

Framework Adjustment 17 to the Atlantic Sea Scallop FMP

Environmental Assessment, Regulatory Impact Review, And Regulatory Flexibility Analysis

Proposing VMS Implementation For Vessels With General Category Permits

Prepared by the New England Fishery Management Council, in Consultation with the National
Marine Fisheries Service and the Mid-Atlantic Fishery Management Council

First framework meeting: November 16, 2004

Second framework meeting: February 1, 2005

Date Submitted: March 11, 2005

Cover Sheet

Abstract

Scallop management – Framework Adjustment 17

Framework Adjustment 17 was developed as an addition to Amendment 10 to improve the enforceability of the present 400 lb. scallop possession limit for general category scallop fishing and to improve safety by removing the automatic charge on Sea Scallop Access Area trips associated with the existing broken trip program. Also, the alternatives would improve collection of data that the Council needs to manage the fishery.

This document amends the Atlantic Sea Scallop FMP via Framework Adjustment 17. Alternatives associated with Framework Adjustment 17 focus on the VMS implementation for the general category scallop fishery and broken trip program for the limited access scallop fishery. Because the alternatives and effects are intertwined, the document and analysis of impacts (Environmental Assessment) have been combined into a single document that describes and analyzes the proposed alternatives.

1 EXECUTIVE SUMMARY

This framework adjustment was prepared by the New England Fishery Management Council (NEFMC), in consultation with the Mid-Atlantic Fishery Management Council (MAFMC) and the National Marine Fisheries Service (NMFS). Two MAFMC members sit on the NEFMC's Scallop Oversight Committee and vote on the alternatives that are recommended to the NEFMC for approval. In addition, the NEFMC uses a Plan Development Team (PDT) of scientists and an Advisory Committee of fishery experts. Four of seven PDT members are employed by the NMFS, either at the Regional Office in Gloucester, MA or the Northeast Fisheries Science Center in Woods Hole, MA. Five of the fifteen Advisory Committee members are from the Mid-Atlantic region.

1.1 Summary of Purpose, Need for Action, and Major Issues

The purpose of this framework action is to increase the enforcement's effectiveness in monitoring the present 400 lb. scallop possession limit for general category scallop fishing and to improve safety by removing the automatic charge on Sea Scallop Access Area trips associated with the existing broken trip program.

The vessels with general category scallop permits must abide by a 400 lb. possession limit for scallops. Many vessels that have general category permits and target sea scallops land in various ports, large and small, which makes it difficult to observe fishing activity and ensure that vessels comply with the possession limit. VMS is a tool that will help enforcement to locate general category vessels participating in the scallop fishery. As a result, VMS will improve enforcement's ability to deploy personnel and other assets in monitoring vessel offloads, thus will increase effectiveness in monitoring the possession limit. Moreover, the VMS is expected to act as a deterrent to illegal scallop landings because fishermen using VMS equipment will know that the fishing activity is being monitored and potentially chosen to monitor compliance. VMS could also have other benefits for the scallop management, in terms of better monitoring of the rotation management closed area boundaries. Data from VMS equipment has been extremely useful for evaluating the impact of the fishery on the scallop resource, and evaluating the effects of the fishery on sensitive fish habitat, finfish resources that are vulnerable to capture in the scallop fishery, and on sea turtle interactions. VMS could also provide additional safety features for vessels in case of an emergency.

This action is needed to ensure that the open-access general category scallop fishery does not grow out of proportion with historic amounts due to illegal landings in excess of 400 lb. possession limit. If the possession limit cannot be effectively enforced, fishing for scallops with a general category permit could become more attractive to fishermen that usually target other species. If there is no action, that is, there are no new regulations to prevent such an increase in fishing effort, scallop mortality could increase beyond the sustainable levels reducing the stock biomass for the scallop resource. As a result, the future yield and revenues from the scallop resource could decline, negatively affecting the vessels both with general category and/or limited access scallop permits. Alternatively, such an increase in fishing effort could cause the Council to adopt stricter regulations for vessels with general category and/or limited access scallop permits.

The purpose for elimination of broken trip charge is to improve safety at sea. The current broken trip provision allows a vessel to return early from a controlled access trip and have a large part of its automatic DAS charge and potential scallop landings applied to a future replacement trip. This rebate depended on the portion the 18,000 lb. scallop possession limit that was actually landed on the broken trip. For the broken trip, the vessel's annual allocation for a controlled access area was charged one DAS for each 10% of the scallop possession limit actually landed, plus two DAS.

In late December 2004, the F/V Northern Edge, a full-time scallop vessel taking a replacement trip sank while fishing in the Nantucket Lightship Area. At the present time it is unclear what factors contributed to the accident, although the decision to continue fishing despite poor weather may or may not have been influenced by the broken trip provision. While the facts are gathered, the proposed action in this framework adjustment would remove the standard two DAS charge on re-initiated trips and will provide a rebate to vessels that terminated an access area trip during the 2005 fishing year before implementation of Framework 17. This action is needed to improve safety at sea and to reduce the actual or alleged safety risks associated with broken trip exemption program.

The major issues addressed by the proposed action include the following:

- Improving law enforcement capabilities in monitoring the possession limit.
- Improving safety by removing the disincentive for vessel to use the broken trip exemption program.
- Preventing the general category scallop fishing from increasing the scallop mortality beyond sustainable levels because illegal landings.
- Minimizing the costs of VMS implementation on vessels with General category permits with incidental catches of scallops.
- Reducing the compliance costs for vessels while are in port.

1.2 Summary of Proposed Action

Section 4.0 of this document provides a description of the proposed action with the rationale for each measure included in this action. The direct and indirect impacts of the proposed action are analyzed in Section 6.0, and the cumulative effects, including the effects of past, present and reasonably foreseeable future actions are analyzed in Section 6.5. The proposed action and the impacts associated with each measure could be summarized as follows:

1. **VMS requirement:** Any General category vessel that has in possession or land more than an incidental amount of scallops, i.e., over 40 lb. scallop meats for commercial sale, in any trip will be required to have a VMS onboard (Section 4.1.1.1).
2. **Power-down while in port:** General category vessels with VMS will be allowed to log into and out of the fishery via VMS after offloading and after the vessel is secured to a fixed dock or mooring, unless required to keep VMS in operation by their permit in another fishery (Section 4.1.1.2).
3. **Elimination of automatic charge on broken trips:** Any limited access scallop vessel that is authorized to take a replacement trip for a Scallop Access are trip terminated early will be allowed to land the difference between the possession limit and the number of pounds landed on the broken trip for which the additional trip replaces (Section 4.2.1.1).
4. **Rebate of charges against replacement trips during the 2005 fishing year and prior to implementation of Framework Adjustment 17:** Access Area trips in the 2005 fishing year that are terminated early will continue to have the broken trip charge applied until Framework Adjustment 17 is implemented. Once Framework Adjustment 17 is implemented, vessels that terminated an access area trip before implementation will be able to take a second replacement trip to catch the amount of scallops lost as a result of the broken trip charge. (Section 4.2.1.2)

1.3 Summary of Alternatives to Proposed Action

Alternatives to the proposed action are described in subsections of Section 4 and a comparative analysis of the direct and indirect impacts of the alternatives is presented in Section 6. Rationale for each of the alternative is also provided with the description of the alternative. In addition, five alternatives that the Council considered and rejected are outlined in Section 4.1.4 without further analysis. The alternatives to the proposed VMS implementation include:

1. Alternative 1 that would require VMS on all vessels with general category permits. There were 2,554 permits issued and 210 of these are presently required to operate VMS due to participation in other fisheries (Section 4.1.3.1).
2. Alternatives 3a to 3c that would require any General category vessel that has in possession or land over a specific amount of scallops per trip, ranging from 100lb, 200 lb, and 300 lb (Section 4.1.3.2).
3. A no action alternative that would not require vessels with general category permits have a VMS onboard with the exception of those that choose the fish in Georges Bank access areas. No action alternative is equivalent to the status quo regulations for the general category scallop fishery (Section 4.1.2)
4. An alternative that provides power-down option via a letter of exemption while a vessel is in port. This alternative would be consistent with the power-down exemption as specified in VMS regulations in §648.9(c)(2) that apply to all vessels that are required to operate VMS equipment, including limited access scallop vessels (Section 4.1.3.3).

No action is the only alternative to the proposed modifications to the broken trip program. No action would retain the conditions and requirements of the existing broken trip program which includes an automatic charge on replacement trips. Similarly, no action for the proposed rebate would continue the existing broken trip program until Framework 17 is implemented (Section 4.2.2).

1.4 Summary of Environmental Consequences

Direct and indirect impacts of the proposed action are analyzed and discussed in Sections 6.1 to 6.4, and the cumulative effects are analyzed in Section 6.5. The analysis indicates that the impacts of the proposed action are not significant and a “Finding of No Significant Impact” is justified based on these analyses in the Environmental Assessment.

The VMS implementation proposed by this action is expected to improve effectiveness in monitoring the possession limit, to increase compliance due to the electronic monitoring presence of VMS, and discourage violations. This in turn will reduce the risks of overfishing of the scallop resource due to violations. VMS implementation will also carry several other important secondary benefits. The requirement to obtain a VMS unit to participate under general category permit will enhance enforcement's ability to ensure area rotation compliance and ensure the integrity of the scallop closed areas. VMS on the most active scallop vessels will provide better data for fishery management, particularly for areas that are more frequently targeted by small vessels fishing inshore of the typical scallop fishing areas. Transmission of location information through VMS will also improve safety by automatic tracking of the vessel's last known position.

The proposed action will provide VMS monitoring for the vessels that usually land scallops in excess of incidental amount (40 lb. per trip) allowed for personal use, while exempting a large number of vessels that are less likely to land scallop or to exceed the possession limit. It will affect about 223 vessels that do not already have a VMS out of a total 276 vessels in this category. These 276 landed over 99.9% of the general category scallop landings in 2003. Therefore, the proposed action will provide VMS coverage for

the majority of general category scallop fishing activity while limiting the economic impact to those who are actually prosecuting the fishery on a regular basis, reducing the total compliance costs for the general category fleet (Section 6.2.1, Economic Impacts). The power-down exemption proposed by this framework action will allow vessels to turn the VMS off while in port and will help to reduce compliance costs from VMS implementation.

The removal of broken trip charge is expected to improve safety at sea by reducing some of the alleged risks associated with the broken trip charge. This is because vessels facing unsafe conditions can return to port without the threat of losing a portion of their authorized scallop landings. The proposed action will also have positive economic impacts on the limited access vessels by allowing every vessel to harvest the full amount of the possession limit through replacement trips and the rebates (Section 6.2.2, Economic Impacts). Rebate of charges against replacement trips during the 2005 fishing year and prior to implementation of Framework Adjustment 17 will address any actual or implied safety concerns with the broken trip charge as quickly as possible.

1.5 Summary of Cumulative Effects

A cumulative effects analysis for past, present, and reasonably foreseeable future actions is provided in Section 6.5. These analyses were performed with respect to their effect with respect to the following Valued Ecosystem Components (VECs):

- Scallop resource
- Non-target species
- Habitat (EFH)
- Protected species
- Communities

The cumulative effects of this action are not likely to have a substantial impact on any of the VECs associated with the sea scallop fishery. The VMS implementation for the general category fishery will have positive indirect impacts on the sea scallop stock, although these impacts are expected to be small. VMS implementation and the modification of the broken trip program will not have substantial impacts on non-target species, habitat and protected species. The proposed action is expected have positive cumulative impacts on the communities by improving safety, by reducing losses from broken trips and by better monitoring of the possession limit, benefiting both limited access and general category vessels participating in the scallop fishery.

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2.3 List Of Acronyms

A10 – Amendment 10 to the Atlantic Sea Scallop Fishery Management Plan

A13 – Amendment 13 to the Northeast Multispecies Fishery Management Plan

BMSY – Biomass Maximum Sustainable Yield
BO – Biological opinion
CEQ – Council on Environmental Quality
CA1 – Closed Area I
CA2 – Closed Area II
CV – Coefficient of variation, a standard statistical measure of variation, expressed as a percentage of the mean. Lower CVs indicate more accuracy in the estimates and less variation in data.
DAS – Day-at-sea
EA – Environmental Assessment
ESA – Endangered Species Act
EFH – Essential Fish Habitat
EFH designation life stages
A – Adult life stage
J – Juvenile life stage
E – Egg life stage
FMP – Fishery Management Plan
FR – Federal Register
FSEIS – Final supplemental environmental impact statement
FW13 – Framework Adjustment 13 to the Atlantic Sea Scallop Fishery Management Plan, which allowed access for scallop fishing in parts of Closed Area I, Closed Area II, and the Nantucket Lightship Area
GB – Georges Bank
HAPC – Habitat Area of Particular Concern
LPUE – Landings per unit effort, usually a DAS in this document
IRFA – Initial Regulatory Flexibility Analysis
MAFMC – Mid-Atlantic Fishery Management Council
NAAA – Northwest Atlantic Analysis Area
NEFMC – New England Fishery Management Council
NEFMC – New England Fishery Management Council
NEFSC – Northeast Fisheries Science Center
NEPA – National Environmental Policy Act
NLSA – Nantucket Lightship Area
NMFS – National Marine Fisheries Service
PSP – Paralytic Shellfish Poisoning
RIR – Regulatory Impact Review
SAP – Special access program – a provision in the Multispecies FMP that may allow special fisheries in closed groundfish areas under special rules to limit the impact on overfished species.
SARC – Stock Assessment Review Committee
SAW – Stock assessment workshop
SBNMS – Stellwagen Bank Marine Sanctuary
SEIS – Supplemental Environmental Impact Statement
SMAST – University of Massachusetts Dartmouth School of Marine Science and Technology
VMS – Vessel Monitoring System
TAC – Total Allowable Catch. This includes discards for finfish species, but not for scallops which have a much lower discard mortality rate.
U10 – A classification of large scallops, less than 10 meats per pound.
USGS – United States Geological Survey

3 INTRODUCTION AND BACKGROUND

3.1 Purpose of the Action

The purpose of this framework action is to enhance monitoring and enforcement of the 400 lb. scallop possession limit for the general category scallop fishery and to improve safety at sea. A vessel monitoring system (VMS) will enable law enforcement personnel to observe fishing activity on sea scallops and easily determine locations where the landings are occurring - no matter how small or large the amount of landings. Removal of the automatic charge on replacement trips will improve safety by eliminating any potential disincentive to use the broken trip program.

VMS will improve enforcement's ability to deploy personnel and other resources in monitoring vessel offloads, and thus will increase effectiveness in monitoring the possession limit. Moreover, the VMS is expected to deter illegal scallop landings because fishermen using VMS will know that the fishing activity is being monitored and potentially chosen to monitor compliance.

VMS requirements also carry several other important secondary benefits. First, data from VMS equipment has been extremely useful for evaluating the impact of the fishery on the scallop resource, the effects of the fishery on sensitive fish habitat, finfish resources that are vulnerable to capture in the scallop fishery, and sea turtle interactions. These data have become more relevant as the Council gathers more fine-scale information about the marine environment and regulates scallop fishing by area rotation. These effects may be even more important to analyze in scallop fishing areas that are closer to shore, where many vessels with general category permits are thought to target sea scallops. Examples of these fishing areas include coastal Maine and near Cape Cod, both areas known to be important to cod, and a little further from shore near NJ and MD where monkfish and summer flounder are known to occur. In addition, interactions with sea turtles may also be important since many vessels with general category permits target scallops with gear that is very similar (although somewhat smaller) than the gear used by limited access scallop vessels.

Another secondary benefit of requiring VMS on vessels that target sea scallops is to monitor and enforce rotation management closed area boundaries. Although the FMP currently requires vessels with general category permits to have VMS when they fish in a re-opened scallop management area, it is even more important to monitor the activity of vessels that would have scallops onboard but are not currently required to have VMS. The present situation opens up potential loopholes where vessels with scallop dredges may occasionally dip into a closed scallop area or take scallops onboard from another vessel that had fished in a scallop controlled access area. Requiring VMS aboard more vessels that fish for scallops with their general category permit would close this potential loophole.

Elimination of the broken trip program disincentive will improve safety by removing one potential factor in a vessel captain's decision whether or not to terminate a trip. The decision to terminate the trip will be based on the ability for the vessel to make an economical makeup trip without consideration of a penalty. Thus, the proposed action will reduce the potential safety misjudgments by fishermen in an attempt to avoid penalty from broken trips. Rebate of charges against replacement trips during the 2005 fishing year and prior to implementation of Framework Adjustment 17 will address any actual or implied safety concerns with the broken trip charge as quickly as possible.

Requiring VMS will also improve safety at sea. This equipment provides highly accurate location information up to two times per hour. Especially when vessels are unable to transmit a distress call, this location information can be vital to the effectiveness of search and rescue operations. In terms of safety, minutes count and more effective search and rescue operations can improve survivability in adverse

conditions. A safer fishery that uses VMS might keep insurance costs lower than they would be without VMS, helping to recoup some of the costs.

3.2 Need for the Action

This action is needed to ensure that the open-access general category scallop fishery does not grow out of proportion with historic amounts due to illegal landings of scallops in excess of the possession limit. It is also needed to improve safety at sea and to reduce the actual or alleged safety risks associated with broken trip exemption program.

Fishing vessels with general category scallop permits must abide by a 400 lb. possession limit, and with certain gear restrictions when using scallop dredges. The landed form of scallops (meats packed in bags aboard the vessel) is highly marketable and it can be difficult to observe landings of moderately small quantities, like ten (or more) 40-lb. bags. Many vessels that have general category permits and target sea scallops land many ports, making it difficult to observe fishing activity and ensure compliance with the possession limit. In fact, recently there has been reports of illegal landings of scallop significantly in excess of the 400 lb. possession limit by some general category vessels. If the possession limit cannot be effectively enforced, the fishing for scallops with a general category permit could become more attractive to fishermen that customarily target other species. Moreover, fishermen could build larger and more capable vessels to target sea scallops. Such an increase in fishing effort could raise scallop mortality beyond sustainable levels or cause the Council to adopt stricter regulations for vessels with general category and/or limited access scallop permits.

3.3 Management Background

Beginning in 1994, the Council has managed the Atlantic sea scallop fishery through limited access effort controls (NEFMC 1993). The limited access program assigned vessels with a history of scallop fishing to three broad classes and assigned each category a maximum number of days that a vessel may fish for sea scallops. In addition to limits on DAS, the limited access vessels were regulated by the maximum number of crew a vessel may carry (which effectively limited shucking capacity and fishing power), limits on the size of the vessel based on its historic baseline, and other limits on gear.

Vessels that had sufficient history qualified for either a full-time, part-time, or occasional limited access permit. Based on the initial analysis in Amendment 4 (NEFMC 1993), there would have been 403 vessels that could qualify for a limited access permit. Unlike other some plans that allowed qualification with one pound of landings of a regulated species, a scallop vessel needed to have landings of more than 400 lb. of scallop meats (or 50 U.S. bu.) in either 1988 or 1989 to qualify for one of the three access categories. In addition, vessels could qualify for one of three categories based on the average of its three highest years of scallop fishing effort (measured in days) during 1985-1990. Any vessel with an average of 1 to 37 days could qualify for an Occasional permit, while it took an average of more than 37 and 150 days to qualify for a part-time or a full-time scallop permit, respectively.

It quickly became apparent at public hearings in Ellsworth, ME; Hyannis, MA; and Washington, NC that many vessels would not qualify for the LA permit as proposed. These vessels appeared to fall into one of the following two categories:

- Vessels that caught and landed scallops while targeting other species with bottom-tending mobile gear
- Vessels that targeted scallops with dredges and trawls on day-long trips

The first group included vessels that used trawls to target flounders and sole (dabs) on Georges Bank and in the Mid-Atlantic region, vessels targeting Loligo squid in the Mid-Atlantic region, and surf clam boats using dredges in the Mid-Atlantic region. Commonly, the crew was allowed to shuck the scallops and land the meats as “shack”, or a bonus. Very often the total scallop catches on a trip were less than 400 lb. Trips were relatively long and were taken year around, although the scallop catches were sporadic. Qualifying for an occasional limited access permit would not have met this group’s need because it would have allowed scallop landings on a few number of days.

The second group included many small vessels that typically fished closer to shore in locations that were accessible for day trips and when scallop abundance was high. Landings often fluctuated with conditions and other fishing opportunities. Many boats also used smaller dredges because of their small size and low horsepower, relative to the bigger boats that targeted scallops offshore. Fishing activities like this were concentrated along the ME coastline, along the other part of Cape Cod, MA, on the eastern end of Long Island, NY, and in coastal NC (where vessels often used modified flounder nets to target scallops). Most captains and vessel owners said in public hearings that landings per day fluctuated between 100 and 400 lb., depending on the local resource conditions. Qualification for a limited access permit also would not have met this group’s need because vessels frequently took many more trips during favorable years than would have been allowed with this permit.

In both cases, the scallop landings were very often marketed by low-volume dealers and individuals, which made it difficult to document landings to qualify vessels for limited access. However, the Council believed that although the number of vessels in this situation was high, the total landings were a small fraction of the total. The Council believed that a 400 lb. possession limit would keep landings and fishing effort in check, even though a “general category” permit would be available to anyone (particularly to accommodate the landings of scallop incidental catches).

Amendment 4 thus established a new “general category” permit, regulated by a 400 lb. possession limit, gear regulations, a minimum 3½” size limit for shell-stock, and scallop area closures when implemented by the Scallop FMP. Vessels with a general category permit could use any legal fishing gear to target sea scallops, including a scallop dredge. The minimum 3” ring size for scallop dredges was initially raised to 3¼” and then 3½”. Amendment 10 raised the minimum ring size to 4” on December 23, 2004. Dredges were limited to 31 feet in total width, but due to concerns about groundfish bycatch the Multispecies FMP limited the maximum dredge size to a single 10½-foot dredge east of 72°30’W longitude. In addition, scallop fishing while not on a limited access DAS was restricted to a coastal exemption area bordering the coastline of eastern MA, NH, and ME.

The initial permit counts in 1994 totaled 358 limited access permits and 1,960 general category permits. Although there were a significantly greater number of general category permits, few vessels actually landed scallops using the general category permit. The number of permits remained relatively steady through 1998 and then increased slightly as resource conditions dramatically improved. By 2003 (the last complete fishing year), permit issuance stood at 333 limited access permits and 2,554 general category permits.

Actual fishing effort remained low and landings remained a small fraction of the catch (<4%) until recently, with no further need to regulate the general category fishery as had been foreseen in Amendment 4 as a possibility. The Council has considered additional regulations at several times in more recent actions. In particular, Amendment 10 to the Scallop FMP (NEFSC 2004) proposed to separate the general category permit into an incidental catch category and a new general category permit for targeting scallops. When the issue arose in previous amendments and actions, further regulation was determined to be unnecessary because conditions changed and landings by vessels with general category scallop permits had not substantially increased.

On the other hand, there was interest in allowing general category vessels to fish in re-opened scallop areas, controlled by the number of trips, a TAC, or other measures. This issue first arose with Framework Adjustment 11 (NEFMC 1999) that allowed controlled access scallop fishing in parts of the Nantucket Lightship Area, Closed Area I, and Closed Area II on Georges Bank. At the time, a solution could not be negotiated that would allow access by general category vessels, which in particular were excluded from fishing in the re-opened areas by the Multispecies FMP (i.e. the re-opened areas were not in the exemption area where scallop fishing was allowed while not on a DAS).

The issue of general category access to scallop controlled access areas arose again in Framework Adjustment 14 (NEFMC 2001) when the Hudson Canyon and VA/NC Areas re-opened to scallop fishing. Unlike the previous action, these areas were exempt from the Multispecies FMP restrictions and therefore the Scallop FMP could allow scallop fishing by vessels with general category permits. Nonetheless, the potential for unmonitored vessels fishing alongside of the limited access vessels that were subject to a scallop possession limit and monitored by VMS concerned many, particularly law enforcement. In Framework Adjustment 14, the Council considered allowing vessels with general category permits to fish with a 400 lb. scallop possession limit, with the condition that they carry a VMS and have a Letter of Authorization. The Council rejected this proposal because it could not be demonstrated that the benefits to the vessels would compensate for the VMS and administrative costs. In addition, there was little historical evidence that vessels with general category scallop permits to target scallops had used these areas.

Nonetheless, there was interest among some to work out a procedure that would allow vessels with general category scallop permits to fish in re-opened scallop areas where there was historic fishing activity, in particular within the Nantucket Lightship Area and Closed Area I. Thus, when Framework Adjustment 16/39 (NEFMC 2004) allowed access to and re-opened portions of the Georges Bank closed areas, the Council reconsidered the VMS requirement and proposed additional monitoring due to concerns over groundfish bycatch and controlling the total catches of scallops. Under the recently approved regulations for Framework Adjustment 16/39, vessels with general category scallop permits may fish in the Georges Bank controlled access areas (inside of the Nantucket Lightship Area, Closed Area I, and Closed Area II), but are required to operate VMS equipment, make vessel trip reports with bycatch information, and carry observers if selected to do so. In addition, the general category fleet has a separate TAC and total number of trips that may be taken in each area. The results of this new program have not been evaluated due to its recency.

Background on Broken trip exemption: The Scallop FMP allowed controlled access to portions of the Georges Bank closed groundfish areas in 1998 and 1999, and to the Hudson Canyon and VA/NC closed scallop areas in 2000-2003. During this time, vessels that took a trip to these areas were charged a minimum of 10 DAS, regardless of how long the vessel took to catch the applicable possession limit. This automatic DAS charge counted against the vessel's annual DAS allocation, regardless of how much scallop landings occurred as long as the vessel entered the controlled access area for scallop fishing.

Initially, whether a vessel received a rebate on DAS due to an early trip termination (i.e. a "broken trip") for weather or other circumstances was determined by the Regional Administrator. Rebates were often given to vessels that landed no scallops or for exceptional weather conditions, like hurricanes. Due to the risk of losing days, however, the Council liberalized this procedure in Amendment 10 to the FMP, which was implemented in July 2004.

The current broken trip provision allows a vessel to return early from a controlled access trip and have a large part of its automatic DAS charge and potential scallop landings applied to a future replacement trip. This rebate depended on the portion the 18,000 lb. scallop possession limit that was actually landed on the broken trip. For the broken trip, the vessel's annual allocation for a controlled access area was charged one DAS for each 10% of the scallop possession limit actually landed, plus two DAS. Thus a vessel with

a broken trip landing 6,000 lbs. on a broken trip would be accorded an allocation of 9,000 lbs. and 6 DAS on a future replacement trip (see table in Section 1.3.2).

In late December 2004, the F/V Northern Edge, a full-time scallop vessel taking a replacement trip sank while fishing in the Nantucket Lightship Area. At the present time it is unclear what factors contributed to the accident, although the decision to continue fishing despite poor weather may or may not have been influenced by the broken trip provision. While the facts are gathered, the alternative considered in this framework adjustment would remove the standard two DAS charge on re-initiated trips.

The following regulatory text in §648.60(c) pertains to the broken trip provision, as it presently exists. Suspending or modifying §648.60(c)(5) would allow the vessel to receive a return of DAS with a reduced or no charge compared to the vessel having had taken the entire 18,000 lbs. of scallops on the original controlled access trip and returned to port under normal conditions.

While the two DAS/3,000 lb. disincentive existed to avoid creation of loopholes and improve enforceability of the 18,000 lb. scallop possession limit, removing the disincentive would take a risk averse approach while a better allocation program can be developed.

3.4 Summary of Management History (Including Amendments and Frameworks)

Tables A and B summarize the management actions taken under the Sea Scallop FMP. Few actions had a direct effect on vessels with general category scallop permits. Amendment 4, which created the general category permit and established a 400 lb. daily possession limit, and Framework Adjustment 2, which exempted vessels fishing in certain state waters from Federal regulations directly effected general category fishing activity. Amendment 10 increased the twine top mesh and minimum dredge ring size that apply to general category vessels using a scallop dredge. Framework Adjustment 16/39 allowed general category vessels to fish in the re-opened Georges Bank closed areas for a limited number of total trips . Better management through other changes in limited access regulations and an improving scallop resource had an important indirect effect, however. Through these actions, scallop fishing became more attractive and larger offshore vessels fished less frequently in some areas where general category vessels targeted scallops, opening up some opportunities.

The broken trip exemption program was first established in Framework Adjustment 11, which authorized the Regional Administrator to use discretionary provisions to grant replacement trips for vessels that returned from a controlled access trip due to weather or emergencies. A pre-defined schedule that gave a partial rebate of days and pounds for trips returning early with landings below the possession limit was first considered in Framework Adjustment 15. The Council first rejected this alternative due to administrative and enforcement concerns. This program was reconsidered in Amendment 10, to apply to controlled access trips as part of area rotation management. The new exemption was deemed more acceptable, because it relieved the problems associated with the program that was first adopted in Framework Adjustment 11.

Table A. Summary of amendments and Secretarial actions for the Atlantic Sea Scallop Fishery Management Plan.

Implementation date	Label	Primary regulatory changes
10/9/85	A1	40-meat count (scallop meats per pound) minimum average size (“meat count standard”)
7/22/88	A2	10% increase in the meat count standard during October through January; framework adjustment to the meat count standard during spawning
2/5/90	A3	Regional 12-hour time periods (windows) for off-loading sea scallops
1/19/94	A4	Limited access; days-at-sea reduction schedule and allocations; overfishing definition; elimination of overfishing on a seven-year schedule
1/14/97	A5	To implement measures to permit the Sea-stead scallop grow-out project
1/10/97	A6	Gear Conflict - allowed the Council to resolve gear conflicts in the sea scallop fishery through the framework adjustment process
4/3/98	IA	Interim action to close Hudson Canyon and Virginia Beach areas to protect small scallops
3/29/98	A7	Addressed SFA stock rebuilding requirements by establishing new management reference points and fishing mortality targets to achieve B_{MSY} on a continuing basis and the elimination of overfishing through DAS reductions. (120 DAS for full time vessels with further reductions planned to meet fishing mortality targets). Extension of Hudson Canyon and Virginia Beach areas to protect small scallops through March 1, 2001.
2/19/99	A8	Made upgrading and vessel replacement provision consistent with those in other New England and Mid-Atlantic FMPs.
4/21/99	A9	EFH – Addressed SFA requirements for designating Essential Fish Habitat
3/2/01	IA	Interim Action – requested by the Council to delay the opening of the Mid-Atlantic closed areas until controlled access to these areas could be implemented by Framework Adjustment 14.
7/23/04	A10	Major change in management to implement rotation area management and allocate DAS by specific area; closed the Elephant Trunk Area to scallop fishing and established closed areas to protect essential fish habitat; increased twine top mesh 10” in all areas; and increased minimum dredge ring size from 3.5” to 4” over a six month time period; set open area DAS allocations and Hudson Canyon Area trip allocations for 2004 – 2006 fishing years; established a two-year regular framework adjustment process.

Table B. Summary of annual and in-season framework adjustments for the Atlantic Sea Scallop Fishery Management Plan

Implementation date	Label	Primary regulatory changes
7/19/94	FW1	Implementation of first-year effort controls on a full-year basis
11/21/94	FW2	State waters exemptions from gear restrictions
12/5/95	FW3	Elimination of vessel ownership requirement to retain limited access permit
4/5/95	FW4	Temporary adjustment (reduction to seven) in crew-size limit
6/29/95	FW5	Restrictions on the use of nets by dredge vessels and twine-top mesh size restrictions
7/10/95	FW6	Change to DAS demarcation line (DAS are counted when a vessel crossed this line)
3/5/96	FW7	Indefinite extension of (reduction to seven) crew-size limit
7/24/96	FW8	Further restrictions on the use of nets to catch sea scallops
8/14/97	FW9	Exemption from the 400-pound possession limit for state waters fisheries
8/28/98	FW10	Extension of measures needed for continuation of the Sea-stead scallop grow-out project
6/15/99	FW11	Scallop vessel access to Georges Bank Closed Area 2 (this action also included GF Framework 29)
3/1/00	FW12	Annual adjustment –DAS allocations adjusted to 120 for full-time; 48 for part-time & 10 for occasional vessels.
6/15/00	FW13	Scallop vessel access to Georges Bank Closed Areas with 10,000 pound trip limit and 10 DAS trade-off. Access for general category scallop vessels to the Nantucket Lightship Closed Area and Closed Area I was disapproved because of enforcement and administrative issues.
5/1/01	FW14	Annual adjustment – DAS allocations adjusted to 120 for full-time; 48 for part-time & 10 for occasional vessels; controlled access to Virginia Beach and Hudson Canyon areas; additional area closures
3/1/03	FW15	Annual adjustment - DAS allocations adjusted to 120 for full-time; 48 for part-time & 10 for occasional vessels; controlled access to Virginia Beach and Hudson Canyon areas
11/2/04	FW16/39	Re-opened portions of the Georges Bank closed groundfish areas to limited scallop fishing by vessels with limited access and general category permits. Set DAS and trip allocations for these areas for the 2004 – 2007 fishing years.

4 MANAGEMENT ALTERNATIVES

4.1 VMS Implementation for the General Category Scallop Fishery

4.1.1 Proposed Action

4.1.1.1 VMS implementation (Alternative 2)

Any vessel with a general category permit that possesses or lands more than 40 lb. scallop meats (or 5 US bushels of in-shell scallops) for commercial sale in any trip will be required to operate a Vessel Monitoring System (VMS). VMS regulations and procedures that pertain to the scallop limited access fishery would also apply to general category vessels if required to operate VMS except for power-down exemption described in Section 4.1.1.2.

Rationale: VMS will improve enforcement's ability to deploy personnel and other assets in monitoring vessel offloads, thus will increase effectiveness in monitoring the possession limit. It is also expected to increase compliance due to the electronic monitoring presence of VMS, and discourage violations. This in turn will reduce the risks of overfishing of the scallop resource due to violations. This alternative will also reduce the incentive to obtain a general category permit or increase scallop fishing effort by inactive vessels. VMS implementation will carry several other important secondary benefits. The requirement to obtain a VMS unit to participate under general category permit will enhance enforcement's ability to ensure area rotation compliance and ensure the integrity of the scallop closed areas. VMS on the most active scallop vessels will provide better data for fishery management, particularly for areas that are more frequently targeted by small vessels fishing inshore of the typical scallop fishing areas. Transmission of location information through VMS could also improve safety by automatic tracking of the vessel's last known position.

Requiring the general category vessels that have in possession or land more than an incidental amount scallops (over 40 lb. per trip) to have a VMS onboard will improve monitoring of possession limits and will prevent imposition of a cost burden the rest of the vessels. Although, for enforcement purposes it would be preferable to include all vessels with general category permits in VMS implementation, such an action would increase the compliance costs for over 2,200 vessels that had either no scallops landings or landed only an incidental amount (see Section 6.4 for more discussion on enforcement benefits and trade-offs). In addition, if every general category vessel was required to operate a VMS, there would be an increase in the enforcement costs due to an increased need for personnel to monitor VMS usage by a large number of general category vessels. Requiring only those general category vessels that land over 40 lb. of scallop per trip is also consistent with the underlying principle of the present regulations, which allows any vessel without a scallop permit to retain and land up to 40 pounds of scallop meats for personal use without requiring a VMS onboard. Only 276 out of 2,554 vessels with general category permits landed scallops more than 40 lb. on at least one trip during the 2003 fishing year. Given that 53 of these vessels already have a VMS, only 223 vessels will be affected by this alternative. Therefore, this alternative would substantially lower the costs of compliance for the general category fleet. As discussed in Section 6.2.1.1.3, the costs of VMS implementation would range from \$8.3 to \$12.1 million during the first year of implementation if all the vessels with general category permits installed and operated a VMS. Under the proposed action the VMS costs are estimated to range from \$0.8 million to \$1.3 million.

4.1.1.2 Power Down Exemption

General category vessels with VMS will be able to use a VMS macro code to log into and out of fishing while the vessel is in port. The VMS may only be powered down after offloading and after vessel is

secured to a fixed dock or mooring, unless required to keep VMS in operation by other regulations. VMS must be re-powered and logged in before getting underway on any fishing trip from a fixed dock or mooring and whenever outside the VMS demarcation line (see Figure 9-1 and Figure 9-2 in Appendix A for VMS demarcation lines).

For example, a vessel with 386 lbs. of scallops aboard while returning from a fishing trip must operate VMS equipment. The vessel lands its catch at a seafood dealer, takes on fuel at a local dock, and then ties up to a mooring in a port. After that point in time, the vessel may designate by sending a VMS macro code that it is “in port” and may power down the VMS. The next day, the weather is bad and the captain decides to take the vessel over to the wharf where he can put different gear on the boat. The VMS does not need to be re-powered at this time, as long as the vessel remains shoreward of the VMS demarcation line. On the third day, the weather is nice enough to go fishing and the vessel is ready to go. The VMS must be re-powered and entered back into the monitoring system, before it can get underway from the mooring. The VMS must be re-powered and operating even if the vessel is fishing for species other than scallops. VMS must continue operating on a vessel that holds some of the scallops onboard after unloading part of the catch. VMS must also be in operation if the vessel is seaward of the VMS demarcation line, even if it is not fishing (such as transiting to another port).

Rationale: This alternative would allow the VMS program to track vessel activity while at sea and reduce compliance costs to vessels. The rationale for this alternative is that it is impractical and unnecessary to operate VMS when vessels are in port and not fishing. Although a twenty-four/seven hour VMS coverage on general category scallop vessels would be preferable from enforcement perspective to prevent some vessels illegally powering down while they are fishing, such continuous coverage would impose hardships on many vessels that comply with the regulations. Since no landings of scallops will be possible while the vessel in dock, the power down alternative is not expected reduce the enforcement benefits from VMS as long as the proposed procedures for power-down exemption could be strictly enforced. With the proposed action, the vessels would not have to rely on shore power or continuous battery power while in port, which may under some circumstances be unavailable. It could also reduce polling costs while vessels are in port. The proposed alternative also allows vessels to operate without turning on VMS when they are inside of the VMS demarcation line. The Council proposed this option to provide flexibility to vessels, for example, when they travel from mooring to fuel and ice docks when they do not have a catch aboard. The enforcement concerns regarding this alternative were discussed in Section 6.3 (Enforcement Benefits and Trade-offs). This alternative would have less administrative costs and would provide more flexibility to vessels compared to the non-preferred power-down via a letter of exemption described in Section 0.

4.1.2 No Action

The vessels with general category permits will not be required to have a VMS onboard other than those that choose the fish in Georges Bank access areas. No action alternative is equivalent to the status quo regulations for the general category scallop fishery. Because vessels will not be required to have a VMS, they will not be provided a power-down exemption.

Rationale: VMS implementation will require a monetary investment by many general category vessels that do not presently operate a VMS unit. Although for many general category vessels the earnings from scallops significantly exceed VMS costs, for some other vessels, VMS requirement could be a financial burden. Even though current enforcement of the possession limits relies on dockside monitoring, and is less efficient than a system based on VMS implementation, it minimizes the costs of compliance for vessels with general category permits. Furthermore, the present system of monitoring of the possession limits could be improved by addition of more law enforcement personnel and resources. No action alternative is required for consideration by the National Environmental Policy Act (NEPA) to provide an

benchmark in order to compare the magnitude of the environmental impacts of other alternatives under consideration.

4.1.3 Alternatives to the Proposed VMS implementation

In addition to the proposed action, Alternative 2, the Council considered two alternatives for requiring VMS for vessels with general category scallop permits and an alternative regarding operating requirements for the VMS units. Alternative 1 would require all vessels with general category permits to operate a VMS, while Alternative 3 would include a smaller subset of vessels in VMS requirement according to the scallop pounds ranging from 100 lb. (Alternative 3a) to 300 lb. (Alternative 3c) per trip. Management alternatives also included the no action alternative discussed in Section 4.1.2. An overview of the costs and benefits of these alternatives is provided in Section 6.2.1.3.

4.1.3.1 VMS Alternative 1: All General Category Permits

Every vessel with a General category permit is required to have a VMS on board regardless of their participation in the scallop fishery and the area they choose to fish. 2,554 general category permits were issued during the 2003 fishing year (Table 36). Of these, only 210 already had a VMS during 2003. VMS regulations and procedures that pertain to the scallop limited access fishery would also apply to general category vessels if required to operate VMS unless revised by the power-down exemption alternative described in Section 4.1.1.2 is implemented.

