

2.0 Executive Summary

Amendment 10 to the Atlantic Sea Scallop FMP proposes new management alternatives to improve scallop management and net benefits, as well as consider a broad range of alternatives to minimize impacts on habitat and bycatch. The purpose and need for Amendment 10 is described in Section 4.0. The goals and objectives are identified in Sections 4.1 and 4.2, but the major issues that are addressed in the amendment include:

- New science indicates that higher scallop yield can be achieved with less impact on the marine environment, through pre-planned, adaptive rotational fishing.
- A more formal process was needed to allow periodic access to the surplus biomass of sea scallops in the Georges Bank groundfish closed areas, relying on a comprehensive environmental impact statement that analyzed the cumulative impacts of scallop management. Uncertainties about habitat and bycatch impacts from fishing in the Georges Bank groundfish closed areas were preventing the scallop fishery from achieving optimum yield.
- The impacts of scallop fishing gear and methods on sensitive habitat, including Essential Fish Habitat (EFH) as defined by the Magnuson-Stevens Act, required further analysis. As discussed further in Section 3.1.2.3, Amendment 10 was required to specifically remedy the deficiencies in Amendment 9's analysis of measures relating to EFH as part of the decision/Settlement Agreement resulting from a legal challenge in the U.S. District Court for the District of Columbia (American Oceans Campaign et. al. V. Daley et. al., Civil Action No. 99-982(GK)).
- The existing management program did not address all of the differences between the vessels in the scallop fleet: (1) vessels using trawl gear were catching smaller scallops than vessels using dredge gear; (2) vessels with permits in the General category (open access permits) were not being allowed to participate in programs that allowed controlled access to closure areas and thus were not benefiting from the improved yields in those areas.
- Data collection and research needed to be improved, and the timing of the management process needed to be better coordinated with the availability of information from the annual sea scallop resource survey.

Because of the complexity of the issues the Council was addressing, Amendment 10 is a complex document. Section 3.1.2 describes the evolution of the current fishery management program and Section 4.0 describes the purpose and need for change, including a list of the goals and objectives to be achieved by the amendment. Section 5.0 describes the proposed management alternatives in the final amendment and the preferred and non-preferred alternatives under consideration in the DSEIS. The proposed action is summarized in Section 5.1, and Section 5.3 describes both preferred and non-preferred management alternatives that the Council took to public hearing for the DSEIS, including other management approaches that were considered and rejected during development of the amendment (Section 5.4).

The affected environment, including a description of the fishery, scallop biology, the economic and social infrastructure, and the related ecosystem are analyzed and described in Section 7.0. Based in

part on the issues identified during scoping and during the public hearing on the DSEIS, the FSEIS includes an evaluation of the effects of fishing on EFH and an analysis of alternatives to improve scallop management, improve net benefits, and minimize to the extent practicable the adverse effects on EFH and bycatch from fishing in Section 8.0. The EIS considers and evaluates alternatives to minimize adverse effects to the extent practicable and include consideration of measures such as closed areas, effort reductions and gear modifications.

The analysis considers the no-action, along with a range of other reasonable alternatives. Information from the 1998 EA (included in Amendment 9 to the Scallop FMP) is reflected in this analysis. However, additional information and the selection of alternatives come from a review of the best scientific information available, including new information made available since the fishery management plan amendments were originally completed.

In Sections 7.2.6 and 8.5, the document also includes material to satisfy the requirements of the NMFS guidelines at 50 CFR part 600, Subpart J for mandatory requirements of an FMP to:

- (1) Identify any fishing activities that are not managed under the MSA that may adversely affect EFH.
- (2) Identify activities other than fishing that may adversely affect EFH. For each activity, the FMP should describe known and potential adverse effects to EFH.
- (3) Identify actions to encourage the conservation and enhancement of EFH, including recommended options to avoid, minimize, or compensate for the adverse effects, especially in HAPCs.
- (4) List the major prey species for the species in the fishery management unit and discuss the location of prey species' habitat. Consider adverse effects on prey species and their habitats that may result from actions that reduce their availability, either through direct harm or capture, or through adverse effects to prey species' habitats.
- (5) Recommendations, in priority order, for research efforts necessary to improve upon the description and identification of EFH, the identification of threats to EFH from fishing and other activities and the development of conservation and enhancement measures for EFH.
- (6) Conduct a cumulative impact analysis that describes impacts on an ecosystem or watershed scale (Cumulative effects of multiple gear types are included in the Gear Effects Evaluation Section)

This document was developed to comply with all of the legal requirements relating to the implementation of a fishery management program. Section 6.0 evaluates the consistency of the proposed management program with the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). Section 13.0 evaluates the impacts on state coastal zones, as required by the Coastal Zone Management Act (CZMA). Section 14.0 evaluates the information collection requirements relating to the proposed measures, as required by the Paperwork Reduction Act (PRA).

Following a 90-day public comment period on the DSEIS and considering public comment and scientific analysis and advice, the Council selected final alternatives to include in the proposed action for Amendment 10. The Council and committee reviewed the public comments and additional analyses that were updated to include new data that became available from the summer resource surveys. These data allowed the Council to update the projected TACs and DAS/trip allocations, and also more accurately identify a rotation area management closure that will protect small scallops observed in the 2003 surveys. Initially, the Council selected the status quo overfishing definition (Section 5.3.1.2) with area-specific

DAS/trip allocations (Section 5.3.3.2) and Habitat Alternative 2 (Section 5.3.4.2) for the final alternative. Further analysis by NMFS resulted in their recommendation that the final alternative was insufficiently conservative and without additional action, the FMP had a low probability of achieving OY.

