

9.0 INITIAL REGULATORY FLEXIBILITY ANALYSIS (IRFA)

9.1 Introduction

The purpose of the Regulatory Flexibility Analysis (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 proposed action would have a “significant economic impact on a substantial number of small entities.”

The main elements of the RFA are fully discussed in several sections of the Amendment 10 document, and the relevant sections are identified by reference to this document.

Problem Statement and Objectives

The purpose and need for management (statement of the problem) is described in Section 4.0 of the Amendment 10 document. The management objectives are enumerated in section 4.2 of this document.

Management Alternatives and Rationale

The proposed action is described in Section 5.1 of the amendment document. Alternatives to the proposed action are summarized in Section 5.3. Economic impacts are examined in Section 8.7.

9.2 Determination of Significant Economic Impact on a Substantial Number of Small Entities

9.2.1 Description of the small business entities

The RFA recognizes three kinds of small entities: small businesses, small organizations, and small governmental jurisdictions. It defines a small business in any fish-harvesting or hatchery business as a firm that is independently owned and operated and not dominant in its field of operation, with receipts of up to \$3.5 million annually. The vessels in the Atlantic sea scallop fishery could be considered small business entities because all of them grossed less than \$3 million according to the dealer’s data for the 2001 and 2002 fishing years (unreported NMFS data). Table 288 shows that annual scallop revenue averaged about \$615,000 to \$665,600 per full-time vessel, \$194,790 to \$209,750 per part-time vessel, and \$14,400 to \$42,500 per occasional vessel during the 2001 and 2002 fishing years. Total revenues per vessel, including revenues from species other than scallops, exceeded these amounts, but were less than \$3 million per vessel. Table 289 shows the revenues per full-time vessel by tonnage class.

The proposed regulations of Amendment 10 would affect vessels with limited access scallop and general category permits. Section 7.1 (Description of the Fishery) and Section 8.8 (Social Impacts) of the Amendment 10 document provide extensive information on the number, the port, the state, and the size of vessels and small businesses that will be affected by the proposed regulations. The information on the number and characteristics of vessels by the region of their principal port and permit category are also shown in Table 287. The current information on the number of scallop permits for the years 1994 to 2003 are provided in Table 286. According to the recent permit data, there were 278 vessels that obtained full-time limited access permits in 2003, including 32 small-dredge and 16 scallop trawl permits. In the

same year, there were also 32 part-time and 16 occasional limited access permits in the sea scallop fishery. In addition, 2,257 permits were issued to vessels in the open access General Category. These numbers could increase as the fishing year progresses. Therefore, the proposed alternatives of Amendment 10 are expected to have impacts on a substantial number of small entities.

9.2.2 Determination of significant effects

The Office of Advocacy at the SBA suggests two criteria to consider in determining the significance of regulatory impacts, namely, disproportionality and profitability.

The disproportionality criterion compares the effects of the regulatory action on small versus large entities (using the SBA-approved size definition of "small entity"), not the difference between segments of small entities. Amendment 10 is not expected to have significant regulatory impacts on the basis of the disproportionality criterion for the following reasons:

1. The majority of the permit holders in the sea scallop fishery are considered small business entities.
2. The alternatives included in this Amendment, including the proposed action and the nonpreferred alternatives, propose to allocate area-specific DAS allocations and controlled access area trips in the same proportion for each category of the limited access scallop permit compared to the no-action levels. The resulting changes in profits, costs, and net revenues are not expected to be disproportional for small versus large entities.
3. The proposed action and the nonpreferred options are not expected to place a substantial number of small entities at a significant competitive disadvantage relative to large entities.

The profitability criterion will apply if the regulation significantly reduces profit for a substantial number of small entities. The impacts of the final proposed alternatives on revenues, costs, and profits of an average vessel are summarized in Section 8.7.2.4 and were contrasted with the estimated values for no action. All the economic values presented in this section are expressed in 1996 constant dollars. Section 8.7.3 provides an economic analysis of the broad-range alternatives for improving the yield from the scallop stock from a long-term perspective. The analyses include scenarios considered by the Council during the development of Amendment 10 with various rotational and non-rotational options, fixed or adaptive area boundaries, mechanical and adaptive rotations with different closure duration or maximum biomass closed, and with 3.5-inch or 4-inch rings. The short-term economic impacts of various measures, including rotation, area-access options, overfishing definitions, habitat closures, trip limits, and other proposed measures, are analyzed in Section 8.7.4.6, including the impacts on small business entities and on an average vessel in Section 8.7.4.8. These results are summarized below.