Rationale: VMS will improve enforcement's ability to deploy personnel and other assets in monitoring vessel offloads, thus will increase effectiveness in monitoring the possession limit. It is also expected to provide an increased level of compliance due to the electronic monitoring presence of VMS, thus to discourage violations by general category vessels. As a result, the risks of overfishing of the scallop resource due to the violations of the possession limits will be reduced. This alternative will also reduce the incentive to obtain a general category permit by inactive vessels, thus it could reduce the number of inactive permits and potential entry to the fishery. VMS implementation will carry several other important secondary benefits. The requirement to obtain a VMS unit to participate under general category permit will enhance enforcement's ability to ensure area rotation compliance. VMS on the most active scallop vessels will provide better data for fishery management, particularly for areas that are more frequently targeted by small vessels fishing inshore of the typical scallop fishing areas. Transmission of location information through VMS will add another layer of safety in the event of an emergency. On the other hand, there will be an increase in the enforcement costs due to an increased need for personnel to monitor VMS usage by a large number of general category vessels included in alternative 1.

4.1.3.2 VMS Alternative 3: 100 lb., 200 lb., and 300 lb. per Trip

Any General category vessel that has in possession or land over a specific amount of scallops per trip, as specified in alternatives 3a, 3b, and 3c below, are required to install and operate a VMS:

- **Alternative 3a:** Any General category vessel that has in possession or land over 100 pounds of scallops per trip are required to install and operate a VMS.
- **Alternative 3b.** Any General category vessel that has in possession or land over 200 pounds of scallops per trip are required to install and operate a VMS.
- **Alternative 3c.** Any General category vessel that has in possession or land over 300 pounds of scallops per trip are required to install and operate a VMS.

VMS regulations and procedures that pertain to the scallop limited access fishery would also apply to general category vessels if required to operate VMS unless revised by the power-down exemption alternative described in Section 4.1.1.2 is implemented.

Rationale: The objective of this alternative is to require only a subset of general category vessels that target scallops to have a VMS onboard and prevent imposition of a cost burden on vessels that consistently land below the 400 limit. As a result, this alternative will result in a lower costs for the general category fleet as compared to both the proposed action and alternative 1. VMS implementation will have similar benefits described for alternative 1 above, except that it will include a smaller subset of vessels. The alternatives 3a to 3b will create, however, another subset of vessels for enforcement to monitor through dockside inspection by exempting a part of the general category vessels from VMS requirement. As a result, the enforcement benefits from VMS implementation will be lower for each successive alternative that requires to smaller subset of vessels to have a VMS.

144 vessels with general category permits landed scallops more than 300 lb. in at least one trip during the 2003 fishing year. Of these, 12 vessels already have a VMS onboard. Therefore, 132 vessels would be affected under alternative 3c. If 200 lb. limit is used as a criteria 156 would be required to install VMS, and if 100 lb. limit is applied 192 vessels would be included in VMS implementation (Table 36). The costs and benefits of these alternatives are fully discussed in Section 6.1.4.

4.1.3.3 Power Down via Letter of Exemption (Alternative 1):

The following power down exemption applies to all vessels that are required to operate VMS equipment, including limited access scallop vessels. The general category vessels that would be required to operate VMS (see Section 4.1.1) will be allowed to “power down” and be exempt from the requirements of transmitting a signal at least every hour, 24 hours a day, throughout the year, when they are in port. The vessel must be continuously out of the water for more than 72 consecutive hours to benefit from this exemption. The application for the exemption must provide required information, including the location of the vessel while exempt, the time period for the exemption, and sufficient information to determine that the vessel will be out of the water for 72 consecutive hours. If the vessel has a NE Multispecies limited access permit, the VMS sign out may be for no less than one calendar month. The letter of exemption must be on board the vessel at all times, and the vessel may not turn off the VMS signal until the letter of exemption has been received. These requirements are the same as the limited access scallop permits VMS regulations in §648.9(c)(2).

Rationale: The rationale for this alternative that is impractical and is unnecessary to operate VMS when vessels are not fishing. Since no landings of scallops will be possible while the vessel in dock, the power down option will not reduce the enforcement benefits from VMS implementation. It could also be costly for vessels to operate VMS when they are in port, while they are not engaged in any fishing activity. This alternative will allow vessels to be stored without continuously supplying electricity. It will also allow vessels that fish seasonally to discontinue VMS operation. Therefore, power-down exemption is expected to reduce compliance costs (See Table 37 for monthly service charge for VMS units). As compared to the proposed power-down alternative, this option would reduce the incentive for some vessels to illegally turn off the VMS in order to circumvent inspection due to the stricter requirements for power-down. These include the requirement for the vessels to be out of water for 72 consecutive hours, and having a letter of exemption on board specifying the location of the vessel while exempt, the time period for the exemption.

4.1.4 Considered and Rejected Alternatives for VMS Implementation

4.1.4.1 Alternative 4

All active general category permits, i.e., all general category vessels that have in possession of any amount of scallops from any trip, should have a VMS on board. There were 337 vessels that landed some amount of scallops in 2003 fishing year. This alternative is rejected by Council because it would include all vessels, even if they landed one pound of scallops from each trip, to have a VMS onboard. Many of these boats landed incidental amount of scallops, 40 pounds or less of per trip, which is already allowed

for personal use for any vessel even for vessels that do not have a general category permit. Alternative 2 provides a better cut-off point for VMS implementation by excluding these vessels with incidental catches of scallops from VMS requirement.

4.1.4.2 Alternative 5

VMS requirements will apply to active trawl vessels with general category permits and all vessels that have a dredge (including surf-clam dredge) onboard capable of catching scallops. Since all active 337 general category vessels used either trawl or dredge gear, this alternative would encompass same number of vessels included in alternative 4. Therefore, this alternative is very similar to alternative 4, and therefore, was rejected for the same reasons discussed above.

4.1.4.3 Alternative 6

Any vessel with a general category permit that landed pounds of scallop meats within a range of 1200 lb. to 4,800 lb. during the last fishing year would be required to have a VMS onboard. Vessels with a new general category scallop permit, issued for the first time to a vessel or owner after the date of the final rule on Framework Adjustment 17 (or March 1, 2005) would also be required to install a VMS. Similarly any vessels intends to land of scallop meats within a range of 1200 lb. to 4,800 lb during the current year will be required to have a VMS. This alternative was rejected because of the difficulties in implementation. First, data imperfections and unreported landings make it very difficult to identify the vessels that landed the specified amount. Furthermore, in addition to monitoring the trips to make sure the 400 lb. possession limit is not exceeded, it will also be necessary to track the total amount of scallop landed for each vessel just to ensure there is compliance with the VMS requirements. On the other hand, some vessels may not report all of their scallop landings in order not to reach the threshold level for VMS requirement, and therefore, would be still subject to the dockside enforcement without a VMS unit onboard. As compared to this alternative, the proposed alternatives 2 and 3 will be easier to implement, since they will only require monitoring of the landings per trip whether or not the total amount of scallops landed by a vessel exceeded a threshold during a given fishing year.

4.1.4.4 Alternative 7

Any vessel with a general category scallop permit is required to continuously operate a VMS, if the vessel has onboard a scallop dredge or if the vessel landed more than (1,000 to 20,000, range) lb. of scallop meats in the previous scallop fishing year (also applies to successive future calendar years). Vessels with a new general category scallop permit, issued for the first time to a vessel or owner after the date of the final rule on Framework Adjustment 17 (or March 1, 2005) would also be required to install a VMS. This alternative is very similar to alternative 6, except for different thresholds for scallop landings and an additional requirement for vessels with scallop dredges to install a VMS regardless of their total landings. The Council rejected this alternative for the same reasons explained for alternative 6. In addition, requiring VMS only for scallop dredges could encourage fishing for scallops by trawls by vessels that land below the threshold amount for VMS requirement.

4.1.4.5 Alternative 8 - Area-exemptions

This alternative would provide exemptions from VMS requirement for some general category vessels fishing in certain areas, such as the waters of Gulf of Maine. This alternative was rejected for the following reasons: Fishing area could not be used as criteria for VMS requirement because the location of fishing activity can change according to the resource conditions. In addition, a VMS requirement based on area fished, except for the access areas with area-specific DAS, TAC and trip controls, could lead to a shift of effort to areas exempted from the VMS requirement. In addition, it was not possible to distinguish vessels with incidental catches from others that target scallops and land the possession limit on basis on

the state of landing or area fished. Such action would also be discriminatory towards some states and would therefore violate National Standard 4.

4.2 Broken Trip Exemption Program

4.2.1 Proposed Action

4.2.1.1 Removal of Broken Trip Disincentive

The proposed action will eliminate the two DAS/3,000 lb. disincentive and retain the broken trip reporting requirements. Paragraph §648.60(c)(5)(i) and (ii) would be replaced by a more liberal procedure where the authorized landings of the broken and replacement trips would total to the amount authorized on the original trip. Doing so would allow vessels to submit an application to take a replacement trip for the amount of scallops equal to the uncaught possession limit. Under the existing broken trip exemption program, vessels do not have to justify (but are required to report) the reason for the early trip termination. All reporting requirements would continue and vessels would not have to justify the need for early trip termination.

The proposed action will be modify the regulations that pertain to broken trip reporting requirements. Paragraph §648.60(c)(5)(i) will be removed because it would no longer be necessary to allocate and track DAS on replacement trips. Paragraph (ii) will be revised as follows:

(ii)The amount of scallops that can be landed on an authorized additional Sea Scallop Access Area trip shall equal the difference between the scallop possession limit that applies to the vessel fishing in the controlled access area and the number of pounds landed on the broken trip for which the additional trip replaces.

Paragraph three (Section 1.2) would remain unchanged because it specifies that replacement trips have the same provisions as do the original controlled access trip allocations and it allows a vessel to combine replacement trips as long as the combined trip does not exceed the scallop possession limit for the access area.

Thus a vessel that landed 6,000 lbs. of scallops on a broken trip would be authorized to take a replacement trip with a 12,000 lb. scallop possession limit. Broken trip applications from part-time and occasional vessels that sometimes have different scallop possession limits would be treated in the same fashion. A vessel that had a 16,000 lb. scallop possession limit on a broken trip and landed 6,000 lbs. would be authorized to take a replacement trip with a 10,000 lb. scallop possession limit. The following table gives some examples, showing the pounds of scallop landings that would be authorized on replacement trips:

Table 1. Pounds landed on broken trips and pounds allowed for the replacement trips

	DAS per trip	12	11.2	7
	Possession limit	18,000	16,800	10,500
	Allocation type	Full-time	Part-time	Occasional
Pounds landed on broken trip	0	18,000	16,800	10,500
	2,500	15,500	14,300	8,000
	9,442	8,558	7,358	1,058
	15,000	3,000	1,800	N/A
	17,500	500	N/A	N/A

Rationale: Eliminating the automatic charge on replacement trips eliminates any potential disincentive to use the broken trip program and reduces cost to the limited access scallop vessels that fish in controlled access areas. It may reduce some of the alleged risks associated with the broken trip charge because vessels facing unsafe conditions can return to port without the threat of losing a portion of their authorized scallop landings. These trips are monitored closely with VMS equipment and may be more likely to have an observer on board. As such, compliance with the scallop possession limit is sufficiently monitored and ensures that the total catch does not exceed the TAC. There are no biological impacts as long as the catch is monitored effectively and does not exceed the TACs.

4.2.1.2 Rebate of Charges Against Replacement Trips During the 2005 Fishing Year and Prior to Implementation of Framework Adjustment 17

Access Area trips in the 2005 fishing year that are terminated early will continue to have the broken trip charge applied until Framework Adjustment 17 is implemented. Once Framework Adjustment 17 is implemented, vessels that terminated an access area trip before implementation will be able to take a second replacement trip to catch the amount of scallops lost as a result of the broken trip charge. Vessels that do not take a replacement trip prior to the implementation of Framework Adjustment 17 will be authorized to take a replacement trip with a possession limit that is equal to the difference between the scallop possession limit on the initial broken trip and the amount landed on the initial broken trip (as described in Section 4.2.2.1).

Rebates of authorized scallop landings for broken trips within an access area may be combined as long as the total amount does not exceed the scallop possession limit that applies to the permit category and area. Rebates from different access areas may not be combined with each other on a single replacement trip.

Rebates of authorized scallop landings may not be taken in a different controlled access area than the one that the broken trip was taken. Replacement trips using the rebated scallop landing authorization must be initiated before March 1, 2006, or completed prior to the end of the access season, so that the amounts landed count against the correct TAC.

All trips that begin on or after March 1, 2005 and are terminated early as a broken trip are eligible for the rebate. Trips that begin before March 1, 2005 are charged against the 2004 TAC and are therefore ineligible for the rebate.

NMFS will monitor and log broken trip activity prior to the implementation of Framework Adjustment 17 and will automatically authorize the rebate once Framework 17 is implemented.

For example, a vessel beginning a trip to the Hudson Canyon Area after March 1, 2005 and which lands 6,000 lbs. of scallops for that trip would be eligible under existing rules to take a replacement trip of 6 DAS and a scallop possession limit of 9,000 lbs. If the vessel takes the replacement trip, it would be eligible to take an additional trip with a 3,000 lb. scallop possession limit (i.e. the remainder of the original 18,000 lb. scallop trip allocation). It could also combine the 3,000 lb. rebate with rebates or authorized landing amounts from other broken trips within the Hudson Canyon Area. If the vessel did not take the authorized replacement trip before the framework action becomes effective, it would be allowed to take a replacement trip with a 15,000 lb. scallop possession limit. The same rules would also apply to controlled access trips taken to other areas during the 2005 fishing year.

Rationale: This measure will provide vessel operators more flexibility for all trips in the 2005 fishing year, even if they occur prior to the implementation of Framework Adjustment 17. Vessel owners will be able to harvest the full amount of the possession limit through replacement trips and the rebates. This may reduce some of the alleged risks associated with the broken trip charge because vessels facing unsafe conditions can return to port without the threat of losing a portion of their authorized scallop landings.

Taking this action will address any actual or implied safety concerns with the broken trip charge as quickly as possible, because it will apply to all trips taken in the 2005 fishing year. Rebates for broken trip charges before the beginning of the 2005 fishing year (i.e. any trip leaving before March 1, 2005) cannot be made because the amounts landed would count against the wrong TAC, raising the risk of potential overfishing. Replacement trips must be taken in and authorized landings must count against the areas where the broken trip was taken to ensure that total landings in each area do not exceed the applicable TAC.

4.2.2 No Action

4.2.2.1 Broken Trip Exemption – Continuation of Status Quo Regulations

No Action will retain the existing broken trip exemption program specified in paragraph §648.60(c) of the regulations as follows:

(i)The number of DAS a vessel will be charged for an additional trip in the Sea Scallop Access Area shall be calculated as the difference between the scallop possession limit for the area and the amount of scallops actually landed on the broken trip, divided by 1,500 lbs. The replacement trip may have a fractional number of DAS associated with it.

The description of and rationale for the broken trip exemption program in Amendment 10 is provided below for reference:

Vessels returning from a controlled access area trip with less than the scallop possession limit, due to an emergency, poor weather, or any other reason deemed appropriate by the captain will have the automatic DAS charge reduced, based on the amount of scallops landed. To terminate a trip and have a reduced day-at-sea charge, the Captain must notify NMFS of his intent to terminate the trip before landing; and report the reason for the termination, the hail weight of the scallop catch onboard the vessel, and the intended time and location of offloading and landing. In addition, vessel owners or captains must submit an application to receive credit for a broken trip adjustment, showing the actual amount of scallops landed, the date sailed, and the date when the vessel returned to a port (i.e. no longer on a DAS). The vessel owner must receive written confirmation of the broken trip from the Regional Administrator, authorizing a replacement trip. Since controlled access DAS and trips cannot be carried over to the next fishing year, all broken trip applications expire at the end of the fishing year.

Vessels returning from a controlled access area trip and having no scallops onboard to land will be charged two days-at-sea. Otherwise the vessel meeting the above conditions would be charged a minimum of 2 days-at-sea plus one day-at-sea for each 10 percent of the scallop possession limit onboard the vessel (i.e. landed).

Vessels that qualify for a broken trip day-at-sea adjustment will also be allowed to resume the trip later within the fishing year, the replacement trip having a possession limit that is reduced to account for remaining time from the original trip. The day-at-sea charge for this trip will be the remaining days-at-sea for that trip and the possession limit will be prorated at a 1,500 per day-at-sea equivalent. For example, a vessel charged two days for a broken trip could continue the trip later in the fishing year, but would be able to land 15,000 lbs. and would be charged 10 DAS. A vessel charged four days for a broken trip could continue that trip later in the fishing year, but would be able to land 12,000 lbs. of scallops (see Table 2 below). Adjustments for two or more broken trips from the same area may be combined in a “make-up” trip, provided that the scallop possession limit does not exceed 18,000 lbs.

After adjustments, more than one broken trip may be combined into one controlled access trip, as long as the total does not exceed the maximum scallop possession limit for controlled access trips for the area being fished, presently 18,000 lbs. of scallop meats for all controlled access areas.

Table 2. Schedule of day-at-sea charges for trips terminated early by limited access scallop making controlled access trips. (This is an example day-at-sea charge schedule if the scallop possession limit is 18,000 pounds and the re-opened area day-at-sea tradeoff is 12 days.)

<i>Proportion of scallop landings to the scallop possession limit</i>	<i>Example hail weight of sea scallops (meat weight, pounds)</i>	<i>Minimum day-at-sea charge</i>	<i>Trip continuation</i>
	18,000 pound possession limit	12 day-at-sea tradeoff	
0 percent	Zero	2 days-at-sea	10 days; 15,000 lbs.
More than 0 to 10 percent	1 to 1,800	3 days-at-sea	9 days; 13,500 lbs.
More than 10 percent to 20 percent	1,801 to 3,600	4 days-at-sea	8 days; 12,000 lbs.
More than 20 percent to 30 percent	3,601 to 5,400	5 days-at-sea	7 days; 10,500 lbs.
More than 30 percent to 40 percent	5,401 to 7,200	6 days-at-sea	6 days; 9,000 lbs.
More than 40 percent to 50 percent	7,201 to 9,000	7 days-at-sea	5 days; 7,500 lbs.
More than 50 percent to 60 percent	9,001 to 10,800	8 days-at-sea	4 days; 6,000 lbs.
More than 60 percent to 70 percent	10,801 to 12,600	9 days-at-sea	3 days; 4,500 lbs.
More than 70 percent to 80 percent	12,601 to 14,400	10 days-at-sea	2 days; 3,000 lbs.
More than 80 percent	Over 14,400	11 days-at-sea	1 day; 1,500 lbs.

Rationale: This broken trip procedure is needed to reduce fishing costs and encourage landings from controlled access trips where scallops are generally larger, which in turn may reduce the incentive to fish all of the open area allocated days. However, this procedure includes three provisions that will prevent abuse of the system that might occur if there are loopholes, which provide an advantage to fishermen. First is that any vessel that terminates a trip will automatically be charged two days-at-sea. Second, actual time at sea will be charged even with no scallop landings or a small amount, unless there are extenuating circumstances explained above that require the vessel to remain at sea. This would prevent vessels from catching large amounts of scallops in controlled access areas and despite a prohibition, transferring portions of the catch to other vessels. While this problem might not be a factor under normal circumstances, the broken trip procedure could open a new incentive to transfer catches to reduce the DAS charge for controlled access trips, unless the vessel would be charged for actual time at sea when landing small amounts of scallops.

In Framework Adjustment 15, the day-at-sea adjustment for broken trips became a non-preferred alternative because of law enforcement concerns. Although vessels would be required to hail the catch and report the intended time of landing, law enforcement interests thought that this program could create opportunities for abuse. A second factor in the decision was that NMFS believes that an existing program performed satisfactorily and reduced the risk vessels face when fishing in the Hudson Canyon and VA/NC Areas. Vessels could apply for an adjustment to the day-at-sea charge for broken trips. NMFS granted or denied adjustments on a case-by-case basis for vessels that claim a medical emergency, equipment failure, bad weather, or other legitimate reason to return early to port. In §6.1.10 of Amendment 10, the analysis recognized the broken trip program as “a better concept than the existing one, but from a safety perspective it is not as effective as no punitive action for valid trip terminations.”

4.2.2.2 Broken trip rebate: Status quo

Vessels with a broken trip taken before the framework adjustment becomes effective would fish under existing rules, i.e. the broken trip program disincentive would apply. Replacement trips for these broken trips would have an allocation that is based on the existing schedule where landings on replacement trips are imposed a 'charge' of up to 2 DAS and 3,000 lbs. Trips that are initiated before the framework adjustment becomes effective but are terminated after the rule becomes effective would be eligible under the new rules (see Section 4.2.1.2 for a description of the new rule).

Rationale: This measure would avoid applying a final rule retroactively to earlier fishing activities. Various vessel operators may make different decisions about terminating trips until the framework adjustment was approved, raising equity concerns.

5 DESCRIPTION OF AFFECTED ENVIRONMENT

This section includes descriptions of biological, physical, economic, and social features that are likely to be affected by the alternatives, focusing on the general category scallop fishery. Broader descriptions of these features that coincide or are correlated with scallop management were presented in the FSEIS for Amendment 10 (NEFMC 2003).

5.1 Description of the Sea Scallop Fishery and Human Environment

The scallop fishery consists of vessels with limited access scallop permits that are regulated with area specific DAS and trip allocations, and vessels with general category scallop permits that are regulated with a 400 lb. possession limit. Amendment 10 provides a thorough description of the scallop fishery, including the limited access and general category fleet, and the business infrastructure (ports and dealers) that support scallop fishing activity. The analysis describes a vibrant fishery that has benefited from the effects of management actions over the last 10 years. Over the past few years, the improving condition of the resource has encouraged more investment in the fishery.

The limited access vessels, with the exception of occasional vessels choosing to fish only in the open areas, are already required to have a VMS onboard while fishing for scallops. As a result, the proposed alternatives requiring VMS implementation for the general category fleet are not expected to have a substantial impact on the limited access vessels, except indirectly through the positive impacts of improved monitoring of the possession limit. The removal of broken trip disincentive and rebates on charges for replacement trips that take place during the 2005 fishing year will have positive impacts on the limited access vessels by improving safety and reducing the revenue losses from broken trips. However, these measures will impact only a small proportion of controlled access trips without substantial impacts for the limited access scallop fishery. This section provides a description of the general category fleet and a summary of the limited access and other sectors of the scallop fishery with updated information for the 2003 fishing year and information on the broken trips that took place during the 2004 fishing year. (See Section 7.1 of the FSEIS for Amendment 10 for a full description of the scallop fishery).

5.1.1 Limited Access Scallop Fleet:

The human environment, including the limited access vessels, dealers and processors, the scallop ports, and fishing areas were described in detail in Section 7.1 of the FSEIS for Amendment 10 (NEFMC 2003). The limited access vessels consist of full-time, part-time and occasional vessels and are regulated through area specific DAS and trip allocations as determined by Amendment 10 to the Sea Scallop Fishery and by the regulations included in Framework 16.

The number of limited access vessels increased from 280 in 1999 to 333 in 2003 (Table 3). According to the permit data, about 289 vessels with full-time, 34 with part-time and 10 with occasional permits participated in the sea scallop fishery during 2003. During the recent year, the Confirmation of Permit Histories (essentially limited access permits in reserve) was placed on new or newly outfitted vessels. Another important trend was that vessels with part-time and occasional permits were converted into a full-time or part-time small dredge permit. Originally, the FMP considered a small dredge permit roughly equivalent to a large dredge permit of the next lower category. This balance, however, changed as the resource conditions improved and the daily catches for a vessel with a small dredge permit became closer to the daily catches of a vessel with a large dredge permit.

Sea scallop landings reached about 52 million lb. in 2002, and revenues over \$202 million. The landings for the 2003 fishing year reached over 56 million pounds, and revenues over \$215 million (Table 4 and Table 7).

During the 2003 fishing year 224 full-time dredge vessels participated in the scallop fishery, earning on the average over \$836,000 in scallop revenue. These were relatively larger vessels with an average of 160 gross tons and over 850 horsepower. In addition 30 full-time small-dredge vessels, 15 full-time trawl vessels, 28 part-time and 5 occasional vessels participated in the scallop fishery in the same year.

Primary centers of fishing industry activities include coastal NC, the Hampton Roads area of VA, Cape May, Barnegat, and Point Pleasant, NJ, New Bedford, Provincetown/Chatham, and Gloucester, MA. The trend in the total number of scallop permits, the total DAS allocated to the limited access fleet, and the amount of DAS actually used by the fleet to target scallops are summarized in Figure 5-1 below and in Table 59 (Appendix A).

Table 3. Limited Access and General Category Permits in the Sea Scallop Fishery.

Permit Category	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Full-time	227	227	214	203	202	207	219	223	229	236
Full-time small dredge	5	4	5	3	2	1	3	13	25	37
Full-time trawl	30	32	27	23	23	16	17	16	16	16
Total full-time	262	263	246	229	227	224	239	252	270	289
Part-time	26	21	18	16	11	11	15	14	13	10
Part-time small dredge	8	6	8	8	6	3	4	6	8	17
Part-time trawl	30	28	27	30	26	18	20	18	10	7
Total part-time	64	55	53	54	43	32	39	38	31	34
Occasional	4	3	2	2	3	4	4	5	4	2
Occasional trawl	28	26	25	20	19	20	16	15	15	8
Total occasional	32	29	27	22	22	24	20	20	19	10
Total limited access	358	347	326	305	292	280	298	310	320	333
General Category	1,960	2,067	1,984	1,993	1,930	2,074	2,247	2,293	2,493	2,554

Table 4. Limited access vessels, 2003 fishing year

Permit category	Number of vessels	Average per vessel					Fleet totals	
		Total revenue (\$)	Scallop revenue (\$)	GRT	Horse power	Crew size	Total Revenue (\$)	Scallop Revenue (\$)
Full-time	224	876,844	836,228	160	852	7	196,413,144	187,314,999
Full-time small dredge	30	423,205	414,534	96	431	5	13,119,345	12,436,022
Full-time trawl	15	657,754	670,149	120	463	6	10,524,065	10,052,240
Total	269	814,036	779,938	151	783	7	220,056,554	209,803,261
Part-time	10	639,112	370,368	151	794	6	6,391,116	3,703,680
Part-time small dredge	13	260,668	157,848	103	421	4	3,649,352	2,052,019
Part-time trawl	5	316,575	188,204	110	467	5	1,582,876	941,021
Total	28	405,810	239,169	121	562	5	11,623,344	6,696,720
Occasional	5	121,797	2,927	59	397	3	1,006,329	14,636
Grand Total	302	753,034	716,936	146	752	6	232,686,227	216,514,617

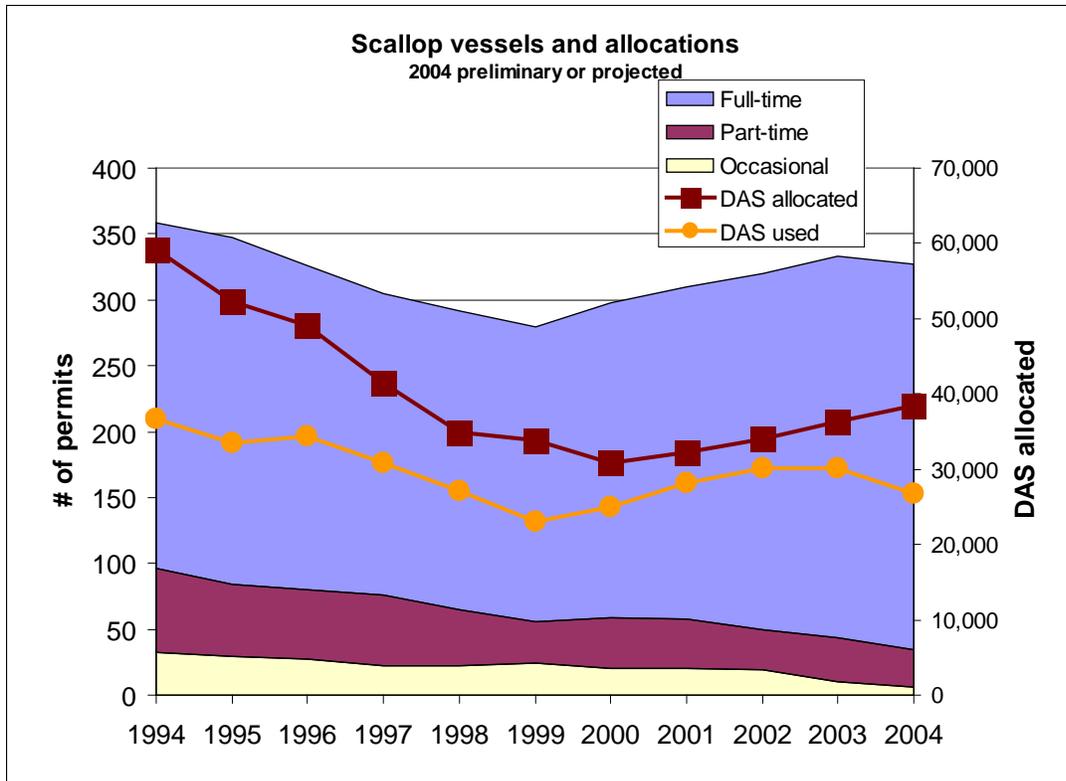


Figure 5-1. Limited access permit and DAS trends, 1994-2004. Data for 2004 are preliminary through December 2004, or are projected based on seasonal DAS use trends and estimates in Framework Adjustment 16/39.

Amendment 10 provisions allows a vessel to return early from a controlled access trip and have a large part of its automatic DAS charge and potential scallop landings applied to a future replacement trip. To terminate a trip and have a reduced day-at-sea charge, the Captain must notify NMFS of his intent to terminate the trip before landing; and report the reason for the termination, the hail weight of the scallop catch onboard the vessel, and the intended time and location of offloading and landing. Vessels that qualify for a broken trip day-at-sea adjustment will be allowed to resume the trip later within the fishing year, the replacement trip having a possession limit that is reduced to account for remaining time from the original trip. The day-at-sea charge for this trip will be the remaining days-at-sea for that trip and the possession limit will be prorated at a 1,500 per day-at-sea equivalent.

During the 2004 fishing year there were 145 trips that were terminated for the reasons specified in Table 5 below. More than half of the broken trips were due to the weather conditions, especially during the winter months. Mechanical or gear problems was the main reason for one third of the broken trips. In terms of season, most broken trips took place in winter months, although more than one-third of the broken trips happened during the summer months. Table 6 shows scallop pounds that were allowed to be landed from the replacement trips averaged 7,575 lb. and totaled over one million pounds for the 2004 fishing year.

More analysis on the broken trips is provided in Section 6.2.2.1.1 (Economic Impacts).

Table 5. Broken Trips by Season and Reason for Termination (2004 fishing year)

Reason for Broken Trip	Sept to Nov. (2004)	May to Aug. (2004)	Dec.2004 to Feb.2005	Total number of Trips
ILLNESS/INJURY	3	3	3	9
MECHANICAL/GEAR	14	19	15	48
OTHER	NA*	NA*	8	11
WEATHER	12	28	37	77
Total	30	52	63	145

*The actual numbers were not specified to keep the data confidential.

Table 6. Average and Total Scallop Pounds from Replacement Trips (2004 fishing year)

Data	Sept to Nov. (2004)	May to Aug. (2004)	Dec.2004 to Feb.2005	Grand Total
Average scallop pounds per trip from replacement trips	6,750	6,731	8,664	7,575
Total scallop pounds from replacement trips	202,502	350,012	545,826	1,098,340

5.1.2 General Category Fleet

General category scallop vessels are regulated by the 400 lb. possession limit and contribute less than 5% of total scallop landings. Any fishing vessel may obtain an open access general category scallop permit that enables it to retain more scallops than the 40-pound (meat weight) personal use limit. Vessels may retain and land up to 400 pounds (meat weight) or 50 US bushels of scallops per day or trip (if longer than 24 hours). Any legal fishing gear may be used, but scallop dredge and trawl size and configurations are regulated the same as those for limited access vessels, unless the vessel is fishing in an exempted groundfish fishery or a state-exempted scallop fishery. In addition, any vessel without a scallop permit may retain and land up to 40 pounds of scallop meats or 5 US bushels of in-shell scallops for personal use. Section 7.1 (Description of the Fishery) of the FSEIS for Amendment 10 (NEFMC 2003) describes the characteristics of the general category fleet and their landings from scallops and other species for years 2000 through 2002. This section provides an updated information on the general category vessels for 2003, corresponding to the most recent available data on an annual basis. A description of the general category vessels is also provided in Section 6.1.5 (Economic Impacts) for groups of vessels that would be affected by the proposed alternatives (Table 36, Table 39 to Table 44).

The number of vessels with general category permits has been rising since the late 1990's, increasing from 1,930 in 1998 to 2,554 in 2003 (Table 3). This number of general category permits issued increased further to 2,591 (compared to 342 limited access permits) in fishing year 2004. However, only a small subset of these vessels actually landed any scallops, less than 200 prior to 2000, and about 337 vessels during the 2003 fishing year. The scallop landings by the general category vessels also increased from 0.6 million in 1994, to 1.9 million lb. in 2003, the highest level except for 2001 when general category vessels landed over 2.1 million lb. of scallops. Actual landings could be higher than these amounts, however, due to the unreported landings in excess of 400 lb. trip by some general category vessels. Despite the rise in landings by general category vessels, the share of total scallop landings by general category vessels has not changed much during the same period because of an increase in landings by limited access vessels at similar rates. According to the dealers data, general category vessels landed 3.4% of scallops in 2003, which was actually lower than their percentage share in 2001 (Table 7).

Table 7. Total Scallop Landings by Limited Access and General Category vessels, by Share of Homeport Region and Share of Total Scallop Landings

Year	Total scallop lb. landed by General Category vessels	Total scallop lb. landed	No. of General Category vessels landing scallops	No. of all vessels landing scallops	% of scallop pounds landed by General Category vessels	% of General Category landings by Mid-Atlantic vessels	% of General Category landings by New England vessels
1994	609,507	16,634,105	194	476	3.7	54.7	22.3
1995	125,862	17,241,667	181	466	0.7	12.4	87.6
1996	280,499	17,633,008	217	519	1.6	2.8	97.2
1997	357,368	13,856,755	241	520	2.6	26.0	74.0
1998	250,667	12,262,295	207	480	2.0	9.5	90.5
1999	256,789	22,526,227	194	456	1.1	19.4	80.6
2000	524,803	34,315,805	208	485	1.5	52.9	47.1
2001	2,117,345	47,501,339	285	589	4.5	34.7	65.2
2002	1,362,666	51,739,443	299	629	2.6	48.1	51.7
2003	1,932,042	56,727,153	337	671	3.4	45.6	48.1

Source: dealer weighout and vessel permit records.

There had been a change in the composition of landings in terms of the homeport of the general category vessels participated in the scallop fishery. The percentage of the general category landings landed by vessels homeported in the Mid-Atlantic region increased since 2001 (Table 7). The spatial distribution of trips during 2000 and 2003 indicated that there were also major changes in the area fished by general category vessels, with an increase in the number of trips in the Mid-Atlantic area during the 2003 fishing year (Figure 5-2 and Figure 5-3).

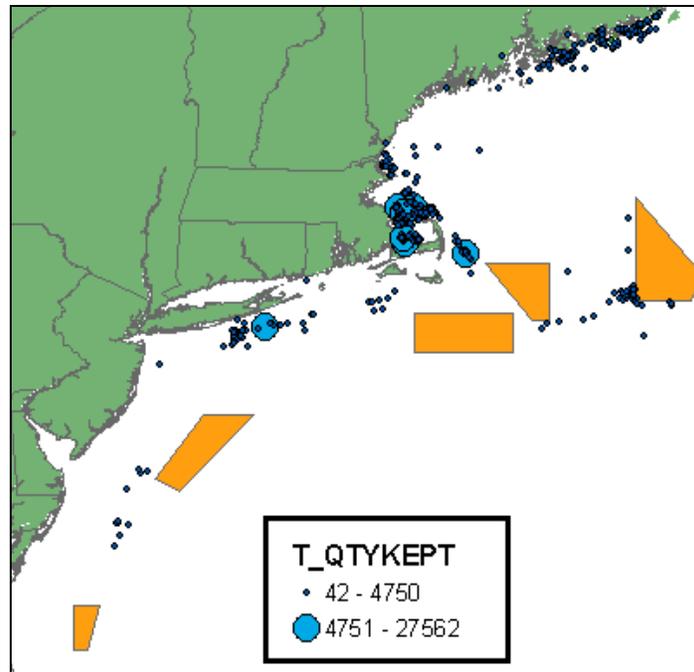


Figure 5-2. Total Scallops Harvested by General Category Vessels in 2000, by Lat./Long. of Fishing Location

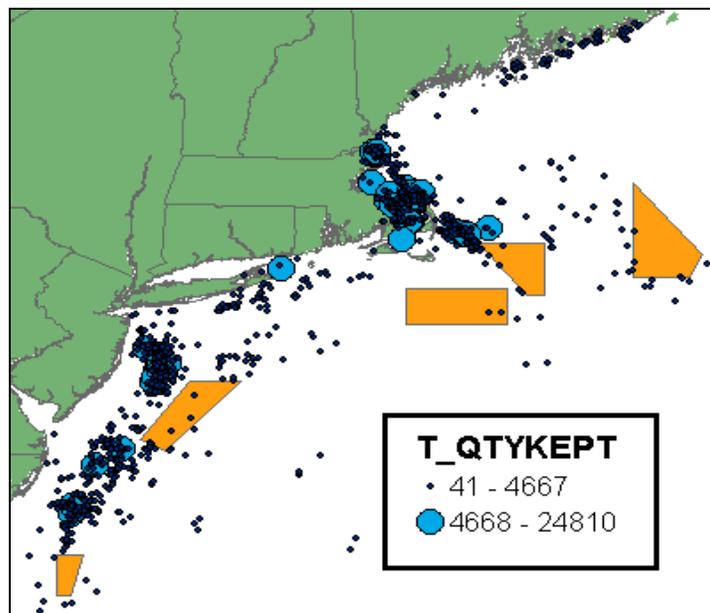


Figure 5-3. Total Scallops Harvested by General Category Vessels in 2003, by Lat./Long. of Fishing Location
Seasonal Distribution of Scallop Fishing by General Category Vessels

Most of the analyses in this report are based on dealers' data for the 2003 fishing year, because vessel trip reports do not include all vessels. The accuracy of these two datasets were often questioned as the landings reported in them do not exactly match for all vessels. Table 8 compares these two datasets across some vessel groups according to their maximum landings per trip. It shows that although scallop landings differ between these two datasets, especially for the group of vessels with maximum scallop landings of less than 300 lb. per trip, total landings are quite similar for 119 vessels that accounted for the majority of the trip landings. Total landings for all the 238 general category vessels that appear both in VTR and

dealer data are quite similar as well, totaling 1.69 million lb. for the dealer and 1.72 million lb. for the VTR data. Because VTR data includes area-fished in terms of a 3-digit statistical area, the distribution of landings by area were analyzed using VTR.

Table 8. Scallop Landings According to the Dealer's and VTR Databases for the 2003 Fishing Year by Maximum Landings per Trip

Data	≤40 lb.	41-100 lb.	101-200 lb.	201-300 lb.	>300	Grand Total
Number of vessels	27	30	39	23	119	238
GRT (average)	62	76	76	67	49	60
Crew (Average-VTR)	2.7	2.7	3.0	2.7	2.7	2.8
Annual Scallop Landings per vessel (dealer's data)	37	216	961	1,348	13,599	7,119
Annual Scallop Landings per vessel (VTR data)	75	417	2,352	3,165	13,004	7,255
Total Scallop Landings (dealer's data)	997	6,479	37,485	30,993	1,618,285	1,694,239
Total Scallop Landings (VTR data)	2,023	12,507	91,747	72,796	1,547,510	1,726,583
Total Scallop Landings as a % of landings (VTR data)	0.12%	0.72%	5.31%	4.22%	89.63%	100.00%
Total Scallop Landings as a % of landings (dealer's data)	0.06%	0.38%	2.21%	1.83%	95.52%	100.00%

5.1.2.1 General Category Fleet and Landings by Vessel Size

There were 2591 general category permits (compared to 342 limited access permits) issued in fishing year 2004, which runs from March 2004 through February 2005. While the limited access fleet consists mainly of large, full-time dredge vessels (with an average length of 79 ft and average GRT of 141), the vessels with general category permits are predominantly small vessels under 50 ft in length (Table 9). The number of general category vessels has increased 30% between 1994 and 2004 (compared to a seven percent decrease, from 368, in limited access permits during the same period). The share of small vessels has also increased, with 64% of the general category fleet less than 50 ft in 1994, compared to 72% in 2004.

