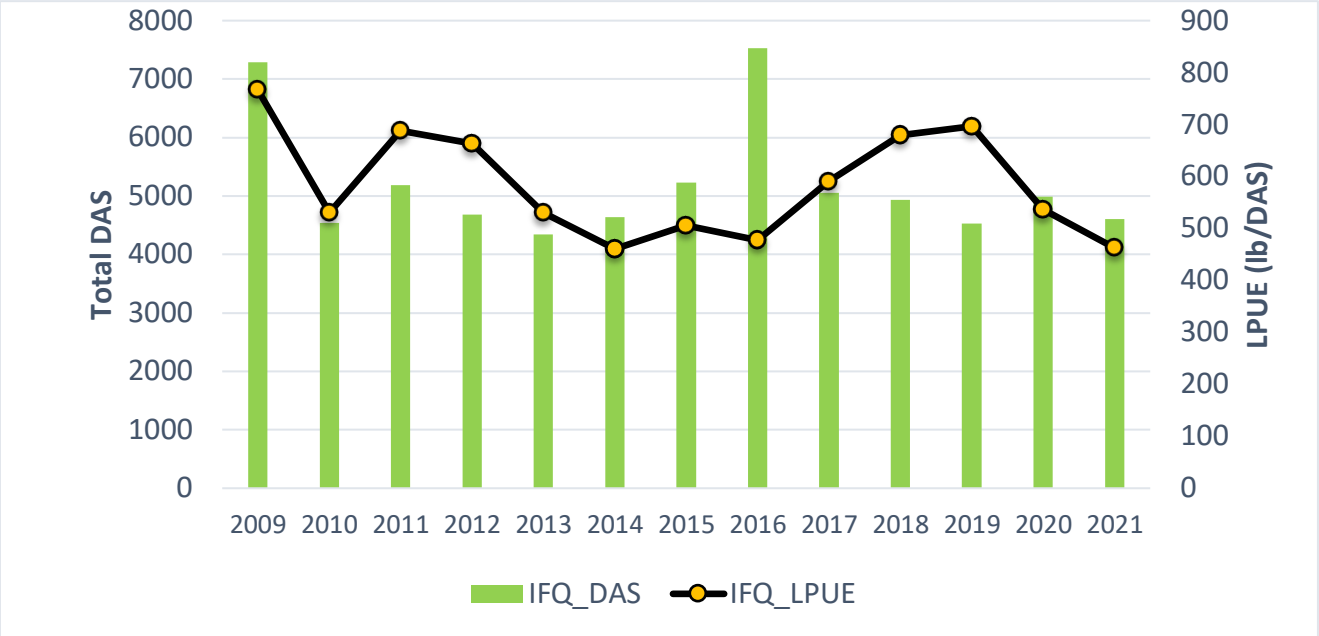


Table 27. DAS and access area allocations per full-time LA vessel (FW19-FW38)

Year	Action	DAS	AA trips	CA I	CA II	NLS	HC	ETA	DMV	NYB	Poss. Limit
2008	FW19	35	5	Closed	Closed	1 trip	Closed	4 trips	Closed		18,000
2009	FW19	42	5	Closed	1 trip	Closed	Closed	3 trips	1 trip		18,000
2010	FW21	38	4	Closed	Closed	1 trip	Closed	2 trips	1 trip		18,000
2011	FW22 and EA	32	4	1.5 trips	0.5 trips	Closed by emergency	1 trip	converted to open area	1 trip		18,000
2012	FW22 and EA	34	4	1 trip**	1 trip	0.5 trips	1.5 trips	Closed (12/12/2012 by EA)	Closed by EA (trips converted to CA1)		18,000
2013[1]	FW24	33	2	118 trips***	182 trips	116 trips	210 trips	Closed	Closed		13,000
2014[1]	FW25	31	2	Closed	197 trips	116 trips	Closed	Closed	313 trips****		12,000
2015	FW26	30.86	3 *****	Closed	Closed	Closed	Merged into one Mid-Atlantic AA, but inshore part of ETA closed				17,000
2016	FW27	34.55	3	Closed	Closed	Closed ~	Merged into one Mid-Atlantic AA, but inshore part of ETA closed				17,000
2017	FW28	30.41	4	Closed	1	1	1, plus another trip to ETA rotational area				18,000
2018	FW29	24	6	1	Closed	2 NLS-W, 1 NLS-S	2				18,000
2019	FR30	24	7	1	Closed	3 in NLS-W	3				18,000
2020	FW32	24	5	.5 FLEX	1	.5 NLS-North, 1 NLS-South	2				18,000
2021	FW33	24	4	856 GC trips, RSA	1.5	1.5 NLS-South	1				18,000
2022	FW34	24	3	GC Trips	2	1 NLS-South				Closed	15,000
2023	FW36	24	2	Closed	2	Closed	Open Bottom, ETA closed			Closed	12,000
2024	FW38	20	3	GC Trips	2	Closed	Open Bottom			1	12,000

[1] Access area trips were allocated to FT LA vessels using a lottery. Numbers shown are total trips allocated per area (not per vessel).
* FW18 also allowed vessels to exchange 2006 CAII and NLS trips for ETA 2007 trips
**1 trip after emergency action May 2012 (157 vessels get initial trip per FW22 and 156 get CA1 trip converted from initial DMV trip)
*** FW25 then allows unused trips to be carried over to future year
**** Vessels given choice of Delmarva trip or 5 DAS
***** Vessels were not allocated trips in access areas, instead a poundage was allocated with a possession limit
~ NLS-N open to LAGC only
+ Information in this table prior to FY2008 and before the implementation of limited access program in scallop fishery is available in FW30 or preceding scallop frameworks.

5.6.1.2.1 Open Area DAS, Landings, and LPUE

Open area DAS for an individual FT vessel in different fishing year since 2008 along with the status of access areas and possession limit is presented in Table 27.

Average open area LPUE estimates from fishing year 2009 to 2023 are shown in Table 28. Open area landings by month and fishing year are shown in Table 29. Open area days-at-sea used by month and fishing year are shown in Table 30. Open area LPUE has declined in recent years are provided in Table 7. In FY 2022, open area TDAS was 7,777 days with total landings of 15.85 million pounds. LPUE in open areas is estimated to be about 1,937 pounds per DAS. They are all lower compared to FY 2021.

Table 28. Average open area LPUE (lb per day) by month and fishing year (source: GARFO).

FY/month	1	2	3	4	5	6	7	8	9	10	11	12	Annual average LPUE
2010	2274	2385	2674	2733	2544	2306	2333	2283	2258	1979	1973	1918	2,305
2011	2220	2346	3197	2977	3019	2851	2767	2813	2509	2193	1822	1791	2,542
2012	2759	2246	3018	2865	2903	2946	3132	2687	2304	2097	1912	2633	2,625
2013	1966	1770	3572	3232	3113	2739	2526	2293	2119	1957	1508	1528	2,360
2014	1547	1050	2381	2552	2402	2098	1712	1849	1710	1520	1149	1381	1,779
2015	1831	1429	1829	1754	1965	1645	1432	1324	1077	986	1139	1225	1,470
2016	1491	1196	1856	1941	1976	1891	1829	1834	1697	1453	1199	1377	1,645
2017	1881	2573	4496	2593	3150	2707	2615	2580	2493	2073	1587	1573	2,527
2018	2466	2809	1762	3293	2693	2646	2457	2372	2036	2004	1581	1660	2,315
2019	1845	1827	1733	3811	2516	2908	2546	2215	1946	1484	1557	1407	2,150
2020	1522	1573	1389	2549	1825	2041	1889	1738	1420	1243	1011	1421	1,635
2021	1947	2322	1680	2649	2013	2195	2352	2062	1740	1492	1276	1920	1,971
2022	1985	1676	1889	2125	2191	2321	2149	1961	1939	1654	1711	1648	1,937
2023				2900	2557	2051	2000	1290					2,160

Table 29. Open area landings (lb) by month and fishing year (source: GARFO).

FY/month	1	2	3	4	5	6	7	8	9	10	11	12	Annual open area landings
2010	601,430	1,348,144	1,490,826	4,198,617	6,227,654	4,265,957	1,272,294	2,856,322	4,187,550	2,874,247	1,077,726	482,370	30,883,137
2011	631,746	1,423,042	2,361,158	4,084,903	7,486,840	6,535,804	4,206,027	265,114	842,757	1,164,417	536,362	273,048	29,811,218
2012	761,229	1,092,557	1,675,044	3,522,647	6,863,266	5,726,127	2,713,356	3,188,781	1,380,436	1,084,992	316,783	787,484	29,112,702
2013	489,596	1,252,163	2,115,822	4,026,339	6,311,771	3,862,451	3,270,333	2,944,480	2,229,762	961,388	218,140	343,443	28,025,688
2014	336,912	381,396	1,330,593	4,740,409	5,236,304	3,421,413	1,889,745	1,724,928	1,627,095	621,174	285,168	173,124	21,768,261
2015	189,765	757,663	968,719	2,894,121	2,780,860	2,371,400	2,128,562	1,721,113	713,456	339,010	246,206	234,019	15,344,894
2016	480,579	845,343	1,153,923	1,213,223	3,628,565	3,615,671	3,170,413	2,790,148	1,764,465	706,162	368,702	263,806	20,001,000
2017	298,964	1,062,504	3,630,766	833,348	3,089,281	3,200,933	3,393,067	4,061,477	1,884,869	2,114,396	550,909	298,966	24,419,480
2018	684,099	1,284,265	1,651,469	2,141,553	2,076,783	3,253,432	2,884,411	2,372,599	1,115,999	981,173	373,474	295,472	19,114,729
2019	456,867	738,496	1,926,526	1,025,257	587,936	2,505,956	4,186,956	2,847,045	1,491,380	518,513	122,454	74,602	16,481,988
2020	460,246	945,043	1,883,793	541,635	285,370	1,662,687	2,753,502	1,833,463	1,361,786	601,836	165,599	176,026	12,670,986
2021	538,111	897,633	1,366,739	4,252,370	2,277,308	1,323,483	2,049,290	1,954,617	1,427,089	686,305	205,078	267,551	17,245,574
2022	506,779	758,335	1,575,284	1,241,477	2,320,959	3,001,197	2,117,632	1,736,235	1,562,333	854,692	116,521	60,726	15,852,170
2023				961,251	2,807,529	2,618,198	3,143,966	1,064,681					10,595,625

Table 30. Open area days-at-sea used by month and fishing year (source: GARFO).

FY/month	1	2	3	4	5	6	7	8	9	10	11	12	Annual open area DAS used
2010	264	565	557	1,536	2,448	1,850	545	1,251	1,854	1,452	546	251	13,121
2011	285	607	739	1,372	2,480	2,292	1,520	94	336	531	294	152	10,702
2012	276	487	555	1,229	2,365	1,944	866	1,187	599	517	166	299	10,490
2013	249	708	592	1,246	2,027	1,410	1,295	1,284	1,052	491	145	225	10,724
2014	218	363	559	1,858	2,180	1,630	1,104	933	952	409	248	125	10,579
2015	104	530	530	1,650	1,415	1,442	1,487	1,300	662	344	216	191	9,871
2016	322	707	622	625	1,837	1,912	1,733	1,522	1,040	486	308	192	11,304
2017	159	413	1,614	321	981	1,183	1,297	1,574	756	1,020	347	190	9,855
2018	277	457	937	650	771	1,230	1,174	1,000	548	490	236	178	7,948
2019	248	404	1,112	269	234	862	1,644	1,286	767	349	79	53	7,306
2020	302	601	1,356	212	156	814	1,458	1,055	959	484	164	124	7,686
2021	276	387	813	1,605	1,131	603	871	948	820	460	161	139	8,215
2022	255	453	834	584	1,059	1,293	985	886	806	517	68	37	7,777
2023				331	1,098	1,276	1,572	825					5,103

5.6.1.3 Trends in the size composition of scallop landings

The share of market grades as a proportion of total scallop landings has fluctuated over time. Inter-annual variation is driven by the size/age of year classes in the fishery, as well as the timing of harvest (meat weight anomaly). Table 31 and Table 32 illustrate landings by market grades in pounds and as a percentage to total landings. In FY 2022, U10 landing share slightly declined to 13 percent from 14 percent in FY 2021.

Table 31. Scallop landings by market category (lb)

FY	U10	11 to 20	21 to 30	31+	Unknown	Grand Total
2009	8,426,450	35,799,075	12,193,737	172,283	1,327,049	58,090,058
2010	8,770,955	36,052,201	10,831,759	63,244	939,048	56,719,863
2011	8,543,436	45,260,311	3,256,836	306,256	1,339,491	59,011,885
2012	10,485,521	41,587,639	3,486,843	63,484	1,234,715	56,921,686
2013	8,666,779	24,780,078	5,564,030	125,631	1,076,312	40,337,729
2014	8,046,766	19,084,369	4,079,070	286,378	873,788	32,652,382
2015	6,115,533	21,138,141	7,719,681	170,252	772,211	36,078,514
2016	4,720,193	18,774,077	14,691,792	2,202,112	1,141,890	43,706,231
2017	10,186,798	29,399,041	12,655,069	388,708	979,780	53,996,717
2018	10,856,965	41,365,184	6,930,184	65,768	880,567	60,164,235
2019	11,944,335	38,171,190	8,154,785	1,061,243	1,053,266	61,365,033
2020	7,680,431	26,586,397	7,013,746	3,967,575	713,057	49,417,580
2021	6,056,458	21,644,829	9,818,605	4,645,150	806,626	46,148,572
2022	4,018,250	18,175,285	7,063,054	535,905	700,965	30,702,069

Table 32. Size composition of scallops (%)

FY	U10	11 to 20	21 to 30	31+	Unknown
2009	14.55	61.81	21.05	0.30	2.29
2010	15.48	63.63	19.12	0.11	1.66
2011	14.55	77.10	5.55	0.52	2.28
2012	18.44	73.14	6.13	0.11	2.17
2013	21.55	61.62	13.84	0.31	2.68
2014	24.86	58.96	12.60	0.88	2.70
2015	17.03	58.85	21.49	0.47	2.15
2016	11.37	45.21	35.38	5.3	2.75
2017	19.00	54.84	23.61	0.72	1.83
2018	18.07	68.83	11.53	0.11	1.47
2019	19.78	63.21	13.50	1.75	1.74
2020	16.71	57.84	15.26	8.63	1.55
2021	14.09	50.37	22.85	10.81	1.88
2022	13.18	59.6	23.16	1.76	2.3

Table 33. Composition of scallop revenue by size (% of total scallop revenue)

Fish Year	U10	11 to 20	21 to 30	31+	Unknown
2009	18.1	59.37	20.08	0.27	2.18
2010	20.18	58.37	19.59	0.12	1.73
2011	14.93	76.48	5.85	0.52	2.22
2012	19.29	72.4	6.16	0.11	2.04
2013	23.17	60.43	13.85	0.32	2.25
2014	27.89	56.48	12.11	0.77	2.75
2015	21.04	56.67	19.95	0.45	1.94
2016	16.52	45.46	31.16	4.08	2.74
2017	25.18	50.2	21.88	0.77	2.07
2018	20.79	65.43	12.09	0.85	1.58
2019	22.37	61.36	12.69	3.62	2.04
2020	18.30	59.41	14.87	6.68	1.73
2021	22.51	48.53	19.84	7.20	1.92
2022	19.78	55.67	20.65	1.33	2.57

Larger scallops fetched higher prices than smaller scallops which led to an increase in overall average scallop prices since FY 2009 (Table 34). An increase or decrease in prices of U10 scallops corresponds to annual landings for this market category. Price per pound (in 2022 dollars) for U10 landings reached a high point in 2021 averaged $27 but declined to $23 in 2022. Average U10 price was record high in 2021. Prices reached over $35 per pound for some months in 2021, but U10 prices have come down significantly more recently in the beginning of FY 2023.

The average price of 11-20 count scallops was around $14.63 per pound, and average price of 21-30 and 31-40 count scallops ranged between approximately $12.58 and $13.12 per pound in FY 2022. Overall scallop prices in FY 2022 were closer to a record high in FY 2021 for most market grade scallops.

Table 34. Price of scallop per pound by market category (in 2022 dollars)

FY	U10	11-20	21-30	31-40	41+	Price
2009	$10.93	$8.49	$8.04	$8.50	$8.99	$11.84
2010	$14.32	$10.89	$11.25	$11.21	$10.98	$13.30
2011	$14.40	$13.18	$13.81	$13.55	$10.53	$17.46
2012	$13.95	$12.60	$12.86	$12.20	-	$20.22
2013	$16.76	$14.42	$14.55	$13.64	$10.75	$17.69
2014	$18.11	$15.39	$15.11	$13.49	$8.71	$17.68
2015	$18.98	$14.76	$14.51	$13.55	$8.86	$17.12
2016	$21.08	$14.89	$13.32	$11.44	$11.51	$15.81
2017	$15.94	$12.08	$11.46	$10.83	$10.91	$14.35
2018	$13.40	$10.83	$11.12	$10.68	$13.82	$12.80
2019	$13.37	$10.97	$10.32	$9.45	$9.21	$12.09
2020	$14.56	$14.42	$12.32	$8.32	$9.06	$14.42
2021	$27.23	$18.09	$15.64	$12.38	$12.16	$19.34
2022	$23.73	$14.63	$13.12	$12.58	$11.34	$15.58

5.6.1.4 Trends in permits by permit plan and category

Table 35 shows the number of active limited access vessels by permit category during 2009-2022 fishing years. The scallop fishery is primarily full-time permits, with a small number of part-time (PT) permits. There are no occasional (OC) permits left in the fishery since 2009, as these were converted to part-time small dredge (PT-SMD). Of these permits, the majority are dredge vessels, with a small number of full-time small dredge (FT-SMD) and full-time trawl (FT-NET) permit holders.[8] There were 244 active FT LA vessels in 2022.

The number of LA vessels that also held an LAGC permit is shown in Table 36. The number of unique limited access permits in 2022 is shown in Table 35. The number of LAGC permits declined considerably after Amendment 11 implementation (in 2009; Table 38). The numbers of LAGC permits by category, excluding the LAGC permits held by LA vessels, are in

Table 39. The trends in the estimated number of active LA vessels are shown in Table 17 by permit plan. The number of full-time permits authorized to use trawls (FT-NET) has remained consistent over time, though most of these vessels have elected to use dredge gear in recent years (Table 17).[9] Table 18 shows the number of active LAGC vessels by permit category excluding those LA vessels which have both LA and LAGC permits.

Table 35. Number of limited access vessels by permit category and gear

Permit Category	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
FT	246	251	252	252	250	249	250	250	249	249	243	250	250	244
FT-Net	12	11	11	11	11	12	11	11	11	10	11	11	11	10
FT-SMD	54	52	52	51	52	53	51	51	51	54	54	55	54	53
Total FT	**312**	**314**	**315**	**314**	**313**	**314**	**312**	**312**	**311**	**313**	**308**	**316**	**315**	**307**
PT	2	2	2	2	2	2	2	2	2	1	0	0	0	0
PT-SMD	30	32	32	31	30	32	31	32	31	31	32	30	29	27
Total PT	**32**	**34**	**34**	**33**	**32**	**34**	**33**	**34**	**33**	**32**	**32**	**30**	**29**	**27**
Total	**344**	**348**	**349**	**347**	**345**	**348**	**345**	**346**	**344**	**345**	**340**	**346**	**344**	**334**

Table 36. LAGC permits held by limited access (LA) vessels by permit category.

CY	LA vessels w/ IFQ permit	LA vessels w/ NGOM permit	LA vessels w/ INCI permit
2009	41	26	112
2010	40	27	113
2011	40	27	113
2012	41	27	111
2013	38	27	112
2014	40	27	113
2015	40	27	113
2016	40	27	113
2017	40	27	113
2018	39	27	113
2019	40	27	109
2020	41	25	113

[8] The permit numbers shown in the Table 35 include duplicate entries because replacement vessels receive new permit numbers and when a vessel is sold, the new owner would get a new permit number.

[9] Most of these vessels (10 out of 11 in 2010) landed scallops using dredge even though they had a trawl permit.

2021	38	28	112
2022	38	52	102

Table 37. Unique scallop permits and category for the 2021 application year

Permit Category	2022	Permit Category	2021
Full-time	244	Part-time	0
Full-time small dredge	53	Part-time small dredge	27
Full-time net boat	10	Part-time trawl	0
Total full-time	**307**	**Total part-time**	**27**
Total Limited Access			**334**

Table 38. LAGC permits (LAGC permits held by LA vessels are included)

	No. of permits qualified under A11 program		
CY	**IFQ**	**NGOM**	**INCI**
2009	238	33	167
2010	198	36	167
2011	181	34	168
2012	164	39	177
2013	156	49	173
2014	166	52	168
2015	163	53	158
2016	172	60	165
2017	166	60	148
2018	166	68	149
2019	150	72	133
2020	143	72	137
2021			
2022			

Table 39. Active LAGC permits after Amendment 11 implementation (excludes LAGC permits held by LA vessels).

CY	IFQ	NGOM	INCI
2009	199	8	57
2010	158	9	54
2011	141	7	55
2012	123	12	66
2013	118	22	61
2014	126	25	55
2015	123	26	45
2016	133	33	52
2017	127	33	35
2018	127	41	36
2019	110	45	24
2020	102	47	24

2021	114	53	23
2022	97	79	18

Table 40. Active vessels (i.e., vessels with scallop landings) during FY 2009-2021

FY	'FT'	'PT'	'FT-SMD'	'PT-SMD'	'FT-NET'	Total
2009	245	2	53	32	11	343
2010	252	2	52	32	11	349
2011	251	2	52	32	11	348
2012	252	2	52	31	11	348
2013	250	2	52	31	11	346
2014	251	2	52	31	11	347
2015	249	2	52	32	11	346
2016	250	2	52	32	11	347
2017	252	2	52	31	11	348
2018	248	0	54	31	10	343
2019	249	0	54	32	11	346
2020	250	0	55	30	11	346
2021	252	0	55	29	11	347
2022	248	0	0	53	28	341

Table 41. No. of active vessels with LAGC permits by permit category (excludes LA vessels w/ LGC permit)

FY	IFQ only	NGOM only	INCI only
2009	202	8	59
2010	143	9	51
2011	139	8	55
2012	118	11	65
2013	115	24	58
2014	126	25	53
2015	122	24	44
2016	135	31	51
2017	129	35	35
2018	123	40	36
2019	101	46	24
2020	106	48	25
2021	114	53	20
2022	96	78	18

5.6.1.5 Trends in limited access (LA only) and "IFQ only" permits by home port and primary port states.

Scallop permits are valuable economic assets because they allow permit holders to access a lucrative fishery. Thus, fishermen are incentivized to conserve the scallop resource and increase productivity to maximize economic benefits. Most LA vessels have home state and primary port states of landing in Massachusetts, followed by New Jersey, Virginia, and North Carolina (Table 42, Table 43). The number of vessels by home

port state and port of landing have remained about same across 2009-2022, suggesting that permit transfers across states are minimal.[10] The number of LAGC IFQ permits are also summarized by both homeport state and primary port state as identified by the permit owner in

Table 44 and Table 45.

Table 42. Number of limited access permits (LA only) by home state

HPST	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
CT	10	10	10	10	9	9	9	10	10	9	8	4	3	4
FL	4	4	4	4	3	3	3	3	3	3	3	3	3	3
MA	145	147	148	149	149	150	145	145	145	147	143	144	148	146
ME	4	3	3	3	3	3	3	3	3	2	2	1	1	1
NC	41	40	39	38	40	39	41	41	38	38	42	44	38	36
NJ	84	90	92	91	92	94	91	92	96	94	98	99	96	94
NY	3	4	3	2	2	1	0	0	1	1	0	0	0	1
PA	5	5	4	3	3	3	3	3	3	3	3	3	2	2
RI	2	3	2	2	2	2	2	2	2	2	2	2	2	2
VA	43	45	45	46	42	44	52	46	45	44	45	46	53	46
Total	**341**	**351**	**350**	**348**	**345**	**348**	**349**	**345**	**346**	**343**	**346**	**346**	**346**	**335**

Table 43. Number of limited access permits (LA only) by primary port state

PPST	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
CT	10	10	10	10	9	9	9	10	10	9	8	4	3	4
MA	146	148	149	150	150	153	148	148	147	149	146	148	152	157
ME	4	3	3	3	3	3	3	3	3	2	2	1	1	1
NC	26	25	24	23	25	25	29	29	27	26	30	31	29	29
NJ	88	93	94	94	94	95	93	95	100	98	102	104	101	98
NY	2	3	3	2	2	1	0	0	1	1	0	0	0	1
PA	1	1	1	1	1	1	1	1	0	0	0	0	0	0
RI	2	3	2	2	2	2	2	2	2	2	2	2	2	2
VA	62	64	64	63	59	60	64	58	56	56	56	56	57	48
Total	**341**	**350**	**350**	**348**	**345**	**349**	**349**	**346**	**346**	**343**	**346**	**346**	**345**	**340**

Table 44. Number of LAGC (IFQ only) permits by home state ports (exclude LA vessels w/ IFQ permit)

HPST	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
CT	3	2	1	2	3	4	3	3	3	3	3	3	4	3
DE	1	2	2	2	2	2	2	2	3	0	1	1	1	0

[10] The Council generally describes changes in the scallop fishery at the community level based on both port of landing, and home port state. A port of landing is the actual port where fish and shellfish have been landed. A home port is the port identified by a vessel owner on a vessel permit application and is where supplies are purchased, or crews are hired. Statistics based on port of landing begin to describe the benefits that other fishing related businesses (such as dealers and processors) derive from the landings made in their port. Alternatively, statistics based on homeport gives an indication of the benefits received by vessel owners and crew from that port. However, during this analysis the PDT in the past have observed that many vessels declare a primary port for the year and it may not always match up with the actual port that a vessel landed the majority of scallop catches for the year. Therefore, these results should take that into consideration.

FL	1	1	0	0	0	0	0	0	0	0	0	0	0	0
GA	1	1	0	0	0	0	0	0	0	0	0	0	0	0
MA	60	44	43	37	36	40	41	44	46	48	42	43	49	48
MD	8	5	4	3	2	2	2	4	3	3	2	3	3	2
ME	9	6	3	4	3	3	5	3	6	9	7	4	4	5
NC	30	22	16	9	10	9	10	12	8	8	6	5	6	3
NH	4	2	3	3	2	2	1	1	1	1	0	0	0	1
NJ	54	48	44	40	39	43	40	43	39	37	32	29	33	28
NY	17	15	15	13	12	13	12	12	11	11	10	10	11	6
PA	1	1	1	1	1	1	0	0	0	0	0	0	0	0
RI	5	5	6	6	6	4	4	4	4	4	4	4	3	3
TX	0	0	0	1	1	1	1	1	1	1	1	0	0	0
VA	5	4	3	3	2	3	2	4	3	3	2	1	1	0
Total	**199**	**158**	**142**	**124**	**119**	**127**	**123**	**133**	**128**	**128**	**110**	**103**	**115**	**99**

Table 45. Number of LAGC (IFQ only) permits by primary port state (excludes LA vessels w/ IFQ permit)

PPST	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
CT	3	2	1	2	3	4	3	4	4	4	4	4	4	3
DE	0	0	0	0	0	0	0	1	1	0	1	1	1	0
FL	2	2	0	0	0	0	0	0	0	0	0	0	0	0
GA	1	1	0	0	0	0	0	0	0	0	0	0	0	0
MA	60	45	44	38	37	41	42	45	47	49	42	43	50	49
MD	10	8	7	6	5	5	5	6	6	4	3	4	3	2
ME	8	5	3	4	3	3	5	3	6	9	7	4	3	5
NC	27	21	15	9	10	9	10	13	9	8	7	4	5	2
NH	4	1	2	2	1	1	0	0	0	0	0	0	0	1
NJ	55	48	45	41	40	44	40	43	39	35	30	30	34	29
NY	17	15	15	13	12	13	12	11	10	10	9	9	11	6
PA	0	0	0	0	0	0	0	0	0	2	2	2	0	0
RI	6	6	6	6	6	4	4	4	4	4	4	4	3	3
VA	5	4	3	3	2	3	2	3	2	3	1	0	1	0
Total	**198**	**158**	**142**	**124**	**119**	**127**	**123**	**133**	**128**	**128**	**110**	**105**	**115**	**100**

5.6.1.6 Foreign trade (import, export, and re-export) of scallops in FY 2017-FY 2022

Historically, Canada, Japan, and China have been the major exporters of various scallop products to the U.S. Recently, the U.S. imported a significant volume of scallops from Argentina and Peru. In FY 2022, the U.S. imported about 47 million lb valued at about $323 million of scallop products primarily from Japan, China, Canada, Argentina, and Philippines. U.S. imports of scallop products in 2022 decreased significantly in both volume and value compared to 2021.

In FY 2021, the top three destinations for U.S. scallop exports have been to Canada, Netherlands, and France. The U.S. exported about 7.92 million pounds or $80 million value of scallop products. Scallop exports in 2022

slightly increased relative to FY 2021. The U.S. also re-exported some of its imports at a re-export value of about $25.66 million, primarily to France and Canada. The re-export value in FY 2022 decreased by about $3 million compared to FY 2021.

Table 46 presents the volume and values (in nominal dollars) of U.S. imports, exports, and re-exports of scallops with major countries during FY 2017-2022. It also provides average import and export prices for scallop products for the same period.

Table 46. Summary of U.S. scallop trades with top five countries during FY 2017-FY 2022.

Import 2022			**Export 2022**			**Re-Export 2022**		
Countries	**Mil lb**	**Mil $**	**Countries**	**Mil lb**	**Mil $**	**Countries**	**Mil lb**	**Mil $**
Japan	13.67	$132.46	**Canada**	1.95	$24.34	**France**	2.99	$17.41
China	11.25	$29.42	**France**	1.65	$11.35	**Canada**	0.88	$7.58
Argentina	8.78	$33.48	**Netherlands**	1.57	$16.57	**Netherlands**	0.04	$0.35
Canada	7.92	$100.29	**Belgium**	0.30	$3.21	**Colombia**	0.01	$0.05
Philippines	1.58	$3.80	**UK**	0.25	$2.58	**Antigua & Barbuda**	0.00	$0.05
Other	4.37	$24.41	**Other**	2.20	$22.49	**Other**	0.02	$0.21
Sum Imports	47.57	$323.85	**Sum Exports**	7.92	$80.54	**Sum Re-Exports**	3.94	$25.66
Import 2021			**Export 2021**			**Re-Export 2021**		
Countries	**Mil lb**	**Mil $**	**Countries**	**Mil lb**	**Mil $**	**Countries**	**Mil lb**	**Mil $**
Japan	17.03	$149.50	Canada	2.76	$31.9	France	3.75	19.60
China	12.95	$32.32	Netherlands	1.56	$15.31	Canada	1.10	8.55
Canada	9.89	$111.82	France	0.41	$4.93	Peru	0.04	0.23
Argentina	7.08	$26.60	South Korea	0.27	$3.14	Japan	0.01	0.18
Peru	5.97	$38.40	UK	0.26	$2.27	Colombia	0.01	0.06
Other	23.66	$35.28	Other	1.39	$14.4	Other	0.01	$.22
Sum Imports	**61.68**	**$393.92**	**Sum Exports**	**6.67**	**$71.95**	**Sum Re-Export**	**4.93**	**$28.84**
Import 2020			**Export 2020**			**Re-Export 2020**		
Countries	**Mil lb**	**Mil $**	**Countries**	**Mil lb**	**Mil $**	**Countries**	**Mil lb**	**Mil $**
Canada	7,99	$81.76	Canada	3.48	$33.32	France	2.04	$11.68
Japan	5,51	$41.43	Netherlands	0.85	$6.20	Canada	1.20	$6.74
Peru	9.93	$36.32	France	0.42	$4.05	Netherlands	0.10	$0.93
Argentina	5.39	$19.28	Belgium	0.29	$2.25	Argentina	0.14	$0.77
China	8.34	$18.85	Uk	0.21	$2.11	Belgium	0.05	$0.28
Other	23.66	197.64	Other	5.25	$47.93	Other	3.53	$20.40
Sum Imports	**41.46**	**$220.01**	**Sum Exports**	**6.75**	**$61.32**	**Sum Re-Export**	**3.55**	**$20.53**
Import 2019			**Export 2019**			**Re-Export 2019**		
Countries	**Mil lb**	**Mil $**	**Countries**	**Mil lb**	**Mil $**	**Countries**	**Mil lb**	**Mil $**
China	7.93	$17.91	Canada	4.03	$39.94	France	2	$12.62
Canada	7.82	$75.70	Netherlands	2.17	$16.19	Canada	0.7	$4.36
Argentina	3.69	$16.05	France	1.51	$14.14	Belgium	0.09	$0.60
Peru	5.43	$22.94	U.K.	0.89	$7.54	China (HK)	0.02	$0.10
Japan	6.39	$53.16	Belgium	0.82	$6.87			
France	1.15	$2.30	Australia	0.34	$2.83			

Other	4.59	$20.98	Other	2.86	$23.80	Other	0.09	$0.58
Sum Imports	**37**	**$209.04**	**Sum Exports**	**12.62**	**$111.31**	**Sum Re-Export**	**2.9**	**$18.26**
Import 2018			**Export 2018**			**Re-Export 2018**		
Countries	**Mil lb**	**Mil $**	**Countries**	**Mil lb**	**Mil $**	**Countries**	**Mil lb**	**Mil $**
China	17.86	$49.06	Canada	4.16	$39.82	France	1.53	$9.63
Canada	8.14	$78.69	Netherlands	2.73	$21.71	Canada	0.61	$4.10
Japan	4.46	$43.86	France	1.57	$14.46	China (HK)	0.08	$0.35
Mexico	4.17	$16.67	Belgium	1.02	$7.81	Netherlands	0.06	$0.51
Argentina	3.89	$19.71	U.K.	0.9	$7.32	U.K.	0.04	$0.42
Other	4.5	$21.65	Other	3.55	$28.41	Other	0.09	$0.66
Sum Imports	**43.02**	**$229.65**	**Sum Exports**	**13.95**	**$119.53**	**Sum Re-Export**	**2.41**	**$15.65**
Import 2017			**Export 2017**			**Re-Export 2017**		
Countries	**Mil lb**	**Mil $**	**Countries**	**Mil lb**	**Mil $**	**Countries**	**Mil lb**	**Mil $**
China	17.86	$49.06	Canada	4.16	$39.82	France	1.53	$9.63
Canada	8.14	$78.69	Netherlands	2.73	$21.71	Canada	0.61	$4.10
Japan	4.46	$43.86	France	1.57	$14.46	China (HK)	0.08	$0.35
Mexico	4.17	$16.67	Belgium	1.02	$7.81	Netherlands	0.06	$0.51
Argentina	3.89	$19.71	U.K.	0.9	$7.32	U.K.	0.04	$0.42
Other	4.5	$21.65	Other	3.55	$28.41	Other	0.09	$0.66
Sum Imports	**43.02**	**$229.65**	**Sum Exports**	**13.95**	**$119.53**	**Sum Re-Export**	**2.41**	**$15.65**
Average Prices (Dollar/Pound) in Current Dollar for Traded Scallops								
Import Price 2017		$6.27	Export Price 2017		$8.69	Re-Export Price 2017		$6.87
Import Price 2018		$5.34	Export Price 2018		$8.57	Re-Export Price 2018		$6.49
Import Price 2019		$5.65	Export Price 2019		$8.82	Re-Export Price 2019		$6.30
Import Price 2020		$5.31	Export Price 2020		$9.07	Re-Export Price 2020		$5.79
Import Price 2021		$6.39	Export Price 2021		$10.79	Re-Export Price 2021		$5.85
Import Price 2022		$6.81	Export Price 2022		$10.17	Re-Export Price 2022		$6.51

5.6.1.7 Trip and Fixed costs

Trip and fixed cost estimates for LA and LAGC IFQ vessels for FY 2022 will be provided in the Appendix for Economic Models.

5.6.2 Northern Gulf of Maine

FY 2023 marked the second NGOM season under new management measures adopted through Amendment 21 to the Scallop FMP. Data on participation in the NGOM area by LAGC vessels since 2010 is provided below, along with information about permit movement within the LAGC component of the fishery.

Table 47. Number of active vessels, total trips, average landings, and trips per vessel in the NGOM management area from 2010 - 2022. NMFS/GARFO, May 15, 2023.

FY	Mean trips per vessel	Active vessels	Total trips	Average catch (lb)
2010	7	11	81	70
2011	10	10	95	62
2012	6	10	60	79
2013	27	18	483	104
2014	20	26	507	156
2015	23	30	682	131
2016	15	38	567	174
2017	7	38	278	197
2018	19	40	751	184
2019	17	45	753	190
2020	22	47	1024	170
2021	14	49	691	190
2022	28	108	2977	207
2023	15	115	1685	208

Table 48. Vessels with multiple sailings/day, and total times this occurred.

FY	Vessels with multi trips	Number of multi trips
2010	0	0
2011	0	0
2012	0	0
2013	0	0
2014	3	3
2015	0	0
2016	2	2
2017	3	3
2018	7	9
2019	7	14

2020	6	6
2021	2	2
2022	18	22
2023	8	12

5.6.3 Fishing Communities

Considering the socioeconomic impacts on fishing communities of proposed fishery regulations is required by NEPA (NEPA 1969) and the MSA, particularly National Standard 8 (MSA 2007) which defines a "fishing community" as "a community which is substantially dependent on or substantially engaged in the harvesting or processing of fishery resources to meet social and economic needs, and includes fishing vessel owners, operators, and crew and United States fish processors that are based in such community" (16 U.S.C. § 1802(17)). Here, "fishing communities" are those with substantial involvement in or dependence on the Atlantic sea scallop fishery.

5.6.3.1 Scallop Fishing Communities Identified

There are over 200 communities that have been a homeport or landing port to one or more active sea scallop vessels since 2010. These ports occur throughout the coastal northeast and Mid-Atlantic, primarily from Massachusetts to Virginia. The level of activity in the sea scallop fishery has varied across time. This section identifies the communities for which sea scallops are particularly important. While the involvement of communities in the sea scallop fishery is described, individual vessel participation may vary. Communities dependent on the sea scallop resource are categorized into primary and secondary port groups. Because geographical shifts in the distribution of sea scallop fishing activity have occurred, the characterization of some ports as "primary" or "secondary" may not reflect their historical participation in and dependence on the fishery.

Primary Port Criteria. The sea scallop fishery primary ports are those that are substantially dependent on or engaged in the fishery, and which are likely to be the most impacted by the alternatives under consideration. The primary ports meet at least one of the following criteria (Table 50):

- At least $5M average annual revenue of sea scallops, FY 2018-2022 (Table 51); or,
- At least 50% of average annual fishing revenue was from sea scallops, FY 2018-2022 (with $500K as a minimum scallop revenue); or
- A ranking of high for engagement in or reliance on the scallop fishery on average in 2018-2022 according to the NOAA Fisheries Community Social Vulnerability Indicators (Table 49).

Secondary Port Criteria. The sea scallop fishery secondary ports are those that may not be as engaged in or dependent on the fishery as the primary ports but are involved to a lesser extent. The secondary ports meet the following criterion:

- At least $600K average annual revenue of sea scallops, FY 2018-2022.
- A ranking of medium-high for engagement in or reliance on the scallop fishery on average in 2018-2022 according to the NOAA Fisheries Community Social Vulnerability Indicators.

Changes to Primary and Secondary Port Criteria. This action updates the criteria developed for Amendment 21 and last used in Framework 36. The scallop fishing engagement and reliance indicators are updated from 2013-2017 to 2018-2022. The scallop revenue data are updated from CY 2010-2017 to FY 2018-2022. Thus, the latest five years of data are used for both criteria. The secondary port revenue threshold has been raised from $500,000

to $600,000 to reflect inflation and the increase in total scallop revenue. Removed from the primary port criteria is "top 10 port by percent of landings each year for either the limited access or the limited access general category scallop permit categories, fishing years 2013-2017." Updated data were not available.

Scallop Primary and Secondary Ports. Based on these criteria, there are 12 primary ports and 14 secondary ports in the sea scallop fishery (Table 50). The primary and secondary ports comprise about 94% and 4% of total fishery revenue, respectively, during 2018-2022. Most of the fishery revenue is from landings in New Bedford (70%), and arguably New Bedford and Fairhaven, Massachusetts, could be considered one fishing community, separated only by the Acushnet River. As Hampton/Seaford and Newport News, Virginia are all located in the Hampton Roads metropolitan area, they could also be considered one fishing community. In both cases, the communities are distinguished because reporting their fishing activity is permissible within data confidentiality standards. Hobucken and Lowland, NC, are combined.

There are about 145 other ports that have had more minor participation (2%) in the fishery recently. Ports are further described in Amendment 21. Community profiles are available from the NEFSC Social Sciences Branch website and in Clay et al (2007). The Northeast Ocean Data Portal has interactive maps to help understand where dredge fisheries based in these ports have been active at sea over time.

Notable updates in fishing communities since reported in Framework 36:

- Moved from a secondary to a primary port: Cutler, ME.
- Moved from a primary to a secondary port: Provincetown and Fairhaven, MA; Stonington, CT.
- New secondary ports: Lubec, Beals, Sorrento, Stonington, and Portland, ME; Davisville, RI; Sanford, VA.
- No longer a secondary port: Sandwich, MA; Montauk, NY; Atlantic City, NJ.
- In 2010-2017, New Bedford landed 58% of total scallop revenue. In 2018-2013, New Bedford's portion has increased to 70%.

Table 49. Changes in scallop fishing community engagement and reliance indicators over 2013-2022 average.

State	Community	Engagement			Reliance	
		2013-2017	2018-2022		2013-2017	2018-2022
ME	Cutler	Low	Medium		Med-High	High
	Beals	Low	Low		Med-High	Med-High
	Sorrento	Low	Low		Medium	Med-High
	Stonington	Medium	Medium		Medium	Med-High
	Portland	Medium	Med-High		Low	Low
MA	Gloucester	High	High		Low	Low
	Provincetown	Med-High	Med-High		Med-High	Medium
	Chatham	Med-High	Med-High		High	High
	Harwichport	Medium	Med-High		Medium	Medium
	New Bedford	High	High		Med-High	Med-High
RI	Narragansett/Pt. Judith	High	High		Medium	Medium
NY	Montauk	Med-High	Medium		Medium	Medium
	Hampton Bays/Shinnecock	Med-High	Med-High		Low	Low
NJ	Point Pleasant	High	High		Medium	Med-High
	Barnegat Light/Long Beach	High	Med-High		High	High
	Cape May	High	High		High	High
VA	Sanford	Low	Low		n/a	Med-High
	Newport News	High	Med-High		Low	Low
NC	Hobucken/Lowland	Low	Low		High	High

State	Community	Engagement			Reliance	
		2013-2017	2018-2022		2013-2017	2018-2022
Note: includes communities that have a ranking of at least medium-high for engagement or reliance. "n/a" = population data not available. *Source:* NOAA Fisheries Community Social Vulnerability Indicators						

Table 50. Primary and secondary ports in the sea scallop fishery.

State	Community	Average revenue, 2018-2022*			Engagement or Reliance Indicator, 2018-2022		Primary/ Secondary
		>$500K	>$5M	≥50% scallops	Med-high	High	
ME	Lubec	√					Secondary
	Cutler	√				√	Primary
	Beals	√			√		Secondary
	Sorrento				√		Secondary
	Stonington	√			√		Secondary
	Portland				√		Secondary
MA	Gloucester	√				√	Primary
	Provincetown	√		√	√		Secondary
	Chatham	√				√	Primary
	Barnstable (Harwichport, Hyannisport, Hyannis, Harwich)	√			√		Secondary
	Fairhaven	√		√			Secondary
	New Bedford	√	√	√		√	Primary
RI	Davisville	√		√			Secondary
	Narragansett/Pt. Judith	√	√			√	Primary
CT	Stonington	√		√			Secondary
	New London	√					Secondary
NY	Hampton Bays/Shinnecock	√			√		Secondary
NJ	Pt. Pleasant/Pt. Pleasant Beach	√	√			√	Primary
	Barnegat Light/Long Beach	√	√	√		√	Primary
	Wildwood	√		√			Primary
	Cape May	√	√	√		√	Primary
MD	Ocean City	√					Secondary
VA	Sanford				√		Secondary
	Hampton/Seaford	√	√	√			Primary
	Newport News	√	√	√	√		Primary
NC	Hobucken/Lowland					√	Primary
Notes: *Inflation adjusted to 2022 dollars. [b] A top 10 port by percent of landings each year for either the LA or LAGC permits, 2013-2017.							

Table 51. Fishing revenue in communities with at least an annual average of $500,000 from scallops, FY 2018-2022.

Community	Average revenue, 2018-2022		
	All fisheries	Sea scallops only	% sea scallops
New Bedford, MA	$500,609,401	$416,498,294	83%
Cape May, NJ	$69,629,425	$46,899,071	67%
Narragansett/Point Judith, RI	$69,832,226	$21,118,902	30%
Barnegat Light, NJ	$25,546,667	$20,748,769	81%
Hampton/Seaford, VA	$27,228,991	$20,699,987	76%
Newport News, VA	$19,732,053	$11,649,983	59%
Point Pleasant, NJ	$33,702,884	$11,448,024	34%
Provincetown, MA	$10,271,060	$4,474,928	44%
Gloucester, MA	$62,708,736	$4,073,422	6%
Barnstable (Harwichport, Hyannisport, Hyannis, Harwich)	$18,958,529	$3,946,592	21%
Wildwood, NJ	$4,802,184	$3,764,937	78%
Chatham, MA	$16,659,379	$3,613,091	22%
Fairhaven, MA	$6,370,229	$3,146,390	49%
Stonington, CT	$6,005,349	$2,913,434	49%
Harwichport/Barnstable, MA	$11,765,389	$2,459,401	21%
Ocean City, MD	$6,196,088	$1,320,410	21%
Stonington, ME	$59,577,549	$1,136,454	2%
Hyannisport, MA	$2,601,154	$1,044,404	40%
Davisville, RI	$897,615	$880,575	98%
Beals Island, ME	$25,590,463	$873,700	3%
Cutler, ME	$6,328,064	$795,104	13%
Lubec, ME	$5,003,249	$749,289	15%
Hampton Bays/Shinnecock, NY	$8,100,707	$635,987	8%
New London, CT	$3,150,540	$604,073	19%
Other ports (n= about 145)	$790,906,483	$12,423,278	2%
total	**$1,777,807,871**	**$594,414,694**	**33%**

Note: Inflation-adjusted to 2022 dollars. Primary ports are shaded.
Source: CAMS data, accessed October 2023.

5.6.3.2 Social and Gentrification Pressure Vulnerabilities

The NOAA Fisheries Community Social Indicators (see also Jepson & Colburn 2013) are quantitative measures that describe different facets of social and economic well-being that can shape either an individual's or community's ability to adapt to change. The indicators represent different facets of the concepts of social and gentrification pressure vulnerability to provide context for understanding the vulnerabilities of coastal communities engaged in and/or reliant on commercial fishing activities. Provided here are these indicators for the primary and secondary scallop ports (Table 52).

The Social Vulnerability Indicators. There are five social vulnerability indicators; the variables for which represent different factors that may contribute to a community's vulnerability. The **Labor force structure** index characterizes the strength/weakness and stability/instability of the labor force. The **Housing characteristics** index measures infrastructure vulnerability and includes factors that indicate housing that may be vulnerable to coastal hazards. The **Personal disruption** index represents factors that disrupt a community member's ability to respond to change because of personal circumstances affecting family life such as unemployment or educational level. The **Poverty** index is a commonly used indicator of vulnerable populations. The **Population composition** index shows the presence of populations who are traditionally considered more vulnerable due to circumstances often associated with low incomes and fewer resources. A high rank in any of these indicates a more vulnerable population.

Almost half of the scallop port communities exhibit medium-high to high vulnerability in at least one of the five social vulnerability indicators. Across scallop ports, there is a contrast between ports that have low social vulnerability across indicators (10 ports score "low" in at least four indicators) and those that are high (three ports are at least "medium-high" in three or more indicators).