NMFS recommended that the Council re-evaluate the reliance on Habitat Alternative 2 (Sections 5.1.6.1 and 5.3.4.2) to achieve the conservation objectives for the amendment, and strengthen the framework adjustment process to ensure that future management actions had a higher probability of achieving OY. After considerable debate at the September Council meeting on the merits of the nine habitat closure alternatives, in relationship to the cumulative effects of likely actions in other FMPs, the Council approved Habitat Alternative 6 which will prevent access to and keep closed areas with important scallop resources, but which have been closed since 1994 and contain important EFH and hard bottom. The Council also modified the framework adjustment process to allow the Regional Administrator the ability to substitute other alternatives shown to achieve OY, if the Council's recommendation does not do this.

In the public comments, fishing industry representatives and fishermen wanted management measures that allowed a 120 full-time DAS allocation with area rotation and well-defined habitat closures if they were necessary to conserve complex and sensitive habitat. Before the Council adopted any habitat closures, industry wanted the analysis to demonstrate that the benefits of habitat closures outweighed the costs to the industry of being prohibited from harvesting scallops in these areas. They were also strongly supportive of continuing to use the status quo overfishing definition, because they felt that the proposed alternative was unnecessarily conservative and would cause too much short-term economic harm. The industry was strongly supportive of a fully-adaptive, flexible boundary rotation area management system, supported by cooperative industry surveys and scallop/habitat research funded through set-asides. Most also sided with not making changes to general category rules, except to obtain better reporting that might allow more effective enforcement of the 400 lb. scallop possession limit.

Representatives of conservation organizations did not feel that the proposed management alternatives were sufficiently conservative, arguing that none of the alternatives provided sufficient protection for EFH or achieved OY because they allowed too much fishing effort. They pointed out that the status quo overfishing definition targets were projected to allow higher amounts of total area swept, and that under this circumstance the Council had no justification for relying on Habitat Alternative 2 to minimize impacts on EFH. They also felt that the DSEIS did not adequately demonstrate the adverse impacts of scallop dredging on EFH or that the benefits of the proposed habitat alternatives were demonstrated.

In the end, the Council took a balanced approach that uses the status quo overfishing definition to allow DAS allocations near present levels, but uses a conservative DAS tradeoff to reduce total fishing time and area swept. The Council also chose Habitat Alternative 6 to continue habitat conservation associated with the existing groundfish closed areas, at least until actions taken in other plans to improve conservation of groundfish EFH were analyzed and chosen to apply to many other types of bottom tending mobile fishing gears. It furthermore decided to strengthen the framework adjustment process to evaluate future management changes with respect to achieving OY, even though the status quo overfishing definition might suggest a more liberal target. In addition to recommending a fully-adaptive, flexible boundary rotation area management system, Amendment 10 also includes an increase to 4-inch minimum dredge rings and to a minimum 10-inch twine top mesh. The former will improve conservation and increase yield by reducing mortality on smaller scallops while increasing dredge efficiency for larger scallops, thus reducing bottom contact time and impacts on EFH and bycatch. The 10-inch twine top will allow for greater escapement of many finfish species, thus minimizing bycatch.

Although Section 5.1 clearly describes the Council’s rationale for selecting the proposed action, it may not be clear why the Council did not select a preferred or non-preferred alternative in Section 5.3, which described alternatives that the Council published in the DSEIS and took public comment. To aid the reader, the following table summarizes these alternatives, the rationale provided in the DSEIS explaining the potential benefits, and the rationale why the Council did or did not select the alternative for the final, proposed action.

This table is intended to provide the reader with an at-a-glance view of how the Council progressed from the draft stage of Amendment 10 to the final action submitted to NMFS. Due to the complex nature of many of the alternatives, particularly the area rotation scheme alternatives, only brief descriptions are provided in this table. Detailed descriptions of each alternative are included in Section 5.1 (Summary of Proposed Action and Initial Allocations) and in Section 5.3 (Preferred and Non-preferred Alternatives). The table does not include a discussion of alternatives that were considered and rejected without further analysis prior to the completion of the DSEIS (discussion of these alternatives is found in Section 5.4).

Table 1. Summary of Amendment 10 alternatives and rationale for decision. Alternatives included in the proposed action are **boldfaced**

Management alternative	Description	DSEIS rationale	FSEIS rationale
Overfishing definition (Section 3.4)			
Status quo (Proposed action)	Maintain existing overfishing definition, which is based on reference points that maximize yield per recruit	The Council could select this alternative if it determines that the status quo overfishing definition will achieve optimum yield. Status quo overfishing definition would achieve optimum yield if sufficient areas remain or become open to scallop fishing. Zero mortality in long-term closed areas will have conservation benefits and act as a source of spawning activity.	The Council determined that the status quo overfishing definition, with an increase in the minimum stock size threshold from ¼ to ½B _{MSY} , and a modification to the status determination criteria, would achieve optimum yield and prevent overfishing on a continuing basis provided that the framework provisions require the Council's future management decisions to be based on multiple resource and fishery condition factors.

Management alternative	Description	DSEIS rationale	FSEIS rationale
Alternative "Proposed" Overfishing Definition	A new overfishing definition would set annual fishing mortality thresholds to achieve maximum yield-per-recruit from scallops that are or will potentially become available to fishing. Annual thresholds would vary according to the rotation area management situation at the time. The biomass target would continue to be defined as B_{max} , but the minimum biomass threshold would be revised to $\frac{1}{2} B_{max}$.	Achieves optimum yield with area rotation by establishing annual mortality targets by area. Allows fluctuations in annual fishing mortality rate to achieve optimum yield.	Projections using this definition gave DAS allocation estimates without closed groundfish area access were much lower than the status quo, having an unacceptable impact on the fishery.