9.2.3 Economic impacts of the proposed measures (i.e., final alternatives)

Section 5.1 describes the final alternatives proposed by the Council and discusses the rationale for the Council's choice of each component of the proposed option. The final alternatives include rotation with 4-inch rings, habitat closures, controlled access to the protected areas of Georges Bank and Hudson Canyon, area-specific DAS schedules, trip limits and one-to-one exchange controlled access trips. As a part of the rotation system, Amendment 10 will also close an area in the Mid-Atlantic, known locally as "the elephant trunk", where small scallops are abundant. The rationale and impacts of this closure is discussed in Section 5.1.3.3. The economic impacts of the final alternatives are analyzed in Section 8.7.2. Section 8.7.2.4 provides an analysis of the combined economic impacts of these measures on vessel revenues, costs, and gross profits with and without access to the Georges Bank groundfish areas and

relative to no action. “No action” is defined as the continuation of the Amendment 10 DAS schedule with no access to the Georges Bank groundfish areas. The combined economic impacts of the proposed option will be positive on the majority of small business entities in scallop fishing industry. The following provides a summary of the impacts of each individual measure on economic benefits and compliance costs, although the numerical results were estimated and presented for combined impacts only:

- **Annual DAS allocations**: Amendment 10 will allocate annual DAS access vessels to achieve optimum yield from the scallop resource (Section 8.2.3). The DAS allocations will be area-specific, and one-to-one exchange will be allowed between vessels for the controlled access area trips. The initial DAS allocations and catch levels proposed by this amendment will greatly exceed no-action levels because the condition of the scallop resource allows higher fishing activity and landings at sustainable levels. As a result, vessel landings, revenues and gross profits will increase compared to no action in the short-term, as discussed below in combination with the access options.
- **Rotation with area access**: The proposed area-rotation alternative with access to the Georges Bank groundfish areas will have positive economic impacts on vessels compared to the no-action levels in the short-term from 2004 to 2007. Gross revenues will increase by over 50% during the period from 2004 to 2007. The average gross profits per year are estimated to be positive during these first four years and to exceed the no-action levels by approximately \$72,000 during the period from 2004 to 2007. The impacts will be positive over the next four years (2008-2011) as well. Therefore, if all vessels were able use their area-specific DAS allocations, and if access were provided to the Georges Bank groundfish areas by Framework 16, the impacts on vessel revenues and profits would be positive both in the short- and long-term.
- **Rotation without access**: Area rotation without access will increase estimated gross and net revenues for the first three years, from 2004 to 2006, but will have negative impacts starting as early as 2007 (Table 292) if access to the Georges Bank groundfish areas is not approved. With this scenario, annual average gross revenues would also decrease by 4% per year during the period from 2008 to 2011. Gross profits are estimated to be negative in 2007 and also over the period from 2008 to 2011, whereas with no action they would be positive. In short, the proposed rotation without access to the Georges Bank groundfish areas will have a negative impact on revenues and profits compared to no action after the first 3 years of implementation (Section 8.7.2.4).
- **Distributional impacts of area rotation**: Although the proposed regulations are expected to benefit most vessels in the scallop fishery by increasing the productivity of the scallop resource, these benefits may not necessarily be equally distributed. Area rotation and closures could have differential effects on fishing families and communities, on scallop vessels, and on processors and ports. The proximity of these entities to open and controlled access areas, as well as to the areas closed for fishing because of rotation and/or habitat protection, may result in differential impacts from area rotation. These impacts may also vary according to the mobility of the vessels in accessing alternative fishing areas. Section 8.7.2.3 provided an empirical analysis of the vessels that could be impacted negatively from area-specific DAS allocations for the controlled access areas and indicated how the one-to-one exchange provision for the access allocations could mitigate some of these impacts. A comprehensive discussion of the distributional impacts from area rotation, from alternative effort allocation and habitat closures, and from other measures included in this Amendment is also provided in Section 8.8, Social Impact Assessment. These impacts are discussed below.

- **Impacts of controlled area trips and area-specific DAS allocations**: The economic impacts discussed above assumed that all vessels would be capable of fishing in the controlled access areas. There is uncertainty, however, regarding the number of vessels that will be able to fish in those areas or that will be able to trade their trips in one access area for trips to their preferred access area. The analysis presented in Section 8.7.2.3 showed that although the majority of the full-time vessels that were active in 2002 previously fished both in the controlled access areas of Georges Bank and Hudson Canyon, about 9% of them never fished in the Mid-Atlantic controlled access areas, another 17% never fished in the Georges Bank groundfish areas, and about 8% never fished in any of these areas. These three groups of vessels constitute about one third of the full-time vessels that were active in the 2002 fishing year and will be allocated trips in areas that they have not fished in the past.