Gentrification Pressure Indicators. Gentrification pressure indicators characterize factors that, over time, may indicate a threat to the viability of a commercial or recreational working waterfront, including the displacement of fishing and fishing-related infrastructure. The **Housing Disruption** index represents factors that indicate a fluctuating housing market where some fishing infrastructure displacement may occur due to rising home values and rents. The **Retiree migration** index characterizes areas with a higher concentration of retirees and elderly people in the population. The **Urban sprawl** index describes areas with increasing population and higher costs of living. A high rank in any of these indicates a population more vulnerable to gentrification.

Half of the scallop ports scored medium-high to high in at least one of the three gentrification pressure indicators. This suggests that shoreside fishing infrastructure and fishing family homes may face rising property values (and taxes) from an influx of second homes and businesses catering to those new residents, which may displace the working waterfront. Across all scallop ports, the highest indicator of vulnerability is housing disruption.

Combined Social and Gentrification Pressure Vulnerabilities. Overall, 16 of the 26 port communities have medium to high levels of vulnerability for four or more of the eight indicators (combined social and gentrification pressure). This indicates high social and gentrification pressure vulnerability overall for both the primary and secondary communities. Lubec, ME and Ocean City, MD have six indicators at the medium to high level.

Table 52. Social vulnerability and gentrification pressure in primary and secondary scallop ports, 2020.

State	Community	Social vulnerability					Gentrification pressure		
				Environmental Justice indicators					
		Labor Force Structure	Housing Characteristics	Personal Disruption	Poverty	Population Composition	Housing Disruption	Retiree Migration	Urban Sprawl
ME	Lubec (s)	High	Med-High	Medium	Medium	Low	Med-High	High	Low
	Cutler (p)	Medium	High	Low	Medium	Low	Low	Medium	Low
	Beals (s)	Medium	High	Low	Low	Low	Medium	Low	Low
	Sorrento (s)	Low	Medium	Low	Low	Low	Low	Medium	Low
	Stonington (s)	Medium	Med-High	Medium	Med-High	Low	High	Low	Low
	Portland (s)	Low	Medium	Low	Medium	Low	Medium	Low	Medium
MA	Gloucester (p)	Low	Low	Low	Low	Low	Medium	Low	Medium
	Provincetown (s)	Low	Medium	Low	Low	Low	Med-High	Low	Medium
	Chatham (p)	High	Low	Low	Low	Low	High	High	Medium
	Barnstable (Harwichport, Hyannisport, Hyannis, Harwich) (s)	Low	Low	Low	Low	Low	n/a	Low	Low
	Fairhaven (s)	Medium	Medium	Low	Low	Low	Medium	Medium	Medium
	New Bedford (p)	Low	Med-High	Med-High	Med-High	Med-High	Low	Low	Med-High
RI	Davisville (s)	Low	Medium	Low	Low	Low	Low	Low	Low
	Narragansett/Pt. Judith (p)	Medium	Low	Low	Low	Low	Med-High	Medium	Low
CT	Stonington (s)	Low	Low	Low	Low	Low	Medium	Medium	Low
	New London (s)	Low	Med-High	Med-High	High	Med-High	Low	Low	Low
NY	Hampton Bays/Shinnecock (s)	Low	Low	Low	Low	Medium	High	Low	Medium
NJ	Pt. Pleasant/Pt. Pleasant Beach (p)	Medium	Low	Low	Low	Low	High	Medium	Medium
	Barnegat Light/Long Beach (p)	High	n/a	Low	Low	Low	Med-High	High	Medium
	Wildwood (p)	Medium	Medium	Med-High	Med-High	Low	High	Low	Low
	Cape May (p)	Med-High	Medium	Low	Low	Low	High	Med-High	Low
MD	Ocean City (s)	Medium	Med-High	Med-High	Medium	Low	Medium	Med-High	Low
VA	Sanford (s)	Medium	High	High	High	Medium	High	Low	Low
	Hampton/Seaford (p)	Low	Medium	Medium	Medium	Medium	Low	Low	Low
	Newport News (p)	Low	Medium	Medium	Medium	Med-High	Low	Low	Low
NC	Hobucken/Lowland (p)	Low	n/a	High	n/a	Low	n/a	Low	n/a

Source: NOAA Fisheries Community Social Indicators Map Tool. *n/a = incomplete data. (p) = scallop primary port. (s) = Scallop secondary port

6.0 ENVIRONMENTAL IMPACTS OF ALTERNATIVES

The impacts of the alternatives under consideration are evaluated herein relative to the valued ecosystem components (VECs) described in the Affected Environment (Section 5.0) and to each other.

6.1 INTRODUCTION

6.1.1 Evaluation Criteria

This action evaluates the potential impacts using the criteria in Table 53.

Table 53. General definitions for terms used to summarize impacts on VECs.

General Definitions				
VEC	**Resource Condition**	**Impact of Action**		
		Positive (+)	Negative (-)	No Impact (0)
Target and Non-target Species	Overfished status defined by the MSA	Alternatives that would maintain or are projected to result in a stock status above an overfished condition*	Alternatives that would maintain or are projected to result in a stock status below an overfished condition*	Alternatives that do not impact stock / populations
ESA-listed Protected Species (endangered or threatened)	Populations at risk of extinction (endangered) or endangerment (threatened)	Alternatives that contain specific measures to ensure no interactions with protected species (e.g., no take)	Alternatives that result in interactions/take of listed resources, including actions that reduce interactions	Alternatives that do not impact ESA listed species
MMPA Protected Species (not also ESA listed)	Stock health may vary but populations remain impacted	Alternatives that will maintain takes below PBR and approaching the Zero Mortality Rate Goal	Alternatives that result in interactions with/take of marine mammal species that could result in takes above PBR	Alternatives that do not impact MMPA Protected Species
Physical Environment / Habitat / EFH	Many habitats degraded from historical effort (see condition of the resources table for details)	Alternatives that improve the quality or quantity of habitat	Alternatives that degrade the quality, quantity or increase disturbance of habitat	Alternatives that do not impact habitat quality
Human Communities (Social and economic impacts)	Highly variable but generally stable in recent years (see condition of the resources table for details)	Alternatives that increase revenue and social well-being of fishermen and/or communities	Alternatives that decrease revenue and social well-being of fishermen and/or communities	Alternatives that do not impact revenue and social well-being of fishermen and/or communities
	Impact Qualifiers			
A range of impact qualifiers is used to indicate any existing uncertainty	Negligible	To such a small degree to be indistinguishable from no impact		
	Slight (sl), as in slight positive or slight negative)	To a lesser degree / minor		
	Moderately (M) positive or negative	To an average degree (i.e., more than "slight", but not "high")		
	High (H), as in high positive or high negative	To a substantial degree (not significant unless stated)		
	Significant (in the case of an EIS)	Affecting the resource condition to a great degree, see 40 CFR 1508.27.		
	Likely	Some degree of uncertainty associated with the impact		

*Actions that will substantially increase or decrease stock size, but do not change a stock status may have different impacts depending on the particular action and stock. Meaningful differences between alternatives may be illustrated by using another resource attribute aside from the MSA status, but this must be justified within the impact analysis.

6.2 IMPACTS ON ATLANTIC SEA SCALLOPS (BIOLOGICAL IMPACTS)

References to "biological impacts" in the following sections are focused on impacts of the measures being considered in this action (Framework 38) to the scallop resource.

6.2.1 Action 1 – Overfishing and Acceptable Biological Catch

The Magnuson-Stevens Act requires that annual catch limits (ACLs) and accountability measures (AMs) be set in all fishery management plans to prevent overfishing. Acceptable Biological Catch (ABC) is defined as the maximum catch that is recommended for harvest, consistent with meeting the biological objectives of the management plan.

Table 54. Comparison of the No Action OFL/ABC from FW36 with updated OFL and ABC estimates for 2024 and 2025 (Alternative 2).

	FY	OFL	ABC including discards	Discards	ABC with discards removed
Alt. 1 – No Action	2024	29,151	23,289	3,083	20,206
Alt. 2 – Updated OFL and ABC	2024	33,406	26,326	4,829	21,497
	2025	35,241	27,699	5,113	22,586

6.2.1.1 Alternative 1 – No Action for OFL and ABC

Under "No Action", the overall OFL and ABC would be set at the default values for FY 2024, which were adopted by the Council through FW36 (Table 54). The No Action ABC including discards is 23,289 mt, or about 51.3 million pounds. The OFL value for No Action is lower than the updated OFL (Alternative 2) for 2024 (4,255 mt difference). The legal limits (OFL and ABC) for No Action are the result of several years of below average recruitment and declining overall biomass. In 2022, survey biomass reached its lowest level since 1999. The ABC for FY 2024 excluding discards would be 20,206 mt (44.5M lb) which is slightly more than the FY 2023 ABC (19,828 mt, discards removed). The ABC for FY 2025 would be 0 mt.

As in past years, both alternatives (Alternative 1 and Alternative 2) could be expected to result in a healthy scallop biomass in the short and long term and should be considered to have a slight positive impact. The best available data should be used to set ABC, which would include updated survey and fishery data from 2023 that is used in Alternative 2 compared to older data used in the No Action ABC (Alternative 1).

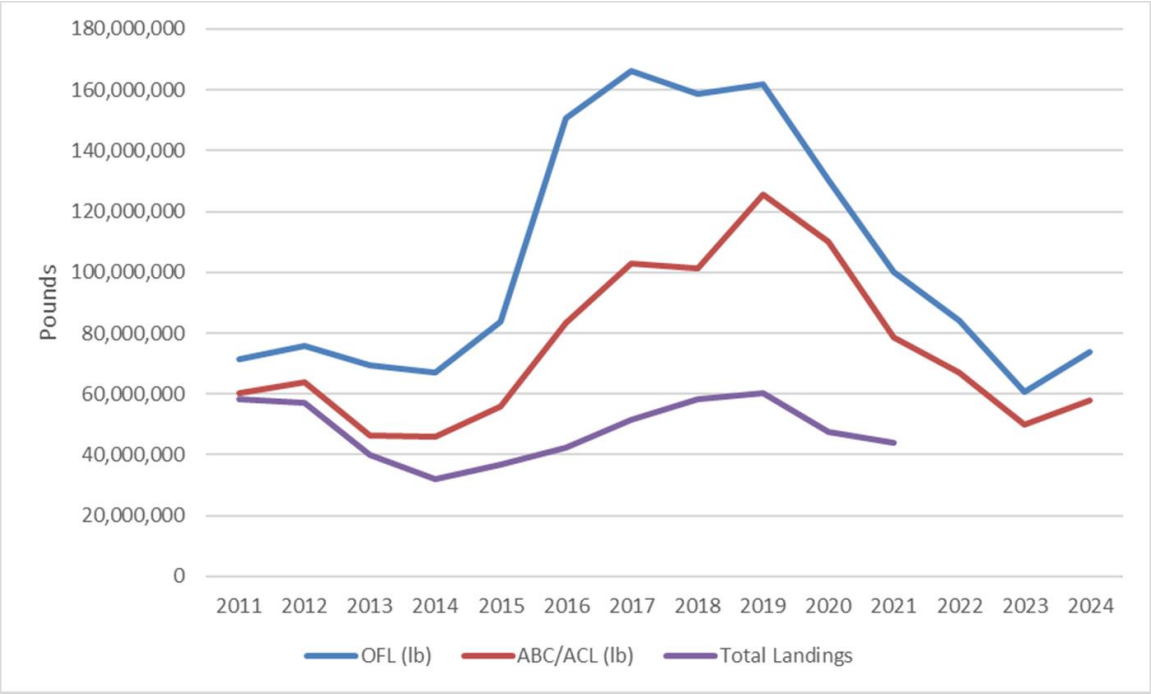
6.2.1.2 Alternative 2 – Updated OFL and ABC for FY 2024 and FY 2025 (*Preferred alternative*)

The FY 2024 and FY 2025 OFL and ABC values that were recommended by the SSC are summarized in Table 54. This year, as in previous years, the SSC recommended including scallop biomass from several areas of the Gulf of Maine as part of the OFL and ABC.

Under Alternative 2, the FY 2025 (default) OFL would be slightly greater than the FY 2024 OFL, and both the FY 2024 and FY 2025 (default) OFLs under Alternative 2 would be higher than the No Action OFL. The 2024 ABC is 8% higher than the ABC for 2023 that was approved in Framework 36, which reverses a downward trend of both OFL and ABC values for the fishery over the last 5 years (Figure 12). The increases in both the OFL and ABC are the result of the growth of a strong year class in Area I-Sliver and in Area II-North. There are several cohorts on Georges Bank, including pre-recruits, recruits, and adult scallops. In 2023, this region is projected to hold the largest share of exploitable biomass across the scallop resource, while surveys detected declines in biomass and abundance across the Mid-Atlantic region.

Overall, the OFL and ABC values in Alternative 2 are based on the most updated survey information and model configurations; therefore, there should be slightly positive impacts on the scallop resource from setting fishery limits with updated data for two years. Since fishing targets are set lower than these limits, the plan reduces the risk of overfishing and optimizes overall yield from the fishery over the long term. As compared to Alternative 1, using the best available science to set specifications should have slight positive impacts.

Figure 12. Scallop OFL and ABC values in pounds, with landings, FY 2011 – FY 2024.



6.2.2 Action 2 – Northern Gulf of Maine Management and TAL Setting

6.2.2.1 Closure of Platts Bank to Protect Small Scallops

6.2.2.1.1 Alternative 1 – No Action

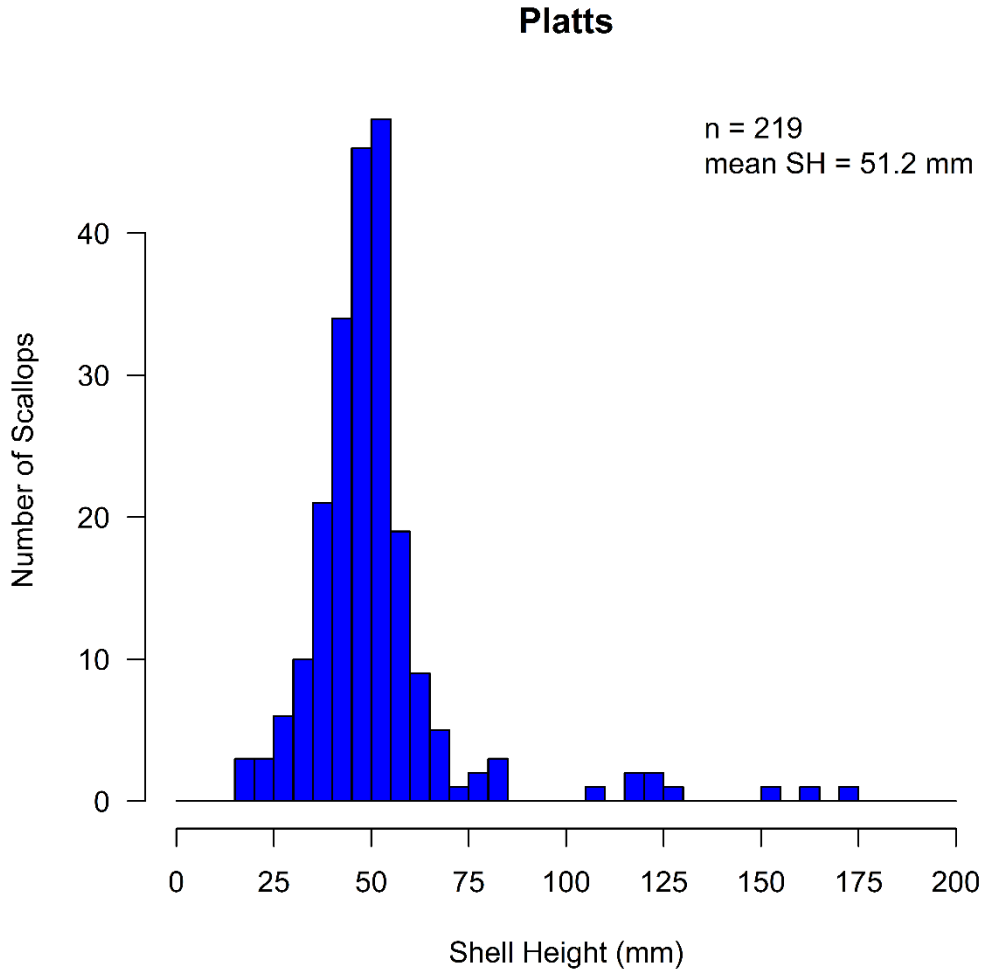
Under Alternative 1, there would be no change to where scallop vessels can fish on declared scallop trips in the NGOM Management Area. Scallop vessels would be able to fish Platts Bank in FY 2024 and FY 2025. With the majority of scallop biomass located in inshore areas of the NGOM, limited directed scallop fishing could be expected on Platts Bank in FY 2024.

6.2.2.1.2 Alternative 2 – Closure of Platts Bank to directed scallop fishing, within the Northern Gulf of Maine Management Area (2-year closure) (*Preferred alternative*)

Alternative 2 would close Platts Bank to directed scallop fishing in the NGOM Management Area for two years (FY 2024 and FY 2025) to protect small scallops that were observed in 2023 surveys. The explicit purpose of this closure would be to conserve small scallops. The area would re-open in FY 2026 when scallops in this area are expected to have fully recruited. The 2023 SMAST drop camera survey of Platts Bank detected relatively high densities of recruits that have growth potential and have not fully recruited to the minimum ring size (Figure 13).

Relative to Alternative 1, a closure of Platts Bank would be expected to have a negligible to slight positive biological impact on scallops in the Northern Gulf of Maine management area because the scallops in this area have substantial growth potential and would be able to spawn multiple times before they are harvested.

Figure 13. Shell height distribution (5 mm bins) of scallops measured by the School for Marine Science and Technology Drop Camera survey in Platts Bank in 2023. The number of scallops measured, and the mean shell height (mm) are also displayed in the figure.



6.2.2.2 Northern Gulf of Maine TAL Setting

6.2.2.2.1 Alternative 1 – No Action

Under No Action, the FY 2024 default NGOM Set-Aside would set at 285,641 pounds, with 25,000 pounds set-aside to support the RSA program, and one percent of the NGOM ABC for observers (7,932 pounds). There would be no TAL value specified for the 2025 fishing year.

The No Action NGOM Set-Aside would be less than Options 1, 2, and 3 developed under Alternative 2. Therefore, the realized F associated with No Action is likely to be less than all options under consideration in Alternative 2. Growth assumptions for the Stellwagen Bank area of the NGOM are uncertain and could be overestimated, which could lead to higher than estimated F in the area. No Action would be expected to have a slight positive impact on the scallop resource.

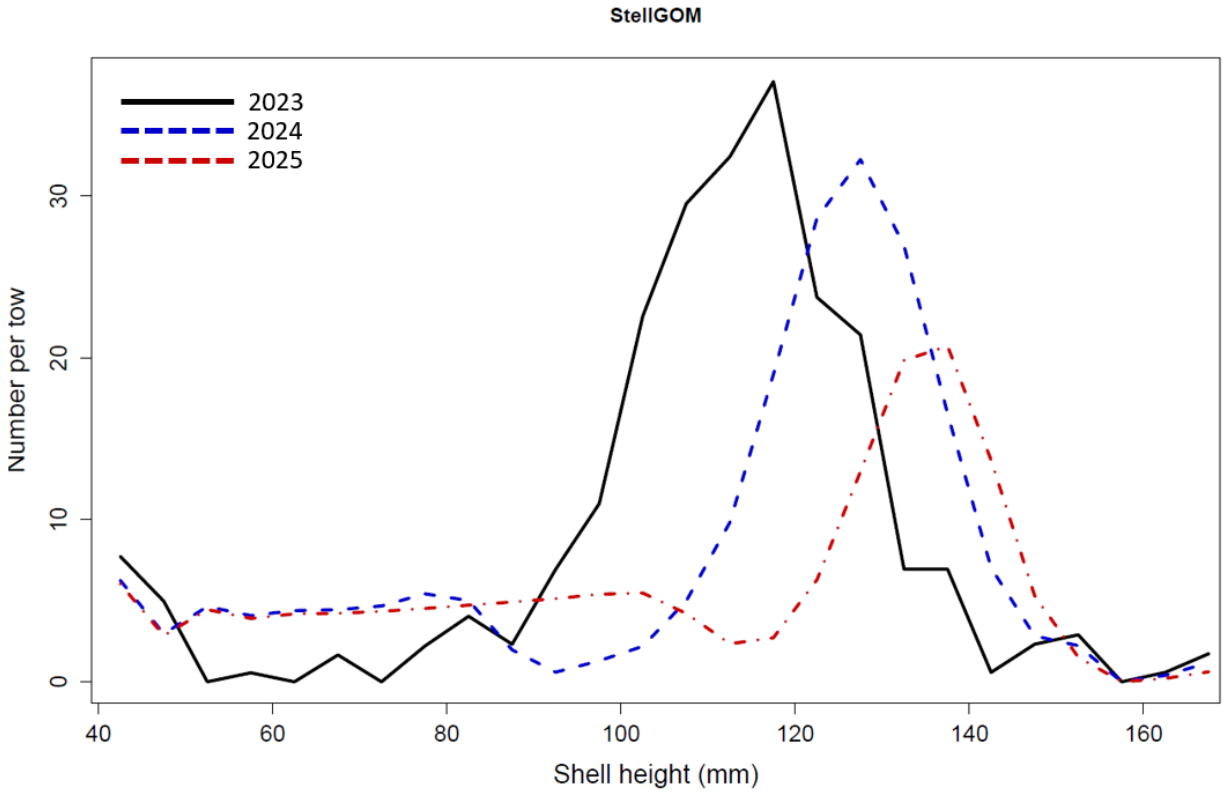
6.2.2.2.2 Alternative 2 – Set NGOM TAL, with set-asides to support research, monitoring, and a directed LAGC fishery

Alternative 2 would specify a Northern Gulf of Maine Total Allowable Landings (NGOM TAL) limit for FY 2024 and FY 2025 (default), including set-asides to support research, monitoring, and a directed LAGC fishery. Option 1 (F=0.18), Option 2 (F=0.21), and Option 3 (F=0.25) would set the NGOM TAL using estimates of exploitable biomass from Stellwagen Bank, Ipswich Bay, and Jeffreys Ledge. Alternative 2 includes 25,000 pounds set-aside to support the RSA program, and one percent of the NGOM ABC for observers (8,554 pounds).

6.2.2.2.2.1 2023 NGOM TAL Options (Alternative 2 Option 2 preferred)

All three NGOM TAL options utilize a conservative F rate for setting harvest levels (F=0.18, F=0.21, and F=0.25). The NGOM covers several banks and ledges, and vessels can choose to fish anywhere within the management unit, unless a closure is specified. The NGOM set-aside (i.e., expected landings by LAGC vessels) increases as F rates increase and as the area that is assumed to be fished expands (i.e., just Stellwagen vs. Stellwagen and Ipswich and Jeffreys). When comparing between the three TAL options, the option with the most positive impacts on the sea scallop resource would be Option 1, and the option with the least positive impacts would be Option 3. Under all three options, if more harvest occurs on Stellwagen Bank than expected, the realized F rate may be higher than the forecast. Option 3 could be expected to have the greatest impact on the scallop resource in the area by setting harvest limits 131-73 thousand pounds more than Options 1 and 2 respectively. Growth assumptions for the Stellwagen Bank area of the NGOM are uncertain and could be overestimated. Most of the fishing is expected to occur on Stellwagen Bank, which continues to hold relatively high densities of exploitable scallops. Recent experience has shown higher levels of mortality when directed fishing occurs on high densities of scallops, such as in the NLS and AII regions. Scallops in Stellwagen Bank area are seven years old, and projections suggest that this cohort still has some growth potential. Stellwagen Bank is the most productive area in the NGOM.

Figure 14. Projected Length Frequencies for 2024 and 2025 in the NGOM-Stellwagen Bank area using 2023 SMAST survey data.



6.2.3 Summary of Biological Information

The following describes the short-term (ST) and long-term (LT) impacts of fishery removals for each specification scenario in Action 3. It should also be noted that the Council has been updating specifications on an annual basis with adjustments to the rotational management program and access areas. All estimates beyond FY 2023 are expected to be revisited again through a future action.

6.2.3.1 Overall Fishing Mortality and Outlook

- All the Action 3 alternatives have a total estimate of short-term fishing mortality that is lower than the upper limit used for setting fishery allocations for the fishery overall. The annual catch target (ACT) includes an overall fishing mortality limit of 0.39 for the total fishery (Section 3.3). The range of total fishing mortality under consideration is between 0.07 for Alternative 1 (No Action) and 0.18 for Alternatives 3 and 4 (24 DAS and Status Quo). The overall F rates for Alternatives 2 and 3 are very similar at F=0.16 and F=0.17 respectively. While overall fishing mortality associated with each of the alternatives remains lower than legal limits, there are important trade-offs in the ST about where F may occur spatially in open bottom and to a lesser extent in Area 2 on Georges Bank.
- Total fishing mortality is constrained so that average fishing mortality does need to exceed FMSY (0.61) in open areas. For the purposes of this analysis, average total fishing mortality over the long term was simulated at F=0.48. There are no alternatives under consideration in Framework 38 that would meet or exceed the average open area F at the upper bound of F=0.61. Alternatives in Section 4.3 consider open area F rates at three DAS options of 18 DAS, 20 DAS, and 24 DAS.

- When compared to estimates of the overall F from the preferred alternatives in recent actions (FW25 – 36), the estimates of overall (total) F rates for all alternatives under consideration are less than the estimated F rates from 2021-2023, and comparable to the overall F rates between the period of 2016 - 2020. The forecasted overall F rate had been increasing for several, which was expected as the exceptional 2012- and 2013-year classes have moved through the fishery with below average recruitment for an extended period after 2013. The increase in total F was also a result of the partial approval of OHA2, which opened areas with high scallop biomass to fishing. Prior to OHA2, those scallops were surveyed and included in the calculation of overall F. The overall F rate is predicted to decline in 2024 as strong cohorts of scallops in Area I and Area II-N continue to enter the fishery.
- Alternatives are modeled over the short-term (ST) and long-term (15 years, LT) to make comparisons about the LT impacts of management decisions for the coming fishing year. The LT forecasts can help to identify trade-offs between ST management measures by comparing how impacts of harvest in year 1 affect the scallop resource when applying the same assumptions across all alternatives. The LT forecasts apply a fixed fishing mortality rate of F=0.48 for open areas in all years after year 1 (i.e., FY 2024), and adjust rotational management in years 2-4. In year 5, all rotational areas are opened, and fished at F=0.48. The simulation in FW38 assumes that access areas will re-open as open bottom in 2025. Since the Council generally sets specifications for one or two years, the LT estimates should be interpreted as relative comparisons between measures, and not absolute values of future landings and economic impacts.
- The short term and long-term forecasts shown in Figure 16 illustrate some of the near-term trade-offs in terms of overall F between the options. The model is also suggesting that the range of alternatives developed for FY 2023 would result in similar outcomes of F over the ST and LT under similar assumptions of fishing behavior over that time.

The risk of overfishing is low for all the alternatives under consideration since the projected F rates are well below 0.61. However, the projection model tends to underestimate fishing mortality and recent forecasts have been overly optimistic. In recent years when the projected F rate has been compared with estimated F rates from the most recent stock assessment, the hindcast or "realized" F has been above the average projected F (see Figure 21). Even so, overall F has remained well below the current FMSY.

Figure 15. Comparison of total fishing mortality (F) estimates in FW38 Alternatives with the preferred alternatives from recent Frameworks.

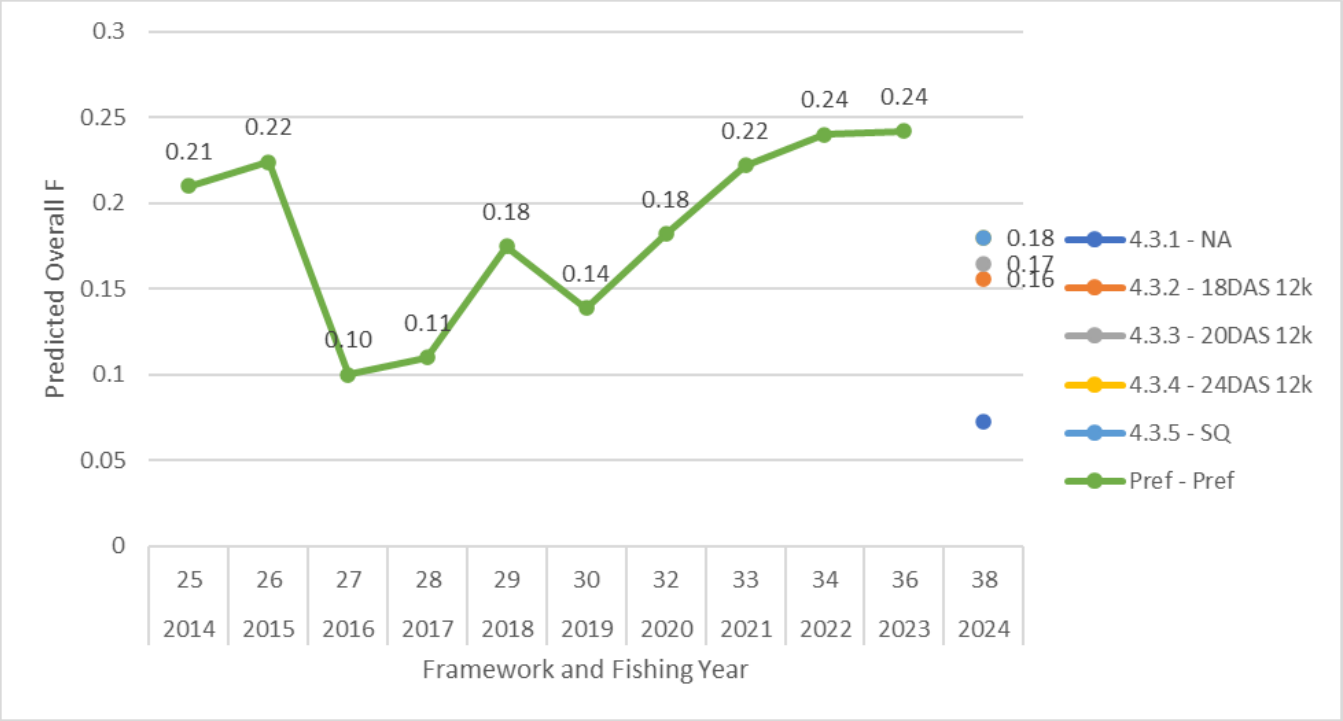
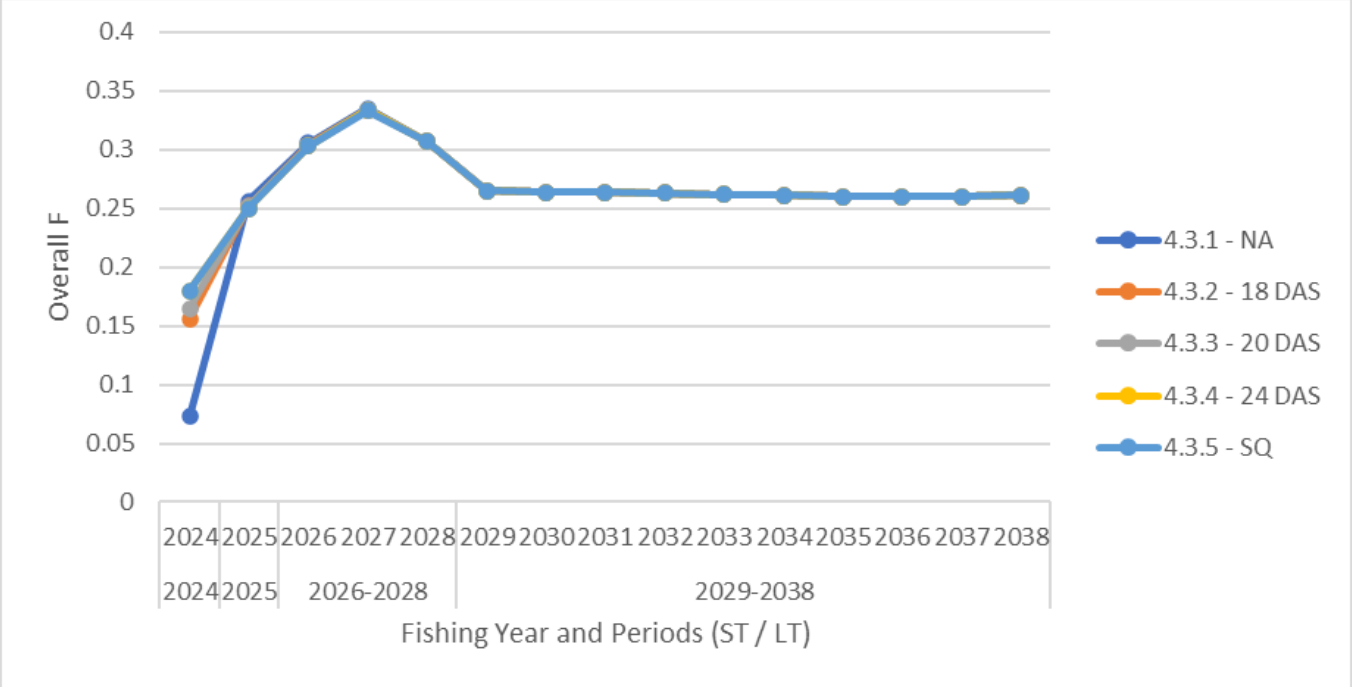


Figure 16. Comparison of overall F over the Short Term and Long Term.



6.2.3.2 Open Area Fishing Mortality and Outlook

- Figure 17 provides a comparison of recent preferred F rates with options under consideration in FW38. Open area F rates are predicted to decrease from the preferred option in FW36 when holding DAS constant at 24. FW38 considers DAS options that are estimated to reduce overall F rates in the open bottom. The declining trend in open area F between 2016 and 2019 came as most fishing was directed to rotational areas that became available through the partial approval of OHA2.
- The outlook for the resource has changed in recent years due to below average recruitment in the Mid-Atlantic since 2013, and average or below average recruitment on Georges Bank.
- The 2022 scallop surveys indicated that the majority of biomass in areas open for DAS fishing is on Georges Bank. Differences in biomass between the Mid-Atlantic and Georges Bank suggest that most of the open area fishing will occur on Georges Bank.
- Open area F rates are an average of area-specific F rates and the model is forecasting above average F rates on Georges Bank, and below average F rates in the Mid-Atlantic (Figure 18). At 24 DAS, the model predicts F rates to be above 0.5 in Georges Bank areas. In the last stock assessment for scallops, open area F rates for Georges Bank were estimated to be above F=0.5 in 2019 for scallops greater than 120mm (Figure 19) whereas the average open area F (Mid-Atlantic and Georges Bank) was predicted to be F=0.23 that year (Figure 16). While the SAMS model appears to be accurately predicting that most open bottom fishing activity will be on Georges Bank, there is considerable uncertainty around predicting realized F rates by area and region, and recent experience has shown the model to underestimate F.
- If realized F rates are higher than modeled F rates for the Georges Bank region, there could be ST and LT negative impacts on the scallop resource in this region. The magnitude of the impact could be exacerbated if the scallop resource in the Mid-Atlantic continues to remain at low levels of biomass, and environmental stressors contribute to declines in abundance and biomass at the southern extent of the range.

Figure 17. Comparison of average open area fishing mortality (F) estimates in FW38 Alternatives with the preferred alternatives from recent Frameworks.

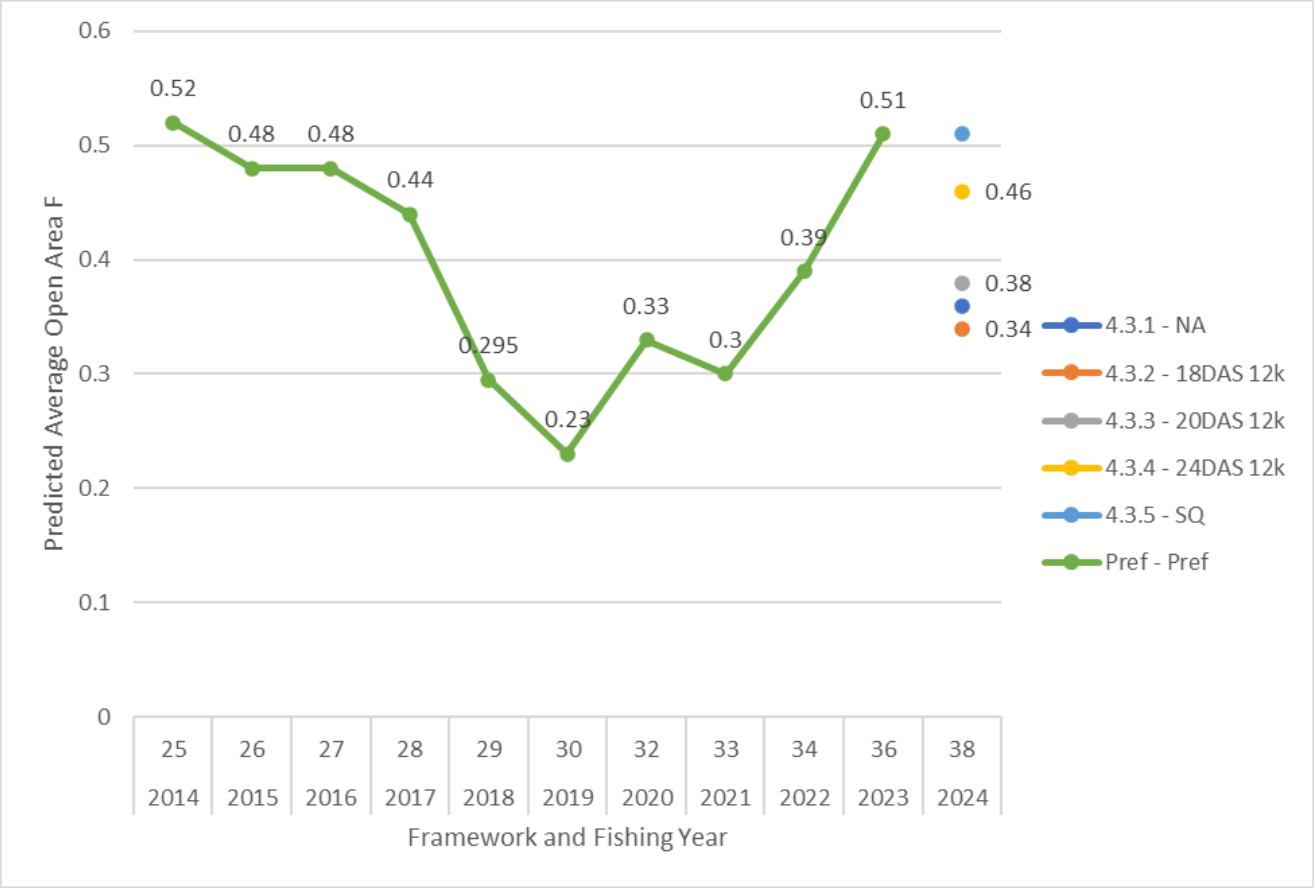


Figure 18. Comparison of Open Bottom F rates by Region and DAS Options

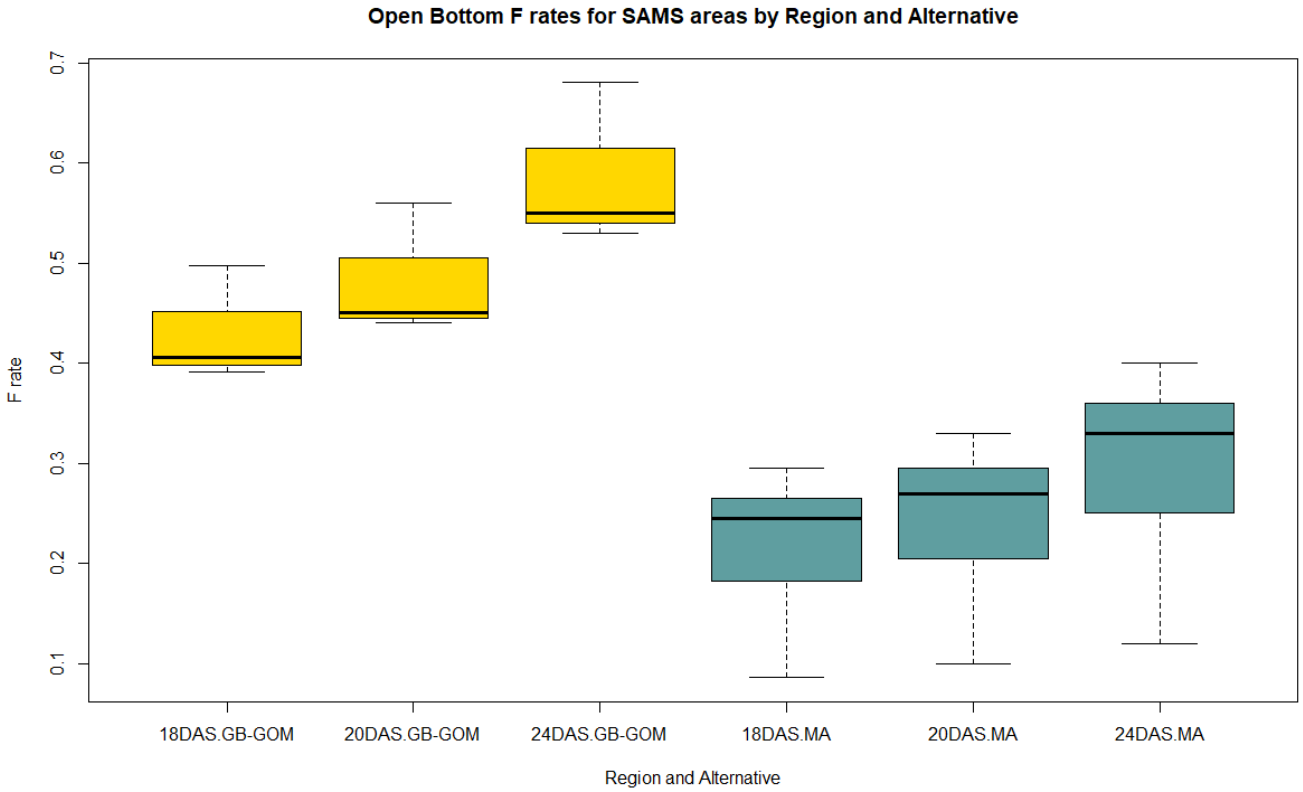
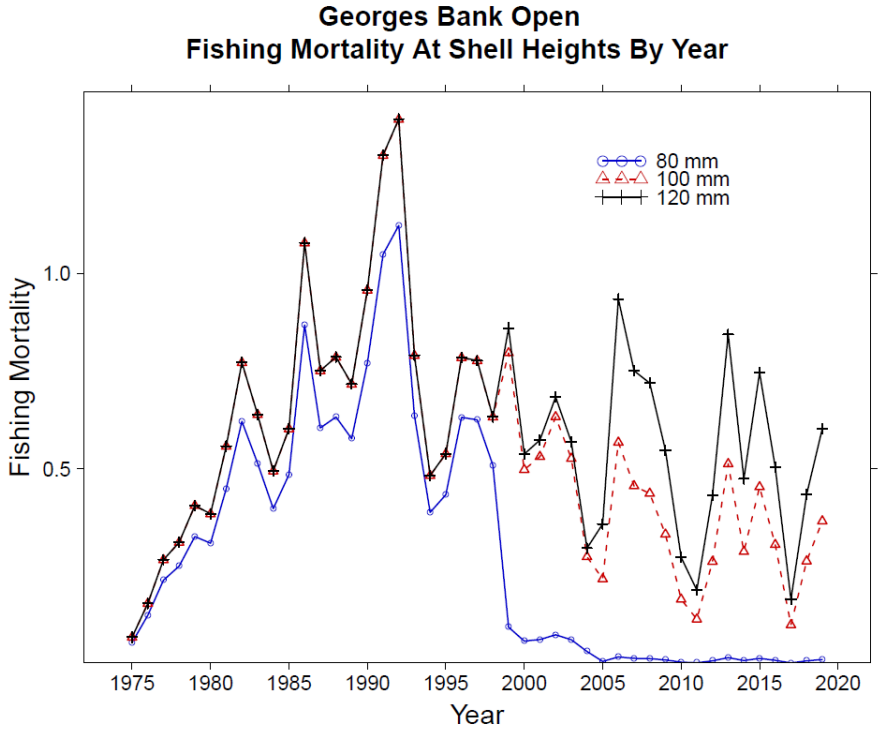


Figure 19. 2020 Management Track Assessment estimates realized F for open bottom areas of Georges Bank for 80mm, 100mm, and 120mm shell-heights.



6.2.3.3 Projected Landings

Overall, the projected landings for the alternative runs under consideration are very similar (Figure 20). All three alternatives in FW38 would increase overall landings compared to the 2023 fishing year. However, landings remain well below annual landings between 2014 and 2022. Alternative 2, 3, and 4 all allocate three access area trips for FY 2024, meaning that differences in projected landings are driven by DAS allocations. Total projected landings are likely to be between 47% (18 DAS and three 12,000 pounds trips) and 54% (24 DAS and three 12,000-pound trips) of the ACL, and well below the OFL. It is important to keep in mind that these are mean values and based on various assumptions for natural mortality and future recruitment. The Council plans to revisit scallop fishery specifications again next year to make recommendations for 2025. The uncertainty in projected landings is lower for year 1 but increases for 2025 and beyond. However, projections have been overly optimistic in recent years, especially in the Mid-Atlantic where forecasts have been biased high for several years (Figure 21).

Figure 20. Projected landings for FW38 alternatives compared to the Council's preferred alternatives in recent actions (2014-2023).