Improving Scallop Yield (Section 5.3.2)

Adaptive closures and re-openings w/adaptive boundaries (Proposed action)	Areas would be closed or opened based on distribution and abundance of scallops of various sizes; an industry supported resource survey would provide biological information about candidate areas	Would produce the greatest benefits by protecting small scallops during their highest growth rates, and more accurately determine areas that should be closed. Would provide improvements in yield and fishing efficiency, compared with fixed boundary area rotation alternatives.	Same as for DSEIS.
Initial Area Rotation in 2004 (Proposed action)	The Hudson Canyon Access Area would remain a controlled access area, and an area just to the south of the Hudson Canyon Access Area -- the "Elephant Trunk Area" -- would be closed to scallop fishing until 2008.	Fishing mortality controls in the Virginia Beach area no longer necessary. Fishing mortality controls in the Hudson Canyon Access Area necessary for 2 additional years (through 2005). Protection of a very large concentration of small scallops to the south of the Hudson Canyon Access Area through complete closure to scallop fishing needed until 2008.	Same as for DSEIS.

Management alternative	Description	DSEIS rationale	FSEIS rationale
Increase minimum ring size to 4" (Proposed action)	Increase the minimum size of rings used in scallop dredge gear from 3-1/2" to 4" in all areas or in selected areas	Would reduce discard mortality of small scallops and improve yield. Increased gear efficiency will reduce tow time to catch a possession limit or an amount crew can shuck. Reduced tow time will yield reduced total area swept, non-catch mortality of sea scallops, amount of bycatch, and habitat effects. Will increase scallop survival and yield.	Same as for DSEIS.
Mechanical area rotation w/fixed boundaries	Pre-defined areas would be closed and opened for pre-determined period of time	Mechanical rotation would be the most simple, and easiest to administer. Benefits accrue because the areas scheduled to close have been opened for longest time period and age structure of those scallops are the most affected by fishing.	Predetermined opening and closing dates may not affect the resource in need of protection - e.g., areas may re-open when large concentration of small scallops present. Fixed boundaries lack precision for best application to changing resource condition.
Adaptive closures for fixed duration w/fixed boundaries	Pre-defined areas would be closed based on growth rate criteria for a pre-determined period of time	Would depend on the age structure of the resource; thus, providing conservation benefits for areas of previous high fishing effort for lengthy periods and/or areas with recent above average recruitment. Monitoring costs would remain at practical levels because a detailed survey would only be needed in the year before an area re-opens.	Higher benefits might be achieved by using an adaptive strategy with flexible area boundaries

Management alternative	Description	DSEIS rationale	FSEIS rationale
Adaptive closures and re-openings w/fixed boundaries	Defined areas would be closed or opened based on growth rate criteria	Length of rotational closures is flexible; thus, preventing a fixed duration closure that may be too short or too long. Would provide conservation benefits for small scallops by preventing a rotational closure from opening too early, and adaptive re-opening would allow for areas with higher potential biomass growth rates to be candidate rotational closures.	Higher benefits might be achieved by using an adaptive strategy with flexible area boundaries
Adaptive closures and re-openings w/fixed boundaries; fishing mortality targets and frequency of access to areas may vary for each area	Pre-defined areas would be closed or opened based on characteristics of the areas (size of scallops, growth rate, presence of sensitive habitat, bycatch of other species including endangered or threatened species); fishing mortality targets and vessel access would be specified for each area	Would allow greater flexibility to set target fishing mortality rates in special management areas. Would allow much of the resource to be open to general fishing because of lower biomass limits in closed or special management areas. Would not require costly one-to-one trading of area-specific day-at-sea allocations or trips. Fishing mortality targets in re-opened areas would consider bycatch and habitat objectives rather than relying on seasons, bycatch total allowable catch (TAC), or indefinite closures.	Uncertainty about the effects compared with other area rotation alternatives. Fixed boundaries lack precision for best application to changing resource condition.
Area based management w/area-specific fishing mortality targets and without formal area rotation	Management areas would be defined with area-specific effort allocations made to vessels based on resource characteristics within each area. No area rotation policies would apply.	Would reduce localized overfishing and would provide conservation benefits for strong year classes. Areas could be fine-tuned in the future (e.g., closed seed beds).	Area based management with different fishing mortality targets and allocations were thought to be too complex for practical management.

Management			
Management alternative	Description	DSEIS rationale	FSEIS rationale
Access to groundfish closed areas on Georges Bank	Access would be allowed for scallop fishing in the 4 year-round groundfish closed areas (Nantucket Lightship, Closed Area I, Closed Area II). Three alternatives within this proposal: access allowed to one area each year; access allowed only when landings from open fishing areas declines below specified level; or access allowed by including these areas or portions of them, under one of the other rotational management schemes	Would reduce mortality and promote rebuilding of scallop stock elsewhere, while also reducing number of used days and swept area by gear. May also reduce bycatch and habitat impacts.	Same as for DSEIS. (NOTE: Access cannot be provided through Scallop FMP alone. Council developing a companion framework action to allow access under the Northeast Multispecies FMP.)
Gear-specific days-at-sea (DAS)	Allocated fishing DAS to vessels based on the type of fishing gear used; allocations would be determined to equalize the rate of fishing mortality per DAS associated with each type of gear	Differential allocations by gear category would reduce mortality on small scallops, improve yield, and encourage vessels to develop or use more size selective gear	Action would unfairly penalize a fishery sector that was incapable of switching to more selective gear
Allocating effort (Section 5.3.3)			
Area-specific trip allocations with possession limits and DAS tradeoffs (Proposed action)	Vessels would be allowed to fish in areas recently reopened for fishing; scallop retention would be limited to a specified possession limit, the number of trips would be capped, and the vessel would be charged a specified number of DAS.	Alternative would allow area-specific fishing effort allocations to optimize yield while reducing the potential for overexploitation in regular, open fishing areas without resorting to complicated tradeoffs	Same as for DSEIS.
Exchanges of area-specific allocations (Proposed action)	Vessels allocated DAS or trips to fish in areas recently reopened for fishing could exchange their allocations	Will enable vessel owners and captains to decide where to fish, and will allow more flexibility during the fishing year. Will restore some flexibility in deciding where to fish.	Same as for DSEIS.