Table 10 shows the numbers of active general category vessels and the average crew size per vessel by gross tonnage category for 2003 fishing year. The majority of general category vessels that participated in the scallop fishery, 176 vessels out of 337, were small vessels with 50 GRT or less and average crew size of 2.2. Again, most of the vessels that had a maximum landings of over 300 lb. per trip, were smaller vessels with an average gross tonnage of 49 GRT for the group as whole (Table 8). In fact, Most general category trips (3,906 out of 5903) were taken by smaller vessels with less than 50 GRT, and a majority if these trips (1,719 out of 3,906) resulted in landings of more than 300 pounds as summarized in Table 11 to Table 14 for 2003 fishing year. Therefore, there is no indication that vessel gross tonnage is a limiting factor in determining the amount of landings per trip.

Table 9. Number of General Category Vessels by Length and Tonnage Categories, 1994-2004

Year	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Length											
Less than 50 ft.	1274	1370	1325	1317	1318	1456	1602	1698	1822	1864	1860
50-70 ft.	401	396	383	385	363	379	388	392	392	400	405
Greater than 70 ft.	317	308	295	300	258	261	273	288	298	310	326
<i>Total</i>	<i>1992</i>	<i>2074</i>	<i>2003</i>	<i>2002</i>	<i>1939</i>	<i>2096</i>	<i>2263</i>	<i>2378</i>	<i>2512</i>	<i>2574</i>	<i>2591</i>
Tonnage											
0-50 GRT	1421	1515	1468	1465	1454	1597	1750	1845	1968	2013	2018
50.1-100 GRT	245	238	229	226	218	223	233	241	240	249	249
100.1-150 GRT	213	209	203	197	169	172	172	180	188	196	208
> 150 GRT	113	112	103	114	98	101	104	108	114	114	113
<i>Total</i>	<i>1992</i>	<i>2074</i>	<i>2003</i>	<i>2002</i>	<i>1939</i>	<i>2093*</i>	<i>2259*</i>	<i>2374*</i>	<i>2510*</i>	<i>2572*</i>	<i>2588*</i>

*Not all vessels provided tonnage information. Source: NE Permit data.

Table 10. Number of Active General Category Vessels With or Without VMS Units According to Tonnage Category (2003 FY)

	≤50 GRT	51-150 GRT	>150 GRT	Grand Total*
Number of vessels				
Have no VMS	165	77	19	261
Have VMS	11	56	9	76
Grand Total	176	133	28	337
Average Crew Size	2.2	3.4	4.2	2.8

This table includes 6 vessels that had limited access permits at least part of the 2003 fishing year.

Table 11. Number of General Category Vessels by Average Annual Scallop Landings per Trip and Tonnage Categories (2003 Fishing Year)

Average Scallop lb. per Trip	≤50 GRT	51-150 GRT	>150 GRT	Grand Total
≤100 lb.	67	65	10	142
101-200 lb.	32	21	12	65
201-300 lb.	32	9	5	46
301-400 lb.	37	24		61
>400 lb.	7	10		17
Grand Total	175	128	28	331

Note: Classifications are done on the basis of average annual landings per trip. For that reason, a vessel included in any category above could also have one or more trips in a year with landings that exceed or are less than the pounds in that category.

Table 12. Number of General Category Trips by Average Annual Scallop Landings per Trip and Ton Class (2003 Fishing Year)

Average Scallop lb. per Trip	≤50 GRT	51–150 GRT	>150 GRT	Grand Total
≤100 lb.	634	162	31	827
101–200 lb.	879	94	84	1057
201–300 lb.	674	151	132	957
301–400 lb.	1442	1054		2496
>400 lb.	277	289		566
Grand Total	3906	1661	336	5903

Table 13. Total Scallop Revenue from Trips (by Average Annual Scallop Landings per Trip and Ton Class) (2003 fishing year)

Scallop lb. per Trip	≤50 GRT	51-150 GRT	>150 GRT	Grand Total
≤100 lb.	263,868	38,043	4,965	306,876
101–200 lb.	739,585	64,684	52,637	856,906
201–300 lb.	762,854	156,883	123,210	1,042,947
301–400 lb.	2,265,725	1,468,476	124,675	3,858,876
>400 lb.	669,963	825,538		1,495,501
Grand Total	4,701,995	2,553,624	305,487	7,561,106

Table 14. Total Scallop Landings (by Average Annual Scallop Landings per Trip and by Ton Class) (2003 fishing year)

Scallop lb. per trip	≤50 GRT	51–150 GRT	>150 GRT	Grand Total
≤100 lb.	40,038	8,546	1,258	49,842
101–200 lb.	126,254	14,107	12,695	153,056
201–300 lb.	171,506	35,398	30,826	237,730
301–400 lb.	504,811	342,835	32,421	880,067
>400 lb.	130,513	176,943		307,456
Grand Total	973,122	577,829	77,200	1,628,151

5.1.2.2 Composition of General Category Trip Revenues

During the 2003 fishing year, scallops were the main source of trip revenue for more than half of the vessels that participated in the general category scallop fishery. As Table 15 shows, revenue from scallops accounted for 100% of the total revenue for 132 out of 331 general category vessels, and 90% to 99% of the trip revenue for another 55 vessels. These trips included only those trips that resulted in landings of scallops. The first group of vessel had an average scallops landings of over 300 lb. per trip, while the second group landed slightly below 300 lb. (272 lb.) of scallops per trip. The vessels that targeted scallops had, in general, a smaller gross tonnage than their counterparts that with scallops landings per trip much below the 400 lb. possession limit. In fact, most of the vessels with 50 GRT or less (97 out of 176 vessels) derived a higher percentage of their trip revenue from scallops (Table 16). The dependence on scallops as a revenue source from the trips that landed scallops was much lower for the larger vessels. For example, scallop revenue constituted less than 30% of the trip revenue for 68 of the 133 vessels with a gross tonnage ranging from 51 GRT to 100 GRT for the 2003 fishing year. Another conclusion that can be

drawn from these tables is that the general category vessels that target scallops usually take more trips and their scallops scallop landings per trip tend to be close to the 400 lb. possession limit.

Table 15. General Category Vessels Classified According to the Percentage of Total Revenue from Trips With Scallop Landings

Data	Scallop Revenue as a Percent of Total Revenue from Trips with Scallop Landings						
	<30%	30%–49%	50%–69%	70%–89%	90%–99%	100%	Total
Number of vessels	97	10	15	19	58	132	331
Gross tonnage (group average)	94	106	68	62	58	48	66
Scallop landings per trip (annual group average)	112	113	229	293	272	309	276
Scallop revenue as a percent of total	6	38	62	79	96	100	67
Number of trips	385	62	237	545	2,164	2,510	5,903
Annual scallop revenue per vessel (average)	1,857	2,834	14,330	37,927	46,468	28,197	22,843
Total Revenue per vessel from trips with scallops landed	35,936	7,018	23,027	48,059	48,077	28,197	34,214
Scallop revenue (group totals)	180,090	28,337	214,955	720,612	2,695,172	3,721,940	7,561,106
Scallop landings (group totals)	43,086	7,012	54,373	159,615	588,052	776,013	1,628,151
Total revenue (including other species)	3,485,755	70,183	345,410	913,128	2,788,448	3,721,940	11,324,864
Scallop landings (group) as a percent of total	2.65	0.43	3.34	9.80	36.12	47.66	100.00

Table 16. General Category Vessels Classified According to Tonnage Category and Percentage of Total Revenue from Trips With Scallop Landings (2003 fishing year)

Tonnage	Data	Scallop Revenue as a Percent of Total Revenue From Trips With Scallop Landings					
		<30%	30%–49%	50%–69%	70%–89%	90%–99%	100%
≤50 GRT	Number of vessels	20	NA	8	11	37	97
	Gross Tonnage (group average)	28	NA	24	33	24	21
	Scallop landings per trip (annual group average)	37	NA	166	184	241	283
	Scallop revenue as a percent of total	5%	NA	63%	81%	96%	100%
	Number of trips	117	NA	196	142	1,494	1,945
	Annual scallop revenue per vessel (average)	1,041	NA	15,869	11,762	47,959	27,311
	Scallop landings (lb. , group total)	4,343	NA	32,623	26,134	359,348	550,507
	51–150 GRT	Number of vessels	68	5	6	7	15	27
	Gross tonnage (group average)	104	100	110	94	94	86
	Scallop landings per trip (annual group average)	148	156	536	356	365	418
	Scallop revenue as a percent of total	6%	39%	61%	75%	97%	100%
	Number of trips	241	38	40	326	489	527
	Annual scallop revenue per vessel (average)	2,135	4,701	14,442	74,867	48,285	38,885
	Scallop landings (lb. , group total)	35,585	5,934	21,450	116,213	178,585	220,062
>150 GRT	Number of vessels	9	3	NA	NA	6	8
	Gross tonnage (group average)	163	172	NA	NA	176	242
	Scallop landings per trip (annual group average)	117	76	NA	NA	277	143
	Scallop revenue as a percent of total	4%	36%	NA	NA	95%	100%
	Number of trips	27	12	NA	NA	181	38
	Annual scallop revenue per vessel (average)	1,562	1,212	NA	NA	32,738	2,858
	Scallop landings (lb. , group total)	3,158	911	NA	NA	50,119	5,444

5.1.2.3 Bycatch and Participation in Other Fisheries

The general category fleet is marked by broad regional differences, with the New England fleet primarily also a groundfish fleet and the Mid-Atlantic fleet participating in other regional fisheries such as surf clam and ocean quahog fisheries (Table 17 and Table 18). In general though, this kind of flexible pattern of fishing shown by the general category fleet is often associated with “traditional” or smaller-scale fishing enterprises (compared with limited access vessels, for which scallops accounted for 92% of their combined landed value in 2003). For the New England general category fleet the main species landed in 2003 were monkfish (14.8% of revenue), cod (12.9%), and haddock (8.3%) followed by squid, lobster and yellowtail. For the Mid-Atlantic general category fleet, however, surf clam (24.7%), ocean quahog (12.9) and summer flounder (10.3%) constituted the main species landed in 2003. Moreover, the logbooks show a difference between trips taken by general category vessels, with most scallops trips accounted for by a directed fishery on scallops, but with a number of trips in which scallops are presumably bycatch (see Table 19). Of the 216 trips in which pounds of scallops landed accounted for less than 10% of the total pounds landed, only 3 used dredge gear; all other trips used some form of trawl, and primarily targeted groundfish or summer flounder. On the other hand, the majority of the scallop trips in which pounds of scallops landed accounted more than 50% of the total pounds landed, monkfish, fluke and groundfish were the main bycatch. In 2003, there were 4986 such trips by 192 vessels that had scallop revenue greater than 50 percent of the trip total.

Table 17. Composition of revenue by Species for Active General Category Vessels Homeported in New England: Species Greater Than 5% Landed Value in 1994-2003 (Active = One Recorded Landing of Scallops)

Year	Monkfish	Cod	Haddock	Squid (Loligo)	Lobster	Yellowtail Flounder	Herring	Winter Flounder	Am. Plaice Flounder	Scallops	Shrimp (Pandalid)	All other species
1994	9.2	17.7	0.5	6.7	3.4	5.0	0.9	6.0	7.6	0.5	5.2	37.1
1995	12.3	14.5	0.6	6.9	4.1	3.7	0.7	6.7	7.4	0.4	8.1	34.7
1996	12.0	14.1	0.9	3.9	4.9	4.6	1.7	8.4	7.3	1.2	6.7	34.4
1997	11.5	12.5	2.4	8.2	4.8	4.5	4.2	8.2	6.2	1.1	5.6	30.9
1998	11.7	13.5	4.5	7.2	4.2	6.0	3.5	7.9	6.0	1.0	1.9	32.5
1999	18.1	11.8	4.8	8.4	6.0	5.3	2.7	6.3	4.4	0.8	2.4	28.9
2000	19.8	13.8	6.4	4.9	5.9	7.6	2.9	6.2	5.2	0.9	0.9	25.6
2001	16.4	16.7	7.8	4.6	4.8	6.3	2.8	6.6	5.0	3.4	0.4	25.3
2002	14.6	14.9	9.4	7.1	4.9	6.5	2.6	6.7	4.3	1.9	1.0	26.2
2003	14.8	12.9	8.3	6.6	6.4	5.9	5.8	5.5	3.1	2.5	0.3	28.0

Source: dealer weighout data.

Table 18. Composition of revenue by Species Active General Category Vessels Homeported in the Mid-Atlantic: Species Greater Than 5% Landed Value in 1994-2003 (Active = One Recorded Landing of Scallops)

	Surf Clam	Ocean Quahog	Summer Flounder	Monkfish	Squid (Loligo)	Scallops	Silver Hake	Shrimp (Penaeid)	All other species
1994	24.4	21.3	8.0	1.0	10.9	2.9	4.7	0.0	26.8
1995	20.5	17.6	7.4	2.3	12.0	0.1	8.6	0.1	31.3
1996	19.2	16.7	8.5	2.8	8.7	0.1	9.5	0.0	34.5
1997	17.5	8.7	8.3	2.5	17.2	1.0	9.9	3.1	31.8
1998	14.1	6.7	8.4	4.1	14.7	0.2	9.8	2.2	39.8
1999	14.5	5.8	7.9	10.4	15.4	0.4	5.2	5.5	35.0
2000	14.5	7.0	7.6	8.3	12.8	1.4	4.7	7.3	36.3
2001	28.2	9.7	6.1	7.8	9.0	2.6	5.2	2.8	28.6
2002	29.3	15.0	8.6	6.0	7.3	2.7	3.4	3.2	24.4
2003	24.7	16.1	10.3	7.0	6.1	4.0	3.4	1.4	27.0

Source: dealer weighout data.

Table 19. General Category Trip Characteristics

% of scallops in a trip		No. of trips	No. of vessels	Scallops	Fluke	Squid	Monkfish	Groundfish	Lobster	Herring	All else	Total: Effort
												Ave: Crew size
Less than 10%	Total	216	88	26,668	720,240	86,209	119,157	1,529,142	25,986	1,200	420,162	3,259
	Ave.			123	3,334	399	552	7,079	120	6	1,945	3
Between 10 and 25 %	Total	59	26	9,698	19,274	118	1,646	19,558	10	0	9,717	165
	Ave.			164	327	2	28	331	0	0	165	2
Between 25 and 50 %	Total	54	16	16,549	17,535	155	1,740	2,108	90	0	5,213	160
	Ave.			306	325	3	32	39	2	0	97	3
50% or more	Total	4986	192	1,697,990	1,920	15	5,296	2,540	38	0	2,607	14,653
	Ave.			341	0	0	1	1	0	0	1	3

Source: logbooks, year 2003. Note: only includes trips that landed at least 40 lb. of scallops. Percentage of scallops is in terms of pounds landed; effort refers to crew size multiplied by days absent; average by trip.

Table 20 shows the composition of the general category landings according to annual scallop landings per vessel. Most of the general category vessels landed relatively insignificant amounts of scallops in 2003. For example, 191 out of 331 general category vessels landed less than 1200 lb. of scallops during this year, accounting for about 2.9% of all landings by general category. As expected these vessels have a low

dependence on scallops as their revenue source. On the other hand, 89 vessels that landed more than 4,800 lb. of scallops accounted for more than 88% of the general category landings during the 2003 fishing year. These vessels landed more than an average of 300 lb. per trip and earned \$74,413 on average, comprising over 40% of their annual revenue from all species and trips.

Table 20. General Category Vessels Classified According to Their Annual Scallop Landings (2003 Fishing Year)

Data	Annual Scallop Landings				
	<1200 lb.	1200-2399 lb.	2400-4799 lb.	>=4,800 lb.	Grand Total
Number of vessels	191	20	31	89	331
Number of trips	609	223	540	4,531	5,903
Total Scallop Landings (lb.)	47,961	34,552	109,372	1,436,266	1,628,151
Average of pounds per trip	79	155	203	317	276
Total annual revenue per vessel (average)	291,011	175,662	94,190	178,393	235,327
Average of Scallop Revenue (annual)	1,206	8,753	17,188	74,413	22,843
Minimum Scallop Revenue per vessel (annual)	1	5,326	10,084	16,924	1
% of Scallop landings	2.9%	2.1%	6.7%	88.2%	100.0%
Trips per vessel (average)	3	11	17	51	18
Vessels with no VMS	128	18	31	84	261

Table 21 to Table 23 provide more information on major species of fish from general category trips for the 2003 fishing year. These Tables included only those trips with some amount of scallop landings or exclude other trips by the vessel where no scallops were landed. They show the most important species landed. For example, if a vessel landed several species including scallops, but its major revenue source was monkfish, it was grouped under the “monkfish” category in these tables. The “scallops only” category indicates that almost all trip revenue was from scallops. Table 21 to Table 23 also group the vessels according to their average scallop pounds per trip. It is evident from these tables that the vessels that landed a greater amount of scallops per trip also derived a larger percentage of their trip revenue from scallops. According to Table 21, for example, 142 general category vessels landed an average of 100 lb. or less scallops per trip during the 2003 fishing year. One third of these vessels, or 45 out of 142, did not land any species other than scallops during these trips. For the majority of the vessels in the same group Multispecies groundfish was the primary source of income with scallop revenue accounting only 10% of their trip revenue as an average. On the other hand, for more than half, or for 57 out of 111 vessels that landed an average of 101 lb. to 300 lb. of scallops per trip during the 2003 fishing year, scallops were almost the only source of revenue. For this group of 57 vessels, annual scallop revenue averaged \$19,950, whereas for the first group of 45 vessels landing 100 lb. or less of scallops per trip, average annual revenue from scallops amounted to only \$3,870 per vessel. Average annual revenue from scallops was even greater for vessels that landed over 300 lb. of scallops per trip, averaging \$68,646 per vessel for all the 78 vessels included this group.

The different permits that scallop vessels hold is another indication of the range of fishing activities that they either do or may participate in, given changing biological or regulatory conditions (Table 24 and Table 49).

Table 21. General Category Vessels Classified by Average Pounds per Trip and Other Species (≤100 Pounds of Scallops per Trip)

Major Species Landed According to Revenue from Scallop Trips	Number of Vessels	Average Scallop Catch (Pounds per Trip)	Number of Trips	Average Scallop Revenue as a Percent of Total Trip Revenue from Scallop Trips	Average Annual Scallop as a Percent of Total Annual Revenue from All Trips	Maximum Scallop Landings per Trip (Average per Vessel)	Average Annual Scallop Revenue per Vessel	Average Annual Scallop Landings per Vessel	Maximum Annual Scallop Landings per Vessel
Lobster	12	49	25	55%	0%	76	434	102	300
Monkfish	13	66	173	64%	17%	97	6,025	877	5,753
Multispecies	48	40	196	10%	0%	96	760	164	1,580
Scallops Only	45	71	374	99%	38%	99	3,870	590	5,258
Other Fish	3	29	16	4%	0%	39	678	157	308
Squid (LOLIGO)	4	61	10	11%	0%	99	622	152	397
Summer Flounder	17	52	33	16%	0%	90	482	100	564
Grand Total	142	60	827	48%	14%	99	2,161	351	5,753

Note: The first column in this and the following Tables indicates only one major source of revenue (fish species) other than scallops.

Table 22. General Category Vessels Classified by Average Pounds per Trip and Other Species (101–300 Pounds Per Trip)

Major Species Landed According to Revenue from Scallop Trips	Number of Vessels	Average Scallop Catch (Pounds per Trip)	Number of Trips	Average Scallop Revenue as a Percent of Total Trip Revenue from Scallop Trips	Average Annual Scallop as a Percent of Total Annual Revenue from All Trips	Maximum Scallop Landings per Trip (Average per Vessel)	Average Annual Scallop Revenue per Vessel	Average Annual Scallop Landings per Vessel	Maximum Annual Scallop Landings per Vessel
Lobster	6	141	15	34%	0%	300	1,471	353	633
Monkfish	15	184	444	93%	51%	293	25,069	5,454	17,268
Multispecies	17	173	314	33%	12%	251	14,475	3,201	16,146
Scallops Only	57	204	1,080	99%	54%	293	19,950	3,860	19,905
Other Fish	NA	212	28	51%	23%	218	10,017	2,963	5,675
Summer Flounder	14	199	133	22%	5%	235	7,982	1,894	12,510
Grand Total	111	194	2,014	74%	37%	300	17,116	3,521	19,905

Table 23. General Category Vessels Classified by Average Pounds per Trip and Other Species (>300 Pounds per Trip)

Major Species Landed According to Revenue from Scallop Trips	Number of Vessels	Average Scallop catch (Pounds per Trip)	Number of Trips	Average Scallop Revenue as a Percent of Total Trip Revenue from Scallop Trips	Average Annual Scallop as a Percent of Total Annual Revenue from All Trips	Maximum Scallop Landings per Trip (Average per Vessel)	Average Annual Scallop Revenue per Vessel	Average Annual Scallop Landings per Vessel	Maximum Annual Scallop Landings per Vessel
Lobster	NA	344	65	98%	8%	344	93,044	22,366	22,366
Monkfish	13	389	534	95%	59%	>400*	63,546	15,964	40,499
Multispecies	NA	303	34	93%	28%	303	46,421	10,308	10,308
Scallops Only	46	394	1,809	100%	81%	>400*	73,965	15,483	48,472
Other Fish	NA	327	21	95%	20%	327	16,383	3,431	6,539
Summer Flounder	15	381	599	65%	31%	>400*	63,576	15,215	44,557
Grand Total	78	388	3,062	92%	64%	>400*	68,646	15,225	48,472

Note: The first column in this and the following Tables indicates only one major source of revenue (fish species) other than scallops.

* Maximum scallop landings exceed 400 lb. per trip for some vessels in this group according to the dealer database. This could be due to errors in the database, however, since 400 lb. is above the legal possession limit. Recording live pounds as meat pounds, landing two different 24-hour trips within the same calendar day, or other data mistakes could be the source of these errors. Therefore, these numbers should be interpreted with caution.

Table 24. 2004 Permits Held by General Category Scallop Vessels

Plan	No.	%	Plan	No.	%
Bluefish	2077	80.2	Scallop Limited	7	0.3
Black Sea Bass	746	28.8	Scallop General	2581	99.6
Dogfish	2000	77.2	Scup	769	29.7
Summer Flounder	807	31.1	Surf Clam	1407	54.3
Herring	1629	62.9	Squid-Mackerel- Butterfish	1957	75.5
Lobster (LO)	1478	57.0	Tilefish	1323	51.1
Monkfish	1994	77.0	Lobster (LOI)	96	3.7
Multispecies	2103	81.2	Red Crab	970	37.4
Ocean Quahog	1376	53.1	Skates	1617	62.4

Source: NE Permit Data. Note: Plans are from the last valid application in 2004, not the last valid application with a scallop permit, so general category does not sum to 100%.

5.1.2.4 General Category Profile by Gear:

Scallop dredge and trawl vessels accounted for the majority of the general category scallop landings during the 2003 fishing year. Table 25 shows the numbers and activity of the general category vessels according to the primary gear used during the scallop trips.¹ There were 164 vessels (50%) that used scallop dredge as the primary gear and landed 66% of total scallop landings from general category trips. The contribution to total scallop landings by other gear types were relatively small, with 34 scallop trawls landing 27%, with 122 trawl vessels landings 4% and 11 surf clam dredges landing 3% of all scallops from general category trips. For the dredge sector, scallop landings per trip averaged 361 lb. per vessel, while for otter trawl vessels, scallop landings per trip was below 100 lb. (average per vessel). On the other hand, average annual scallop landings per vessel was greater for scallop trawls (over 13,000 lb), than for scallop dredges (over 6,500 lb.), followed by surf clam dredges (4,600 lb.). Otter trawl fleet landed on the average only about 500 lb. per vessel during the 2003 fishing year. Comparison of the annual revenue from scallops with the total revenue from scallop trips indicates that scallop dredges, scallop trawls and surf clam dredges had more trips targeting scallops, while otter trawl vessels mainly caught scallops as a bycatch. The primary state for the majority of the scallop dredge vessels was in the New England area, with 81 vessels from Massachusetts and 40 vessels from Maine, while for the scallop trawls and surf clam dredges, the primary state was in the Mid-Atlantic area (Table 26).

In order to distinguish trips with incidental catches of scallops from trips directed on scallops, composition of general category trips by pounds per trip and gear type was analyzed in Table 53 (Appendix A). Again, the majority of scallop landings were by dredges, followed by trawls with general category permits. The trips with more than 300 lb. of scallops per trip constituted over 70% of the landings for each gear category. Furthermore, the distribution of trips indicated that both trawl and dredge gear were capable of the landing the 400 lb. possession limit. The current data available for 2004 (up to April 2004) also shows that most of the trips were taken by scallop dredges (Table 62, Appendix A)

¹ Some vessels used more than one gear during the 2003 fishing year. Primary gear was determined as the most frequent gear employed during those trips when a vessel landed scallops.

Table 25. Active General Category Vessels by Primary Gear Used During the Scallop Trips (2003 fishing year)

Data	Otter Trawl (fish)	Scallop Dredge	Scallop Trawl	Surf Clam Dredge	All vessels
Total number of trips	537	3,934	1,235	197	5,903
% of total trips	9%	67%	21%	3%	100%
Number of vessels	122	164	34	11	331
% of total number of vessels	37%	50%	10%	3%	100%
Averages per vessel					
GRT	90	38	78	194	66
HP	449	354	390	821	408
Crew size	3	2	3	4	3
Average scallop lb. per trip	91	361	281	120	246
Annual scallop Landings per vessel	522	6,531	13,020	4,607	4,919
Annual revenue from all species (scallop trips only)	22,341	36,518	70,511	19,352	34,214
Annual Scallop Revenue per vessel	2,175	32,463	51,884	18,890	22,843
Annual revenue per vessel from all trips	313,341	129,701	154,300	1,195,311	235,327
General category fleet totals					
Total Scallop Landings	63,662	1,071,128	442,680	50,681	1,628,151
% of total landings	4%	66%	27%	3%	100%
Total Scallop Revenue	265,298	5,323,969	1,764,053	207,786	7,561,106

Table 26. Active General Category Vessels by Primary State and Gear Used During the Scallop Trips (2003 fishing year)

Data	Otter Trawl (fish)	Scallop Dredge	Scallop Trawl	Surf Clam Dredge	All vessels
ME, NH		40			40
MA	47	81	NA	NA	129
NH	4	6	NA	NA	10
RI	31	3	NA	NA	35
Total New England	82	130			214
NJ	3	23	7	10	43
NY	25	NA	NA	NA	26
NC	11	NA	19	NA	32
MD, VA, DE, FL	NA	8	7	NA	4
Total Mid-Atlantic	39	31	33	10	117
Grand Total	122	164	34	11	331

Table 27. General Category Permits by Homeport State, With Average Length, 1995-2004

Year	1995		1996		1997		1998		1999		2000		2001		2002		2003		2004	
	Ave. ft	#	Ave. ft	#	Ave. ft	#	Ave. ft	#	Ave. ft	#	Ave. ft	#	Ave. ft	#	Ave. ft	#	Ave. ft	#	Ave. ft	#
ST	.	0	.	0	.	0	.	0	.	0	.	0	.	0	112	1	112	1	112	1
AK	.	0	.	0	.	0	.	0	.	0	.	0	.	0	.	0	.	0	61	1
AL	91	15	53	20	52	22	49	24	48	30	50	29	50	36	46	44	46	39	45	43
CT	52	9	54	10	57	8	52	11	51	11	51	11	52	11	57	16	56	17	52	24
DE	52	7	60	6	60	6	50	4	50	4	50	4	41	3	46	6	58	10	62	17
FL	.	0	.	0	.	0	.	0	58	1	76	4	76	4	78	3	76	7	77	5
GA	74	2	72	1	72	1	.	0	.	0	.	0	.	0	.	0	.	0	98	1
LA	46	854	46	817	46	843	44	812	44	834	43	872	43	922	42	997	42	990	43	946
MA	61	4	51	6	51	7	49	10	49	8	50	11	48	12	47	14	47	19	49	21
MD	41	558	41	556	42	491	42	459	42	503	41	551	41	556	41	548	41	562	40	561
ME	80	1	85	1	.	0	.	0	.	0	.	0	.	0	.	0	.	0	.	0
MS	72	30	71	34	70	37	68	41	66	43	62	56	62	68	60	77	60	94	62	110
NC	38	74	40	78	40	87	40	87	40	89	44	78	43	110	41	117	42	111	41	120
NH	56	152	55	140	55	144	55	143	53	188	52	213	53	246	54	265	52	289	52	303
NJ	52	156	52	146	51	152	51	145	50	162	49	173	49	156	49	164	47	179	47	197
NY	89	1	89	1	60	2	.	0	.	0	.	0	31	1	.	0	.	0	.	0
PA	55	170	57	155	56	157	56	160	55	165	54	175	53	180	54	179	53	184	54	176
RI	SC	0	.	0	.	0	47	1	47	1	47	1	44	2	41	1	.	0	.	0
SC	77	2	70	1	70	1	70	1	70	1	.	0	.	0	.	0	55	1	55	1
TX	62	37	64	28	62	41	60	40	51	55	49	62	49	69	47	76	46	70	46	63
VA	23	2	23	1	23	1	.	0	.	0	.	0	.	0	17	1	.	0	.	0
VT	WA	0	.	0	.	0	.	0	.	0	135	2	135	2	77	3	67	1	67	1

Source: NE Permit Data.

5.1.2.5 General Category Vessels by Port

While the fleet is spread throughout the eastern seaboard, the majority of general category permits are found in Massachusetts, Maine, New Jersey, and Rhode Island, and New York (Table 27). Most general category vessels found in the Northeast are relatively small throughout, though somewhat larger on average in North Carolina (Table 27). For the general category fleet, the ports of New Bedford, Gloucester, Cape May, Point Judith, Chatham, Portland, Barnegat Light, and Montauk have the highest number of permitted vessels (Table 50, APPENDIX A). Vessels land their catch at different ports at different times of the year, or at ports other than their homeports. The relation between these different geographies has significance for understanding the communities to which fishermen belong, the mutual influences between communities—as places for socialization and social organization—and the impacts of management. Table 27 to Table 29 try to ground the different kinds of places to which federally-permitted general category scallop fishermen belong, and to gauge the spatiality of economic activity and its changes over time, by looking at ports of landing and homeports by dockside value and dependence. (For some ports—mainly in Connecticut and some in Maine—it is difficult to say anything conclusively about the boats landing there from the dealer data, for data are usually provided without accompanying permit numbers, especially from smaller vessels, or are reported at the county-level only.)

The distribution of landings by state has a tendency to vary over time due presumably to biomass conditions, dealer prices, and vessel activity in other fisheries. The shift in geographic activity by the general category fleet mentioned earlier can also be seen in terms of landing ports, with the predominance of ports in Maine in the 1997 season having shifted in 2003 to Mid-Atlantic ports (such as Chincoteague and Barnegat Light). Only Gloucester, New Bedford, and Cape Cod in general show consistency during this timeframe. (1997 was chosen as a reference point, since it was a fishing year that saw an overall decrease in scallop landings but relatively robust landings by general category vessels—see Table 28). A slightly different picture is told when one looks at the ports that boats call their homeports, for not all ports buy scallops nor are all ports in the vicinity of scallop. Here, the Maine ports continue to have some importance, perhaps reflecting a seasonal movement of vessels from their customary ports to more active scallop grounds

Table 28. Landed Pounds and Value of Scallops by General Category Vessels, 1997-2003 Fishing Years

Port	Value of scallops landed by general category vessels (in thousands of dollars)							Percentage to total value landed by all vessels in port						
	1997	1998	1999	2000	2001	2002	2003	1997	1998	1999	2000	2001	2002	2003
Chatham (Barnstable MA)	.	.	0	4	479	101	400	.	.	0.0	0.0	2.0	0.5	3.7
Harwich Port (Barnstable MA)	.	.	.	.	426	110	285	.	.	.	.	3.6	1.3	11.6
Other Barnstable (Barnstable MA)	0	.	2	159	665	197	399	0.0	.	0.0	1.4	6.2	2.1	8.6
Provincetown (Barnstable MA)	56	24	28	110	2,060	501	582	1.1	0.4	0.4	1.2	21.6	6.7	15.0
Sandwich (Barnstable MA)	120	215	195	155	201	248	225	1.9	3.4	2.2	1.4	1.5	1.9	3.6
Wellfleet (Barnstable MA)	64	45	17	23	66	32	111	13.9	18.7	5.6	4.5	11.5	4.2	24.9
New Bedford (Bristol MA)	744	529	556	460	759	523	392	0.4	0.2	0.2	0.2	0.2	0.2	0.2
Gloucester (Essex MA)	164	61	95	80	942	683	462	0.3	0.1	0.1	0.1	1.2	0.9	0.9
Newburyport (Essex MA)	35	0	6	1	4	160	103	3.9	0.0	0.5	0.1	0.3	8.4	9.4
Rockport (Essex MA)	60	0	.	.	.	62	103	4.5	0.0	.	.	.	1.0	3.2
Ocean City (Worcester MD)	0	.	6	41	40	67	132	0.0	.	0.0	0.3	0.2	0.5	1.5
Cape May (Cape May NJ)	15	43	1	51	180	60	422	0.0	0.1	0.0	0.1	0.3	0.1	0.8
Wildwood (Cape May NJ)	.	3	.	119	78	141	287	.	0.0	.	1.1	0.6	1.1	4.1
Barnegat Light (Ocean NJ)	.	.	.	123	382	995	1,827	.	.	.	0.4	1.3	3.2	8.7
Point Pleasant (Ocean NJ)	3	0	0	135	218	435	474	0.0	0.0	0.0	0.4	0.6	1.0	1.8
Hampton Bays (Suffolk NY)	22	6	53	417	451	94	157	0.1	0.0	0.3	2.2	2.6	0.6	1.8
Chincoteague (Accomack VA)	.	1	1	16	70	200	922	.	0.0	0.0	0.3	1.3	2.9	17.1

Source: dealer weighout data.

Note: only includes ports that had at least 100,000 landed value in 2002 or 2003.

Table 29. Distribution of General Category Only Landed Value of Scallops by Associated Homeport in the Northeast (2000–2004)

Homeport (County State)	Value of scallops to homeport, landed by general category vessels (in thousands of dollars)							Percentage to total value by all vessels in homeport						
	1997	1998	1999	2000	2001	2002	2003	1997	1998	1999	2000	2001	2002	2003
Stonington (Hancock ME)	218	145	28	*	134	146	85	42.6	40.0	13.2	*	39.3	49.7	39.1
Friendship (Knox ME)	12	*	0	0	22	100	92	11.5	*	.	.	22.6	57.5	75.9
Owls Head (Knox ME)	*	*	*	0	*	39	139	*	*	*	.	*	11.6	40.0
Bucks Harbor (Washington ME)	13	1	*	*	159	58	133	12.5	1.3	*	*	57.9	32.4	42.9
Lubec (Washington ME)	43	15	0	0	54	35	149	100.0	100.0	.	.	89.5	100.0	100.0
Barnstable (Barnstable MA)	18	22	53	1	248	185	58	1.9	2.2	4.6	18.0	13.6	10.9	3.9
Chatham (Barnstable MA)	0	0	*	0	296	40	273	.	.	*	.	4.3	0.7	4.2
Provincetown (Barnstable MA)	86	36	72	96	2168	676	351	4.7	2.0	2.6	4.4	57.5	29.0	18.5
Sandwich (Barnstable MA)	71	83	114	28	349	177	323	8.0	6.8	6.0	9.5	24.4	11.5	18.9
Wellfleet (Barnstable MA)	66	49	13	53	287	139	848	99.4	65.3	96.7	52.0	89.9	84.7	98.2
New Bedford (Bristol MA)	158	64	79	49	403	241	647	0.4	0.2	0.2	0.7	1.0	0.7	1.8
Gloucester (Essex MA)	86	38	57	26	309	352	330	0.7	0.2	0.3	0.2	1.7	1.8	1.4
Newburyport (Essex MA)	11	*	4	1	143	101	122	2.5	*	1.4	0.3	23.9	24.8	18.0
Plymouth (Plymouth MA)	66	12	6	*	16	126	18	5.0	2.6	0.6	*	0.9	5.2	0.7
Tiverton (Newport RI)	0	0	0	17	1	0	127	.	.	.	2.6	0.1	.	11.8
Cape May (Cape May NJ)	518	4	220	100	53	119	130	4.7	0.0	2.1	1.0	0.5	1.2	1.3
Wildwood (Cape May NJ)	2	*	0	81	38	89	210	0.0	*	.	1.9	0.9	2.7	7.4
Barnegat Light (Ocean NJ)	0	*	0	*	382	1006	1684	.	*	.	*	4.9	14.3	18.8
Point Pleasant (Ocean NJ)	*	*	0	*	6	213	200	*	*	.	*	0.1	4.9	3.0
Toms River (Ocean NJ)	0	0	0	0	0	223	212	.	.	.	.	.	68.1	50.2
Chincoteague (Accomack VA)	0	0	0	*	0	0	130	.	.	.	*	.	.	36.4
Norfolk (Norfolk (City) VA)	1	*	*	*	7	25	131	0.1	*	*	*	0.2	0.6	4.7
Belhaven (Beaufort NC)	0	0	0	1	20	128	155	.	.	.	0.1	2.9	11.4	15.4
Morehead City (Carteret NC)	0	0	0	0	0	16	115	.	.	.	.	.	23.0	59.2
Engelhard (Hyde NC)	0	0	0	0	*	*	115	.	.	.	.	*	*	19.6

Note: Only ports with at least 100,000 in landed valued in 2002 or 2003. * Cannot report landings for ports with less than 3 active vessels. Source: dealer weighout and permit records

Table 30 summarizes general category scallops trips by state of landing. A majority of these trips were landed in ports of Massachusetts and New Jersey. In terms of trip characteristics, it was not possible to distinguish vessels with incidental catches from others that target scallops and land the possession limit based on the state of landing alone. The 2003 fishing year data arranged by active general category vessels indicated that the majority of trip landings with more than 300 lb. per trip took place in the states of Massachusetts, New Jersey and Virginia, while there were a few trips with scallop landings of greater than 300 lb. per trip in other states such as New Hampshire, Maine, Rhode Island, and North Carolina (Table 31 and Table 32). However, there were also many trips landed in Massachusetts, New Jersey and Virginia with a scallop catch of less than or equal to 100 lb. per trip. Further information on the distribution of trips by state landed and pounds per trip is provided in Table 54 to Table 58 in Appendix A.

Table 30. Scallop Trips by General Category Vessels by State Landed (Trip Data)

State of Landing	Number of Trips	Pounds per Trip	Revenue per Trip	Percent of Landings	Total Landings (lb.)	Total Revenue (\$)
MA	2,819	228	1,130	39%	642,694	3,185,991
RI	94	84	348	0%	7,915	32,745
ME	151	118	679	1%	17,813	102,543
NH	70	132	616	1%	9,253	43,106
Total New England	3,134	216	1,074	42%	677,675	3,364,385
NJ	1,591	377	1,781	37%	600,541	2,832,944
NY	232	166	681	2%	38,432	157,878
NC	29	191	787	0%	5,537	22,817
VA	759	359	1,385	17%	272,349	1,050,850
MD	158	213	837	2%	33,617	132,232
Total Mid-Atlantic	2,769	343	1,516	58%	950,476	4,196,721
Grand Total	5,903	276	1,281	100%	1,628,151	7,561,106

Table 31. Number of Trips by State Landed According to Pounds per Trip

State Landed	≤100	101–300	301–400	>400	Grand Total
MA	854	1,034	789	142	2,819
RI	67	23	NA	NA	NA
NH	39	20	11		70
ME	113	26	4	8	151
NC	10	10	9		29
NJ	90	304	953	244	1,591
NY	94	107	28	3	232
MD	30	87	38	NA	NA
VA	64	90	592	13	759
Grand Total	361	1,701	2,427	414	5,903

Table 32. Scallop Landings by State Landed According to Pounds per Trip

State Landed	≤100	101–300	301–400	>400	Grand Total
MA	44,948	198,188	293,527	106,031	642,694
RI	2,570	3,688	NA	NA	NA
NH	1,405	3,956	3,892		9,253
ME	5,087	4,685	1,429	6,612	17,813
NC	731	1,631	3,175		5,537
NJ	5,469	64,520	362,048	168,504	600,541
NY	4,033	22,866	10,185	1,348	38,432
MD	1,799	16,635	13,973	NA	NA
VA	2,837	18,451	231,240	19,821	272,349
Grand Total	68,879	334,620	920,520	304,132	1,628,151

Note: Maximum scallop landings exceed 400 lb. per trip for some vessels in this group according to the dealer database. This could be due to errors in the database, however, since 400 lb. is above the legal possession limit. Recording live pounds as meat pounds, landing two different 24-hour trips within the same calendar day, or other data mistakes could be the source of these errors. Therefore, these numbers should be interpreted with caution.