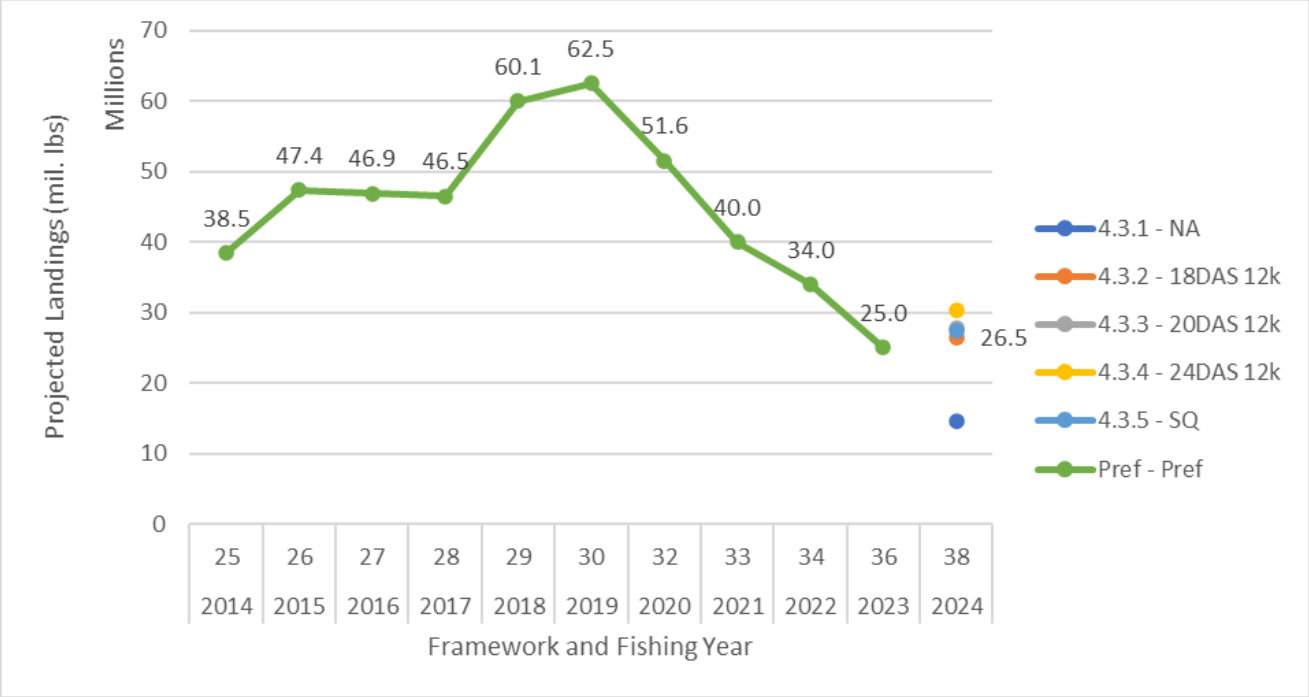
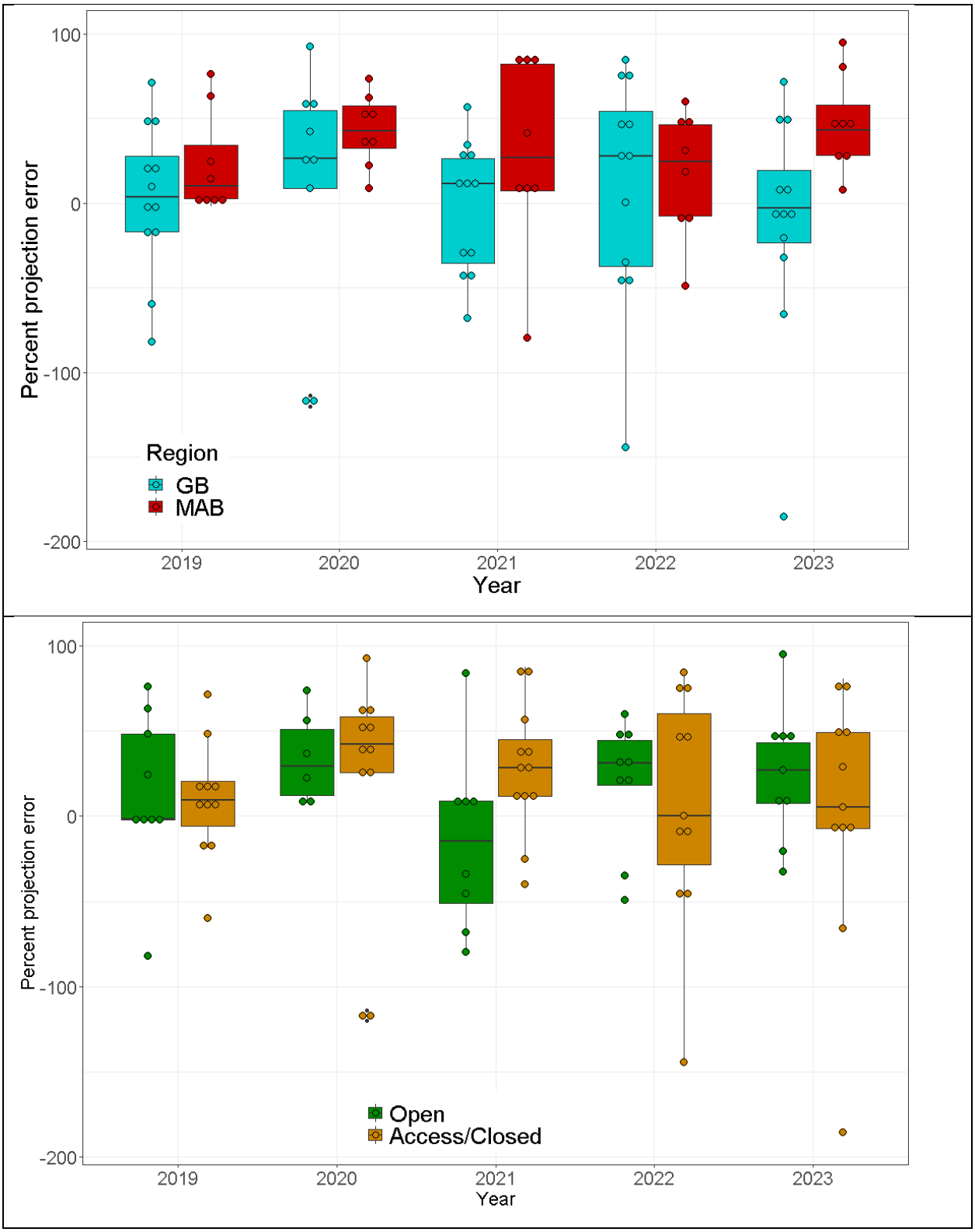


Figure 21. Comparison of projection error for 2019 - 2023 by region (top) and access and open areas (bottom). The percent error is calculated as 100*(predicted-observed)/predicted.



6.2.4 Action 3 – Fishery Specifications and Rotational Management

The alternatives developed in this action set FY 2024 open area and access trip allocations for the LA and LAGC IFQ components of the fishery. Default specifications for FY 2025 are also established. The Council considered options. In addition to Alternative 1/No Action, one rotational management approach was developed, with three options for open area DAS for full time limited access vessels.

For 2024, the Council is considering rotational fishing on eastern Georges Bank in a large rotational area (Area II) that combines the CAII-SW, SE, and EXT areas. This configuration would afford the fleet access to larger scallops in CAII-SE. The projection model assumes that fishing effort will be distributed evenly across Area II; however, if most of the harvest occurs in the SE portion of Area II, fishing mortality for that area will likely be underestimated, and biological impacts on the sea scallop resource in the ST and LT will be greater.

6.2.4.1 Alternative 1 – No Action

No Action would allocate 18 DAS for full-time limited access vessels, and 942,884 pounds for the LAGC IFQ component. This alternative is likely to reduce landings and area swept compared to other alternatives and Status Quo. Setting DAS at 18 is likely to have a positive biological impact on open areas relative to Alternatives 3 and 4, particularly if most of the fishing is on Georges Bank.

6.2.4.2 Alternative 2 – 18 Days At Sea with three access area trips with 12,000-pound trip limit

Alternative 2 would result in an overall F rate (F=0.15, Table 8), which is slightly lower than the overall F rates for Alternative 3 (F=0.165) and Alternative 4 (F=0.18). The Access Area trip allocation is the same as Alternatives 3 and 4, and there is no difference in the impact on the scallop resource in access areas between each alternative. All Alternatives and DAS options are expected to result in fishing mortality that is well below the OFL. With respect to open area F rates, 18 DAS would result in an open area F=0.34, which would result in a slight positive biological impact on the scallop resource relative to No Action (F=0.36). Since open area F rates are the average of all SAMS areas, Alternative 2 could be expected to result in the lowest F rates for Georges Bank areas relative to Alternatives 3 and 4

6.2.4.3 Alternative 3 – 20 Days At Sea with three access area trips with 12,000-pound trip limit (*Preferred alternative*)

Alternative 3 would result in an overall F rate (F=0.165, Table 8), which is slightly lower than the overall F rates for Alternative 4 (F=0.18) and slightly above that of Alternative 2 (F=0.15). The Access Area trip allocation is the same as Alternatives 3 and 4, and there is no difference in the impact on the scallop resource in access areas between each alternative. All Alternatives and DAS options are expected to result in fishing mortality that is well below the OFL. With respect to open area F rates, 20 DAS would result in an open area F=0.38, which would result in a slight negative biological impact on the scallop resource relative to No Action (F=0.36) and Alternative 1 (F=0.34), but positive relative to Alternative 4 (F=0.46).

6.2.4.4 Alternative 4 – 24 Days At Sea with three access area trips with 12,000-pound trip limit

Alternative 4 would result in an overall F rate (F=0.18, Table 8), which is slightly higher than the overall F rates for Alternative 3 (F=0.165) and slightly above that of Alternative 2 (F=0.15). The Access Area trip allocation is the same as Alternatives 3 and 4, and there is no difference in the impact on the scallop resource in access areas

between each alternative. All Alternatives and DAS options are expected to result in fishing mortality that is well below the OFL. With respect to open area F rates, 20 DAS would result in an open area F=0.38, which would result in a slight negative biological impact on the scallop resource relative to No Action (F=0.36) and Alternative 1 (F=0.34), but positive relative to Alternative 4 (F=0.46).

6.2.5 Action 4 – Access Area Trip Allocations to the LAGC IFQ Component

The LAGC IFQ component is allocated a fleet wide total number of access area trips. Amendment 21 increased the LAGC IFQ access area trip limit from 600 pounds to 800 pounds per trip. Individual vessels are not required to take trips in specific areas like access area trips allocated to the LA fishery. After the total number of access area trips are determined, a maximum number of trips are identified by access area, and once that limit is reached, the area closes to all LAGC IFQ vessels for the remainder of the fishing year.

Alternative 2 would make the total LAGC IFQ access area trip allocation (856 trips) available in Area I, Area II and the New York Bight Access Area. There would not be a specific number of trips allocated to Area I, Area II or the New York Bight, but rather, vessels would be able to fish in either area and trips would be counted against the total trip allocation. Once the total trip allocation is projected to have been taken, all areas would be closed to LAGC IFQ access area fishing for the remainder of the fishing year.

Alternative 3 would make 50% of the total LAGC IFQ access area trip allocation (428 trips) available in Area I or Area II and 50% of the trip allocation in the New York Bight (428 trips). There would not be a specific number of trips allocated to Area I or Area II, but rather, vessels would be able to fish in either area and trips would be counted against the total trip allocation (428 trips).

6.2.5.1 Alternative 1 – No Action (Default Measures from FW36)

Under Alternative 1, the LAGC IFQ access area allocation would be 0 trips, and there would be no IFQ fishing in rotational access areas.

Impacts of Alternative 1 are likely negligible at the stock level, but slight negative on the scallop resource. Since the LAGC IFQ access area allocation is a proportion of the total LAGC IFQ allocation, and a much smaller proportion of total scallop catch, these removals do not have a major impact on the resource.

When considered in concert with Action 3 and the expected implementation of the framework on April 1, 2024, Alternative 1 could have slight negative to negligible impacts on the scallop resource because all LAGC IFQ fishing would be in open areas, which may or may not have higher catch rates than the available access areas for the LAGC IFQ.

6.2.5.2 Alternative 2 – Update LAGC IFQ Access Area Trip Allocations, Distribute LAGC IFQ Access Area Allocation to Area I, Area II, and the New York Bight (*Preferred alternative*)

This option could have negligible to slight positive impacts on the resource overall by reducing fishing pressure on inshore open areas and providing access to areas with higher biomass and catch rates (Area I and Area II) as well as an area that holds lower densities of large scallops but has not been open to fishing in recent years (New York Bight). Alternative 2 would likely have a slight positive to negligible biological impact on the resource relative to Alternative 1 since LAGC IFQ harvest from access areas would likely reduce impacts on the resource in open areas by allowing vessels to utilize their quota within rotational management areas, and specifically shifting allocations associated with Area II to Area I and the NYB for the LAGC component.

6.2.5.3 Alternative 3 – Update LAGC IFQ Access Area Trip Allocations, Distribute 50% of LAGC IFQ Access Area allocation to Area I / Area II, and 50% to the New York Bight

This option could have negligible to slight positive impacts on the resource overall by reducing fishing pressure on inshore open areas and providing access to areas with higher biomass and catch rates (Area I and Area II) as well as an area that holds lower densities of large scallops but has not been open to fishing in recent years (New York Bight). Alternative 3 would likely have a slight positive biological impact on the resource relative to Alternative 1 and negligible biological impact relative to Alternative 2. LAGC IFQ harvest from access areas would likely reduce impacts on the resource in open areas by allowing vessels to utilize their quota within rotational management areas, and specifically shifting allocations associated with Area II to Area I and the NYB for the LAGC component.

6.2.6 Action 5 – Scallop Research Set-Aside Compensation Fishing

6.2.6.1 Alternative 1 – No Action

Alternative 1 (No Action) would prohibit vessels from fishing RSA compensation in access areas. This option would increase effort and removals in open areas, where LPUE is projected to be much lower than in access areas. The Council has developed alternatives is to set DAS at either 18, 20, or 24 for FT LA vessels, noting unremarkable recruitment in the open bottom from 2016 – 2023 surveys. This option would be expected to slightly increase F in the open areas and have a slightly negative impact on that portion of the resource relative to Alternative 2. While No Action would have a slightly negative impact relative to Alternative 2, the overall impact on the stock would be expected to be negligible since projected landings are well below the OFL and ABC, and the RSA is very small part of the APL.

6.2.6.2 Alternative 2 – Allow RSA Compensation fishing in Area II Access Area (*Preferred alternative*)

Alternative 2 could be expected to have negligible impacts on the scallop resource as a whole. Vessels would be allowed to fish RSA compensation pounds in the Area II Access Area, open bottom, and the NGOM management area (up to 25,000 pounds). Vessels would not be able to fish RSA compensation pounds in any other access areas, and only vessels receiving allocations of NGOM RSA compensation would be able to fish their awards in the NGOM management area.

Alternative 2 would expand where RSA compensation fishing can occur which would allow vessels to fish in areas with higher LPUE. The opportunity to fish in access areas could be expected to slightly reduce F in the open areas, and therefore have a slightly positive impact on that portion of the resource relative to Alternative 1. There is some potential for negligible to low-negative biological impacts on a finer scale if catch rates or availability of preferred market grades result in higher than anticipated fishing mortality in discrete areas. The overall impact on the stock would be expected to be negligible since projected landings are well below the OFL and ABC, and the RSA is very small part of the APL.

6.2.7 Action 6 – Increase VMS-Reporting Interval for All Scallop Vessels

6.2.7.1 Alternative 1 – No Action

There would be no change to the current 30-minute VMS ping rates under Alternative 1 (No Action).

There is some potential for negligible to low-negative biological impacts if vessels are able to fish within closure boundaries undetected since scallop projections are based on assumptions of abundance and biomass in fine scale areas. If removals from a closed area are occurring, and not accounted for in forecasts or landings data, forecasts of biomass could be overly optimistic.

6.2.7.2 Alternative 2 – 5-minute VMS reporting rate when a scallop vessel crosses seaward of the VMS demarcation line on a scallop declaration code (SES-%) (*Preferred alternative*)

Alternative 2 would increase the VMS reporting rate on declared scallop trips to 5-minute intervals when vessels are seaward of the VMS demarcation line.

While the increase of VMS reporting rates is an administrative measure that does not, in and of itself, have a direct effect on the scallop resource, VMS is a tool that is used to enforce regulations in the fishery, and therefore the impacts of this change could have negligible to slight-positive impacts on the scallop resource. Increasing VMS reporting rates may deter vessels from attempting to fish inside closed areas illegally, which would improve the quality of information about catch rates and landings data. Fishing inside closures or access areas on open area DAS can also undermine the performance of fishery projections, making them appear overly optimistic. Compared to Alternative 1, Alternative 2 could be expected to have slight positive impacts on the scallop resource.

6.3 Impacts on Non-Target Species (Bycatch)

6.3.1 Action 1 – Overfishing Limit and Acceptable Biological Catch

The overfishing limit and acceptable biological catch are landings limits that the fishery is not allowed to exceed. As has been the case recent years, fishery allocations under consideration in this action (Section 4.3) are below the OFL and ABC values for both Alternative 1 (No Action, default OFL and ABC from FW34) and Alternative 2 (Updated OFL and ABC for FY 2024 and FY 2025). Neither Alternative 1 or Alternative 2 are expected to have a direct impact on non-target species because the anticipated level of effort, spatial distribution of scallop fishing activity, and projections of non-target species bycatch in FY 2023 are not based on the OFL or ABC limits. Impacts to non-target species are, however, directly related to the fishery allocations (annual projected landings or 'APL') being considered in this action and are assessed below in Section 6.3.3. Given the above information, the impacts of Alternative 1 and Alternative 2 to non-target species are negligible overall and negligible in comparison to one another.

6.3.2 Action 2 – Northern Gulf of Maine Management and TAL Setting

6.3.2.1 Closure of Platts Bank to Protect Small Scallops

Overall impacts on non-target species under both No Action or a partial closure of Platts Bank (Alternative 2) could be expected to be negligible since this action is not expected to have a positive or negative impact to stocks or populations of species that are caught during the directed scallop fishery in the NGOM management area. The proposed closure of Platts Bank would shift where the fishery occurs in the NGOM management unit but would not shift fishing into new stock areas. This conclusion is based on available survey information, some of which is described in Table 55.

6.3.2.2 Northern Gulf of Maine TAL Setting

The Northern Gulf of Maine Management Area overlaps with part of the northern windowpane stock boundary. This area also overlaps with part of the Cape Cod/Gulf of Maine yellowtail stock boundary. Bycatch projections for these two flatfish stocks under the NGOM TAL options are provided in Table 55. Bycatch projections are based on observed discard to kept (d/K) ratios from observed LAGC trips in the NGOM in FY 2023 (i.e., the second year where observer coverage was required for the NGOM).

For Alternative 1 and all options being considered under Alternative 2, bycatch of windowpane and yellowtail flounder is expected to be low relative to the overall catch limits for these stocks for both alternatives. Alternative 1 or Alternative 2 are not expected to directly impact the overfishing/overfished status of these stocks or result in the overall ACLs to be exceeded. Therefore, considering the above, the impacts of Alternative 1 and Alternative 2 to non-target species are expected to be negligible overall and negligible in comparison to one another.

Table 55. Comparison CC/GOM yellowtail and northern windowpane bycatch projections for the NGOM management area in FY 2023, based on NGOM TAL Alternative 2 Options 1 and 2.

FW38 Alt	F rate	NGOM TAL (lb)	NWP bycatch (mt)	CC/GOM YT bycatch (mt)
Alternative 1	No Action, Default	318,573	0.08	0.10
Alternative 2 Op 1	F=0.18, biomass from Stellwagen, Ipswich, Jeffreys Ledge	396,391	0.10	0.11
Alternative 2 Op 2 (*Preferred*)	F=0.21, biomass from Stellwagen, Ipswich, Jeffreys Ledge	454,152	0.13	0.15
Alternative 2 Op 3	F=0.25, biomass from Stellwagen, Ipswich, Jeffreys Ledge	527,346	0.16	0.18

6.3.3 Action 3 – Fishery Specifications and Rotational Management

The alternatives under this action set FY 2024 open area and access trip allocations for the fishery. Default specifications for FY 2025 are also established. The Council considered a total of three allocation options in addition to Alternative 1/No Action. The action alternatives (Alternatives 2 - 4) offer different FT LA DAS options (18, 20, 24), and keep the same access area option. The access area option would allocate two 12,000 pound trips to Area II and one to the NY Bight Access area (three total per FT LA vessel). No Action includes

default open area DAS set through FW36 (i.e., 18 DAS for FT LA vessels). A status quo scenario, which was not formally considered as an alternative, and is different from the No Action/default allocations, was evaluated for comparison to current management. The status quo alternative applies FY 2023 specifications for FY 2024 (i.e., considering changes in biomass that have occurred). The rotational access areas open under status quo differ from the action alternatives.

Table 56 shows the FY 2024 scallop fishery bycatch projections for Georges Bank yellowtail, SNE/MA yellowtail, northern windowpane, and southern windowpane, relative to the anticipated scallop fishery sub-ACLs for each of these stocks. A description of the flatfish bycatch outlook for FY 2024 and discussion around projections relative to anticipated catch limits for these stocks is included in the November 22, 2023 memo from the Scallop PDT to the Groundfish PDT.

Table 56. Overview of FY 2024 projected scallop fishery bycatch estimates for the range of alternatives being considered in FW38, including the anticipated FY 2024 scallop sub-ACL for each stock.

Alternative	Scenario	GB Closure	GB YT	SNE/MA YT	GOM/GB WP	SNE/MA WP
Anticipated 2024 sub-ACL			*11 mt*	*2 mt*	*26.6 mt*	*71.3 mt*
Alternative 2	2 trips to Area II at 12,000 lb per trip and 1 trip to NYB at 12,000 lb per trip; 18 DAS; Area I - sliver, NLS (West, North, South, Ext) Closed	Area II seasonal closure (Aug 15-Nov 15)	25.9	2.5	76.2	10.2
Alternative 3 (*Preferred*)	2 trips to Area II at 12,000 lb per trip and 1 trip to NYB at 12,000 lb per trip; 20 DAS; Area I - sliver, NLS (West, North, South, Ext) Closed	Area II seasonal closure (Aug 15-Nov 15)	26.1	2.8	79.8	11.1
Alternative 4	2 trips to Area II at 12,000 lb per trip and 1 trip to NYB at 12,000 lb per trip; 24 DAS; Area I - sliver, NLS (West, North, South, Ext) Closed	Area II seasonal closure (Aug 15-Nov 15)	26.4	3.3	86.8	12.9

6.3.4 Action 4 – Access Area Trip Allocations to the LAGC IFQ Component

The LAGC IFQ component is allocated 5.5% of the access area allocations and a fleet wide total number of access area trips. Therefore, bycatch of non-target species in the LAGC IFQ fishery is relatively small when compared to the amount of bycatch by the entire scallop fishery over the course of the year.

Individual vessels are not required to take trips in specific areas like access area trips allocated to the LA fishery. After the total number of access area trips are determined, a maximum number of trips are identified by access area, and once that limit is reached, the area closes to all LAGC IFQ vessels for the remainder of the fishing year.

Under Alternative 1 (No Action), there would be no access area trips allocated to the LAGC IFQ component.

The nature of the LAGC IFQ fishery is such that vessels are motivated to fish areas with high LPUE, thereby reducing area swept and ultimately minimizing catch of non-target species. It is also important to note that occurrences of high bycatch of non-target species in the LAGC IFQ fishery are relatively minimal when

compared to the amount of bycatch by the entire fishery over the course of the year. This is true for all Alternatives being considered in Action 4.

In any scenario, the Alternatives being considered under Action 4 are not expected to result in levels of bycatch of allocated flatfish stocks that would contribute to ABCs for those stocks to be exceeded. Therefore, the direct impacts of Alternative 1 and Alternative 2 and Alternative 3 are expected to be negligible in the context of the overall fishery wide bycatch estimates presented in Section 6.3.3, as well as negligible in comparison to one another.

6.3.5 Action 5 – Scallop Research Set-Aside Compensation Fishing

Alternative 1 (No Action) would prohibit vessels from fishing RSA compensation in access areas, though vessels could complete RSA compensation fishing in open bottom and in the NGOM (up to 25,000 pounds).

Under Alternative 2, vessels would be allowed to fish RSA compensation pounds in the Area II Access Area, open bottom, and the NGOM management area (up to 25,000 pounds). Vessels would not be able to fish RSA compensation pounds in any other access areas, and only vessels receiving allocations of NGOM RSA compensation would be able to fish their awards in the NGOM management area.

Allowing RSA compensation fishing in all available access areas in addition to open area is expected to spread effort out across the resource. Vessels will likely target areas with high LPUE and higher meat yield when compensation fishing – fishing in areas with high LPUE means it will take less time for vessels to harvest compensation pounds, which could be expected to reduce area swept and associated bycatch of non-target species overall.

GB yellowtail and northern windowpane flounder bycatch tends to be higher in Closed Area II relative to other parts of the resource within the boundaries for these respective stocks; however, bycatch of both stocks vary seasonally. Considering this and acknowledging that RSA compensation fishing represents a small portion of annual scallop effort and landings, the impact of RSA compensation fishing on non-target species is expected to be negligible relative to impacts from the fishery as a whole.

6.3.5.1 Alternative 1 – No Action

Alternative 1 would prohibit RSA compensation fishing in access areas.

Overall impacts of Alternative 1 on non-target species are likely to be negligible since RSA compensation fishing effort is a relatively small proportion of overall scallop fishing effort, around 5% the projected landings (1.25 million pounds). Impacts on non-target species may vary depending on where and when RSA compensation fishing occurs in the open area. LPUE is expected to be higher in access areas compared to the open area in FY 2024 due to higher densities of scallops and greater meat yield being in access areas. By not allowing RSA compensation fishing in areas with higher LPUE and better meat yield, the time it takes to harvest compensation pounds will likely be elevated if vessels are only able to fish in the open bottom. More time spent fishing under Alternative 1 means that area swept will likely be greater, which in turn could lead to increases in bycatch of non-target species relative to Alternative 2, which allows RSA compensation fishing in all available access areas. Though bycatch may be somewhat elevated under Alternative 1 relative to Alternative 2, the overall impacts of either option on non-target species are expected to be negligible because RSA compensation fishing represents a small portion of annual harvest (i.e., 1.25 million pounds, less than 5% of annual projected landings.

6.3.5.2 Alternative 2 – Allow RSA Compensation fishing in Area II Access Area (*Preferred alternative*)

Though bycatch may be similar or somewhat reduced under Alternative 2 relative to Alternative 1, the overall impacts of either option on non-target species are expected to be negligible because RSA compensation fishing represents a small portion of annual harvest (i.e., 1.25 million pounds, less than 5% of annual projected landings) and the direct impacts of this level of harvest are not expected to implicate the stock status of any non-target species. For Georges Bank yellowtail flounder, the impacts of Alternative 2 could be slightly negative compared to Alternative 1 since bycatch rates of GBYT tend to be higher in Area II compared to the open bottom.

6.3.6 Action 6 – Increase VMS-Reporting Intervals

The increase of VMS reporting rates is an administrative measure that does not, in and of itself, have a direct effect on non-target species.

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6.4 Impacts on Protected Species

6.4.1 Action 1 – Overfishing Limit and Acceptable Biological Catch

Annual Biological Catch (ABC) and overfishing limits (OFL) are recommended by the Council's Scientific and Statistical Committee and approved by the Council. The FY 2024 and FY 2025 OFL and ABC values that were approved by the SSC and recommended to the Council are summarized in Table 4. The updated ABC estimate excluding discards is 21,497 mt for FY 2024. This is 1,291 (6.3%) higher than the No Action ABC (default) (Table 2). The OFL, ABC, and ACL values set by the Council are often higher than the projected landings by the fishery (e.g., in this action, all alternatives in Section 4.3 are nearly double). Therefore, realized impacts on protected species for this framework will largely reflect measures discussed in Section 4.3, and are only indirectly related to the ABC and OFL values.

6.4.1.1 Alternative 1 – No Action for OFL and ABC

The scallop fishery is prosecuted with scallop dredge and bottom trawl gear. As provided in Section 5.4, ESA listed species of sea turtles and Atlantic sturgeon are at risk of interaction with these gear types, with interactions often resulting in injury or mortality to the species. Based on this, the scallop fishery is likely to result in some level of negative impacts to ESA listed species of sea turtles and Atlantic sturgeon. Taking into consideration fishing behavior/effort under this alternative, as well the fact that interaction risks with protected species are strongly associated with the amount of gear in the water, gear soak or tow duration, as well as the area of overlap, either in space or time, of the gear and a protected species (with risk of an interaction increasing with increases in of any or all of these factors), the level of negative impacts to ESA listed species of sea turtles and Atlantic sturgeon is expected to be slight. Support for this determination is provided below.

Under "No Action", the overall OFL and ABC would be at the default values for FY2024, which were adopted by the Council through FW36. The No Action ABC including discards is 23,289 mt or about 51 million pounds. The No Action OFL including discards is 29,151 mt or roughly 64 million pounds. The ABC and OFL under Alternative 1 (No Action) are near the lowest values authorized for the fishery since 2014 (Table 57). As biomass of the scallop resource affect the OFL and ABC, and these resource conditions can vary from year to year, it is likely that fishing effort under the No Action OFL and ABC will be no greater than effort seen under the most recent values authorized in the fishery (i.e., 2017 through 2023). In addition, the OFL and ABC are not a direct measure of the Annual Projected Landings (APL) for the scallop fishery and therefore, the values in and of

themselves are not a direct measure of expected fishing behavior or effort under such specifications. Instead, these values represent the legal limits for the fishery based on biomass throughout the range of the resource and the overfishing level updated through the 2020 scallop stock assessment (F=0.61) (NEFSC 2020). Projected landings are anticipated to be much lower than the OFL/ABC values under No Action and Alternative 2, and impacts of the projected landings resulting from specification alternatives in Section 4.3 (i.e., day-at-sea and access area allocations) are described in Section 6.4.3.

As noted above, interaction risks with protected species are strongly associated with amount, time, and location of gear in the water. As fishing behavior and expected levels of effort under the No Action are not expected to change any of these operating conditions, relative to current operating conditions in the fishery, the No Action is not expected to introduce new or elevated interaction risks to ESA listed species of sea turtles or Atlantic sturgeon. Given this, and the fact that this action would still require compliance with sea turtle chain mat and TDD regulations, Alternative 1 (No Action) would likely have slight negative impacts on ESA listed species of sea turtles and Atlantic sturgeon. Relative to Alternative 2, the No Action alternative would result in negligible impacts to ESA-listed species because the OFL and ABC values in and of themselves, under either alternative are not expected to change fishing behavior and effort in a manner that significantly differs from status quo conditions.

6.4.1.2 Alternative 2 – Updated OFL and ABC for FY2023 and FY2024 (default) (*Preferred Alternative*)

The OFL and ABC values approved by the SSC for FY2024 and FY2025 (default) under Alternative 2 are summarized in Table 4. The updated OFL including discards is 33,406 mt (approximately 74 million pounds) and the updated ABC including discards is 26,326 mt (approximately 58 million pounds). The updated OFL and ABC represent an increase from No Action by 4,255 mt and 3,037 mt, respectively. Survey results from 2023 suggest a slight increase in scallop biomass relative to 2022, although overall biomass is estimated to be near its lowest level since 1999. The trend is likely driven by larger year classes of scallops being fished down in tandem with several years of below average recruitment.

Under Alternative 2, the proposed OFL and ABC for FY2024 and FY2025 are lower than the range of ABC and OFL values that were authorized by the fishery over the past 12 years (Table 57). The trends in the ABC and OFL since 2017 (i.e., increases between FY2017 and FY2019; roughly similar values between FY2019 and FY2020; and a reduction between FY2020, FY2021, FY2022, and FY2023) reflect the higher estimates of scallop biomass observed in recent surveys of the scallop resource and the leveling off and steady decline of scallop biomass as the large year classes continued to be fished with a lack of subsequent recruitment. As biomass of the scallop resource affect the OFL and ABC, and these resource conditions can vary from year to year, it is likely that fishing effort under the Alternative 2 OFL and ABC will be no greater than effort seen under the most recent values authorized in the fishery (i.e., 2017 through 2023). In addition, the OFL and ABC are not a direct measure of the Annual Projected Landings (APL) for the scallop fishery and therefore, the values in and of themselves are not a direct measure of expected fishing behavior or effort under such specifications. Instead these values represent the legal limits for the fishery based on biomass throughout the range of the resource and the overfishing level updated through the 2020 scallop stock assessment (F=0.61) (NEFSC 2020). Projected landings are anticipated to be much lower than the OFL/ABC values under both No Action and Alternative 2; impacts of the projected landings resulting from specification alternatives in Section 4.3 (i.e., day-at-sea and access area allocations) are described in more detail in Section 6.3.3.

Fishery allocations are projected to result in significantly lower landings than the OFL and ABC limits under Alternative 2 and are lower than projected landings in recent history. Based on this, the OFL and ABC in and of themselves are not expected to change fishing behavior and effort in a manner that significantly differs from status quo conditions. As a result, impacts on ESA listed species of sea turtles and Atlantic sturgeon under Alternative 2 are expected to be like those assessed for Alternative 1, slight negative. Therefore, relative to

Alternative 1, Alternative 2 is likely to result in negligible impacts on ESA listed species of sea turtles and Atlantic sturgeon.

Table 57. Overfishing limit (OFL) and acceptable biological catch (ABC) values (mt) from fishing year 2011 to 2022, with 2023 and 2024 values.

Fishing Year	OFL	ABC
2011	32,387	27,269
2012	34,382	28,961
2013	31,555	21,004
2014	30,419	20,782
2015	38,061	25,352
2016	68,418	37,852
2017	75,485	46,737
2018	72,055	45,950
2019	73,421	57,003
2020	56,186	45,414
2021	47,503	36,435
2022	38,271	30,305
2023	27,504	22,631
2024	29,151	23,289

6.4.2 Action 2 – Northern Gulf of Maine Management and TAL Setting

6.4.2.1 Closure of Platts Bank to Protect Small Scallops

Overall impacts on protected species under both No Action or a partial closure of Platts Bank (Alternative 2) could be expected to be negligible since this action is not expected to have a positive or negative impact to stocks or populations of species that are caught during the directed scallop fishery in the NGOM management area. The proposed closure of Platts Bank would shift where the fishery occurs in the NGOM management unit but would not shift fishing into new stock areas. This conclusion is based on available survey information, some of which is described in Table 55.

6.4.2.2 Northern Gulf of Maine TAL Setting

6.4.2.2.1 Alternative 1 – No Action

Under No Action, the default specifications approved in Framework 36 for the NGOM Set-Aside (285,641 pounds) would be in place for the 2024 fishing year. There would be no NGOM Set-Aside specified for FY 2025, and as such, the area would close to directed scallop fishing. In recent years the NGOM set-aside has been fully harvested early in the fishing year, and it is expected that it will be fully harvested in 2024 as well. Relative to FY 2023, Alternative 1 (No Action) represents a reduction in the overall NGOM Set-Aside. While this is expected to equate to a similar rate of harvest from the LAGC component as seen in recent years, relative to FY 2023, the overall duration of the LAGC NGOM fishery is expected to be abbreviated (i.e., FY 2023, NGOM fishery

concluded in late April 2023). In other words, under Alternative 1 (No Action), the NGOM Set-Aside would likely be harvested by early to mid-April, if activity in terms of active vessels and catch rates are like what was observed in FY 2023. If the number of active vessels or catch rates in the NGOM were to be reduced in FY 2024 compared to FY 2023, there is potential that scallop fishing activity at some level could persist within the NGOM management area beyond the month of May; however, this is not expected given recent trends in the fishery (see Section 0) and therefore, will not be the focus of the following assessment.

As discussed in Section 5.4.2, sea turtles (hard-shelled and leatherback) are at risk of interacting with scallop dredge and trawl gear. In general, from late April/early May to November each year, sea turtles occur throughout the range of the scallop fishery. In the portion of the scallop fishery operating in the NGOM, hard-shelled sea turtles are most likely to be present, and overlap with the scallop fishery, from June through September; however, their presence, albeit lower, is still possible from October through December (Epperly et al. 1995b; Griffin et al. 2013; Hawkes et al. 2011; NMFS 2021; Shoop & Kenney 1992). Leatherback sea turtles also occur in the Gulf of Maine over a similar time frame as hard-shelled sea turtles, with most leaving the Northwest Atlantic shelves by mid-November (Dodge *et al.* 2014; James *et al.* 2005; James *et al.* 2006)(Dodge *et al.* 2014; James *et al.* 2005; James *et al.* 2006)(Dodge *et al.* 2014; James *et al.* 2005; James *et al.* 2006)(Dodge *et al.* 2014; James *et al.* 2005; James *et al.* 2006)(Dodge *et al.* 2014; James *et al.* 2005; James *et al.* 2006). Although sea turtles can be found seasonally throughout the range of the scallop fishery, relative to Mid-Atlantic, encounter rates of hard-shelled species of sea turtles are lower in the Gulf of Maine (Murray 2018, 2020). In addition, review of NMFS observer data (NEFSC FMRD database; unpublished data) show that there have been no observed or documented interactions between scallop fishing gear and any hard-shelled species of sea turtle in the GOM (FSB 2015; 2016; 2017; 2018; Murray 2011; 2013; 2015a; c; Murray & Orphanides 2013a; NMFS 2012; Warden 2011a; c). Although there is the possibility for leatherback sea turtles to interact with scallop fishing gear, based on NMFS observer data (FSB 2019), as well as data provided by the Greater Atlantic Region Sea Turtle Disentanglement Network (GAR STDN, unpublished data), leatherback sea turtle interactions with scallop fishing gear have never been observed or documented. Therefore, while the risk of interaction exists, it is likely very low.

Taking into consideration the information above, since the NGOM fishery is expected to end by early to mid-April, fishing activity is not expected to have a substantial overlap with the seasonal distribution of sea turtles in the Gulf of Maine (GOM). Based on this, interactions with sea turtles are not expected.

Atlantic sturgeon are known to occur in the Gulf of Maine year-round and are vulnerable to interactions with scallop fishing gear; however, based on the best available information, the risk is expected to be low (NMFS 2021). Specifically, review of NMFS observer data from 1989 through 2019 show no observed or documented Atlantic sturgeon interactions with scallop bottom trawl gear where the haul target or trip target is scallop; and only one (1) Atlantic sturgeon interaction with scallop dredge gear targeting Atlantic sea scallops; this sturgeon was released alive (FSB 2015; 2016; 2017; 2018; 2019). Based on this information, as well as the information provided in the sea turtle assessment above regarding fishing effort, new or elevated (e.g., more gear, longer soak or tow times) interaction risks to Atlantic sturgeon are not expected under the No Action. Based on this information, as well as the information provided above regarding expected fishing behavior and effort in the NGOM, the impacts to Atlantic sturgeon could be slightly negative overall.

Based on the above, the impacts on protected species (i.e. ESA listed species of sea turtles and Atlantic sturgeon) from Alternative 1 would likely be negligible to slight negative.

6.4.2.2.2 Alternative 2 – Set NGOM TAL, with set-asides to support research, monitoring, and a directed LAGC fishery (*Alternative 2 Option 2 is preferred*)

Alternative 2 would specify a Northern Gulf of Maine Total Allowable Landings (NGOM TAL) limit for FY 2024 and FY 2025 (default), including set-asides to support research, monitoring, and a directed LAGC fishery. Option 1 (F=0.18), Option 2 (F=0.21), and Option 3 (F=0.25) would set the NGOM TAL using estimates of exploitable biomass from Stellwagen Bank, Ipswich Bay, and Jeffreys Ledge. The resulting TALs from these

options are 396,391 pounds (Option 1), 454,152 pounds (Option 2, preferred), 527,346 pounds (Option 3), respectively. All three options fall under the 800,000-pound NGOM Set-Aside trigger, meaning the remainder of the NGOM TAL after set-asides are removed will be allocated as NGOM Set-Aside, available to directed LAGC fishing only.

Taking into consideration fishing behavior/effort under this alternative, as well the fact that interaction risks with protected species are strongly associated with the amount of gear in the water, gear soak or tow duration, as well as the area of overlap, either in space or time, of the gear and a protected species (with risk of an interaction increasing with increases in of any or all of these factors), impacts of Alternative 2 on ESA-listed species of sea turtles and Atlantic sturgeon are expected to be negligible to slight negative for all Options. Support for this determination is provided below.

The options of Alternative 2 represent slightly higher catch limits than those authorized in FY 2023 and compared to limits for FY 2018-FY 2022. The NGOM fishery is not expected to extend longer than what has typically been observed (i.e., NGOM fishery concluding between late-April and mid-May) because of the NGOM TAL options being considered under Alternative 2. The main variable driving the duration of the fishing season is the level of participation (i.e., number of active vessels). Participation could vary under either Alternative 1 or Alternative 2 because any vessels with an LAGC A (IFQ) or LAGC B/C permit could choose to fish in the NGOM. For the purpose of understanding the relationship between the level of participation in the NGOM and potential impacts to protected species, several scenarios are presented below.

In a scenario where participation remains the same as last year, with approximately 100 LAGC vessels actively fishing in the NGOM, scallop fishing activity in the NGOM would likely conclude by early to mid-May under any of the options of Alternative 2. In another scenario with a moderate decrease in active vessels in the NGOM, fishing activity in the NGOM could extend slightly compared to FY 2023; however, it is difficult to say to what degree. Another scenario could be that there is a significant increase in the number of active vessels fishing the NGOM Set-Aside; under this scenario, there would be an increase of gear in the water, but the duration of the NGOM fishery would be abbreviated to a short window in the early spring (i.e., likely mid- to late-April). Given the increase in the NGOM TAL between FY 2023 and the options considered for FY 2024 under Alternative 2, there would not be a strong incentive for a significant increase in the number of active vessels under any of the options of Alternative 2. There are roughly 532 LAGC IFQ, LAGC NGOM, and LAGC Incidental permits in the fishery; while it is highly unlikely that this number of vessels would activate in the NGOM, this represents the upper bound of possible participation in the above scenarios associated with Alternative 2. While it is difficult to state which of these scenarios would occur, given recent trends in the NGOM scallop fishery, a similar level of participation as observed in FY 2023 is probably the most realistic scenario to occur under Alternative 2, and as such, will be the focus of the following assessment.

Interactions with protected species are strongly associated with the amount of gear in the water, gear soak or tow time, as well as the area of overlap, either in space or time, of the gear and a protected species (with risk of an interaction increasing with increases in of any or all of these factors). Fishing behavior/effort under Alternative 2 is not expected to increase or differ from what was observed in FY 2023, meaning risk of interaction with protected species is not expected to be elevated compared to current conditions as a result of Alternative 2 and its options. It is also important to note the low level of co-occurrence between hard-shelled sea turtles and scallop gear in this sub-region, especially considering that hard-shelled sea turtle interactions with scallop fishing gear in the Gulf of Maine have never been observed or documented (FSB 2015; 2016; 2017; 2018; Murray 2011; 2013; 2015a; c; Murray & Orphanides 2013a; NMFS 2012; Warden 2011a; c) and that hard-shelled sea turtles are generally less common in the Gulf of Maine relative to the Mid-Atlantic. Although there is the possibility for leatherback sea turtles to interact with scallop fishing gear (NMFS 2012), based on fisheries observer data (FSB 2019), as well as data provided by the Greater Atlantic Region Sea Turtle Disentanglement Network (GAR STDN, unpublished data), leatherback sea turtle interactions with scallop fishing gear have never been observed/documented. Therefore, while the risk of interaction exists, it is likely very low, even at the levels of effort expected under Alternative 2. Taking all of these factors into consideration and acknowledging that the level of effort, fishing behavior, and duration of the NGOM fishery under the options of Alternative 2 are

expected to be similar to what occurred in FY 2023, the impacts to sea turtles would likely be slightly negative overall.

The impact of Alternative 2 to Atlantic sturgeon would likely be driven by the overall effort, amount of gear, and tow time in the NGOM. As provided above, Atlantic sturgeon are known to occur in the Gulf of Maine year-round and are vulnerable to interactions with scallop fishing gear; however, a review of NMFS observer data from 1989 through 2019 show no observed or documented Atlantic sturgeon interactions with scallop bottom trawl gear where the haul target or trip target is scallop, and only one (1) Atlantic sturgeon interaction with scallop dredge gear targeting Atlantic sea scallops; this sturgeon was released alive (FSB 2015; 2016; 2017; 2018; 2019). Based on this information, as well as the information provided above regarding the most likely scenario for Alternative 2 related to the timing and amount of fishing effort in the NGOM, the impacts to Atlantic sturgeon could be slightly negative overall.

Given the similarities in NGOM TAL options under Alternative 2 and Alternative 1, the impacts to protected species are expected to be similar under both alternatives, meaning the impacts of Alternative 2 would likely be negligible relative to Alternative 1.

6.4.3 Action 3 – Fishery Specifications and Rotational Management

Alternatives under this action set FY 2024 open area and access trip allocations for the fishery as well as default specifications for FY 2025. The Council is considering a total of three allocation options in addition to Alternative 1/No Action. The action alternatives (Alternatives 2 - 4) offer three DAS options and one access area allocation options (Table 58). The access area option includes two 12,000-pound trips to Area II and one 12,000-pound trip to the New York Bight. A status quo scenario, which was not formally considered as an alternative, and is different from the No Action/default allocations, was evaluated for comparison to current management. The status quo alternative applies FY 2023 specifications for 2024 (i.e., considering changes in biomass that have occurred). The rotational access areas open under status quo differ from the action alternatives. Table 58 shows landings, LPUE, and area swept by alternative,

Table 59 provides a matrix of comparisons for the area swept values only.

Impacts of scallop fishing on protected resources are gauged by the level of scallop effort that overlaps with regions where protected resource species are typically observed and is measured by projected area swept (

Table 59). Interaction risks with protected species, such as sea turtles and Atlantic sturgeon, are strongly associated with the amount of gear in the water, gear soak or tow time, as well as the area of overlap, either in space or time, of the gear and a protected species, with risk of an interaction increasing with increases of any or all of these factors. Any alternatives that will result in a low projected area swept (i.e., higher landings per unit of effort) would reduce the overall time gear is deployed in the water, thereby reducing the potential for interactions. The level of impact measured using these points of reference varies very little when comparing Alternatives except for Status Quo because all alternatives are very similar in terms of the level of expected harvest, the parts of the resource that are expected to be fished, and associated area swept by the scallop fishery.

The majority of available exploitable biomass is accounted for in the current OFL and ABC estimates on Georges Bank. Area II and the New York Bight are the only candidate access areas being considered for FY 2024. The projection model also suggests that the majority of open area fishing will occur on Georges Bank, which is consistent with observed trends in the past few years as well as survey estimates that show open areas of Georges Bank to hold greater biomass than in the Mid-Atlantic Bight region. The scallop fishery is expected to operate mostly on eastern Georges Bank in FY 2024.

Given the similarities between alternatives in terms of spatial patterns of effort and area swept, the impacts to protected species are therefore expected to be broadly similar between the different alternatives, with effects scaling according to the magnitude of effort in each area by DAS effort.

Table 58. Summary of projected landings, overall landings per unit of effort (LPUE), bottom area swept (nm^2), and relative habitat efficiency (landings/area swept) for alternatives under consideration in Framework 38.

Alternative	Description	Projected Landings (lb)	Open Area LPUE Estimate	Area Swept (nm^2)	Landings (mt)/Area Swept (nm^2)
4.3.1	No Action	14,399,272	2,008	2,196	3.03
4.3.2	18 DAS 3x12k	26,165,343	2,025	2,853	4.21
4.3.3	20 DAS 3x12k	27,392,436	1,996	3,115	4.05
4.3.4	24 DAS 3x12k	29,733,304	1,938	3,661	3.75
4.3.5	Status Quo	27,113,331	1,901	3,601	3.46

Table 59. Comparison of area swept (nm2) between each specification alternative in Framework 38.

Alternative			4.3.1	4.3.2	4.3.3	4.3.4	4.3.5
	Description	**Area Swept**	**2196**	**2853**	**3115**	**3661**	**3601**
4.3.1	No Action	**2196**	0	-657	-919	-1465	-1405
4.3.2	18 DAS 3x12k	**2853**	657	0	-262	-808	-748
4.3.3	20 DAS 3x12k	**3115**	919	262	0	-546	-486
4.3.4	24 DAS 3x12k	**3661**	1465	808	546	0	60
4.3.5	Status Quo	**3601**	1405	748	486	-60	0

6.4.3.1 Alternative 1 – No Action

Alternative 1 (No Action) is the default measure for FY2024 that was implemented through Framework 36. The default measure automatically goes into place at the start of the 2024 fishing year (April 1, 2024) if the updated specifications being proposed through this action (Framework 38) are not implemented by that date. The fishery would operate under the default measures until updated specifications are implemented through this action (Framework 38). Alternative 1 would set DAS at 18 for full-time limited access vessels. This alternative is anticipated to result in reduced levels of landings and area swept compared to all other alternatives and Status Quo.

Alternative 1 does not introduce effort to new parts of the resource and is not expected to result in significantly greater effort compared to recent years; however, because scallop fishing at any level poses an inherent risk for interactions with ESA-listed species of sea turtles and Atlantic sturgeon, the overall impact of Alternative 1 could be slightly negative.

Alternative 1 has the lowest days-at-sea allocation, access area allocations, and estimated area swept (Table 59) compared to all the alternatives being considered in Action 3 and Status Quo. Like all alternatives being considered in Framework 38, the majority of open and access area scallop fishing is expected to occur on eastern Georges Bank because the majority of exploitable biomass is estimated to be in that part of the resource.