Management alternative			
Management alternative	Description	DSEIS rationale	FSEIS rationale
Individual DAS allocations to vessels based on fishing area	Under rotational management, vessels would be allocated specific number of DAS that could be utilized when fishing in areas recently reopened for fishing	Could allow area-specific fishing effort allocations to optimize yield and reduces the potential for overexploitation in regular, open fishing areas without resorting to complicated and difficult to administer tradeoffs.	Area-specific allocations without tradeoffs would reduce limited access DAS allocations to unacceptable levels.
Status quo	DAS would be allocated to vessels based on their permit category and could be used to fish in any open area. Other than total day-at-sea allocations, there would be no limit on the amount of fishing effort directed towards scallops once an area re-opens to fishing	The Council would select this alternative if area-specific controls would not be necessary.	Mortality in regular, open fishing areas would continue to be too high and not produce optimum yield
Reducing habitat impacts (Section 5.3.4)			
Rely on incidental habitat benefits of other measures in Amendment 10 (Proposed action)	No specific measures established to reduce habitat impact (Habitat alternative #2)	Incidental habitat benefits resulting from other measures included in Amendment 10 would minimize adverse effects of fishing on EFH.	Same as for DSEIS. Most practicable approach for minimizing adverse effects of fishing on EFH because it requires no additional measures. However, Council determined that additional measures necessary (see Habitat Alternative 6 below).
Closed areas based on scallop Framework 13 (Proposed action)	Existing groundfish closed areas on Georges Bank and in Gulf of Maine are maintained except that scallop fishery is allowed inside the portions of the closed areas that were opened for fishing in Framework 13 (habitat alt #6)	Closure of the "Framework 13" portions of groundfish closed areas specifically for long-term EFH protection would allow for continued recovery of EFH in these areas without requiring new closures for bottom-tending mobile gear in other plans.	Same as for DSEIS.

Management alternative	Description	DSEIS rationale	FSEIS rationale
Increase minimum ring size to 4" (Proposed action)	The increase the minimum size of rings used in scallop dredge gear from 3½" to 4" in all areas or in selected areas specified under the Improving Scallop Yield section also has habitat benefits (Habitat alternative #11).	Would reduce mortality on small scallops where scallops are of mixed sizes. Would increase efficiency of harvesting larger scallops. Thus, improved dredge efficiency has the potential for reducing bottom time, non-catch mortality, bycatch, and possibly habitat effects.	Same as for DSEIS.
Habitat research funded by scallop TAC set-aside (Proposed action)	Research would be conducted on impacts of scallop gear on habitat with funding from scallop catch or DAS set aside for research (Habitat alternative #12)	Would broaden the range of research types that could be funded through the scallop research TAC set aside. May identify fishing gear or methods that have fewer habitat impacts or that might be useful to identify ways that fishing is managed to minimize related habitat impacts through funded research.	Same as DSEIS.
No Action/Status quo	Scalloping prohibited in the groundfish closure areas on Georges Bank; Hudson Canyon and Virginia Beach Scallop Closed Areas would re-open to regular scallop fishing; annual specifications establish DAS allocations consistent with fishing mortality rate target in Amendment 7 (Habitat alternative #1)	The Council would select this alternative if it could determine that DAS reductions, with changing in gear restrictions and limits on shucking capacity (crew size limits) have already minimized total area swept and associated habitat impacts to the extent practicable. Existing closures under the Multispecies FMP provided EFH protection.	The Council determined that status quo measures would not minimize habitat impacts. Council determined that more certain EFH protection could be gained by establishing portions of the Multispecies FMP closures as EFH closed areas to protect EFH from scallop fishing.
Habitat closed areas	Boundaries of existing groundfish closed areas on Georges Bank and in Western Gulf of Maine are modified to improve habitat benefits (Habitat alternatives #3a and 3b)	Would better protect complex hard-bottom and other sensitive habitats.	Unacceptable and inequitable economic effects, especially without access to Georges Bank closed groundfish areas; uncertainty whether complimentary actions would be taken in other plan amendments