When the analysis was conducted, however, based on a sample of vessels that were active during all the years when access was provided to these areas, the percentage of full-time vessels that did not access one or more of the controlled access areas in Georges Bank and the Mid-Atlantic was reduced to 22%. Therefore, the proportion of vessels that could be affected by area-specific DAS allocations ranges from one-fourth to one-third of the full-time fleet.

These vessels could face negative economic impacts from area-specific trip and DAS allocations if they are unable to take their trips to specific controlled access areas due to the limitations in vessel size and equipment, safety concerns, or cost factors. Although the provision that allows one-to-one exchange of controlled access area trips may mitigate these impacts, some vessels may be unable to find other vessels to exchange their allocations for the areas they would be able to fish. As shown in Table 293, controlled access revenue is estimated to constitute 45% the total scallop revenue in 2004 if no access is given and 66% of the total scallop revenue if access is provided to the Georges Bank groundfish areas. The same proportions in 2005 are estimated to be about 35% for no access and 60% with access (Table 293). The scallop revenue from even one access area trip could amount to more than 10% of the annual revenue in 2004 without access and close to 10% of the annual revenue with access to the Georges Bank groundfish areas (Section 8.7.2.4). Therefore, the loss of revenue and gross profits from controlled access trips could be significant, even if one or two of these trips could not be taken.

In addition, because controlled access trip allocations cannot be used in open areas, overall fishing costs could increase even for a vessel that has the capability to fish in all areas. This is because if some vessels did not fish in some of the controlled access areas, it could be either because accessing them was more costly or involved some intangible costs as compared to fishing in the open areas of their choice.

- **One-to-one exchange of controlled access area DAS allocations**: To mitigate the adverse impacts from area-specific controlled access trips discussed above, the Council's proposed action includes a provision that allows for one-to-one exchange of controlled access area DAS allocations. This is expected to provide flexibility to vessels regarding which areas to fish, thereby reducing the possibility of revenue loss to those vessels that are unable to access some offshore areas due to their capacity constraints. Although, there will be some transaction costs associated with the exchange of the controlled area trips with another vessel, such as notifying NMFS of such exchange, the net impacts of exchange should result in a reduction in overall costs of fishing if a vessel is engaged in such a transaction. Administrative and enforcement costs associated with the exchange of controlled access trip

authorizations should be relatively modest when compared with the potential improvement in controlled access allocation programs and reduced economic costs to the industry.

- **Habitat alternatives**: Amendment 10 proposals include measures that minimize the adverse effects of fishing on EFH, habitat and bycatch to the extent practicable. The Council's proposed habitat closure alternative-6 is described in Section 5.3.4.6. The economic impacts of the final alternatives analyzed in Section 8.7.2.4, which include analysis of impacts on vessels and small business entities, consist of the combined impacts of area rotation, habitat closures, 4-inch rings, area-specific DAS, and trip limits with and without access to the Georges Bank groundfish areas. Since the areas closed to fishing under habitat alternative 6 will also remain closed under the no-action alternative, Amendment 10 will have no additional economic impacts on vessel revenues and profits with this closure compared to no action. The areas within the boundaries of habitat closure 6, however, contain valuable scallop biomass, and as with any closure, they represent a potential revenue loss to the scallop fishery. For a further discussion of this, see below for the summary of the impacts with alternative habitat closures (Section 9.2.4).
- **Possession limits**: The proposed 18,000 lb. possession limit with 12 DAS trade-off results in maximum annual net revenues per vessel from the controlled access areas in 2004 as well as from 2004 to 2007 as an average of these years. This limit is slightly lower than the status quo trip limit of 21,000 lb. and could constrain larger vessels with the capacity to land more scallops per trip. Because of the TAC constraints and rounding method used in allocating trips to each limited access permit holder for each area, however, larger possession limits at higher DAS allocations result in a smaller number of trips per vessel. As result, a 21,000-lb. or larger possession limit generates lower average annual net revenues for 2004–2007, compared to the other possession limit alternatives (Table 3, Final Alternatives). On the other hand, it could be difficult for some vessels to land the possession limit within 12 days. In order to accommodate for this difficulty and to reduce the costs of controlled area trips to the vessels, the Council proposed that the limited access vessels should be charged no more than 12 days even if the actual trip length was longer.
- **Broken trip exemption**: Amendment 10 proposes a new broken trip procedure for controlled access area trips terminated prematurely due to an emergency, poor weather, or any other reason deemed appropriate by the captain as described in Section 5.1.2.4. This provision will allow a vessel to fish at 1,500 lb. per day for the remaining days of a broken trip. Therefore, this action will have positive economic impacts on vessels by reducing fishing costs and the losses from broken trips, and it will provide more incentive for vessels to take their controlled access trips. The vessels will need to submit a trip termination notice via VMS, and an application for DAS/trip adjustment with actual DAS use and landings. The costs of filling these applications are expected to be minimal, and be outweighed by the benefits from the broken trip adjustment.
- **Part-time and occasional vessels**: Although the economic analysis in Sections 8.7 was conducted for an average full-time vessel in the scallop fishery, the impacts will be similar to the impacts discussed for full-time vessels. This is because part-time and occasional DAS allocations will be adjusted in the same manner, proportionally to their allocation relative to full-time DAS allocations. These vessels will also be allocated trips in the controlled management areas of Georges Bank and Hudson Canyon and will have the flexibility to use these trips in any access area, provided that the number of trips does not exceed the maximum