As provided above, interaction risks with protected species, such as sea turtles and Atlantic sturgeon, are strongly associated with the amount of gear in the water, gear soak or tow time, as well as the area of overlap, either in space or time, of the gear and a protected species. As provided in Section 5.4.2.1.3, sea turtle distribution commonly overlaps with the sea scallop fishery, specifically in Mid-Atlantic waters, as evidenced by the number

of sea turtle (specifically hard-shelled) interactions. Encounter rates of hard-shelled species of sea turtles are higher in the Mid-Atlantic relative to the Gulf of Maine (GOM) and Georges Bank (GB) (see Section 5.4.2.1.2) (Murray & Orphanides 2013a). As the No Action (Alternative 1) will result in the majority of open and access area scallop fishing occurring on eastern Georges Bank, the degree of overlap between scallop fishing effort and sea turtles is likely to be reduced under Alternative 1. In addition, relative to current operating conditions in the fishery, as No Action is expected to result in less overall effort and lower realized area swept, an increase in the amount of gear fished and/or trawl/dredge tow duration is not expected under the No Action. Based on this and the information provided above, Alternative 1 is not expected to introduce new or elevated interaction risks to any ESA-listed species of sea turtles. As a result, the No Action alternative is expected to result in slight negative impacts to ESA listed species of sea turtles overall.

Atlantic sturgeon are known to occur in the Gulf of Maine year-round and are vulnerable to interactions with scallop fishing gear; however, based on the best available information, the risk is expected to be low (NMFS 2021). Specifically, review of NMFS observer data from 1989 through 2019 show no observed or documented Atlantic sturgeon interactions with scallop bottom trawl gear where the haul target or trip target is scallop, and only one (1) recorded Atlantic sturgeon interaction with scallop dredge gear targeting Atlantic sea scallops; this sturgeon was released alive (FSB 2015; 2016; 2017; 2018; 2019). Based on this information, as well as the information provided in the sea turtle assessment above regarding fishing effort, new or elevated (e.g., more gear, longer tow times) interaction risks to Atlantic sturgeon are not expected under the No Action. Taking into consideration this information, as well as the information provided above regarding fishing effort (i.e., relatively low projected area swept) the No Action alternative is expected to result in slight negative impacts to Atlantic sturgeon overall.

Taking into consideration the above information, Alternative 1 is expected to have slight negative impacts on protected species (i.e., ESA-listed species of sea turtles and Atlantic sturgeon) overall. The impacts of Alternative 1 on protected species are expected to be slightly positive relative to Alternative 2, Alternative 3, and Alternative 4 because fewer days-at-sea and less access area effort would be allocated and because area swept is expected to be lower under Alternative 1 in comparison to all other options. Because overall effort is reduced under No Action relative to Status Quo and considering that area swept is also expected to be lower, this alternative is expected to have a slight positive impact on ESA-listed species of sea turtle and Atlantic sturgeon in comparison.

6.4.3.2 Alternative 2 – 18 Days At Sea with three access area trips with 12,000-pound trip limit

Alternative 2 would allocate full-time limited access vessels three 12,000-pound trips and 18 DAS. Alternative 2 also closes the Area I-Sliver, the Nantucket Lightship West, the Nantucket Lightship North, the Nantucket Lightship South, and the Nantucket Lightship Extension to scallop fishing for the duration of FY2024 due to sets of juvenile scallops observed in these areas during the 2023 surveys. An additional area within Area I (i.e., Area I Quad) would be closed to protect transplanted scallops related to an ongoing RSA project.

Alternative 2 does not introduce effort to new parts of the resource and is not expected to result in significantly greater effort compared to recent years. In fact, the level of effort under Alternative 2 is expected to be lower than the level of effort seen in the fishery over the past several fishing years in the open bottom. Relative to status quo, overall area swept will likely be lower under Alternative 2 (Table 58 and Table 59). In addition, based on the distribution of exploitable scallop biomass (i.e., the majority of exploitable scallop biomass is on Georges Bank) and considering closures of several areas such as the Area I-Sliver and Nantucket Lightship region, Alternative 2 is expected to focus the majority of open area effort and access area effort on eastern Georges Bank, with one 12,000-pound access area trip allocated to the New York Bight.

As provided above, interaction risks with protected species, such as sea turtles and Atlantic sturgeon, are strongly associated with the amount of gear in the water, gear soak or tow time, as well as the area of overlap, either in space or time, of the gear and a protected species. As provided in Section 5.4.2.1.3, sea turtle distribution

commonly overlaps with the sea scallop fishery, specifically in Mid-Atlantic waters, as evidenced by the number of sea turtle (specifically hard-shelled) interactions. Encounter rates of hard-shelled species of sea turtles are higher in the Mid-Atlantic relative to the Gulf of Maine (GOM) and Georges Bank (GB) (see Section 5.4.2.1.2) (Murray & Orphanides 2013a). As Alternative 2 will result in the majority of open and access area scallop fishing occurring on eastern Georges Bank, the degree of overlap between scallop fishing effort and sea turtles is likely to be reduced under Alternative 2. In addition, relative to current operating conditions in the fishery, as Alternative 2 is expected to result in less overall effort and lower realized area swept, an increase in the amount of gear fished and/or trawl/dredge tow duration is not expected. Based on this and the information provided above, Alternative 2 is not expected to introduce new or elevated interaction risks to any ESA-listed species of sea turtles. As a result, Alternative 2 is expected to result in slight negative impacts to ESA listed species of sea turtles overall.

There is limited information on Atlantic sturgeon encounter rates throughout the scallop resource area. Review of NMFS observer data from 1989 through 2019 show no observed or documented Atlantic sturgeon interactions with scallop bottom trawl gear where the haul target or trip target is scallop, and only one (1) recorded Atlantic sturgeon interaction with scallop dredge gear targeting Atlantic sea scallops; this sturgeon was released alive (NEFSC FMRD database; unpublished data). Based on this, it appears the risk of an interaction between Atlantic sturgeon and scallop dredge or trawl gear is low throughout the scallop resource area (see section 5.4.2). Taking into consideration this information, as well as the information provided above regarding fishing effort (e.g., relatively low projected area swept), Alternative 2 is not expected to introduce new or elevated (e.g., more gear, longer tow times) interaction risks to Atlantic sturgeon. Given this, Alternative 2 is expected to result in slight negative impacts to Atlantic sturgeon overall.

Projected area swept under Alternative 2 is expected to be greater than Alternative 1 (No Action) by 30% (Table 59). Open area effort would be the same under Alternative 2 relative to No Action, and the spatial distribution of open area effort is expected to similar under both alternatives, with the majority of open area fishing on Georges Bank. A slightly lesser proportion of open area effort could occur on Georges Bank under Alternative 2, which closes both the Nantucket Lightship North, Nantucket Lightship South, and Nantucket Lightship Extension areas, in comparison to Alternative 1, which only maintains the current Nantucket Lightship West closure. Alternative 2 also would designate the Elephant Trunk area as open bottom. However, exploitable biomass and anticipated fishing effort in both the Nantucket Lightship region and the Elephant Trunk are low, and effort is unlikely to be displaced. As noted above, interactions between scallop fishing gear and Atlantic sturgeon are expected to be low throughout the scallop resource area. However, encounter rates of hard-shelled species of sea turtles are higher in the Mid-Atlantic relative to the Gulf of Maine and Georges Bank (see Section 5.4.2.1.2; (Murray & Orphanides 2013a). Based on this, sea turtle distribution commonly overlaps with the sea scallop fishery, specifically in Mid-Atlantic waters, as evidenced by the number of sea turtle (specifically hard-shelled) interactions (see Section 5.4.2). Estimated bycatch rates in trawl and dredge gear are higher in the Mid-Atlantic than in other waters in the affected environment. Given this, displacing effort out of the Mid-Atlantic region could reduce the risk of interaction with protected species that overlap with the fishery in the Mid-Atlantic at a higher rate than on Georges Bank and the Gulf of Maine, such as ESA-listed species of hard-shelled sea turtles. Therefore, considering that the risk of interactions with protected species scales with overall effort, time with gear in the water, and area swept, the impacts to protected species under Alternative 2 are expected to be slightly negative to slightly positive relative to Alternative 1 (No Action).

Alternative 2, Alternative 3, and Alternative 4 are the same with regard to access area configurations, rotational closures (i.e., Area I-Sliver and NLS), and the number of trips to Area II access area (i.e., two trips) and to the New York Bight (ie. one trip), with the only difference being the open area DAS, with 18 DAS under Alternative 2, 20 DAS under Alternative 3, and 24 DAS under Alternative 4. The spatial distribution of open area effort is expected to be the same for all alternatives, with the majority of effort anticipated to occur on Georges Bank. Area swept is estimated to be lower under Alternative 2 in comparison to Alternative 3 and Alternative 4. The area swept estimate for Alternative 3 is 9% greater than Alternative 2, and Alternative 4 is 28% greater than Alternative 2 (Table 59), meaning the overall impact of the alternatives to protected species is expected to be similar for Alternative 2 and Alternative 3, but negative for Alternative 4 relative to Alternative 2 and Alternative

3. Impacts to Atlantic sturgeon and ESA-listed species of sea turtle are expected to scale with the level of overall effort and associated area swept, meaning the impacts of Alternative 2 and Alternative 3 are likely to be very similar, but Alternative 4 would be negative relative to Alternative 2 and Alternative 3. Therefore, given the above information, the impact of Alternative 2 on protected species is expected to be negligible in comparison to Alternative 3 and positive in comparison to Alternative 4.

6.4.3.3 Alternative 3 – 20 Days At Sea with three access area trips with 12,000-pound trip limit (*Preferred*)

Alternative 3 would allocate full-time limited access vessels three 12,000-pound trips and 20 DAS. Alternative 3 also closes the Area I-Sliver, the Nantucket Lightship West, the Nantucket Lightship North, the Nantucket Lightship South, and the Nantucket Lightship Extension to scallop fishing for the duration of FY2024 due to sets of juvenile scallops observed in these areas during the 2023 surveys. An additional area within Area I (i.e., Area I Quad) would be closed to protect transplanted scallops related to an ongoing RSA project.

Alternative 3 does not introduce effort to new parts of the resource and is not expected to result in significantly greater effort compared to recent years. In fact, the level of effort under Alternative 3 is expected to be lower than the level of effort seen in the fishery over the past several fishing years. Relative to status quo, overall area swept will likely be lower under Alternative 3 (Table 58 and Table 59). In addition, based on the distribution of exploitable scallop biomass (i.e., the majority of exploitable scallop biomass is on Georges Bank) and considering closures of several areas such as the Area I-Sliver and Nantucket Lightship region, Alternative 3 is expected to focus the majority of open area effort and access area effort on eastern Georges Bank, with one 12,000-pound access area trip allocated to the New York Bight.

As provided above, interaction risks with protected species, such as sea turtles and Atlantic sturgeon, are strongly associated with the amount of gear in the water, gear soak or tow time, as well as the area of overlap, either in space or time, of the gear and a protected species. As provided in Section 5.4.2.1.3, sea turtle distribution commonly overlaps with the sea scallop fishery, specifically in Mid-Atlantic waters, as evidenced by the number of sea turtle (specifically hard-shelled) interactions. Encounter rates of hard-shelled species of sea turtles are higher in the Mid-Atlantic relative to the Gulf of Maine (GOM) and Georges Bank (GB) (see Section 5.4.2.1.2) (Murray & Orphanides 2013a). As Alternative 3 will result in the majority of open and access area scallop fishing occurring on eastern Georges Bank, the degree of overlap between scallop fishing effort and sea turtles is likely to be reduced under Alternative 3. In addition, relative to current operating conditions in the fishery, as Alternative 3 is expected to result in less overall effort and lower realized area swept, an increase in the amount of gear fished and/or trawl/dredge tow duration is not expected. Based on this and the information provided above, Alternative 3 is not expected to introduce new or elevated interaction risks to any ESA-listed species of sea turtles. As a result, Alternative 3 is expected to result in slight negative impacts to ESA listed species of sea turtles overall.

There is limited information on Atlantic sturgeon encounter rates throughout the scallop resource area. Review of NMFS observer data from 1989 through 2019 show no observed or documented Atlantic sturgeon interactions with scallop bottom trawl gear where the haul target or trip target is scallop, and only one (1) recorded Atlantic sturgeon interaction with scallop dredge gear targeting Atlantic sea scallops; this sturgeon was released alive (NEFSC FMRD database; unpublished data). Based on this, it appears the risk of an interaction between Atlantic sturgeon and scallop dredge or trawl gear is low throughout the scallop resource area (see section 5.4.2). Taking into consideration this information, as well as the information provided above regarding fishing effort (e.g., relatively low projected area swept), Alternative 3 is not expected to introduce new or elevated (e.g., more gear, longer tow times) interaction risks to Atlantic sturgeon. Given this, Alternative 3 is expected to result in slight negative impacts to Atlantic sturgeon overall.

Projected area swept under Alternative 3 is expected to be greater than Alternative 1 (No Action) by 42% (Table 59). Open area effort would be greater under Alternative 3 relative to No Action, and the spatial distribution of open area effort is expected to similar under both alternatives, with the majority of open area fishing on Georges

Bank. A slightly lesser proportion of open area effort could occur on Georges Bank under Alternative 3, which closes both the Nantucket Lightship North, Nantucket Lightship South, and Nantucket Lightship Extension areas, in comparison to Alternative 1, which only maintains the current Nantucket Lightship West closure. Alternative 3 also would designate the Elephant Trunk area as open bottom, although exploitable biomass and anticipated effort in the area is low, and effort is unlikely to be displaced. However, exploitable biomass and anticipated fishing effort in both the Nantucket Lightship region and the Elephant Trunk are low. As noted above, interactions between scallop fishing gear and Atlantic sturgeon are expected to be low throughout the scallop resource area. However, encounter rates of hard-shelled species of sea turtles are higher in the Mid-Atlantic relative to the Gulf of Maine and Georges Bank (see Section 5.4.2.1.2; (Murray & Orphanides 2013a). Based on this, sea turtle distribution commonly overlaps with the sea scallop fishery, specifically in Mid-Atlantic waters, as evidenced by the number of sea turtle (specifically hard-shelled) interactions (see Section 5.4.2). Estimated bycatch rates in trawl and dredge gear are higher in the Mid-Atlantic than in other waters in the affected environment. Given this, displacing effort out of the Mid-Atlantic region could reduce the risk of interaction with protected species that overlap with the fishery in the Mid-Atlantic at a higher rate than on Georges Bank and the Gulf of Maine, such as ESA-listed species of hard-shelled sea turtles. Therefore, considering that the risk of interactions with protected species scales with overall effort, time with gear in the water, and area swept, the impacts to protected species under Alternative 3 are expected to be slightly negative relative to Alternative 1 (No Action).

Alternative 2, Alternative 3, and Alternative 4 are the same with regard to access area configurations, rotational closures (i.e., Area I-Sliver and NLS), and the number of trips to Area II access area (i.e., two trips) and to the New York Bight (ie. one trip), with the only difference being the open area DAS, with 18 DAS under Alternative 2, 20 DAS under Alternative 3, and 24 DAS under Alternative 4. The spatial distribution of open area effort is expected to be the same for all alternatives, with the majority of effort anticipated to occur on Georges Bank. Area swept is estimated to be higher under Alternative 3 relative to Alternative 2, and lower relative to Alternative 4. The area swept estimate for Alternative 2 is 8% less than Alternative 3, and Alternative 4 is 18% greater than Alternative 3 (Table 59), meaning the overall impact of the alternatives to protected species is expected to be similar for Alternative 2 and Alternative 3, but negative for Alternative 4 relative to Alternative 2 and Alternative 3. Impacts to Atlantic sturgeon and ESA-listed species of sea turtle are expected to scale with the level of overall effort and associated area swept, meaning the impacts of Alternative 2 and Alternative 3 are likely to be very similar, but Alternative 4 would be negative relative to Alternative 2 and Alternative 3. Therefore, given the above information, the impact of Alternative 3 to protected species is expected to be negligible in comparison to Alternative 2 and positive in comparison to Alternative 4.

6.4.3.4 Alternative 4 – 24 Days At Sea with three access area trips with 12,000-pound trip limit

Alternative 4 would allocate full-time limited access vessels three 12,000-pound trips and 18 DAS. Alternative 2 also closes the Area I-Sliver, the Nantucket Lightship West, the Nantucket Lightship North, the Nantucket Lightship South, and the Nantucket Lightship Extension to scallop fishing for the duration of FY2024 due to sets of juvenile scallops observed in these areas during the 2023 surveys. An additional area within Area I (i.e., Area I Quad) would be closed to protect transplanted scallops related to an ongoing RSA project.

Alternative 4 does not introduce effort to new parts of the resource and is not expected to result in significantly greater effort compared to recent years. In fact, the level of effort under Alternative 4 is expected to be similar to the level of effort seen in the fishery over the past several fishing years. Relative to status quo, overall area swept will likely be slightly higher under Alternative 4 (Table 58 and Table 59). In addition, based on the distribution of exploitable scallop biomass (i.e., the majority of exploitable scallop biomass is on Georges Bank) and considering closures of several areas such as the Area I-Sliver and Nantucket Lightship region, Alternative 4 is expected to focus the majority of open area effort and access area effort on eastern Georges Bank, with one 12,000-pound access area trip allocated to the New York Bight.

As provided above, interaction risks with protected species, such as sea turtles and Atlantic sturgeon, are strongly associated with the amount of gear in the water, gear soak or tow time, as well as the area of overlap, either in space or time, of the gear and a protected species. As provided in Section 5.4.2.1.3, sea turtle distribution commonly overlaps with the sea scallop fishery, specifically in Mid-Atlantic waters, as evidenced by the number of sea turtle (specifically hard-shelled) interactions. Encounter rates of hard-shelled species of sea turtles are higher in the Mid-Atlantic relative to the Gulf of Maine (GOM) and Georges Bank (GB) (see Section 5.4.2.1.2) (Murray & Orphanides 2013a). As Alternative 4 will result in the majority of open and access area scallop fishing occurring on eastern Georges Bank, the degree of overlap between scallop fishing effort and sea turtles is likely to be reduced under Alternative 4. Relative to current operating conditions in the fishery, as Alternative 4 is expected to result in similar overall effort and realized area swept, an increase in the amount of gear fished and/or trawl/dredge tow duration is not expected. Based on this and the information provided above, Alternative 4 is not expected to introduce new or elevated interaction risks to any ESA-listed species of sea turtles. As a result, Alternative 4 is expected to result in slight negative impacts to ESA listed species of sea turtles overall.

There is limited information on Atlantic sturgeon encounter rates throughout the scallop resource area. Review of NMFS observer data from 1989 through 2019 show no observed or documented Atlantic sturgeon interactions with scallop bottom trawl gear where the haul target or trip target is scallop, and only one (1) recorded Atlantic sturgeon interaction with scallop dredge gear targeting Atlantic sea scallops; this sturgeon was released alive (NEFSC FMRD database; unpublished data). Based on this, it appears the risk of an interaction between Atlantic sturgeon and scallop dredge or trawl gear is low throughout the scallop resource area (see section 5.4.2). Taking into consideration this information, as well as the information provided above regarding fishing effort (e.g., relatively low projected area swept), Alternative 4 is not expected to introduce new or elevated (e.g., more gear, longer tow times) interaction risks to Atlantic sturgeon. Given this, Alternative 4 is expected to result in slight negative impacts to Atlantic sturgeon overall.

Projected area swept under Alternative 4 is expected to be greater than Alternative 1 (No Action) by 67% (Table 59). Open area effort would be the greater under Alternative 4 relative to No Action, and the spatial distribution of open area effort is expected to similar under both alternatives, with the majority of open area fishing on Georges Bank. A slightly lesser proportion of open area effort could occur on Georges Bank under Alternative 4, which closes both the Nantucket Lightship North, Nantucket Lightship South, and Nantucket Lightship Extension areas, in comparison to Alternative 1, which only maintains the current Nantucket Lightship West closure. Alternative 4 also would designate the Elephant Trunk area as open bottom, although exploitable biomass and anticipated effort in the area is low. However, exploitable biomass and anticipated fishing effort in both the Nantucket Lightship region and the Elephant Trunk are low, and effort is unlikely to be displaced. As noted above, interactions between scallop fishing gear and Atlantic sturgeon are expected to be low throughout the scallop resource area. However, encounter rates of hard-shelled species of sea turtles are higher in the Mid-Atlantic relative to the Gulf of Maine and Georges Bank (see Section 5.4.2.1.2; (Murray & Orphanides 2013a). Based on this, sea turtle distribution commonly overlaps with the sea scallop fishery, specifically in Mid-Atlantic waters, as evidenced by the number of sea turtle (specifically hard-shelled) interactions (see Section 5.4.2). Estimated bycatch rates in trawl and dredge gear are higher in the Mid-Atlantic than in other waters in the affected environment. Given this, displacing effort out of the Mid-Atlantic region could reduce the risk of interaction with protected species that overlap with the fishery in the Mid-Atlantic at a higher rate than on Georges Bank and the Gulf of Maine, such as ESA-listed species of hard-shelled sea turtles. Therefore, considering that the risk of interactions with protected species scales with overall effort, time with gear in the water, and area swept, the impacts of Alternative 4 are expected to result in negative impacts to protected species relative to Alternative 1 (No Action).

Alternative 2, Alternative 3, and Alternative 4 are the same with regard to access area configurations, rotational closures (i.e., Area I-Sliver and NLS), and the number of trips to Area II access area (i.e., two trips) and to the New York Bight (ie. one trip), with the only difference being the open area DAS, with 18 DAS under Alternative 2, 20 DAS under Alternative 3, and 24 DAS under Alternative 4. The spatial distribution of open area effort is expected to be the same for all alternatives, with the majority of effort anticipated to occur on Georges Bank.

Area swept is estimated to be greater under Alternative 4 in comparison to Alternative 2 and Alternative 3. The area swept estimate for Alternative 4 is 15% greater than Alternative 3, and Alternative 4 is 22% greater than Alternative 2 (Table 59), meaning the overall impact of the alternatives to protected species is expected to be similar for Alternative 2 and Alternative 3, but negative for Alternative 4 relative to Alternative 2 and Alternative 3. Impacts to Atlantic sturgeon and ESA-listed species of sea turtle are expected to scale with the level of overall effort and associated area swept, meaning the impacts of Alternative 2 and Alternative 3 are likely to be very similar, but Alternative 4 would be negative relative to Alternative 2 and Alternative 3. Therefore, given the above information, the impact of Alternative 4 to protected species is expected to be slight negative in comparison to Alternative 2 and Alternative 3.

6.4.4 Action 4 – Access Area Allocations to the LAGC IFQ Component

The LAGC IFQ fishery is allocated a fleet wide total number of access area trips that is based on the access area allocation that the limited access component receives through specification setting (Action 3). LAGC IFQ vessels can elect to fish their quota in available access areas but are not required to take trips in access areas. A maximum number of trips is identified for each area and once that limit is reached, the area closes to all LAGC IFQ vessels for the remainder of the fishing year.

The LAGC IFQ fishery is allocated a fleet wide total number of access area trips that is based on the access area allocation that the limited access component receives through specification setting (Action 3). LAGC IFQ vessels can elect to fish their quota in available access areas but are not required to take trips in access areas. A maximum number of trips is identified for each area and once that limit is reached, the area closes to all LAGC IFQ vessels for the remainder of the fishing year.

This action considers how LAGC IFQ access area trips will be distributed. Under Alternative 1 (No Action) the LAGC IFQ component would be allocated 0 access area trips, which is the default number of trips allocated through Framework 36. Under Alternative 2 and Alternative 3, a total of 856 access area trips would be allocated to the LAGC IFQ component in FY 2024. Alternative 2 would allocate a total number of trips that could be fished in Area I, Area II, or the New York Bight. Alternative 3 would allocate 50% (428) of trips to Area I and Area II and 50% (428) of trips to the New York Bight. Once the total number of trips is taken, LAGC IFQ vessels will no longer be allowed to fish access area trips in either area.

Allocating LAGC trips to access areas is not expected to change the overall amount of effort expected from this component of the fishery because the LAGC IFQ component is a quota-based fishery. Alternative 2 and Alternative 3 allocate LAGC IFQ access area trips to the Mid-Atlantic region, meaning both options could have some negative impacts to protected species, particularly sea turtles, by increasing effort and therefore the potential for interactions, in an area where interactions are more commonly observed (i.e., Mid-Atlantic) relative to other parts of the resource (i.e., GB, GOM, and SNE). However, considering that fishing would still occur in some part of the resource at some level, the risk of an interaction with ESA-listed species of sea turtles and Atlantic sturgeon would exist regardless, meaning the overall impact of Alternative 2 or Alternative 3 on protected resources (i.e., with ESA-listed species of sea turtles and Atlantic sturgeon) could be slightly negative.

Under Alternative 1, LAGC IFQ vessels would only be able to fish quota on open trips, which would have little impact on the spatial distribution of LAGC IFQ effort and would not increase area swept beyond what is expected under status quo. Similar to current conditions, vessels homeported in the northeast would likely continue fishing on Georges Bank, and vessels homeported in the Mid-Atlantic would likely continue fishing in the Mid-Atlantic. Based on this and the information provided above, Alternative 1 is expected to result in slight negative impacts to protected resources (i.e., with ESA-listed species of sea turtles and Atlantic sturgeon).

Under Alternative 2, vessels would have the option to fish quota in Area I, Area II, or the New York Bight. Should vessels choose to fish in Area II, vessels will likely be able to harvest the possession limit in less time compared to fishing in Area I, the New York Bight, or the open bottom because there are high densities of scallops in Area II. This could reduce bottom time, which could have a positive effect on protected species in that the risk of interaction correlates to area swept and duration of time gear is in the water. Given the choice between fishing in Area I, Area II or the New York Bight, it is more likely that LAGC IFQ vessels will fish in Area I or the New York Bight due to the considerably longer steam time associated with trips to Area II, even if, relative to Area II, catch rates are not as high in Area I or the New York Bight. However, catch rates in the Area I or the New York Bight could be similar or slightly higher than what is anticipated for open trips, meaning allowing LAGC IFQ vessels to fish access area trips there could also have some slight benefits to protected species in that area swept and duration of time gear is in the water could be slightly reduced. Based on this and the information provided above, Alternative 2 is expected to result in slight negative impacts to protected resources (i.e., with ESA-listed species of sea turtles and Atlantic sturgeon).

Under Alternative 3, vessels would be allocated 50% of their quota in Area I and Area II, and 50% in the New York Bight. Vessels would have less opportunity to fish quota in Area II where there are high densities of scallops, and effort would be redistributed from Georges Bank to the New York Bight. This could increase bottom time relative to Alternative 2, which could have a negative effect on protected species due to greater area swept and duration of time gear is in the water. Additionally, greater effort in the New York Bight would increase the potential for interactions in an area where interactions are more commonly observed (i.e., Mid-Atlantic) relative to other parts of the resource (i.e., GB, GOM, and SNE). Based on this and the information provided above, Alternative 3 is expected to result in slight negative impacts to protected resources (i.e., with ESA-listed species of sea turtles and Atlantic sturgeon).

Given the above analyses and acknowledging the difficulty in predicting the timing and amount of LAGC IFQ access area effort, the impacts of Alternative 1, Alternative 2, and Alternative 3 to protected species could range from negligible to slightly positive in comparison to one another.

6.4.5 Action 5 – Scallop Research Set-Aside Compensation Fishing

There are two alternatives under consideration related to where RSA compensation fishing can occur. Alternative 1 would allow RSA compensation fishing in the open bottom and the Northern Gulf of Maine management area but would prohibit vessels from fishing RSA compensation in access areas. Alternative 2 would allow vessels to fish RSA compensation trips in the Area II Access Area, open bottom, and the Northern Gulf of Maine management area.

In general, RSA compensation fishing is a small component of the overall fishery (i.e., less than 5% of the fishery-wide projected landings associated with the preferred specifications alternative) and is considered as part of the impact analysis in Section 6.4.3. Despite the low level of effort, landings, and area swept expected as a result of RSA compensation fishing, the overall impacts on ESA listed species of sea turtles and Atlantic sturgeon are expected to be slightly negative for both alternatives. Considering that RSA compensation fishing represents a minimal part of overall effort, time with gear deployed in the water, landings, and area swept relative to what is expected for the fishery as a whole, it is difficult to distinguish how impacts to protected species might differ between Alternative 1 and Alternative 2. Based on this, both alternatives when compared to the other are expected to result in negligible impacts to protected species.

6.4.6 Action 6 – Increase VMS-Reporting Intervals

The increase of VMS reporting rates is an administrative measure that does not, in and of itself, have a direct effect on protected resources.

6.5 Impacts on Physical Environment and Essential Fish Habitat

As in previous scallop frameworks, impacts to EFH for this action are evaluated considering the amount of fishing proposed, the general location of that fishing with respect to habitat type, and the swept area expected to result from that fishing, based on estimates produced by the Scallop Area Management Simulator (SAMS) model. Since the inception of this FMP, a broad suite of measures has been employed to reduce fishing mortality and address habitat impacts. Through OHA2 (NEFMC 2016) and prior actions including Amendment 10 (NEFMC 2004), the Council has identified areas to prohibit scallop fishing in order reduce impacts on EFH. After a period of very high fishing mortality during the mid-1980's and early-1990's, rotational area management (formalized in Amendment 10) has improved meat yields and LPUE, while DAS reductions have curbed overall fishing mortality. Overall, the successful management of the scallop resource has generally mitigated impacts on EFH.

6.5.1 Action 1 – Overfishing and Acceptable Biological Catch

Fishery impacts to EFH are only indirectly related to the OFL and ABC, and more closely reflect the specifications alternative selected. Neither the No Action ABC (Alternative 1) nor the alternative ABC (Alternative 2) are anticipated to have direct impacts on EFH. The OFL and ABC values set by the Council are much higher than the projected landings by the fishery. Therefore, realized impacts on EFH for this framework will largely reflect measures discussed in Section 4.3, and are only indirectly related to the ABC and OFL values. It should be noted that scallop fishing activity has negative impacts on benthic habitat, even if not directly influenced by the measures considered in Action 1. The OFL and ABC values for No Action and Alternative 2 are relatively similar to one another, with slightly values under Alternative 1, the default measures. Therefore, Alternative 2 is expected to have indirect negative effects on EFH relative to Alternative 1.

6.5.2 Action 2 – Northern Gulf of Maine Management and TAL Setting

Action 2 considers measures for the NGOM component of the scallop resource. Overall fishing activity in the Gulf of Maine represents a relatively small proportion of overall effort in the fishery, and therefore adjustments to area management and specifications for NGOM has a limited influence on the fishery's overall impacts to EFH.

6.5.2.1 Closure of Platts Bank to Protect Small Scallops

Platts Bank is a small but historically important fishing ground that consistently supports scallop dredging at low levels, depending on resource conditions. Platts is a small, shallow bank that is covered with gravel substrates and epifauna, which are estimated to be more vulnerable to the effects of fishing gear than surrounding soft bottom habitats. Platts Bank was evaluated as a potential habitat management area closed to mobile bottom-tending gears during Omnibus Habitat Amendment 2, but the Council elected to continue or add spatial habitat management in other portions of the Gulf of Maine, given Platt's historic importance as a fishing ground.

Alternative 1 would not create a short-term closure in the area during FY 2024 and 2025 and would mean that fishing on Platts Bank could continue during that time. Alternative 2 would close Platts Bank to scallop dredging through the beginning of FY 2026. Given current resource conditions, scalloping is likely to be minimal on Platts Bank in the next two years, with effort expected to be focused on higher biomass concentrations further inshore, specifically Stellwagen Bank, southern Jeffreys Ledge, and Ipswich Bay. Also, effort in the NGOM is quota-limited, overall. Considering both these factors, impacts to EFH are expected to be similar under Alternatives 1 and 2. There could be some short-term positive impacts due to temporary reductions in scallop fishing activity on Platts Bank associated with Alternative 2, although other types of fishing, i.e., for groundfish, would be allowed to continue in the area despite the scallop rotational closure, and scalloping would resume in 2026.

6.5.2.2 Northern Gulf of Maine TAL

The alternatives in this action pertain to setting the TAL for the NGOM Management Area. Under Alternative 1/No Action, the NGOM set-aside would be set at the default value for FY2024. There would be no NGOM set-aside specified for FY 2025, and the area would close to directed scallop fishing. Alternative 2 would specify catch limits for FY 2024 and FY 2025 (default), including set-asides to support research, monitoring, and a directed LAGC fishery. Alternative 2 is based on exploitable biomass from Stellwagen Bank, Jeffreys Ledge, and Ipswich Bay. Alternatives and options are summarized below (also see Table 7):

- Alternative 1 (No Action): NGOM set-aside 285,641 lbs
- Alternative 2
    - Option 1 (F=0.18), NGOM set-aside 362,837 lb (272,128 lb FY 2025 default)
    - Option 2 (F=0.21), NGOM set-aside 420,598 lb (315, 449 lb FY 2025 default)
    - Option 3 (F=0.25), NGOM set-aside 493,792 lb (370,344 lb FY 2025 default)

In recent years the NGOM set-aside has been fully harvested early in the fishing year, and it is expected that it will be fully harvested in 2024 as well. The amount of fishing effort and impacts to EFH associated with the NGOM fishery are expected to scale up or down relative to the size of the set-aside. Alternative 2 Option 1 has the lowest set-aside and therefore will have fewer impacts to EFH as compared to Alternative 2 Options 2 and 3, which have progressively larger set-asides.

Table 60. Scallop density (>40mm) per meter squared from the 2023 SMAST Drop camera survey for the Northern Gulf of Maine Management Area.

NGOM Region	Scallop density per m^2	Number of stations
Platts Bank	0.24	90
Ipswich Bay	0.10	93
Jeffreys Ledge	0.05	181
Stellwagen Bank	0.36	131

Within the Northern Gulf of Maine Management Area, the 2023 SMAST drop camera estimated the highest densities of scallops on Stellwagen Bank (0.36 scallops per meter squared). The spatial distribution of scallops on Stellwagen Bank suggests that density is likely be higher on top of the bank, and that the areas that are initially fished could have even higher densities of 1-2 scallops per meter squared. Overall, these density and biomass values suggest that harvest is likely to be much more efficient on Stellwagen Bank compared to other areas like Ipswich Bay and Jeffreys Ledge. Among the Alternative 2 options, those with progressively higher TALs could be expected to result in higher area swept and greater impacts to EFH in the NGOM management area. Considering that fishing activities negatively impact habitat quality, the overall impacts of both Alternative 1 and Alternative 2 could be slightly negative; however, given these differences in efficiency, the impacts of options that establish the set-aside based on biomass in all three fishing grounds (i.e., Options 3 and 4) and have higher set aside values could be considered low negative because the TAL, expected effort, and area swept would be greater in comparison to Alternative 2 Option 1 and Option 2.

6.5.3 Action 3 – Fishery Specifications and Rotational Management

Action 3 considers fishery specifications including rotational closures and openings for the fishery outside the NGOM. The differences between alternatives are in the number of DAS allocated.:

- Alternative 1/No Action – 18 DAS
- Alternative 2 – 18 DAS, Three trips with a 12,000-pound trip limit (2x Area II, 1x NYB)
- Alternative 3 – 20 DAS, Three trips with a 12,000-pound trip limit (2x Area II, 1x NYB)
- Alternative 4 – 24 DAS, Three trips with a 12,000-pound trip limit (2x Area II, 1x NYB)

Given the similarities between alternatives, spatial patterns of effort and therefore of impacts to habitat are expected to be broadly similar between the different approaches, with effects scaling according to the overall magnitude of effort. Fishing effort and allocations during 2024 will influence availability of scallops during fishing year 2025, so taking a multiyear view, differences in impacts to habitat between the various approaches will likely be similar over the long term because the animals would eventually be harvested.

The tables and figures in this section are intended to support the Council's evaluation of each alternative individually and compared to each of the other allocation options. Table 58 shows projections of landings, LPUE, and area swept by alternative, based on the SAMS model, while

Table 59 provides a matrix of comparisons for the area swept values only. Table 58 compares area swept for each FW38 alternative during the 2024 fishing year relative to the projections for recent preferred alternatives.

Broadly speaking, lower total area swept values represent lower effects on EFH associated with a particular alternative.

However, in terms of habitat impacts, all effort in the fishery is not considered equal, and underlying differences in habitat vulnerability affect the potential magnitude of impacts. Figure 23 depicts estimates of intrinsic habitat vulnerability to scallop dredges from the Council's Fishing Effects Model, by SAMS area. This figure shows estimated vulnerability based on evenly distributed fishing effort, with the magnitude of effort at a median level relative to historical activity. Figure 24 and Figure 25 present the results spatially for Georges Bank and the Mid-Atlantic Bight, which summarize model estimates for the 5 km by 5 km model grids overlapping various SAMS areas. For more information on the Fishing Effects Model, see NEFMC 2020 (available at https://www.nefmc.org/library/fishing-effects-model).

Habitat impacts of the fishery are of course considered in the context of catch projections. Similar levels of catch with higher area swept values present a problematic tradeoff from a habitat standpoint, relative to the same catch with lower swept area values. The status quo scenario is a good illustration of this. However, increases in swept area that are commensurate with increases in projected landings are generally viewed differently, because in these scenarios, fishery yield increases, with impacts to habitat as an associated cost. Indeed, efficiency of harvest (typically expressed in terms of LPUE) is an often-cited benefit of rotational management employed in the FMP. To attempt to quantify this tradeoff between habitat impact and yield, Figure 26 shows area swept and landings/area swept ratio, respectively, for each FW38 alternative during the 2021 fishing year relative to the projections from recent preferred alternatives. The landings/area swept ratio indicates the relative 'habitat efficiency' of fishing across the alternatives considered.

Because all the alternatives allow fishing in the same set of access areas (Area II and New York Bight), and open area fishing is expected to occur in similar patterns regardless of how access areas are allocated, spatial variation in habitat vulnerability is not a particularly important consideration for this set of specifications. The substrate throughout much of southeastern Georges Bank and in the Nantucket Lightship region is predominately sandy and therefore is estimated to be less vulnerable to fishing (i.e., light blue area in Figure 24). Other locations on Georges Bank are relatively more vulnerable to median levels of dredging with scallop dredges (light red coloring in Figure 24). These include CAI Access, CAII Extension, Great South Channel, and Northern Flank, plus Closed Area II North, which is a long-term habitat closure that cannot be dredged. Areas in the Mid-Atlantic are generally lower vulnerability. CAII-Ext and the southeastern section of CAII-SE fall within the low energy portion of the model domain (light red coloring in Figure 25), which likely accounts in large part for the higher estimate of intrinsic seabed vulnerability in these locations as compared to adjacent areas of Georges Bank. The scallop resource in CAII-SW and CAII-Ext, which will be open to fishing in FY 2022, is largely concentrated in the shallower and less vulnerable CAII-SW access area.

To summarize across all alternatives including No Action and status quo, the action alternatives with 22 DAS have lower swept area than those with 24 DAS, with status quo scenario having similar values to the 24 DAS alternatives (Table 58,

Table 59). No Action has lower swept area estimates combined with lower projected catch, since this alternative allocates fewer DAS and between 54-75% of the CAII possession limit, depending on the action alternative to which No Action is being compared. Impacts of all action alternatives are therefore higher than Alternative 1/No Action, but similar to or reduced as compared to status quo.

Figure 22. Comparison of Bottom Area Swept estimates (nm^2) for FW38 alternatives and recent preferred alternatives.

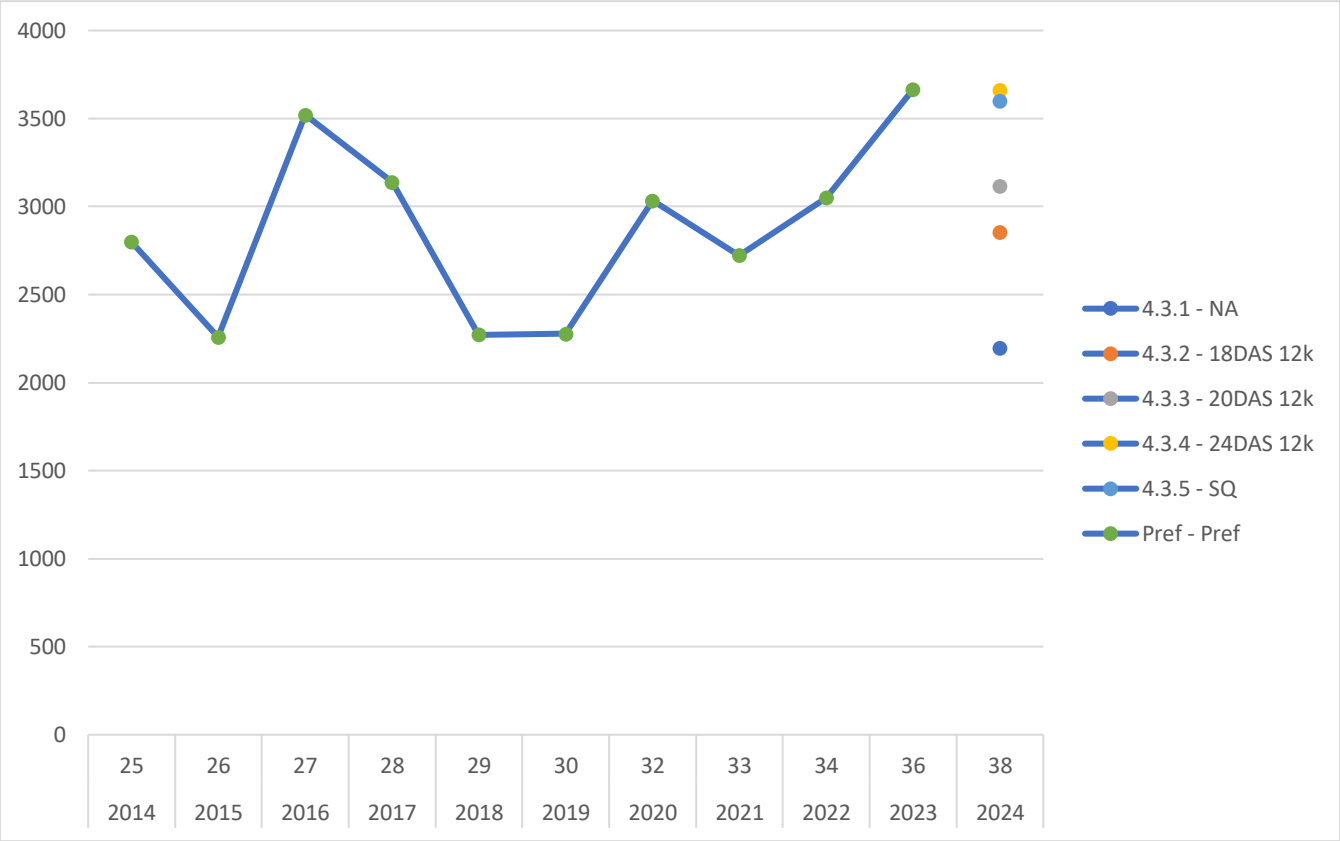


Figure 23. Comparison of Intrinsic Habitat Vulnerability among SAMS areas

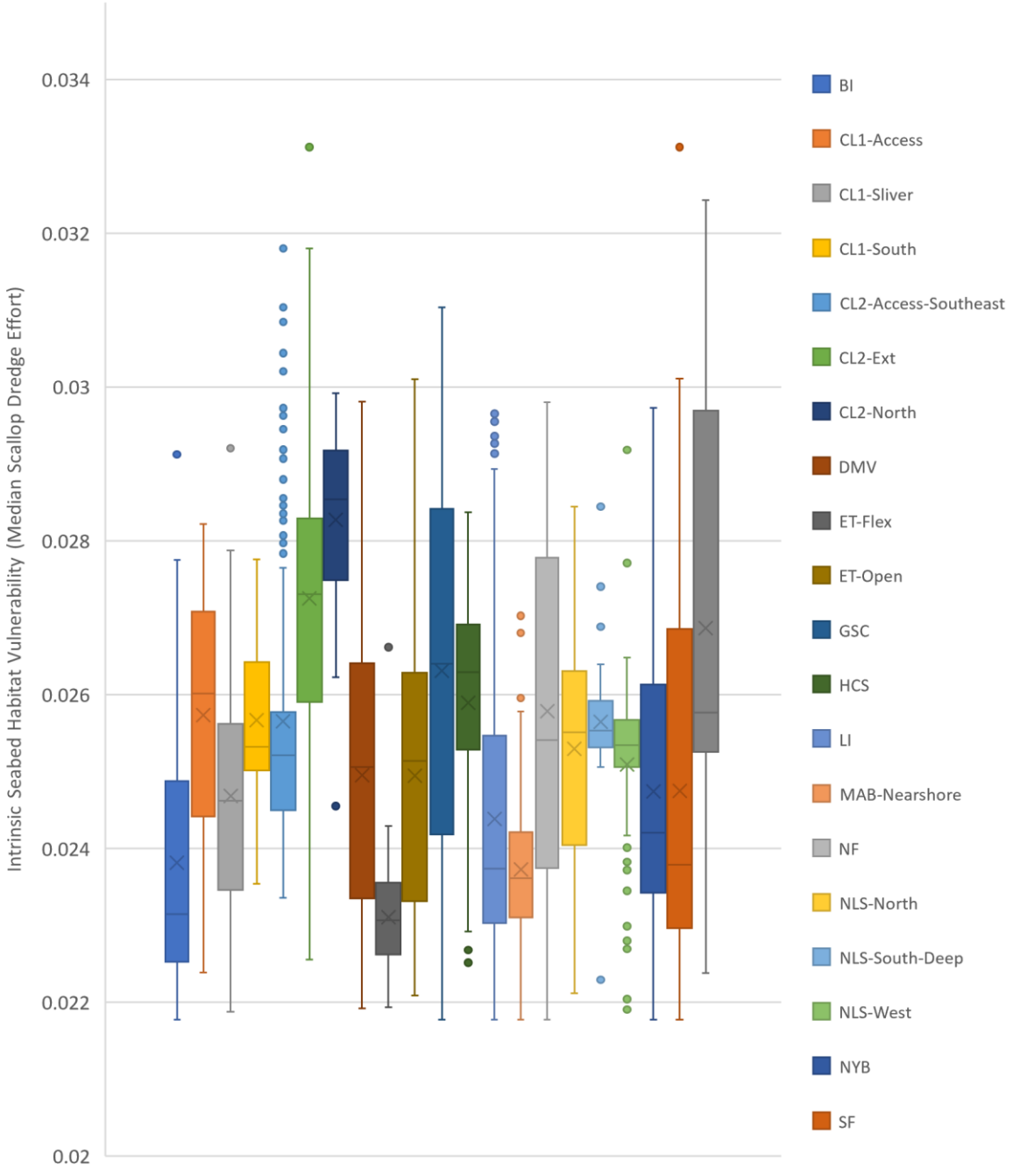


Figure 24. Spatial distribution of intrinsic seabed habitat vulnerability on Georges Bank, based on a uniform distribution of scallop dredging at median levels. Source: Fishing Effects Model.