Management alternative	Description	DSEIS rationale	FSEIS rationale
Modified groundfish closed areas with habitat component	Existing groundfish closed areas are modified and some of the closed area is specifically to reduce habitat impacts (Habitat alternative #4)	Would better protect complex hard-bottom and other sensitive habitats from any adverse impacts associated with fishing.	Complimentary action to modify groundfish closed areas in Multispecies FMP no longer were viable because complimentary action in the Multispecies FMP no longer applied.
Closed areas are developed to balance habitat protection with fishery productivity for scallops, groundfish, monkfish	A computer model is used to designate closed areas and consider fishery productivity (Habitat alternatives #5a, 5b, 5c, 5d)	Would balance the protection of EFH and fishery productivity.	Strong opposition due to economic impacts in groundfish fishery and that the proposed areas failed to include some hard bottom areas that would be included in other alternatives. Model did not include physical characteristics in the selection criteria. Alternative included areas closer inshore than other alternatives and therefore had inequitable and local impacts that were unacceptable.
Habitat closed areas minimizing scallop fishing in less productive fishing areas and in areas with high EFH value	Habitat closures would be based on EFH designations, with scallop fishing prohibited in least productive scallop areas (Habitat alternative #7)	Protect areas of high EFH value and low scallop productivity.	Alternative would have to apply to fisheries using other bottom-tending mobile gear to be effective and included areas that had mainly sandy sediments and would have a high cost to other fisheries.
Close cod habitat area of particular concern to scallop fishery	Scallop fishing would be prohibited in existing or new areas on Georges Bank designated as HAPC for cod (Habitat alternatives #8a and 8b)	Would change the status of the cod HAPC from mortality closure to a habitat closure providing more conservation benefit for habitat.	Uncertainty whether complimentary action would be taken in other plan amendments. Lower habitat benefits than other alternatives when analyzed across the entire management area.

Management alternative	Description	DSEIS rationale	FSEIS rationale
Existing groundfish closed areas would be closed to scallop fishery	Scallop fishing would be prohibited in the groundfish closed areas on Georges Bank (Closed Area I, Closed Area II), the Nantucket Lightship Closed Area in Southern New England, Western Gulf of Maine closed area, and Cashes Ledge closed area (Habitat alternative #9)	Would change the status of the closed areas from mortality closure to a habitat closure providing more conservation benefit for habitat.	Economic costs to society and the industry are higher than most of the other alternatives.
Restrictions on rock chains	Specific regulations would limit the use of rock chains by scallop vessels (Habitat alternative #10)	Would prevent vessels from fishing in more rugged areas, having complex bottom habitats.	May not decrease bottom area fished by scallop industry and may have unintended safety hazard concerns.
Area based management and rotation based on habitat protection	Areas designated for closure in a rotational management scheme would be specified in part based on habitat protection (Habitat alternative #13).	Would rely on increased conservation benefits for habitat through adjustments in area rotation strategies rather than long-term, indefinite closures.	Although the conceptual approach had merit, the alternative needed more work to be practical. More information is needed about habitat sensitivity and recovery potential in localized areas, in order to develop specific management procedures.
Reducing bycatch and bycatch mortality (Section 5.3.5)			
Area rotation alternatives (Proposed action)	Area rotation alternatives under the section Improving Scallop Yield also result in reductions in bycatch and bycatch mortality	Area rotation thought to improve efficiency and therefore reduce effective fishing effort on finfish.	Same as for DSEIS.
Increase minimum ring size to 4" (Proposed action)	Area rotation alternatives under the section Improving Scallop Yield also result in reductions in bycatch and bycatch mortality	Will increase efficiency for harvesting large scallops by about 10-15 percent. Increased release of small scallops. Would reduce the area swept by commercial dredges 10-15 percent. Reduction of area swept would result in reduction of finfish bycatch.	Same as for DSEIS.
Increase minimum twine top mesh to 10" (Proposed action)	Increase the minimum twine top mesh size in scallop dredge gear to 10" in all or select areas; and/or specify how twine tops must be installed	Increase of minimum twine top will reduce finfish bycatch.	Same as for DSEIS.

Management alternative	Description	DSEIS rationale	FSEIS rationale
Proactive protected species program (Proposed action)	The Council would be required to address new take information on sea turtles or other protected species by initiating a framework process to consider time/area closures or other measures to minimize bycatch potential.	Would provide a mechanism to mitigate takes of turtles and other protected species as new information becomes available. Would promote enhanced observer coverage and further research.	Same as for DSEIS.
Gear modifications	Use results of recent research to require modifications to the dredge bail on scallop gear to reduce finfish bycatch	Would allow for additional research in other areas that may show consistently better results. Such research may be used to require gear modifications that would reduce bycatch and/or bycatch mortality.	No new data or analysis available that justifies implementation of a specific new gear restrictions. Gear identified through future research may be implemented by framework adjustment or amendment.
Area-specific possession limits for finfish	Maximum possession limits would be established for some species of finfish to provide an incentive for scallop vessels to avoid areas of high bycatch	Prohibiting scallop vessels from landing finfish would reduce the incentive to fish in portions of rotational management areas that have greater bycatch than in other areas.	Area-specific possession limits would be hard to monitor and enforce, unless combined with a special controlled access program, which would be developed by framework action.
Area specific TACs for finfish	Total Allowed Catch (TAC) would be specified for some finfish species in specific areas, with the area closed to scallop fishing when a TAC was attained	Would reduce/prevent incidental catches from exceeding biological limits from greater than average scallop fishing effort in re-opened areas. Would influence fishermen to fish in portions of the area with lower bycatch and/or use gear or methods that reduce bycatch. May result in re-opened area staying open as long as allowed if scallop fishermen avoid catching non-target species.	Measures are suitable for controlled access programs implemented by future framework adjustments.
Area specific seasons	Specified management areas would be seasonally closed to scallop fishing in order to avoid bycatch of finfish	Seasonal closures would avoid times when finfish bycatch was high, without preventing access to the scallop biomass.	Other measures to minimize bycatch would be more effective, without reducing opportunities to fish for scallops.