number of trips per vessel assigned to that area. In general, rotation and controlled access will have positive impacts on these vessels, at least in the short-term.

- **Impacts of general category rules:** The proposed option would prohibit vessels with limited access scallop permits from targeting scallops under the general category rules when not fishing on a scallop day-at-sea. The economic impacts of these general category rules were examined in Section 8.7.2.5. Although one-third of the limited access vessels landed some scallops under the general category rules during the 2002 fishing year, only 7% of these vessels derived more than 1% of their revenues from the general category trips. Therefore, this action will have an insignificant impact on the majority of the limited access vessels. Furthermore, this rule is expected to benefit most limited access vessels, since an increase in general category rule trips may lead to a further reduction in the DAS allocations in the future, which will penalize those vessels that do not take any general category trips. For these reasons, the Council did not select the status quo alternative of allowing the limited access vessels to continue targeting scallops under general category rules.

Vessels holding general category scallop permits and limited access scallop vessels fishing under a multispecies or monkfish DAS would be subject to the 400 lb. scallop possession limit in open scallop fishing areas and reopened controlled access areas, including those reopened for species other than scallops. These measures will have positive economic impacts on these vessels by increasing their scallop revenues. Furthermore, Amendment 10 does not require VMS onboard for general category scallop vessels, and thus does not impose any new costs on these vessels.

- **Gear restrictions:** The gear requirements are discussed in Section 5.1.4. Increasing the minimum ring size to 4-inches is expected to have positive economic impacts. Larger rings allow more small scallops to escape capture, reducing discard mortality and improving yield. Improved yield in the future years will increase scallop revenues. In addition, gear efficiency for large scallops would increase, reducing the tow time needed to catch a possession limit or an amount that the crew can shuck. This in turn could result in lower operational expenses. Delayed implementation in regular, open fishing areas for 6 months until September 1, 2004 will allow suppliers to increase production to supply the fleet with new gear. Also, scallop vessels will be able to use existing gear for a phase-in period, replacing the old gear with new rings as it wears. Therefore, vessels may have low compliance cost from this requirement if they are able to use existing gear in open areas for the first six months after implementation. In addition, scallop vessels with limited access and general category permits must have twine tops with mesh no less than 10-inches, diamond or square mesh. Scallop vessels on controlled access trips have had to use 10-inch mesh twine tops since 1999, so the gear is readily available and can be easily adopted. A new twine top is relatively inexpensive and is frequently replaced due to wear.
- **Data collection and monitoring requirements, and TAC set-asides:** These requirements, including industry surveys and scallop research, are discussed in Section 5.1.8. Vessels with sea scallop fishing permits may be required by the Regional Administrator to carry an observer onboard. Increased observer coverage is needed to improve the estimated amount of finfish bycatch and to determine the level of sea turtle takes in the scallop fishery. The compliance costs of this requirement on vessels will be minimized, however, through the TAC and/or DAS set-asides that will allow compensation to vessel owners and crews that have paid for observers. NMFS will also initiate a cooperative industry survey to provide information for rotation area management. Vessel compensation and direct administrative costs of this survey will be recaptured from a two percent set-aside to fund research and

resource monitoring. In short, although TAC/DAS set-asides will reduce part of the scallop revenue available to the scallop vessels, these funds will reduce the compliance costs for vessels by providing compensation for observer coverage. The scallop industry will also benefit from improved management made possible through research and surveys funded by TAC/DAS set-asides. Habitat research funded through these funds will improve information that could reduce habitat impacts and therefore, could eliminate the need for more conservative actions with adverse impacts on the small businesses in scallop industry.