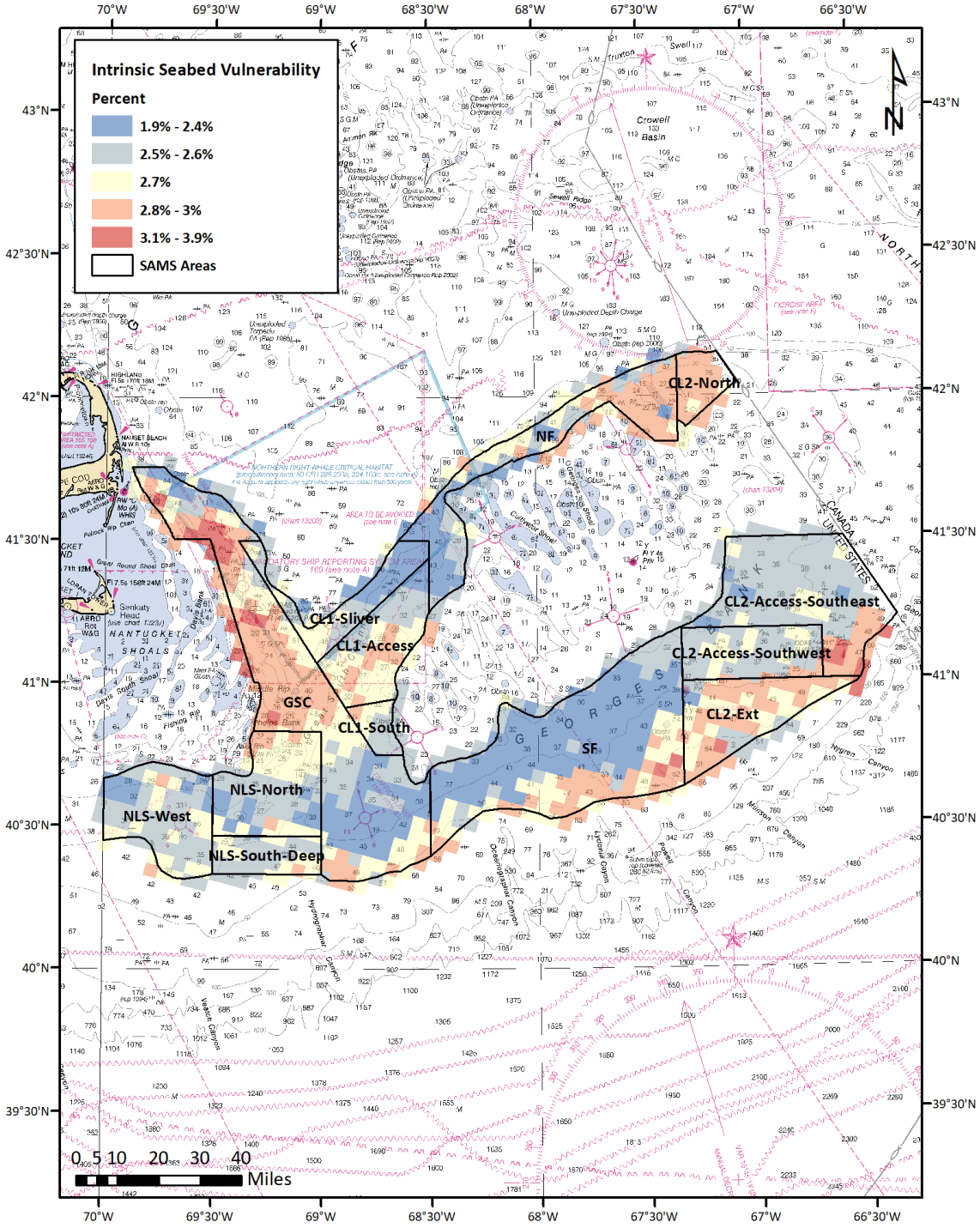


Figure 25. Spatial distribution of intrinsic seabed habitat vulnerability in the Mid-Atlantic Bight, based on a uniform distribution of scallop dredging at median levels. Source: Fishing Effects Model.

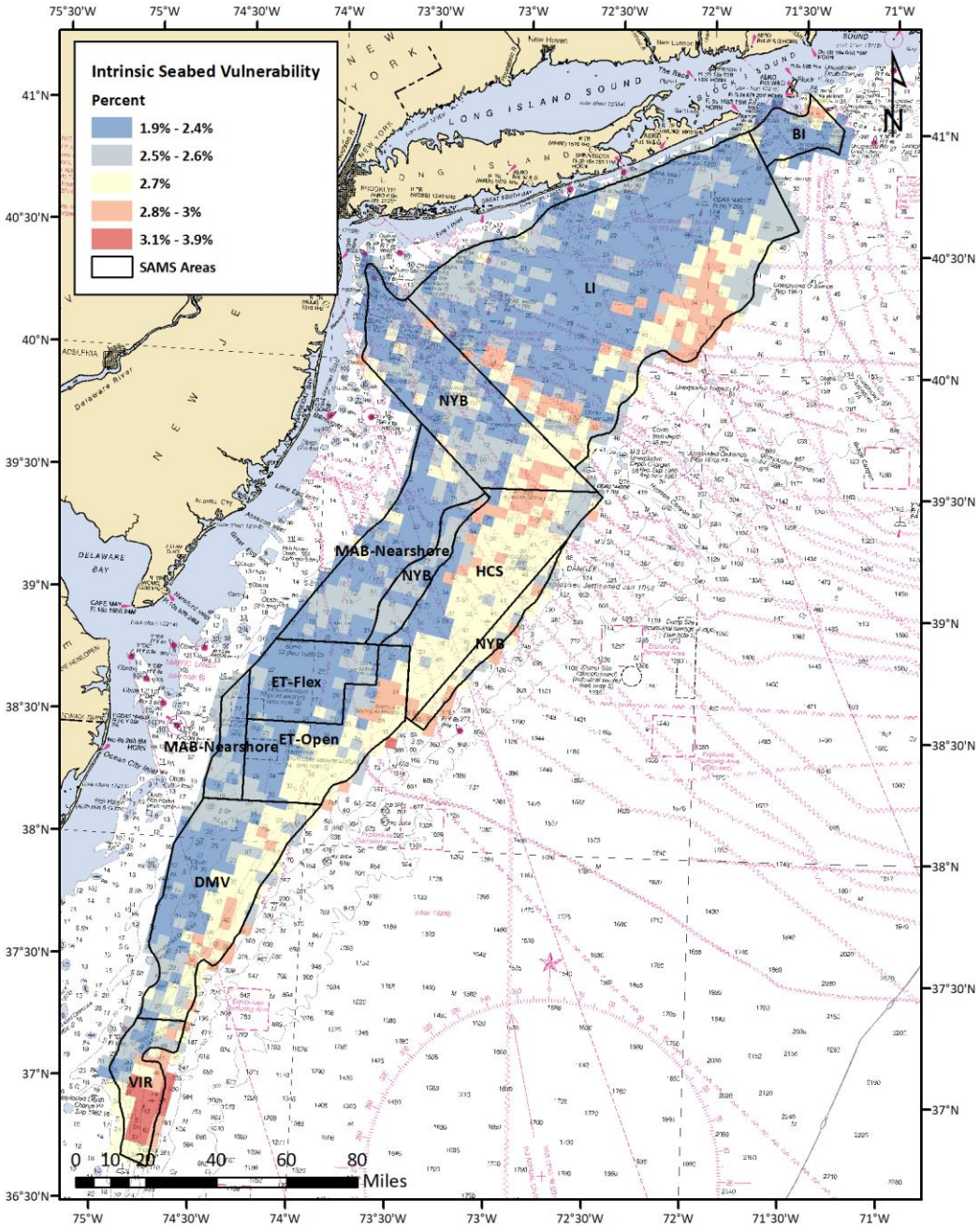
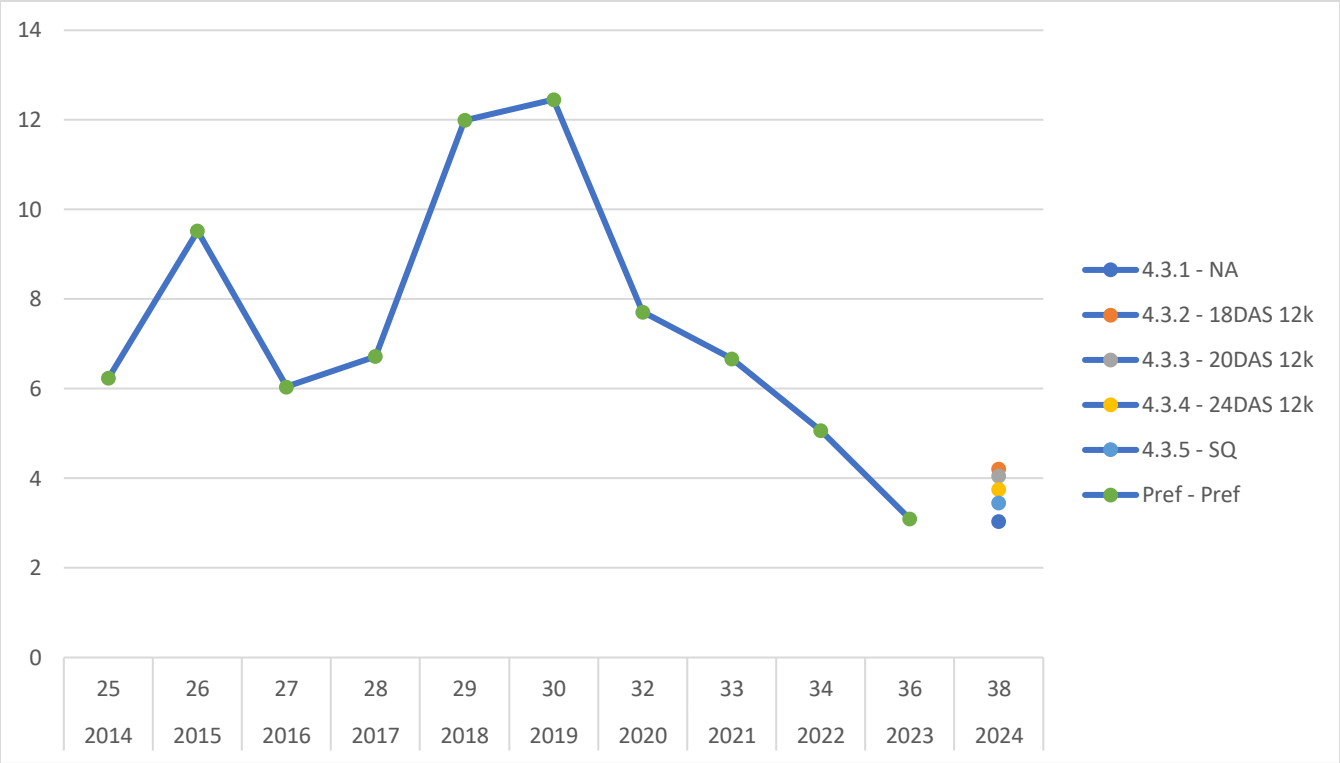


Figure 26. Comparison of relative habitat efficiency of fishing (landings in mt divided by area swept in nm2) for FW38 specification alternatives and recent preferred alternatives. The higher the ratio, the more habitat efficient an alternative is.



6.5.4 Action 4 – Access Area Trip Allocations to the LAGC IFQ Component

The LAGC IFQ fishery is allocated 5.5% of the access area allocations as a fleet wide total number of access area trips. Under Alternative 1/No Action, no trips would be allocated per the default specifications set in Framework 36. Alternative 2 would make the total LAGC IFQ access area trip allocation (856 trips) available in Area I, Area II and the New York Bight Access Area. There would not be a specific number of trips allocated to Area I, Area II or the New York Bight, but rather, vessels would be able to fish in any area and trips would be counted against the total. Once the total trip allocation is projected to have been taken, all areas would be closed to LAGC IFQ access area fishing for the remainder of the fishing year. Alternative 3 would make 50% of the total LAGC IFQ access area trip allocation (428 trips) available in Area I or Area II and 50% of the trip allocation in the New York Bight (428 trips). There would not be a specific number of trips allocated to Area I or Area II, but rather, vessels would be able to fish in either area and trips would be counted against the total (428 trips).

Since LAGC fishermen can choose whether to harvest their IFQ from access or open areas, options that afford greater flexibility to make this choice based on current fishery conditions are expected to have marginally lower impacts to EFH. This relies on the assumption that fishermen will opt to fish in areas that have more abundant or larger scallops whenever possible. Fishing more efficiently is expected to reduce gear/seabed contact and thus reduce impacts to EFH. Swept area estimates for access areas are generally lower than open areas, and LPUE in the open bottom is projected to be much lower than in recent fishing years. Thus, Alternatives 2 and 3 would likely have lower impacts to EFH as compared to Alternative 1. The difference in impacts of Alternative 2 versus Alternative 3 on EFH is likely to be negligible.

6.5.5 Action 5 – Scallop Research Set-Aside Compensation Fishing

There are two alternatives are under consideration related to where RSA compensation fishing can occur. Alternative 1 would allow RSA compensation fishing in the open bottom but would prohibit vessels from fishing RSA compensation in access areas. Alternative 2 would allow vessels to fish RSA compensation trips in open bottom and in the Area II access areas and the Northern Gulf of Maine management area.

Overall impacts of either alternative are expected to be negligible since RSA compensation fishing is not a large proportion of landings (~5% of projected landings in FY 2024). Adjusting the areas where RSA compensation trips can be fished is not likely to have a large influence on fishery impacts to EFH.

Alternative 2 could be expected to have a slight positive impact on EFH relative to Alternative 1 since it would enable vessels to direct fishing effort to areas with higher concentrations of animals, specifically in Area II.

6.5.6 Action 6 – Increase VMS-Reporting Intervals

This action considers whether to increase the VMS reporting rate to 5-minutes (Alternative 2) from the current rate of every 30 minutes (Alternative 1/No Action). The increase of VMS reporting rates is an administrative measure that does not, in and of itself, have a direct effect on the physical environment and essential fish habitat. More frequent polling could improve our understanding of the distribution of scallop fishing relative to habitat management areas or other areas more vulnerable to the impacts of fishing, which could support EFH management over the longer term.

6.6 Impacts on Communities (Economic and Social Impacts)

The analysis of impacts on human communities characterizes the magnitude and extent of the economic and social impacts likely to result from the alternatives considered, individually and in relation to each other. Management regulations influence the direction and magnitude of economic and social change, but attribution is difficult, because communities are constantly evolving in response to many external factors (e.g., market conditions, technology, alternate uses of waterfront) that contribute to community vulnerability and adaptability to changing regulations.

Economic impacts. The economic effects of regulations can be categorized by changes in costs (including transactions costs such as search, information, bargaining, and enforcement costs) or revenues (by changing market prices or by changing the quantities supplied). These economic effects may be felt by the directly regulated entities as well as related industries (e.g., dealers, processors).

Social impacts. The social effects of regulations relate to changes factors such as demographics, employment fishery dependence, safety, attitudes towards management, equity, cultural values, and the well-being of persons, families, and fishing communities (e.g., Burdge 1998; NMFS 2007).

It is important to consider impacts on the following: the fishing fleet (vessels grouped by fishery, primary gear type, and/or size); vessel owners and employees (captains and crew); dealers and processors; consumers; community cooperatives; fishing industry associations; cultural components of the community; and fishing families. While some management measures may have a short-term negative impact on some communities, this should be weighed against potential long-term benefits to all communities which can be derived from a sustainable fishery. Amendment 21 further describes approaches to the analysis of impacts on human communities.

General impacts of scallop fishery specifications on human communities

Reauthorization of the MSA requires the SSC to set an acceptable biological catch (ABC), or maximum catch level that can be removed from the resource considering all sources of biological uncertainty. The Council is prohibited from setting catch limits above that level. This requirement is expected to have long-term economic

benefits on the fishery by helping to ensure that catch limits and fishing mortality targets are set at or below ABC. This should help prevent overfishing and optimize yield on a continuous basis. Increasing the scallop ABC (and associated catch limits) may have positive short-term impacts on fishing communities depending on how prices respond to changes in quantity supplied. Likewise, lowering allowable harvests (as contemplated in this action) could result in short-term revenue reductions, which may, in turn, have negative impacts on employment and the size of the scallop fishery within fishing communities. Additionally, declines in fishing earnings may decrease job satisfaction among fishermen (e.g., Pollnac & Poggie 2008; Pollnac *et al.* 2015), which may reduce the well-being of fishermen, their families, and their communities (e.g., Pollnac *et al.* 2015; Smith & Clay 2010). In the long term, ensuring continued, sustainable harvest of the resource benefits all fisheries.

The specific communities that may be impacted by this action are identified in Section 5.6.3. This includes 11 primary ports (e.g., New Bedford, Cape May, Hampton/Seaford) and 12 secondary ports for the scallop fishery (Table 50). The communities more involved in the scallop fishery are likely to experience more direct impacts of this action, though indirect impacts may be experienced across all the key communities. As these specifications largely affect stock-wide harvest levels, impacts would likely occur across the communities that participate in the scallop fishery, proportional to their degree of participation. Potential differential impacts across ports are noted in the analysis. Given these specifications are only for the next two years, any change to the historical dependence on and participation in the fishery (structure of fishing practices, income distribution and rights) would be minor and difficult to predict.

6.6.1 Economic Impacts

The following sections analyze the economic impacts of the management alternatives considered in Framework 38. The objective of the cost-benefit analysis is to evaluate the net economic benefits arising from changes in consumer and producer benefits that are expected to occur with implementation of a regulatory action. As the NMFS Guidelines for the Economic Analysis of the Fishery Management Action (NMFS, 2007) [11] state "the proper comparison is '*with the action' to 'without the action'* rather than to *'before and after the action,*' since certain changes may occur even without action and should not be attributed to the regulation." The guidelines also state that the "No Action alternative does not necessarily mean a continuation of the present situation, but instead is the most likely scenario for the future, in the absence of other alternative actions"[12]. Even without action, the scallop stock abundance in open and access areas will be different, and as a result, landings, scallop prices, fishing costs, revenues and benefits from the fishery would change compared to the present levels. For Action 3 (specifications), analyses consider two baselines, No Action and Status Quo.

While NMFS 2007 guidelines indicate "The No Action alternative should be the basis of comparison for other alternatives", it very often uses the terms "No Action" and "Status Quo" interchangeably[13]. The economic analyses presented in this section make a distinction in the definition of those terms. In this analysis "No Action" refers to a "regulatory" baseline and "Status Quo" refers to a state with no changes from the present allocations for open area DAS and access area trips. The definition of "No Action" refers to the default measures that are specified in Framework 36 until the next Framework action is implemented.

[11] Guidelines for Economic Reviews of National Marine Fisheries Service Regulatory Actions, March 2007,

http://www.nmfs.noaa.gov/sfa/domes_fish/EconomicGuidelines.pdf

[12] Ibid, p.12

[13]For example, see p. 15 of 2007 NMFS guidelines: "For economic analysis of regulatory actions, changes in net benefits are measured by the difference in the present value of the discounted stream of net benefits of regulatory action, as compared to the status quo. In this context, a positive result means that the net present value of the regulatory action exceeds that of the status quo."

However, the default "No Action" measures are temporary in nature and allocations set under those measures are usually considerably lower than the allocations either in the current fishing year (in 2024) or the projected allocations in the next fishing year (2025). This is done to allow for limited levels of harvest to continue if there are delays in the implementation of the proposed measures in next Framework Action. As a result, the projections for landings, revenues and economic benefits under the No Action alternative are considerably lower than the current levels and the levels that are expected under the proposed measures. Because of this, if economic benefits of the proposed alternatives were estimated using No Action as the baseline, the impacts on the economy would be overstated in the short-term compared to the present circumstances.

For these reasons, the economic analyses in Framework 38 also includes a Status Quo scenario *(SQ)* to provide an assessment of how landings, revenues and total economic benefits from the scallop fishery would change if the current regulations were continued in 2024. From that perspective, the status quo is a more realistic baseline to assess the impacts of the proposed measures on the economy.

As the Guidelines for Economic Analysis of Fishery Management Actions specify, "benefits and costs are measured from the perspective of the Nation, rather than from that of private firms or individuals. Benefits enjoyed by other nations are not included, although tax payments by foreign owners, and export revenues, are benefits to the Nation."

Because fishery management actions in general result in short-term costs for the industry in terms of foregone revenue, "choosing a period of analysis that is too short may bias the analysis toward costs, where costs are incurred in the short-term and benefits are realized later." Similarly, the Office of Management and Budget (OMB, 2003) indicated that the analyses should "present the annual time stream of benefits and costs expected to result from the rule," and state that "the beginning point for your stream of estimates should be the year in which the final rule will begin to have effects" and "the ending point should be far enough in the future to encompass all the significant benefits and costs likely to result from the rule."[14] For these reasons, guidelines indicate that "a reasonable attempt should be made to conduct the analysis over a sufficient period of time to allow a consideration of all expected effects."

Furthermore, the economic impacts of the proposed regulations over the long-term should be evaluated by the discounted cumulative present value of the stream of benefits since benefits or costs that occur sooner are generally more valuable (or have a positive time preference). A discount rate is the interest rate used in calculating the present value of expected yearly benefits and costs.

This section examines the economic impacts of the proposed regulations in Framework 38. Although Framework 38 is a one-year action, it will have impacts on the future yield from scallop resources, on scallop revenues and total economic benefits. The short- and the long-term economic impacts of the specification alternatives are analyzed in Section 0. The present value of long-term benefit and costs of the specification alternatives are estimated using a 7% discount rate. The higher discount rate (7%) provides a more conservative estimate and a lower bound for the economic benefits of alternatives compared with the benefits predicted using a lower discount rate (3%).

6.6.1.1 Action 1 – Overfishing and Acceptable Biological Catch

The MSA requires the SSC to set an acceptable biological catch (ABC), or maximum catch level that can be removed from the resource, taking into account all sources of biological uncertainty. The Council is prohibited from setting catch limits above that level. This requirement is expected to have long-term economic benefits on the fishery by helping to ensure that catch limits and fishing mortality targets are set at or below ABC. This should help prevent overfishing and optimize yield on a continuous basis.

[14] OMB Circular A-4 (September 17, 2003), http://www.whitehouse.gov/omb/circulars_a004_a-4/

6.6.1.1.1 Alternative 1 – No Action for OFL and ABC

Under "No Action", the overall OFL and ABC would be set at the default values for FY 2024, which were adopted by the Council through FW36 (Table 54).

The economic impacts of Alternative 1 are likely to be negligible. Since the ABC under No Action and Alternative 2 are not expected to constrain the fishery, the impacts of the No Action are likely to be negligible compared to Alternative 2. However, since Alternative 1 would not set a default OFL or ABC for FY 2025, the start of FY 2025 could be delayed (from April 1, 2025) if there is a delay in setting specifications next year. Therefore, the overall short-term impacts of Alternative 1 are likely to be negative compared to Alternative 2. In the long-term, Alternative 1 is likely to have slight negative stock benefits. If this leads to more restrictive regulations, the potential impacts of the "No Action" ABC on economic benefits are negative.

6.6.1.1.2 Updated OFL and ABC for FY 2023 and FY 2024 (*Preferred Alternative*)

The FY 2024 and FY 2025 OFL and ABC values that are preferred by the Council are summarized in Table 54. After several years of below-average recruitment in the Mid-Atlantic, the fishery is shifting primarily to Georges Bank. Overall, the OFL and ABC values in Alternative 2 are based on the most updated survey information and model configurations.

The economic impacts of Alternative 2 are likely negligible to slightly positive. Since the ABC under No Action and Alternative 2 are not expected to constrain the fishery, the impacts of the Alternative 2 are likely to be negligible relative to No Action. The overall short-term impacts of Alternative 2 are likely to be positive compared to No Action because Alternative 2 would set a default OFL or ABC for FY 2025. This means that the fishing year could start on time in FY 2025 (from April 1, 2025). The fishing year could not begin on April 1, 2025 if no OFL or ABC is set and there is a delay in setting specifications next year. Overall, using updated OFL and ABC estimates should have positive economic impacts over the long-term because the ABC values were determined based on the recent surveys and projections. If this leads to less restrictive regulations, there may be positive long-term economic impacts.

6.6.1.2 Action 2.1 – Closure of Platts Bank to Protect Small Scallops

The Council developed a closure option for Platts Bank within the NGOM management area to improve the yield-per-recruit of an incoming year class that has substantial scope for growth. The Council's preferred alternative (4.2.1.2) would close roughly 101 square miles (262 km2) of Platts Bank for two years, which is situated east of the Western Gulf of Maine Closed Area off the coast of Maine. This closure would protect a substantial number of small scallops that have not recruited into the fishery. The area would re-open to directed scallop fishing in fishing year 2026.

6.6.1.2.1 Alternative 1 – No Action

Under no action, Platts Bank would remain open to fishing in FY2024 and FY2025. The economic impact of Alternative 1 would likely be negligible overall and when compared to Alternative 2. While juvenile scallops in this area would be susceptible to fishing, they have not recruited to the 4" ring. The majority of larger scallops are located in the southern areas of the Northern Gulf of Maine on Stellwagen Bank. Scallops in the Stellwagen Bank area are seven years old, and are expected to be targeted by the fishery in FY2024 and FY2025. Therefore, no or very limited fishing activity is expected to occur on Platts Bank in the short term.

6.6.1.2.2 Alternative 2 – Closure of Platts Bank to directed scallop fishing, within the Northern Gulf of Maine Management Area (2 year closure) *(Preferred alternative)*

The proposed closure of Platts Bank is expected to have a negligible economic impact because the scallops in this area have not recruited to the 4" ring, and the majority of exploitable biomass is found on Stellwagen Bank. In the short-term, the economic impact of Alternative 2 would likely be negligible overall and when compared to Alternative 1. Over the long term, Alternative 2 could have a slight positive economic impact by improving YPR while the area is closed, increasing overall biomass that is available for harvest in the NGOM management area.

6.6.1.3 Action 2 – Northern Gulf of Maine Management and TAL Setting

6.6.1.3.1 Alternative 1 – No Action

Under Alternative 1 – No Action, the default specifications approved in Framework 36 for the NGOM Set-Aside would be in place for the 2024 fishing year. The NGOM Set-Aside would be set at 285,641 pounds, and there would be no value specified for the 2025 fishing year, and the area would close to directed scallop fishing (Table 63).

No Action (Alternative 1) will have negative economic impacts on the NGOM portion of the fishery compared to Alternative 2. For FY 2024, this alternative would result in lower revenues and net benefits relative to Alternative 2 with Options 1 to 3.

For FY 2024, estimated scallop revenue for the LAGC NGOM fleet would be about $3.94 million under this alternative using an estimated price of $13.79 per pound and assuming landings will be about 285,641 pounds. Fishing costs are estimated to be about $0.96 million and net revenue would be about $2.963 million for the LAGC NGOM fleet[15] (Table 61).

Table 61. NGOM Set-Aside, Scallop revenue and costs under Alternative 1, No Action (Monetary values are in 2023 dollars)

Data and Values	Estimated values for FY 2024
NGOM Set-Aside scallop pounds	285,641 lb
Economic Impacts on the LAGC (NGOM) share	
Estimated LAGC scallop revenue	$3,938,399
DAS	1,428
Trip costs (in 2023 dollars)	$ 975,686
Net revenue	$2,962,713

[15] Scallop revenue and cost estimates are based on the following assumptions and data. The assumed price per pound of scallops, $13.79, is roughly equivalent to the average estimated price (in 2023 dollars) for all market categories of scallops under the FW38 specification scenarios. This price is used for both alternatives in this action.

Trip costs estimates are based on cost function estimated using observer data for 1991-2022 and corresponds to estimated fuel, oil, water, food, ice, supply costs per trip for the NGOM fishery. Trip costs that were initially estimated in 2022 dollars were later adjusted by cost inflation to estimate costs in terms of 2023 dollars. Note that the observed trip costs in FY2022 increased by about 35 percent compared to the trip cost estimates in FY2021. But trip costs are expected to decline in FY2023 primarily due to a decline in diesel prices. Estimated trip cost per DAS for NGOM fleet is expected to be about $683 per DAS. Total DAS for the NGOM fleet was estimated by dividing TAC with the 200 lb. possession limit.

6.6.1.3.2 Alternative 2 – Set NGOM TAL, with set-asides to support research, monitoring, and a directed LAGC fishery (*Alternative 2 Option 2 preferred*)

Alternative 2 would specify a Northern Gulf of Maine Total Allowable Landings (NGOM TAL) limit for FY 2024 and FY 2025 (default), including set-asides to support research, monitoring, and a directed LAGC fishery. All three options in this alternative-- Option 1 (F=0.18), Option 2 (F=0.21) and Options 3 (F=0.25) would set the NGOM TAL using estimates of exploitable biomass from Stellwagen Bank, Ipswich Bay, and Jeffreys Ledge.

- NGOM Set-Aside for FY 2024: The NGOM Set-Aside for FY 2024 under the options of Alternative 2 ranges from 396,391 pounds (Option 1) to 527,346 pounds (Option 3) (Table 62).
- The economic impacts of the FY 2023 NGOM Set-Aside in Alternative 2 (Option 1 to 3) are shown in Table 62 and the economic impacts of the associated FY 2025 default NGOM Set-Aside values are shown in Table 63. The economic impacts of the Alternative 2 for all options under consideration are positive relative to the No Action.

Table 62. Economic Impacts of the FY 2024 NGOM TAL under Alternative 2 Option 1 – 3 (monetary values are in 2023 dollars).

	Alternative 2		
	4.2.2.2.1	**4.2.2.2.2**	**4.2.2.2.3**
	Option 1	**Option 2**	**Option 3**
	F=0.18	**F=0.21**	**F=0.25**
Areas Fished	**Stellwagen, Ipswich, Jeffreys**	**Stellwagen, Ipswich, Jeffreys**	**Stellwagen, Ipswich, Jeffreys**
2024 Total Allowable Landings (TAL)	396,391	454,152	527,346
1% NGOM ABC for Observers	8,554	8,554	8,554
2024 RSA Contribution	25000	25000	25000
Lag year Overage Payback	-	-	-
2024 NGOM Set-Aside	362,837	420,598	493,792
Impacts of the NGOM Set-Asid			
Estimated LAGC revenue (in 2023 dollars)	$5,002,773	$5,799,178	$6,808,372
DAS	1,814	2,103	2,469
Trip costs (in 2023 dollars)	**1,239,370**	**1,436,669**	**1,686,683**
Net revenue	$3,763,403	$4,362,509	$5,121,688
Net revenue net of No Action	**$800,689**	**$1,399,795**	**$2,158,975**

Table 62 and Table 63 summarize the economic impacts of Alternative 2 in FY 2024 and FY 2025 (default), respectively. Revenues and net revenues under FY 2024 options 1-3 under Alternative 2 are all higher than estimated for Alternative 1 (No Action).

- Alternative 2, Option 1 would result in a higher NGOM Set-Aside (396,391 pounds) for the LAGC component compared to the LAGC share of the NGOM TAC under Alternative 1 (285,641 pounds) for the 2024 fishing year and is expected to have an estimated revenue of $5.0 million. Net revenue for

Alternative 2 Option 1 would be around $3.76 million, which is about $0.8 million higher than No Action.

- Alternative 2 Option 2 *(Preferred)* yields higher net revenue estimated compared to No Action at $4.36 million in FY 2024. The net benefit (net of No Action) for this sub-option is estimated to be about $1.4 million higher than No Action Alternative 1. The net benefit of this option is expected to be higher than Option 1, but lower than Option 3. The preferred alternative has a positive economic impact relative to Alternative 1.
- Alternative 2 Option 3 yields lower net revenue estimated at $5.12million in FY 2024. The net benefit (net of No Action) for this option is estimated to be about $2.16 million higher than Alternative 1. The preferred alternative has a positive economic impact relative to Alternative 1.
- Comparing the three options in Alternative 2 for FY 2024, Option 3 has the highest net revenues relative to other options, and all options in Alternative 2 have higher revenues relative to the No Action.
- All options in the Alternative 2 have higher economic benefits in the short term relative to Action 1 (No Action). The preferred alternative has a positive economic impact relative to Alternative 1 in the short term.
- In the longer term, sustaining higher NGOM Set-Asides and revenue will be directly related to the level of exploitable biomass in the NGOM in the future. The allocation sharing arrangement, requirement for observer coverage, and contributions to the research set-aside are expected to reduce uncertainty around removals from the area, allow for a directed LAGC fishery, and improve the understanding of the resource in the NGOM through improved fishery data and research. The measures in Option 1-3 are expected to result in short-term positive economic benefit. All options in Alternative 2 are also expected to have positive economic benefits in the long term to the participants of the NGOM fishery.

6.6.1.3.3 2025 NGOM TAL Options

Default Set-Aside for FY 2025: The FY 2025 default NGOM Set-Aside is set at 75% of the FY 2024 NGOM Set-Aside. The default NGOM Set-Aside for the Alternative 2 in FY 2024 would be set at 272,128 pounds under Option 1; 315,449 pounds in Option 2; and 370,344 pounds in Option 3.

The economic impacts of NGOM TAL options are given in Table 63. Economic impacts for the FY 2025 default measures correspond to the options in Alternative 2. Revenues range from $3.758 million in Option 1 to $5.1 million in Option 3 (highest). The preferred Option 2 will have expected revenue of about $4.35 million in FY2024. The revenue in the preferred option is expected to be lower than Option 3 but higher than Option 1.

Table 63. Economic impacts of the FY 2025 (default) NGOM Set-Aside under Alternative 2 Option 1 to 3 (values in 2023 dollars).

	Alternative 2		
	Option 1 F=0.18	**Option 2 F=0.21 (Preferred)**	**Option 3 F=0.25**
2025 Default NGOM Set-Aside	272,128	315,449	370,344
Impacts of the 2025 NGOM Set-Aside (default)			
Estimated Revenue	$3,752,083	$4,349,390	$5,106,279
DAS	1,361	1,577	1,852
Trip costs	**$929,528**	**$1,077,503**	**$1,265,012**
Net revenue	$2,822,554	$3,271,887	$3,841,266

6.6.1.4 Action 3 – Fishery Specifications and Rotational Management

The LA (94.5%) and LAGC IFQ (5.5%) allocations are based on Annual Projected Landings (APL). Table 64 provides a comparison of anticipated F rates, along with APL values for the LA and LAGC components of the scallop fishery.

Table 64. Comparison of allocations and DAS associated with each specification alternative in FW38.

FW38 Specification Alternatives	Open DAS, and 3 LA trip limits	Overall F	Open area F	DAS	APL	APL w/ set-asides removed	LA Share	LAGC IFQ Share
4.3.1 (Alternative 1)	No Action	0.073	0.36	18	14,399,272	12,600,300	11,907,284	693,017
4.3.2 (Alternative 2)	18-DAS, 12,000 lb	0.156	0.34	18	26,165,343	24,366,371	23,026,221	1,340,150
4.3.3 (Alternative 3) *(Preferred)*	20 DAS, 12,000 lb	0.165	0.38	20	27,392,436	25,593,464	24,185,823	1,407,641
4.3.4 (Alternative 4)	24 DAS, 12,000 lb	0.18	0.46	24	29,733,304	27,934,332	26,397,944	1,536,388
4.3.5	Status Quo*	0.18	0.51	26.3	27,113,331	25,314,359	23,922,069	1,392,290
* Status Quo (SQ) refers to Framework 36 preferred measures and is provided in the alternatives section of Framework 38 to provide continuity and context for the reader but is not an option proposed for Council decision.								

Alternatives considered in Framework 38 are described in Section 4.3 for a full-time limited access vessel. No Action corresponds to the default measures in Framework 36 and Status Quo refers to a state with no changes from the present allocations in Framework 36 for open area DAS, access area trips, and area closures, using updated biological data from the 2023 surveys.

Economic impacts in the Framework 38 fishery specifications are evaluated for both the short- and long-terms, i.e., the short-term impacts in FY 2024 and the long-term impacts over the 15- year period from FY 2024-FY 2038. This analysis uses price and variable trip cost models that incorporate data through FY 2022. Scallop prices and trip cost estimates are adjusted to 2023 dollars for the FY 2024 (short-term) projections using economy wide inflation index, i.e., CPI. Scallop prices have experienced wide swings, with very high price increases for all market grades in FY 2021 and FY 2022.[16] In order to better account for the recent price increases, price models incorporated consumer demand component as well.

[16] Right after Covid-19 pandemic, both scallop harvest and prices plummeted. Scallop prices remained at a lower level for most part of FY2020 but buoyed up significantly later in FY2020. Prices further increased and have remained high for all grades of scallops throughout FY2021. The price increase has surpassed well above the economy wide inflation index during FY2021. The economy wide CPI increased by about 6 percent between FY2020 and FY2021. However, U10 grade price increased by about 124 percent and 11 to 20 grade scallop price increased by about 43 percent for the same period. Overall, there was about 54% increase in the price of all grades of scallops during FY2021.

Prices of scallops have pulled back slightly in FY2022, but they are still high relative to earlier years. In the early part of FY2022, U10 grade price decreased by about 13 percent and 11 to 20 grade scallop price decreased by about 10 percent while economy wide CPI increased by about 9 percent between FY2021 and FY2022 (Apr-Jul).

In FY2021, fuel price increased by about 33 percent and overall trip cost increased by about 32 percent. In FY2022 (Apr-Oct), fuel price has increased by about 49 percent and overall trip cost increased by about 35 percent.

The long-term landings streams are based on assumptions of average recruitment and constant F over the long-term. Since the Council generally sets specifications for one or two years, the long-term estimates should be interpreted as relative comparisons between measures, and not absolute values of future landings and economic impacts. The long-term economic impacts are evaluated conservatively using scallop prices adjusted with the recent CPI. Economic values are then discounted to present values at 7 and 3 percent.

Short-term Economic Impacts of the FW38 Fishery Specification Action

Below is the summary of economic impact in the short-term (FY 2024) for the FW38 Fishery Specification Action. Table 65 provides a summary of the short-term impacts in terms of landings, revenues, producer surplus, consumer surplus, and total economic benefits for all alternatives and options in consideration. Each alternative including the No Action alternative is compared with the status quo.

Table 65. Economic Impacts for FY 2024: Estimated landings (Mil. lb), revenue and economic benefits (Mil. $, in 2023 dollars), and prices (in 2023 $ per lb).*

Alternatives		4.3.5	4.3.1	4.3.2	(Preferred) 4.3.3	4.3.4
Key Economic Variables	**RUN**	**Status Quo**	**No Action**	**18 DAS 3x12k**	**20DAS 3x12k**	**24 DAS 3x12k**
	Units*		**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**
Landings	Mil lb.	27.1	14.4	26.2	27.4	29.7
Price	$/lb.	$13.98	$15.16	$14.10	$14.02	$13.79
Revenue	Mil $	$379.04	$218.34	$368.96	$383.93	$409.92
Revenue Difference from SQ	**Mil $**	**$0.00**	**-$160.70**	**-$10.07**	**$4.90**	**$30.88**
Producer Surplus**	Mil $	$274.66	$136.21	$269.15	$281.14	$301.33
Consumer Surplus***	Mil $	$32.73	$10.04	$31.75	$34.70	$40.43
Total Benefits (PS+CS)	Mil $	$307.39	$146.25	$300.90	$315.84	$341.77
Total Benefits Difference from SQ	**Mil $**	**$0.00**	**-$161.14**	**-$6.49**	**$8.45**	**$34.37**
Rank of Total Benefits			**4**	**3**	**2**	**1**

*CPI based priced adjustment to 2023 dollars for the price model estimates that are in 2023 dollars.

6.6.1.4.1 Alternative 1 – No Action

Alternative 1 or No Action alternative (Section 4.3.1) yields least economic benefits in terms of landings, revenues, and total economic benefits in the short-term compared to Alternative 2, Alternative 3 and Alternative 4 (Table 65). No Action also has lower economic benefits compared to the status quo.

The No Action alternative is expected to have total landings 14.40 million pounds, revenue $218.34 million, and producer surplus $136.21 million, consumer surplus $10.05 million and total economic benefits $146.25 million in FY 2024.

6.6.1.4.2 Alternative 2 – 18 Days At Sea with three access area trips with 12,000-pound trip limit

In FY2023 (Apr-Sep), consumer price increased by about 4.13% relative to FY2022. Diesel price decreased by about 19% in FY2023 (Apr-Sep) relative to FY2022. Overall trip cost in FY2023 is expected to decline by about 12%.

Alternative 2 has two access area trips in Area II and one trip in the NYB with a 12,000-pound trip limit, and 18 DAS (Section 4.3.2). This alternative has higher landings, revenues, producer surplus, and consumer surplus relative to No Action but lower than Alternative 3, Alternative 4 and status quo.

This alternative (Section 4.3.2) is expected to have total landings 26.17 million pounds, revenue $368.96 million, producer surplus $269.15 million, consumer surplus $31.75 million and total economic benefits $300.90 million. It ranks third among the FW38 specification alternatives in consideration and has lower benefits relative to the status quo.

6.6.1.4.3 Alternative 3 – 20 Days At Sea with three access area trips with 12,000-pound trip limit (*Preferred alternative*)

Alternative 3 has two access area trips in Area II and one trip in the NYB with a 12,000-pound trip limit, and 20 DAS (Section 4.3.3). This alternative has higher landings, revenues, producer surplus, and consumer surplus relative to No Action, status quo and Alternative 2 but lower than Alternative 4.

This alternative (Section 4.3.3) is expected to have total landings of about 27.39 million pounds, revenue $383.93 million, producer surplus $281.14 million, consumer surplus $34.70 million and total economic benefits $315.84 million. It ranks second among the FW38 specification alternatives in consideration.

6.6.1.4.4 Alternative 4 – 24 Days At Sea with three access area trips with 12,000-pound trip limit

Alternative 4 has two access area trips in Area II and one trip in the NYB with a 12,000-pound trip limit, and 24 DAS (Section 4.3.4). This alternative has the highest landings, revenues, producer surplus, and consumer surplus relative to all alternatives, No Action, and status quo.

This alternative (Section 4.3.4) is expected to have total landings of about 29.73 million pounds, revenue $409.92 million, producer surplus $301.33 million, consumer surplus $40.43 million and total economic benefits $341.77 million. It ranks highest among the FW38 specification alternatives in consideration and has also higher benefits relative to the status quo.

6.6.1.4.5 Summary of Short-Term and Long-Term Economic Impacts

Short-term economic impacts in terms of landings, prices, revenues, producer surplus, consumer surplus, and total economic benefits for the FW38 specification alternatives are compared with the status quo (SQ). [17]

- Landings, revenues, producer surplus, consumer surplus, and total economic benefits (a sum of producer and consumer surpluses) in No Action, Alternative 1 (Section 4.3.1), Alternative 2 (Section 4.3.2), and Alternative 3 (Section 4.3.3) with three 12,000 lb, with 18, 20, and 24-DAS options are all higher than No Action in the short-term.
- Higher economic benefits correspond to a higher trip limit and higher DAS in the short term.
- The No Action (Section 4.3.1) has the least landings, revenues, and total benefits in the short-term, but this alternative is only a transitory measure until the preferred alternative in the FW38 specification action is implemented.
- Revenue ranges from around $218.34 million for No Action alternative (Section 4.3.1) to $409.92 million for Alternative 4 (Section 4.3.4).

[17] Note that range of estimates for different economic variables like revenues, producer surplus, consumer surplus and total economic benefits in the short-term economic impacts are based on CPI based price adjustment to 2023 dollars. All economic numbers are in 2023 dollars in the short-term economic impacts.

- Producer surplus ranges from around $136.21 million for No Action Alternative 1 (Section 4.3.1) to $301.33 million for Alternative 4 (Section 4.3.4).
- Consumer surplus ranges from around $10.04 million for No Action Alternative (Section 4.3.1) to $40.43 million for Alternative 4 (Section 4.3.4).
- Total economic benefit (in 2023 dollars) for the highest ranked Alternative 4 (Section 4.3.4) is about $341.77 million but $146.25 million for the lowest ranked No Action Alternative 1 (Section 4.3.1).
- Compared to the status quo, total economic benefits are higher by about $34.37 million for the highest ranked Alternative 4 (Section 4.3.4) but is lower by $161.14 million for the lowest ranked No Action Alternative 1 (Section 4.3.1).
- The short-run (FY2024) economic impacts for the Council's preferred alternative (Section 4.3.3) are as follows:
    - The preferred alternative has annual projected landings of 27.4 million pounds with expected revenue of about $383.93 million; producer surplus of $281.14 million; and total economic benefits of $315.84 million.
    - The preferred alternative's economic benefits (i.e., revenues, producer surplus, and total economic benefits) are higher than No Action (4.3.1), Alternative 2, but is lower than Alternative 4.
    - The economic benefits for the preferred alternative are also slightly higher than status quo scenario (Section 4.3.5). Relative to the status quo, total economic benefits for the preferred alternative are expected to be higher by about $8.45 million.
    - The preferred alternative ranks 2nd in terms of total scallop revenues, producer and consumer surpluses, and net economic benefits.
    - The preferred alternative has a slight negative economic impact relative to Alternative 4 but slight positive impact compared to status quo and Alternative 2.

It is important to note that actual prices, revenues, producer surplus, consumer surplus and total economic benefits may differ from these estimates. Actual prices will depend on realized landings, the size composition of landings, and values of variables that effect prices including import prices, disposable income of consumers, consumer demand level in terms of per capita scallop consumption, imports of scallops from countries such as Canada and Japan that are a close substitute for the large domestic scallops. When estimating prices, it was assumed that the values of these variables will not change from the current levels and that actual landings will equal to the projected landings from the biological model. For these reasons, the numbers provided in the tables should be mainly used to compare one alternative with another rather than to predict future values.

Long-term Economic Impacts (FY 2024 to FY 2038)

The long-term economic impacts are summarized in Table 66 and Table 67. Economic values are discounted to present value terms at a market rate of 7 percent and at a lower discount rate of 3 percent. The economic estimates are in 2023 dollars.

- In the long-term, cumulative scallop landings ranged between 879.39 to 882.75 million pounds. They differ by less than 1 million pounds across alternatives except No Action in the long-term.
- The present value of the revenues for all alternatives but No Action are marginally higher than status quo at both discount rates of 7 and 3 percent.
- At 7 percent discount rate, the present value of revenues expected to range from $6.26 billion in No Action Alternative (Section 4.3.1) to $6.36 billion in Alternative 4 (Section 4.3.4); producer surplus ranges from $4.90 in the No Action Alternative (Section 4.3.1) to $4.99 billion in Alternative 4 (Section 4.3.4); and total economic benefits range from $5.98 in No Action Alternative (Section 4.3.1) to $6.054 billion in Alternative 4 (Section 4.3.4).

- At 3 percent discount rate, the present value of revenues expected to range from $8.064 billion in No Action Alternative 1 (Section 4.3.1) to $8.157 billion in Alternative 4 (Section 4.3.4); producer surplus ranges from $6.326 billion in No Action Alternative 1 (Section 4.3.1) to $6.405 billion in Alternative 4 (Section 4.3.4); and total economic benefits range from $7.734 billion in Alternative 1 (Section 4.3.1) to $7.796 billion in Alternative 4 (Section 4.3.4).
- The ranking of alternatives in the long-term matches with the short-term one for all alternatives. In the long-term, the No Action alternative yields least economic benefits relative to all other alternatives.
- Higher revenues and economic benefits are expected from specifications alternatives with the higher open area DAS for the FT LA vessels. The increase in revenues and economic benefits can be attributed to higher DAS from 24 DAS in open areas. Similarly, higher trip limits also yield higher revenues and total economic benefits.