5.1.2.6 General Category Scallop Fishing Activity by Month

The major fishing activity for scallops by the general category vessels took place during the months from April through August in the 2003 fishing year with over 10% of the scallop trips occurred during each of these months (Table 33). However, there were several trips that landed scallops during the rest of the year. Most trips with over 300 lb. of scallops per trip took place from May to August, but again, there were several such trips in other months of 2003 fishing year. Therefore, there does not seem to be an inherent aspect to the season (or month) that makes it less likely for vessels to fish and/or to land or exceed the possession limit. In terms of total scallop landings, major proportion of general category landings took place July (15.7%) and August (15.9%) (Table 34).

Table 33. Percent of Trips by Month for 2003 Fishing Year (General Category)

Pounds per Trip	MONTH												Grand Total
	1	2	3	4	5	6	7	8	9	10	11	12	
≤40	0.6%	0.5%	0.8%	0.8%	0.7%	1.0%	1.2%	1.0%	0.9%	0.4%	0.4%	1.0%	9.3%
> 500	0.0%	0.1%	0.2%	0.4%	0.3%	0.4%	0.5%	0.4%	0.2%	0.2%	0.0%	0.1%	2.8%
41–100	0.5%	1.2%	1.6%	1.2%	1.5%	1.4%	1.8%	1.3%	1.1%	0.7%	0.7%	0.7%	13.8%
101–200	0.4%	0.9%	1.8%	2.3%	2.0%	1.5%	1.7%	1.3%	1.0%	0.8%	0.9%	0.7%	15.2%
201–300	0.1%	0.5%	1.4%	2.2%	1.8%	1.3%	1.8%	1.1%	1.2%	1.3%	0.6%	0.4%	13.6%
301–400	0.3%	0.4%	1.7%	3.2%	5.4%	5.6%	7.3%	7.1%	3.6%	3.7%	2.2%	0.6%	41.1%
401–500	NA	NA	0.2%	0.4%	0.4%	0.7%	0.8%	0.3%	0.5%	0.4%	0.3%	NA	4.2%
Grand Total	1.9%	3.6%	7.7%	10.4%	12.1%	12.0%	15.1%	12.5%	8.3%	7.6%	5.2%	3.6%	100.0%

Table 34. Percentage of Scallop Landings by Month for the 2003 Fishing Year (General Category)

Pounds Per Trip	MONTH												Grand Total
	1	2	3	4	5	6	7	8	9	10	11	12	
≤40	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.1%	0.8%
> 500	0.1%	0.8%	1.6%	1.6%	1.0%	1.3%	1.3%	3.5%	0.4%	0.6%	0.0%	0.3%	12.4%
41–100	0.1%	0.3%	0.4%	0.3%	0.4%	0.4%	0.4%	0.3%	0.3%	0.2%	0.2%	0.2%	3.5%
101–200	0.2%	0.5%	0.9%	1.2%	1.1%	0.8%	0.9%	0.7%	0.5%	0.5%	0.5%	0.4%	8.2%
201–300	0.1%	0.4%	1.3%	2.0%	1.6%	1.2%	1.6%	1.0%	1.1%	1.2%	0.6%	0.4%	12.4%
301–400	0.4%	0.5%	2.4%	4.3%	7.3%	7.7%	10.1%	9.9%	4.9%	5.2%	3.1%	0.8%	56.5%
401–500			0.2%	0.7%	0.7%	1.1%	1.2%	0.5%	0.8%	0.6%	0.4%		6.2%
Grand Total	1.0%	2.6%	6.9%	10.1%	12.1%	12.5%	15.7%	15.9%	8.0%	8.2%	4.8%	2.2%	100.0%

5.2 Biological Environment

5.2.1 Status of the Scallop Resource

NMFS conducted a benchmark assessment of the scallop stock during July 2004 using data from the 2003 fishery and from the 2003 scallop surveys. Like previous assessments, the official status determination and description of trends in biomass and fishing mortality were determined with a rescaled catch-biomass method. An alternative method using a forward projection model-based approach (CASA) gave similar trends, but was not adopted by the Stock Assessment Review Committee for use as a status determination. The main changes in this assessment were the presentation of a combined status determination for scallops in the Georges Bank and Mid-Atlantic regions. Nonetheless, trends were also reported separately for each region, consistent with previous assessments. The following discussion summarizes the findings of the benchmark assessment, but more details can be found in the following on-line publication:
<http://www.nefsc.noaa.gov/nefsc/publications/crd/crd0410/>.

Since the early 1990's when the scallop fleet targeted a then exceptional year class of scallops (see Figure 4) that appeared in the Great South Channel, SE of MA, DAS management and closed

areas have brought down high fishing mortality rates (Figure 2) and led to a large increase in scallop biomass in both regions (Figure 3). In the early 1990's, scallops in both regions were considered overfished (i.e. low stock biomass) and overfishing was occurring (high fishing mortality).

Before the implementation of Amendment 4, fishing mortality was 4-6 times higher than the level now considered as a maximum fishing mortality threshold. Biomass was less than 25% of the level now thought to be associated with maximum sustainable yield (MSY).

Fishing mortality declined through the 1990s, reaching the fishing mortality threshold in 1998 (Figure 5-5). Most of the decline in fishing mortality occurred in the Georges Bank region due to closed areas and had remained stubbornly high in the Mid-Atlantic region. Since the late 1990s, fishing mortality has remained low in the Georges Bank region and declined in the Mid-Atlantic region. Overall mortality has trended upward since 1998 and the 2003 estimate was 0.30, or 25% higher than the fishing mortality threshold. Several important management changes in Amendment 10 were expected to bring down fishing mortality to below the threshold in 2004.

Biomass began increasing in 1994 in the Georges Bank region (Figure 5-5), largely due to the effect of the groundfish area closures, which prevented scallop fishing during most years. Recruitment in the Georges Bank region was above average (but not exceptional) during 1998-2001 and below average during 2002-2003. Georges Bank biomass has however remained high in part due to the protection of the 2000 year-class that appeared in the southern part of Closed Area II.

Increasing biomass in the Mid-Atlantic region was observed a little later (Figure 5-5), following the good 1998 year-class, which was protected from fishing by the Hudson Canyon Area closure. Record recruitment in 2000 and again in 2003 has contributed to the recent increase in stock biomass despite the fishing mortality which is nearly twice the rate associated with MSY. Reductions in open area DAS allocations and the Elephant Trunk Area closure in 2004 is expected to cause Mid-Atlantic region fishing mortality to come down.

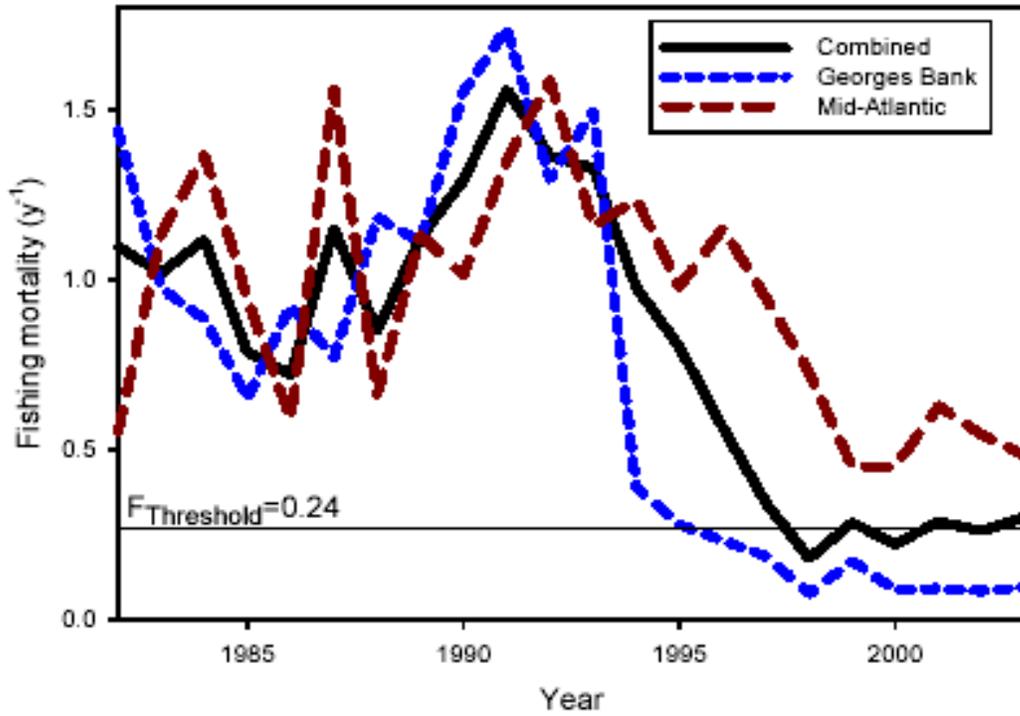


Figure 5-4. Trends in fishing mortality, 1982-2003. Source: 39th SAW Assessment Summary Report.

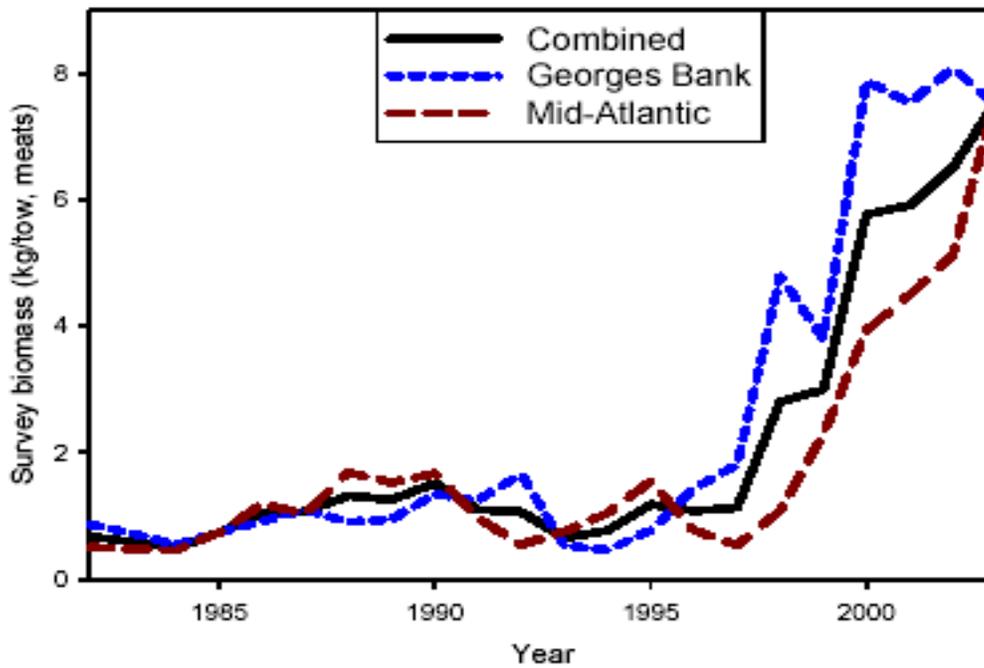


Figure 5-5. Trends in Scallop Biomass, 1982-2003. Source: 39th SAW Assessment Summary Report.

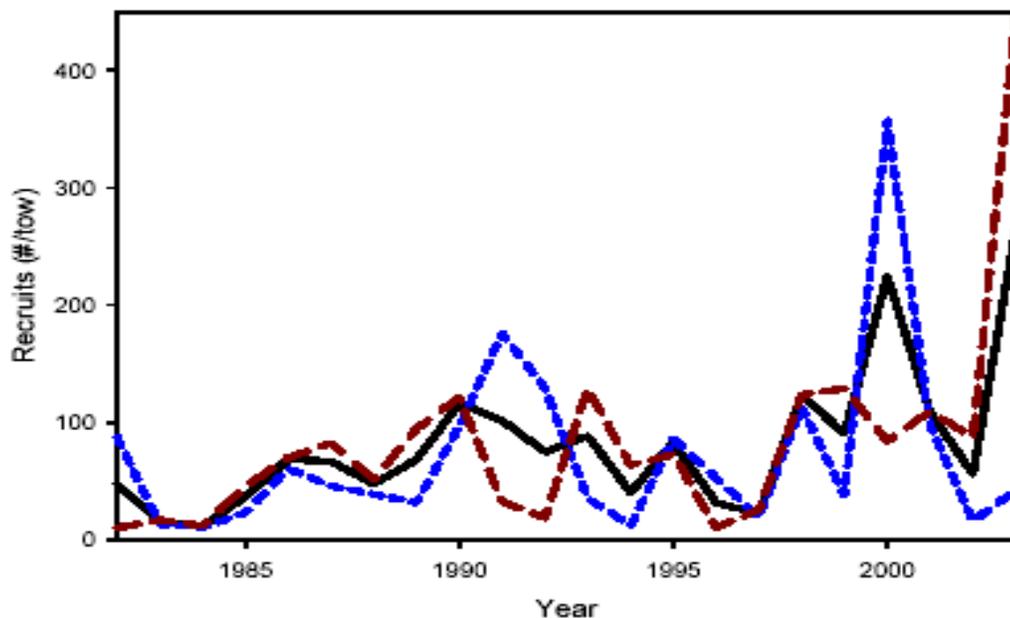


Figure 5-6. Trends in Scallop Recruitment, 1982-2003. Source: 39th SAW Assessment Summary Report.

Despite the reduction in fishing mortality and fishing effort, landings have climbed to record levels in 2003 (Figure 5-1) particularly for the Mid-Atlantic region where recruitment has been favorable. Exceptional record year classes occurred in 2000 (which was partially protected by the Hudson Canyon Area management) and the 2003 year class (which is now protected by the Elephant Trunk Area closure). Actually, most would acknowledge that the biomass increase has occurred because of, not despite, the reductions in mortality and improvements in size selectivity caused by changes in minimum ring size and limits on crew.

Scallop landings from the Georges Bank region are higher than average, but are lower than during the record 1991 and 1992 years. Landings for Georges Bank are partly held down by the groundfish area closures where large scallops are abundant. Landings in the Mid-Atlantic region have increased to record levels partly due to the well above average recruitment in recent years and due to the effect from the Hudson Canyon Area, which was closed for three years to protect small scallops. The small Hudson Canyon Area scallops were re-opened to controlled access fishing during 2001 to 2005, when the scallops were of optimum commercial size.

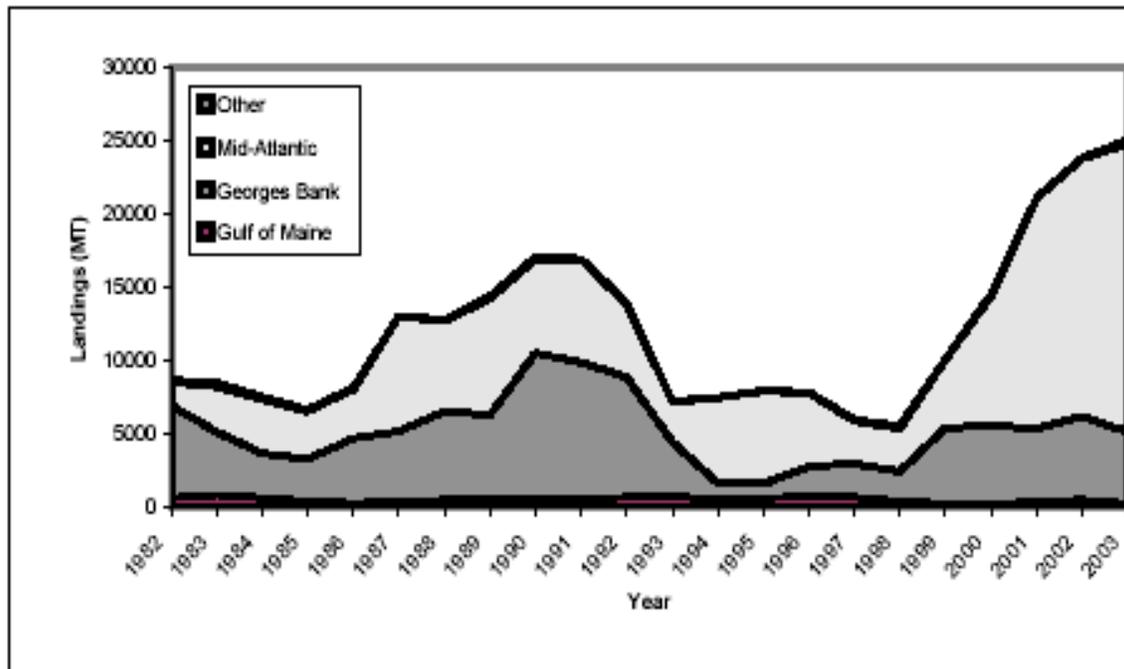


Figure 5-7. Sea Scallop Landings (mt meats), 1982-2003. Source: 39th SAW Assessment Summary Report.

Landings for 2004 are expected to be near 2003 levels, but more of the landings are expected to come from the Hudson Canyon Area, the Nantucket Lightship Area, and Closed Area II, rather than from the open areas of the Mid-Atlantic region.

The stock assessment does not evaluate the biomass of inshore scallops separate from the entire scallop resource, so there are few quantitative indices of the scallop resource inshore where vessels with general category permits fish more frequently. Anecdotal evidence, however, indicates that the scallop biomass has improved in these areas as well, particularly near Cape Cod and offshore of New Jersey and the Delmarva region. Fishing opportunities may have fallen off around the Cape Cod area, however, because of targeting of a localized concentration of scallops that appeared around 2001. Another area of interest to the vessels with general category permits is the Nantucket Lightship Area and Closed Area I. These areas are slated to open to limited fishing by general category vessels, offering an opportunity to fish for abundant large scallops that have appeared due to area management.

A scallop survey is not conducted in the Gulf of Maine region due to the rugged bottom, fixed gear, and other factors. Landings and effort trends however do not suggest a significant increase in scallop biomass, like that observed in the Mid-Atlantic and Georges Bank regions.

The Council plans to update the scallop stock assessment during 2005, using 2004 landings and survey data. Early results from the scallop survey do not indicate a substantial increase or decrease of total scallop biomass compared to 2003, which was 36% above the management target. Some areas, like the Hudson Canyon Area and the Nantucket Lightship Area are expected to see a decline in biomass due to fishing, while other areas like the closed Elephant Trunk Area are expected to see an increase.

5.2.2 Species Caught as Bycatch While Scallop Fishing

The Amendment 10 DSEIS estimated the catches of finfish species in scallop dredges in the Georges Bank access areas during 2000 and in the open fishing areas during 1991-2000. Tables 72 and 73 of that document give the complete list of bycatch estimates. The Council plans on updating these estimates in the 2005 SAFE Report using sea sampling data collected during the 2004 fishing year. The amounts and ranking of bycatch species may change due to required changes in gear that affect selectivity, changes in areas open to fishing, and shifts in the seasonal distribution of DAS use due to regulatory changes.

During 2000, the most commonly caught species in the Georges Bank closed areas were miscellaneous skates (1.7 million lb.), monkfish (801,000 lb.), yellowtail flounder (535,000 lb.), and winter flounder (154,000 lb.). Refinements in these estimates and new projections were completed in Framework Adjustment 16/39 to assess the impacts of the controlled access openings on finfish caught as bycatch. In the Amendment 10 estimates for open areas, the most commonly caught finfish were little skate (801,000 lb.), miscellaneous skates (754,000 lb.), monkfish (660,000 lb.), and yellowtail flounder (62,000 lb.). Except for yellowtail flounder, some skates, and monkfish, the analysis suggested that the bycatch amounted to a very small fraction of the affected stocks.

5.2.3 EFH Considerations - Habitat Requirements and Gear Effects Evaluation

EFH descriptions and maps for Northeast region species can be accessed at <http://www.nero.nmfs.gov/ro/doc/hcd/>. The following description and map of EFH for Atlantic sea scallops (*Placopecten magellanicus*) is excerpted from the Omnibus EFH Amendment. Essential fish habitat for Atlantic sea scallops is described as those areas of the coastal and offshore waters (out to the offshore U.S. boundary of the exclusive economic zone) that are designated on Map 32 in Amendment 10 to the Atlantic sea scallop FMP and meet the following conditions:

Eggs: *Bottom habitats in the Gulf of Maine, Georges Bank, southern New England and the middle Atlantic south to the Virginia -North Carolina border as depicted in Map 32. Eggs are heavier than seawater and remain on the seafloor until they develop into the first free-swimming larval stage. Generally, sea scallop eggs are thought to occur where water temperatures are below 17°C. Spawning occurs from May through October, with peaks in May and June in the middle Atlantic area and in September and October on Georges Bank and in the Gulf of Maine.*

Larvae: *Pelagic waters and bottom habitats with a substrate of gravelly sand, shell fragments, and pebbles, or on various red algae, hydroids, amphipod tubes and bryozoans in the Gulf of Maine, Georges Bank, southern New England and the middle Atlantic south to the Virginia -North Carolina border as depicted in Map 32. Generally, the following conditions exist where sea scallop larvae are found: sea surface temperatures below 18°C and salinities between 16.9‰ and 30‰.*

Juveniles: *Bottom habitats with a substrate of cobble, shells and silt in the Gulf of Maine, Georges Bank, southern New England and the middle Atlantic south to the Virginia - North Carolina border that support the highest densities of sea scallops as depicted in*

Map 32. Generally, the following conditions exist where most sea scallop juveniles are found: water temperatures below 15°C, and water depths from 18 - 110 meters.

Adults: *Bottom habitats with a substrate of cobble, shells, coarse/gravelly sand, and sand in the Gulf of Maine, Georges Bank, southern New England and the middle Atlantic south to the Virginia–North Carolina border that support the highest densities of sea scallops as depicted in Map 32. Generally, the following conditions exist where most sea scallop adults are found: water temperatures below 21°C, water depths from 18 - 110 meters, and salinities above 16.5‰.*

Spawning Adults: *Bottom habitats with a substrate of cobble, shells, coarse/gravelly sand, and sand in the Gulf of Maine, Georges Bank, southern New England and the middle Atlantic south to the Virginia -North Carolina border that support the highest densities of sea scallops as depicted in Map 32. Generally, the following conditions exist where spawning sea scallop adults are found: water temperatures below 16°C, depths from 18 - 110 meters, and salinities above 16.5‰. Spawning occurs from May through October, with peaks in May and June in the middle Atlantic area and in September and October on Georges Bank and in the Gulf of Maine.*

Section 7.2.5 of the FSEIS to Amendment 10 described benthic habitats that exist within the range of the scallop fishery biological characteristics of regional systems, and assemblages of fish and benthic organisms. It also included a description of canyon habitats on the edge of the continental shelf. No new information is available.

Section 7.2.6 of the FSEIS to Amendment 10 evaluated the potential adverse effects of gears used in the scallop fishery on EFH for scallop and other federally-managed species and the effects of fishing activities regulated under other federal FMPs on scallop EFH. The evaluation considered the effects of each activity on each type of habitat found within EFH. The two gears used in the directed scallop fishery are bottom trawls and scallop dredges. Scallop EFH has been determined to only be minimally vulnerable to bottom-tending mobile gear (bottom trawls and dredges) and bottom gillnets. Therefore, the effects of the scallop fishery and other fisheries on scallop EFH do not require any management action. However, the scallop dredge and trawl fisheries do have more than a minimal and temporary impact on EFH for a number of other demersal species in the region.

The following conclusions were reached in Amendment 10 to the Atlantic sea scallop FMP:

- Potentially adverse habitat impacts from bottom trawling occur throughout most of the NE region on a variety of substrates;
- High levels of fishing activity with scallop dredges occur primarily in the Mid-Atlantic region and secondarily on Georges Bank, according to the vessel trip report data from 1995 – 2001. Intense dredge activity from the same data show that the highest intensity of scallop fishing is in the Great South Channel and portions of the Mid-Atlantic region from Long Island to VA. The VMS data from 1998 confirms this assessment and also shows high scallop fishing intensity in the southern part of Closed Area II because the period included the area access program during the 1999 and 2000 fishing years which was intended to have high levels of effort to reduce impacts in open areas where smaller scallops existed.

- Potentially adverse habitat impacts from scallop dredging may occur in areas where scallop effort overlaps with areas where EFH has been designated for species with vulnerable EFH. According to the analysis within this document, scallop fishing effort is distributed in the same proportion as juvenile and adult EFH designations, but areas with more intense scallop fishing effort tend to be over areas with less EFH designations for species with vulnerable EFH.

Adverse impacts that were more than minimal and less than temporary in nature were identified for the following species and life stages, based on an evaluation of species life history and habitat requirements and the spatial distributions and impacts of bottom otter trawls in the region (Stevenson *et al.*, in press):

Otter Trawls

The use of Otter Trawls may have an adverse effect on the following species (and life stages) EFH as designated in Amendment 11 to the Northeast Multispecies FMP (1998):

American plaice (Juvenile (J), Adult (A)), Atlantic cod (J, A), Atlantic halibut (J, A), haddock (J, A), ocean pout (E, L, J, A), red hake (J, A), redfish (J, A), white hake (J), silver hake (J), winter flounder (A), witch flounder (J, A), yellowtail flounder (J, A), red crab (J, A), black sea bass (J, A), scup (J), tilefish (J, A), barndoor skate (J, A), clearnose skate (J, A), little skate (J, A), rosette skate (J, A), smooth skate (J, A), thorny skate (J, A), and winter skate (J, A).

Scallop Dredge (New Bedford style)

The use of New Bedford style Scallop Dredges may have an adverse effect on the following species (and life stages) EFH as designated in Amendment 11 to the Northeast Multispecies FMP (1998):

American plaice (J, A), Atlantic cod (J, A), Atlantic halibut (J, A), haddock (J, A), ocean pout (E, L, J, A), red hake (J, A), redfish (J, A), white hake (J), silver hake (J), winter flounder (J, A), yellowtail flounder (J, A), black sea bass, (J, A), scup (J), barndoor skate (J, A), clearnose skate (J, A), little skate (J, A), rosette skate (J, A), smooth skate (J, A), thorny skate (J, A), and winter skate (J, A).*

Gear types other than otter trawls and scallop dredges, in the context of the Atlantic Sea Scallop fishery, were not found to have adverse effects the Essential Fish Habitat as currently designated in this region. See **Error! Reference source not found.** for a description of the species and life staged that were determined to be adversely impacted in a manner that is more than minimal and less than temporary in nature in Amendment 10.

Table 35. Summary species and life stage's EFH adversely impacted by otter trawling and scallop dredging (gears that adversely impact EFH used in the Scallop fishery).

Species	Life Stage	Vulnerability to Otter Trawling	Vulnerability to Scallop Dredging	Depth in meters (EFH Designation)	Substrate (EFH Designation)
American Plaice	A	High	High	45-150	sand or gravel
American Plaice	J	Mod	Mod	45-175	sand or gravel
Atlantic Cod	A	Mod	Mod	25-75	cobble or gravel
Atlantic Cod	J	High	High	10-150	rocks, pebble, gravel
Atlantic Halibut	A	Mod	Mod	20-60	sand, gravel, clay
Atlantic Halibut	J	Mod	Mod	100-700	sand, gravel, clay
Barndoor Skate	A	Mod	Mod	0-750, mostly <150	mud, gravel, and sand
Barndoor Skate	J	Mod	Mod	0-750, mostly <150	mud, gravel, and sand
Black Sea Bass	A	High	High	20-50	structures, sand and shell
Black Sea Bass	J	High	High	1-38	rough bottom, shell and eelgrass beds, structures and offshore clam beds in winter
Clearnose Skate	A	Mod	Mod	0-500, mostly <111	soft bottom along shelf and rocky or gravelly bottom
Clearnose Skate	J	Mod	Mod	0-500, mostly <111	soft bottom along shelf and rocky or gravelly bottom
Haddock	A	High	High	35-100	pebble gravel
Haddock	J	High	High	40-150	broken ground, pebbles, smooth hard sand, smooth areas between rocky patches
Little Skate	A	Mod	Mod	0-137, mostly 73-91	sand or gravel or mud
Little Skate	J	Mod	Mod	0-137, mostly 73-91	sand or gravel or mud
Ocean Pout	A	High	High	<110	soft sediments

Ocean Pout	J	High	High	<80	smooth bottom near rocks or algae
Ocean Pout	L	High	High	<50	close to hard bottom nesting areas
Ocean Pout	E	High	High	<50	hard bottom, sheltered holes
Pollock	A	Mod	Mod	15-365	hard bottom, artificial reefs
Red Hake	A	Mod	Mod	10-130	sand and mud
Red Hake	J	High	High	<100	shell and live scallops
Redfish	A	Mod	Mod	50-350	silt, mud, or hard bottom
Redfish	J	High	High	25-400	silt, mud, or hard bottom
Rosette Skate	A	Mod	Mod	33-530, mostly 74-274	soft substrates including sand/mud and mud
Rosette Skate	J	Mod	Mod	33-530, mostly 74-274	soft substrates including sand/mud and mud
Scup	J	Mod	Mod	0-38	inshore sand, mud, mussel and eelgrass beds
Silver Hake	J	Mod	Mod	20-270	all substrate types
Smooth Skate	A	High	High	31-874, mostly 110-457	soft mud, sand, broken shells, gravel and pebbles
Smooth Skate	J	Mod	Mod	31-874, mostly 110-457	soft mud, sand, broken shells, gravel and pebbles
Thorny Skate	A	Mod	Mod	18-2000, mostly 111-366	sand gravel, broken shell, pebble, and soft mud
Thorny Skate	J	Mod	Mod	18-2000, mostly 111-366	sand gravel, broken shell, pebble, and soft mud

Tilefish	A	High	Low	76-365	rough, sheltered bottom
Tilefish	J	High	Low	76-365	rough, sheltered bottom
White Hake	J	Mod	Mod	5-225	pelagic during pelagic stage and mud or fine sand during demersal stage
Winter Flounder	A	Mod	Mod	1-100	estuaries with mud, gravel, or sand
Winter Skate	A	Mod	Mod	0-371, mostly <111	sand, gravel, or mud
Winter Skate	J	Mod	Mod	0-371, mostly <111	sand, gravel, or mud
Witch Flounder	A	Mod	Low	25-300	fine-grained sediment
Witch Flounder	J	Mod	Low	50-450	fine-grained sediment
Yellowtail Flounder	A	Mod	Mod	20-50	sand and mud
Yellowtail Flounder	J	Mod	Mod	20-50	sand and mud

In Amendment 13 to the Multispecies FMP and Framework 16 to the Scallop FMP, the New England Council implemented a range of measures to minimize the impacts of bottom trawling in the Gulf of Maine, George’s Bank and Southern New England. In addition to the significant reductions in days-at-sea and some gear modifications, the Council closed 2,811 square nautical miles to bottom-tending mobile fishing gear (known as Habitat Closed Areas). Because the monkfish fishery overlaps significantly with the groundfish fishery in the northern fishery management area and the habitat closed areas extend into the southern fishery management area, measures to protect habitat in Amendment 10 and Amendment 13 assist in minimizing the effect of fishing on EFH in the monkfish fishery.

5.3 Physical Environment

A description of the affected environment was prepared for Amendment 10 to the Sea Scallop FMP and Amendment 13 to the Multispecies FMP, based on earlier work for the Council’s Omnibus EFH Amendment and based on several reports have been published which add to our understanding of the physical and biological environment of the Northeast U.S. region. Amendment 10 included an updated description on the biological and physical components of the environment that could be affected by the proposed action. This description covered an area known as the Northeast Shelf Ecosystem (NESE), which includes areas where scallops are found. A summary of the physical characteristics of the NESE is given below, but more detailed information is given in the Amendment 10 DSEIS.

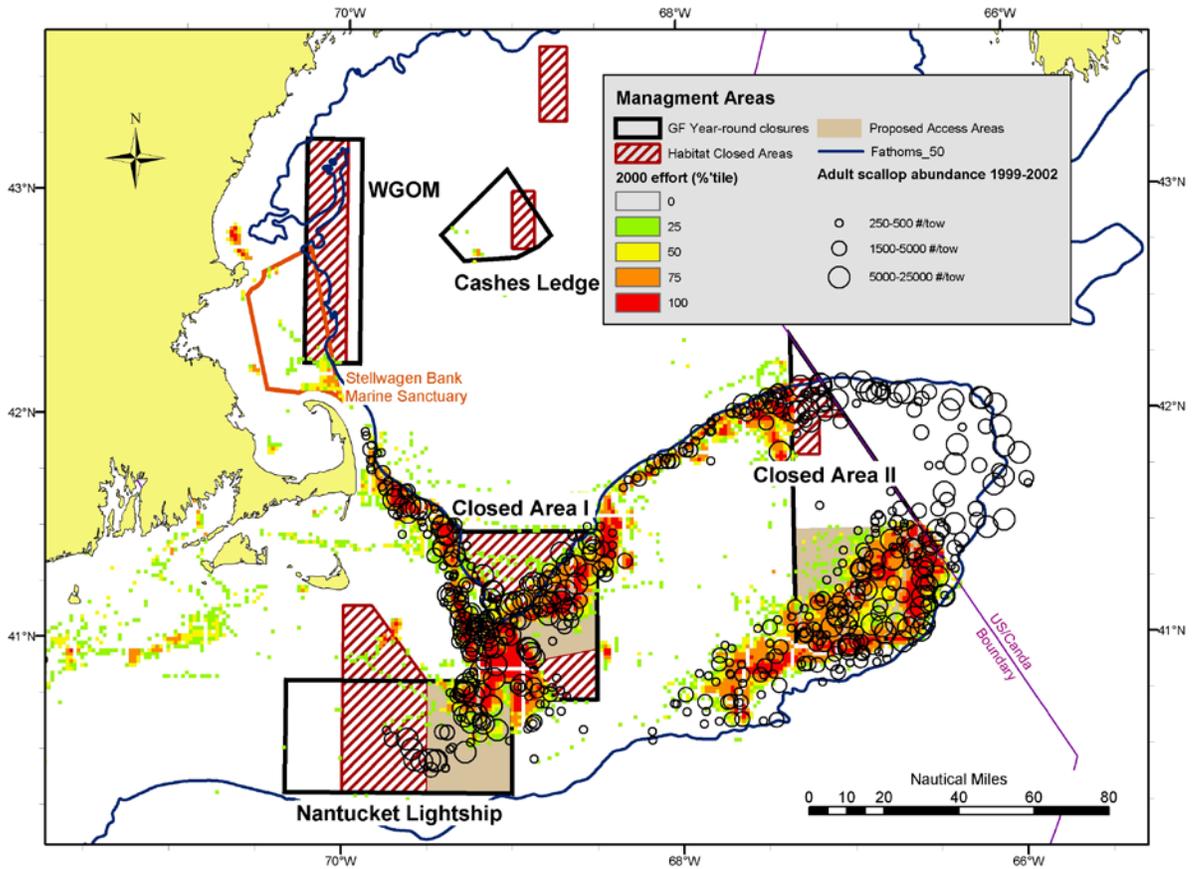
The Northeast Shelf Ecosystem has been described as including the area from the Gulf of Maine south to North Carolina, extending from the coast seaward to the edge of the continental shelf, including the slope sea offshore to the Gulf Stream (Sherman et al. 1996). The continental slope of this region includes the area east of the shelf, out to a depth of 2000 m (Map 5). A number of distinct sub-systems comprise the region, including the Gulf of Maine, Georges Bank, the Mid-Atlantic Bight, and the continental slope. Occasionally another subsystem, Southern New England, is described; however, we incorporated the distinctive features of this region into the descriptions of Georges Bank and the Mid-Atlantic Bight.

The Gulf of Maine is an enclosed coastal sea, characterized by relatively cold waters and deep basins, with a patchwork of various sediment types. Georges Bank is a relatively shallow coastal plateau that slopes gently from north to south and has steep submarine canyons on its eastern and southeastern edge. It is characterized by highly productive, well-mixed waters and strong currents. The Mid-Atlantic Bight is comprised of the sandy, relatively flat, gently sloping continental shelf from southern New England to Cape Hatteras, NC. The continental slope begins at the continental shelf break and continues eastward with increasing depth until it becomes the continental rise. It is fairly homogenous, with exceptions at the shelf break, some of the canyons, the Hudson Shelf Valley and in areas of glacially rafted hard bottom.

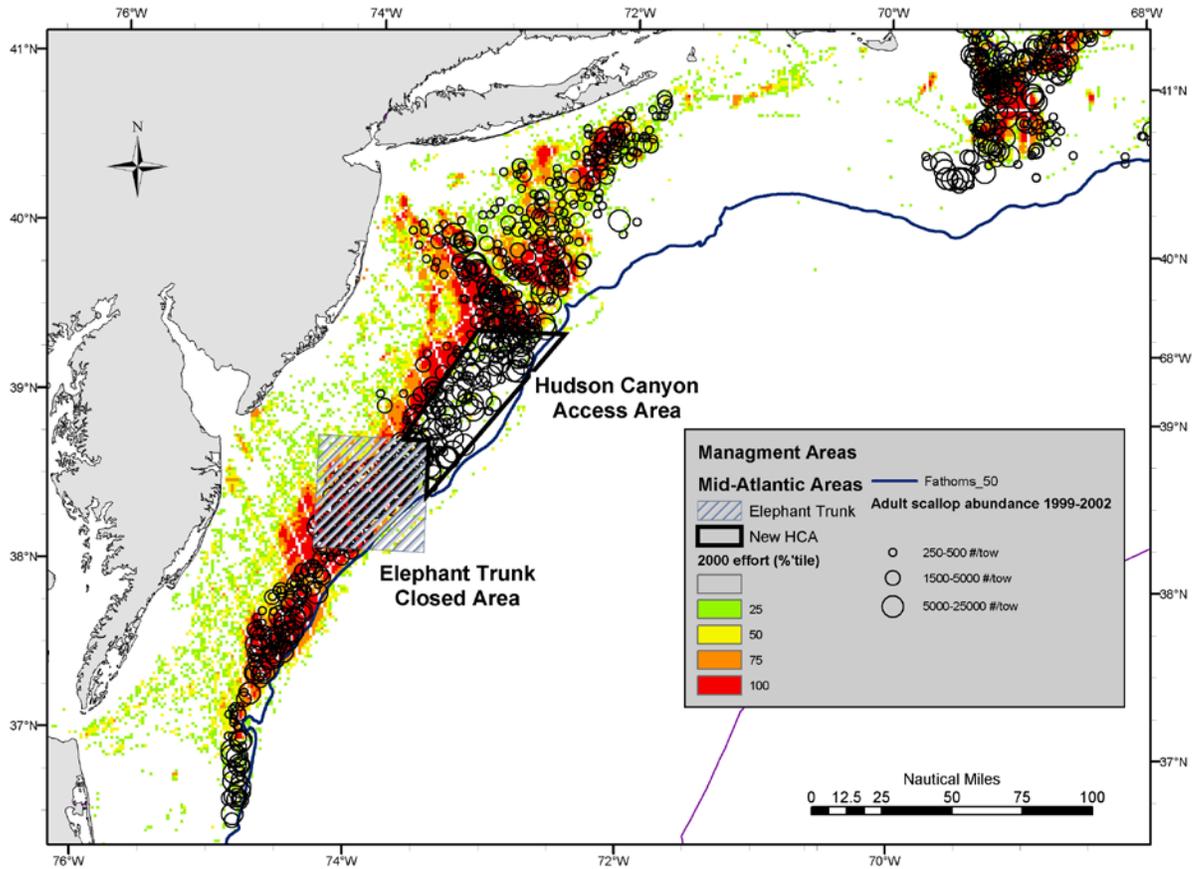
Sea scallops range from the north coast of the Gulf of St. Lawrence (Squires 1962) to the SSE of Cape Hatteras, NC (Posgay 1957), with large concentrations on Georges Bank and the Mid-Atlantic shelf. Smaller concentrations occur along coastal Maine, in the Bay of Fundy (Digby grounds), the Gulf of St. Lawrence, on St. Pierre Bank, and in Port au Port Bay, Newfoundland. Scallops are found in shallow water along Cape Cod and the Gulf of Maine (Map 3), but are commonly found in 40 to 100 m elsewhere (Map 4). Most abundant on the continental shelf between 20 and 50 m (65-165 ft), it is found less abundantly from 18 to 110 m (60-360 ft). Occasionally, the sea scallop is found as shallow as 2 m (6 ft) along the ME coast (Serchuk et al. 1982; Naidu and Anderson 1984) and as deep as 384 m (1260 ft) (Merrill 1959).

Sea scallops seem to be vulnerable to high temperatures above 20 degrees C (Posgay 1953, Johannes 1957 and Dickie 1958) and larvae also appear to sensitive to temperatures above 19 degrees C. (Culliney 1974). This sensitivity to high temperature appears to limit the southern range and the inshore distribution on the Mid-Atlantic shelf. The northern range appears to be limited by delayed maturation and/or insignificant scallop sets (Dickie 1955, Medcof and Bourne 1964). Scallops appear to be robust to changes in salinity (Cuulliney 1974), but vulnerable to anoxia (MacKenzie (1977).