- **Carry-over DAS:** The provision to carry over up to 10 unused open area days-at-sea from the previous year will provide flexibility to vessels about when and how long to fish, and therefore will reduce their costs and have positive economic and safety impacts (Section 5.1.2.3).
- **Bi-annual framework adjustment procedure :** As discussed in Section 5.1.9, framework process will have positive impacts on the scallop industry by adjusting the management actions to changing resource conditions. Bi-annual adjustment procedure will also reduce the uncertainty to scallop business operations from more frequent adjustments that was implemented in the past.
- **Proactive protected species program:** This program is expected to have positive impacts on the scallop fishery by helping to minimize the interactions between scallop gear and protected species and therefore, by reducing the need for more conservative actions that could have negatively impacts on the small businesses in scallop industry. (Section 5.1.7).

9.2.4 Comparison of the proposed measures with the non-selected alternatives, and mitigating factors

The RFA requires consideration of alternatives that accomplish the stated objectives of the applicable statutes and that minimize any significant economic impacts on small entities. According to the NMFS guidelines (Revised August 16, 2000). The IRFA should identify any significant alternatives that would minimize economic impacts on small entities, if such alternatives exist. If there is an alternative with less of an impact on small entities that meets the stated objectives, the IRFA should explain why the preferred alternative was selected over the alternative with lower impact. A rationale should be provided to explain any unavoidable adverse effects on small entities that are necessary to achieve the objectives.

The description of the management alternatives and rationale was provided in Section 5.0 of Amendment 10. Section 5.1 describes proposed action and discusses the rationale for the individual measures included as a part of the proposed action, whereas, Section 5.2 describes No Action and Status Quo options. Section 5.3 identifies and discusses the rationale for the alternatives to the proposed measures.

This section summarizes the economic impacts of the proposed option in comparison with the significant alternatives considered but not selected by the Council. This comparison could be done from two perspectives: 1) Proposed option is evaluated as a set of integrated measures, including effort control, area access, gear control, trip limits, bycatch reduction, and habitat protection measures; 2) The economic impacts of the individual components of the proposed option are compared to alternatives to the extent it is possible to separate the impacts of each measure from others. Validity of the second approach could be questionable, however, since the individual measures were selected by the Council to balance and complement the impacts of other measures, so that when they are implemented together they achieve

the fishing mortality, habitat protection, and bycatch reduction objectives of the plan at the least practicable economic cost to the scallop industry. Nevertheless, the economic analyses from these two perspectives were provided in several subsections of Section 8.7, and relevant sections are referenced and the results are summarized below.

The impacts of the proposed option were compared to that of no action with and without access to the Georges Bank Groundfish areas in Section 8.7.2. Although these results were summarized above, in Section 9.2.3 in comparison to no action, Sections 8.7.2.1 and 8.7.2.4 compared the impacts of the proposed option also with “status quo”, as an alternative to the proposed option. “Status quo” is defined as the adjustment of DAS allocations in accordance with the fishing mortality targets of Amendment 7 and current conditions of scallop resource, and includes 3.5-inch rings and no rotation (see Section 5.2 of Amendment 10 for further description of these options). The results showed that the combined economic impacts of the final alternatives, including access to Georges Bank groundfish areas, will be positive on the majority of the scallop vessels as compared to both no action and status quo alternatives. Without access, however, economic impacts from the proposed option could be negative after the first three years of implementation compared to no action. Status quo option would also have lower adverse impacts than Amendment 10 proposed action without access, both in the short- and the long-term. Georges Bank groundfish areas are a part of the rotational management areas, but access to these areas requires implementation of a joint Groundfish/Scallop framework action to allow access to a groundfish closed area and minimize impacts on finfish bycatch during the access program. The Council held the first framework meeting for Framework Adjustment 16/39 at its November 2003 meeting, which if approved will provide controlled access to the Georges Bank groundfish areas in 2004. In short, if this framework is approved, and access is provided to Georges Bank groundfish areas, the combined economic impacts of the measures included in the proposed option will be positive on small business entities in the scallop fishery. Therefore, no alternatives that minimize the adverse impacts could be identified in such a case.

In addition to the no action and status quo alternatives, other alternatives considered but not selected by the Council are described in detail in Section 5.3 along with the rationale for each alternative. Section 5.3.2 identifies and discusses the rationale for the alternatives to improve scallop yield. The long-term economic impacts of these alternatives on landings, revenues and producer benefits were analyzed in Section 8.7.3. The significant alternatives to rotational area management included no-rotation with 3.5-inch or 4-inch rings and various rotational area options with fixed area boundaries, mechanical and adaptive rotations with different closure durations or maximum biomass closed, and with 3.5-inch or 4-inch rings. No rotation options include the ‘status quo’ option with DAS allocations set at $F=0.2$, with no access to the groundfish Areas, no new habitat closures and 3.5-inch rings. Another no rotation option included 4-inch rings with uniform fishing mortality applied in all areas. The rotational alternatives included mechanical rotation and adaptive rotations with fixed or variable closure durations, various criteria for area openings and maximum biomass closed, fixed or flexible area boundaries, and rotation with 3.5-inch or 4-inch rings.