Table 66. FW38 - Long-term Economic Impacts (2024-2038) (CPI based price adj in 2023 dollars): Cumulative present value (PV) of revenues, producer surplus and total economic benefits net of Status quo values (million $ in 2023 dollars, 7% Discount rate)

Alternatives		4.3.5	4.3.1	4.3.2	(Preferred) 4.3.3	4.3.4
	RUN	Status Quo	No Action	18 DAS 3x12k	20DAS 3x12k	24 DAS 3x12k
Economic Variables	Units		Alternative 1	Alternative 2	Alternative 3	Alternative 4
Landings	Mil lb.	876.810	874.574	877.641	877.761	877.920
Price _ALL	$/lb.	$0.00	$0.00	$0.00	$0.00	$0.00
PV Revenue	Mil $	$6,347	$6,261	$6,348	$6,354	$6,363
PV Revenue Difference from SQ	Mil $	$0.00	-$85.60	$1.25	$7.14	$16.09
PV Producer Surplus	Mil $	$4,974	$4,900	$4,977	$4,981	$4,987
PV Consumer Surplus	Mil $	$1,069	$1,080	$1,069	$1,068	$1,067
PV Total Economic Benefits (PVPS+PVCS)	Mil $	$6,042	$5,980	$6,046	$6,049	$6,054
PV Total Benefits Difference from SQ	Mil $	$0.00	-$62.64	$3.43	$6.85	$11.45
Rank			4	3	2	1

Table 67. FW38 - Long-term Economic Impacts (2024-2038) with Low Prices (CPI based price adj in 2023 dollars): Cumulative present value (PV) of revenues, producer surplus and total economic benefits net of Status quo values (million $ in 2023 dollars, 3% Discount rate)

Alternatives		4.3.5	4.3.1	4.3.2	(Preferred) 4.3.3	4.3.4
	RUN	Status Quo	No Action	18 DAS 3x12k	20DAS 3x12k	24 DAS 3x12k
Economic Variables	Units		Alternative 1	Alternative 2	Alternative 3	Alternative 4
Landings	Mil lb.	876,810	874,574	877,641	877,761	877,920
Price ALL	$/lb.					
PV Revenue	Mil $	$8,142	$8,064	$8,145	$8,150	$8,157
PV Revenue Difference from SQ	Mil $	$0.00	-$78.26	$2.32	$7.41	$14.90
PV Producer Surplus	Mil $	$6,393	$6,326	$6,397	$6,401	$6,405
PV Consumer Surplus	Mil $	$1,394	$1,409	$1,394	$1,393	$1,391
PV Total Economic Benefits (PVPS+PVCS)	Mil $	$7,787	$7,734	$7,791	$7,793	$7,796
PV Total Economic Benefits Difference from SQ	Mil $	$0.00	-$52.50	$4.43	$6.79	$9.47
Rank of Total Benefits			4	3	2	1

- The long-term (FY2024-2038) economic impacts for the preferred alternative (Section 4.3.3) relative to other alternatives and Status Quo are evaluated below. The long term annual economic values are discounted to present value at 7% and 3%.
    - The preferred alternative has cumulative projected landings of 877.76 million pounds over the period of 15 years. The long-term forecasts can help to identify trade-offs between short-term management measures by comparing how impacts of harvest in Year 1 affect the scallop resource when applying the same assumptions across all alternatives. Since the Council generally sets specifications for one or two years, the long-term estimates should be interpreted as relative comparisons between measures, and not absolute values of future landings and economic impacts.
    - The preferred alternative's economic benefits (i.e., revenues, producer surplus, and total economic benefits) are higher than No Action and Alternative 2 but they are slightly lower relative to Alternative 4.
    - The economic benefits for the preferred alternative are slightly higher than status quo scenario (Section 4.3.5).
    - The preferred alternative ranks 2nd among all alternatives considered at both discount rates (7% and 3%).
- Compared to SQ, the long-term present value of revenues, producer surplus and total economic benefits are higher for the preferred alternative Section 4.3.2.
- The cumulative present value of the revenue evaluated at 7% discount rate in the long run is highest for Section 4.3.4 at about $8.157 billion (in 2023 dollars). Except for the No Action alternative, the cumulative present value of revenue ranged between $8.145 billion for Alternative 4.3.1 and $8.157 billion for Alternative 4 (Section 4.3.4).
- Except for the No Action alternative, the cumulative present value of producer surplus evaluated at 7% discount rate in the long run ranged between $6.397 billion (Section 4.3.2) and $6.405 billion (Section 4.3.4). The differences in total economic benefit from SQ range between $4.43 million (Section 4.3.2) and $9.47 million (Section 4.3.4).

- The long-term economic impact of the preferred alternative is slightly negative/positive relative to the Alternative 4 and status quo but it is slightly positive/negative compared to Alternative 1, Alternative 2 and Alternative 3

The results of these analyses should be interpreted with caution and should be used solely to compare one alternative with another rather than to predict future values. The costs and the benefits of the alternatives were analyzed based on the biological projections of landings, DAS and LPUE and the available information about the vessel costs and characteristics and price model. Actual value of landings, size composition and other biological variables are likely to be different, at least to some extent, than the projected values due to scientific and management uncertainties. Price projections are derived from the price model, which estimated the impact of landings and size composition on prices after considering the impact of exogenous variables. These variables include import prices, per capita disposable income, and scallop imports from Japan and Canada as a proxy of changes in international markets for large scallops. Future price projections hold all the exogenous explanatory variables constant to estimate the economic impacts of alternative management measures on landings, scallop size composition, LPUE and effort. Actual prices will be different than estimated depending on the differences in actual landings and in size composition from projected values as well as due to changes inflation, consumer demand, price, composition of imports, disposable personal income, etc.

6.6.1.4.6 LAGC IFQ Allocations

The LAGC IFQ fishery is allocated 5.5% of the annual projected landings (APL), those with IFQ permits receiving 5% and those with both IFQ and LA permits receiving 0.5% of the total APL. Table 68 shows the LAGC IFQ share (5.5% of APL) and estimated revenues for all specification alternatives including SQ and NA options. LAGC IFQ share for the SQ alternative is 1,392,290 pounds. The share for the specification alternatives except No Action ranges from 1,340,150 pounds in Alternative 2 (Section 4.3.2) to a high of 1,536,388 pounds in Alternative 4 (Section 4.3.4).

Section 4.3.5 is the Status Quo scenario for comparison purposes of the relative economic benefits. Under this scenario, allocations for the LAGC IFQ fishery would be set using the regulations and spatial management from FW36, which would result in 1,392,290 pounds. Alternative 4 (Section 4.3.4) has the highest LAGC IFQ allocation at 1,536,388 pounds with an expected revenue of $21.18 million (in 2023 dollars). The differences in revenue with status quo across alternatives range from about -$0.57 million to -$1.72 million. The highest-ranking alternative in terms of revenue is Alternative 4 (Section 4.3.4) with about 8.82% higher revenue than what is expected for the LAGC IFQ allocation under status quo.

Table 68. Economic Impacts of the LAGC IFQ allocation for the 2024 fishing year.

Alternatives	4.3.1 No Action	4.3.2 18DAS 3x12k	(Preferred) 4.3.3 20DAS 3x12k	4.3.4 24 DAS 3x12k	4.3.5 Status Quo
Runs/Alts	Alternative 1	Alternative 2	Alternative 3	Alternative 4	
LAGC IFQ Share (lb)	693,017	1,340,150	1,407,641	1,536,388	1,392,290
LAGC IFQ Share (mt)	314	608	639	697	632
Price per lb (in 2023$)	$15.16	$14.10	$14.02	$13.79	$13.98
Revenue (in 2023 $ mil)	$10,508,222	$18,897,853	$19,729,606	$21,181,319	$19,463,928
Revenue Difference from SQ (in 2023 $ mil)	-$8,955,706	-$566,075	$265,678	$1,717,391	$0
Percent Change in Revenue from SQ	**-46.01%**	**-2.91%**	**1.36%**	**8.82%**	**0.00%**

The Council's preferred alternative (Section 4.3.3) has a 1.41 million pounds LAGC IFQ share allocated. The preferred alternative could be expected to result in marginally higher landings and hence higher revenues for the LAGC IFQ component relative to status quo. It yields revenues of $19.72 million, and the revenue is $0.27 million higher than status quo (Table 68). The preferred alternative has higher revenue relative to No Action status quo and Alternative 2, but lower relative to Alternative 4. The preferred alternative is expected to have negligible or slightly positive economic impact compared to status quo.

6.6.1.4.7 Landings and size composition

Projected landings under all specification alternatives (except for No Action) range from roughly 26.50 million to 30.26 million pounds in FY 2024. While projections suggest that landings could reach close to 62 million pounds during FY 2026 to FY 2028 (Table 69), the Council plans to revisit its rotational management strategy again next year using different assumptions. However, over the long-term (FY 2029 to FY 2038), the projected landings for each specification alternative (including No Action) are expected to stabilize around 63 million pounds.

The short- and long-term projected landings of U10s are shown in Table 70 and Table 72. Under the specification alternatives being considered in this action (except for No Action), the proportion of overall landings that are U10s is estimated to be about 18%in FY 2024 and is expected to stabilize around 4% in the long-term (FY 2026 to FY 2038).

Table 69. Estimated landings (Million lb, Average per fishing year).

Average of Total Landings	Scenarios				
Alternatives/ Options	4.3.5 Status Quo	4.3.1 No Action	4.3.2 18 DAS 3x12k	(Preferred) 4.3.3 20 DAS 3x12k	4.3.4 24 DAS 3x12k
Fishing year groups		Alternative 1	Alternative 2	Alternative 3	Alternative 4
2024	27.113	14.399	26.165	27.392	29.733
2025	41.092	44.799	41.813	41.362	40.487
2026-28	61.018	62.686	61.263	61.090	60.742
2029-38	62.555	62.732	62.587	62.574	62.547

Table 70. Projected landings of U10 scallops per year (million lb).

Average of U10 Landings	Scenarios				
Alternatives/ Options	4.3.5 Status Quo	4.3.1 No Action	4.3.2 18 DAS 3x12k	(Preferred) 4.3.3 20 DAS 3x12k	4.3.4 24 DAS 3x12k
Fishing year groups		Alternative 1	Alternative 2	Alternative 3	Alternative 4
2024	4.162	2.681	4.863	5.113	5.514
2025	3.516	4.048	3.296	3.214	3.075
2026-28	2.461	2.708	2.241	2.211	2.168
2029-38	2.846	2.888	2.840	2.837	2.832

Table 71. Historical landings of scallops by size category (lb).

FY	'U10' landings	'1120' landings	'2130' landings	31+ landings	Unknown	Total
2009	8,426,450	35,799,075	12,193,737	172,283	1,327,049	58,090,058
2010	8,770,955	36,052,201	10,831,759	63,244	939,048	56,719,863
2011	8,543,436	45,260,311	3,256,836	306,256	1,339,491	59,011,885
2012	10,485,521	41,587,639	3,486,843	63,484	1,234,715	56,921,686
2013	8,666,779	24,780,078	5,564,030	125,631	1,076,312	40,337,729
2014	8,046,766	19,084,369	4,079,070	286,378	873,788	32,652,382
2015	6,115,533	21,138,141	7,719,681	170,252	772,211	36,078,514
2016	4,720,193	18,774,077	14,691,792	2,202,112	1,141,890	43,706,231
2017	10,186,798	29,399,041	12,655,069	388,708	979,780	53,996,717
2018	10,856,965	41,365,184	6,930,184	65,768	880,567	60,164,235
2019	11,944,335	38,171,190	8,154,785	1,061,243	1,053,266	61,365,033
2020	7,680,431	26,586,397	7,013,746	3,967,575	713,057	49,417,580
2021	6,056,458	21,644,829	9,818,605	4,645,150	806,626	46,148,572
2022	4,018,250	18,175,285	7,063,054	535,905	700,965	30,702,069

Table 72. Biological projections - Percentage share of U10 scallops in total landings.

Average of L-U10	**Scenarios**				
Alternatives/ Options	**4.3.5 Status Quo**	**4.3.1 No Action**	**4.3.2 18 DAS 3x12k**	**(Preferred) 4.3.3 20DAS 3x12k**	**4.3.4 24 DAS 3x12k**
Fishing year groups		**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**
2024	15.16%	18.26%	18.35%	18.36%	18.22%
2025	8.48%	8.96%	7.81%	7.71%	7.53%
2026-28	4.01%	4.29%	3.64%	3.60%	3.55%
2029-38	4.53%	4.58%	4.52%	4.51%	4.51%

Table 73. Percentage composition of scallop landings by size categories.

FY	'U10' landings	'1120' landings	'2130' landings	31+ landings	Unknown
2009	14.55	61.81	21.05	0.30	2.29
2010	15.48	63.63	19.12	0.11	1.66
2011	14.55	77.10	5.55	0.52	2.28
2012	18.44	73.14	6.13	0.12	2.17
2013	21.55	61.62	13.84	0.31	2.68
2014	24.86	58.96	12.60	0.88	2.70
2015	17.03	58.85	21.49	0.48	2.15
2016	11.37	45.21	35.38	5.29	2.75
2017	19.00	54.84	23.61	0.72	1.83
2018	18.07	68.83	11.53	0.10	1.47
2019	19.78	63.21	13.5	1.77	1.74
2020	16.71	57.85	15.26	8.63	1.55
2021	14.09	50.37	22.85	10.81	1.88
2022	13.18	59.60	23.16	1.76	2.30

Table 74. Scallop landings pounds per DAS (LPUE).

Average of LPUE	Scenarios				
Alts/ Options	4.3.5 Status Quo	4.3.1 No Action	4.3.2 18 DAS 3x12k	4.3.3 20 DAS 3x12k (Preferred)	4.3.4 24 DAS 3x12k
FY groups		**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**
2024	2,136	2,025	2,265	2,237	2,176
2025	2,329	2,381	2,326	2,320	2,308
2026-28	2,575	2,593	2,576	2,575	2,573
2029-38	2,649	2,651	2,649	2,649	2,649

6.6.1.4.8 Prices and Revenue

Prices are estimated (Table 75) using the ex-vessel price model that takes into account the impacts of changes in domestic landings, exports, import prices, income of consumers, composition of landings by market category (i.e., size of scallops), and changes in international markets for large scallops using imports of Japanese and Canadian scallops as proxy variables (Economic Appendix I on Price Model).

The price estimates in Framework 38 correspond to the price model outputs assuming that the import prices will be constant at their recent two year average value (i.e., import price for FY 2021 - FY 2022 averaged to about

$6.6 per pound); scallop exports will constitute about 23.6% of the domestic landings; per capita disposable income of about $56.7 thousands in FY 2022 and is adjusted for in price estimation; the ratio of Japanese and Canadian imports to total scallops imported will be constant at their current levels in FY 2022; and only the effects of the reduction in and changes in the size composition of landings could be identified. In addition, price estimates reflect real (as opposed to nominal) prices since they are expressed in 2022 constant prices assuming inflation will be zero in future years. Therefore, actual, real, or nominal prices could be higher (lower) than the estimated prices depending on the import prices, exports, and(or) disposable income increased (decreased) in future years. Nominal prices will probably be higher in the future as well since it is unusual for inflation to remain at zero. In addition, ex-vessel prices could be underestimates of true values because the biological model underestimates the proportion of U10s in landings and it does not have a separate category for U12 scallops which also receive a premium price.

Although the absolute values for revenues, producer and consumer surpluses, and total economic benefits would change with the value of estimated prices, the differences of these values for all the alternatives to the No Action or Status Quo scenarios would not change in any substantial way. Higher realized prices would increase the short-term positive impact of all alternatives on revenues compared to No Action and SQ, while lower realized prices would reduce this impact. Increase in import prices leads to higher ex-vessel prices and revenues.

Table 75. Short-term Ex-Vessel Scallop Price Estimates* for FY 2024 (in 2023 dollars) by FW38 Alternatives and Market Grades.

	4.3.5 Status Quo	4.3.1 No Action	4.3.2 18 DAS 3x12k	4.3.3 20 DAS 3x12k (Preferred)	4.3.4 24 DAS 3x12k
		Alternative 1	Alternative 2	Alternative 3	Alternative 4
U10	$17.81	$19.69	$16.87	$16.57	$16.11
11+	$13.49	$14.39	$13.56	$13.47	$13.31
Price	$13.98	$15.16	$14.10	$14.02	$13.79

*Price model estimates are in 2021 dollars. The price estimates are later adjusted to 2023 dollars based on CPI.

Table 76. Scallop revenue per fishing year (undiscounted, Million dollars, in 2023 dollars (Adj to CPI)).

FY groups	4.3.5 Status Quo	4.3.1 No Action	4.3.2 18 DAS 3x12k	4.3.3 20 DAS 3x12k (Preferred)	4.3.4 24 DAS 3x12k
		Alternative 1	Alternative 2	Alternative 3	Alternative 4
2024	$379.038	$218.336	$368.965	$383.934	$409.916
2025	$526.844	$562.481	$533.512	$528.776	$519.805
2026-28	$694.575	$707.642	$696.054	$694.530	$691.660
2029-38	$706.029	$707.445	$706.254	$706.126	$705.906

6.6.1.4.9 Estimated impacts on DAS, fishing costs and open area days and employment

Total effort in terms of total DAS (Table 78, Table 79) are expected to be lower in the short-term in FY 2024 for all alternatives compared to the status quo. Changes in the employment level (
Table 77) in the scallop fishery, as measured by CREW*DAS[18], is also expected to be lower compared to the status quo. Employment level is expected to increase ranging from about 8.23% in Alternative 4 (Section 4.3.4) to a decline of 8.94% in Alternative 2 (Section 4.3.2). Expected employment for the FW38 alternatives in both short- and long-term are presented in
Table 77.

In the preferred alternative, the short-term (FY2024) employment level is expected at about 75,821 crew*DAS which is 3.1% lower than the status quo level of employment (Table 77). Except in Alternative 4 (Section 4.3.4), fleet-wide trip costs (Table 80) in FY 2024 for all alternatives including No Action are expected to be lower than SQ levels dollars because of lower Total DAS, but there are small differences in the magnitude of trip costs across specification alternatives. However, trip costs are expected to increase noticeably over the long-term. Trip cost per DAS in FY 2024 is expected to decline by about 12% compared to last year, which is primarily attributed to declining fuel costs and slower pace of general inflation recently.

Table 77. Total employment level (i.e., Crew*DAS) and percent changes relative to the Status Quo in the short- and long-term by FW38 Alternatives

FY groups	4.3.5 Status Quo	4.3.1 No Action	4.3.2 18 DAS 3x12k	4.3.3 20 DAS 3x12k (Preferred)	4.3.4 24 DAS 3x12k
		Alternative 1	Alternative 2	Alternative 3	Alternative 4
2024	78,244	44,159	71,247	75,821	84,681
2025	108,426	115,546	110,424	109,504	107,696
2026-28	145,119	148,105	145,644	145,273	144,538
2029-38	144,472	144,764	144,538	144,508	144,453
Grand Total	**137,783**	**136,777**	**137,599**	**137,748**	**138,035**
Percent change in employment level (Crew*DAS) from status quo:					
Short Run (FY 2024)	**0%**	-43.56%	-8.94%	-3.10%	8.23%
Long Run (FY 2024-2038)	**0%**	-0.73%	-0.13%	-0.03%	0.18%

[18] Employment in scallop fishery is as measured by average crew in a FT vessel times total days at sea (DAS).

Table 78. Projected DAS per FT vessel per year (including open and access areas).

Alternatives	4.3.5 Status Quo	4.3.1 No Action	4.3.2 18 DAS 3x12k	4.3.3 20 DAS 3x12k (Preferred)	4.3.4 24 DAS 3x12k
Fishing year groups		**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**
2024	36.02	20.33	32.79	34.90	38.98
2025	49.91	53.19	50.83	50.40	49.57
2026-28	66.80	68.17	67.04	66.87	66.53
2029-38	66.50	66.63	66.53	66.52	66.49

Table 79. Percentage change in total DAS from Status Quo levels (open and access areas).

Alternatives	4.3.5 Status Quo	4.3.1 No Action	4.3.2 18 DAS 3x12k	4.3.3 20 DAS 3x12k (Preferred)	4.3.4 24 DAS 3x12k
Fishing year groups		**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**
2024	-	-43.6%	-8.9%	-3.1%	8.2%
2025	-	6.6%	1.8%	1.0%	-0.7%
2026-28	-	2.1%	0.4%	0.1%	-0.4%
2029-38	-	0.2%	0.0%	0.0%	0.0%

Table 80. Average trip costs per year for the scallop fleet (Undiscounted, in million 2023 dollars).

Alternatives/ Options	4.3.5 Status Quo	4.3.1 No Action	4.3.2 18 DAS 3x12k	4.3.3 20 DAS 3x12k (Preferred)	4.3.4 24 DAS 3x12k
Fishing year groups		**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**
2024	$33.234	$18.756	$30.261	$32.204	$35.968
2025	$46.053	$49.077	$46.902	$46.511	$45.743
2026-28	$61.638	$62.906	$61.861	$61.703	$61.391
2029-38	$61.363	$61.487	$61.391	$61.379	$61.355

6.6.1.4.10 Present Value of Producer Surplus, Consumer Surplus and Total Economic Benefits

Producer surplus (benefits) for a fishery shows the net benefits to harvesters, including vessel owners and crew, and is measured by the difference between total revenue and costs including operating costs and opportunity costs of labor and capital. In technical terms, the producer surplus (PS) is defined as the area above the supply curve and below the price line of the corresponding firm and industry (Just, Hueth & Schmitz (JHS)-1982). The supply curve in the short-run coincides with the short-run marginal cost above the minimum average variable cost. This area between price and the supply curve can then be approximated by various methods depending on the shapes of the marginal and average variable cost curves.

- Alternative 3 and 4 in Framework 38 have higher producer surplus relative to the status quo in the short-term. In FY 2024, producer surplus (Table 65) is estimated to range between $269.15 million in Alternative 2 (Section 4.3.2) to $301.33 million in Alternative 4 (Section 4.3.4).
- Producer surplus for the preferred alternative (Section 4.3.3) is estimated to be about $281.14 million.
- The economic analysis presented in this section used the most straightforward approximation of producer surplus, which was defined as the excess of total revenue (TR) over the total variable costs (TVC) minus the opportunity costs of labor and capital. The fixed costs were not deducted from the producer surplus since the producer surplus is equal to profits plus the rent to the fixed inputs. More information about the producer surplus estimates and opportunity costs are provided in the Appendix for the Economic Model.
- It must also be emphasized that the empirical results of the economic analyses should be used to compare alternatives with each other and with No Action or Status Quo rather than to estimate the absolute values since the later will be change according to the several external variables that affect prices, revenues and costs including changes in import prices, exports of scallops, disposable income of consumers, size composition of scallop landings, oil prices and inflation.

Consumer surplus for a fishery is the net benefit that consumers gain from consuming fish based on the price they would be willing to pay for them. Consumer surplus will increase when fish prices decline, and/or when the volume of fish harvested goes up. Present value of the consumer surplus (using a 7% discount rate), and the cumulative present values net of Status Quo levels are summarized in Table 66.

- No Action and Alternative 2 in Framework 38 have lower consumer surplus relative to the status quo in the short-term.
- In FY 2024, consumer surplus is predicted to range between approximately $31.75 million in Alternative 2 (Section 4.3.2) to $40.43 million in Alternative 4 (Section 4.3.4).
- Consumer surplus for the preferred alternative (Section 4.3.3) is estimated to be about $34.7 million.

Economic benefits include the benefits both to the consumers and to the fishing industry and are equal to the sum of benefits to the consumers and producers. The cumulative present value of the total benefits and economic benefits net of Status Quo (SQ) levels are shown in Table 66.

- The cumulative present value of economic benefits is also estimated at a 7% discount rate. Total economic benefits for all specification alternatives are lower relative to the Status Quo. Discounting future benefits at a lower level resulted in higher benefits for all options without changing the ranking of the alternatives in terms of magnitude of benefits.
- Compared to status quo, total economic benefits in the short-term (FY 2024) are higher Alternative 3 and Alternative 4 with 20 and 24 DAS.
- Total economic benefits would be largest under Alternative 4 (Section 4.3.4) which has 24 DAS and opens the CAII. Economic benefits are lowest under Alternative 2 (Section 4.3.2), which allocated 18 DAS and keeps the CAII open.
- Total economic benefits range between $300.90 million in Alternative 2 (Section 4.3.2) to $341.77 million in Alternative 4 (Section 4.3.4).

- In the long-term, Alternative 4 (Section 4.3.4) ranks highest and Alternative 2 (Section 4.3.2) ranks lowest in total economic benefits.
- The preferred alternative ranks 2nd for overall economic benefits at both discount rates of 7% and 3%.
- Total economic benefit for the preferred alternative (Section 4.3.3.2) is estimated to be about $322.15 million. Total economic benefit for the preferred alternative ranks 2nd in the short run and is higher than status quo by about $8.45 million.

6.6.1.5 Action 4 – Access Area Trip Allocations to the LAGC IFQ Component

6.6.1.5.1 Alternative 1 – No Action

Under Alternative 1, the LAGC IFQ access area allocation would be 0 trips, and there would be no IFQ fishing in rotational access areas.

6.6.1.5.2 Alternative 2 – Update LAGC IFQ Access Area Trip Allocations, Distribute LAGC IFQ Access Area Allocation to Area I, Area II, and the New York Bight (*Preferred alternative*)

Under Alternative 2, the total number of access area trips allocated to the LAGC IFQ component would be the 800-pound trip equivalent of 5.5% of the access area allocation to the full-time limited access component specified in Section 4.3. The total number of trips allocated to the LAGC IFQ based on the Council's preferred alternative in Action 3, Alternative 3 (4.3.3) is 856. Under Alternative 2, there would not be a specific number of trips allocated to Area I, Area II or the New York Bight. Vessels would be able to fish in any of the three areas, and when all 856 trips are taken, all three areas would close.

The economic impacts of Alternative 2 would likely be positive relative to Alternative 1. Having access area opportunities on Georges Bank (Area I and Area II) and in the Mid-Atlantic where catch rates and scallop market grades could be expected to be larger than average open area catches could lead to increased revenues for the LAGC IFQ component. The flexibility to fish inshore areas in the Mid-Atlantic and on Georges Bank, along with an offshore area (Area 2) where higher LPUE is expected could have slight positive impacts relative to Alternative 1 and Alternative 3.

6.6.1.5.3 Alternative 3 – Update LAGC IFQ Access Area Trip Allocations, Distribute 50% of LAGC IFQ Access Area allocation to Area I / Area II, and 50% to the New York Bight

Under Alternative 3, the total number of access area trips allocated to the LAGC IFQ component would be the 800-pound trip equivalent of 5.5% of the access area allocation to the full-time limited access component specified in Section 4.3. The total number of trips allocated to the LAGC IFQ based on the Council's preferred alternative in Action 3, Alternative 3 (4.3.3) is 856. Alternative 3 would allocate 428 trips to the New York Bight, and 428 trips to Area I and/or Area II.

The economic impacts of Alternative 2 would likely be positive relative to Alternative 1. Having access area opportunities on Georges Bank (Area I and Area II) and in the Mid-Atlantic where catch rates and scallop market grades could be expected to be larger than average open area catches could lead to increased revenues for the LAGC IFQ component and could have positive economic impacts on LAGC IFQ vessels overall in the long run and compared to Alternative 1. Impacts relative to Alternative 2 could be expected to be slightly negative since there is less flexibility to fish trips across all access areas, and there is substantial uncertainty in the biomass estimates for Area I. If catch rates are low in Area I and trips are not profitable, the LAGC IFQ component would need to fish offshore in Area II to access the Georges Bank LAGC IFQ allocation. This may lead to a partial utilization of the access area allocation, versus the opportunity in Alternative 2 to fish trips in any of the areas.

6.6.1.6 Action 5 - Scallop Research Set-Aside Compensation Fishing (Alternative 2 preferred)

There are two alternatives under consideration related to where RSA compensation fishing can occur. Alternative 1 would allow RSA compensation fishing in the open bottom but would prohibit vessels from fishing RSA compensation in access areas. Alternative 2 would allow vessels to fish RSA compensation trips in the Area 2 access areas, open bottom, and the Northern Gulf of Maine management area.

Alternative 2 could be expected to have a slight positive economic impact relative to Alternative 1 since it would enable vessels to direct fishing effort to areas with higher concentrations of animals, specifically in Area II. Since this option would allow directed scallop fishing on larger animals in high densities scallops in access areas, it could result in lower trip costs compared to open area fishing. Access to larger scallops in access areas could have a positive effect on revenues, which is an important part of the RSA program.

6.6.1.7 Action 6 – Increase VMS-Reporting Intervals for all Scallop Vessels (Alternative 2 preferred)

In Action 6, the Council developed an alternative that considers increasing the vessel monitoring system (VMS) reporting interval for all scallop vessels on declared scallop trips. Under the preferred alternative, Alternative 2 (4.6.2), all scallop vessels with active VMS units would be subject to constant reporting at 5-minute intervals when seaward of the VMS demarcation line on a scallop declaration (SES-%). When inshore of the VMS demarcation line, vessels would report at a 30-minute interval. The increased VMS reporting rate is not intended to apply to vessels participating in state-waters scallop fisheries and excludes any SES-% VMS code associated with the scallop state water exemption program.

VMS vendors offer a range of service plans with varying allotments of data per month, and varying costs for additional data over and above the base plan, based on a vessel's fishing activity and any associated regulatory requirements. The service price depends on the amount of data required, with data being used for tasks such as weather updates, email, software updates to the VMS unit, as well as reporting the vessel's location at the required frequency. Increasing the required VMS reporting frequency will increase data usage and likely require vessels to pay for a service plan with a higher data limit, particularly for vessels that use VMS data for other tasks. Scallop businesses should work directly with their VMS vendors to understand how costs may change with more frequent polling requirements, as well as any potential changes to their VMS service plan that could reduce costs. For example, many VMS vendors offer vessels the opportunity to reduce their service plan during months when less data is required.

Total VMS cost estimates for the scallop fleet under Alternative 2, as well as No Action (remaining at 30-min VMS reporting) are presented in Table 81. Fleet-wide cost estimates were derived using an estimated cost of $0.36/hour for 5-minute reporting and $0.06/hour for 30-minute reporting, multiplied by the scallop fleet's FY 2022 VMS hours relative to the proposed boundaries that would trigger 5-minute reporting. Estimated VMS costs were provided by each VMS vendor. Fleet-wide cost estimates should be considered a maximum potential cost since the analysis assumes that all vessels in the analysis (n=533) would be using this most expensive VMS option. Recognizing that vessels use a range of vendors with varying VMS costs at the vessel level, realized costs at the fleet level would be less than the maximum cost presented in Table 81.

Table 81. Estimated maximum annual VMS costs to the scallop fleet under each option compared to the cost of No Action based on FY 2022 VMS data.

Measure	Fleet-Wide annual VMS costs	Cost increase vs. No Action
Alternative 1 - No Action	$193,061	

(Preferred) Alternative 2	$461,385	$268,324

6.6.2 Social Impacts

6.6.2.1 Action 1 – Overfishing and Acceptable Biological Catch

6.6.2.1.1 Alternative 1 – No Action for OFL and ABC

Under Alternative 1, the OFL and ABC would be set at the default values for FY 2024 (Table 54). The ABC for FY 2024 excluding discards would be 20,206 mt (44.5M lb), which is slightly more than the FY 2023 ABC (19,828 mt). The ABC for FY 2025 would be 0 mt.

The social impacts of No Action would likely be negligible to moderate negative. With no change in the FY 2024 ABC from the default, there would be a degree of constancy and predictability for fishing industry operations. This ABC is 2% higher than that of FY 2023 (19,828 mt). The employment levels of the fishery-related workforce could be similar, as would the historical dependence on and participation in the fishery (structure of fishing practices, income distribution and rights). The SSC recommended that the ABC could be higher than the No Action level, so selecting No Action might cause distrust in management among the industry, and a feeling that managers are not making use of the best available science in a timely manner. This may lead to negative impacts on the attitudes of stakeholders towards management. Because the default ABC for FY 2025 would be 0 mt (i.e., there would be no fishery), unless the Council takes another action that sets ABC, and it is implemented on-time, stakeholders could perceive the use of default specifications for sea scallops as a fishery management failure.

6.6.2.1.2 Alternative 2 - Updated OFL and ABC for FY 2024 and FY 2025 (*Preferred alternative)*

Under Alternative 2, the OFL and ABC for FY 2024 would be set based on the results of the most recent data and at levels recommended by the SSC (Table 54). The ABC excluding discards would be 21,497 mt for FY 2024 and the default for FY 2025 would be 22,586 mt.

The social impacts of Alternative 2 would likely be slight positive and more positive than No Action. The ABC in FY 2024 would be 8% higher than in FY 2023 (19,828 mt) and 6% higher than the FY 2024 default level. This increase is unlikely to substantially change the employment levels of the fishery-related workforce and the historical dependence on and participation in the fishery (structure of fishing practices, income distribution and rights) could be altered. Using the SSC recommendation would likely cause more trust in management among the industry relative to No Action and a feeling that managers are making use of the best available science in a timely manner. This may lead to positive impacts on the attitudes of stakeholders towards management. In the long term, the industry could realize the benefits of yield that is supported by the best available science. With a default ABC for 2025, there is more assurance under Alternative 2 that the fishery will continue, providing a degree of predictability for fishing industry operations into the future, leading to long-term positive social impacts.

6.6.2.2 Action 2 — Northern Gulf of Maine Management and TAL Setting

6.6.2.2.1 Closure of Platts Bank to Protect Small Scallops

6.6.2.2.1.1 Alternative 1 – No Action

Under Alternative 1, there would be no change to where scallop vessels can fish on declared scallop trips in the NGOM Management Area. Scallop vessels would be able to fish Platts Bank in FY 2024-2025.

The social impacts of No Action would likely be negligible to slight negative. With the majority of scallop biomass located in inshore areas of the NGOM, limited directed scallop fishing could be expected on Platts Bank in FY 2024. Thus, the fishery would have little near-term benefit from continuing to be allowed to fish in this area. Should there be

some scallop fishing activity in this area, there could be more long-term negative impacts for the fishery as it could not benefit from future scallop growth if this area is too heavily fished in the near term.

6.6.2.2.1.2 Alternative 2 – Closure of Platts Bank to directed scallop fishing, within the Northern Gulf of Maine Management Area (2-year closure) (*Preferred alternative*)

Under Alternative 2, Platts Bank would be closed to directed scallop fishing in FY 2024-2025 and reopen in FY 2026 when scallops in this area are expected to have fully recruited.

The social impacts of Alternative 2 would likely be negligible to slight positive and would be more positive than Alternative 1. With the majority of scallop biomass located in inshore areas of the NGOM, the fishery is unlikely to be constrained in the near-term by not fishing in this area. Allowing scallop growth in this area could lead to more long-term benefits for the fishery as it could benefit from harvesting larger scallops in this area.

6.6.2.2.2 Northern Gulf of Maine TAL Setting

6.6.2.2.2.1 Alternative 1 – No Action

Under No Action, the default measures for FY 2024 would be in place: the NGOM Set-Aside for FY 2024 would be 285,641 lb, 39% lower than the FY 2023 Set-Aside (465,980 lb). No TAL would be set for FY 2025, and the area would close to directed scallop fishing.

The social impacts of No Action would be uncertain but likely slight negative. As growth assumptions for the Stellwagen Bank area of the NGOM are uncertain and could be overestimated, so there is uncertainty about the long-term sustainability of fishing under Alternative 1. With a 39% reduction in the Set-Aside from the FY 2023 level, the fishery would continue to benefit from fishing in the NGOM, but at reduced levels. This degree of change could disrupt the constancy and predictability of fishing industry operations and make providing a steady supply to the market a challenge. The size of the fishery-related workforce operating in the NGOM would likely be reduced, as would the historical dependence on and participation in the fishery (structure of fishing practices, income distribution and rights). Scallop surveys indicate that the No Action NGOM TAL may be lower than is biologically sustainable in the long term. Selecting No Action might cause distrust in management among the industry, and a feeling that managers are not making use of the best available science in a timely manner and that the fishery is prevented from benefiting from a higher TAL. This may lead to negative impacts on the attitudes of stakeholders towards management. Because the default NGOM TAC for FY 2025 would be 0 mt (i.e., there would be no fishery), unless the Council takes another action that sets the TAC, and it is implemented on-time, stakeholders could perceive the use of default specifications for this area as a fishery management failure.

Alternative 1 would likely have differential impacts among ports. Gloucester is a key landing port for the vessels that would be fishing the NGOM TAC, particularly the LAGC NGOM vessels, as it is near the most productive fishing grounds in this area and has the necessary shoreside infrastructure to support the fishery. However, the LAGC vessels fishing out of Gloucester are from homeports throughout Maine, New Hampshire, and Massachusetts (Amendment 21, Section 5.6.8.4.3).

6.6.2.2.2.2 Alternative 2 — Set NGOM TAL, with set-asides to support research, monitoring, and a directed LAGC fishery (Alternative 2 Option 2 is Preferred)

Under Alternative 2, the NGOM TAL for FY 2024 and FY 2025 (default), including set-asides to support research, monitoring, and a directed LAGC fishery. There are three options for setting the NGOM TAL and Set-Aside at varying F rates that result in FY 2024 Set-Asides ranging from a low of 362,837 lb under Option 1 to a high of 4493,792 lb under Option 3.

The social impacts of Alternative 2 would be uncertain but likely moderate positive and more positive than No Action. As growth assumptions for the Stellwagen Bank area of the NGOM are uncertain and could be overestimated, so there is

uncertainty about the long-term sustainability of fishing under Alternative 2. The fishery would continue to benefit from fishing in the NGOM and at higher levels than under No Action. While Options 1 and 2 are the most conservative, their impacts may be more positive in the long term. While Option 3 may lead to more positive short-term social impacts due to allowing the highest landings, in the long-term the most positive social impacts would more likely accrue under Option 1, which has the most conservative TAL. In the long term, ensuring continued, sustainable harvest of the resource benefits all fisheries.

Alternative 2 would likely have differential impacts among ports with the short-term positive impacts accruing more to the port of Gloucester for the same reasons as described under No Action. In the long term, if Alternative 2, and particularly Option 1, allows for the most growth in the scallop resource, biomass may increase substantially and become more distributed throughout the area. Thus, LAGC landings may increase in more northerly ports as well. Alternative 2 may more quickly lead to biomass being above the trigger that would allow for more directed harvest by the LA fishery component. These vessels are distributed throughout the range of the entire resource; many are based out of New Bedford but occur down to North Carolina.

6.6.2.3 Action 3 – Fishery Specifications and Rotational Management

Action 3 sets specifications for open area DAS and access area trip allocations. The alternatives are based on Alternative 2 for OFL and ABC (Section 4.1.2). The LA (94.5%) and LAGC IFQ (5.5%) allocations are based on the Annual Projected Landings (APL).

6.6.2.3.1 Alternative 1 – No Action

Under No Action, the FY 2024 specifications (default approved in Framework 36) would include 18 full-time LA open area DAS, 75% of the FY 2023 DAS. Part-time and occasional LA vessels would have 7.2 and 1.5 DAS, respectively. The total LAGC IFQ allocation would be 942,884 lb, 75% of the FY 2023 LAGC IFQ allocation. The target TAC for vessels with an LAGC incidental permit would be 50,000 lb. There would be no access area trips allocated under No Action (Map 3). There would be no allocations specified for FY 2025.

The social impacts of No Action would be moderate negative. Fishing would be allowed, but at substantially reduced levels relative to FY 2023 (Status Quo; Section 4.3.5). Landings, revenue, and total economic benefits would likely be lower than Status Quo (FY 2023) and the Alternative 2 options, providing fewer fishing opportunities. Employment (i.e., crew limit * DAS) is modeled to be lower in FY 2024 under No Action relative to Status Quo (Table 77). Thus, the size of the fishery-related workforce could decrease, though the model predicts similar employment across the alternatives in later years. Fishermen could perceive the selection of No Action as a fishery management failure (e.g., no default for FY 2025). It might cause distrust in management among the industry and a feeling that managers are not making use of the best available science which indicates that scallop fishing would be sustainable in additional areas and using more DAS. No Action may lead to negative impacts on the attitudes of stakeholders towards management. The industry could not realize the benefits of yield that is supported by the best available science. The social impacts could be negative in the longer term because no access would be specified for FY 2025, unless the Council takes another action to set specifications.

6.6.2.3.2 Alternative 2 – 18 Days At Sea with three access area trips with 12,000-pound trip limit

Under Alternative 2, specifications for access to the open areas and rotational access areas would be set for FY 2024 and default measures for FY 2025. The full-time LA vessels would have 18 DAS and two access area trips to Area II and one trip to the NYB, each with a possession limit of 12,000 lb. The APL (after set-asides removed) under this alternative would be 24.4M lb.

The social impacts of Alternative 2 are likely slight positive and more positive than No Action. Landings, revenue, and total economic benefits would likely be higher than No Action, providing more fishing opportunities and participation

and more positive social impacts. Social impacts of Alternative 2 are likely less positive than the Alternatives 3 and 4 and Status Quo (FY 2023). Employment in FY 2024 is modeled to be lower under Alternative 2 relative to Status Quo (Table 77). Thus, the size of the fishery-related workforce could change, though the model predicts similar employment across the alternatives in later years. Setting default measures for FY 2024 leads to greater predictability and business planning, which have positive social outcomes.

6.6.2.3.3 Alternative 3 – 20 Days At Sea with three access area trips with 12,000-pound trip limit (*Preferred alternative*)

Under Alternative 3, specifications for access to the open areas and rotational access areas would be set for FY 2024 and default measures for FY 2025. The full-time LA vessels would have 20 DAS and two access area trips to Area II and one trip to the NYB, each with a possession limit of 12,000 lb. The APL (after set-asides removed) under this alternative would be 25.6M lb.

The social impacts of Alternative 3 are likely slight positive and more positive than No Action. Landings, revenue, and total economic benefits would likely be higher than No Action, providing more fishing opportunities and participation and more positive social impacts. Social impacts of the Alternative 3 options are likely to be more positive than Alternative 2 and less positive than Alternative 4 options and Status Quo (FY 2023). Employment in FY 2024 is modeled to be lower under Alternative 3 relative to Status Quo (Table 77). Thus, the size of the fishery-related workforce could change, though the model predicts similar employment across the alternatives in later years. Setting default measures for FY 2025 leads to greater predictability and business planning, which have positive social outcomes.

6.6.2.3.4 Alternative 4 – 24 Days At Sea with three access area trips with 12,000-pound trip limit

Under Alternative 4, specifications for access to the open areas and rotational access areas would be set for FY 2024 and default measures for FY 2025. The full-time LA vessels would have 24 DAS and two access area trips to Area II and one trip to the NYB, each with a possession limit of 12,000 lb. The APL (after set-asides removed) under this alternative would be 27.9M lb.

The social impacts of Alternative 4 options are likely slight positive and more positive than No Action. Landings, revenue, and total economic benefits would likely be higher than No Action, providing more fishing opportunities and participation and more positive social impacts. Social impacts of Alternative 4 are likely more positive than the Alternative 2 and 3 options and like Status Quo (FY 2023). Employment in FY 2024 is modeled to be like Status Quo (Table 77). Thus, the size of the fishery-related workforce could change, though the model predicts similar employment across the alternatives in later years. Setting default measures for FY 2025 leads to greater predictability and business planning, which have positive social outcomes.

6.6.2.4 Action 4 – Access Area Trip Allocations to the LAGC IFQ Component

6.6.2.4.1 Alternative 1 – No Action (Default measures from FW36)

Alternative 1 would set LAGC IFQ access area trips at 0 for FY 2024-2025, which is the number of trips specified through default measures in Framework 36.

The social impacts of No Action are likely negative. For FY 2023, there were 571 access area trips allocated for this fishery component to the Area II and Nantucket Lightship North, so No Action would result in a substantial reduction from present conditions. Fishing would be precluded from the rotational access areas for this fishery component. LAGC IFQ vessels would still be allowed to fish in open areas, but the scallop resource is generally less dense in open areas, so fishing operations tend to be less efficient. No Action would provide less fishing opportunities. Employment and the size of the fishery-related workforce would likely decrease. Fishermen could perceive the selection of No Action as a fishery management failure and it might cause distrust in management among the industry, and a feeling that managers are not

making use of the best available science which indicates that some LAGC IFQ fishing in access areas would be sustainable. This may lead to negative impacts on the attitudes of stakeholders towards management. No Action may lead to a perception among LAGC IFQ fishermen of management unfairness if their effort in the access areas is substantially constrained while the LA effort continues. The social impacts could be negative in the longer term because no access would be specified for FY 2025, unless the Council takes another action to set the ABC.

6.6.2.4.2 Alternative 2 – Update LAGC IFQ Access Area Trip Allocations, Distribute LAGC IFQ Access Area Allocation to Area I, Area II, and the New York Bight (*Preferred alternative*)

Under Alternative 2, there would be 856 FY 2024 LAGC IFQ access area trips allocated to Area I, Area II and the New York Bight and vessels could choose which area to fish in. Like No Action, there would be no LAGC IFQ access area trips allocated in FY 2025.

The social impacts of Alternative 2 are likely slight positive and more positive than No Action. For FY 2023, there were 571 access area trips allocated for this fishery component, so Alternative 2 would result in an increase from present conditions and an increase from No Action. Relative to No Action, the social impacts would be positive, leading to more opportunity for the LAGC IFQ to harvest scallops from access areas. Employment opportunities, the size of the fishery-related workforce and the historical dependence on and participation in the fishery (structure of fishing practices, income distribution and rights) could be sustained, but would not necessarily change relative to current conditions. Alternative 2 would likely lead to a perception among LAGC IFQ fishermen of management fairness, relative to No Action, as their effort in the access areas could continue along with that of the LA effort. This may lead to more positive impacts on the attitudes of stakeholders towards management. Access would be allowed in three access areas, so vessels based in a wide geographic range of ports could benefit from fishing and there would be flexibility in which area to fish. Given Area II is offshore of Area I and NYB, there may be more safety risks from fishing in Area II. Alternative 2 allows flexibility for safer fishing inshore, particularly for smaller LAGC IFQ vessels.

6.6.2.4.3 Alternative 3 – Update LAGC IFQ Access Area Trip Allocations, Distribute 50% of LAGC IFQ Access Area allocation to Area I / Area II, and 50% to the New York Bight

Under Alternative 3, like Alternative 2, there would be 856 FY 2024 LAGC IFQ access area trips allocated to Area I, Area II and the New York Bight and vessels could choose which area to fish in. However, Alternative 3 would make 50% of the total LAGC IFQ access area trip allocation (428 trips) available in Area I or Area II and 50% of the trip allocation (428 trips) in the New York Bight.

The social impacts of Alternative 3 are likely slight positive, more positive than No Action, and slightly negative relative to Alternative 2. For FY 2023, there were 571 access area trips allocated for this fishery component, so Alternative 3 would result in an increase from present conditions and an increase from No Action. Relative to No Action, the social impacts would be positive, leading to more opportunity for the LAGC IFQ to harvest scallops from access areas. Employment opportunities, the size of the fishery-related workforce and the historical dependence on and participation in the fishery (structure of fishing practices, income distribution and rights) could be sustained, but would not necessarily change relative to current conditions. Alternative 3 would likely lead to a perception among LAGC IFQ fishermen of management fairness, relative to No Action, as their effort in the access areas could continue along with that of the LA effort. This may lead to more positive impacts on the attitudes of stakeholders towards management. Access would be allowed in three access areas, so vessels based in a wide geographic range of ports could benefit from fishing and there would be flexibility in which area to fish. Given Area II is offshore of Area I and NYB, there may be more safety risks from fishing there. Alternative 3 allows for safer fishing inshore, particularly for smaller LAGC IFQ vessels. Given that Alternative 3 designates a set number of trips to NYB, Area I, and Area II, there is less flexibility than under Alternative 2. However, Alternatives 2 and 3 have similar impacts to safety since there is flexibility to choose to take trips in Area I or Area II.

6.6.2.5 Action 5 – Scallop Research Set-Aside Compensation Fishing

6.6.2.5.1 Alternative 1 – No Action

Under Alternative 1, RSA compensation fishing would be restricted to areas open to LA DAS fishing, and up to 25,000 pounds of RSA harvest from the Northern Gulf of Maine Management Unit. Vessels with RSA poundage would not be allowed to harvest RSA compensation from access areas. RSA is a very small proportion of the APL. RSA compensation fishing is currently not permitted in access areas, and therefore Alternative 1 would likely have negligible social impacts.

6.6.2.5.2 Alternative 2 - Allow RSA Compensation fishing in Area II Access Area (*Preferred Alternative*)

Under Alternative 2, RSA compensation fishing would be permitted only in Area II Access Area, areas open to LA DAS fishing, and up to 25,000 pounds of RSA harvest from the NGOM. RSA compensation fishing would not be permitted in the New York Bight access area, Area I, or any areas closed to scallop fishing. Allowing RSA fishing in Area II Access Area is expected to allow vessels to target high density areas, which could have a slight positive impact by allowing greater flexibility for vessels on RSA compensation trips.

6.6.2.6 Action 6 – Increase VMS-Reporting Intervals For All Scallop Vessels

6.6.2.6.1 Alternative 1 – No Action

Under Alternative 1, the VMS reporting rate would remain at 30-minutes. Alternative 1 would likely lead to decreased trust in management from stakeholders due to the perception that vessels fishing in closed areas are unlikely to be held accountable, and therefore the social impacts are likely to be negative.