Management alternative	Description	DSEIS rationale	FSEIS rationale
Long term closures of areas with high bycatch	Areas with high levels of finfish bycatch would be closed indefinitely to scallop fishing	Would result in reduced bycatch and bycatch mortality. Would ensure that National Standard 9 is achieved.	Other measures to minimize bycatch would be more effective, without reducing opportunities to fish for scallops.
Status quo	The existing management program would be deemed sufficient to address bycatch	The Council would select the status quo/no action alternative if it determines that the management measures in Amendment 10 are not necessary to minimize bycatch and bycatch mortality at levels deemed practicable.	The Council determined that additional measures were necessary and practicable to minimize bycatch and bycatch mortality, consistent with purpose and need for Amendment 10.

Managing general category vessels & limited access scallop vessels not fishing on a DAS (Section 5.3.6)

Status quo (Proposed action)	Any vessel can obtain General category permit and land up to 400 lb/trip; limited access vessels can fish under General category when not on DAS	The Council could select this alternative if it determined that the current management measures in place to manage, monitor, and assess the general category portion of the scallop fleet are adequate.	Mortality and fishing effort by vessels with general category permits appear to have declined recently in response to price, reducing the need to apply stricter regulations.
Prohibit limited access scallop vessels from fishing for scallops outside of DAS under general category rules (Proposed action)	Limited access scallop vessels would be prohibited from fishing for or landing more than 40 lb of shucked (5 bushel in-shell) scallops outside of DAS.	Landings of scallops by limited access vessels fishing outside of DAS increasing. Higher landings of scallops outside of DAS may reduce DAS available for limited access vessels. Consistent with other fisheries that do not allow the targeting of managed species outside of DAS.	Same as for DSEIS.
Incidental catch and general category permits and management measures	New measures for vessels issued a General category permit could include vessel monitoring systems (VMS), TACs, possession limits and reports; limited access vessels could not obtain General category permit; a new incidental category vessel permit would allow retention of small amounts of scallops	Would allow vessels with general category permits to fish more economically and be consistent with the change in scallop biomass. It would limit the total catch of scallops by vessels with general category permits to a reasonable fraction of the overall and area-specific TACs.	Compliance cost and administrative burden exceeded benefits at this time.

Management alternative			
Management alternative	Description	DSEIS rationale	FSEIS rationale
Incidental catch and general category permits and management measures	Similar to previous measure but no TACs would be established except in areas recently reopened for fishing; possession limits would be established for both permit categories	Would allow any vessel to obtain a general category scallop permit, target scallops, and possibly fish in re-opened rotation areas.	Compliance cost and administrative burden exceeded benefits at this time.
Improving data collection and monitoring (Section 5.3.7)			
Set asides for observer coverage (Proposed action)	Establish DAS and/or TAC set-asides to fund bycatch monitoring	Would aid monitoring TACs for scallops, help to quantify the amount of finfish bycatch, and determine the level of sea turtle takes in the scallop fishery. The TAC and/or DAS set-asides would allow compensation to vessel owners and crews that have paid for observers.	Same as for DSEIS.
Set asides for cooperative industry assisted resource surveys (Proposed action)	Establish DAS or TAC set-asides to fund resource surveys conducted by industry vessels	Would promote an increase sampling intensity and would support area rotation.	Same as for DSEIS.
Bag tags and standard bags- Alternative 1	Require the use of a standardized bag for landing scallops, labeled with a tag identifying the vessel	The bag tag would maintain accountability after scallops leave the possession of the harvester until the first point of wholesale processing. Would provide for better enforcement of possession limits. Scallop possession limits would be easier to monitor because they would be expressed in number of standard bags.	Bag tag monitoring system needed more study before being considered for broad application

Management alternative			
Management alternative	Description	DSEIS rationale	FSEIS rationale
Bag tags and standard bags- Alternative 2	Require the use of a standardized bag for landing scallops, labeled with unique number/color to identify fishing vessel and fishing area; limited access vessels would be allocated specific number of bags	Same as alternative 1 above, but greater requirements would improve accountability and compliance.	Bag tag monitoring system needed more study before being considered for broad application
Require daily vessel reporting via VMS	Vessel trip reports would be submitted daily via VMS	Would improve timeliness of data for real time monitoring of TACs. Failure to make reports can be flagged immediately.	Without quota monitoring, the benefits of real-time reporting were unclear.
Require daily vessel reporting via VMS and real time landings reports by dealers	Vessel trip reports would be submitted daily via VMS; landings would be reported by dealers in real time	Would replace vessel trip report (VTR) data collection with more efficient and reliable systems by requiring vessels to make reasonable daily reports via VMS equipment. Unreliable discard data would not be collected.	Reporting system needed more study before being considered for broad application. No public support to replace the VTR system with electronic reporting by VMS.
Require all limited access vessels to operate VMS	Expand requirement for VMS to include occasional category vessels in addition to full- and part-time	Would be equitable among all limited access vessels to obtain and operate VMS equipment, particularly if general category vessels required to operate VMS units.	Without general category VMS requirements, this measure is not necessary.
Expand number of VMS suppliers	NMFS would be encouraged to secure additional VMS vendors	Would result in competitive pricing and would spark innovation in VMS design.	Same as for DSEIS. No associated management action required.
Status quo	Maintain existing monitoring and reporting requirements	The Council could select this alternative if it determined that current reporting and monitoring requirements and provisions are adequate.	The Council determined that additional measures would improve data collection and monitoring
Enabling scallop research (Section 5.3.8)			
Process for managing research funded through research set-asides (Proposed action)	DAS or TAC set aside for research would be allocated through a long term process specified in Amendment 10, including research priorities and establishment of research priorities	DAS and/or TAC set-asides would provide certainty for funding of research identified as priority by the Council.	Same as for DSEIS.