The detailed results for the rotational options are presented in Table 302 to Table 310, and the results are summarized in Section 8.7.3.1. The economic impacts on vessels and small business entities will be similar to those impacts analyzed on a fleet-wide basis. The final alternative proposed by the Council includes adaptive rotation with flexible area boundaries based on frequent surveys of the resource. The results showed that the proposed option would have positive impacts on the scallop industry compared to no rotation alternatives. This is because, it protects small scallops during their highest growth rates, and more accurately determine areas that should be closed, improving the yield and fishing efficiency. The proposed rotational option will also have positive impacts compared to the other rotational options with mechanical rotation and fixed area boundaries, and also compared to adaptive

closures with more strict growth criteria¹¹⁰. In fact, these later alternatives may reduce the economic benefits slightly in the short-term compared to the proposed adaptive rotation. The economic benefits of the flexible area boundary option selected by the Council will be greater than the fixed area boundaries because closure areas could be determined optimally based on recent surveys. This option also makes it possible to devise the area boundaries so as to minimize the social and economic impacts on fishing communities located close to the controlled access and closed areas. The results also show that rotation combined with 3.5-inch rings may result in slightly higher economic benefits compared to the rotation with 4-inch rings during the first 10 years. The economic benefits of the 4-inch rings will, however, exceed the level that could be achieved from using 3.5-inch rings over the longer-term. Because of these reasons, the Council rejected no-rotation and the alternative rotation options as well as using 3.5-inch rings in favor of the proposed adaptive rotation with the 4-inch rings. Other factors in Council's decision are regarding gear changes are discussed below. Further discussion of the rationale for the proposed option and alternatives were provided in Sections 5.1 and 5.3.

Even though collective economic impacts of the final measures proposed by Amendment 10 are expected to be positive (compared to no action and status quo) with access to Georges Bank groundfish areas, some individual components of the proposed option, such as gear restrictions and area specific DAS allocations, may increase the short-term costs for some small business entities. The following provides a discussion of the individual measures in comparison with the significant alternatives.

For some components, no action and/or status quo constitute the main alternative to the proposed option. These include the proposed gear changes, broken trip exemption, carry-over days, general category rules regarding the prohibition of limited access vessels, bi-annual framework adjustment procedure, and proactive protected species program, the measures with mostly positive impacts. The discussion provided above in Section 9.2.3, summarized the economic impacts of these actions, which explained why Council selected them instead of the alternative status quo options. Also, Sections 5.1 through 5.3 provide comprehensive discussion on these proposed measures and alternatives. These analyses will not be repeated here except when needed for purposes clarification. However, the impacts of gear changes are discussed in more detail below and alternatives other than status quo and/or no action are also summarized.

Again, the proposed option, as a collection of all individual measures, including the 4 inch rings, will increase economic benefits for the small business entities compared to the no action or status quo with 3.5 inch rings. When analyzed in isolation from other measures (such as DAS allocations, rotation and access) included in the proposed option, however, 4-inch rings may have some negative impacts in the short-term compared to using 3.5-inch rings, even though in the long-term their benefits exceed 3.5 inch rings. For example, the analysis provided in Section 8.7.3 rotation for 3.5-inch rings could result in higher landings and revenues during the short-term compared to 4-inch rings. However, compliance costs associated with 4-inch ring requirement will be modest since scallop vessels will be able to use existing gear for a phase-in period, replacing the old gear with new rings as it wears. The 4-inch rings are expected to have positive impacts on the scallop industry over the long-term by reducing mortality on small scallops, and as a result, improve yield and increase scallop revenues. Also, by increasing dredge efficiency for larger scallops, 4-inch rings will reduce bottom contact time, potentially reducing EFH and bycatch impacts.

Similarly, changing twine top mesh to a minimum of 10-inch may increase costs for some vessels, although this the extra cost is expected to be small. A new twine top is relatively inexpensive and is frequently replaced due to wear. In addition, scallop vessels on controlled access trips have had to use 10-inch mesh twine tops since 1999, so the gear is readily available and can be easily adopted. More

¹¹⁰ The proposed option is a revised version of the scenario ACR-3 examined in Section 8.7.3.

importantly, these gear changes are the expected to have positive impacts on EFH and will reduce bycatch. The 10-inch twine top will allow for greater escapement of many finfish species, thus minimizing bycatch. Therefore, these gear restrictions will help to prevent the need for more strict measures in the future with potential negative impacts on revenues and profits in the scallop industry. For example, without measures to keep bycatch low, it is unlikely that scallop vessels would be allowed to fish in Georges Bank groundfish areas.