6.6.2.6.2 Alternative 2 - 5-minute VMS reporting rate when a scallop vessel crosses seaward of the VMS demarcation line on a scallop declaration code (SES-%) (*Preferred Alternative*)

Alternative 2 would increase the VMS reporting rate to 5-minutes, from the current rate of every 30 minutes, for all vessels on a scallop declaration when seaward of the VMS demarcation line. The social impacts of Alternative 2 are expected to be positive. This increased VMS reporting rate is expected to improve enforcement of management boundaries and reduce illegal fishing within closed areas. This is likely to increase trust between stakeholders and management, as well as the perception of fairness for all fishery participants.

6.7 Cumulative Effects Analysis

7.0 APPLICABLE LAWS/EXECUTIVE ORDERS

7.1 MAGNUSON STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT

7.1.1 National Standards

Section 301 of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) requires that regulations implementing any fishery management plan or amendment be consistent with ten national standards. Below is a summary of how this action is consistent with the National Standards and other required provisions of the Magnuson-Stevens Act.

National Standard 1. The Council continues to meet the obligations of National Standard 1 by adopting and implementing conservation and management measures that will continue to prevent overfishing, while achieving optimum yield for managed species and the U.S. fishing industry on a continuing basis. The primary goal of managing the scallop fishery is to maintain long-term sustainable catch levels and the first objective of the Scallop FMP is to prevent overfishing. The Scallop FMP established a fishery specifications process that ensures a consistent review of the Atlantic sea scallop stock status, fishery performance, and other factors to manage by annual catch limits (ACL) and prevent overfishing. The measures implemented through this action should further achieve the goals/objectives and reduce the possibility of overfishing the Atlantic sea scallop resource. The Atlantic sea scallop resource is currently not overfished, and overfishing is not occurring (see Section 5.2).

National Standard 2. This action is consistent with National Standard 2 because it was informed by fisheries-independent data from several surveys, commercial fishery landings data, stock assessments, and other scientific data sources. The 2023 and 2024 (default) scallop fishery specifications are supported by the best available scientific information, and recommendations for scallop fishery catch limits (i.e., OFL, ABC/ACL) are based on advice from the Council's Scientific and Statistical Committee (SSC). The supporting science and analyses, upon which the proposed action is based, are summarized and described in Section 5.0 and Section 6.0 of this document.

National Standard 3. The Council manages Atlantic sea scallops throughout their range (National Standard 3). Under the Atlantic Sea Scallop FMP, the target fishing mortality rate and stock biomass are applied to the scallop resource from North Carolina to the US/Canada boundary. This encompasses the entire range of the Atlantic sea scallop stock under Federal jurisdiction. See Section 5.2 for a description of the scallop resource.

National Standard 4. The management measures proposed in this action do not discriminate among residents of different states (National Standard 4); the measures are intended to be applied equally to scallop permit holders of the same category, regardless of homeport of location.

National Standard 5. The proposed 2024 and 2025 (default) scallop fishery specifications are allocated to management areas (i.e., open and access areas, the Northern Gulf of Maine) in a manner that is intended to maximize opportunities for the fishery while minimizing the potential for overfishing. The specifications proposed in this document should promote efficiency in the use of fishery resources through appropriate measures intended to provide access to the scallop fishery for both current and historical participants while minimize the race to fish in any of the scallop management areas, and they do not have economic allocation as their sole purpose (National Standard 5).

National Standard 6. The measures proposed account for variations in the fishery (National Standard 6). The 2020 scallop assessment update noted declines in biomass and recruitment from previous assessments. There are several factors which could introduce variations into the scallop fishery, and this action enhances the ability of the Scallop FMP to adapt to changing resource conditions. The rotational management program is expected to allow the FMP to stabilize fishing effort in open areas and access areas, and potentially allow the FMP greater flexibility to achieve optimum yield through rotational area management in the future. Furthermore, market fluctuations, environmental factors, and predator-prey interactions constantly introduce additional variations among, and

contingencies in, the scallop resource, the fishery, and the available catch. The proposed 2024 and 2025 (default) scallop fishery specifications represent reductions in projected landings from recent years. However, these specifications intend to balance the needs of the scallop fishery while accounting for the variation in scallop biomass and recruitment.

National Standard 7. As always, the Council considered the costs and benefits associated with the proposed 2024 and 2025 (default) specifications and scallop fishery catch limits (i.e., OFL, ABC/ACL). Any costs incurred as a result of the management action proposed in this document are necessary to achieve the goals and objectives of the Scallop FMP and are viewed to be outweighed by the benefits of taking the management action. Consistent with National Standard 7, the management measures proposed in this document are not duplicative and were developed in close coordination with NMFS and other interested entities and agencies to minimize duplicity.

National Standard 8. The proposed 2024 and 2025 (default) scallop fishery specifications consider the importance of fishery resources to fishing communities (National Standard 8). A complete description of the fishing communities participating in and dependent on the scallop fishery is in Section 5.6. Relative to the No Action alternatives, the measures proposed are expected to have positive impacts on communities engaged in and dependent on the scallop fishery.

National Standard 9. This action also considers National Standard 9; Section 5.3 of this document has information related to bycatch in the scallop fishery. The primary non-target species in this fishery are GB yellowtail flounder, northern windowpane flounder, SNE/MA yellowtail flounder, and southern windowpane flounder, all of which have catch caps (i.e., sub-ACLs). The proposed 2024 and 2025 (default) specifications, as well as other proactive measures such as seasonal closures in rotational areas, gear requirements, and effort controls, promote the concept of reducing bycatch to the extent practicable. In general, area rotation promotes efficiency by increasing catch rates and reducing area swept, which reduces fishing time and reduces overall bycatch in the scallop fishery. If sub-ACLs for any of the above flounder stocks are exceeded, reactive accountability measures are implemented which require further modifications to dredge gear to reduce flatfish bycatch in the future.

National Standard 10. Finally, this action is consistent with National Standard 10 to promote the safety of human life at sea. The Council has the utmost concern regarding safety and understands how important safety is when considering allocations for scallop fishery. The proposed 2024 and 2025 (default) scallop specifications ensure that access to the scallop fishery is provided for vessels of all sizes and gear types and this action does not propose any new measures that would change the findings from previous actions which discussed the effect of scallop management and the rotational management program on safety (Amendment 10 FSEIS).

7.1.2 Other Required Provisions of the M-S Act

Section 303 of the Magnuson-Stevens Fishery Conservation and Management Act contains 15 additional required provisions for FMPs, which are discussed below. Any FMP prepared by any Council, or by the Secretary, with respect to any fishery, shall:

1. *contain the conservation and management measures, applicable to foreign fishing and fishing by vessels of the United States, which are— (A) necessary and appropriate for the conservation and management of the fishery to prevent overfishing and rebuild overfished stocks, and to protect, restore, and promote the long-term health and stability of the fishery; (B) described in this subsection or subsection (b), or both; and (C) consistent with the National Standards, the other provisions of this Act, regulations implementing recommendations by international organizations in which the United States participates (including but not limited to closed areas, quotas, and size limits), and any other applicable law;*

   Since the domestic scallop fishery is capable of catching and processing the allowable biological catch (ABC), there is no total allowable level of foreign fishing (TALFF), and foreign fishing on sea scallops is not permissible at this time.

2. *contain a description of the fishery, including, but not limited to, the number of vessels involved, the type and quantity of fishing gear used, the species of fish involved and their location, the cost likely to be incurred in management, actual and potential revenues from the fishery, any recreational interest in the fishery, and the nature and extent of foreign fishing and Indian treaty fishing rights, if any;*

The fishery and fishery participants are described in detail in Section 5.6 of Amendment 21 to the Scallop FMP. Section 5.6 in this document describes the scallop permits by category as well as the active scallop vessels by permit type that could be affected by this action. The number of trips and average scallops landed per category are also included in that section.

3. *assess and specify the present and probable future condition of, and the maximum sustainable yield and optimum yield from the fishery, and include a summary of the information utilized in making such specification;*

The present and probable future condition of the resource and estimates of MSY and OY are given in Section 8.2.2.2 of Amendment 10 to the Scallop FMP.

The SSC reviewed the most recent work on assessing this resource and recommended that acceptable biological catch be set at 26,326 mt in 2024 and 27,699 mt in 2025 (default). Acceptable Biological Catch (ABC) is defined as the maximum catch that is recommended for harvest, consistent with meeting the biological objectives of the management plan.

This level was recommended by the Science and Statistical Committee (SSC) and various sources of scientific uncertainty were considered when setting this value. ABC calculations were based on the overfishing definition approved in Amendment 15, spatially averaged F = 0.61 as of the 2020 scallop assessment update. The control rule for target catches used for the limited access fishery in the Scallop FMP is that the spatially combined target fishing mortality must be no higher than that which gives a 25% probability of exceeding the ABC. This current estimate is a maximum of 0.39 for the limited access ACT in the Scallop FMP. Target fishing mortalities can be set below these limits but not above them. Under these principles, the probable future condition of this fishery is sustainable.

Current domestic landings and processing capabilities are around 50-60 million lb. Total landings have been above that level in some years since 2004 and are projected to be 27.4 million pounds in fishing year 2024 under the proposed action (Section 4.3.3). However, the actual landings could be higher or lower than this amount depending on the availability of exploitable scallops in the open areas.

4. *assess and specify— (A) the capacity and the extent to which fishing vessels of the United States, on an annual basis, will harvest the optimum yield specified under paragraph (3); (B) the portion of such optimum yield which, on an annual basis, will not be harvested by fishing vessels of the United States and can be made available for foreign fishing; and (C) the capacity and extent to which United States fish processors, on an annual basis, will process that portion of such optimum yield that will be harvested by fishing vessels of the United States;*

The US fishery is expected to harvest 100% of OY and domestic processors are expected to be able to process 100% of OY.

5. *specify the pertinent data which shall be submitted to the Secretary with respect to commercial, recreational, charter fishing, and fish processing in the fishery, including, but not limited to, information regarding the type and quantity of fishing gear used, catch by species in numbers of fish or weight thereof, areas in which fishing was engaged in, time of fishing, number of hauls, economic information necessary to meet the requirement and the estimated processing capacity of, and the actual processing capacity utilized by, United States fish processors;*

The FMP and existing regulations specify the type of reports and information that scallop vessel owners and scallop dealers must submit to NMFS. These data include, but are not limited to, the weight of target species and incidental catch which is landed, characteristics about the vessel and gear in use, the number

of crew aboard the vessel, when and where the vessel fished, and other pertinent information about a scallop fishing trip. Dealers must report the weight of species landed by the vessel, the date of landing, and the ex-vessel price for each species and/or size grade. Important information about vessel characteristics, ownership, and location of operation is also required on scallop permit applications. Dealers are also surveyed for information about their processing capabilities.

All limited access scallop vessels and general category vessels are required to operate vessel monitoring system (VMS) equipment to record the location of the vessel for monitoring compliance with DAS regulations. An at-sea observer is also placed on scallop vessels at random to record more detailed information about the catch, including size frequency data, the quantity of discards by species, detailed gear data, and interactions with protected species.

6. consider and provide for temporary adjustments, after consultation with the Coast Guard and persons utilizing the fishery, regarding access to the fishery for vessels otherwise prevented from harvesting because of weather or other ocean conditions affecting the safe conduct of the fishery; except that the adjustment shall not adversely affect conservation efforts in other fisheries or discriminate among participants in the affected fishery;

The action proposed in this framework does not alter any adjustments made in the Scallop FMP that address opportunities for vessels that would otherwise be prevented from harvesting because of weather or other ocean conditions affecting the safe conduct of the fisheries. No consultation with the Coast Guard is required relative to this issue.

7. describe and identify essential fish habitat for the fishery based on the guidelines established by the Secretary under section 305(b)(1)(A), minimize to the extent practicable adverse effects on such habitat caused by fishing, and identify other actions to encourage the conservation and enhancement of such habitat;

Essential fish habitat (EFH) was defined in earlier scallop actions. This framework does not further address or modify those EFH definitions. There are no additional impacts to the physical environment or EFH expected from the action proposed in this framework.

8. in the case of a fishery management plan that, after January 1, 1991, is submitted to the Secretary for review under section 304(a) (including any plan for which an amendment is submitted to the Secretary for such review) or is prepared by the Secretary, assess and specify the nature and extent of scientific data which is needed for effective implementation of the plan;

Data and research needs for the Atlantic sea scallop and its associated fisheries are described in Section 5.1.8 of Amendment 10 and Section 4.1 of Amendment 15. Other data already collected include fishery dependent data described in Section 6.2.4 of Amendment 10, Section 4.4 of Amendment 15, and Section 5.6 of Amendment 21. Fishery-independent resource surveys provide an index of scallop abundance and biomass on an annual basis.

9. include a fishery impact statement for the plan or amendment (in the case of a plan or amendment thereto submitted to or prepared by the Secretary after October 1, 1990) which shall assess, specify, and describe the likely effects, if any, of the conservation and management measures on— (A) participants in the fisheries and fishing communities affected by the plan or amendment; (B) participants in the fisheries conducted in adjacent areas under the authority of another Council, after consultation with such Council and representatives of those participants; and (C) the safety of human life at sea, including weather and to what extend such measures may affect the safety of participants in the fishery;

The impacts of the scallop management program in general have been analyzed in previous scallop actions (Amendment 10, Amendment 11, Amendment 15, Amendment 19, Amendment 21, Framework 16, and Frameworks 18-34). Any additional impacts from measures proposed in this action on fishery participants are summarized in Section 6.6.2. Safety in the scallop fishery was described in Section

8.1.5.6 of Amendment 10 and nothing proposed in this action is expected to affect the safety of human life at sea.

10. specify objective and measurable criteria for identifying when the fishery to which the plan applies is overfished (with an analysis of how the criteria were determined and the relationship of the criteria to the reproductive potential of stocks of fish in that fishery) and, in the case of a fishery which the Council or the Secretary has determined is approaching an overfished condition or is overfished, contain conservation and management measures to prevent overfishing or end overfishing and rebuild the fishery;

Overfishing reference points describing targets and thresholds for biomass and fishing mortality were updated in the most recent stock assessment (NEFSC 2020) and are presented and explained in Section 5.2 of this document.

11. establish a standardized reporting methodology to assess the amount and type of bycatch occurring in the fishery, and include conservation and management measures that, to the extent practicable and in the following priority— (A) minimize bycatch; and (B) minimize the mortality of bycatch which cannot be avoided;

This action does not include changes to the current standardized bycatch reporting methodology (SBRM). This methodology is expected to assess the amount and type of bycatch in the scallop fishery and help identify ways the fishery can minimize bycatch and mortality of bycatch which cannot be avoided. The scallop fishery also has an industry funded observer set-aside program that provides additional funding (portion of total scallop catch set-aside) to put observers on scallop vessels.

12. assess the type and amount of fish caught and released alive during recreational fishing under catch and release fishery management programs and the mortality of such fish, and include conservation and management measures that, to the extent practicable, minimize mortality and ensure the extended survival of such fish;

The proposed action does not address recreational fishing regulations. There are no substantial recreational or charter fishing sections in the scallop fishery. Any recreational scallop fishing is likely conducted by diving, and harvest is by hand, meaning the survival of released scallops is maximized.

13. include a description of the commercial, recreational, and charter fishing sectors which participate in the fishery, including its economic impact, and, to the extent practicable, quantify trends in landings of the managed fishery resource by the commercial, recreational, and charter fishing sectors;

A detailed description of the scallop fishery is included in Section 7.1 of Amendment 10, Section 4.4 in Amendment 11, Section 4.4 of Amendment 15, Section 5.6 of Amendment 21, and Section 5.6 of this action. These sections provide information related to scallop vessels, processors, and dealers.

14. to the extent that rebuilding plans or other conservation and management measures which reduce the overall harvest in a fishery are necessary, allocate, taking into consideration the economic impact of the harvest restrictions or recovery benefits on the fishery participants in each sector, any harvest restrictions or recovery benefits fairly and equitably among the commercial, recreational, and charter fishing sectors in the fishery; and

This action proposes slightly higher catch levels compared to the 2023 fishing year. The measures included in this action are expected to have positive economic impacts in the short-term (2024) compared to the No Action alternative, and slightly positive economic impacts in the short-term relative to the Status Quo scenario. The proposed measures are expected to have slightly positive economic impacts over the long-term (2024-2038) compared to the No Action and slightly positive economic impacts compared to Status Quo levels. The proposed specification measures will affect the vessels with limited access permits participating in the sea scallop fishery in similar proportions since each vessel within a

permit category will receive the same number of open areas DAS and access area trip allocations, and the limited access general category IFQ vessels receive 5.5% of the total APL. As a result, the proposed specification measures will have proportionally similar impacts on revenues and profits of each vessel compared to No Action levels.

Section 6.6.1 provides a detailed examination of the expected economic impacts of this action. Harvest from the Atlantic sea scallop fishery will continue to be reviewed, established, and analyzed through the recurrent framework process. Recreational fishing for sea scallops is rare and does not affect the overall FMP or participants in the federal fishery.

15. establish a mechanism for specifying annual catch limits in the plan (including a multiyear plan), implementing regulations, or annual specifications, at a level such that overfishing does not occur in the fishery, including measures to ensure accountability.

The proposed action includes catch limits for certain sectors of the scallop fishery, as well as effort controls for the rest of the fishery that is not under a direct TAC or quota. This action covers fishing years 2024 and 2025 (default) measures only. Measures have been set well below the fishing mortality threshold of 0.61, so overfishing is not expected to occur.

Amendment 15 was approved in 2011, which brought the Scallop FMP in compliance with new annual catch limits required under the reauthorized Magnuson-Stevens Act of 2007. The ABC was set in this action under the same principles and the respective values are: 26,326 mt in 2024 and 27,699 mt in 2025 (default). Fishery allocations under the proposed action are set at F = 0.21 overall. The annual projected landings from areas associated with that fishing mortality level is estimated to be around 27.4 million pounds in 2024.

7.2 National Environmental Policy Act (NEPA)

The National Environmental Policy Act (NEPA) provides a mechanism for identifying and evaluating the full spectrum of environmental issues associated with federal actions and for considering a reasonable range of alternatives to avoid or minimize adverse environmental impacts. The Council on Environmental Quality has issued regulations specifying the requirements for NEPA documents (40 CFR 1500 – 1508), as has NOAA in its policy and procedures for NEPA (NAO 216-6A).

7.2.1 Environmental Assessment

The required elements of an Environmental Assessment (EA) are specified in 40 CFR 1508.9(b). They are included in the document as follows:

- The need for this action is described in Section 3.2;
- The alternatives that were considered are described in Section 4.0 (alternatives including the proposed action);
- The environmental impacts of the proposed action are described in Section 6.0, and;
- The agencies and persons consulted on this action are listed in Section 7.2.2 and Section 7.2.3.

While not required for the preparation of an EA, this document includes the following additional sections that are based on requirements for an Environmental Impact Statement (EIS).

- An executive summary can be found in Section 1.0;
- A table of contents can be found in Section 2.0;
- Background and purpose are described in Section 3.0;
- A summary of the document can be found in the executive summary, Section 1.0;

- A brief description of the affected environment is in Section 5.0;
- Cumulative impacts of the proposed action are described in Section 0;
- A list of preparers is in Section 7.2.2.

7.2.2 Point of Contact

Questions concerning this document should be addressed to:

Dr. Cate O'Keefe, Executive Director

New England Fishery Management Council

50 Water Street, Mill 2

Newburyport, MA 10950

(978) 465-0492

Additional copies of this EA can be requested via the above contact or through the Council's website at http://www.nefmc.org/scallops/index.html

7.2.3 Agencies Consulted

The following agencies were consulted in the preparation of this document:

New England Fishery Management Council

Mid-Atlantic Fishery Management Council

National Marine Fisheries Service, NOAA, Department of Commerce

7.2.4 List of Preparers

Framework Adjustment 38 was prepared and evaluated in consultation with the National Marine Fisheries Service and the Mid-Atlantic Fishery Management Council. Members of the Scallop PDT prepared and reviewed portions of analyses and provided technical advice during the development of the Environmental Assessment. The list of Scallop PDT members is included below:

Scallop Plan Development Team	
Jonathon Peros, PDT Chair, NEFMC	Kelly Whitmore, MA DMF
Connor Buckley, NEFMC	Danielle Palmer, GARFO, PRD
Dr. William DuPaul, College William & Mary	Dr. David Rudders, VIMS
Travis Ford, GARFO, SFD	Sharon Benjamin, GARFO, NEPA
Benjamin Galuardi, GARFO APSD	Chris Parkins, RI DEM
Dr. Naresh Pradhan, NEFMC	Dr. Adam Delargy, SMAST UMass Dartmouth
Dr. Dvora Hart, NEFSC, Population Dynamics	Tasha O'Hara, CFF
Dr. Rachel Feeney, NEFMC	
Carl Huntsberger, ME DMR	

In addition, other individuals contributed data and technical analyses for the document. Dr. Jui-Han Chen (NEFSC), Dr. Liese Siemann (Coonamessett Farm Foundation), Sally Roman (Virginia Institute of Marine

Science), Dr. Jamie Cournane (NEFMC), Michelle Bachman (NEFMC), and Sherie Goutier from NEFMC staff assisted with various sections of this document.

7.2.5 Opportunities for Public Comment

The proposed action was developed during the period of May 2023 through December 2023 and was discussed at the meetings listed in Table 82, below. Opportunities for public comment were provided at each of these meetings.

Table 82. Summary of meetings with the opportunity for public comment during the development of Framework 38.

Meeting	Location	Date
Scallop PDT	Webinar	5/24/2023
Scallop PDT	Webinar	6/04/2023
Scallop Advisory Panel	Boston, MA and webinar	6/14/2023
Scallop Committee	Boston, MA and webinar	6/15/2023
NEFMC Council Meeting	Portland, ME and webinar	6/30/2023
Scallop PDT	Boston, MA and webinar	7/25/2023
Scallop PDT	Falmouth, MA and webinar	8/30/2023
Scallop PDT	Falmouth and webinar, MA	8/31/2023
Scallop PDT	Webinar	9/6/2023
Scallop Advisory Panel	Warwick, RI and webinar	9/20/2023
Scallop Committee	Warwick, RI and webinar	9/21/2023
NEFMC Council Meeting	Plymouth, MA and webinar	9/26/2023
Scallop PDT	Webinar	9/29/2023
Scallop PDT	Webinar	10/17/2023
Scallop PDT	Webinar	10/24/2023
Scallop Advisory Panel	New Bedford, MA and webinar	11/01/2023
Scallop Committee	New Bedford, MA and webinar	11/02/2023
Scallop PDT	Webinar	11/9/2023
Scallop PDT	Webinar	11/16/2023
Scallop Advisory Panel	Webinar	11/29/2023
Scallop Committee	Webinar	11/29/2023
NEFMC Council Meeting	Newport, RI and webinar	12/7/2023

7.3 Marine Mammal Protection Act

Section 5.4 describes marine mammals that are found in the affected environment of the scallop fishery; however, despite the overlap of some marine mammal stocks and where the fishery is expected to operate, it has been determined that this action is not likely to impact any species of marine mammals because either the occurrence of the species is not known to overlap with the scallop fishery and(or) there have never been documented interactions between the species and the scallop fishery.

Given the above, the Council has concluded that the management actions proposed are consistent with the provisions of the MMPA and would not alter existing measures to protect the species likely to inhabit the management area of the subject fishery. A final determination of consistency with the MMPA will be made by the agency when Framework 36 is implemented.

7.4 Endangered Species Act

NOAA's National Marine Fisheries Service (NMFS) issued a Biological Opinion (Opinion) on June 17, 2021, that considered the effects of the NMFS' authorization of the Scallop Fishery Management Plan (FMP) on ESA-listed species and designated critical habitat. The 2021 Opinion concluded that the scallop fishery, as authorized under the scallop FMP: 1) may adversely affect, but is not likely to jeopardize the continued existence of the Northwest Atlantic Ocean distinct population segment (DPS) of loggerhead, leatherback, Kemp's ridley, and the North Atlantic DPS of green sea turtles, as well as the five listed DPSs of Atlantic sturgeon; and, 2) is not likely to adversely affect designated critical habitat for North Atlantic right whales or loggerhead (Northwest Atlantic Ocean DPS) sea turtles. The Opinion included an incidental take statement authorizing the take of specific numbers of ESA listed species of sea turtles and Atlantic sturgeon over a five-year period. Reasonable and prudent measures and terms and conditions were also issued with the incidental take statement to minimize impacts of any incidental take.

The proposed action is not expected to alter overall fishing operations, lead to a substantial increase of fishing effort, or alter the spatial and(or) temporal distribution of current fishing effort in a manner that would increase interaction risks with ESA-listed species or cause adverse effects to critical habitat. Based on this, it has been determined that fishing activities pursuant to this action will not affect endangered and threatened species or critical habitat in any manner not considered in the 2021 Opinion on this fishery.

7.5 Administrative Procedures Act

Sections 551-553 of the Administrative Procedure Act established procedural requirements applicable to informal rulemaking by federal agencies. The purpose is to ensure public access to the federal rulemaking process, and to give public notice and opportunity for comment. The Council did not request relief from notice and comment rule making for this action, and the Council expects that NOAA Fisheries will publish proposed and final rule making for this action.

The Council has held 22 meetings open to the public on Framework 38 (Table 82). The Council initiated this action at the June 2023 Council meeting and approved final measures at the December 2023 meeting. After submission to NMFS, there will be an opportunity for public comment during the rulemaking process.

7.6 Paperwork Reduction Act

The purpose of the Paperwork Reduction Act is to minimize the paperwork burden for individuals, small businesses, nonprofit institutions, and other persons resulting from the collection of information by or for the Federal Government. It also ensures that the Government is not overly burdening the public with requests for

information. The amount that the proposed action would alter the burden hour estimates will be described and evaluated in an updated PRA analysis and public comments will be sought through Framework 38 rulemaking.

7.7 Coastal Zone Management Act

Section 307 of the Coastal Zone Management Act (CZMA) is known as the federal consistency provision. Federal Consistency review requires that "federal actions, occurring inside or outside of a state's coastal zone, that have a reasonable potential to affect the coastal resources or uses of that state's coastal zone, to be consistent with that state's enforceable coastal policies, to the maximum extent practicable." The Council previously made determinations that the FMP was consistent with each state's coastal zone management plan and policies, and each coastal state concurred in these consistency determinations (in Scallop FMP). Since the proposed action does not propose any substantive changes from the FMP, the Council has determined that this action is consistent with the coastal zone management plan and policies of the coastal states in this region. Once the Council has adopted final measures and submitted Framework 38 to NMFS, NMFS will request consistency reviews by CZM state agencies directly.

7.8 Information Quality Act (IQA)

Section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Public Law 106-554, also known as the Data Quality Act or Information Quality Act) directed the Office of Management and Budget (OMB) to issue government-wide guidelines that "provide policy and procedural guidance to federal agencies for ensuring and maximizing the quality, objectivity, utility, and integrity of information (including statistical information) disseminated by federal agencies." OMB directed each federal agency to issue its own guidelines, establish administrative mechanisms allowing affected persons to seek and obtain correction of information that does not comply with the OMB guidelines, and report periodically to OMB on the number and nature of complaints. The NOAA Section 515 Information Quality Guidelines require a series of actions for each new information product subject to the Data Quality Act. Information must meet standards of utility, integrity and objectivity. This section provides information required to address these requirements.

Utility of Information Product

The proposed document includes a description of the management issues, a description of the alternatives considered, and the reasons for selecting the preferred management measures, to the extent that this has been done. These actions propose modifications to the existing FMP. These proposed modifications implement the FMP's conservation and management goals consistent with the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) as well as all other existing applicable laws.

Utility means that disseminated information is useful to its intended users. "Useful" means that the content of the information is helpful, beneficial, or serviceable to its intended users, or that the information supports the usefulness of other disseminated information by making it more accessible or easier to read, see, understand, obtain or use. The information presented in this document is helpful to the intended users (the affected public) by presenting a clear description of the purpose and need of the proposed action, the measures proposed, and the impacts of those measures. A discussion of the reasons for selecting the proposed action is included so that intended users may have a full understanding of the proposed action and its implications. The intended users of the information contained in this document are participants in the Atlantic sea scallop fishery and other interested parties and members of the public. The information contained in this document may be useful to owners of vessels holding an Atlantic sea scallop permit as well as scallop dealers and processors since it serves to notify these individuals of any potential changes to management measures for the fishery. This information will enable these individuals to adjust their fishing practices and make appropriate business decisions based on the new management measures and corresponding regulations.

The information being provided in this action is based on landings and effort information through the 2022 and 2023 fishing years when possible. Information presented in this document is intended to support Framework 38 and the proposed specifications for the 2024-2025 fishing years, which have been developed through a multi-stage process involving all interested members of the public. Consequently, the information pertaining to management measures contained in this document has been improved based on comments from the public, fishing industry, members of the Council, and NOAA Fisheries.

This document is the principal means by which the information herein is publicly available. The information provided in this document is based on the most recent available information from the relevant data sources, including detailed and relatively recent information on the scallop resource and, therefore, represents an improvement over previously available information. This document will be subject to public comment through the rulemaking process, as required under the Administrative Procedure Act and, therefore, may be improved based on comments received.

This document is available in several formats, including printed publication, and online through the NEFMC's web page (www.nefmc.org). The Federal Register notice that announces the final rule and implementing regulations will be made available in printed publication, on the website for the Greater Atlantic Regional Fisheries Office (www.greateratlantic.fisheries.noaa.gov), and through the Regulations.gov website. The Federal Register documents will provide metric conversions for all measurements.

Integrity of Information Product

Integrity refers to security – the protection of information from unauthorized access or revision, to ensure that the information is not compromised through corruption or falsification. Prior to dissemination, information associated with this action, independent of the specific intended distribution mechanism, is safeguarded from improper access, modification, or destruction to a degree commensurate with the risk and magnitude of harm that could result from the loss, misuse, or unauthorized access to or modification of such information. All electronic information disseminated by NMFS adheres to the standards set out in Appendix III, "Security of Automated Information Resources," of OMB Circular A-130; the Computer Security Act; and the Government Information Security Act. All confidential information (e.g., dealer purchase reports) is safeguarded pursuant to the Privacy Act; Titles 13, 15, and 22 of the U.S. Code (confidentiality of census, business, and financial information); the Confidentiality of Statistics provisions of the Magnuson-Stevens Act; and NOAA Administrative Order 216-100, Protection of Confidential Fisheries Statistics.

Objectivity of Information Product

Objective information is presented in an accurate, clear, complete, and unbiased manner, and in proper context. The substance of the information is accurate, reliable, and unbiased; in the scientific, financial, or statistical context, original and supporting data are generated and the analytical results are developed using sound, commonly accepted scientific and research methods. "Accurate" means that information is within an acceptable degree of imprecision or error appropriate to the kind of information at issue and otherwise meets commonly accepted scientific, financial, and statistical standards.

For the Pre-Dissemination Review, this document is considered a "Natural Resource Plan." Accordingly, the document adheres to the published standards of the MSA; the Operational Guidelines, Fishery Management Plan Process; the Essential Fish Habitat Guidelines; the National Standard Guidelines; and NOAA Administrative Order 216-6, Environmental Review Procedures for Implementing NEPA. This information product uses information of known quality from sources acceptable to the relevant scientific and technical communities. Several data sources were used in the development of this action, including, but not limited to, historical and current landings data from the Commercial Dealer and DMIS databases, vessel trip report (VTR) data, vessel monitoring system (VMS) data, and fisheries independent data collected through the NMFS bottom trawl surveys. The analyses herein were prepared using data from accepted sources and have been reviewed by members of the Scallop Plan Development Team and by the SSC where appropriate.

The conservation and management measures considered for this action were selected based upon the best scientific information available. The analyses important to this decision used information from the most recent complete fishing years, generally through fishing year 2022. The data used in the analyses provide the best available information on the number of permits, both active and inactive, in the fishery, the catch (including landings and discards) by those vessels, the landings per unit of effort (LPUE), and the revenue produced by the sale of those landings to dealers, as well as data about catch, bycatch, gear, and fishing effort from a subset of trips sampled at sea by government observers.

Specialists, including professional members of plan development teams, technical teams, committees, and Council staff, who worked with these data are familiar with the most current analytical techniques and with the available data and information relevant to the Atlantic sea scallop fishery. The proposed action is supported by the best available scientific information. The policy choice is clearly articulated in Section 4.0, the management alternatives considered in this action.

The supporting science and analyses, upon which the policy choice was based, are summarized and described in Section 5.0 of this document. All supporting materials, information, data, and analyses within this document have been, to the maximum extent practicable, properly referenced according to commonly accepted standards for scientific literature to ensure transparency. The review process used in preparation of this document involves the responsible Council, the NEFSC, GARFO, and NOAA Fisheries Service Headquarters. The NEFSC's technical review is conducted by senior-level scientists specializing in population dynamics, stock assessment, population biology, and social science.

The Council review process involves public meetings at which affected stakeholders have the opportunity to comment on the document. Review by staff at GARFO is conducted by those with expertise in fisheries management and policy, habitat conservation, protected species, and compliance with the applicable law. The Council also uses its Scientific and Statistical Committee to review the background science and assessment to approve the Allocable Biological Catch (ABCs), including the effects those limits would have on other specifications in this document. The SSC is the primary scientific and technical advisory body to the Council and is made up of scientists that are independent of the Council. A list of current committee members can be found at: https://www.nefmc.org/committees/scientific-and-statistical-committee.

Final approval of the action proposed in this document and clearance of any rules prepared to implement resulting regulations is conducted by staff at NOAA Fisheries Service Headquarters, the Department of Commerce, and the U.S. Office of Management and Budget. In preparing this action for the Atlantic Sea Scallop FMP, the Council and NMFS took into account the policies of the Administrative Procedure Act, the Paperwork Reduction Act, the Coastal Zone Management Act, the Endangered Species Act, the Marine Mammal Protection Act, the Information Quality Act, and Executive Orders 12630 (Property Rights), 12866 (Regulatory Planning), 13132 (Federalism), and 13158 (Marine Protected Areas). The Council has determined that the proposed action is consistent with the National Standards of the MSA and all other applicable laws.

7.9 Executive Order 13158 (Marine Protected Area)

Executive Order (EO) 13158 on Marine Protected Areas (MPAs) requires each federal agency whose actions affect the natural or cultural resources that are protected by an MPA to identify such actions, and, to the extent permitted by law and to the maximum extent practicable, in taking such actions, avoid harm to the natural and cultural resources that are protected by an MPA. The EO directs federal agencies to refer to the MPAs identified in a list of MPAs that meet the definition of MPA for the purposes of the EO. The EO requires that the Departments of Commerce and the Interior jointly publish and maintain such a list of MPAs. A list of MPA sites has been developed and is available at: http://marineprotectedareas.noaa.gov/nationalsystem/nationalsystemlist/. No further guidance related to this EO is available at this time.

In the Northeast U.S., the only MPAs are the Stellwagen Bank National Marine Sanctuary (SBNMS), the Tilefish Gear Restricted Areas in the canyons of Georges Bank, and the National Estuarine Research Reserves and other coastal sites. The only MPA that overlaps the Atlantic sea scallop fishery footprint is the SBNMS.

This action is not expected to more than minimally affect the biological/habitat resources of the SBNMS MPA, which was comprehensively analyzed in the Omnibus Habitat Amendment 2 (NEFMC 2016). Fishing gears regulated by the Atlantic sea scallop FMP are unlikely to damage shipwrecks and other cultural artifacts because fishing vessel operators actively avoid contact with cultural resources on the seafloor to minimize costly gear losses and interruptions to fishing.

In fishing year 2017 there were unintended interactions and damage to a shipwreck in the Stellwagen Bank National Marine Sanctuary (SBNMS), likely caused by limited access vessels that were operating under DAS management in the NGOM management area and were not familiar with the location of the wrecks. In preparation for both the 2018 and 2019 Northern Gulf of Maine (NGOM) scallop fishery, NOAA Fisheries, in conjunction with NOAA Stellwagen Bank National Marine Sanctuary (Sanctuary), published a bulletin requesting that scallopers avoid shipwreck sites in the Sanctuary by keeping gear 360 feet away from each of the site locations listed in the bulletin. A chart was provided to show the area where these shipwrecks are located. Measures were implemented for fishing years 2018 and 2019 to limit effort in the NGOM, and no interactions with shipwrecks were reported. The portion of Stellwagen Bank within the NGOM Management Area was closed in fishing years 2020 and 2021 to protect a large recruitment event, reopened the Stellwagen Bank closure for the duration of fishing years 2022 and 2023 and will remain open for the duration of 2024 under the proposed action. Fishing in the NGOM management area is expected to occur on Stellwagen Bank, Jeffreys Ledge, and Ipswich Bay, based on observed scallop biomass in the 2023 surveys and fishing behavior/fishing reports from the 2023 NGOM fishing season. While it is anticipated that scallop vessels will be operating in the vicinity of shipwrecks on Stellwagen Bank in fishing year 2024, proactive avoidance measures (i.e., notice of the location of shipwrecks to fishermen) have been taken to reduce the risk of adverse effects to these historic resources. Vessels fishing in the area will have access to information about the location of shipwrecks that will help to inform how to avoid them.

7.10 Executive Order 13132 (Federalism)

The E.O. on federalism establishes nine fundamental federalism principles for Federal agencies to follow when developing and implementing actions with federalism implications. Previous scallop actions have already described how the management plan is in compliance with this order. Furthermore, this action does not contain policies with Federalism implications, thus preparation of an assessment under E.O. 13132 is not warranted. The affected states have been closely involved in the development of the proposed action through their representation on the Council (i.e., all affected states are represented as voting members of at least one Regional Fishery Management Council). No comments were received from any state officials relative to any federalism implications that may be associated with this action.

7.11 Executive Order 12898 (Environmental Justice)

Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations provides guidelines to ensure that potential impacts on these populations are identified and mitigated, and that these populations can participate effectively in the NEPA process (EO 12898 1994). NOAA guidance NAO 216-6A, Companion Manual, Section 10(A) requires the consideration of EO 12898 in NEPA documents. Agencies should also encourage public participation, especially by affected communities, during scoping, as part of a broader strategy to address environmental justice issues. Minority and low-income individuals or populations must not be excluded from participation in, denied the benefits of, or subjected to discrimination because of their race, color, or national origin.

Although the impacts of this action may affect communities with environmental justice concerns, the proposed actions should not have disproportionately high effects on low income or minority populations. The proposed

actions would apply to all participants in the affected area, regardless of minority status or income level. The existing demographic data on participants in the Atlantic sea scallop fishery (i.e., vessel owners, crew, dealers, processors, employees of supporting industries) do not allow identification of those who live below the poverty level or are racial or ethnic minorities. Thus, it is impossible to fully determine how the actions within this specification document may impact these population segments. The public comment process is an opportunity to identify issues that may be related to environmental justice, but none have been raised relative to this action. The public has never requested translations of documents pertinent to the Atlantic sea scallop fishery.

For primary port communities relevant to this action (Section 5.6.3), poverty and minority rate data (for 2010) at the state and county levels are in Table 83. Minority rates are well below the state averages, except Hampton and Newport News, Virginia. Poverty rates are below or within 3% of state averages.

With respect to subsistence consumption of fish and wildlife, federal agencies are required to collect, maintain, and analyze information on the consumption patterns of populations who principally rely on fish and(or) wildlife for subsistence. GARFO tracks these issues, but there are no federally recognized tribal agreements for subsistence fishing in New England federal waters.

Table 83. Demographic Data for Atlantic Sea Scallop Fishing Communities (counties).

State/County	Minority Rate[a]	Poverty Rate[b]
Massachusetts	*23.6%*	*10.5%*
Barnstable	7.5%	7.5%
Bristol	13.6%	11.3%
Rhode Island	*22.6%*	*12.2%*
Washington	7.4%	7.4%
Connecticut	*27.6%*	*10.1%*
New London	20.6%	7.2%
New Jersey	*39.4%*	*9.1%*
Cape May	12.5%	9.2%
Ocean	13.4%	9.0%
Virginia	*34.3%*	*10.3%*
Hampton[c]	57.8%	12.6%
Newport News[c]	53.0%	13.5%
York	24.9%	3.9%

Source: U.S. Census Bureau, 2010: https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml
[a] Persons other than those who report as White persons not Hispanic or Latino.
[b] Persons below poverty level, 2006-2010.
[c] An independent city.

7.12 Executive Order 12866 (Regulatory Impact Review)

7.12.1 Introduction

The Regulatory Impact Review (RIR) provides an assessment of the costs and benefits of preferred alternatives and other alternatives in accordance with the guidelines established by Executive Order 12866. The regulatory philosophy of Executive Order 12866 stresses that in deciding whether and how to regulate agencies should assess all costs and benefits of all regulatory alternatives and choose those approaches that maximize the net benefits to society.

The RIR also serves as a basis for determining whether any proposed regulations are a "significant regulatory action" under the criteria provided in Executive Order 12866 and whether the proposed regulations will have a significant economic impact on a substantial number of small entities in compliance with the Regulatory Flexibility Act of 2180 (RFA).

The Framework 38 document contains all the elements of the RIR/RFA, and the relevant sections are identified by reference to the document. The economic impacts of this action are summarized in Section 6.6.1 of this document.

7.12.2 Statement of Problems/Goals and Objectives

The purpose of and the need for action are described in Section 3.2.

7.12.3 Management Alternatives and Rationale

The alternatives under consideration in the Framework are explained in Section 4.0.

7.12.4 Description of the Fishery

A description of the fishery is available in Section 5.0.

7.12.5 Summary of Economic Impacts

Section 6.6.1 evaluated economic impacts of Framework 38 proposed measures and alternatives considered by the Council. The combined impacts of the specification alternatives on the scallop fishery, on consumers and total economic benefits to the nation are analyzed in Section 0 and subsections from Section 6.6.1.4.1 to Section 6.6.1.4.10. The economic impacts of the individual measures are discussed in Sections as indicated below.

Section 0 Overfishing Limit and Acceptable Biological Catch

Section 6.6.1.2 Closure of Platts Bank to Protect Small Scallops

Section 6.6.1.3 Northern Gulf of Maine Management Area

Section 6.6.1.4 Economic impacts of the Framework 38 specification alternatives

- Section 6.6.1.4.5 Summary of Short- and Long-Term Impacts
- Section 6.6.1.4.6 LAGC IFQ Allocations
- Section 6.6.1.4.7 Landings and Size Composition
- Section 6.6.1.4.8 Prices and Revenue
- Section 6.6.1.4.9 Impacts on DAS and Employment
- Section 6.6.1.4.10 Producer Surplus, Consumer Surplus, and Total Economic Benefits
- Section 6.6.1.5Access Area Trip Allocations to the LAGC IFQ Component

Executive Order 14094 of April 6, 2023, amends Section 3(f) of Executive Order 12866 on the threshold for a significant regulatory action from $100 million (in 2001 constant dollars) to $200 million. It specifies "Significant regulatory action" to mean any regulatory action that is likely to result in a rule that may have an annual effect on the economy of $200 million or more (adjusted every 3 years by the Administrator of OIRA for changes in gross domestic product) among others.[19] Thus, the economic impacts in Section 7.1.1 of FW38 are provided in current dollars (in 2023 dollars) differing from earlier frameworks where the values for economic impacts were measured in constant 2001 dollars consistent with the guidelines in Circular A-4 (2003)[20](Table 86).

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[19] Presidential Documents—Executive Order 14094 of April 6, 2023. Modernizing Regulatory Review. Federal Register, Vol. 88, No. 69, Tuesday, April 11, 2023.

[20] Page 32 of Circular A-4 (2003) states that: "In presenting the stream of benefits and costs, it is important to measure them in constant dollars to avoid the misleading effects of inflation in your estimates", and page 45 states that: "Please report all monetized effects in 2001 dollars. You should convert dollars expressed in different years to 2001 dollars using the GDP deflator".

On November 9, 2023, the new Circular A-4 revised guidance on discount rates for evaluating the long-term economic impacts. The discount rate is revised from 7% and 3% to 2%. The new Circular supersedes and rescinds the previous version of OMB Circular No. A-4, issued on September 17, 2003. It will be effective on March 1, 2024, for regulatory analyses received by OMB in support of proposed rules, interim rules, and final rules.[21] Therefore, the long-term economic impacts in FW38 are evaluated at 2% discount rates given FW38 would be implemented on April 1, 2023. The results of the economic impacts in current dollars are summarized in Table 87 and Table 88. For continuity with previous analyses, discount rates of 3% and 7% from previous Circular A-4 guidance are also provided.

7.12.5.1 Baseline for determination of significant impacts

Framework 38 is a one-year action that will be implemented for FY 2024. It also includes default measures for FY 2025 in case the next scallop framework action is delayed. This evaluation of the economic impacts of the proposed action compares projections for the current fishing year (FW36 FY 2023) to the economic projections for scenarios for the upcoming fishing year in Framework 38 (FY 2024). For the E.O. 12866 analysis, the economic impacts of the proposed measures are estimated relative to the management framework that was implemented for fishing year FY 2023 (i.e., FW 36 preferred alternative) only. For FY2024, this analysis considered three alternatives (plus No Action) that assume full time LA vessels would be allocated 18, 20, or 24 open area DAS and two trips in the Area II Access Area (12,000 pounds/trip) and one trip in New York Bight Access Area (12,000 pounds/trip).

The FW 38 preferred alternative (Alternative 3, 4.3.3) is compared with the FW36 preferred alternative projection for FY 2023 to evaluate whether the action will have a significant economic impact on the economy under the requirements of E.O. 12866. Specification alternatives under consideration in FW38 are presented in Table 84.

Table 84. Specification and Rotational Management alternatives under consideration in FW 38.

FW38 Specification Alternatives/ Options	FW38 Sections	Description	Overall F	Open area F	FT DAS
Alternative 1	4.3.1	No Action	0.073	0.36	18
Alternative 2	4.3.2	18 DAS, 12,000 lbs., 2 trips in AII and 1 trip in NYB	0.156	0.34	18
Alternative 3	4.3.3 (Preferred)	20 DAS, 12,000 lbs., 2 trips in AII and 1 trip in NYB	0.165	0.38	20
Alternative 4	4.3.4	24 DAS, 12,000 lbs., 2 trips in AII and 1 trip in NYB	0.18	0.46	24

The Council and NOAA Fisheries have successfully used a hybrid system of DAS and rotational closures in the management of Atlantic sea scallops. This approach can result in increases and decreases in landings over time, depending on which rotational areas may be open for harvest or closed to protect small scallops and improve yield-per-recruit. Considering that rotational closures and rotational harvest are driven by underlying resource conditions (i.e., level of exploitable biomass), a major driver of scallop fishery allocations is recruitment. While recruitment has been unremarkable prior to 2022, two exceptional year classes (2012 & 2013) supported landings of over 60 million pounds in 2019, with most of this harvest attributed to rotational areas. Considering the lack of strong incoming recruitment over a 10-year period, overall landings, and subsequent economic benefits have

[21] OMB Circular A-4 (whitehouse.gov) November 9, 2023.

steadily declined in recent years. However, for Framework 38, the economic benefits are expected to be similar to Framework 36 levels (Table 86). Projected benefits are also subject to the changes in price.

Table 85. Projected and actual scallop landings during FY2011-FY2023 (negative values in red).