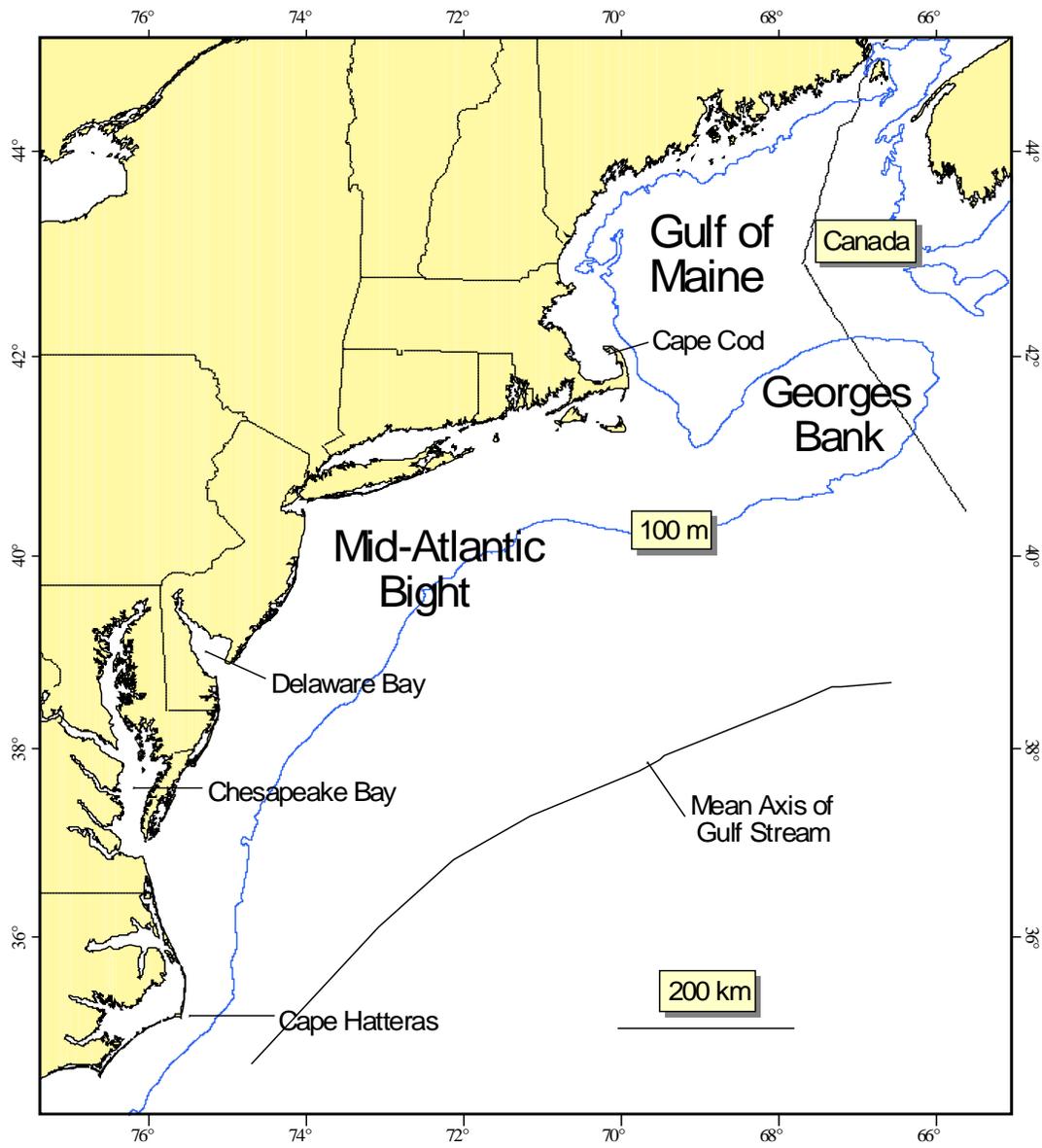
Scallops are also constrained by the presence of fine suspended sediments, which not only reduce the availability of phytoplankton, but also inhibit filter feeding and require frequent expulsion of sediments by clapping. Suitable adult scallop habitat is therefore dictated by presence of suitable temperatures, adequate food, bottom substrate, and physical oceanographic features (which influence pelagic larval distributions) (Packer et al. 1999).



Map 1. Map of the Georges Bank proposed access areas in the Nantucket Lightship Area, Closed Area I, and Closed Area II, with adjusted EFH closed areas, showing the distribution of 1999-2002 adult scallop abundance and 2000 fishing effort intensity.



Map 2. Distribution of 1999-2002 adult scallop abundance and 2000 scallop fishing effort, compared with the closed Elephant Trunk Area and Hudson Canyon Access Area, pending approval of Amendment 10.



Map 5. Gulf of Maine and Mid-Atlantic Bight areas

5.4 Threatened, Endangered and Other Protected Species

A complete list of threatened, endangered and other protected species inhabiting the scallop management unit was provided in Amendment 10 to the Sea Scallop FMP. An update is provided here to facilitate consideration of the species most likely to interact with the scallop fishery relative to the proposed action.

According to the most recent Biological Opinion provided by NOAA Fisheries Service and dated 12/15/04, the scallop management program as currently implemented may adversely affect loggerhead and leatherback sea turtles. Loggerheads are the only hard-shelled turtle species that has been identified as captured in the scallop dredge fishery despite increased observer coverage throughout the fishery and improved observer training for identifying and documenting turtles species caught in the fishery. Documented interactions with leatherback turtles have occurred in the fishery, but to much lesser degree than loggerheads. The distribution and behavior of other species of sea turtles makes interactions with the fishery unlikely.

The agency also determined that the management program is not likely to adversely affect shortnose sturgeon, the Gulf of Maine distinct population segment (DPS) of Atlantic salmon, hawksbill sea turtles, North Atlantic right whales, humpback whales, fin whales, sei whales, blue whales, or sperm whales all of which are listed as endangered species under the ESA. The Opinion added that the management program is not likely to adversely affect Kemp's ridley or green sea turtles

Similarly, other cetaceans not listed under the ESA, but protected by the Marine Mammal Protection Act, as well as the pinniped species inhabiting the action area, do not appear to be vulnerable to scallop gear or negative fishery impacts because of scallop gear configuration and/or the lack of overlap between the fishery and the distribution of these species. Neither has evidence come to light indicating the current scallop management program adversely affects right whale critical habitat.

6 ENVIRONMENTAL CONSEQUENCES—ANALYSIS OF IMPACTS

6.1 Biological Impacts

Requiring VMS on vessels with general category scallop permits is not expected to have any direct change of impacts on biological resources. There are no changes proposed in the scallop possession limits, the number of authorized trips, or the amount of fishing authorized or expected to occur.

There may however be some indirect effects on fishing activity as the fleet absorbs the cost of VMS monitoring. Some vessels may choose to drop the general category permit if they are required to install and operate VMS. As a result, fishing effort may not change but there may be less scallop landings and more discarding, which due to the low discard mortality rate may have some conservation benefit for the scallop resource. On the other hand, vessels that target scallops under a general category permit may increase the number of trips they take to recoup the VMS costs. This could increase mortality on scallops and have a greater impact on the environment. The added cost could also discourage new entrants into the general category fishery; helping to keep catches near present levels and keeping mortality from increasing.

If the amount of catch by the general category fishery changes, the FMP would adjust future limited access allocations and/or general category scallop possession limits to compensate and achieve the target fishing mortality rate.

There are also important secondary benefits from collecting better data with which to manage the fishery and analyze the impacts of the fishery on the environment. This is especially important for data collected from general category vessels, because they tend to fish more frequently in inshore regions and in the Gulf of Maine, which are not part of the annual research surveys. Since effort in the general category fishery tends to occur in areas that differ somewhat from areas targeted by limited access vessels, the fishery is likely to have a greater impact on a different range of finfish species and on habitat. Better knowledge of where this fishing occurs will provide a better assessment of the fishery's effects.

As long as scallop landings are monitored and do not exceed the TAC for each area, removal of the replacement trip charge will have no biological consequences. In addition, Amendment 10 and Framework Adjustment 16/39 take the approach that the total allocation of trips and scallop possession limits approximate a catch that will achieve the mortality objectives.

6.1.1 Scallop Resource

6.1.1.1 VMS Implementation and Power-down - Impacts of Proposed Action and Alternatives

At the present level of fishing effort, there is virtually no impact on the scallop resource, since the proposed management measures do not change the level of authorized catch. No change in scallop possession limits, the number of authorized trips, or other allocations is being proposed at this time. The Council also does not anticipate a change in fishing effort distribution to target larger or smaller scallops as a result of the proposed action.

There may, however, be some indirect effects on the scallop resource in response to higher costs associated with using the permit to land scallops. One on hand, vessels that elect not to install VMS (either by relinquishing their permit under Alternative 1, or by landing less than the possession limit that requires VMS under Alternatives 2, and 3a – 3b) may discard more scallops when targeting other species or take fewer trips targeting scallops (because they cannot land the scallops without having VMS). On the other hand, some vessels that install VMS may choose to target scallops more frequently to compensate for the higher costs.

For vessels that elect not to install VMS, the vessel may continue catching scallops when targeting other species, but would be forced to discard (or land illegally) more scallops if the catch exceeds the limit that requires VMS. Since scallop discard mortality is low under most circumstances (10-30%, see Amendment 10), the additional discarding is likely to have a beneficial conservation effect, although it would reduce income for that vessel. In the long run, this response would allow more scallops to be caught by other vessels and allow the management rules to be more liberal than they would otherwise be.

Similarly, it may not be worthwhile to install VMS for vessels that take a small number of trips targeting scallops. This response could also allow more scallops to be caught by other vessels and allow the management rules to be more liberal than they would otherwise be, because fewer vessels would be operating in the scallop fishery.

Alternatively, vessels that target scallops may elect to target scallops more frequently to compensate for the added compliance costs. At present prices and VMS costs, a vessel might have to take 2 to 3 trips to cover the added cost with scallop revenue, or about 5-10 trips to cover the added costs with profits from scallop trips. These rough estimates will of course vary greatly from vessel to vessel.

The added cost may also discourage new entrants into the scallop fishery. The additional compliance cost is unlikely to dissuade a new entrant that intends to target scallops frequently as a full-time, day-trip activity. Many entrants to the general category scallop fishery, however, begin to target scallops on a few trips when the opportunity exists. If faced with added costs due to VMS requirements, an otherwise occasional participant in the fishery may elect to take no trips targeting scallops because of the higher start up costs.

It is impossible to forecast how such a diverse, open access fishery will respond, except in the most general terms. For Alternatives 1 that would require most or all vessels with general category permits to install VMS, there would probably be more vessels that choose simply to land fewer scallops and discard scallop bycatch more frequently. Proposed alternative, i.e., Alternative 2, Alternative 3a and especially Alternatives 3b and 3c would not affect scallop discarding as much, but may induce some vessels to target scallops more frequently to pay for the added VMS cost. On the other hand, the added VMS cost may discourage new entrants into the general category fleet, thereby keeping a lid on the expansion of the fishery. It would not be surprising, however, to see the vessels with VMS push for an increase in the 400 lb. scallop possession limit in line with the increase in scallop biomass and compliance costs, particularly if limited access is contemplated under the November 2004 control date.

More importantly, however, are the indirect effects on the scallop resource associated with better reporting of scallop landings and with more knowledge about the distribution of scallop fishing effort. Analysis of seasonal and inter-annual fishing effort patterns have been very useful in assessing the impact of fishing on the scallop resource, in particular helping the Council to refine its knowledge of the effectiveness of DAS regulations. The system polls nearly all limited access vessels twice per hour to determine the vessel's position. When sequential positions are compared, the results indicate whether the vessel is probably steaming or fishing.

When combined with the landings for the trip and information from vessel trip reports, the VMS data can provide more detailed information about the resource than we can obtain from the research vessels surveys alone. This is especially true when vessels fish for scallops in unsurveyed areas, which are known to occur in the Gulf of Maine, near Cape Cod, and in shallower areas off the NY and NJ coastline.

More often than limited access scallop vessels, vessels with general category permits tend to fish in more marginal scallop beds near shore, sometimes on an opportunistic or seasonal basis. Because they often fish in unsurveyed areas that support occasional or seasonal fisheries, polling general category position data using VMS equipment will improve information for management of these areas. Future analyses using this new VMS data will help management assess the distribution of effort in the general category fishery and its impact on specific scallop fishing areas.

6.1.1.2 Impacts of the Removal of Broken Trip Disincentive and Rebate of Charges for Replacement Trips

Given the high biomass in controlled access areas and the opportunity for future TAC adjustment, coupled with the probability that the scallop fleet will not take all allocated trips, marginal changes in actual catches from the removal of the two DAS/3,000 lbs. replacement trip charge will have no meaningful impact on the resource. It would also be highly unlikely to cause overfishing, because the FMP already has a built-in 20% buffer between the fishing mortality target and the threshold that defines overfishing. Furthermore, the controlled access trip allocations were made as if there were no broken trips and the entire allocated catch had been taken by the fleet. Therefore, broken trip replacements where the combined catch does not exceed the total allowed for the original trip would not change scallop fishing mortality.

6.1.1.3 No Action

“No action” alternative would be similar to the current system and would include no VMS requirement for general category vessels fishing in the open areas. Because it does not require VMS, no action will not have any VMS power-down alternative associated with it.

The impacts of the no action alternative were discussed above relative to the impacts of the alternatives. If the possession limit cannot be effectively enforced, scallop mortality could increase beyond sustainable levels due to the illegal landings in excess of the 400 lb. possession limit. As a result, the stock biomass for and the future yield from the scallop resource could decline. Therefore, no action could have a negative impact on the scallop resource.

No action would also retain the existing regulations for the broken trip program. The impacts of the no action would not be different from than the impacts specified in Amendment 10. There could be some negligible positive impacts on the scallop resource due to the slight decline in landings because of the automatic charge on replacement trips. But as Table 45 in Section 6.2.2.1 shows, the decline in total scallop landings due to the broken trips was marginal, about 358,940 lb. during the 2004 fishing year.

6.1.2 Finfish Bycatch

6.1.2.1 VMS Implementation and Power-down - Impacts of Proposed Action and Alternatives

The effects on species that are customarily captured as bycatch in the scallop fishery are likely to see changes in impacts that parallel those described above for the scallop resource. This is especially true in this framework action for species that more frequently occur in association with inshore scallop areas where fishing by day-trip vessels with general category permits frequently operate. There are no direct effects anticipated from this action because the amount of authorized fishing and other regulations that effect fishing are not changing. Similarly, the distribution of fishing effort is not expected to change in response to the proposed action.

If fishing effort that targets scallops increase due to vessels trying to recoup the compliance costs, then finfish bycatch would increase by a similar amount. If on the other hand, the added VMS cost discourages additional participation in the general category scallop fishery, it could have a beneficial effect of reducing finfish bycatch compared to the amount that would occur without the

added costs. Less scallop fishing effort due to VMS requirements may however be replaced by higher fishing effort elsewhere.

More importantly, the VMS data provides information about the distribution of fishing by vessels with general category permits. This distributional data is likely to be helpful for assessing bycatch hotspots that overlap the distributions of other managed species. This information may, for example, be used to evaluate the effectiveness of the small mesh exemption program and for identifying seasons when finfish bycatch may be a problem.

6.1.2.2 Impacts of the Removal of Broken Trip Disincentive and Rebate of Charges for Replacement Trips

The removal of broken trip alternative is not expected to change finfish bycatch as long as the scallop catches and total expected fishing effort remains at the levels that were allocated by Amendment 10 and Framework Adjustment 16/39. Replacement trips would be taken in the area where the broken trip occurred and while the area is open for scallop fishing.

No changes in finfish bycatch is expected as long as the scallop catches and total expected fishing effort remains at the levels that were allocated by Amendment 10 and Framework Adjustment 16/39. Replacement trips would be taken in the area where the broken trip occurred and while the area is open for scallop fishing.

6.1.2.3 No Action

There are no significant effects anticipated from no action in regard to VMS implementation. There could be some slightly negative impacts, however, if increased participation in general category scallop fishery leads to an increase in bycatch. These impacts would be marginal given that general category fishery constitutes a small part of total scallop landings and activity. Similarly, retaining the existing regulations for the broken trip program is not expected to have any appreciable impacts on the non-target species.

6.1.3 Habitat Impacts of the Proposed Action and Alternatives

Section 7.1.3 (EFH Assessment) describes and summarizes the expected impacts of this action on essential fish habitat, focusing on the proposed action. Overall habitat impacts of all the measures combined in this action have neutral impacts on habitat, compared to the habitat benefits that will result from implementation of Amendment 10 of the Scallop FMP. These impacts are summarized below for each measure. The impacts of the alternatives are not expected to be different than the impacts of the proposed action.

6.1.3.1 VMS Implementation and Power-down Exemption - Impacts of Proposed Action and Alternatives

There will be no adverse habitat impacts associated with the implementation of the proposed action and the alternatives. The proposed action is not expected to appreciably change the amount or distribution of fishing effort. The VMS implementation proposed by this action is expected to improve effectiveness in monitoring the possession limit, to increase compliance due to the electronic monitoring presence of VMS, and discourage violations. This in turn will reduce the risks of overfishing of the scallop resource due to violations. VMS implementation will also carry several other important secondary benefits. Nonetheless, the information collected by the VMS

program has been very useful in evaluating the effects of the scallop fishery on habitat. This information will be even more useful to evaluate the effects on habitat, particularly in the Gulf of Maine and around Cape Cod, MA, where there are more habitat concerns than in the sandy-bottom areas in Southern New England and Mid-Atlantic waters. This information could be used to improve habitat management and therefore the proposed alternatives could have an indirect benefit for minimizing effects on essential fish habitat. Similarly, there will be no adverse habitat impacts associated with the implementation of the power-down provision. The impacts of the non-preferred VMS alternatives and the no-action are expected to be the same as the impacts of the proposed action.

6.1.3.2 Elimination of Automatic Charge on Broken Trips and Rebate of Charges for Replacement Trips

No changes in impacts habitat is expected from liberalizing the broken trip exemption program. The proposed action is not expected to appreciably change the amount or distribution of fishing effort. The removal of broken trip charge is expected to improve safety at sea by reducing some of the alleged risks associated with the broken trip charge. This is because vessels facing unsafe conditions can return to port without the threat of losing a portion of their authorized scallop landings. Similarly, there will be no adverse habitat impacts associated with the implementation of rebates of charges. Rebate of charges against replacement trips during the 2005 fishing year and prior to implementation of Framework Adjustment 17 will address any actual or implied safety concerns with the broken trip charge as quickly as possible. Replacement trips would be taken in the area where the broken trip occurred and while the area is open for scallop fishing. The impacts of the non-preferred VMS alternatives and the no-action are expected to be the same as the impacts of the proposed action.

6.1.3.3 No Action

Amendment 10 to the Scallop FMP was a major action that was determined to have significant impacts on fishery resources as well as fishing communities. The Secretary of Commerce has approved the Amendment 10 FEIS and accompanying SFA documentation. It was determined that the gear used in this fishery impact the EFH of some species in the region that have EFH vulnerable to bottom tending gears. Therefore, Amendment 10, which was modified by Framework 16 subsequently, identified several specific alternatives to minimize these impacts, to the extent practicable. Both actions implemented specific area closures for habitat, as well as effort reductions, and gear modifications to enhance EFH conservation. No Action is not expected to change habitat impacts addressed in Amendment 10 and Framework 16(see Section 5.2.3 above for a summary of EFH impacts in Amendment 10). The no action regarding VMS implementation and broken trip program is not expected to impact the amount or distribution of fishing effort. In summary, there will be no significant habitat impacts associated with status quo regulations in regard to both general category fishery and broken trip program.

6.1.4 Impacts of Proposed Action and Alternatives on Threatened, Endangered and Other Protected Species

6.1.4.1 VMS Implementation and Power-down Exemption - Impacts of Proposed Action and Alternatives

General category vessels have historically participated in the sea scallop fishery, and there has been discussion that effort attributed to this sector has increased in recent years and in certain regions, such as off the Virginia coast. To provide perspective, 276 vessels out of 2,554 with general category permits landed more than 40 pounds of sea scallops on at least one trip during the 2003-2004 fishing year. Excluding about 53 boats that already have VMS, this is the group that will be most affected by the action under consideration.

Framework 17 proposes that vessels with general category permits that possess or land more than 40 pounds of scallops per trip be required to install and operate a VMS to enhance monitoring of the general category catch. The action also contains a power down exemption, a suspension of the broken trip exemption and an associated rebate of charges against replacement trips taken during the 2005 fishing year and prior to the implementation of Framework Adjustment 17.

Of the range of alternatives under consideration, including No Action, none are likely to directly affect protected species either a positively or negatively. Changes in fishing patterns could, but are not likely to occur as a result of the new rules. If shifts in effort or other changes do occur as a result of the action, it is probable they will not be separable from other factors that influence fishing behavior, such as weather, market conditions, availability of crew, and vessel maintenance, etc. Indirectly, however, more detailed reporting on catch, and in particular effort distribution and possibly other information, would enable managers to better evaluate the impacts of this fishery on protected and other marine resources.

Currently interactions, primarily involving endangered sea turtles, are monitored by fishery observers and are reported to the Northeast Fisheries Science Center. None of the proposed options will affect that undertaking. The general category sector of the fishery is currently represented by a very limited sample size.

Alternatives that were considered and rejected by the Council are all variations on the VMS requirement. As such, the same conclusions apply as discussed above. Enhanced monitoring of general category vessels have a very remote chance of affecting scallop vessel interactions with any threatened, endangered or other protected species.

6.1.4.2 Elimination of Automatic Charge on Broken Trips and Rebate of Charges for Replacement Trips

No changes in impacts on endangered species and protected resources is expected from liberalizing the broken trip exemption program, as long as the scallop catches and total expected fishing effort remains at the levels that were allocated by Amendment 10 and Framework Adjustment 16/39. The removal of broken trip disincentive and rebates on replacement scallop trips have a very remote chance of affecting scallop vessel interactions with any threatened,

endangered or other protected species. Replacement trips would be taken in the area where the broken trip occurred and while the area is open for scallop fishing.

6.1.4.3 No Action

The no action alternative would continue the status quo regarding both general category fishery and broken trip program, a scenario with no additional discernable impacts to any protected species when compared to any of the alternatives. The status quo was fully reviewed and analyzed in the December 15, 2004 Biological Opinion provided by NOAA Fisheries. The agency concluded that the effects of the continued implementation of the Sea Scallop FMP, and its cumulative effects, may adversely affect but would not jeopardize the continued existence of loggerhead and leatherback sea turtles.

6.2 Economic Impacts

6.2.1 VMS implementation and Power-down exemption

The section provides an analysis of the economic costs and benefits of the alternatives proposed by the Council through Framework Action 17 to the Sea Scallop FMP. The regulatory guidelines require that the economic impacts of the proposed options be compared relative to the impacts likely to occur if “no action” is taken. “No action” here is defined as the continuation of the present regulations which do not require vessels with general category permits to carry a VMS, except those that choose to fish in the Georges Bank controlled access areas. Therefore, the economic impacts of alternatives for VMS implementation are compared to the “no action” (status quo) scenario with no VMS requirement. The economic impacts of the power-down alternatives are also discussed in this Section.

Although economic costs from VMS implementation, including the expenditures on VMS equipment and monthly service charge are known, the economic benefits from VMS implementation could only be analyzed from a qualitative perspective. This is because the benefits will materialize through improved monitoring and enforcement of the possession limit, vessel safety benefits, and better data for scallop fishery management. These benefits cannot be estimated in dollars.

6.2.1.1 Proposed Alternative (Alternative 2)

6.2.1.1.1 Summary of Economic Impacts

VMS implementation is expected to have positive economic impacts compared to “no action,” by improving compliance with the possession limit, and thereby preventing an unexpected increase in overfishing due to illegal landings and a reduction in future scallop landings and revenues. VMS will provide better data for fishery management, particularly for areas that are more frequently targeted by small vessels fishing inshore of the typical scallop fishing areas. The other benefit would be better monitoring of area boundaries that are a part of rotational area management. Such benefits for scallop management will help to maintain the optimum yield and economic benefits from the fishery, although these benefits cannot be quantified.

The proposed action will provide VMS monitoring for the vessels that usually land scallops in excess of incidental amount (40 lb. per trip) allowed for personal use, while exempting a large

number of vessels that are less likely to land scallop or to exceed the possession limit. It will affect about 223 vessels that do not already have a VMS out of a total 276 vessels in this category (Table 36). These 276 landed over 99.9% of the general category scallop landings in 2003. Therefore, the proposed action will provide VMS coverage for the majority of general category scallop fishing activity while limiting the economic impact to those who are actually prosecuting the fishery on a regular basis. If all of these 223 vessels chose to install and operate a VMS, total costs to the industry will range between \$795,000 to \$1,307,000 during the initial year of implementation. The enforcement benefits from this action is, however, expected to outweigh the costs for VMS implementation. These benefits and costs were discussed in detail in Section 6.2.1.1.2 and Section 6.2.1.1.3 below. The economic impacts on vessels were summarized in Section 6.2.1.1.4.

6.2.1.1.2 Economic Benefits of VMS Implementation

VMS implementation is expected to have indirect economic benefits on the scallop industry through improved monitoring and enforcement of the 400 lb. general category possession limit. A vessel monitoring system (VMS) will enable law enforcement personnel to locate general category vessels participating in the scallop fishery, thus improving enforcement's ability to deploy personnel and other resources in monitoring vessel offloads. The improvement in enforcement's effectiveness in monitoring the possession limit and the resulting increase in compliance may help to prevent fishing mortality from increasing beyond the sustainable levels due to illegal landings in excess of the 400 lb. possession limit. Although, the reported category landings by general category vessels constitute a relatively small percentage of total scallop landings (less than 5%), there is an increasing concern both on part of the scallop industry members and enforcement that not all landings are reported or reported accurately by some vessels in the general category.²

If the possession limit cannot be effectively enforced, fishing for scallops with a general category permit could become more attractive to fishermen who usually target other species. If there is no action, that is, there are no new regulations to prevent such an increase in fishing effort, scallop mortality could increase beyond sustainable levels, reducing the stock biomass for the scallop resource. As a result, the future yield and revenues from the scallop resource could decline. This would negatively affect the vessels both with general category and/or limited access scallop permits. Under the "no action" scenario, impacts on the consumer benefits also may be negative due to reduced scallop landings in the future, possibly coupled with higher scallop prices. Similarly, producer benefits would decline due to lower landings and revenues, and higher fishing costs per pound of scallops if overfishing leads to a reduction in the productivity of the scallop resource, measured by LPUE (landings per unit effort). Therefore, VMS implementation is expected to have positive economic impacts compared to "no action," by improving compliance with the possession limit, thereby preventing an unexpected increase in overfishing due to illegal landings and thus a reduction in future scallop landings and revenues. Monitoring fishing activity through VMS also would be less costly, at least for the NMFS, compared to improved monitoring by employing more enforcement personnel at the dockside.

² For example, on September 26, 2004, a Coast Guard Station Menemsha law enforcement team boarded a fishing vessel in New Bedford Harbor and discovered it had over had 3,394 lb. of scallops, that is, over 3,000 lb. the amount of sea scallops the vessel's permit allows for.

However, instead of taking no action, the Council could adopt stringent regulations to prevent overfishing due to the unreported landings in excess of the possession limit. For example, the DAS allocations for the limited access vessels could be reduced, negatively impacting the group of vessels that has already been subject to strict effort controls since 1994. Such an action would redistribute income from the limited access vessels to the vessels with general category permits landing scallops illegally in excess of the 400 lb. possession limit. The Council could also reduce the possession limit for all general category vessels, affecting negatively those vessels that comply with the rules. Therefore, VMS implementation will have positive impacts on the limited access and many general category vessels that comply with the 400 lb. possession limit.

VMS could also have some other important benefits for scallop management. VMS will provide better data for fishery management, particularly for areas that are more frequently targeted by small vessels fishing inshore of the typical scallop fishing areas. Sometimes these areas are not well surveyed, and better information about the general category scallop fishery and its effect on these unsurveyed areas is needed, even though the total landings by this fleet is a relatively small fraction of the entire catch. The other benefit would be better monitoring of area boundaries that are a part of rotational area management. Without the VMS requirement, there would be a fleet of vessels targeting scallops adjacent to closed and controlled access scallop areas, making it more difficult to ensure compliance with rotation area management regulations. Such benefits for scallop management will help to maintain the optimum yield and economic benefits from the fishery, although these benefits cannot be quantified.

VMS could also have potential vessel safety benefits. Since VMS is a system that is constantly monitored, when a vessel signal stops, it provides another method to alert shoreside authorities that the vessel is in trouble. Therefore, transmission of location information through VMS will add another layer of safety in the event of an emergency. Although these benefits cannot be quantified in terms of dollars, they nevertheless may provide economic benefits to the extent that they reduce the chances for loss of property (vessel) and life in emergency situations.

Although the economic benefits discussed in this section are applicable both to the proposed action (Alternative 2) and other alternatives (Alternative 1, Alternatives 3a to 3c) considered by this Framework, the extent of the benefits will be proportional to the number of vessels included in the VMS implementation. While exempting a subset of general category vessels will reduce the overall costs of VMS requirement for the general category fleet, it also will create the same enforcement problems in monitoring the possession limit for the subset of vessels not required to install VMS. The larger the number of vessels that are exempted from VMS requirement, the more difficult it would be to improve the enforcement efficiency in monitoring possession limits. On the other hand, including all 2,554 vessels with general category permits could present a challenge in terms of the current enforcement resources, resulting in an increase the personnel costs of enforcement associated with monitoring VMS activity of a large number of vessels. These trade-offs in terms of economic costs versus enforcement efficiency are discussed relative to each alternative in the following sections.

6.2.1.1.3 Economic Costs of VMS Implementation

VMS implementation will also increase the fishing costs for the general category vessels that do not presently own and operate a VMS. The earnings from scallops significantly exceed these costs for many general category vessels that target scallops, yet for some other vessels that land scallops primarily as a bycatch the VMS requirement could be a financial burden. The initial

investment costs for VMS including the installation charge, activation fee and monthly service are estimated to be \$3,565 for Skymate to \$4,735 for Boatracs as discussed in Section 6.2.1.1.6.

Table 36 shows the costs of VMS implementation for the proposed action and alternatives assuming that all the vessels included in that alternative install a VMS. Total VMS costs will be less than these amounts, however, if some vessels either choose to give up their general category permit or lower their scallop landings instead of investing in VMS. This is because for a vessel that is not required to have a VMS other than for participating in the general category scallop fishery, there will be an incentive to install VMS if scallop revenues exceed the VMS costs.

The proposed action will provide VMS monitoring for the vessels that usually land scallops in excess of incidental amount (40 lb. per trip) allowed for personal use, while exempting a large number of vessels that are less likely to land scallop or to exceed the possession limit. There were 2,554 vessels with general category permits in 2003 fishing year, 2,278 of these vessels either did not have any landings or landed up to 40 lb. of scallops per trip, and 2,121 of them did not have a VMS. These vessels will not be required to operate a VMS and still retain their permit as long as their landings per trip do not exceed 40 lb. of scallops. While the proposed action will restrict the enforcement's ability to monitor the possession limit for these vessels by exempting them from VMS requirement, it will also substantially reduce the costs of VMS implementation.

Proposed action will affect about 223 vessels that do not already have a VMS out of a total 276 vessels in this category (Table 36). These 276 landed over 99.9% of the general category scallop landings in 2003. Therefore, the proposed action will provide VMS coverage for the majority of general category scallop fishing activity while limiting the economic impact to those who are actually prosecuting the fishery on a regular basis. If all of these 223 vessels chose to install and operate a VMS, total costs to the industry will range between \$795,000 to \$1,307,000 during the initial year of implementation. These amounts represent an increase in fishing costs compared to the no action alternative because the vessels with general category permits would not be required to operate a VMS. On the other hand, if all the vessels with general category permits were included in VMS requirement, as in alternative 1, total VMS costs for the fleet would range from \$8.3 million to \$12.1 million depending on the choice of VMS units to be installed. Therefore, the proposed action minimizes the costs for VMS implementation compared to this alternative.

Although expenditures on VMS will comprise the major cost from this framework action, for vessels that cannot afford VMS or choose not to renew their general category permit, or reduce their scallop landings per trip, the costs will be equivalent to the loss in revenue from forgone landings of scallops. Potential losses in revenue for these vessels, for which VMS costs exceed the scallop revenue, are shown in the last row of Table 36 assuming that the vessels with scallop revenue less than the VMS costs will choose not to renew their general category permit. For the proposed action, VMS costs on the average constitute about 11% to 15% of total scallop revenue of the vessels required to operate a VMS (for Skymate and Boatracs, respectively). Many vessels in this group, 79 vessels (if they installed Skymate) and 87 vessels (if they installed Boatracs), are estimated to have an annual scallop revenue lower than the VMS costs. The scallop landings per trip for these vessels were generally less than the 400 lb. possession limit. Therefore, some vessels in this group may reduce their landings of scallops per trip to 40 pounds or less to avoid the VMS requirement, resulting in a potential decline in scallop revenue by about \$105,000. In that case, however, the costs for VMS implementation will also decline below the amounts shown in Table 36 for the proposed alternative. For example, if the vessels that land up to 100 pounds of scallops in this group chose not to invest in VMS, the total cost of VMS implementation would

equal the costs estimated for alternative 3a, which already excludes these vessels from VMS requirement. For some other vessels, however, it could make more economic sense to increase the scallop landings up to the amount allowed for the possession limit (400 lb.) to cover VMS costs. Such action would increase the scallop revenue from the general category fishery.

Theoretically, any vessel catching of scallops below the levels that justify the costs for VMS could also choose not to renew its general category permit. Given that the Council published a control date for the general category fishery, however, many vessels probably will not choose this option. In fact, the publication of the control date and a potential limited entry program into the general category scallop fishery could provide an economic incentive to buy and operate a VMS for many vessels in this category. If, for example, regulations changed at some point to introduce limited access to the general category fishery, the permits may gain a market value for their owners. For more discussion on the possible impacts of the control date, see Section 6.5.3 (Reasonably Foreseeable Actions).

Table 36. VMS alternatives and economic impacts on the general category vessels

Data	Alternatives and maximum scallop landings per trip				
	Alt. 1 All general category permits	(Alt.2) Proposed Action >40 lb.	Alt.3a >100 lb.	Alt.3b >200 lb.	Alt.3c >300 lb.
Number of vessels required to have a VMS	2,554	276	232	175	144
Number of affected vessels (i.e. vessels that don't already have a VMS)	2,344	223	192	156	132
Number of vessels for which VMS costs (for Skymate:\$3,565) exceed scallop revenues	2,200	79	50	22	9
Number of vessels for which VMS costs (for Boatracs:\$4,735) exceed scallop revenues	2,208	87	57	27	13
Scallop landings as a % of total general category landings	100%	99.9%	99.4%	96.8%	94.2%
Total scallop revenue (\$)	7,301,895	7,297,007	7,258,831	6,982,719	6,768,007
Total costs for VMS and monthly service for the general category fleet during 2005 (Skymate:\$3,565)	8,356,360	794,995	684,480	556,140	470,580
As a % of total scallop revenue	114%	11%	9%	8%	7%
Total costs for VMS and monthly service for the general category fleet during 2005 (Boatracs:\$4,735)	12,093,190	1,306,860	1,098,520	828,625	681,840
As a % of total scallop revenue	166%	18%	15%	12%	10%
Annual service costs for Skymate (2006 on)	1,517,506	144,370	124,301	100,994	85,457
Annual service costs for Boatracs (2006 on)	2,953,440	280,980	241,920	196,560	166,320
Total scallop landings by vessels with scallop revenue less than VMS costs*					
Scallop landings in lb.	22,666	21,628	16,604	9,707	4,277
Landings as a % of total general category landings	1.2%	1.1%	0.9%	0.5%	0.2%
Total scallop revenue of vessels with scallop revenue less than VMS costs*	109,415	104,527	76,814	42,757	4,277

*Estimated at the least cost for VMS equipment, installment and monthly service costs (for Skymate).

6.2.1.1.4 Economic Impacts on Vessels

General category vessels that comply with the 400 lb. possession limit and with earnings from scallops significantly exceeding VMS costs will benefit from VMS implementation. Better

enforcement of the possession limit will help to prevent future revenue loss from general category fishery if overfishing of the resource occurs due to the illegal landings of scallops in excess of the 400 lb. trip limit or if stringent measures on general category fleet need to be taken to prevent such overfishing. These vessels will also benefit from better management of the scallop resource made possible by better data on the location of the fishing activity. Finally, all general category vessels are expected to benefit from the additional safety benefits from having a VMS on board. Section 6.2.1.1.7 provides a comparative analysis of economic impacts of the proposed action and the alternatives and Section 7.11 (IRFA) analyses the impacts on vessels from an Regulatory Flexibility Act (RFA) perspective.

6.2.1.1.5 Impacts of Power-down Exemption

This measure is expected to have positive economic impacts on general category vessels that are required to operate a VMS under the proposed action. By allowing vessels to power-down VMS they are while in port and not fishing, the proposed action will reduce compliance costs to vessels. In this way, the vessels would not have to rely on shore power or continuous battery power while in port, which may under some circumstances be unavailable. It could also reduce polling costs for vessels that fish seasonally by allowing them to discontinue VMS operation while they in dock (see Table 37). Since no landings of scallops will be possible while the vessel in dock, the power down alternative is not expected reduce the enforcement benefits from VMS as long as the proposed procedures for power-down exemption could be strictly enforced and vessels that illegally power-down could be detected by enforcement. This alternative would have less administrative costs and would provide more flexibility to vessels compared to the non-preferred power-down via a letter of exemption described in Section 0. The proposed alternative also allows vessels to operate without turning on VMS when they are inside of the VMS demarcation line. The Council proposed this option to provide flexibility to vessels, for example, when they travel from mooring to fuel and ice docks when they do not have a catch aboard. There are enforcement concerns regarding this alternative, however, as discussed in Section 6.3 (Enforcement Benefits and Trade-offs).

6.2.1.1.6 Estimation of Revenues and VMS Costs

In order to analyze the economic impacts of each alternative on general category vessels, the annual scallop revenue per vessel from general category trips for the 2003 fishing year were compared to the costs of installing and operating VMS. This is because for a vessel that is not required to have a VMS in order to participate in the general category fishing, there will be an incentive to install VMS if, at a minimum, its revenues from scallops exceed the VMS costs. This could be a valid assumption for general category vessels that either land incidental amounts of scallops, or for which trip revenue is mostly derived from species other than scallops. In such cases, it can be assumed that trip expenses and crew shares are mostly paid out of revenues from other species, while revenues from scallops as bycatch provide an additional source of income. From this perspective, if scallop revenues exceed the VMS costs, the vessel will have some incentive to make the initial investment for VMS equipment and service estimated in Table 37 for both Boatracs and Skymate units. On the other hand, for some vessels that target scallops and cover their trip expenses and crew income solely from scallop revenue, installing VMS will make economic sense if scallop revenues net of trip costs and crew income exceed the VMS costs. Since the major source of trip income would be from scallops in such cases, scallop revenues should exceed not only the costs for VMS but also the trip expenses and crew shares in order for the vessel owner to derive some profits from these trips. This assumption would be valid mostly

for the general category vessels that targeted scallops and landed more than 300 lb. of scallops per trip in 2003. This is because this group of vessels had a high amount of scallop revenue from targeted trips, which constituted more than 84% of the trip revenue (Table 40).

The level of scallop landings that could generate enough revenue from general category scallop trips, defined as ‘equivalent pounds’ for the purposes of analysis, is estimated in Table 38. If scallop revenues fall short of such threshold, the vessel may either stop taking these trips and avoid VMS costs, or change the composition of its fishing activity to target other species to cover its trip costs while still earning some revenues from scallops as an additional source of income.