In conclusion, the potential benefits from 4-inch rings and 10-inch twine top mesh are expected to outweigh the short-term costs. For these reasons, the Council rejected the status quo option, and selected to increase the ring size to 4-inch from 3.5-inch and minimum size for twine top mesh from 8-inch for the open areas to 10-inch. For further discussion on the rationale for these gear changes please see Section 5.1.4, and for their impacts on bycatch reduction. For rationale for why a mesh larger than 10 inch was not selected, see Section 5.3.5.2 and 5.3.5.3.

The proposed option includes using the status quo overfishing definition to determine the level of effort consistent with the fishing mortality reduction targets. The management using the alternative proposed overfishing definition was not accepted in this Amendment because it would allow fewer DAS allocations and would have negative economic impacts on the scallop industry in the short-term. Further discussion on the rationale for status quo and alternative overfishing definitions are provided in Section 5.1.1 and 5.3.1.1. The economic impacts of these alternatives are compared in Section 8.7.4.7.

As discussed above, the proposed option includes area-specific DAS allocations and controlled access trips, which may have negative economic impacts on some vessels by restricting their ability to fish in the least-cost areas, or assigning them trips in areas they are not able to fish. The current annual DAS allocation scheme, combined with DAS trade-offs for fishing in the controlled access areas, provided more flexibility to vessels regarding spatial fishing choices. The Council selected the area-specific DAS and trip option instead of the status quo alternative because the proposed allocation mechanism reduces the potential for overfishing of scallops in open areas, thereby increasing yield, scallop revenues and economic benefits. Further discussion is provided on the rationale for the proposed allocation mechanism in Section 5.1.2.1 and on the alternatives for allocating effort in Section 5.3.3. The proposed one-to-one-exchange of controlled access area trips is expected to mitigate the adverse impacts of area-specific DAS allocations on some vessels that have restricted capability to fish in some areas (see Section 9.2.3). One other rejected alternative to area-specific DAS allocations included adaptive area closures with output controls as discussed in Section 5.4.1. According to this alternative, area-specific TACs would be divided among the limited access permits and each vessel would be allocated area-specific pounds or standard bags. The Council rejected this individual quota proposal, with or without transferability, because at the time of discussions the US Congress had implemented a moratorium on new ITQ management plans, which would prevent adoption of such a plan by the Council.

Other alternatives to the Council's proposed habitat alternative 6 were habitat closure alternatives 1 to 9 as described in Section 5.3.4. The impacts on revenues and economic benefits from various habitat closures combined with various area access alternatives are examined in Sections 8.7.4.6 and 8.7.4.8 (Table 316 and Table 348). The results presented in those tables should be used to evaluate the relative impacts rather than the absolute impacts of these closures because they were produced using the proposed overfishing definition rather than the status quo definition selected by the Council. These relative impacts show that proposed habitat alternative 6 was ranked in the middle in terms of its impact on scallop revenues and economic benefits. In other words, other habitat alternatives, including alternatives 5a, 5c, 5d, 8a and 8b, would have less negative impacts on the vessel revenues as compared alternative 6. These and other habitat alternatives were not chosen because they were either impracticable due to the negative social or economic impacts for some fishing communities and/or did not quite meet the SFA requirements to minimize adverse impacts of fishing on EFH to the extent practicable. Further discussion on the

impacts and rationale for these alternatives were provided in Section 5.1.6 and Section 5.3.4. Sections 8.5.4.14 and 8.5 provide a comprehensive analysis of the habitat alternatives including practicability assessment.

The alternative Georges Bank area access options are described in Section 5.3.2.8 and their economic impacts are discussed in Section 8.7.4.4. Overall, all options that allow access to the Georges Bank areas increase revenues, gross profits and employment significantly. The Council rejected alternative access options based on the current analysis, and because the preferred alternative allows sufficient access with positive economic benefits for the fishing industry over the next few years, while refining the shape and location of potential habitat closures. Therefore, future framework adjustments or amendments might be needed to allow controlled access to other areas of the groundfish closed areas if they are not chosen as habitat closures.

The proposed option would prohibit vessels with limited access scallop permits from targeting scallops under the general category rules when not fishing on a scallop day-at-sea. The rationale for this option was discussed in Section 5.1.5 and the economic impacts are discussed in Section 8.7.2.5, and summarized in Section 9.2.3. The impacts of and the rationale for alternatives for general category management options are discussed in Section 5.3.6, and the economic impacts are summarized in Section 8.7.4.10. One alternative option required all general category permits to carry VMS all the time. In combinations with this requirement, alternative options also included setting hard TAC 's for the General category landings either for all or for only re-opened scallop areas. These alternatives were not selected by the Council in order not to increase compliance costs on these vessels.