Frameworks and Fish Year	Total Landings (lb)	**Projected Landings (lb)	nth Framework's Status Quo (lb)	Differences in Actual vs. Projected Landings (lb)	% Differences in Actual vs Projected Landings*	Difference on Projected landings (lb) from Lag Year	% Difference on Projection from Lag Year
FW22 2011	58,461,465	52,300,000	57,000,000	6,161,465	11.78%	N/A	N/A
FW23 2012	57,098,684	57,200,000	§§59,800,000	-101,316	-0.18%	4,900,000	9.37%
FW24 2013	39,807,589	38,216,741	50,900,000	1,590,848	4.16%	-18,983,259	-33.19%
FW25 2014	32,020,980	38,463,656	31,700,000	-6,442,676	-16.75%	246,915	0.65%
FW26 2015	36,974,195	47,400,000	37,500,000	-10,425,805	-22.00%	8,936,344	23.23%
FW27 2016	42,423,177	46,932,006	44,800,000	-4,508,829	-9.61%	-467,994	-0.99%
FW28 2017	51,325,269	45,230,038	47,700,000	6,095,231	13.48%	-1,701,968	-3.63%
FW29 2018	58,100,342	57,748,612	44,000,000	351,730	0.61%	12,518,574	27.68%
FW30 2019	60,244,657	62,525,276	63,000,000	-2,280,619	-3.78%	4,776,664	8.27%
FW32 2020	45,585,081	51,604,456	44,900,000	-6,019,384	-11.66%	-10,920,820	-17.47%
FW33 2021	42,249,972	40,044,765	39,129,847	2,205,207	2.49%	-11,559,691	-28.87%
FW34 2022	30,043,497	34,039,373	33,686,634	-3,995,876	12%	-6,005,392	-14.98%
FW36 2023	§ 20,228,088	25,007,005	28,300,706	N/A	N/A	-9,032,368	-26.53%
FW38 2024	N/A	27,392,436	27,113,331	N/A	N/A	2,385,431	10%

Source: Year-end catch reports (up to FW34), updated in September 2023.

§ total sea scallop landing as of Dec. 6, 2023 (ACL_tables.knit (noaa.gov)).

* negative sign indicates a lower value of actual or projected landing against a comparison parameter.

** for the preferred alternative in the corresponding fishing year.

§§ The status quo projection from earlier framework.

7.12.5.2 Summary of the economic impacts of the proposed measures

Economic impacts of the proposed measures on specification alternatives in Framework 38 are evaluated relative to the economic impacts of Framework 36's preferred alternative (FY 2023). The economic assessments are in terms of the differences in landings, revenues, producer surplus and total economic benefits between the two frameworks over the short-run (FY2024) and long-run. This analysis also compares the economic impacts of the Council's preferred alternative in Framework 38 against the results of simply carrying forward last year's approach to scallop management using new biological data for projections (status quo).

Short-run impacts:

- An economic assessment and comparison are made on the preferred alternatives for FY2024 (FW 38) with FY2023 (FW36) and with the status quo. The summary of preferred alternative comparison between the two frameworks in the short-term are shown in Table 85. Table 86 compares economic

values for all alternatives in FW38 with the status quo and with the Framework 36 preferred alternative (baseline) in the short-term.

- While landings are predicted to increase in FY 2024 compared to FY 2023, the short-term economic impacts (2023 dollars) of the preferred alternative in Framework 38 will be lower when compared to the preferred alternative in FY 2023 (FW36) due to lower scallop prices predicted in Framework 38. The predicted average price of the preferred alternative in Framework 38 is $14.02 (2023$) compared to $15.94 predicted in FW36 (2022$). The FW38 preferred alternative is expected to result in 27.39 million pounds of landings, which is about 2.38 million pounds higher than FW36's preferred alternative projected landings (i.e., 25.01 million pounds in FY2023). Hence, scallop revenue, producer surplus and total economic benefits (in 2023 current dollars) for the preferred alternative (Section 4.3.3.2) in FY2024 (FW 38) are expected to decline by $31.16 million, $33.05 million and $19.62 million, respectively, compared to the preferred alternative projections for FY2023 (FW36) (Table 87). However, revenue, producer surplus and total economic benefits in the preferred alternative is higher relative to status quo in this framework (Table 86).
- Overall total economic impacts for the other non-preferred alternatives in FY 2024 (FW38) are mixed. It is higher for Alternative 4 (Section 4.3.4) but lower for other alternatives when compared to the preferred alternative in FY2023 (Framework 36) (Table 87).
- While the projected landings in recent years have been lower than the estimates from earlier fishing years since 2011, wider swings in projected landings year-over-year can be expected occasionally due to the nature of stock recruitment and other environmental conditions. Scallop landing projections have ranged between 25 and 63 million pounds over the past 14-year period from FY 2011 to FY 2024. During this period, projected landings increased by about 23% in FY 2015 and 28% in FY 2018 compared to their previous year, but the projections also dropped with a similar magnitude in FY 2013 and FY 2021 by about 33% and 29% from their lag years, respectively (Table 85). In FW34, projected landings declined by about 15%. In FW36, it further declined by about 26.5% relative to FW34 projected landings. Projected landing in the preferred alternative in FW38 is slightly higher by about 10% or 2.38 million pounds compared to the FW36 preferred alternative. The magnitude of year-over-year variations in projected landings and associated risks are, however, expected by stakeholders due to substantial information on overall abundance, biomass, recruitment, and growth that is gathered during annual surveys.
- The short-term level of employment in the scallop fishery as measured by CREW*DAS will be lower for the preferred alternative in FW38 in FY 2024 compared to FY 2023 (FW36). There will be about 75,821 crew DAS in FW38 compared to 81,102 crew DAS in FW36. Employment, as measured by crew days, will be lower by about 6.5% in FY 2024 for the preferred alternative compared to levels estimated for FY 2023 in FW36.

Long-run impacts:

- Long-run economic impacts in FW38 are evaluated at 2% discount rate per new Circular A-4 (Table 88). For continuity, the analysis in Framework 38 also includes discount rates of 3% and 7% based on previous guidance in Circular A-4.
- In the long-run, FW38 is expected to have a higher net landing by about 25.9 million pounds over the period of 15 years compared to that of the FW36 preferred alternative.
- Despite higher long-term cumulative landing differences compared to the preferred alternative in FW36 (FY 2023 - FY 2037) in the long-run, cumulative present values (PV) of the economic benefits of the preferred alternative in FW38 (FY 2024- FY 2038) are lower (Table 87 and Table 88). The decline in long-term economic values for the FW38 projections are primarily due to lower prices that were used in the economic evaluation of FW38 relative to that of FW36. However, the preferred alternative has higher economic values relative to the status quo as indicated earlier.
- The annualized total economic benefits for the preferred alternative in FW38 over the long-term (over a period of next 15 years) compared to the Framework 38 status quo is marginally higher by $0.74

million at a discount rate of 2% (Table 88, in 2023 current dollars).[22] The economic impacts in the long-run for the other non-preferred alternatives except No Action in FW38 (FY 2024 – FY 2038) are also higher compared to the status quo (Table 88).

- The long-term level of employment in the scallop fishery as measured by CREW*DAS is expected to be negligible for the preferred alternative in FY38 compared to FW36. There will be about 2,066,224 cumulative crew DAS in FW38 compared to 2,217,237 cumulative crew DAS in FW36 over the period of 15 years of projections. Long-term employment is expected to be slightly lower by about 0.03% for the preferred alternative in FW38 compared to FW36.

7.12.5.2.1 Summary of Economic Impacts for Other FW38 Actions:

7.12.5.2.1.1 On NGOM measures in Action 2:

The measures for the NGOM scallop fishery considered in this action are described in detail in Section 0 of Framework 38. Economic impacts of the NGOM alternatives are analyzed in Section 0 of the Framework documents.

The preferred alternative (Alternative 2) would allow a higher amount scallop landing (TAL 454,152 lbs.) to occur in the NGOM area relative to "No Action' (Alternative 1, NGOM set-aside 285,641 lbs.). The NGOM Alternative 2 Option 2 (preferred) in FW38 yields higher net revenue estimated at $4.36 million in FY 2024. The net benefit (net of No Action) for this option is estimated to be $1.399 million higher than Alternative 1 (No Action in FW38) resulting in a positive economic impact on the profits of NGOM LAGC entities. The preferred NGOM Set-Aside also represents an increase from FY 2023 levels. The Council also recommended fishing year 2025 default measures would be set at 75% of the 2024 NGOM Set-Aside value.

7.12.5.2.1.2 On LAGC IFQ Access Area Trip Allocations in Action 4:

Allocating 5.5% of the total allocations to LAGC vessels could result in a maximum of 856 trips (at 800-pound trip limit) under the FW38 preferred alternative, which would have positive economic impacts compared No Action (Section 4.3.1) which would not provide any trips as a default measure in FY2024.
Within Action 4, the Council specified where the LAGC IFQ could fish their access area trips. Alternative 2 could have positive economic impacts on LAGC IFQ vessels overall compared to Alternative 1 (No Action or FW36 default). This alternative will make the total LAGC IFQ access area trip allocation (i.e., 856 trips) available in both Area I, Area II and the New York Bight. There would not be a specific number of trips allocated to Area I, Area II or the New York Bight, but rather, vessels would be able to fish in any area with trip counts to total trip allocation.

7.12.5.2.1.3 On Increase VMS-Reporting Intervals in Action 6:

VMS vendors offer a range of service plans with varying allotments of data per month, and varying costs for additional data over and above the base plan, based on a vessel's fishing activity and any associated regulatory requirements. The service price depends on the amount of data required, with data being used for tasks such as weather updates, email, software updates to the VMS unit, as well as reporting the vessel's location at the required frequency. Increasing the required VMS reporting frequency will increase data usage and likely require vessels to pay for a service plan with a higher data limit, particularly for vessels that use VMS data for other tasks. Scallop businesses should work directly with their VMS vendors to understand how costs may change with more frequent polling requirements, as well as any potential changes to their VMS service plan that could reduce costs. Total VMS cost estimates for the scallop fleet under No Action (Alternative 1) and Alternative 2 are $193,061 and $461,385, respectively. The increase in VMS cost for the scallop fleet in Alternative 2 would be about $268,324.

[22] Annualized value of changes in cumulative present value of total economic benefit compared to previous framework's evaluated at 7% and 3%., i.e., Annualized value = PMT (r, N, ΔCPV$). Because of structural differences in discount rates used between FW38 and FW38, economic impacts are compared with status quo rather between the two frameworks' preferred alternative.

7.12.5.2.2 Cumulative Economic Impacts

The cumulative impacts of the measures from Framework 38 proposed measures, and the past actions including Amendment 10, Amendment 11, Amendment 15, and Framework 28 through 36 to the scallop FMPs, are expected to be positive for the scallop fishery over the long-term. Adjustment of the open area DAS allocations, implementation of trip limits and allocations for the access areas through rotational management had positive impacts on the scallop industry by increasing the revenues, producer and consumer surpluses and net benefits in the past. However, the Framework 38 measures are estimated to have negative impacts on total economic benefits in the short-term compared to Framework 36 projections. The preferred alternative in Framework 38 is expected to decrease economic benefits compared to the preferred alternative in Framework 36 in the short-run. Economic impacts are also lower in the long-term primarily due to recent decline in prices relative to previous framework or due the differences in prices in evaluating these frameworks. However, FW38 preferred alternative has positive economic impacts relative to status quo of applying last year's regulations again in FY 2024. The short-run (FY 2024) total economic benefit for the FW38 preferred alternative is lower by about $19.62 million (in 2023 current dollars) compared to the preferred alternative in FW36 (FY 2023), but it is higher by $8.45 million compared to the status quo. Annualized long-term total economic benefit for the preferred alternative in FW38 (FY 2024 - FY 2038) compared to the status quo are higher by about $0.74 million (at 2% discount rate) (Table 88). As a result, cumulative economic benefits over the long-term are expected to be positive relative to the status quo. However, it is negative relative to the FW36 preferred alternative primarily due to differences scallop prices that were used to evaluate long-term impacts in the previous and current frameworks, i.e., scallop prices were higher last year than this year.

Table 86. Economic impact comparison of preferred alternatives in FW38 and FW36: Estimated landings (Mil. lb.), revenue and economic benefits (Economic estimates in 2023 current dollars, Mil. dollars)

Scallop Framework	FW38 (FY 2024)	FW38 (FY 2024)	FW36 (FY 2023)
	Proposed Action	Status Quo	Baseline
Landings	27.39	27.11	25.01
Revenue	$383.93	$379.04	$415.09
Producer Surplus (PS)	$281.14	$274.66	$314.19
Total Economic Benefits (CS+PS)	$315.84	$307.39	$335.46
Net Values or Difference from FY 2024 Status Quo values:			
Landings	0.28	0.00	-
Revenue	4.89	$0.00	-
Producer Surplus (PS)	6.48	$0.00	-
Total Economic Benefits (CS+PS)	8.45	$0.00	-
Net Values or Difference from FY 2023 (FW36 Action projection) values:			
Landings	2.38	-	0.00
Revenue	-$31.16	-	$0.00
Producer Surplus (PS)	-$33.05	-	$0.00
Total Economic Benefits (CS+PS)	-$19.62	-	$0.00

Table 87. Short-term Economic Impacts for FY 2024 compared with FY 2023: Estimated Landings (Mil. lb.), revenues, producer surplus, and total economic benefits (in 2023 current dollars, Mil. dollars).

Alternatives/Runs	*Framework 38 Alternatives (in 2023 dollars)					*FW36's Preferred Alternative	*FW36's Preferred Alternative
	Alternative 1 No Action	**Alternative 2**	**Alternative 3 (Preferred)**	**Alternative 4**	**Status Quo**		
Sections=> Economic Variables	**4.3.1 NA**	**4.3.2 18d12k**	**4.3.3 20d12k**	**4.3.4 24d12k**	**4.3.5 SQ**	2023$	2022$
Landings	14.40	26.17	27.39	29.73	27.11	25.01	25.01
Revenue	$218.34	$368.96	$383.93	$409.92	$379.04	$415.09	$398.63
Producer Surplus (PS)	$136.21	$269.15	$281.14	$301.33	$274.66	$314.19	$301.73
Total Economic Benefits (CS+PS)	$146.25	$300.90	$315.84	$341.77	$307.39	$335.46	$322.15
Net Values or Difference from FY 2024 Status Quo:							
Landings	-12.71	-0.95	0.28	2.62	0	-	-
Revenue	-160.70	-10.08	4.89	30.88	0	-	-
Producer Surplus (PS)	-138.45	-5.51	6.48	26.67	0	-	-
Total Economic Benefits (CS+PS)	-161.14	-6.49	8.45	34.38	0	-	-
Net Values or Difference from FY 2023 (FW36's Preferred Alternative projection) values:							
Landings	-10.61	1.16	2.38	4.73	2.11	0.00	-
Revenue	-$196.75	-$46.13	-$31.16	-$5.17	-$36.05	$0.00	-
Producer Surplus (PS)	-$177.98	-$45.04	-$33.05	-$12.86	-$39.53	$0.00	-
Total Economic Benefits (CS+PS)	-$189.21	-$34.56	-$19.62	$6.31	-$28.07	$0.00	-

Notes: A negative sign indicates a lower value for a FW38 alternative compared to the FW36's preferred alternative and vice versa.

*Note that FW36 and FW38 are evaluated at different prices, and price variability may swing wildly for various reasons affecting the economic comparisons between the two frameworks. In such a case, preferred alternative comparison with status quo in the current framework would be more relevant.

Table 88. Long-term Economic Impacts (2024-2038) for FW38: Cumulative present value of revenues and total economic benefits net of Status Quo values (Monetary values in Mil. dollars, in 2023 current dollars, 2% discount rate).

	Framework 38 Alternatives at 2% discount rate					FW36's Preferred Alternative at 2% discount rate	FW36's Preferred Alternative at 3% discount rate	FW36's Preferred Alternative at 7% discount rate
Alternatives/Runs	**Alternative 1 No Action**	**Alternative 2**	**Alternative 3 (Preferred)**	**Alternative 4**	**Status Quo**			
Sections=> Economic Variables	**4.3.1 NA**	**4.3.2 18d12k**	**4.3.3 20d12k**	**4.3.4 24d12k**	**4.3.5 SQ**	2023$	2023$	2022$
Landings	874.57	877.64	877.76	877.92	876.81	851.87	851.87	851.87
PV of Revenue	$8,637	$8,716	$8,721	$8,728	$8,714	$10,544.68	$9,832.63	$7,597.81
PV of Producer Surplus	$6,779	$6,849	$6,852	$6,857	$6,845	$8,634.94	$8,048.00	$6,206.22
PV of Total Economic Benefits	$8,292	$8,347	$8,349	$8,351	$8,342	$9,944.50	$9,262.77	$7,124.54
Difference from Status Quo:								
Landings mil lbs.	-2.24	0.83	0.95	1.11	0	-	-	-
PV of Revenue	-$76.18	$2.63	$7.49	$14.57	0	-	-	-
PV of Producer Surplus (PS)	-$65.71	$4.56	$7.89	$12.02	0	-	-	-
PV of Total Economic Benefits (CS+PS)	-$49.62	$4.72	$6.77	$8.93	0	-	-	-
*Annualized value = PMT(0.07,15,NetCPV$)	-$5.45	$0.52	$0.74	$0.98	0	-	-	-

Notes: *Annualized value of the cumulative present value of the net total economic benefits. A negative sign indicates a lower value for a FW38 alternative compared to FW36's preferred alternative and vice versa. Note that FW36 and FW38 are evaluated at different prices, and price variability may swing wildly for various reasons affecting the economic comparisons between the two frameworks. In such a case, preferred alternative comparison with status quo in the current framework would be more relevant while transitioning to new discount rate.

7.12.5.3 Enforcement Costs

The enforcement costs and benefits of the proposed options for Framework 38 are within the range of impacts addressed in Section 8.9 of Amendment 10 FSEIS and Section 5.4.22 and Section 5.6.3 of Amendment 11 and Section 5.4.2 of Amendment 15. The qualitative analysis included a discussion of the pros and cons of the proposed alternatives from an enforcement perspective. The proposed measures by Framework 38 are very similar to the existing measures in Framework 36 in terms of the enforcement requirements, since they include the continuation of the area specific trip allocations, area closures, open area DAS allocations, measures for reducing bycatch, and the continuation of observer coverage program. The costs of implementing and enforcing the preferred alternative are not expected to compromise the effectiveness of implementation and enforcement of this action. Furthermore, there are several mechanisms and systems, such as VMS monitoring and data processing, already in place that will aid in monitoring and enforcement of this action. Therefore, the overall enforcement costs are not expected to change significantly from the levels necessary to enforce measures under the No Action regulations.

7.12.6 Determination of Significant Regulatory Action

Executive Order 12866 (with a recent amendment of Section 3(f) by Executive Order 14094 on April 6, 2023) defines a "significant regulatory action" as one that is likely to result in:

i. an annual effect on the economy of $200 million or more, or one which adversely affects in a material way the economy, a sector of the economy, productivity, jobs, the environment, public health or safety, or state, local, or tribal governments or communities;
ii. a serious inconsistency or interference with an action taken or planned by another agency;
iii. a budgetary impact on entitlements, grants, user fees, or loan programs, or the rights and obligations of recipients thereof;
iv. novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this executive order.

Framework 38 is not expected to constitute a "significant regulatory action" based on the economic analyses provided in Section 0 and summarized below:

- The economic benefits are expected to decline between FY 2023 and FY 2024 (Table 86). The preferred alternative in Framework 38 is expected to slightly decrease economic benefits compared to the preferred alternative in Framework 36 in the short-run and the long-run. This outcome can be attributed primarily to large price volatility, and a decline in predicted price between FY 2024 and FY 2023.
- Compared to the preferred alternative in FW36, the short-run (FY 2024) total economic benefit for the FW38 preferred alternative is lower by about $19.62 million in 2023 current dollars (Table 86). However, the preferred alternative in FW38 yields higher short-run total economic benefits relative to status quo by about $6.77 million. Over the long-run (FY 2024 to FY 2038), the preferred alternative in FW38 is estimated to have positive impacts on the total economic benefits compared to the status quo. Annualized values in the long-run for the FW38 is about $0.74 million (in current 2023 dollars) using a discount rate of 2% (Table 88).
- The preferred alternative in FW38 will not have an annual net impact on the economy by more than $200 million compared to 2023 projections (Framework 36) in the short-term.
- While economic benefits may be declining, this is not unexpected, and the proposed alternatives will not adversely affect in a material way the economy, productivity, competition, public health or safety, jobs or state, local, or tribal governments or communities in the long-run and will not raise novel legal and policy issues, other than those that were already addressed and analyzed in Amendment 10, Amendment 11 and Amendment 15.

- The preferred alternative could have slight negative impacts on employment (measured in terms of total crew days (Crew*DAS)) compared to FY 2022 levels in the short-term (6.5% decrease in employment), but a long-term decrease in employment by only 0.03%.
- The preferred alternative also does not interfere with an action planned by another agency, since no other agency regulates the level of scallop harvest. It does not materially alter the budgetary impact of entitlements, grants, user fees, or loan programs, or the rights and obligations of recipients.

7.13 REGULATORY FLEXIBILITY ACT

The purpose of the Regulatory Flexibility Act (RFA) is to reduce the impacts of burdensome regulations and record-keeping requirements on small businesses. To achieve this goal, the RFA requires government agencies to describe and analyze the effects of regulations and possible alternatives on small business entities. Based on this information, the Regulatory Flexibility Analysis determines whether the preferred alternative would have a "significant economic impact on a substantial number of small entities." To this end, this document contains an RFA, found below, which includes an assessment of the effects that the Proposed Action and other alternatives are expected to have on small entities.

7.13.1 Statement of Objective and Need

This action proposes the management measures and specifications for the Atlantic Sea scallop fishery for the 2024 fishing year, with 2025 default measures. A description of the action, why it is being considered, and the legal basis for this action, are contained in Framework 38 and are not repeated here.

The proposed regulations would affect all vessels with Limited Access (LA), Limited Access General Category IFQ (LAGC IFQ), and Limited Access General Category NGOM (LAGC NGOM) scallop permits. Framework 38 (Section 5.6) and the LAGC IFQ Performance Evaluation (2017)[23] provide extensive information on the number of vessels that would be affected by the proposed regulations, their home and principal state, dependency on the scallop fishery, and revenues and profits.

There were 307 vessels that held full-time LA permits in FY 2022, including 244 dredge, 53 small-dredge, and 10 scallop trawl permits. In the same year, there were also 27 part-time LA permits in the sea scallop fishery. No vessels were issued occasional scallop permits in 2022. In 2019, NMFS reported that there was a total of 300 IFQ only permits, with 212 issued and 88 in Confirmation of Permit History (CPH). There was a total of 78 NGOM only permits issued in 2019. Approximately 96 of the IFQ vessels and 78 NGOM vessels actively fished for scallops in FY 2022. The remaining IFQ permits likely leased out scallop IFQ allocations with their permits in Confirmation of Permit History. The LA fleet also held LAGC permits, i.e., 38 of LA vessels also had IFQ permits; 52 had NGOM permits, and 102 had incidental permits.

In 2015, NMFS issued a final rule establishing a small business size standard of $11 million in annual gross receipts for all businesses primarily engaged in the commercial fishing industry (NAICS 11411) for Regulatory Flexibility Act (RFA) compliance purposes only. The $11 million standard became effective on July 1, 2016. Thus, the RFA defines a small business in the shellfish fishery as a firm that is independently owned and operated with receipts of less than $11 million annually. Individually permitted vessels may hold permits for several fisheries, harvesting species of fish that are regulated by several different fishery management plans, even beyond those impacted by the proposed action. Furthermore, multiple permitted vessels and/or permits may be owned by entities affiliated by stock ownership, common management, identity of interest, contractual relationships, or economic dependency.

[23] https://d23h0vhsm26o6d.cloudfront.net/180202_LAGC_IFQ_Council_Approved.pdf

For the purposes of this analysis, "ownership entities" are defined as those entities with common ownership as listed on the permit application[24].

On June 1 of each year, ownership entities are identified based on a list of all permits for the most recent complete calendar year. The current ownership dataset is based on the calendar year 2022 permits and contains average gross sales associated with those permits for calendar years 2018 through 2022.[25]

Matching the potentially impacted 2022 fishing year permits described above (LA and LAGC IFQ) to calendar year 2022 ownership data results in 150 distinct ownership entities for the LA fleet and 77 distinct ownership entities for the LAGC IFQ fleet (Table 89 and Table 90). Based on the Small Business Administration (SBA) guidelines, 142 of the LA distinct ownership entities and 87 LAGC IFQ entities are categorized as small. Eight LA and zero LAGC IFQ entities are categorized as large business entities with annual fishing revenues over 11 million dollars in 2022. There were 73 distinct small business entities with NGOM permits in 2022 (Table 91).

Table 89. Number of business entities and active vessels (that may include non-LA permits) in the scallop limited access fishery (revenues in current dollars).

Business Size	Calendar Year	No. of Entities**	No. of Permits*	Total Affiliation Revenue	Total Scallop Revenue***	Average Income from Fishing per Entity
Large	2018	8	121	$163,514,933	$141,850,275	$20,439,367
	2019	8	121	$175,781,827	$157,910,561	$21,972,728
	2020	8	121	$140,930,910	$126,878,234	$17,616,364
	2021	8	121	$195,976,111	$179,608,598	$24,497,014
	2022	8	121	$134,503,470	$122,885,523	$16,812,934
Small	2018	143	293	$366,467,414	$336,510,981	$2,562,709
	2019	143	293	$393,395,597	$361,413,015	$2,751,018
	2020	143	293	$345,079,134	$311,304,110	$2,413,141
	2021	145	297	$461,870,660	$433,777,896	$3,185,315
	2022	142	292	$331,391,481	$300,779,512	$2,333,743

* Number of permits refer to LA permits that may also hold LAGC permits. Affiliations could include several vessels with permits other than scallop as well as some LAGC IFQ permits. The permits associated with entities that did not land scallop is not included in the number of permits count. The number of permits would also imply the number of active vessels that landed scallops in the corresponding calendar year. ** Number of entities will have at least one LA permit with scallop landing. *** Scallop revenue for entities in large and small categories.

[24] Only permits with identical ownership are categorized as an "ownership entity." For example, if five permits have the same seven persons listed as co-owners on their permit applications, those seven persons would form one "ownership entity," that holds those five permits. If two of those seven owners also co-own additional vessels, that ownership arrangement would be considered a separate "ownership entity" for the purpose of this analysis.

[25] The data for the RFA analysis is from the Social Science Branch, Northeast Fisheries Science Center (June 28, 2023).

Table 90. Number of business entities with LAGC IFQ permits (revenues in current dollars).

Business Size	Calendar Year	No. of Entities**	No. of Permits*	Total Affiliation Revenue	Total Scallop Revenue	Average Revenue from Fishing per Entity
Small	2018	88	138	$66,197,987	$23,841,737	$752,250
	2019	81	124	$61,767,381	$26,062,464	$762,560
	2020	83	116	$45,165,949	$24,376,715	$544,168
	2021	85	124	$63,131,540	$34,321,951	$742,724
	2022	77	114	$63,947,672	$30,322,315	$830,489

*Number of permits refer to LAGC IFQ only permits. Affiliations could include several vessels with permits other than scallop. Some of the active LAGC – IFQ permits belong to affiliations with LA permits and are included in Table 41 above.

Table 91. Number of business entities with LAGC NGOM permits (revenues in current dollars).

Business Size	Calendar Year	No. of Entities**	No. of Permits*	Total Affiliation Revenue	Total Scallop Revenue	Average Revenue from Fishing per Entity
Small	2018	47	77	$13,524,932	$3,620,167	$287,765
	2019	46	76	$14,824,574	$4,726,306	$322,273
	2020	46	74	$12,201,021	$4,397,298	$265,240
	2021	52	76	$19,351,540	$5,900,784	$372,145
	2022	73	107	$29,079,349	$14,626,377	$398,347

*Number of permits refer to LAGC NGOM only permits. Affiliations could include several vessels with permits other than scallops. The permits associated with entities that did not land scallop are not included in the number of permit count.

** Number of entities will have at least one LAGC NGOM permit with scallop landing

7.13.1.1 Description of Projected Reporting, Recordkeeping, and other Compliance Requirements of the Proposed Rule

This action contains no new collection-of-information, reporting, or recordkeeping requirements. It does not duplicate, overlap, or conflict with any other Federal law.

7.13.1.2 Federal Rules Which May Duplicate, Overlap, or Conflict with this Proposed Rule

The proposed regulations do not create overlapping regulations with any state regulations or other federal laws.

7.13.1.3 Summary of the Proposed Action and Significant Alternatives

7.13.1.3.1 Framework 38 Specification Measures

Framework 38 is a one-year action that will be implemented for the fishing year 2024. The Council's preferred alternative (Section 4.3.3) and other Framework 38 alternatives are summarized in Table 8. A detailed description of each specification alternative is provided in Section 4.3 of Framework 38. For the purposes of this RFA analysis, the Council's preferred alternative is evaluated relative to the FY 2023 projections for the Framework 36 preferred alternative as well as with the FW38's Status Quo.

Table 92 and Table 93 include the No Action alternative as well as the FY 2023 projections from Framework 36, which are used as a baseline to compare the economic impacts of the Framework 38 alternatives. The definition of "No Action" (Section 4.3.1) follows a regulatory approach and refers to the default measures that are specified in the previous action, Framework 36, until this action is implemented in 2024. These correspond only to a fraction of allocations for the entire year and are intended to be replaced with subsequent measures based on updated survey information. Therefore, the economic benefits of proposed action and alternatives will considerably exceed the benefits for the "No Action" because default allocations under those measures have been set at precautionary levels.

The primary objective of Framework 38 is broader in scope than just replacing the temporary default measures set in the previous framework to prevent issues related to the delays in implementation. In this analysis, the baseline comparison for specifications focuses on the differences between the Council's preferred alternative in FY2023 (FW36) and the preferred alternative for FY 2024 (FW38). The FY 2023 allocations included open area DAS set at 20 DAS and each FT LA vessel receiving three access area trips in Area II Access Area (2 trips) and New York Bight Access Area (1 trip). For FY 2024, the Council's preferred alternative (4.3.3) is expected to increase landings by about 2 million pounds. Using the FY 2023 estimates from Framework 36 better reflects the changing conditions between 2023 and 2024. For these reasons, the FY 2023 (FW36) baseline is used to evaluate the impacts of the proposed measures on small business entities to address the requirements of the Regulatory Flexibility Act.

7.13.1.3.1.1 Summary of the Proposed Action

If the preferred alternative (Section 4.3.3) is approved, Framework 38 would allocate each FT LA vessel 20 open area DAS and three access area trips (i.e., 2 Area II trips at 12,000 pounds and 1 New York Bight trip at 12,000 pounds) amounting to 36,000 pounds in FY 2024. This is estimated to result in about 25.596 million pounds of annual projected landings after research and observer set asides are accounted for. The LA share of 94.5% is around 24.18 million pounds (Table 92). The LAGC IFQ share (5.5% allocation for both IFQ only and LA vessels with IFQ permits) will be about 1.407 million lbs. (Section 4.4.2, Table 93). Total landings, including set-asides to support research and observer coverage is projected to be about 27.39 million.

The preferred alternative (Section 4.3.3) is expected to have negative impacts on the net revenues and profits of small entities regulated by this action in FY 2024 (FW38) compared to the FY 2023 (FW36) scenario. The decline in revenue per entity between FY 2023 levels and FY 2024 is a result of a decline in scallop prices for these fishing years despite higher projected landings in FW38 relative to FW36. Projected landings for LA fleet are expected to increase by about 1.325 million pounds in the FW38 preferred alternative compared to FW36 preferred alternative.

As described in the Economic Impacts Section 6.6.1, and summarized in Table 92 below, fleetwide net revenue for the LA vessels (including revenue from the LAGC IFQ vessels) would be lower for the preferred alternative in FW38 (Section 4.3.3) by about $4.9 million (in 2023 dollars) compared to the preferred alternative in FW36. Net revenue per entity for LA vessels in FY 2024 under the FW38 preferred alternative would be lower by about $0.193 million as compared to FW36 preferred alternative in FY 2023. Thus, the preferred alternative (Section 4.3.3) would have about 5.57% lower net revenue for the fleet and about 8.6% lower net revenue per entity compared to the FW36 preferred alternative. The low negative economic impact to entities in FW38 is primarily due to a decline in scallop prices recently even though annual projected landing is higher in FW38 compared to FW36.

Under the preferred alternative (Section 4.3.3), allocations for the LAGC IFQ fishery, including the LA vessels with IFQ permits, will be about 12% higher than the allocation that was implemented for FY 2023 under FW36.

In terms of net revenue, this difference is expected to be of similar magnitude and negative for the preferred alternative relative to FY 2023 levels. Therefore, the FW38 preferred alternative will have slightly negative or negligible economic impacts on the LAGC IFQ fishery compared to FY 2023 levels due to a decline in scallop prices recently (Table 93).

Table 92. Net scallop revenue for Limited Access vessels in FY 2024 and % change from the FY 2023 (revenues in 2023 dollars).

		Framework 38 Alternatives					FW36's Preferred Alternative
Alternatives/Runs		**Alt. 1**	**Alt 2**	**Alt 3**	**Alt 4**	**Status Quo**	**(in 2023$)**
Description	**Unit**	**4.3.1 No Action**	**4.3.2**	**4.3.3 Pref. Alt.**	**4.3.4**	**4.3.5 Status Quo**	
Estimated scallop APL landings	mil lb	14.40	26.17	27.39	29.73	27.11	25.01
Estimated LA scallop landings (94.5% net of set asides)	mil lb	11.91	23.03	24.19	26.40	23.92	21.60
No. of Entities (Average in 2018-2022) both small and large	Counts	151	151	151	151	151	146
Estimated revenues for scallop APL	mil dollars	$218.34	$368.96	$383.93	$409.92	$379.04	$476.51
Estimated LA revenues from scallop	mil dollars	$180.55	$324.69	$338.99	$363.94	$334.43	$415.63
Estimated Net Revenue for scallop APL	mil dollars	$199.58	$338.70	$351.73	$373.948	$345.81	$377.04
Estimated LA net revenue from scallop	mil dollars	$165.04	$298.07	$310.56	$332.00	$305.10	$328.87
Net scallop revenue per Entity	mil dollars	$1.092	$1.971	$2.054	$2.196	$2.018	$2.247
% change in net revenue compared to SQ (FW36 preferred alternative)	Percent	-51.43%	-12.28%	-8.61%	-2.30%	-10.21%	0.00%

Note: landings and net revenues net of set asides, such as research set aside scallop, etc..

Table 93. Impacts of the LAGC IFQ Allocation for FY 2024 (Framework 38).

	Framework 38 Alternatives					FW36's Preferred Alternative
Sections	**4.3.1**	**4.3.2**	**4.3.3 (Preferred)**	**4.3.4**	**4.3.5**	
Descriptions	NA	12k, 18 DAS	12k, 20 DAS	12k, 24 DAS	Status quo	
Allocation for IFQ only vessels (5%) (lb)	630,015	1,218,319	1,279,673	1,396,717	1,265,718	1,142,890
Allocation for LA vessels with IFQ permits (0.5%) (lbs.)	63,002	121,832	127,967	139,672	126,572	114,289
Total Allocation* for IFQ fishery (5.5%) (lb)	693,017	1,340,150	1,407,641	1,536,388	1,392,290	1,257,179
% Change in estimated landings (and revenue) per business entity from SQ (FW36 Pref Alt)	-44.9%	6.6%	12.0%	22.2%	10.7%	0.0%

*APL w/ set aside removed

7.13.1.3.1.2 Description of Significant Alternatives to the Proposed Action

The economic benefits of all the alternatives considered in this Framework, including the proposed alternative, will exceed economic benefits of No Action. The specification alternatives considered in Framework 38 slightly differ across alternatives with each alternative allocating to the same access area allocations. Differences between the alternatives are driven by the number of DAS allocated, which ranges from 18 to 24 DAS and the trip limit is fixed at 12,000 pounds. The Council's preferred alternative, Alternative 3 (Section 4.3.3) would result in a higher allocation to the LA and LAGC IFQ components in 2024. This is expected to result in lower revenues compared to FW36 preferred alternative in FY 2023 primarily due to lower expected price during FW38 relative to FW36 (Table 92 and Table 93). The percent change in net revenue per business entity for all FW38 alternatives is expected to decline between -2.3% to -12.28% compared to FW36 preferred alternative. Under the preferred alternative in FW38, net revenues per entity with LA permits are estimated to be below FY 2023 levels by about -8.6% in FY 2024.

7.13.1.4 Northern Gulf of Maine (NGOM) Management Measures

The measures for the NGOM scallop fishery considered in this action are described in detail in Section 4.2 of Framework 38. The economic impacts of the NGOM alternatives are analyzed in Section 0 of the Framework documents. The Council's *preferred alternative* (Alternative 2, Option 2) would allocate a higher NGOM Set-Aside (420,598 lbs.) relative to No Action (Alternative 1, NGOM Set-Aside of 285,641 lbs.). As a result, the net revenue for the LAGC NGOM fishery is expected to increase by about $0.461 million under the preferred measure compared to the No Action. This is expected to result in a positive impact on the profits of NGOM LAGC entities.

The NGOM TAL for the LAGC component under the preferred alternative (454,152 pounds), would be higher than the No Action NGOM Set-Aside (285,641 pounds). As a result, the net revenue for the LAGC NGOM fishery is expected to increase by about 47% under the preferred measure compared to No Action with positive impacts on the profits of NGOM LAGC entities. For the 2024 fishing year, the overall NGOM set-aside shares for LAGC vessels in the preferred alternative will be 420,598 pounds excluding 25,000 pounds set aside to support research and help offset the cost of monitoring the fishery (Table 94).

7.13.1.4.1 Description of Significant Alternatives to the Proposed Action

The Council considered four NGOM TAL options for FY 2024 that ranged from 396,391 pounds (Option 1) to 527,346 pounds (Option 3). All TAL options would result in higher revenues compared to No Action, which are default measures set in Framework 36 for FY 2024. The preferred alternative (Alternative 2, Option 2) would have a slightly higher TAL (454,152 pounds) and revenue compared to the Alternative 2 (Option 1), but lower revenues than Alternative 2 (Option 3). When compared to No Action, the higher TAL of Alternative 2 (Option 2) would also result in higher revenues and economic benefits for entities in this fishery with an estimated increase in net revenues by about 47% compared to No Action (Table 94).

Table 94. Impacts of the Preferred Alternative 2 Option 2 and other alternatives for NGOM scallop fishery (2024 fishing year and monetary values in 2023 dollars).

	Alternative 2			Alternative 1
	4.2.2.2.1	**4.2.2.2.2**	**4.2.2.2.3**	**(No Action)**
	Option 1	**Option 2 (Preferred)**	**Option 3**	
	F=0.18	**F=0.21**	**F=0.25**	
Area(s) Fished	**Stellwagen, Ipswich, Jeffreys**	**Stellwagen, Ipswich, Jeffreys**	**Stellwagen, Ipswich, Jeffreys**	
2024 Total Allowable Landings (TAL)	396,391	454,152	527,346	
1% NGOM ABC for Observers	8,554	8,554	8,554	
2024 RSA Contribution	25000	25000	25000	
Lag year Overage Payback	-	-	-	
2024 NGOM Set-Aside	362,837	420,598	493,792	285,641
Impacts of the NGOM Set-Aside:				
Estimated LAGC revenue (in 2023 dollars)	$5,002,773	$5,799,178	$6,808,372	$3,938,399
Days at sea (DAS)	1,814	2,103	2,469	1,428
Trip costs (in 2023 dollars)	**1,239,370**	**1,436,669**	**1,686,683**	$975,686
Net revenue	$3,763,403	$4,362,509	$5,121,688	$2,962,713
Net revenue net of No Action	**$800,689**	**$1,399,795**	**$2,158,975**	
Net revenue net of No Action %	27.03%	47.25%	72.87%	0.00%

Under the sharing arrangement approved for the NGOM Management Area in Amendment 21, Framework 38 would not allocate pounds to the LAGC IFQ or LA components for FY 2024 because the NGOM set-aside did not exceed 800,000 pounds. Therefore, Action 2 would not have direct impacts on the Limited Access component. More research is planned for this area in 2024, which will help to increase the understanding of biomass in the NGOM management area. This will lead to better management of the NGOM resource with positive biological and economic impacts over the long-term on both LAGC and LA vessels.

7.13.1.5 LAGC IFQ Access Area Allocations

The LAGC IFQ component is allocated 5.5% of access area allocations under each specification alternative presented in Table 93. Alternative 2 could have positive economic impacts on LAGC IFQ vessels overall compared to Alternative 1 and Alternative 3.

When 5.5% is applied to the FT LA access area allocations from 4.3.3.2 (3 trips at 12,000 pounds) for FY2024, the LAGC IFQ component would receive 856 trips (with an 800-pound trip limit) which is higher than the FY 2023 allocation. Under the Council's preferred alternative in Section 4.3, the total LAGC IFQ access area allocation is 856 trips under Alternative 2 in Section 4.4. The total LAGC IFQ access area trip allocation would be available in Area I, Area II, and the New York Bight area. There would not be a specific number of trips allocated to Area I, Area II or the New York Bight, but rather vessels would be able to fish in any of the three access areas and trips would be counted against the total trip allocation. Once the total trip allocation is projected to have been taken, all three areas would be closed to LAGC IFQ access area fishing for the remainder of the fishing year. Alternative 2 could have positive economic impacts on LAGC IFQ vessels overall in the long run and compared to Alternative 1. The impacts compared to Alternative 3 could be slight positive to negligible since

the same number of trips would be allocated, but Alternative 2 provides vessels more flexibility on where they can be fished.

7.13.1.5.1 Description of Significant Alternatives to the Proposed Action

The Council considered two alternatives for LAGC IFQ access area allocations. As noted above, Alternative 2, with the Council's preferred in Section 4.3 would allocate 856 total trips. Alternative 3 would also allocate a total of 856 trips but would allocate 428 trips to the New York Bight and 428 trips to access areas on Georges Bank (Area I and Area II). Under Alternative 1, the number of total access area trips would be 0. Since LPUE in the open bottom is projected to decrease in FY 2024, LAGC IFQ vessels may have more opportunities to target larger scallops in areas of high abundance and would likely utilize rotational trips. The preferred alternative for LAGC access area allocations would have the highest economic benefits for the small business entities in the LAGC IFQ fishery compared to No Action and Alternative 3.

7.13.2 Summary and Conclusions

Economic impacts of Framework 38 preferred alternatives, including fishery specifications, access area trip allocations for the LA and LAGC IFQ fisheries, except NGOM measures, are expected to be slightly negative for the scallop vessels and small business entities compared to the FY 2023 baseline implemented through FW36. This is primarily due to a decline in the projected price. There are only eight large entities in the LA component of the scallop fishery and impacts on scallop revenues to small entities would not be disproportionate. All entities would be impacted in a similar way from a higher projected landing allocation. A slight negative or negligible economic impact in FW38 compared to FW36 is primarily due to a decline in scallop prices rather than changes in projected landings between these frameworks.

8.0 GLOSSARY

Annual projected landings – The annual projected landings are the model-based estimate of scallop fishery landings for a given fishing year, accounting for the spatial management of the fishery (*see also* area based management *and* area rotation). The APL is equal to the combined projected landings by the limited access and LAGC IFQ fleets in both the open area and access areas, after set-asides (RSA and observer) and incidental landings are accounted for, for a given fishing year. Projected scallop landings are calculated by estimating the landings that will come from open and access area effort combined for both limited access and LAGC IFQ fleets.

Area based management – in contrast to resource wide allocations of TAC or days, vessels would receive authorization to fish in specific areas, consistent with that area's status, productivity, and environmental characteristics. Area based management does not have to rotate closures to be effective.

Area rotation – a management system that selectively closes areas to fishing for short to medium durations to protect small scallops from capture by commercial fishing until the scallops reach a more optimum size. Closed areas would later re-open under special management rules until the resource in that area is like other open fishing areas. Area rotation is a special subset of area-based management that relies on an area closure strategy to achieve the desired results when there are sufficient differences in the status of the management areas.

Biological Opinion – an ESA document prepared by either the NMFS or USFWS describing the impacts of a specific Federal action, including an FMP, on endangered or threatened species. The Biological Opinion concludes if the NMFS/USFWS believe that the actions are likely to jeopardize the continued existence of any of the protected species and provides recommendations for avoiding those adverse impacts.

Consumer surplus - The net benefit consumers gain from consuming fish based on the price they would be willing to pay for them. Consumer surplus will increase when fish prices decline and/or landings go up.

Critical habitat – an area that has been specifically designated under the ESA as an area within the overall geographical region occupied by an endangered or threatened species on which are found the physical or biological features essential to conservation of the species.

Day-at-sea (DAS) – is each 24-hour period that a vessel is on a scallop trip (i.e. not declared out of the day-at-sea program) while seaward of the Colregs line.

Endangered species – a species that is in danger of extinction throughout all or a significant portion of its range.

Exploitable biomass - the total meat weight of scallops that are selected by fishing, accounting for gear and cull size, at the beginning of the fishing year[26].

Fixed costs - These costs include expenses that are generally independent of the level of fishing activity, i.e., DAS-used, such as insurance, license, half of repairs, office expenses, professional fees, dues, utility, interest, dock expenses, bank, rent, store, auto, travel, and employee benefits.

Incidental Take Statement – a section of a Biological Opinion that allows the take of a specific number of endangered species without threat of prosecution under the ESA. For the Scallop FMP, an incidental take statement has been issued for a limited number of sea turtles to be taken by permitted scallop vessels.

LPUE – Similar to catch per unit effort (CPUE), commonly used terminology in fisheries, LPUE in the Scallop FMP refers to the amount of landings per DAS a vessel achieves. This value is dependent on the scallop abundance and catch rate, but also depends on the shucking capacity of the crew and vessel, since most of the scallop catch must be shucked at sea. Since discard mortality for sea scallops is low, discards are not included as a measure of catch in the calculation of LPUE.

Meat yield – the weight of a scallop meat in proportion to the total weight or size of a scallop. Scallops of similar size often have different meat yields due to energy going into spawning activity or due to the availability of food.

Net economic benefits - Total economic benefits measure the benefits both to the consumers and producers and are estimated by summing consumer and producer surpluses. Net economic benefits show, however, the change in total economic benefits net of no action.

Nominal versus real economic values - The nominal value of fishing revenues, prices, costs and economic benefits are simply their current monetary values unadjusted for inflation. Real values are obtained, however, by correcting the current values for inflation.

Open area – a scallop fishing area that is open to regular scallop fishing rules. The target fishing mortality rate is the resource-wide target.

Operating expenses or variable costs - The operating costs measure the expenses that vary with the level of the fishing activity including food, ice, water, fuel, gear, supplies and half of the annual repairs.

Opportunity cost - The cost of forgoing the next best opportunity. For example, if a fisher's next best income alternative is to work in construction, the wage he would receive from construction work is his opportunity cost.

PDT – Scallop plan Development Team; a committee of experts that contributed to and developed the technical analysis and evaluation of alternatives.

Producer surplus -Producer surplus for a particular fishery shows the net benefits to harvesters, including vessel owners and the crew, and is measured by the difference between total revenue and operating costs.

Recruitment – a new year class of scallops measured by the resource survey. Scallop larvae are pelagic and settle to the bottom after 30-45 days after spawning. The resource survey, using a lined dredge, can capture scallops

[26] The **average exploitable biomass** is different and is defined as the total meat weight of scallops that are selected by fishing averaged over the fishing year, accounting growth, natural mortality, fishing mortality, and gear and cull size.

between 20 - 40 mm, but more reliably at between 40 - 60 mm. Recruitment in this document refers to a new year class that is observable in the survey, at around two years after the eggs had been fertilized and spawned.

SAFE Report – A Stock Assessment and Fishery Evaluation Report, required by the Sustainable Fisheries Act. This report describes the present condition of the resource and managed fisheries, and in New England it is prepared by the Council through its Plan Development Teams (PDT) or Monitoring Committees (MC). The Scallop PDT is the MC for the Atlantic Sea Scallop FMP and prepares this report.

Shucking – a manual process of cutting scallop meats from the shell and viscera.

TAC – Total allowable catch is an estimate of the weight of scallops that may be captured by fishing at a target fishing mortality rate. The TAC could apply to specific areas under area-based management rules.

Take – a term under the MMPA and ESA that means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct with respect to either a marine mammal or endangered species.

Ten-minute square – an approximate rectangle with the dimensions of 10-minutes of longitude and 10-minutes of latitude.

Threatened species – any species that is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

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