Estimation of VMS costs for equipment and service

There are two different VMS units approved by NMFS for VMS operations, Skymate and Boatracs. It is assumed that these units would be operated at the standard polling of once every minute, which is the same as the polling frequency for limited access fleet. The initial investment costs for VMS, including the installation and monthly service, costs from \$3,565 for Skymate to \$4,735 for Boatracs and are estimated as follows:

Table 37. VMS Equipment, Installation and Service Costs

Costs	Standard Boatracs VMS Unit	Skymate plus PC
Initial Investment (one-time costs)		
Equipment	\$3,295.00	\$2,268.00
Installation	\$180.00	\$500.00
Activation fee	\$0.00	\$149.00
Total one-time costs	\$3,475.00	\$2,917.00
Ongoing costs		
Monthly service costs	\$105.00	\$53.95
Annual service costs (2006 on)	\$1,260.00	\$647.40
Total annual equipment and service costs during the first year (2005)	\$4,735.00	\$3,564.40
Average annual fixed costs (annual average for a 4 year period)	\$1,116.00	\$936.00
Average annual costs with service (annual average for a 4-year period)	\$2,376.00	\$1,583.40

Boatracs: As shown in Table 37, the equipment costs for VMS range from \$3,295 for a standard unit to \$3,495 for a unit with a GPS option.³ The VMS installation fee could vary among the dealers, but it usually takes 2 to 3 hours costing \$60 per hour.⁴ The total VMS costs were estimated for a standard Boatracs unit, assuming a 3-hour installation at a total cost of \$180. Monthly service costs are \$70, plus \$35 for double polling, totaling \$105 per month. There is no longer an activation fee for the monthly service. According to these estimates, installing and operating a VMS unit will require an initial investment of \$4,735 per vessel for a standard Boatracs unit. However, after the initial investment for equipment is paid off, the cost of VMS

³ Information is based on communications with Jim Kendall, representing Boatracs.

⁴ Information is based on communications with the representative from Chris Electronics, a Boatracs dealer.

implementation for vessels will comprise monthly service costs adding up to about \$1,260 per year assuming a 12-month operation of VMS. If the equipment and installation costs were paid over a 4-year period by borrowing at an interest rate of 12.75%, average annual costs for Boatrac will amount to \$2,376 per year, including the monthly service (Table 37). The actual costs could be greater than these amounts if the VMS units need to be repaired due to wear and tear.

Skymate: The cost of Skymate is \$1,188 plus the cost for a PC device, estimated to be about \$1,080.⁵ VMS equipment and PC costs, including installation, will add up to an initial cost of \$2,768 (Table 37). The installation fee is about \$500 per vessel. However, group training will be available for boat owners who would choose to install their own units and reduce their costs. Use of SkyMate VMS services will entail a \$149 activation fee and enrollment in a monthly service plan estimated at \$53.95 per month for double polling, or \$647 per year⁶. This represents the least expensive plan as monthly service costs could go up to \$73.99 a month (\$887.80 per year) if the vessel chooses the Platinum plan recommended by the company. Adding these amounts to the equipment cost results in a cost of approximately \$3,565 per vessel for the first year. After the first year, however, the cost of VMS implementation per vessel will consist of monthly service costs adding up to \$647 per year assuming a 12-month operation of VMS. Again, the actual costs could be greater than these amounts if the VMS units need to be repaired due to wear and tear. If the equipment and installation costs were paid over a 4-year period by borrowing at an interest rate of 12.75%, average annual costs for Skymate would amount to about \$1,583 per year, including the monthly service. For vessels that remain at the dock and do not intend to participate in the fishery during some months, there is a “dry-dock” option at a cost of \$4.99 a month, during which the VMS unit would be turned off, but could be reactivated at any time without the \$149 activation fee.

It must be cautioned that these are rough estimates, and total costs could vary according to the prices and the fee for installation charged by each dealer. These costs could also vary because there could be discounts on the sale units if vessel owners buy more than one unit to be installed for the boats they own. The installation time for VMS units could also vary depending on the vessel. The prices for service and VMS units could also change according to the market conditions in the future.

Estimation of trip costs, revenues and equivalent scallop pounds

The trip costs consist of food expenses, and expenses for fuel, oil and ice, and are estimated from the cost equation provided in Appendix IV of Amendment 10 FSEIS for an average general category vessel. These expenses were estimated in 1996 prices; however, the latest statistics for the average of 11 months ending in November 2004 indicated that fuel costs were 48.5 % higher than in 1996, and food costs were 21% higher. Therefore, trip costs per DAS were adjusted to

⁵ The estimate for PC is based on a price of a laptop that meets the specifications recommended by Skymate. One such unit was a Compaq Presario Notebook with Mobile AMD Athlon™ XP-M Processor 3000 (Model: R3306US). This notebook actually exceeded the minimum requirements and was sold at Bestbuy for \$1,080.

⁶ Monthly costs for Skymate range from \$38.99 for Gold plan to \$73.99 for Platinum plan. Since hourly report adds up to 14,400 characters, 30 minute reporting will require at least 28,800 characters, exceeding the 20,000 characters that Gold plan offers by 8,800. Again, using \$1.70 extra for each additional 1000 characters, 8,800 characters will cost about \$14.96 a month. Adding this amount to the \$38.99 for the Gold plan, results in a \$53.95 monthly service charge for double polling (i.e., twice an hour).

account for these increases, assuming that average fuel costs comprised about 70% of the trip costs, whereas food and other costs accounted for the remaining 30%.⁷ According to the estimates, the trip costs for an average vessel (with 66 GRT, 408 HP, and an average of 2.7 crew) would be \$660 per day in terms of 1996 prices and approximately \$920 per day in 2004 prices. Table 38 also estimates crew shares by assuming a lay system by which crew pays for all trip expenses and receives 60% of the gross revenues from each trip.

In estimating scallop revenues, it is assumed that the revenues during the first year of implementation of F17 will be similar to that for the 2003 fishing year, the latest year for which data is available. This may be a reasonable assumption to make if there are no significant price changes in the near future. In fact, scallop prices in 2003 averaged \$4.55 per general category vessel and were approximately equal to the average price for scallops in March and April 2004, which averaged \$4.48 per pound.

Table 38. Estimation of equivalent scallop pounds and revenues

Data	Total payment for VMS unit and service during the first year		Annualized costs for a 4-year period	
	Boatracs	Skymate	Boatracs	Skymate
Price of scallops per pound	\$4.55	\$4.55	\$4.55	\$4.55
Trip costs per DAS	\$919.5	\$919.5	\$919.5	\$919.5
Number of trips	6.5	4.9	3.3	2.2
Total trip costs	\$5,981.3	\$4,502.8	\$3,002.2	\$2,000.8
Scallop pounds per trip	400	400	400	400
Equivalent scallop landings	2,602	1,958.8	1,306	870.4
Equivalent scallop revenue	\$11,839.1	\$8,912.5	\$5,942.3	\$3,960.3
Crew shares	\$ 1,122.1	\$844.7	\$563.2	\$ 375.4
Vessel revenue net of crew shares and trip costs	\$4,735.6	\$3,565	\$2,376.9	\$1,584.1
Annual VMS equipment and service costs	\$4,735.6	\$3,564.4	\$2,376	\$1,583.4

For the purposes of this analysis “equivalent scallop pounds” are defined as that amount of scallop landings at which a vessel fishing solely for scallops will have sufficient revenue to cover its trip expenses, pay for the crew, and for the VMS units and service charge. In other words, equivalent scallop pounds represent a threshold at which the vessel will derive zero profit after paying for the crew, trip, and VMS expenses. The level of zero profit was selected for calculation purposes and as a threshold, rather than as an economic criterion for vessel operations.

Table 38 estimates equivalent pounds for both Boatracs and Skymate units under two separate assumptions. The first two columns of the table are estimated assuming that the vessel will pay for the cost of equipment, installation and activation charges during the first year of implementation out of its current financial resources. The last two columns annualize these costs

⁷ This assumption is based on the information from cost data for 1996’s.

by assuming that the equipment and installation costs will be paid over a 4-year period by borrowing at an interest rate of 12.75% as estimated above in Table 37. These costs are also shown in the last row of Table 38.

It is assumed that a vessel targeting scallops will maximize its trip landings and will land the 400 lb. possession limit on each trip. The total revenues from scallops are estimated by varying the number of trips to calculate the number of trips that will result in “equivalent scallop pounds.” As Table 38 shows, the equivalent pounds are estimated to be about 2,600 lb. of scallops during the first year for Boatracs, and 1,958 lb. of scallops for Skymate. If VMS costs were annualized as discussed above, 1,300 lb. of scallops would be sufficient to cover expenses for Boatracs units, and 870 lb. for Skymate units in addition to paying for trip and crew expenses. The annual revenue corresponding to the estimated pounds is \$11,839 for Boatracs and \$8,912 for Boatracs.

6.2.1.1.7 Impacts of the Proposed Action and Alternatives on Vessels and Small Business Entities

The overall economic costs and benefits of the VMS alternatives proposed by this Framework action on the general category fleet were discussed in Section 6.2.1 above. The impacts of the proposed alternatives will not be uniform, however, for all the vessels with the general category permits. Each successive alternative requires and thus will impact a different subset of vessels with varying rates of participation in the general category scallop fishery. This section describes the characteristics and the fishing activity for the group of vessels included in each alternative, discusses the impacts on each group, and provides the necessary background for the RFA analysis.

The analysis is based on the 2003 fishing year because it corresponds to the most the recent year for which information is available on the annual activity of the general category fleet. The 2003 fishing year also represents a peak year in terms of the number of vessels that participated in the general category scallop fishery, increasing from 194 vessels in 1999 to 337 vessels in 2003. During 2003, the reported landings also increased to 1.9 million lb. of scallops from about 0.2 million lb. in 1999, the highest level except for 2001 when general category vessels landed over 2.1 million lb. of scallops. The results of the following analysis should be interpreted with caution, however, since it provides a rough estimate of the number, landings, characteristics, and composition of the vessels in each group that will be affected by the proposed alternatives. The actual landings by the general category vessels could exceed the amounts shown in the tables, because of illegal landings of scallops in excess of the 400 lb. possession limit not reported in the dealers’ database. The future participation in the general category fishery could also differ from the levels observed in the past, including in the 2003 fishing year. In fact, if past trends continue, the number of general category vessels and total scallop landings by this fleet could increase further in the coming years.

For the purposes of this analysis, the vessels with general category permits are divided into six groups according to their maximum scallop landings per trip corresponding to the criteria for each alternative for VMS requirement. Table 39 shows the number of vessels in each group, including the number of vessels that do not already have a VMS, their scallop landings, revenues, and VMS costs relative to earnings from scallops. It also indicates the alternatives that include the group for VMS implementation.

Table 39. General Category Vessels and VMS Alternatives

Data	Groups of vessels by maximum scallop pounds per trip					
	Group I. Zero lb.	Group II. 1 - 40 lb.	Group III. 41-100 lb.	Group IV. 101-201 lb.	Group V. 201-300 lb.	Group VI. >300 lb.
Number of vessels	2,217	55	44	57	31	144
Number of vessels that don't have a VMS	2,083	38	31	36	24	132
Annual scallop landings per vessel (lb.)	None	29	181	755	1,343	10,652
Annual Scallop revenue per vessel (\$)	None	134	1,046	5,394	7,374	48,414
Scallop landings as % of total general category landings	0%	0.1%	0.5%	2.6%	2.6%	94.2%
Included in Alternative 1 VMS requirement	Yes	Yes	Yes	Yes	Yes	Yes
Included in Alternative 2 VMS requirement	No	No	Yes	Yes	Yes	Yes
Included in Alternative 3a VMS requirement	No	No	No	Yes	Yes	Yes
Included in Alternative 3b VMS requirement	No	No	No	No	Yes	Yes
Included in Alternative 3c VMS requirement	No	No	No	No	No	Yes
% of vessels with annual scallop revenue covering the first year cost for VMS						
Skymate units and service (\$3,565)	0%	0%	<12%	22%	46%	93%
Boatracs units and service (\$4,735)	0%	0%	<12%	17%	42%	90%
Costs of VMS and service as a % of scallop revenue for vessels with annual revenue of at least equal to cost of VMS						
Skymate units and service (\$3,565)	NA	NA	68%	12%	21%	6%
Boatracs units and service (\$4,735)	NA	NA	76%	12%	25%	8%

Beginning with alternative 1, the impacts of each alternative on groups of vessels included in VMS implementation could be summarized as follows:

- Starting with alternative 1, each successive alternative requires fewer groups of vessels to install and operate a VMS, and therefore, will result in a lower cost burden for the vessels in the general category fleet.
- In general, average annual scallop landings and revenue per vessel is larger for groups of vessels with higher maximum landings per trip relative to others. Therefore, the alternatives with a higher threshold for scallop landings per trip will include a larger number of vessels for which VMS costs will be small relative to revenues, and thus will have a smaller negative impact on profits.
- Alternative 1 requires all 2,554 vessels with general category permits, the vessels in Groups I-VI to install and operate a VMS in order to be qualified for the permit. Since 210 of these vessels already have a VMS, about 2,344 vessels are estimated to be affected by alternative 1.⁸ Alternative 1 would have a negative economic impact on a large number of vessels since the majority of these vessels reported either no landings (2,217 vessels in Group I) or had only incidental catches of up to 40 lb. of scallops (55 vessels in Group II) during the 2003 fishing year.

⁸ According to the latest data as of Jan.10, 2005, the number of general category vessels that have a VMS increased to 229 from 210 in 2004 (personal communications by Linda Galvin of Enforcement, NMFS).

- Proposed action, i.e., Alternative 2, excludes the vessels in Groups I and II from VMS implementation, requiring only those vessels with scallop landings of more than 40 lb. per trip (Groups III to Group VI) to install a VMS. As a result, the number of vessels that will be included in VMS implementation will decline to 223 general category vessels that do not have a VMS.
- Alternative 3a would require those general category vessels (Groups IV to VI) with scallop landings of more than 100 lb. per trip to install and operate a VMS. There were 192 general category vessels which fit into this category during the 2003 fishing year that did not already have a VMS
- Alternative 3b would require all general category vessels with scallop landings of more than 200 lb. per trip to install and operate a VMS. It would affect 156 vessels in Groups V and VI that do not already have a VMS. Therefore, compared to Alternative 3a, this alternative would exclude 57 vessels that landed 101 lb. to 200 lb. of scallops per trip with an average annual scallop revenue of \$5,394 during the 2003 fishing year.
- Alternative 3c will have impacts on the least number of general category vessels compared to the other alternatives, resulting in the lowest cost to the general category fleet. It would require only a small subset of general category vessels with scallop landings of more than 300 lb. per trip to install and operate a VMS. According to the dealers' data for the 2003 fishing year, there were about 144 vessels with maximum trip landings of more than 300 lb., and 132 of these vessels did not already have a VMS.

As discussed in Section 6.2.1 above, general category vessels that comply with the 400 lb. possession limit and with earnings from scallops significantly exceeding VMS costs will benefit from VMS implementation. Better enforcement of the possession limit will help to prevent future revenue loss from general category fishery if overfishing of the resource occurs due to the illegal landings of scallops in excess of the 400 lb. trip limit or if stringent measures on general category fleet need to be taken to prevent such overfishing. These vessels will also benefit from better management of the scallop resource made possible by better data on the location of the fishing activity. Finally, all general category vessels are expected to benefit from the additional safety benefits from having a VMS on board. Although the benefits from VMS cannot be estimated quantitatively, they will be higher for vessels that target on and derive a significant proportion of revenue from scallops. The vessels with incidental landings of scallops may have little to benefit from improved enforcement of the possession limit and the positive impacts on the scallop resource.

The analysis of impacts in this section mainly focus on the costs of VMS relative to the scallop or total revenue for the group vessels, keeping in mind these costs should be compared with the potential benefits from VMS implementation. The analysis is based on the information on vessel and crew size, landings, revenues, primary areas fished, primary state of landing, and primary gear used during the trips with scallop landings shown in Table 40 to Table 44 below.

The following provides a description of the characteristics and fishing activity of the general category vessels for each group and a discussion of impacts for each alternative.

- Group I (zero lb. of scallops): This group includes 2,217 vessels with general category permits with no reported landings of scallops during the 2003 fishing year, of which 2,083 vessels have no VMS. Only alternative 1 requires the vessels in Group I to have a

VMS in order to keep their general category permit. Because they derive no income from scallops, many vessels in this group may choose to give up their permit, however, instead of incurring the costs for VMS if alternative 1 is selected. On the other hand, some vessels may choose to install a VMS in order to keep their general category permit as a future investment. In fact, the recent publication of the control date and a potential limited entry program into the general category scallop fishery could provide an economic incentive to buy and operate a VMS for some vessels in this category even if they do not presently participate in the fishery. If, for example, regulations changed at some point to introduce limited access to the general category fishery, the permits may gain a market value for their owners. For vessels that chose to keep their general category permit, alternative 1 will impose a cost burden equivalent to the cost for VMS estimated in Table 37 above. Alternatives 2, 3a, 3b, and 3c will not have any impacts on these vessels because they will be exempted from the VMS requirement with these alternatives.

- Group II (1 lb. to 40 lb. of scallops per trip): This group comprises 55 vessels with incidental catches of scallops up to and including 40 lb., which is the amount allowed for personal use for any vessel. Most of these vessels were otter trawls (41 out of 55 vessels), although a few had scallop and surf clam dredges when they landed scallops (Table 43). These vessels landed only 0.1% of the total general category scallop landings in 2003, with annual landings per vessel averaging 29 lb. of scallops according to the dealer's data. Average annual scallop revenue amounted to only \$134 per vessel, far below the amount sufficient to cover VMS costs for Skymate or Boatracs, even at the annualized cost of \$1,583 for Skymate shown in Table 37 above. Because they earn a minimal income from scallops, many vessels in this category may opt to give up their general category permit if they are included in VMS implementation with alternative 1. On the other hand, as discussed in relation to Group I above, general category permits may have a value as a future investment, providing an incentive for some vessels to install VMS to maintain their permit even if their earnings from scallop landings were marginal. Given that VMS costs constituted an insignificant proportion of their total revenue from all species, about 1% for Skymate and slightly higher for Boatracs, many vessels in Group II may choose this option if they were required to do so to keep their permit. Again, alternatives 2, 3a, 3b, and 3c will not have any impacts on these vessels because they will not be required to have a VMS if these alternatives are implemented.
- Group III (41 lb. to 100 lb. of scallops per trip): Both alternative 1 and alternative 2 require 44 vessels in this group to install and operate a VMS. Alternative 2, however, excludes 2,217 vessels in Group I and 55 vessels in Group II from VMS implementation. Total scallop landings by vessels that landed 41 lb. to 100 lb per trip comprised only 0.5% of the general category scallop landings in 2003. The scallop landings by this group of vessels averaged 88 lb. per trip, and 181 lb. per vessel for the entire year in 2003. The primary gear used by this group while fishing for scallops were otter trawls (24 vessels) and scallop dredges (18 vessels) (Table 43). Consequently, annual scallop revenues averaged \$1,046 per vessel, falling short of the amount needed to cover VMS costs. In fact, only a few vessels (<12%) in this group earned revenues from scallops sufficient to cover VMS costs for equipment and service (Table 39). Therefore, many vessels in this group may have an incentive to leave the general category fishery or reduce their landings of scallops below 41 lb. to avoid paying for VMS. On the other hand, for many other vessels maintaining their general category permit will provide a sufficient incentive for installing VMS for the reasons discussed above, and given that these costs comprise a

small percentage (1.3% for Skymate) of their annual average revenue from all fishing activity (Table 40).

- Group IV (101 lb. to 200 lb. of scallops per trip): There were 57 vessels in this group, which landed 2.6% of general category scallop landings in 2003 (Table 39). Alternatives 1, 2 and 3a will include this group of vessels in VMS implementation, whereas alternatives 3b and 3c will exclude them. Most vessels in this group have a low dependence on scallops as an income source, with scallop revenue constituting 22.6% of the trip revenue during which scallops are landed, and 1.9% of the total fishing revenue in 2003. Most vessels in this group used either otter trawls or scallop dredge as their primary gear when they landed scallops (Table 43). As Table 39 shows, only 17% to 22% of these vessels earned revenues from scallops sufficient to cover VMS costs for Boatracs and Skymate, respectively. Therefore, for the majority of the vessels in this group, scallop earnings alone will not provide an incentive for investment in VMS unless they plan to increase their scallop catch in the coming years. Nevertheless, keeping the general category permit as a future asset will provide incentive for some to install a VMS, given that VMS costs may constitute a small percentage of their total fishing revenue (Table 40).
- Group V (201 lb. to 300 lb. of scallops per trip): This group of 31 vessels landed only 2.6% of general category scallop landings in 2003 and an average of 1,343 lb per vessel during the entire 2003 FY (Table 39). Like the vessels in Group IV, most vessels in this group used either otter trawls or scallop dredge as their primary gear during those trips with landings of scallops (Table 43). Although these vessels exhibited a higher dependence on scallops as a source of revenue (41.8%) from trips that they landed scallops, they earned, on average, only 3.3% of their annual fishing revenue (from all trips) from scallops (Table 40). All alternatives with the exception of alternative 3c require that all vessels in Group V install and operate a VMS. More than 40% of these vessels could pay the VMS costs from their earnings from scallops. For the remaining majority of vessels in this group, at least part of the VMS costs will need to be paid out of their income from other fisheries.
- Group VI (Over 300 lb. scallops per trip): During the 2003 fishing year, there were 144 general category vessels that landed more than 300 lb. of scallops per trip. This group included vessels that targeted scallops and landed over 94% of scallops from general category fishing. The primary fishing gear was scallop dredge for the majority of the vessels (65% of total number of vessels), followed by scallop trawl (18% total number of vessels) when they targeted scallops (Table 43)⁹. In fact, 94 scallop dredges in group VI landed over 61% and 27 scallop trawls landed about 27% of all general category scallop catch during the 2003 fishing year. Scallop revenue as a percentage of the total trip revenue averaged 84% for the trips targeting scallops. These vessels earned a significant proportion, over 29% on average, of total annual income from scallops as well. These vessels fished primarily in the Gulf of Maine (34 vessels), South Channel (23 vessels), Delmarva (36 vessels), and New York Bight areas (19 vessels) as shown in Table 41.¹⁰

⁹ Primary gear is defined as the gear most frequently used during those trips vessels targeted or landed scallops.

¹⁰ Primary area fished is defined as the area where a vessel's major proportion of scallop catch happened. For most vessels the primary area fished were the only area where any scallop catch occurred. The

As Table 42 shows, the primary state of landings by these vessels included the ports in Massachusetts with 50 vessels, in Maine and New Hampshire with 25 vessels, and Mid-Atlantic States with 58 boats.

All proposed alternatives require that the vessels in group VI have a VMS, but alternative 3c would only include this group of vessels in VMS implementation. As Table 39 shows, 90% to 93% of these vessels had scallop revenues covering or exceeding the VMS costs for Boatracs and Skymate, respectively. Because a majority of these vessels targeted scallops during their general category trips, the profitability of these trips will be determined not only by the excess of annual revenue over VMS costs, but also by the ability to pay for the trip costs and crew shares out of the total revenue. The amount of revenue that would cover trip costs, crew shares and VMS costs (defined as equivalent scallop revenue) is estimated to be \$11,839 for Boatracs, and \$8,912 for Skymate as shown in Table 38 above. The majority of these vessels had revenues in excess of these amounts in 2003. The average annual scallop revenue per vessel in this group was \$48,400, and total revenue from targeted trips was \$57,421, far exceeding the VMS and trip costs and crew shares. As compared to other groups of general category vessels (in Groups I to V), the vessels in group VI included smaller boats with an average tonnage of 55 GRT, and with an annual average income of \$164,070 for the 2003 fishing year. As a result, VMS costs comprise a slightly higher percentage, about 2.2% to 2.9%, of fishing annual revenue for these vessels depending on the particular VMS unit to be installed. In short, because they earn a significant income from scallops exceeding the costs for VMS, the vessels landing over 300 lb. per trip (Group VI) are more likely to invest in VMS than the general category vessels in other groups. These vessels are also more likely to benefit from VMS implementation since better enforcement of the possession limit will help to prevent stringent measures in the future if overfishing of the scallop resource occurs due to the illegal landings of scallops in excess of the 400 lb. trip limit.

proportion of landings from each primary area was 100% for 146 out of 331 boats, between 70% to 99% for 56 vessels, between 50% to 69% for 32 vessels, and between 30% to 49% for the rest of the 97 boats.

Table 40. General Category Vessels by Their Maximum Scallop Landings per Trip (2003 Fishing Year)

Data	Maximum scallop pounds per trip					
	<=40 lb.	41-100	101-200	201-300	>300	Grand total
Number of vessels	55	44	57	31	144	331
Number of vessels that don't have a VMS	38	31	36	24	132	261
GRT (average)	71	78	77	76	55	66
Length (average)	60	61	59	60	55	57
Crew (average)	3	3	3	3	3	3
Scallop landings per trip (average)	16	43	88	144	317	276
Number of trips per vessel	2	4	9	9	34	18
Annual scallop landings per vessel (dealer's data)	29	181	755	1,343	10,652	4,919
Annual Scallop revenue per vessel (dealer's data)	134	1,046	5,394	7,374	48,414	22,843
Annual total revenue per vessel from scallop trips	8,115	15,942	23,889	17,637	57,421	34,214
Scallop revenue as a % of total revenue from scallop trips	1.7%	6.6%	22.6%	41.8%	84.3%	66.8%
Annual Scallop revenue as a % of total revenue from all trips	0.0%	0.4%	1.9%	3.3%	29.3%	9.7%
Total annual revenue per vessel	371,267	241,403	283,833	222,685	165,070	235,327
VMS cost as a % of total annual revenue per vessel						
Skymate	1.0%	1.5%	1.3%	1.6%	2.2%	1.5%
Boatrac	1.3%	2.0%	1.7%	2.1%	2.9%	2.0%
Total number of trips	101	185	491	289	4,837	5,903
Total scallop landings (dealer's data)	1,583	7,961	43,054	41,645	1,533,908	1,628,151

Note: Six general category vessels that also had limited access permits at least during part of the fishing year are excluded from the table.

Table 41. Primary Area Fished by Active General Category Vessels and Maximum Scallop Pounds per Trip

Area Fished (Statistical Area)	Groups of vessels by maximum scallop pounds per trip					
	Group II. 1 - 40 lb.	Group III. 41-100 lb.	Group IV. 101-201 lb.	Group V. 201-300 lb.	Group VI. >300 lb.	All Vessels
Gulf of Maine (511-515)	12	12	17	7	34	82
Georges Bank South (525)	NA	NA	NA	NA	NA	6
Georges Bank North (561,562)		NA	NA	NA	NA	7
South Channel (521,522,526)	7	NA	11	4	23	48
Southern New England (537-539)	NA	NA	NA	NA	NA	7
New York Bight (611-616)	NA	5	NA	7	19	37
Delmarva (621-623, 625-627)		NA	NA	NA	36	43
Virginia/NC (631-638)		NA	NA		NA	5
Not known	28	14	18	8	28	96
Grand Total	55	44	57	31	144	331

Note: "NA" indicates that the number of vessels in each category were 3 or less.

Table 42. Number of General Category Vessels by Primary State of Landing

State	Groups of vessels by maximum scallop pounds per trip					
	Group II. 1 - 40 lb.	Group III. 41-100 lb.	Group IV. 101-201 lb.	Group V. 201-300 lb.	Group VI. >300 lb.	All Vessels
New England						
MA	22	19	27	11	50	129
ME and NH	8	5	8	4	25	50
RI	8	8	9	4	6	35
Total	38	32	44	19	84	217
Mid-Atlantic						
NY and NJ	15	7	8	9	30	69
VA and NC	NA	10	5	3	28	46
Total	NA	17	13	12	58	100

Note: "NA" indicates that the number of vessels in each category were 3 or less.

Table 43. Primary Gear used by Active General Category Vessels and Maximum Scallop Pounds per Trip

Primary Gear Group	Groups of vessels by maximum scallop pounds per trip					
	Group II. 1 - 40 lb.	Group III. 41-100 lb.	Group IV. 101-201 lb.	Group V. 201-300 lb.	Group VI. >300 lb.	All Vessels
Number of vessels						
Otter trawl	41	24	26	12	19	122
Scallop dredge	8	18	30	14	94	164
Scallop trawl	NA	NA	NA	NA	27	34
Surf clam dredge	NA	NA	NA	NA	4	11
Grand Total	55	44	57	31	144	331
Scallop Landings as a % of Total general category landings						
Otter trawl	0.1%	0.2%	0.5%	0.3%	2.9%	3.9%
Scallop dredge	0.0%	0.3%	2.2%	2.1%	61.3%	65.8%
Scallop trawl	NA	NA	NA	NA	27.0%	27.2%
Surf clam dredge	NA	NA	NA	NA	3.0%	3.1%
Grand Total	0.1%	0.5%	2.6%	2.6%	94.2%	100.0%

Note: "NA" indicates that the number of vessels in each category were 3 or less.

Table 44. General Category Vessels Classified by Maximum Scallop Pounds per Trip (Cumulative Grouping)

Data	Alternatives and maximum scallop pounds per trip					
	Included in Alt. 1 1 lb. to 40 lb.	(Alt. 2) Proposed Action >40 lb.	Alt.3a >100 lb.	Alt.3b >200 lb.	Alt.3c >300 lb.	All vessels
Number of vessels	55	276	232	175	144	331
Number of vessels that don't have a VMS	38	223	192	156	132	261
GRT (average)	71	65	63	58	55	66
Length (average)	60	57	56	55	55	57
Crew (average)	3	3	3	3	3	3
Scallop landings per trip (average)	16	280	238	286	317	276
Number of trips per vessel	2	21	24	29	34	18
Annual scallop landings per vessel (dealer's data)	29	5,893	6,977	9,003	10,652	4,919
Annual average scallop revenue per vessel (dealer's data)	134	27,369	32,361	41,144	48,414	22,843
Annual total revenue per vessel from scallop trips	8,115	39,415	43,867	50,374	57,421	34,214
Scallop revenue as a % of total revenue from scallop trips	1.7%	69.4%	73.8%	81.7%	84.3%	66.7%
Annual scallop revenue as a % of total revenue from all trips	0.04%	13%	16%	23.5%	29.3%	9.7%
Total average annual revenue per vessel	371,267	208,237	201,947	175,276	165,070	235,327
Total number of trips	101	5,802	5,617	5,126	4,837	5,903
Total scallop landings (dealer's data)	1,583	1,626,568	1,618,607	1,575,553	1,533,908	1,628,151
Scallop landings as % of total general category landings	0.1%	99.9%	99.4%	96.8%	94.2%	100.0%

6.2.1.2 No Action

“No action” alternative would be similar to the current system and would include no VMS requirement for general category vessels fishing in the open areas. Because it does not require VMS, no action will not have any VMS power-down alternative associated with it. The impacts of the no action alternative were discussed above relative to the impacts of the alternatives. Enforcement currently has insufficient resources to adequately address enforcing possession limit due to the need to be present when the vessel hits the dock. If the possession limit cannot be effectively enforced, scallop mortality could increase due to the illegal landings in excess of the 400 lb. possession limit. As a result, the future yield and revenues from the scallop resource could decline. This would have negative impacts on the vessels both with general category and/or limited access scallop permits. Producer benefits would decline due to lower landings and revenues, and higher fishing costs per pound of scallops if overfishing leads to a reduction in the productivity of the scallop resource. Under the “no action” scenario, impacts on the consumer benefits would also be negative due to reduced scallop landings in the future, possibly coupled with higher scallop prices.

On the other hand, the no action alternative would minimize the compliance costs for the general category vessels. The costs of VMS implementation with the proposed action will range between \$0.8 million to \$1.3 million for the initial year of implementation, and will decline considerably afterwards consisting only of service charges. The potential negative impacts associated with

illegal landings of scallops due to violations of the 400 lb. general category possession limit is expected to exceed the cost benefits from no action.

6.2.1.3 Non-preferred alternatives

6.2.1.3.1 Economic Impacts of Alternative 1

Alternative 1 requires all vessels with the general category permits to install and operate a VMS. Therefore, this alternative will affect 2,344 vessels that do not already have a VMS and will result in largest costs for the general category fleet (Table 36). The economic benefits of VMS implementation discussed in Section 6.2.1.1.2 will also apply to Alternative 1. In fact, this alternative will have the largest enforcement benefits although it will also result in an increase in personnel costs for enforcement. The trade-offs between benefits and costs for alternative 1 could be summarized as follows:

- Alternative 1 will have negative economic impacts on about 2,200 to 2,208 general category vessels because these vessels either had no reported revenues from scallops during the 2003 fishing year or had revenues from scallops that were less than the costs for VMS equipment, installation and service. If, instead of investing in a VMS, these vessels with incidental or no landings of scallops choose not to renew their permit, the total reduction in scallop revenue is estimated to be \$109,415, with no significant decline in scallop mortality and landings.
- Many vessels with general category permits would choose to install a VMS, even though they did not land any scallops in the past, in order to prevent being disqualified by any potential limited entry program for the general category in the future. If all the vessels included in alternative 1 install a VMS, total VMS costs for the fleet will range from \$8.3 million to \$12.1 million depending on the choice of VMS units to be installed. However, if those vessels with no scallop landings or with incidental catches of scallops chose not to renew their general category permit, total costs of VMS implementation would be equal to the costs for alternative 2, since alternative 2 excludes these vessels from VMS requirement.
- VMS costs should be evaluated relative to the enforcement benefits expected to occur with VMS implementation. As discussed in Section 6.2.1.1.2, VMS will act as a deterrent to illegal scallop landings due to better monitoring of fishing activity. From that perspective, Alternative 1 could have the largest enforcement benefits compared to other alternatives because it will include all general category vessels, which can potentially land scallops. On the other hand, this alternative could present a challenge in terms of the current enforcement resources. It will increase the personnel costs of enforcement associated with monitoring VMS activity of a large number of vessels with general category permits. For this reason, additional VMS funding may be required if this alternative is selected for implementation.
- If all the vessels with no reported landings of scallops or that landed only incidental amounts (up to 40 lb. of scallops) included in Alternative 1 choose not to buy a VMS, then the total VMS costs will be approximated by the amount shown for alternative 2 (Proposed Action), which already excludes these vessels from VMS implementation. In fact, the total VMS costs for each alternative, assuming that a part of the general category fleet will not renew their permit, could be estimated from the total VMS costs for each

successive alternative that requires a smaller subset of vessels to have a VMS. Therefore, the VMS costs for any alternative could be less than estimated in Table 32 if many vessels follow such a strategy.

- On the other hand, some general category vessels that were catching scallops below the 400 lb. possession limit may increase their scallop landings per trip in order to cover VMS costs instead of leaving the general category fishery. In such a case, Alternative 1 could increase scallop landings from general category fishery, thus could result in overfishing and a reduction in future scallop landings and revenues.

6.2.1.3.2 Economic Impacts of Alternative 3

Alternatives 3a to 3c would affect a smaller number of vessels, ranging from 192 vessels for alternative 3a to 132 vessels for alternative 3c because they employ a higher threshold for scallop pounds per trip as criteria for VMS requirement (Table 36). Total scallop landings comprised 99.4% of total general category landings in the 2003 fishing year for the group of vessels included in alternative 3a and 94.2% for the group of vessels included in alternative 3c. Therefore, alternatives 3a to 3c, will require VMS implementation for the group of vessels that are most active in the scallop general category fishery and benefit from scallop fishing.

In fact, most of these vessels included in alternatives 3a to 3c had scallop revenues in excess of the amounts required to pay for VMS. Consequently, total cost burden for these alternatives will be relatively small and will comprise about 9% to 15% of the total general category scallop revenues for alternative 3a, and 7% to 10% for alternative 3c depending on the VMS unit installed. These alternatives also will minimize the total loss in scallop revenue due to some vessels with small landings of scallops choosing not to install a VMS. In addition, some general category vessels in any group defined by their scallop landings per trip in Table 32 could choose to land less scallops per trip than the threshold amount for VMS requirement in order to avoid VMS costs.

On the other hand, alternatives 3a to 3c present greater trade-offs in terms of enforcement efficiency. They will have smaller enforcement benefits compared to alternatives 1 and 2 by creating another subset of vessels for enforcement to monitor through dockside inspection. In fact, requiring vessels with scallop landings in excess of 100 lb., 200lb. or 300 lb. for alternatives 3a, 3b, and 3c, respectively, will create another trip limit for enforcement to monitor.¹¹ Therefore, each successive alternative starting with alternative 3a, will have the least cost burden for the general category fleet, but at the same time, will result in less enforcement benefits by requiring VMS on a smaller number of general category vessels.

¹¹ The 40 lb. limit proposed by Alternative 2 (proposed action) is consistent, however, with the provisions of the general category permit, since a vessel needs no permit to land less than 40 lbs. of scallop meats.

6.2.1.3.3 Power-down via Letter of Exemption

Similar to the proposed power-down alternative, this measure is expected to have positive economic impacts on general category vessels that are required to operate a VMS. By allowing vessels to power-down VMS they are while in port and not fishing, the proposed action will reduce compliance costs to vessels. In this way, the vessels would not have to rely on shore power or continuous battery power while in port, which may under some circumstances be unavailable. It could also reduce polling costs for vessels that fish seasonally by allowing them to discontinue VMS operation while they in dock (see Table 37). Since no landings of scallops will be possible while the vessel in dock, the power down alternative is not expected reduce the enforcement benefits from VMS as long as the proposed procedures for power-down exemption could be strictly enforced and vessels that illegally power-down could be detected by enforcement. This alternative would have more administrative costs and would provide less flexibility to vessels compared to the proposed alternative described in Section 4.1.1.2. On the other hand, as compared to the proposed power-down alternative, this option would reduce the incentive for some vessels to illegally turn off the VMS in order to circumvent inspection due to the stricter requirements for power-down. These include the requirement for the vessels to be out of water for 72 consecutive hours, and having a letter of exemption on board specifying the location of the vessel while exempt, the time period for the exemption. While stricter requirements for power-down will improve the economic and enforcement benefits associated with VMS implementation, this alternative would have more costs associated for vessels because of less flexibility for powering-down VMS.

6.2.2 Broken Trip Exemption Program

6.2.2.1 Proposed alternative

6.2.2.1.1 Removal of Broken Trip Disincentive

Suspending the replacement trip charge will have positive economic impacts by reducing the losses from broken trips for the limited access scallop vessels that fish in controlled access areas. With the status quo broken trip program, vessels would be allowed to take replacement trips for each controlled access area trip they terminated, but at a charge of 2 days-at-sea plus one day-at-sea for each 10 percent of the scallop possession limit onboard the vessel (i.e. landed). The day-at-sea allocation for the replacement trip will be the remaining days-at-sea for that trip after this charge. Furthermore, the possession limit will be prorated at a 1,500 per day-at-sea equivalent. For example, a vessel charged two days for a broken trip could continue the trip later in the fishing year, but would be able to land 15,000 lbs of scallops, instead of 18,000 lb. of scallops allowed for a regular controlled access area trip. As a result, a vessel could lose 3,000 lb. by having a broken trip with no landings, amounting to a loss of about \$13,650 if evaluated at an average ex-vessel price of \$4.55 per pound of scallops.

The proposed action would prevent such revenue loss because it will allow vessels to land the difference between the possession limit and the amount of scallops they landed during the broken trip. In other words, total pounds landed from the broken and the replacement trip will add up to the possession limit (18,000 lb. for 2004 fishing year) for that area.

During 2004 fishing year, there were 145 applications for broken trips, most of which occurred during the winter months. As Table 45 shows, due to the broken trip charge, the total pounds of

scallops landed from the broken and the replacement trip would be 15,525 lb. per trip on the average, which is 2,475 lb. less than the 18,000 lb. possession limit. With the proposed action the automatic charge would not be applied, resulting in an additional 358,940 lb. of scallop landings and an additional \$1.6 million in revenue for the scallop fishery.

In addition, the suspension of the broken trip charge could provide more incentive for vessels to take broken trips, leading to more broken trip applications and replacement trips in the future and resulting in higher scallop landings and revenues. It is not possible to predict, however, how much the use of the broken trip provision will occur without the automatic DAS change on the replacement trip.

Table 45. Broken trips, scallop landings and revenues (2004 fishing year)

Data	Sept to Nov. (2004)	May to Aug. (2004)	Dec.2004 to Feb.2005	Grand Total
Number of broken trips	30	52	63	145
Scallop landings per broken trip (average per trip)	8,965	8,829	6,740	7,950
Scallop pounds allowed to land from replacement trips (average per trip)	6,750	6,731	8,664	7,575
Total scallop pounds from broken and replacement trips (per trip)	15,715	15,560	15,404	15,525
Loss of scallop pounds per trip due to broken trip charge	2,285	2,440	2,596	2,475
Loss of scallop revenue per trip due to broken trip charge	10,395	11,102	11,810	11,263
Total loss in scallop landings from all broken trips (lb)	68,541	126,875	163,524	358,940
Total loss in scallop revenue from all broken trips (\$)	311,862	577,281	744,034	1,633,177

The vessels will need to submit a trip termination notice via VMS in order to benefit from the broken trip program, 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.

6.2.2.1.2 Impacts of Rebate of Charges Against Replacement Trips During the 2005 Fishing Year

This measure will provide vessel operators more flexibility for all trips in the 2005 fishing year, even if they occur prior to the implementation of Framework Adjustment 17. The economic impacts of this action is expected to be positive because vessel owners will be able to land the full amount of the possession limit through replacement trips and the rebates starting with the 2005 fishing year.