Management alternative			
Management alternative	Description	DSEIS rationale	FSEIS rationale
Alternative process for managing research funded through research set-asides	DAS or TAC set aside for research would be allocated annually through the annual framework process	Would provide additional information on the impacts of experimental fishing.	Other alternatives in Amendment 10 are adequate.
Status quo	Maintain existing process	The Council would select this alternative if it determines that the current process works sufficiently well.	Expanded funding and a more formal priority-setting procedure was needed.
Adjusting management measures (Section 5.3.9)			
Two-year cycle for framework adjustments (Proposed action)	A range of management measures could be revised through framework actions taken every other year	Would allow the Council and NMFS time to administer a more complicated area rotation management system and to develop future plan amendments when necessary. May reduce administrative costs arising from frequent extensive analysis, review, and approval currently associated with framework adjustments.	Same as for DSEIS.
Adjustments for broken trips (Proposed action)	DAS charged to vessels fishing under area access programs could be adjusted if a trip is terminated early	Will reduce business risk of fishing in re-opened rotation management areas. Will decrease the need and/or size of an in-season adjustment to re-allocate unused trips, and would improve safety.	Same as for DSEIS.
Notice action to establish closed areas	A process would be established to allow area management measures to be imposed through notice in Federal Register (either closed to protect small scallops or reopened to harvest large scallops).	Would provide a mechanism to quickly close areas where small scallops occur.	Procedural details needed more work to be effective.
Annual specifications	DAS and TACs could be revised annually through annual specifications	Would allow for routine, annual management adjustments (i.e. DAS and TAC specifications).	Not needed as long as the Council could initiate an ad hoc framework adjustment when necessary.

Management alternative	Description	DSEIS rationale	FSEIS rationale
Scallop fishing year	The starting date for the scallop fishing year would be revised to fall between July 1 and Sept 1	Would streamline annual adjustments to take into account the most recent annual resource survey data. Would reduce the amount of duplicative analyses that are currently required for framework adjustments, which otherwise could cause delays in implementation beyond the start of the fishing year.	Strong industry opposition due to business risk required to reserve DAS allocations to the second half of a new fishing year, when fishing is most productive.
Increase DAS carryover	The number of DAS that can be carried over from one fishing year to the next would be between 10 and 30 DAS	Would reduce the business risk associated with changing the fishing year to start in mid-summer, if vessels are caught in a situation where needed.	Adjustment was not needed to mitigate fishing year change.
Status quo	Maintain annual review of fishing measures	The Council would select this alternative if it determined that no new measures are necessary to improve the management adjustment process.	Council determined that additional measures are necessary, consistent with purpose and need of Amendment 10.

Under the Northeast Multispecies FMP, large areas are closed to “all gears capable of catching groundfish” to avoid disruptions in spawning and to promote rebuilding of depleted groundfish stocks. Due to the groundfish bycatch levels observed in the early 1990s and observations of scallop vessels targeting groundfish with scallop dredges, this 1994 action included scallop fishing gear. Amendment 10 includes several alternatives that will require management action under the Northeast Multispecies FMP primarily to allow scallop fishing access to these groundfish closed areas and to enable certain aspects of area rotation. These measures are intended to reduce and minimize groundfish bycatch and/or impacts on groundfish stocks potentially through incidental finfish catch TACs, possession limits, and areas closed to scallop fishing to prevent bycatch.

Framework Adjustment 16 will be a Scallop FMP action to re-estimate the scallop TACs and trip allocations using new survey data that will become available. In addition, it will consider modifying the access boundaries approved in Amendment 10 to make them consistent with the habitat closure boundaries that the Council approved in Multispecies FMP Amendment 13, relying on data and analyses in the two amendments. Framework Adjustment 39 is a companion Multispecies FMP framework adjustment to consider and evaluate alternatives to minimize finfish bycatch and impacts on groundfish resources. The initial framework meeting for both frameworks (developed as one document and action) was in November 2003. A final framework meeting is planned for late February 2004, with implementation anticipated in late summer or early fall, 2004.

The following alternatives related to controlled access options in Amendment 10, but are related to or may require management action under the framework adjustment process include the following alternatives to reduce, minimize, or monitor groundfish bycatch. Some of these alternatives may be included in Framework Adjustment 16/39 to allow access to scallops beds in the groundfish closed areas (see discussion below).

Georges Bank access to groundfish closed areas	Section 5.3.2.8	Page 5-81
Increase minimum twine top mesh to 10-inches in all or select areas, and/or specify how twine tops should be installed in dredges	Section 5.3.5.3	Page 5-118
Gear modifications (to reduce bycatch) based on recent research	Section 5.3.5.4	Page 5-120
Area-specific possession limits for some finfish species	Section 5.3.5.5	Page 5-121
Area-specific TACs for some finfish species	Section 5.3.5.6	Page 5-121
Area-specific seasons to avoid bycatch	Section 5.3.5.7	Page 5-122
Long-term indefinite closures to avoid areas with high bycatch levels	Section 5.3.5.8	Page 5-125
Adequate observer coverage (to estimate bycatch) and funding by day-at-sea or TAC set aside	Section 5.3.7.1	Page 5-1345-137
Require vessels to make daily reports of vessel trip report (VTR) data through the vessel monitoring system (VMS)	Section 5.3.7.4	Page 5-93
Require all limited access vessels to operate a vessel monitoring system (VMS)	Section 5.3.7.6	Page 5-138

While the draft amendment and DSEIS were open for public comment, the Council intended to develop a companion framework adjustment to evaluate and recommend measures to minimize finfish bycatch during a Georges Bank closed area access program. Fishing by gear capable of catching groundfish is otherwise prohibited under current regulations and would remain prohibited according to Multispecies FMP Amendment 13, which is under review. The Multispecies FMP closed these areas to enhance rebuilding and protect spawning activity, but under special access programs may allow certain types of fishing under the Council's Northeast Multispecies FMP.