The alternatives for reducing bycatch and bycatch mortality are described in Section 5.3.5. Area rotation, proposed gear changes including 4-inch rings and 10-inch twine top mesh are expected to reduce bycatch, although future framework actions could include area-specific finfish TAC, and/or possession limits for the scallop vessels as discussed in that section. As discussed above, the proposed measures for data collection, monitoring and scallop research will benefit scallop industry and the compliance costs for these measures will be minimized through funding with TAC set-asides. Section 5.1.8 provides more discussion on these measures, whereas the non-selected alternatives for improving data collection and monitoring are discussed in Section 5.3.7. The Council also rejected the change in the fishing year (Section 5.3.9.4) to avoid increasing business risk associated with vessels getting new annual DAS allocations after the end of the preferred fishing season (March – June) when scallop meat yield is highest. With a later fishing year (which the Council did not select), vessels would have needed to reserve DAS until the end of the alternative fishing year to take trips during this favorable seasonal period.

9.2.4.1 Indirectly affected industries

The overall impacts of the proposed measures on regional revenues and incomes will be higher than the estimates given above because of the indirect and induced impacts. Indirect impacts include the impacts on the sales, income, employment and value-added of industries that supply commercial harvesters, such as the impacts on marine service stations that sell gasoline and oil to scallop vessels (Table 368). The induced impacts represent the sales, income and employment resulting from expenditures by crew members and employees of the indirect sectors. An input/output analysis conducted by NMFS (1998) estimated that sales, income and employment multipliers for the sea scallop fishery in the Northeast Region. Table 368 provides a list of indirectly affected sectors for the sea scallop fishing industry. Each column of this table shows the estimated proportions of revenue by directly affected sectors on purchased inputs from each of the indirectly affected sectors. The increase in the scallop landings and revenues will have positive economic benefits on these sectors as well.

The sales multiplier for the coastal counties in the Northeast was estimated to be approximately 1.8 in 1997 for the scallop dredge and trawls. If the overall multiplier for both the Northeast and Mid-Atlantic regions were close to this value, then the increase in overall sales for rotation alternatives compared to no action, on average, would range from \$67 million with no access to \$104 million per year with access to the Georges Bank groundfish areas during the 2004-2007 period.

These estimates should be interpreted with caution, however, since the multipliers were estimated for 1997 including only the backward linkages associated with the harvest of sea scallops, in other words, the linkages between the sea scallop harvest sector and its suppliers. The forward linkages, or the value added to sea scallops from wholesalers and retailers, are not captured by these multipliers. A lack of detailed data on dealers and wholesalers, particularly the level of imports/exports associated with the purchase of sea scallops, prohibited a proper impact assessment of these sectors. Therefore, the total sales, income and employment impacts attributed to the commercial harvest of sea scallops are likely to be higher than those indicated here.

Section 7.1.1.2 describes the processing sector. The processors, while not directly subject to the regulations, are expected to be positively affected by the increase in the domestic harvest of sea scallops from rotation and area access.

Table 368. **List of Indirectly Affected Industry Sectors**

SIC Sector (cost categories)	Percentage of total gross revenues	
	Dredge vessels	Trawl vessels
Value added	37.76	51.0
Service stations (fuel, oil, travel)	23.39	13.48
Insurance carriers	7.26	7.96
Grocery stores (food)	7.03	2.55
Iron and steel forgings (gear - dredges)	7.33	4.25
Wholesale trade (supplies, mis. expenditures,	3.97	2.76
Ship repairing (repairs)	6.99	7.18
Manufactured ice	2.09	1.80
Water transportation (rent, docking)	1.90	0.86
Prepared fresh or frozen seafood (storage,	0.96	1.06
Accounting (professional)	0.50	1.10
Combination utilities (electric, gas)	0.18	0.35
Water supply (water)	0.15	0.05
Management services (office)	0.14	0.15
Motor freight transportation	0.11	0.05
Business associations (dues)	0.11	0.07
Banking	0.10	5.33
Advertising	0.03	0.0

9.2.4.2 Enforcement and compliance costs

See Section 10.0, RIR for a discussion of enforcement costs and summary of economic impacts above (Section 9.2.3) for a discussion compliance costs of individual measures.

9.2.4.3 Identification on Overlapping Regulations

The proposed regulations do not create overlapping regulations with any state regulations or other federal laws.