6.2.2.2 No Action

6.2.2.2.1 Broken trip Program

No action will retain the existing regulations for the broken trip program. The impacts of the no action is evaluated above in relation to the proposed removal of the broken trip program. Vessels returning from a controlled access area trip with less than the scallop possession limit, due to an emergency, poor weather, or any other reason deemed appropriate by the captain will have the automatic DAS charge reduced, based on the amount of scallops landed. Therefore, no action will involve economic costs associated with the broken trip. As discussed in Section 4.2.1.1 above, the loss of revenue associated with a broken trip could exceed \$10,000 for some trips. For example, during the 2004 fishing year, the existing broken trip program resulted in a \$1.6 million in revenue loss for the scallop fleet.

6.2.2.2.2 Broken Trip Rebate: Status Quo

Vessels with a broken trip taken before the framework adjustment becomes effective would fish under existing rules, i.e. the broken trip program disincentive would apply. Because replacement trips for these broken trips would have an allocation that is based on the existing schedule where landings on replacement trips are imposed a 'charge' of up to 2 DAS and 3,000 lbs, this alternative would result in a revenue loss for vessels that have a broken trip before the implementation of Framework 17.

6.2.3 Uncertainties and Cautions

The results of these analyses presented above and in the following sections should be interpreted with caution. The number of affected vessels, scallop landings and revenues were estimated from the 2003 fishing year data. These numbers could change in the future depending on several factors, including in changes in scallop resource biomass and yield, scallop prices, import prices for scallops, fishing expenses, VMS costs, changes in profitability of the scallop trips relative to trips targeted on other species, and changes in management measures affecting scallop fishery and other fisheries that limited access and general category vessels participate.

6.3 Enforcement Benefits and Trade-offs

The enforcement benefits of the proposed alternatives for VMS implementation were discussed above in Section 6.2.1.1.2 (Benefits of VMS implementation), and elsewhere in the document (Section 3.1 and Section 4.1.1). As a summary, VMS will improve enforcement's ability to deploy personnel and other resources in monitoring vessel offloads, and thus will increase effectiveness in monitoring the possession limit. Another benefit would be better monitoring of area boundaries that are a part of rotational area management.

The enforcement benefits are expected to be proportional, however, to the number of vessels included in the VMS implementation. While exempting a subset of general category vessels would reduce the overall costs of VMS requirement for the general category fleet, it also would create the same enforcement problems in monitoring the possession limit for the subset of vessels not required to install VMS. The larger the number of vessels that are exempted from VMS requirement, the more difficult it would be to improve the enforcement efficiency in monitoring possession limits. For this reason, the best option from an enforcement perspective would be to require all vessels with general category permits, as in non-preferred alternative 1, to operate a

VMS. There were about 2,554 vessels with general category permits in 2003, which would be included in VMS implementation if Alternative 1 selected. From the cost side, however, this alternative could present a challenge in terms of the current enforcement resources. It would increase the personnel costs of enforcement associated with monitoring VMS activity of a large number of vessels with general category permits. For this reason, additional VMS funding would be required if this alternative was selected for implementation. Alternative 1 would also result in largest costs for the general category fleet as examined in Section 6.2.1.3.1 above, ranging from \$8.3 million (Skymate) to \$12.1 million (Boatracs) depending on the choice of VMS units to be installed.

Enforcement benefits for proposed action (Alternative 2) are expected to be lower than Alternative 1. On the other hand, proposed action will affect about 223 vessels that do not already have a VMS and will have significantly lower compliance costs, ranging between \$0.8 to \$1.3 million during the initial year of implementation. Enforcement benefits are expected to be greater for the proposed action which includes all general category vessels that land more than an incidental amount of scallops (over 40 lb. per trip) compared to Alternatives 3a, 3b and 3b, which require consecutively a smaller subset of general category vessels to have VMS, and therefore resulting in a larger subset of vessels that will be monitored through current method of dockside patrol effort.

Although the proposed alternative for power-down would allow the VMS program to track vessel activity while at sea and reduce compliance costs to general category vessels while they are in port, it will also reduce the enforcement effectiveness in monitoring the possession limit. From an enforcement perspective, a twenty-four/seven VMS coverage on general category scallop vessels would be the best method to ensure compliance within this segment of the fishery. The volume of small, itinerant vessels that participate in this fishery challenges the resources of Law Enforcement to stay current with the activities associated with this fleet. Recent enforcement actions aboard several general category vessels have uncovered strong evidence that suggest multiple prior landings by subject vessels exceeding the 400 pound trip limit with little to no concern of apprehension. According to the proposed action, the vessels are required to send hourly positional signals except when they power down VMS may after offloading and after vessel is secured to a fixed dock or mooring. This action will improve enforcement's effectiveness benefits because the application of hourly positional signals would:

- Profile vessels on grounds longer than expected to harvest 400 pounds and target subject vessels.
- Ensure vessels stay clear of closed areas.
- Locate port of landing prior to vessel's arrival.
- Allow fisheries management to assess effort.
- Locate vessels quickly to assess compliance.

On the other hand, power-down would reduce the enforcement's effectiveness because it would:

- Allow vessels to fish undetected, especially if intent on exceeding trip limit by simply turning off the VMS.
- Allow target vessels to move from port to port without notification in order to circumvent inspection.

- Allow a suspect vessel inbound from grounds with an overload to power down prematurely and later cite a litany of plausible excuses.
- Allow vessels that buoy off excess scallops would power down after landing only to retrieve the scallops later undetected by VMS.

While recognizing these trade-offs in terms of reduced enforcement efficiency, the Council proposed power-down exemption to balance the enforcement benefits with the costs of operating VMS while a vessel in port. As explained in Section 4.1.1.2, without this exemption vessels would have to rely on shore power or continuous battery power while in port, which may under some circumstances be unavailable. Because no landings of scallops will be possible while the vessel stays in dock after downloading, this exemption is not expected to reduce the enforcement benefits associated with the VMS implementation except if the vessels illegally turn off the VMS while they are fishing and remain undetected by enforcement as explained above.

There are also enforcement's concerns with the re-powering part of the proposed action which allows vessel to operate without turning on VMS when they are inside of the VMS demarcation line. The Council proposed this option to provide flexibility to vessels, for example, when they travel from mooring to fuel and ice docks when they do not have a catch aboard. However, enforcement is concerned that if vessels can move around inside the VMS line without turning on VMS - which could easily include transiting from port to port - the purpose of VMS for these vessels would be quickly defeated. Such allowance will also increase enforcement complexity because it results in more types of exemptions that the enforcement has to deal with while using its resources for monitoring the possession limit. Therefore, from an enforcement perspective, if the vessels are given the option to power down after a vessel is secured to a fixed dock or mooring, they should be required to power up VMS when they leave the mooring for any reason, even if they are inside the VMS line.

The proposed action regarding the removal of broken trip disincentive is not expected to have significant impacts on enforcement costs or benefits. Broken trip rebates will increase administrative costs slightly since NMFS will have to let the fishermen know that they are entitled to another replacement trip and keep track of these trips. However, this increase in costs is not expected to be significant because NMFS already tracks the broken trips and have procedures in place for doing so.

6.4 Social Impacts

The mandate to consider the social impacts from proposed federal fishery regulations stems from the National Environmental Policy Act (NEPA) and the Sustainable Fisheries Act (SFA). NEPA requires that any regulation that will have impacts on the environment must also consider the economic and social impacts of such actions. National Standard 8 of the SFA requires that "Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities" (16 U.S.C. § 1851(2)(8)). The act further defines a fishing community as one that is "substantially dependent or substantially engaged in the harvesting or processing of fishery resources to meet social and economic needs, and includes

fishing vessel owners, operators, and crew and United States fish processors that are based in such community” (16 U.S.C. § 1802 (16)).

6.4.1 Impacts of VMS implementation and Power Down Exemption - Impacts of Proposed Action and Alternatives

The general category fleet is a heterogeneous group of fishermen composed of those who target scallops on a smaller scale than limited access vessels, and those that primarily catch scallops as bycatch (see Affected Human Environment section). Many of these vessels are relatively small ones that engage in a variety of different fisheries throughout the year, in a manner of annual rounds once common to many small-scale operations. This framework is essentially a question of whether or not, and for whom, to require the installation of VMS units. Clearly, the higher the landings threshold at which the VMS requirement is applied, the fewer the number of fishermen who will be impacted in the ways detailed below. A vessel that would be required to install VMS would lose its general category permit without the use of VMS. If vessels don't upgrade to VMS, it may be because the permit is inactive or the landings so low as to not justify the cost of a VMS unit. The economic impacts on such vessels who do not install VMS may seem minimal on both these vessels and the fleet as a whole (see Economic Impact section). However, in social terms, the effect is rather more subtle for it further limits flexibility, which in the long run can undermine the traditional round. While an open access fishery, such as the general category fishery, is often controversial in terms of the potential loss of economic rent, the indirect curtailment of open access through the requirement of costly devices such as VMS would achieve access restriction in potentially inequitable ways, i.e. restricting access to those able to afford the additional requirements.

While VMS is suggested as a method for enhancing the ability of enforcement to monitor violations, the analysis of social impacts should direct attention to the possibility of creating new institutional incentives to fish or violate trip limits. For example, for those vessels that do install VMS, the initial impact will be the financial cost of installing and maintaining the unit. (This cost will be presumably borne by vessel owners, although a possible social impact is that such costs could later affect changes in the crew share ratio.) Additionally, those vessels incurring additional costs from VMS might actually increase their catch of scallops in order to pay for the VMS, thus increasing scallop resource use by general category vessels. In combination with the upcoming control date proposed for the general category fishery, such inactive permits may be even more likely retained and utilized. Furthermore, while requiring only a subset of the vessels to install VMS would lessen the immediate economic impact on the fleet, such internal differences might actually create institutional incentives to violate trip limits among those that are not subject to the additional monitoring.

In terms of positive social impacts, the addition of a VMS unit can enhance safety at sea through its ability to both locate vessels in distress and send distress messages to other vessels that may be nearby. Finally, although VMS may only aid enforcement in combination with other forms of monitoring, it will help with the perception problem that there may be widespread cheating, and help mitigate feelings of inequality among limited access fishermen that they shoulder an unfair burden from enforcement.

Power down alternative: This alternative takes into account the nature of many of the vessels in the general category fleet, which may either be small vessels or dock in small ports where power

availability or cost may be an issue of concern. Such an allowance will enable more vessels to participate in the VMS system, and thus in the general category fishery.

6.4.2 Removal of Broken Trip Disincentive and Rebates for Replacement Trips for 2005 fishing year:

The proposed alternative will have positive social impacts in terms of both safety at sea and confidence in the fishery, if it makes vessels in dangerous conditions more likely to come back to shore as discussed in Section 4.2 (Proposed Action). The existing broken trip program allows vessels to take replacement trips for each controlled access area trip they terminated, but at a charge of 2 days-at-sea plus one day-at-sea for each 10 percent of the scallop possession limit onboard the vessel (i.e. landed). The proposed action would prevent such economic loss because it will allow vessels to land the difference between the possession limit and the amount of scallops they landed during the broken trip. As a result, the decision to terminate the trip will be based on the ability for the vessel to make an economical makeup trip without consideration of a loss in revenue. Thus, the proposed action will reduce the potential safety misjudgments by fishermen in an attempt to avoid revenue loss from broken trips, and will promote the safety of human life at sea. Similarly, rebates for the charges for the replacement trips taken during the 2005 fishing year may reduce some of the alleged risks associated with the broken trip charge. The vessels facing unsafe conditions can return to port without the threat of losing a portion of their authorized scallop landings. Therefore, taking this action will improve safety associated with the broken trip program as quickly as possible.

6.4.3 No Action

The no action alternative would continue the status quo regulations regarding general category fishery. This action would have positive social impacts because it provides the general category vessels more flexibility to participate in the scallop fishery without imposing extra compliance costs associated with VMS implementation. On the other hand, the perception that there may be widespread violations of the general category possession limit could have negative social impacts by increasing the feelings of inequality among both general category and limited access fishermen who obey with the regulations governing scallop fishery.

No action would also retain the status quo broken trip program and would entail no rebates on charges for replacement trips. This action would have negative social impacts by increasing the alleged safety risks associated with the automatic charge on replacement trips. The existing broken trip program allows vessels to take replacement trips for each controlled access area trip they terminated, but at a charge of 2 days-at-sea plus one day-at-sea for each 10 percent of the scallop possession limit onboard the vessel (i.e. landed). Such automatic charge would reduce vessel revenue and crew income from the broken trips. As a result, it could result in potential safety misjudgments by fishermen in an attempt to avoid revenue loss from broken trips.

6.4.4 Fishery Dependent Communities (National Standard 8)

National Standard 8 requires the consideration of impacts on fishery dependent communities, where a fishing community is “a community which is substantially dependent on or substantially engaged in the harvesting or processing of fishery resources to meet social and economic needs, and includes fishing vessel owners, operators, and crew and United States fish processors that are based in such community.” Current guidance on National Standard 8 focuses on communities as

towns or cities, a geographic unit that might fit the Census Bureau's definition of a "place." Additionally, a number of factors to consider in making determinations of dependence are supplied in current guidance, such as landings information, numbers of participants, and the sociocultural importance of the fishery. Yet, methodological guidelines are in the process of refinement, and the question of how to interpret a spatial construct like the community, and what analytical weight to give it, is also a matter of scholarly debate. For many social science disciplines, it is axiomatic that space is social: socially used, organized, and produced, where places are not isolated but are connected in networks of relations through collective activity over time. The weigh-out data and the permit files list ports, which are not necessarily or always the same places where people live, where specific styles of and knowledge about fishing are practiced, and where the impacts of management are most strongly felt. Moreover, the ownership structure of the scallop fleet—to what extent boats are owner-operated or boats are part of larger, corporately-owned fleets—is difficult to judge from the permit files. Thus to assess what and where the "communities" are would require a broad-based ethnographic research program aimed at these questions.

Unfortunately, resources have not been directed towards the systematic and long-term collection of the kinds of baseline data needed to make such determinations in an empirically grounded way. However, the Northeast Region has begun to make some headway in collecting the kinds of information and performing the kinds of analyses to support National Standard 8 determinations, including current staff efforts to profile regional communities, as well as recent past efforts such as the Marine Fisheries Initiative (MARFIN) project on fishing communities and fishing dependency in New England (Hall-Arber, *et. al* 2001) and an updated port-profiles report for the Mid-Atlantic (McCay and Cieri, 2000). While some of these efforts include discussions of communities at larger levels than a "place," they are still useful in providing context and background for a discussion of communities as defined for National Standard 8. Together these strive to give a picture of how fishing communities identified in the previous section, with their varying fishing styles and practices, may be impacted by the proposed regulations.

6.4.5 Analysis of Affected Ports

The analysis of affected ports was based on location of landing ports as recorded in logbooks records, and location of homeports as recorded in vessel permit records. All attempts were made to correct the logbooks for inaccurate entries, namely the recording of landings in shellstock incorrectly entered as scallop meat. Additionally, homeport entries were corrected to the extent possible for misspellings and other problems. The group of the 20 or so ports with the highest number of affected vessels is essentially the same regardless of option (Table 60). It includes Cape Cod ports (Barnstable, Chatham, Provincetown, and Sandwich); New Jersey ports (Barnegat Light, Cape May, Long Beach, and Point Pleasant); mid-Atlantic ports (Shinnecock NY, Ocean City MD, Chincoteague VA, Hampton VA and Wanchese NC); Northern New England ports (Gloucester, Newburyport and Rockport MA, and Stonington ME); and southern New England ports (Plymouth, New Bedford and Fairhaven MA and Point Judith RI). Not all of these ports have a significant portion of their total landed value stemming from general category scallop landings (see Affected Human Environment section and Table 50). Of these, those that have over 5% from general category scallop landings in 2003 (either directly as a port of landing or indirectly as homeport) include Stonington, Barnstable, Provincetown, Sandwich, Newburyport, Barnegat Light, and Chincoteague.

Most of these ports are marked by small-boat fisheries which may be more vulnerable to changing regulations. Census data (Table 61) give some indication for these ports of additional sources of community stress or vulnerability. Stonington and Chincoteague have relatively higher rates of poverty and lower levels of educational attainment, suggesting economic and occupational vulnerability is higher overall in these towns. Provincetown experiences high unemployment and poverty rates. Virtually all these towns have a high percentage of housing devoted to seasonal and tourists uses, which may indicate they are facing gentrification pressures, threats to working waterfronts, and other related issues such as housing costs. Both Stonington, Barnegat Light, and Chincoteague show a high level of employment involvement in the occupation category “Farming, fishing, and forestry,” which will including more than fishing is generally considered to drastically undercount involvement in fishing. Finally, by looking at the ratio of landings to aggregate community income (which does not give an accurate count of community income dependence on fishing, since it is unknown whether landings income stays in a community, and because it does not account for additional economic linkages generated by fishing activity), one can get a general sense of the importance of fishing in a community, in this case Stonington, Barnegat Light, and Sandwich.

Some other analytical standards have characterized a number of these general category scallop ports as generally fishing-dependent. While such characterizations may or may not meet the legal standards established for National Standard 8, they do give a sense of the effect scallop regulations may have on these communities. The MARFIN report tried to assess levels of regional dependence in New England using a variety of dependency indices. Of the ports listed above, Cape Cod region ports Sandwich and Provincetown ranked as highly dependent on fishing, either in terms of actual employment or because of a lack of alternative occupations for fishermen (Hall-Arber *et. al* 2001: 33). Additionally, Sandwich was also noted as having positive factor rankings in terms of infrastructure capacities (*ibid*: 40-43), while Provincetown was noted as being vulnerable to gentrification pressures (*ibid*: 44). The MARFIN report writes that “The Cape and Islands is third, following Downeast Maine (1) and Upper Mid-coast Maine (2), on the dependency index that is based on the employment indices used in this project [...] Despite gentrification, [Chatham, Vineyard Haven, and Sandwich] are actively engaged in the fishing industry” (Hall-Arber 2001: 144). The report also characterizes a number of specific ports on the Cape. For Sandwich, “Although fishing represents an historical activity, it has always been part of a mixed economy including tourism, agriculture, and transport” (*ibid*: 149); an estimated “200 households [are] directly dependent on commercial fishing, and an additional 70 households that are indirectly dependent on the fishing industry” (*ibid*: 151). Provincetown and its Portuguese fleet, the MARFIN report notes, “did not significantly diversify their economic activities and thus remained somewhat culturally and linguistically isolated” (*ibid*: 183), making it particularly vulnerable.

Work in the Mid-Atlantic has also profiled important fishing ports. “Barnegat Light is one of New Jersey’s most important ports. Many members of the East Coast’s longline fleet, scallop vessels, and a fleet of inshore gillnetters reside at this port. Recreational and charter boats also utilize and work from this port” (McCay and Cieri 2000: 48). Further, one resident estimated that “the commercial fishing industry (including charter and party boats) becomes the stalwart economic sector for the town in the winter through employing as many as 150 local people to work at the marinas. (According to the 1990 census, 12.6% of those employed at Barnegat Light were in fisheries.)” (*ibid*: 49). Though gentrification is of increasing concern, “the fisheries are perceived as part of the identity of this community” (*ibid*: 51). The McCay and Cieri report also

gives an indication of the scope of fishing businesses and infrastructure in Mid-Atlantic communities. For example in Chincoteague, “There is only one resident active dealer, but four out-of-town dealers uses this dock as a packing house. Seasonally, draggers and other fishermen come from other states to land their catches in Chincoteague, and there is a small local inshore and bay fishery as well as shellfish farming. There are several packing houses in Chincoteague, including a small cooperative” (ibid: 124).

6.5 Cumulative Impacts

6.5.1 Introduction

The term “cumulative effects” is defined in the Council of Environmental Quality’s (CEQ) regulations in 40 CFR Part 1508.7 as:

“The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.”

Cumulative effects are linked to incremental actions or policy changes that individually may have small outcomes, but that, in the aggregate and combined with other factors, can result in greater environmental effects on the affected environment. At the same time, the CEQ guidelines recognize that it is not practical to analyze the cumulative effects of an action on the universe; analyses focus on those effects that are truly meaningful. The Council of Environmental Quality also states that the range of alternatives considered must include the “no-action alternative as a baseline against which to evaluate cumulative impacts.” Therefore, the analyses in this document, referenced in the following cumulative impacts discussion, compare the likely effects of the proposed action to the no-action alternative.

Amendment 10 to the Sea Scallop FMP assessed all the principles identified by the CEQ guidance including the direct and indirect impacts on the natural and human environment, the cause and effect relationships of the measures being proposed, the synergistic interactions, the spatial and temporal boundaries of the action, and the capacity of the resource to accumulate additional effects. Section 5 of this document summarizes the current state of the scallop resource and scallop fishery, and provides additional information about habitat, protected resources, and non-target species that may be affected by the proposed action. The direct and indirect impacts of the proposed action and alternatives were analyzed for five VECs in the following sections:

1. **Scallop resource:** Section 6.1.4
2. **Non-Target Species:** Section 6.1.2
3. **Habitat: Section:** 6.1.3
4. **Protected Species:** 6.1.4
5. **Communities:** Sections 6.2 and 6.4

The following analysis will identify and characterize the impact on the environment by the proposed action when analyzed in the context of other past, present, and reasonably foreseeable

future actions. The analysis is generally qualitative in nature because of the limitations of estimating the effects of the proposed measures quantitatively.

6.5.2 Past and Present Actions

The management background and implementation of relevant management actions is more thoroughly described in Sections 3.3 and 3.4. In 1994, Amendment 4 instituted a limited access program and established a fishing effort reduction schedule in order to lower scallop fishing mortality and increase yield. Amendment 7 revised the DAS-reduction schedule in order to meet the mandates of the Fisheries Sustainable Act of 1996. In addition to these actions, Nantucket Lightship Area, CAI and CAII were closed to scallop fishing beginning in 1994, first by an emergency action, later by Amendment 7 to the Multispecies FMP. The management actions taken under the Sea Scallop FMP are summarized in Section 3.4, in Tables A and B. This section summarizes only those present actions related to VMS implementation for general category scallop fishery and broken trip program for the limited access vessels.

Few actions implemented by Sea Scallop FMP had a direct effect on vessels with general category scallop permits. Beginning in 1994, the Council has managed the Atlantic sea scallop fishery through limited access (LA) effort controls (NEFMC 1993). The limited access program assigned vessels with a history of scallop fishing to three broad classes and assigned each category a maximum number of days that a vessel may fish for sea scallops. Vessels that had sufficient history qualified for either a full-time, part-time, or occasional limited access permit. There were many vessels, however, that would not qualify for the LA permit as proposed. These vessels appeared to fall into one of the following two categories:

- Vessels that caught and landed scallops while targeting other species with bottom-tending mobile gear
- Vessels that targeted scallops with dredges and trawls on day-long trips

In both cases, the scallop landings were very often marketed by low-volume dealers and individuals, which made it difficult to document landings to qualify vessels for limited access. Because the scallop landings by these vessels were a small fraction of the total landings, the Council believed that landings and fishing effort by these vessels could be kept in check by establishing general category possession limit that will be applicable to scallop landings per trip. Amendment 4 thus established a new “general category” permit, regulated by a 400 lb. possession limit, gear regulations, a minimum 3½” size limit for shell-stock, and scallop area closures when implemented by the Scallop FMP. Amendment 10 increased the twine top mesh and minimum dredge ring size that apply to general category vessels using a scallop dredge. In addition, scallop fishing while not on a limited access DAS was restricted to a coastal exemption area bordering the coastline of eastern MA, NH, and ME.

Actual fishing effort by general category vessels remained low and their landings remained a small fraction of the scallop catch (<4%) until recently, with no further need to regulate the general category fishery. The vessels with general category permits were also exempted from the VMS requirements because of the same reasons, and also because to minimize the compliance costs for these vessels, many of which were small vessels that landed incidental amounts of scallops as a bycatch.

The issue of VMS requirement for the general category vessels arose later in connection with allowing fishing in controlled access areas for these vessels. Framework 11 did not provide access to general category vessels to parts of the Nantucket Lightship Area, Closed Area I, and Closed Area II on Georges Bank when these areas were opened to scallop fishing in 1999. This was because the re-opened areas were not in the exemption area where scallop fishing was allowed while not on a DAS. Providing general category access to scallop controlled access areas was reconsidered again in Framework Adjustment 14 (NEFMC 2001) when the Hudson. Canyon and VA/NC Areas re-opened to scallop fishing. Unlike the previous action, these areas were exempt from the Multispecies FMP restrictions and therefore the Scallop FMP could allow scallop fishing by vessels with general category permits. In fact, the Council considered allowing vessels with general category permits to fish with a 400 lb. scallop possession limit, with the condition that they carry a VMS and have a Letter of Authorization. The Council rejected this proposal because it could not be demonstrated that the benefits to the vessels would compensate for the VMS and administrative costs.

VMS requirement and proposed additional monitoring were reconsidered when Framework Adjustment 16/39 (NEFMC 2004) allowed access to and re-opened portions of the Georges Bank closed areas, due to concerns over groundfish bycatch and controlling the total catches of scallops. Under the recently approved regulations for Framework Adjustment 16/39, vessels with general category scallop permits may fish in the Georges Bank controlled access areas (inside of the Nantucket Lightship Area, Closed Area I, and Closed Area II), but are required to operate VMS equipment, make vessel trip reports with bycatch information, and carry observers if selected to do so. In addition, the general category fleet has a separate TAC and total number of trips that may be taken in each area. The results of this new program have not been evaluated because for the general category fishery will be able to fish in controlled access areas until the 2005 fishing year which starts in March.

Based on the cumulative impact assessment in Amendment 10 (Section 8.1) and Framework Adjustment 16/39 (Section 6.3), the impacts of these past and present measures concerning the general category scallop fishery) on five VECs could be summarized as follows:

- 1) **Scallop resource:** Because total fishing effort by these vessels were mostly uncontrolled and unmonitored, the regulations prior to Framework Action 16/39 possibly have had a negative cumulative impact on scallop yield from inshore scallop resources, and a marginal impact on the overall scallop resource. Some of these negative impacts could be offset by Framework 16/39 measures if it provides incentive for some general category vessels to fish in controlled access areas where scallops are abundant and to install a VMS as required for such access. Overall, the cumulative impacts of the past and present measures on the scallop resource could be slightly negative.
- 2) **Non-target species:** The effects on species that are customarily captured as bycatch in the scallop fishery are likely to be similar to those described above for the scallop resource. In general, those impacts are unquantified, but past and present actions concerning general category fishery may have had possible negative effects by encouraging near shore fishing in New England. On the other hand, requiring 4" rings and 10" twine tops for general category fishery is expected to have positive benefits, offsetting some of negative impacts on non-target species.
- 3) **Impacts on Habitat (Including EFH):** General category vessels primarily fish inshore and in areas with complex bottom. Thus this fishery has probably had negative impacts on EFH

like the other fisheries in the region. Because Amendment 10 and F16/39 allow general category vessels to fish in newly reopened areas, they will increase effort resulting in an indirect negative impact on EFH. These impacts are probably negligible given that the level of activity by general category vessels is small compared to other fishing activities in the region. Therefore, the overall cumulative impacts of past and present actions may be slightly negative for EFH.

4) **Impacts on Protected Species:** Because the takes in the general category scallop fishery are unknown, no cumulative effects are identified from the past and present actions concerning general category fishery.

5) **Impacts on Communities:** Past and present actions had positive cumulative impacts of the communities by giving smaller vessels an option to fish on a rebuild resource. General category fishery also helped to supply local scallop markets in small ports. Amendment 10 and Framework 16 is expected to increase the revenues of the general category vessels by allowing access to the re-opened areas. Although fishing costs will increase as well due to VMS and other reporting requirements for these vessels, general category vessels would access these areas only if their revenues from scallops exceed VMS costs. Therefore, cumulative effects the past and present actions on the communities are expected to be positive.

The broken trip exemption program was first established in Framework Adjustment 11, which authorized the Regional Administrator to use discretionary provisions to grant replacement trips for limited access scallop vessels that returned from a controlled access trip due to weather or emergencies. A pre-defined schedule that gave a partial rebate of days and pounds for trips returning early with landings below the possession limit was first considered in Framework Adjustment 15. The Council first rejected this alternative due to administrative and enforcement concerns. This program was reconsidered in Amendment 10, to apply to controlled access trips as part of area rotation management. The new exemption was deemed more acceptable, because it relieved the problems associated with the program that was first adopted in Framework Adjustment 11.

The Scallop FMP allowed controlled access to portions of the Georges Bank closed groundfish areas in 1998 and 1999, and to the Hudson Canyon and VA/NC closed scallop areas in 2000-2003. During this time, vessels that took a trip to these areas were charged a minimum of 10 DAS, regardless of how long the vessel took to catch the applicable possession limit. This automatic DAS charge counted against the vessel's annual DAS allocation, regardless of how much scallop landings occurred as long as the vessel entered the controlled access area for scallop fishing.

Initially, whether a vessel received a rebate on DAS due to an early trip termination (i.e. a "broken trip") for weather or other circumstances was determined by the Regional Administrator. Rebates were often given to vessels that landed no scallops or for exceptional weather conditions, like hurricanes. Due to the risk of losing days, however, the Council liberalized this procedure in Amendment 10 to the FMP, which was implemented in July 2004. The broken trip provision in Amendment 10 allowed a vessel to return early from a controlled access trip and have a large part of its automatic DAS charge and potential scallop landings applied to a future replacement trip. For the broken trip, the vessel's annual allocation for a controlled access area was charged one DAS for each 10% of the scallop possession limit actually landed, plus two DAS. For example, a vessel with a broken trip landing 6,000 lbs. on a broken trip would be accorded an allocation of 9,000 lbs. and 6 DAS on a future replacement trip. As a result, this vessel would

land a total of 15,000 lb. of scallops from the broken and replacement trip, instead of the full 18,000 lb. of scallops if the original trip was not discontinued (see table in Section 1.3.2).

The impacts of these past and present measures regarding broken trips on five VECs are summarized as follows:

- 1) **Scallop resource:** The past and present actions probably had slightly positive cumulative impacts by allowing the FMP to meet area-specific mortality targets and maximize sustainable yield. This was because the broken trip program allowed vessels to land a major part of their trip allocations from the access areas by taking replacement trips at an automatic charge.
- 2) **Non-target species:** The cumulative impacts on non-target species were slightly positive because broken-trip program encouraged DAS use in controlled access areas where fishing time per DAS and per unit of scallop landings were low.
- 3) **Impacts on Habitat (Including EFH):** Overall, the past and present actions had neutral cumulative impacts on EFH, but if significantly more vessels participate in access programs as a result of this adjustment for broken trips, then the EFH in outside areas may benefit.
- 4) **Impacts on Protected Species:** No cumulative impacts on the protected species were identified in Amendment 10. On the other hand, if impacts on protected species decline with fishing time, broken trip program in Amendment 10 and Framework 16/39 probably had slight positive impacts by encouraging fishing in the controlled access areas, which reduces total fishing time.
- 5) **Impacts on Communities:** Past and present actions had positive cumulative impacts on communities by reducing the business risk of losing controlled access area DAS and trip allocations from broken trips. The existing broken trip program also reduced negative safety impacts by allowing vessels to make a more rational choice to terminate a trip early due to adverse conditions.

6.5.3 Reasonably foreseeable future actions

Further restrictions on the scallop general category fishery including the control date and possible limited access. The Council passed a control date for the general category fishery that was published on November 1, 2004. This action indicates that the Council is concerned about increased entry and possibly increased scallop landings by general category vessels. Currently the General Category fishery is an open access fishery and the number of vessels with general category permits has increased by 30% over the period 1994 to 2003. Anecdotal reports indicate that the number of general category permits still is increasing.

The increase in the number of general category permits raises concerns that the fishing mortality from this sector will increase because there is no mechanism that automatically adjusts general category fishing effort. To date, this has not been a major concern because general category landings have comprised only about 2 percent of total scallop landings. However, with increased catch rates, high prices for scallops and diminished opportunities in other fisheries, effort in this fishery probably will continue to increase.

If general category landings have increased substantially the Council will have to take action to protect its conservation program for scallops. However, at present, it is not clear whether

action will be required or, if so, whether the Council will cap general category landings with a quota or will limit access to the general category fishery as part of an effort control program.

None of these foreseeable actions will result in additional cumulative effects on the scallop or other fisheries in combination with the removal of the broken trip disincentive.

Two groups of vessels might be affected differently in terms of additional cumulative effects of a the control date and the proposed VMS requirement: 1) vessels that have landed more than 40 pounds on a single trip in the past and are expected to do so in the future; and 2) vessels that have not landed more than 40 pounds on a single trip in the past but might do so for the sole purpose of establishing a history of higher landings in case it might affect their qualification under possible limited access in the future. Impacts on the first group are fully captured in the analysis of impacts in section 6.2 and as a result there are no additional cumulative effects impacts expected from the establishment of the control date.

However, the proposed action may have additional cumulative social and economic impacts on the second group of vessel owners because they will have to acquire VMS if they land more than 40 pounds of scallops on a single fishing trip to establish a higher level of participation in the fishery. For these vessels, installing a VMS may cost more than they earn from landing scallops. It is not possible to estimate any impacts because and they will depend on the number of vessels that change their fishing behavior and the extent of their scallop landings. The VMS requirement itself should not affect the level of landings or effort by this vessel group because their primary incentive would be to establish a history of landings rather than recovering the cost of installing a VMS unit.

Other scallop management actions –The effects of interactions with adjustments to current scallop management plan provisions such as overall DAS, allocations, the rotational area management plan and other provisions are captured in the analyses of in sections 6.2. In summary, the VMS requirement is expected to have positive effects on the scallop management program by reducing non-compliance with general category possession limits. The removal of the broken trip disincentive is not expected to have any impact on the resource and is not expected to result in any cumulative effects as the result of changes to current management measures because it removes an existing requirement.

Non-fishing Impacts – There are several non-fishing actions that could potentially impact sea scallop fishery. Two project types currently proposed by non-fishing sources have the potential to impact EFH.

Liquid natural gas (LNG) terminals: There are approximately 11 LNG projects in various stages of the approval process (i.e., existing with approved expansions, approved, proposed, or planned) in the northeast region of the U.S. Only two onshore LNG projects have been constructed, one in Everett, MA and one in Cove Point, MD. LNG facilities are currently being proposed or planned for construction in Pleasant Point, ME (onshore); two projects offshore of Boston, MA area and one in Somerset, MA (onshore); Providence, RI (onshore); Long Island Sound, NY (onshore); Logan Township, NJ (onshore); Philadelphia, PA (onshore); and an expansion of an existing facility in Cove Point, MD.

Offshore wind energy generation projects: Although only two offshore wind energy projects have formally been proposed in the northeast region, at least 20 other separate projects may be

proposed in the near future. Cape Wind Associates (CWA) proposes to construct a wind farm on Horseshoe Shoal, located between Cape Cod and Nantucket in Nantucket Sound, Massachusetts. A second project is proposed by the Long Island Power Authority (LIPA) off Long Island, New York. The CWA project would have 130 wind turbines located as close as 4.1 miles offshore of Cape Cod in an area of approximately 24 square miles with the turbines being placed at a minimum of 1/3 mile apart. The turbines will be interconnected by cables, which will relay the energy to shore to the power grid.

Other non-fishing activities include: chemical (e.g. pesticides and oil pollution), biological (e.g. invasive species and pathogens), and physical (e.g. dredging and disposal, coastal development) disturbances to riverine, inshore and offshore fish habitats; power plant operations (thermal pollution and entrainment of larvae); global warming; and energy projects such as liquid natural gas (LNG) facilities and windfarms. The majority of these activities tend to affect inshore areas, and the impacts are often localized.

Atlantic sea scallops (*Placopecten magellanicus*) are found on the continental shelf of the northwest Atlantic, from the Gulf of St. Lawrence south to Cape Hatteras (Packer et al. 1999). Benthic life stages occur at depths from shore out to approximately 110 m. Scallop eggs are heavier than seawater and are thought to remain on the bottom during development, but the functional value of this habitat for eggs is unknown. Larsen and Lee (1978) indicated that spat may obtain a survival advantage in areas of increased structure, including sessile branching plants and animals. The availability of suitable hard surfaces on which to settle appears to be a primary requirement for successful reproduction (Packer et al. 1999). There is a close association between the bryozoan, *Eucratea loricata*, and spat. *Eucratea* attach to adult scallops, and have been found to contain large numbers of spat (Packer et al. 1999). Juvenile scallops (spat) are very delicate and do not survive on shifting sand bottoms (Packer et al. 1999). Adults are found in benthic habitats with some water movement, which is critical for feeding, oxygen and removal of waste; optimal growth for adults occurs at currents of 10 cm/sec (Packer et al. 1999). Adult scallops inhabit coarse substrates, usually gravel, shell, and rocks. They are less likely to be found in areas with fine clay particles. Since scallops depend on very specific environments with which to settle and grow, the impacts to this species of non-fishing activities such as oil pollution, dredging activities, and coastal development are likely high. However, if these impacts are largely localized and inshore, then the impacts may be minimal as a whole. Similarly, as discussed in the paragraphs below, the potential impacts associated with LNGs and windfarms are also localized but may impact the scallop fishery with more than minimal impact depending on location of the project and the extent of its effects.

LNG is transported via tanker to specialized terminals at a super-cooled temperatures of -260 degrees F. Upon arrival, the LNG is warmed by using either seawater (open loop system) or an enclosed heating medium/liquid (closed loop system), within a regassification facility. At this point, LNG can be transported into existing pipelines. Depending on the specific location and type of LNG facility, a range of impacts to fisheries and/or fisheries habitat may result from both construction and operation of terminals.

Due to the large size of LNG tankers, dredging may need to occur in order to access onshore terminals. Dredging can result in direct loss of fish and/or shellfish habitat and can elevate levels of suspended sediment within the water column. As with other dredging, suspended sediments can impact various life stages of fish and shellfish. The construction of pipelines and fill

associated with site construction can have adverse impacts on intertidal habitats and salt marshes in the area.

In addition, the operation of LNG facilities can have adverse effects on fishery habitats. Ballast water intakes for LNG vessels as well as intakes for regassification facilities can impinge and entrain fish eggs and larvae and can have a significant impact on coastal ecosystems. Closed loop systems that do not use seawater for regassification can help to reduce this impact. If open loop systems are utilized, water is generally returned to the waterbody at cooler temperatures. Depending on the location of the discharge, changes in temperature have the potential to alter ecosystems and obstruct anadromous fish passage. For LNG facilities located offshore, anchor lines and increases in vessel traffic have the potential to impact protected resources in the area. Due to the potentially hazardous nature of the facilities, security zones are generally established around LNG facilities. Depending on the location of the facility, this can restrict access to areas traditionally utilized for fishing and shellfishing. A list of constructed, approved, and proposed LNG projects is provided in the above discussion of RFF actions.

There are currently ten operational offshore wind energy generation facilities throughout the world and approximately 12 in various stages of proposal (British Wind Energy Association website: <http://www.bwea.com/offshore/worldwide.html>). Only two projects are formally proposed in the U.S., but at least 20 other separate projects may be proposed in the near future. The Army Corps of Engineers, New England District has developed a draft environmental impact statement (DEIS) and has completed a scoping process for the proposed Cape Wind Associates (CWA) project on Horseshoe Shoal. The DEIS will assess potential impacts from the project to recreational and commercial fisheries, endangered species, cultural resources, visual resources, benthic communities, avian resources, navigation and aeronautical activities. The potential impacts associated with the CWA offshore wind energy project include the construction, operation and removal of turbine platforms and transmission cables; thermal and vibration impacts; changes to species assemblages within the area from the introduction of vertical structures, and the cumulative impacts on the resources and habitats of Nantucket Sound.

Although wind energy has the ability to produce a renewable, clean energy source that will reduce the use of, and dependence on, fossil fuels, there is much controversy associated with potential user group and aesthetic impacts. Once constructed, the turbines would preempt other bottom uses in an area similar to oil and natural gas leases. Agencies responsible for such leases have no established authority for reviewing or permitting renewable energy projects, and legislation has been introduced in recent years to expand federal authority to grant easements in the outer continental shelf to include wind farms and other renewable energy projects. To date none of the submitted bills have passed.

In terms of impacts on protected species, there are other sources of human-induced mortality and/or harassment of turtles in the action area. These include incidental takes in state-regulated fishing activities, vessel collisions, ingestion of plastic debris, and pollution. While the combination of these activities may affect populations of endangered and threatened sea turtles, preventing or slowing a species' recovery, the magnitude of these effects is currently unknown.