Although Amendment 10 analyzed the effects of periodic, rotational scallop fishing access with boundaries that existed during the 2000 fishing year (Framework Adjustment 13 and a preferred alternative in Amendment 10), the Council was unable to properly consider alternatives to minimize finfish bycatch during the proposed access. Due to the uncertainties and workload issues associated with a groundfish amendment simultaneously under development (Amendment 13), the Council was unable to initiate Framework Adjustment 16/39 until November 2003. As a result, the Amendment 10 comment period and the Council's choice of final alternatives was completed before the companion framework adjustment (16/39) began.

As a result of the delayed start of Framework Adjustment 16/39 and the plan for area rotation in Amendment 10, the proposed scallop management and limited access scallop fishing allocations in Amendment 10 are calculated and analyzed with and without access to the Georges Bank closed groundfish areas, in Section 5.1.2.1. Initially, Amendment 10 proposes to allocate open-area DAS as if there will be access to the groundfish areas during the 2004 fishing year and the fleet will be able to harvest optimum yield at the target fishing mortality rate.

If Framework Adjustment 16/39 is approved and allows access to these closed areas, then full-time scallop fishing vessels would receive 36 additional DAS for three total trips to the Nantucket Lightship Area and Closed Area I during 2004 (see Table 8; subject to revision by Framework Adjustment 16 using 2003 survey data). If this approval does not occur, more fishing effort would be needed in regular, open fishing areas to achieve the resource-wide fishing mortality target ($F=0.2$). Thus if Framework Adjustment 16/39 is not approved or does not allow access to the Georges Bank closed groundfish areas, the full-time open area DAS allocations would increase by 20, totaling 62 DAS in 2004. Should Framework Adjustment 16/39 not be approved, Amendment 10 also estimates and analyzes the effects of higher open area DAS allocations in future years as well as the allocations and effects with access. Biological (Section 8.2.3), habitat (Section 8.5.4.14), and economic (Section 8.7.2.3) effects of these allocations on the scallop resource, other marine resources, and the scallop fishery are analyzed in Amendment 10 with and without access.

The FSEIS (this document) contains references to implementation of approved measures at the beginning of the fishing year on March 1, 2004. However, given the timing of the action, it now appears unlikely that implementation will occur on March 1, 2004, if Amendment 10 is approved. In cases where March 1, 2004 is anticipated, actual implementation will occur following the publication of the final rule for Amendment 10, along with appropriate delay in effectiveness under the Administrative Procedures Act, if the measures are ultimately approved by the Department of Commerce.

Also, several sections of the amendment and FSEIS contain references to a "Proposed Overfishing Definition". This proposal for a new overfishing definition was considered and analyzed in the DSEIS, but ultimately the Council decided to modify the status quo overfishing definition instead of taking an entirely new approach. Since this original alternative overfishing definition did not have another name, it may be confused with a proposed action that the Council approved in Section 5.1. Rather than rename the alternative overfishing definition that was under consideration, the existing nomenclature was retained and Section 5.1.1 clearly identifies that the proposed action includes the status quo overfishing definition with changes in the biological reference points.

The description of the alternatives and the comparative analyses of their impacts are presented in order to comply with multiple legal requirements including those specified within the National Environmental Policy Act (NEPA), the Regulatory Flexibility Act (RFA), Executive Order 12866, the Endangered Species Act (ESA), and the Marine Mammal Protection Act (MMPA). This document serves as the Final Supplemental Environmental Impact Statement (FSEIS) required by NEPA and as the Preliminary Regulatory Economic Evaluation (PREE). These analyses are presented for public comment, as required by those laws. NMFS initiated Section 7 consultation for the Atlantic Sea Scallop FMP during the development of Amendment 10. Based on existing data, NMFS has concluded that the continued operation of the scallop fishery may adversely affect but is not likely to jeopardize the existence of Kemp's ridley, loggerhead, green, and leatherback sea turtles. As required in the biological opinion, NMFS will collect more data and evaluate the potential for sea turtle and scallop gear interactions. The biological opinion is available from NMFS (Gloucester, MA) or from their web site at <http://www.nefsc.noaa.gov/ro/doc/nero.html>.

This document contains a description of the final alternative (Section 5.1), descriptions of the preferred and non-preferred alternatives that were considered in the DSEIS (Section 5.3), an analysis of the cumulative effects of past and present management actions (Section 7.1.2), and an analysis of direct and indirect impacts of the final, preferred, and non-preferred alternatives (Section 8.0). Section 8.1 summarizes these impacts and assesses the cumulative impacts of these actions, as well as highlights cumulative effects of non-fishing activities that are likely to have effects on valuable environmental components.

Finally, several of the maps and figures in this document were originally created in color. However, the printed document was not able to reproduce the color format of these figures and, therefore, some figures are somewhat difficult to interpret. Readers and reviewers interested in examining the figures in their original color format are referred to <http://www.nefmc.org/documents/scallops/> or they may request copies of specific color figures from the Council office.

Because of the multiple purposes of this document, the crosswalk below is intended to help the reader identify the portions of the document that satisfy specific legal requirements. Readers may find this supplemental TOCs related to specific applicable laws affecting fisheries management useful in identifying how the document satisfies the content requirements of individual laws.

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