State Water Fisheries - Fishing activities are considered one of the most significant causes of death and serious injury for sea turtles. A 1990 National Research Council report estimated that 550 to 5,500 sea turtles (juvenile and adult loggerheads and Kemp's ridleys) die each year from all other fishing activities besides shrimp fishing. Fishing gear in state waters, including bottom

trawls, gillnets, trap/pot gear, and pound nets, take sea turtles each year. However, information on the takes is limited. Given that state managed commercial and recreational fisheries along the Atlantic coast are expected to continue within the action area in the foreseeable future, additional takes of sea turtles in these fisheries is anticipated.

Vessel Interactions - NOAA Fisheries STSSN data indicate that interactions with small recreational vessels are responsible for a large number of sea turtles stranded each year within the action area. Collision with boats can stun or easily kill sea turtles, and many stranded turtles have obvious propeller or collision marks (R. Boettcher, pers. comm.).

Pollution and Contaminants - Marine debris (e.g., discarded fishing line or lines from boats) can entangle turtles in the water and drown them. Turtles commonly ingest plastic or mistake debris for food. Chemical contaminants may also have an effect on sea turtle reproduction and survival. While the effects of contaminants on turtles is relatively unclear, pollution may be linked to the fibropapilloma virus that kills many turtles each year (NOAA Fisheries 1997). If pollution is not the causal agent, it may make sea turtles more susceptible to disease by weakening their immune systems. Excessive turbidity due to coastal development and/or construction sites could influence sea turtle foraging ability. As mentioned previously, turtles are not very easily affected by changes in water quality or increased suspended sediments, but if these alterations make habitat less suitable for turtles and hinder their capability to forage, eventually they would tend to leave or avoid these less desirable areas (Ruben and Morreale 1999).

6.5.4 Cumulative impacts on the sea scallop resource

Cumulative impacts of the past, present, and reasonably foreseeable actions were recently analyzed in Amendment 10 to the Sea Scallop FMP. Overall, the FMP determined that cumulative impacts of the past and present actions, when evaluated in totality, were positive for the scallop resource and fishery even though the impacts of some specific measures may have been slightly negative. As a result of the past and present actions, coupled with above average recruitment in the Mid-Atlantic region, scallop biomass had risen in 2003 to the biomass targets, five years earlier than planned. More importantly, fishing mortality has been lowered to around F_{max} ($F=0.20$) for the resource. Amendment 10 to the Sea Scallop FMP is expected to protect the resource from overexploitation and maintain a sustainable fishery. Rotation area management implemented by Amendment 10 is expected to have a cumulative positive impact by increasing yield-per-recruit and helping to stabilize scallop yield over the long term. Access to Georges Bank groundfish areas with the Framework 16 regulations is expected to have positive impacts on the scallop resource and fishery, particularly in the New England region. The fishery will have access to large scallops whose biomass has stopped growing, allowing a decrease in fishing mortality on scallops in open areas where growth is higher.

The direct and indirect impacts of the VMS requirement on the sea scallop resource is expected to be slightly positive as discussed in Section 6.1 and summarized below. Although the proposed management measures do not change the level of fishing effort or authorized catch, the added VMS cost may discourage new entrants in to the general category fishery. On the other hand, some vessels may increase their scallop landings to recoup part of the costs for VMS. These changes in fishing behavior and effort will probably be marginal since no change in scallop possession limits, the number of authorized trips, or other allocations is being proposed at this time. There may be some positive indirect effects on the scallop resource in the long-term, however, associated with better monitoring of possession general category possession limit, better

reporting of scallop landings and knowledge about the distribution of scallop fishing effort. The other benefit would be better monitoring of area boundaries that are a part of rotational area management. For these reasons, proposed VMS implementation may have slightly positive cumulative impacts on the scallop resource.

The cumulative impacts of suspending the broken trip disincentive are not expected to be different than those described in Amendment 10 in conjunction with the provisions for controlled area access. It is also highly unlikely for the proposed change in the broken trip program to cause overfishing, because the FMP already has a built-in 20% buffer between the fishing mortality target and the threshold that defines overfishing. Furthermore, the controlled access trip allocations were made as if there were no broken trips and the entire allocated catch had been taken by the fleet. Given the high biomass in controlled access areas and the opportunity for future TAC adjustment, marginal changes in actual catches from the removal of the two DAS/3,000 lbs. replacement trip charge will have no meaningful impact on the scallop resource and fishery. For the same reasons, providing rebates of charges against replacement trips is not expected have biological consequences on the scallop resource and fishery.

In conclusion, the impacts of the proposed action on the scallop resource are expected to be positive for the VMS requirement and neutral for the suspension of the broken trip disincentive (see section 6.1.1.2) and therefore the overall impacts are expected to be positive. Consequently, these positive impacts will mitigate but not outweigh the slightly negative cumulative impacts on the scallop resource of past and present management measures for the general category fishery.

6.5.5 Cumulative impacts on the non-target Species

There are no direct effects anticipated from Framework 17 action on non-target species, or finfish bycatch as long as the scallop catches and total expected fishing effort remains at the levels that were allocated by Amendment 10 and Framework Adjustment 16/39. Most relevant to the cumulative effects on vulnerable finfish resources, caught as bycatch in the scallop fishery, are the reductions in total effort allocations, gear changes that allow more escapement and better survival of finfish, and the effect of the groundfish closed areas on scallop fishing. The proposed action does not change, however, the amount of authorized fishing, gear configurations and other regulations that effect bycatch. Similarly, the distribution of fishing effort is not expected to change in response to the proposed VMS requirement and revised provisions for broken trip program. Replacement trips would be taken in the area where the broken trip occurred and while the area is open for scallop fishing.

There may be some indirect effects from the proposed action, however, if fishing effort increase due to vessels trying to recoup the compliance costs, resulting in a proportional increase in finfish bycatch. If on the other hand, the added VMS cost discourages additional participation in the general category scallop fishery, it could have a beneficial effect of reducing finfish bycatch. Therefore, any increase in effort will probably marginal with negligible impact on finfish bycatch. In addition, there could be some beneficial indirect impacts on non-target species because VMS data provides information about the distribution of fishing by vessels with general category permits, which may be helpful for assessing bycatch hotspots and the seasons when finfish bycatch may be a problem. As a result, the overall direct and indirect impacts of VMS requirement could be positive for non-target species.

In conclusion, the impacts of the proposed action on the non-target species could be positive for the VMS requirement and neutral for the suspension of the broken trip disincentive (see section 6.1.2) and therefore the overall impacts are expected to be slightly positive. Consequently, these positive impacts will mitigate but not outweigh the slightly negative cumulative impacts on the scallop resource of past and present management measures for the general category fishery .

6.5.6 Cumulative impacts on Protected Species

The proposed action is not expected to have an adverse impact on sea turtles, which have been caught by scallop fishing gear. The Biological Opinion prepared for Amendment 10 to the Scallop FMP found that the scallop management program is not likely to jeopardize the continued existence of endangered and threatened species. Section 6.1.4 describes and summarizes the expected impacts of the proposed action on protected species, including threatened, endangered and other protected species.

The proposed action is not expected to directly affect protected species or critical habitat of these species. It is not expected to appreciably change the amount or distribution of fishing effort by general category scallop fishery. Indirectly, however, more detailed reporting on catch, and in particular effort distribution and possibly other information, may enable managers to better evaluate the impacts of this on endangered or threatened species, marine mammals, or critical habitat of these species. No changes in impacts on endangered species and protected resources is expected from liberalizing the broken trip exemption program, as long as the scallop catches and total expected fishing effort remains at the levels that were allocated by Amendment 10 and Framework Adjustment 16/39. Replacement trips would be taken in the area where the broken trip occurred and while the area is open for scallop fishing. Therefore, the proposed action in this framework adjustment does not appear to have any adverse cumulative effects on protected species that would alter the prognosis for impacts of fishing under Amendment 10 and Framework Adjustment 16/39. In other words, the cumulative impacts of the proposed action is not expected to be different in any significant way than those described in Amendment 10 to the Scallop FMP and Framework Adjustment 16/39.

6.5.7 Cumulative impacts on Habitat

Essential Fish Habitat (EFH) includes all marine habitats deemed essential to the well-being and reproduction of managed marine species. The geographical distribution and characteristics of EFH are defined in the management plans that regulate the fisheries targeting marine species. Section 6.1.3 describes and summarizes the expected impacts of this action on essential fish habitat, focusing on the proposed action. Overall habitat impacts of all the measures combined in this action have neutral impacts on habitat, compared to the habitat benefits that will result from implementation of Amendment 10 of the Scallop FMP.

Because the potential adverse impacts of trawls and dredges are so similar bottom otter trawls and scallop dredges can be considered as a group and their cumulative effects as a function of the fishing activity of the two gears added together. In state waters, which are designated as EFH for one or more species in the multi-species assemblage, the cumulative effects of mobile, bottom-tending gear would also include adverse impacts from other types of dredges listed in Appendix VI to Amendment 10. The combined effect of otter trawls and scallop dredges was ranked considerably higher in gravel (and other hard-bottom habitats) than in sand (ranked second) and mud (ranked third)). Impacts on biological structure were considered to be more severe than

impacts on physical structure, with removal of major physical features ranking third). A fourth effect, changes in benthic prey, was not adequately evaluated because there was not enough information available. Combined impacts to gravel and sand habitat were primarily to biological structure, with gravel ranking higher than sand. Impacts on physical structure were judged to be the same in gravel and sand. Impacts in mud ranked low, with removal of major physical structures scoring higher than impacts to physical and biological structure.

The cumulative effect of the proposed action on habitat, when viewed in context of the habitat protection measures implemented in Amendment 10 and Framework 16 to the Atlantic sea scallop, as well as actions taken in Multispecies and Monkfish FMPs, is minimal and not significant. The effort allocation is unchanged and the range of impacts is within what was analyzed in Amendment 10.

6.5.8 Cumulative Impacts on Communities

The impacts of the proposed regulations on vessels and the communities were discussed in detail in Section 6.3 (Economic Impacts) and 6.4 (Social Impacts) of this document. Although the VMS implementation will increase the fishing costs for a relatively small subset of vessels with general category permits, it is not expected to reduce significantly the revenues and profits of most of these vessels required to install and operate a VMS. Proposed action will minimize the negative economic impacts of VMS implementation by providing the flexibility to any general category vessel retain its permit without having a VMS on board as long as scallop catch is limited to the incidental amount (40 lb.) per trip. Therefore, many vessels that do not land any or land only a small amount of scallops per trip could avoid VMS costs without experiencing a significant amount of revenue loss and without giving up their general category permit. For other general category vessels that already earn significant amounts of revenue from scallop trips in excess of the VMS costs, there could be an opportunity to recover these costs fully or in part by taking more trips and/or by increasing the scallop catch per trip (See Section 7.11, IRFA). By allowing vessels to power-down VMS while they are at a dock or mooring, the proposed action is expected to reduce compliance costs to vessels.

More importantly, the VMS implementation is expected to have indirect positive economic impacts for the scallop fishery by improving compliance with the general category possession limit, and thereby by preventing an unexpected increase in overfishing due to illegal landings. If scallop mortality increase beyond sustainable levels due to violations of the possession limit, the future yield and revenues from the scallop resource could decline, negatively impacting both the limited access and general category vessels. Both the limited access and the general category vessels will benefit from better management of the scallop resource made possible by better data on the location of the fishing activity. These benefits from VMS implementation are expected to outweigh the VMS costs over the long-term.

Suspending the broken trip charge and rebates of charges on replacement trips will have positive economic impacts by reducing losses from broken trips for the limited access scallop vessels that fish in controlled access areas. Both VMS implementation and the broken trip provisions will improve safety-at -sea, thus will have positive impacts on the participants in scallop fishery and their communities.

Therefore, although VMS requirement will increase costs for about 10% of the vessels with general category permits (223 vessels out of a total 2,554 vessels with general category permits),

the proposed action is expected to have positive cumulative impacts on the communities by improving safety, by reducing losses from broken trips and by better monitoring of the possession limit, benefiting both limited access and general category vessels participating in the scallop fishery.

7 APPLICABLE LAW

7.1 *Magnuson-Stevens Fishery Conservation and Management Act (Including National Standards)*

7.1.1 Consistency with National Standards

7.1.1.1 National Standard 1: Overfishing and Optimum Yield

“Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the United States fishing industry. “

The biological reference points and control rule for Atlantic sea scallops was revised and updated in Amendment 10 to the FMP. The recent 2003 survey data indicated that the scallop biomass is above the MSY biomass target and will remain above this level for the foreseeable future under either the proposed action or the no action alternative. Also the updated analysis indicated that fishing mortality will remain below the overfishing threshold mortality rate, F_{max} , either with the proposed action or the No Action alternative.

The proposed action is not expected to cause overfishing to occur or to cause the stock to become overfished (see Section 6.1.1). Requiring VMS on vessels with general category scallop permits is not expected to have any direct change of impacts on biological resources. Similarly, allowing vessels to power-down while they are in port is not expected to have adverse effects on the scallop resource or to cause overfishing. There are no changes proposed in the scallop possession limits, the number of authorized trips, or the amount of fishing authorized or expected to occur.

Furthermore, the proposed action is expected to improve the FMPs ability to produce optimum yield. due to the indirect benefits on the sea scallop resource. A vessel monitoring system (VMS) will enable law enforcement personnel to locate general category vessels participating in the scallop fishery, thus improving enforcement's ability to deploy personnel and other resources in monitoring vessel offloads. The improvement in enforcement's effectiveness in monitoring the possession limit and the resulting increase in compliance may help to prevent fishing mortality from increasing beyond the sustainable levels due to illegal landings in excess of the 400 lb. general category possession limit. VMS will also provide better data for fishery management for monitoring the area boundaries that are a part of rotational area management. Such benefits for scallop management will help to maintain the optimum yield from the fishery.

The removal of the broken trip program disincentive is not expected to have any biological consequences or to cause overfishing. The Scallop FMP already has a built-in 20% buffer between the fishing mortality target and the threshold that defines overfishing. Furthermore, Framework 16/39 controlled access trip allocations were based on the assumption that there will be no broken trips and the entire allocated catch will be taken by the scallop fleet. Therefore, broken trip replacements where the combined catch equals the total allowed for the original trip

would not change scallop fishing mortality, as long as there is sufficient enforcement of and compliance with the controlled access trip allocations and possession limits.

7.1.1.2 National Standard 2: Best Available Science

“Conservation and management measures shall be based upon the best scientific information available.”

The information used in the framework adjustment analyses included the fishery data from the most recently completed fishing year (2003) and the most recent survey data (2003) collected by the NMFS on the R/V Albatross and by SMAST on industry-based surveys. The information also included 2004 fishing year data for scallop landings and revenues available only for months January through May. In addition, the number of broken trips were analyzed by using 2004 fishing year data provided by NMFS Northeast Regional Office. Furthermore, the analyses were prepared by and peer reviewed by the Council’s Scallop Plan Development Team and complies with the Data Quality Act (Section 7.7). Thus, the information used for this framework adjustment is the best available data, which is presently available for analysis and relevant to the alternatives under consideration.

7.1.1.3 National Standard 3: Management Unit

“To the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination.”

According to Amendment 10, the target fishing mortality rate and stock biomass are applied to the scallop resource from NC to the US/CAN boundary. This encompasses the entire range of scallop stocks under Federal jurisdiction. Rotation area management furthermore allows the FMP to set area-specific mortality rates to achieve a resource wide mortality target and achieve optimum yield from the resource. The proposed action do not affect this policy and consistent with management of scallop stock as a unit throughout its range.

7.1.1.4 National Standard 4: Fairness and equity

“Conservation and management measures shall not discriminate between residents of different States. If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, such allocation shall be (A) fair and equitable to all such fishermen; (B) reasonably calculated to promote conservation; and (C) carried out in such manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.”

The proposed action will require VMS on a subset of vessels with general category permits regardless of the location of their homeports, the area they fish, or the port where they land their catch. The proposed action will also allow all general category vessels with VMS to power-down while in port after offloading their catch. The only criteria applied for VMS requirement is possession or landing of more than an incidental amount of scallops, i.e. 40 lb. of scallops per trip. The analyses in Section 5.1.2 and Section 6.1.4.5 showed that the general category vessels that would be required to install a VMS by the proposed action were located and landed their catch in several states from Maine in New England to North Carolina in Mid-Atlantic. Therefore, the proposed action will nit discriminate between residents of different States. Similarly, the automatic charge on replacement trips will be eliminated for all limited access scallop vessels that fish in controlled access areas regardless of the location of these areas or the homeport of a

vessel. Therefore, there are no alternatives in the proposed action which by their nature disadvantage or unfairly discriminate against fishermen in various states.

7.1.1.5 National Standard 5: Efficiency

“Conservation and management measures shall, where practicable, consider efficiency in the utilization of fishery resources; except that no such measure shall have economic allocation as its sole purpose.”

The proposed action will require general category vessels that land over an incidental amount of scallops, i.e., over 40 lb., to have a VMS on board. Its primary purpose is to improve enforcement's effectiveness in monitoring the general category possession limit. The improvement in enforcement's ability to monitor the possession limit and the resulting increase in compliance may help to prevent fishing mortality from increasing beyond the sustainable levels due to illegal landings in excess of the 400 lb. possession limit. As a result, the proposed action is expected to enhance the FMP's ability to efficiently utilize the fishery resources.

VMS could also have some other important benefits for scallop management. VMS will provide better data for fishery management, particularly for areas that are more frequently targeted by small vessels fishing inshore of the typical scallop fishing areas. The other benefit would be better monitoring of area boundaries that are a part of rotational area management. Such benefits for scallop management will help to maintain the optimum yield and economic benefits from the fishery, thus will improve efficiency in the utilization of fishery resources.

Although VMS requirement will increase the costs of fishing for general category fleet, the benefits for enforcement and scallop management are expected to outweigh these costs. In addition, this action requires only those vessels that land more than an incidental amount of scallops (Over 40 lb.) per trip to have VMS, thus does not impose any cost burden over 2,300 general category vessels that do not land in excess of the amount (See Section 6.2 for economic impacts). In addition, the power-down option proposed by the Framework will reduce the costs for general category vessels that have a VMS by allowing them to log out of the fishery and turn VMS off when they are in port.

The removal of broken trip disincentive could also enhance efficiency in the utilization of scallop resources, although this impact could be small. The two DAS/3000 lb. of scallops penalty associated with broken trips will reduce the landings below the optimum yield, whereas the elimination of this penalty will allow every vessel to land the possession limit by taking replacement trips.

Similarly, this framework action does not propose a limited access system or include measures with a sole purpose to effect economic allocation. Although, the costs associated with VMS requirement may discourage some general category vessels from participating in the scallop fishery, as long as a vessel lands up to 40 lb. of scallops per trip, it can still retain its general category permit without installing a VMS. Therefore, this action does not change the criteria for qualifying for a permit. It is also not expected to change the allocations for general category and limited access vessels that continue to participate in the scallop fishery.

This framework action proposes no changes in possession limit for general category vessels, or no changes in DAS allocations for the limited access fleet. On the other hand, if no action is taken and illegal landings of scallops increase due to the violation of the 400 lb. possession limit,

scallop mortality could increase beyond sustainable levels, reducing the stock biomass and the efficiency in utilization of scallop resource. Instead of taking no action, the Council could adopt stringent regulations to prevent overfishing due to the unreported landings in excess of the possession limit. For example, the DAS allocations for the limited access vessels could be reduced, negatively impacting the group of vessels that has already been subject to strict effort controls since 1994. Such an action would redistribute income from the limited access vessels to the vessels with general category permits landing scallops illegally in excess of the 400 lb. possession limit. The Council could also reduce the possession limit for all general category vessels, affecting negatively those vessels that comply with the rules. For example, the concerns about illegal landings by general category vessels and increased participation in general category scallop fishery caused the Council to publish a control date for the general category fishery as of November 1, 2004, which could be used in the future establish a limited entry general category fishery. The proposed action, if successful in improving the enforcement of the possession limit, may help prevent drastic changes in economic allocations.

7.1.1.6 National Standard 6: Variations and Contingencies

“Conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches.”

The proposed action does not detract from, and in fact enhances, the FMP’s ability to adapt to changing resource conditions. VMS implementation is expected to improve enforcement’s effectiveness in monitoring the general category possession limit, to provide better data for fishery management, and improve monitoring of area boundaries that are a part of rotational area management. These benefits will potentially provide the FMP greater flexibility in the future to achieve optimum yield by preventing fishing mortality from increasing beyond the sustainable levels due to illegal landings in excess of the 400 lb. possession limit, and also through better management of the scallop resource. The removal of broken trip charge will increase the flexibility for fishermen to determine when to continue fishing, thereby minimizing costs to industry and take into account variations and contingencies. Therefore, this action will enhance the FMP’s ability to take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches. Because the control area TACs and fishing mortality targets were set by assuming that vessel landings will equal to the possession limit set for these areas, the modification of the broken trip program does not detract from the FMP’s ability to adapt to changing resource conditions.

7.1.1.7 National Standard 7: Cost and Duplication

“Conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication.”

The proposed action in this framework adjustment does not introduce any new measures that are unnecessary or duplicate measures already in place. The general category vessels were not previously required to have a VMS onboard by the Scallop FMP except when they fish in Georges Bank access areas. The proposed action minimizes the compliance and enforcement costs by requiring only those general category vessels land over an incidental amount of scallops, i.e., over 40 lb., to have a VMS on board. Only 276 out of 2,554 vessels with general category permits landed scallops more than 40 lb. on at least one trip during the 2003 fishing year. There

were 53 vessels that already have a VMS due to the regulations in other fisheries, thus they will not be required to install a second VMS unit because of this framework action. Therefore, the proposed alternative would substantially lower the costs of compliance for the general category fleet by exempting over 2,200 general category vessels that had either no landings of scallops or only landed an incidental amount. The power down alternative proposed this Framework also minimizes the compliance costs for the general category vessels that are required to have a VMS.

The removal of broken trip disincentive and broken trip rebates will improve safety and minimize the compliance costs for vessels, in terms of foregone revenue due to broken trips, by eliminating the penalty associated with replacement trips.

7.1.1.8 National Standard 8: Communities

“Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities.”

The characteristics and participation of fishing communities involved in the scallop fishery were discussed in Section 7.1.1.3 of the Amendment 10 FSEIS, and Section 6.1 and 7.1.6 and the impacts of proposed action from the point of view of National Standard 8 is discussed also in Section 7.1.6.

The proposed VMS implementation and power-down alternative will have impacts on the general category vessels. Many of these vessels are relatively small ones that engage in a variety of different fisheries throughout the year. Stonington, Barnstable, Provincetown, Sandwich, Newburyport, Barnegat Light, and Chincoteague were among the main ports in 2003, each constituting over 5% of total general category landings in 2003 (either directly as a port of landing or indirectly as homeport).

The proposed action will impact a small subset of general category fishermen by requiring only those vessels that land over an incidental amount of scallops (over 40 lb.) per trip to have a VMS. The vessels with general category permits that choose not to operate a VMS will still be able to retain their permit, but will not be allowed to land more than 40 lb. of scallops per trip. Only 276 out of 2,554 vessels with general category permits landed scallops more than 40 lb. on at least one trip during the 2003 fishing year. Given that 53 of these vessels already have a VMS, only 223 vessels will be affected by this alternative. Although, the proposed VMS requirement will increase the fishing costs, for some vessels the revenues from scallops will substantially exceed the costs for VMS equipment and operation (See section 6.2.1.1.3 for economic impacts). For some other vessels, however, scallop landings could be so low as to not justify the cost of a VMS unit. These vessels will be still be able to retain their general category permit, however, if their scallop landings do not exceed 40 lb. per trip. Therefore, the proposed action will minimize adverse economic impacts on the communities by exempting over 2,200 vessels from VMS requirement, and by providing the vessels the flexibility to retain their general category permit without installing a VMS as long as they land an incidental amount of scallops (up to 40lb.) per trip.

The power down exemption specifically addresses the needs of smaller fishing communities that cannot offer facilities with shoreside power. Instead, vessels in these communities are more frequently tied to moorings (in part due to extreme tidal range in ME) or are located at docks lacking electricity or other amenities. Therefore, the power-down alternative takes into account the nature of many of the vessels in the general category fleet operating at ports where power availability or cost may be an issue of concern. By allowing to turn-off VMS after offloading and when a vessel is in port will enable more vessels to participate in the VMS system, and thus in the general category fishery.

Proposed action is also expected to minimize the adverse economic impacts on by removing the automatic charge on replacement trips associated with the broken trip exemption program instituted by Amendment 10. Rebate on charges for the 2005 fishing year will also minimize adverse economic impacts from the broken trips prior to the implementation for Framework 17.

The economic and social impacts, which have a large role in effects on fishing communities, are analyzed and discussed in Sections 7.1.4, and 7.1.6.

7.1.1.9 National Standard 9: Bycatch

“Conservation and management measures shall, to the extent practicable, (A) minimize bycatch and (B) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch.”

Bycatch in the scallop fishery has been greatly reduced and minimized by the success of the FMP to increase scallop biomass and reduce the amount of time fished on a DAS. The FMP has also implemented several gear restrictions that have successfully reduced bycatch. These effects are discussed in detail in Section 6.1.9 of the Amendment 10 FSEIS, and in related sections of that document.

There are no direct effects anticipated from the proposed action because the amount of authorized fishing and other regulations that effect fishing are not changing. Similarly, the distribution of fishing effort is not expected to change in response to the proposed action.

VMS requirement for the general category vessels may have some indirect effects on bycatch, however. If fishing effort that targets scallops increase due to vessels trying to recoup the compliance costs, then finfish bycatch would increase by a similar amount. Given that the proposed action will require a small subset of general category vessels that land a more than incidental amount of scallops per trip to install a VMS, such negative impacts on bycatch are expected to be negligible. Furthermore, the added VMS cost could discourage increasing participation in the general category scallop fishery, thus, it could have a beneficial effect of reducing finfish bycatch compared to the amount that would occur without the added costs.

More importantly, the VMS data provides information about the distribution of fishing by vessels with general category permits. This distributional data is likely to be helpful for assessing bycatch hotspots that overlap the distributions of other managed species. This information may, for example, be used to evaluate the effectiveness of the small mesh exemption program and for identifying seasons when finfish bycatch may be a problem.

The removal of broken trip alternative is not expected to change finfish bycatch as long as the scallop catches and total expected fishing effort remains at the levels that were allocated by

Amendment 10 and Framework Adjustment 16/39. Replacement trips would be taken in the area where the broken trip occurred and while the area is open for scallop fishing.

The direct and indirect impacts of these measures are described in Section 6.1.2.

7.1.1.10 National Standard 10: Safety

“Conservation and management measures shall, to the extent practicable, promote the safety of human life at sea.”

Requiring general category vessels to have a VMS onboard will improve safety at sea. Since VMS is a system that is constantly monitored, when a vessel signal stops, it provides another method to alert shoreside authorities that the vessel is in trouble. Therefore, transmission of location information through VMS will add another layer of safety in the event of an emergency. Especially when vessels are unable to transmit a distress call, this location information can be vital to the effectiveness of search and rescue operations.

Proposed action is also expected to promote the safety by removing the automatic charge on replacement trips associated with the broken trip exemption program instituted by Amendment 10. Amendment 10 implemented the new broken trip exemption system specifically as a measure to enhance safety (see page 6-20, Final Amendment 10 document). It recognized the improvement in safety from the new broken trip exemption program, but also recognized that there was a compromise to improve administration and safety that held a potential risk.

Elimination of the broken trip program disincentive will improve safety by removing one potential factor in a vessel captain's decision whether or not to terminate a trip. The existing broken trip program allows vessels to take replacement trips for each controlled access area trip they terminated, but at a charge of 2 days-at-sea plus one day-at-sea for each 10 percent of the scallop possession limit onboard the vessel (i.e. landed). Such automatic charge will result in a revenue loss from the broken trips. The proposed action would prevent such economic loss because it will allow vessels to land the difference between the possession limit and the amount of scallops they landed during the broken trip. In other words, total pounds landed from the broken and the replacement trip will add up to the possession limit (18,000 lb. for 2004 fishing year) for that area. As a result, the decision to terminate the trip will be based on the ability for the vessel to make an economical makeup trip without consideration of a loss in revenue. Thus, the proposed action will reduce the potential safety misjudgments by fishermen in an attempt to avoid revenue loss from broken trips, and will promote the safety of human life at sea. Similarly, rebates for the charges for the replacement trips taken during the 2005 fishing year may reduce some of the alleged risks associated with the broken trip charge. The vessels facing unsafe conditions can return to port without the threat of losing a portion of their authorized scallop landings. Therefore, taking this action will improve safety associated with the broken trip program as quickly as possible.

7.1.2 Compliance with Provisions of the Act

Section 6.2 of Amendment 10 to the Atlantic Sea Scallop FMP describes and analyzes the FMP's compliance with the required provisions of the Magnuson Act, §303(a). Nothing in this framework adjustment effects compliance with foreign fishing measures, a description of the fishery, a discussion of pertinent fishery data, the fishery impact statement, objectives to prevent overfishing, or effects on recreational catch and release.

7.1.3 EFH Assessment

7.1.3.1 Description of Action

This essential fish habitat (EFH) assessment is provided pursuant to 50 CFR 600.920(e) of the EFH Final Rule to initiate EFH consultation with the National Marine Fisheries Service.

Section 4.0 describes the proposed action which is intended to meeting the following objectives:

- Improving law enforcement capabilities in monitoring the possession limit.
- Improving safety by removing the disincentive for vessel to use the broken trip exemption program.
- Preventing the general category scallop fishing from increasing the scallop mortality beyond sustainable levels because illegal landings.
- Minimizing the costs of VMS implementation on vessels with General category permits with incidental catches of scallops.
- Reducing the compliance costs for vessels while are in port.

To accomplish these goals, the Council proposes to implement the following actions for which no impacts to EFH are expected.

1. VMS requirement: Any General category vessel that has in possession or land more than an incidental amount of scallops, i.e., over 40 lb. scallop meats for commercial sale, in any trip will be required to have a VMS onboard (Section 4.1.1.1).
2. Power-down while in port: General category vessels with VMS will be allowed to log into and out of the fishery via VMS after offloading and after the vessel is secured to a fixed dock or mooring, unless required to keep VMS in operation by their permit in another fishery. (Section 4.1.1.2).
3. Elimination of automatic charge on broken trips: Any limited access scallop vessel that is authorized to take a replacement trip for a Scallop Access are trip terminated early will be allowed to land the difference between the possession limit and the number of pounds landed on the broken trip for which the additional trip replaces (Section 4.2.1.1).
4. Rebate of charges against replacement trips during the 2005 fishing year and prior to implementation of Framework Adjustment 17: Access Area trips in the 2005 fishing year that are terminated early will continue to have the broken trip charge applied until Framework Adjustment 17 is implemented. Once Framework Adjustment 17 is implemented, vessels that terminated an access area trip before implementation will be able to take a second replacement trip to catch the amount of scallops lost as a result of the broken trip charge. (Section 4.2.1.2)

In general, the activity described by this proposed action, fishing for sea scallops, occurs throughout the U.S. EEZ, from about the NC/VA border to the coastal portions of the Gulf of Maine in the north. The concentrations of sea scallops, and thus the majority of scallop fishing activity, however, occur within a narrow depth band in the Mid-Atlantic from about the 40-meter isobath out to the 100-meter isobath, throughout the Hudson Canyon area, and around the perimeter of Georges Bank, including the Great South Channel. Thus, the range of this activity occurs across the designated EFH of all Council-managed species (see Amendment 9 to the Atlantic Sea Scallop FMP for a list of species for which EFH was designated, the maps of the distribution of EFH, and descriptions of the characteristics that comprise the EFH). This activity also occurs across EFH designated by the Mid-Atlantic Council for species such as black sea bass, ocean quahog, scup, spiny dogfish, summer flounder, and tilefish (see the Dogfish, Surf clam and Ocean Quahog, Summer Flounder, Scup and Black Sea Bass, and Tilefish FMPs for relevant information on the characteristics and distribution of EFH designated for these species). EFH designated for species managed under the Secretarial Highly Migratory Species FMPs are not affected by this action, nor is any EFH designated for species managed by the South Atlantic Council as all of the relevant species are pelagic and not directly affected by benthic habitat impacts.

7.1.3.2 Assessing the Potential Adverse Impacts

Although scallop dredges have been shown to be associated with adverse impacts to some types of bottom habitat (NEFMC 2003), this action does not propose to increase current levels of fishing activity in the U.S. EEZ. As such, no negative habitat impacts are expected to result from this action.

VMS requirement: Any General category vessel that has in possession or land more than an incidental amount of scallops, i.e., over 40 lb. scallop meats for commercial sale, in any trip will be required to have a VMS onboard.

Habitat Impacts: There will be no adverse habitat impacts associated with the implementation of this measure. The VMS implementation proposed by this action is expected to improve effectiveness in monitoring the possession limit, to increase compliance due to the electronic monitoring presence of VMS, and discourage violations. This in turn will reduce the risks of overfishing of the scallop resource due to violations. VMS implementation will also carry several other important secondary benefits.

Power-down while in port: General category vessels with VMS will be allowed to log into and out of the fishery via VMS after offloading and after the vessel is secured to a fixed dock or mooring, unless required to keep VMS in operation by their permit in another fishery.

Habitat Impacts: There will be no adverse habitat impacts associated with the implementation of this measure. The requirement to obtain a VMS unit to participate under general category permit will enhance enforcement's ability to ensure area rotation compliance and ensure the integrity of the scallop closed areas. VMS on the most active scallop vessels will provide better data for fishery management, particularly for areas that are more frequently targeted by small vessels fishing inshore of the typical scallop fishing areas. Transmission of location information through VMS could also improve safety by automatic tracking of the vessel's last known position.

Elimination of automatic charge on broken trips: Any limited access scallop vessel that is authorized to take a replacement trip for a Scallop Access are trip terminated early will be allowed to land the difference between the possession limit and the number of pounds landed on the broken trip for which the additional trip replaces.

Habitat Impacts: There will be no adverse habitat impacts associated with the implementation of this measure. The removal of broken trip charge is expected to improve safety at sea by reducing some of the alleged risks associated with the broken trip charge. This is because vessels facing unsafe conditions can return to port without the threat of losing a portion of their authorized scallop landings.

Rebate of charges against replacement trips during the 2005 fishing year and prior to implementation of Framework Adjustment 17: Access Area trips in the 2005 fishing year that are terminated early will continue to have the broken trip charge applied until Framework Adjustment 17 is implemented. Once Framework Adjustment 17 is implemented, vessels that terminated an access area trip before implementation will be able to take a second replacement trip to catch the amount of scallops lost as a result of the broken trip charge.

Habitat Impacts: There will be no adverse habitat impacts associated with the implementation of this measure. Rebate of charges against replacement trips during the 2005 fishing year and prior to implementation of Framework Adjustment 17 will address any actual or implied safety concerns with the broken trip charge as quickly as possible.

7.1.3.3 Minimizing or Mitigating Adverse Impacts

In Amendment 13 to the Multispecies FMP and Framework 16 to the Scallop FMP, the New England Council implemented a range of measures to minimize the impacts of bottom trawling in the Gulf of Maine, George's Bank and Southern New England. In addition to the significant reductions in days-at-sea and some gear modifications, the Council closed 2,811 square nautical miles to bottom-tending mobile fishing gear (known as Habitat Closed Areas). See Table 46 for a description of the actions implemented in recent Council actions that act to minimize, mitigate or avoid impacts on EFH that are more than minimal and less than temporary in nature.

Measure	Source FMP (implemented by)	Description	Description of Habitat Impacts	Overall Habitat Impact
CLOSED AREA MEASURES				
Mortality Closure	Multispecies	Retention of existing groundfish closed areas in the Gulf of Maine, George's Bank and Southern New England. Addition of Cashes as a year round closure	Year-round closures provide habitat benefits to the areas within the closures. The addition of Cashes Ledge as a year-round closure will benefit EFH. Rare kelp beds are found in that area.	+
Habitat Closed Areas	Multispecies and Scallop	2811 square nautical miles closed to bottom-tending mobile gear indefinitely in five separate closed areas in GOM, GB and SNE.	Significant benefits to EFH by minimizing adverse effects of bottom trawling, scallop dredging and hydraulic clam dredging by prohibiting use.	+
Rotational Area Management (RAM)	Scallop	Amendment 10 implemented a rotational area management strategy which introduced a systematic structure that determines where vessels can fish and for how long. Framework adjustments will consider closure and re-opening criteria.	Expected to have positive effects on habitat because effort on gravely sand sediment types is expected to decline. In general, swept area is expected to decline in most of the projected scenarios (especially in the Mid-Atlantic region), which could have positive impacts on EFH.	+
EFFORT REDUCTION MEASURES				
Monkfish DAS usage by limited access permit holders in scallops and multispecies fisheries	Monkfish	Retain current requirement for vessels to use both monkfish DAS and scallop or multispecies DAS simultaneously	This alternative relies on the scallop and multispecies management plans to set DAS levels (with the exception of when DAS fall below 40 DAS). As DAS have been reduced by management actions over the past two years, consequent impacts on habitat by the directed monkfish fishery have been reduced proportionally. Further reductions are possible depending on management actions in these two plans.	+
Capacity Control	Multispecies	DAS can be transferred with restrictions and new measures for "reserve days"	Any measure that is intended to reduce the amount of time fishing by mobile gear will likely have benefits to EFH. These measures reduce amount of latent effort as well.	+
DAS	Multispecies	Mix of adaptive and phased effort	Reducing DAS will likely benefit EFH by reducing the amount of	+

Measure	Source FMP (implemented by)	Description	Description of Habitat Impacts	Overall Habitat Impact
Reductions		reduction strategies. A days (60% of effective effort) B days (40% of effective effort) C days (FY01 allocation). Provides opportunity to fish on stocks that do not need rebuilding.	time vessels can fish.	
DAS Limits	Scallops	Amendment 10 implemented a new program that allocates specific number of DAS for open areas and controlled access areas.	The total DAS allocation in open areas is significantly less than the Status quo DAS allocation. Less DAS translates into less fishing effort, so positive for EFH. Furthermore, CPUE in controlled access areas is expected to be greater, thus the gear is expected to spend less time on the bottom.	+
Possession Limits	Scallops	Reduced possession limit for limited access vessels fishing outside of scallop DAS	Vessels with limited access permits are currently allowed to possess and land up to 400 lbs per trip of shucked scallop meats when not required to use allocated DAS; this measure will reduce possession limit to 40 lbs/trip) and reduce fishing effort by vessels that have been targeting scallops under the higher general category possession limit. Scallops harvested under this provision cannot be sold.	+
GEAR MODIFICATION MEASURES				
Minimum mesh size on directed MF DAS	Monkfish	Mobile gear vessels are required to use either 10-inch square or 12-inch diamond mesh in the codend. Gillnets must be at least 10 inches	The mesh size regulations do not have a direct effect on habitat, but may indirectly minimize adverse effects of the fishery on complex bottom types by reducing the ability to catch groundfish, and therefore the incentive to target those fish in hard bottom areas.	+
Four inch rings	Scallop	Increase ring size on scallop dredge rig to 4" everywhere.	Four inch rings will slightly increase dredge efficiency for larger scallops, thus reducing bottom contact time in recently-opened areas where large scallops are abundant, but will reduce catch rates and increase bottom time in areas where medium-small sized scallops are prevalent.	+
OTHER MEASURES				

Measure	Source FMP (implemented by)	Description	Description of Habitat Impacts	Overall Habitat Impact
Observer Coverage	Multispecies	10% requested by 2006 for each gear type	If observers are able to collect data of interest to EFH management, increased coverage could indirectly benefit habitat.	+
TAC Set-Aside for research	Scallop	2% set-aside from TAC and/or DAS allocations to fund scallop and habitat research and surveys	Could indirectly benefit habitat when habitat research is funded and provides better information for future management decisions.	+

Table 46. Description of measures implemented by Council in last major FMP amendments to minimize, mitigate or avoid adverse impacts on EFH.

Section 6.5.7 (Cumulative Effects Analysis) demonstrates that the overall habitat impacts of all the measures combined in this action have neutral impacts on habitat, compared to the habitat benefits that will result from implementation of Amendment 10 and Framework 16 of the Scallop FMP. Because the impacts are less than minimal and are temporary in nature and a framework action is considered a minor action, measures to minimize adverse effects on EFH are not necessary.

7.1.3.4 Conclusions

The action proposed under this framework adjustment should have no more than a minimal adverse effect on EFH of federally managed species. Because there are no substantial adverse impacts associated with this action, an abbreviated consultation may be the only required action.

7.1.4 Skate Baseline Review

The proposed action does not affect any of the fisheries management measures listed below,

- (i) NE Multispecies year-round closed areas
- (ii) NE Multispecies DAS restrictions
- (iii) Gillnet gear restrictions
- (iv) Lobster restricted gear areas
- (v) Gear restrictions for small mesh fisheries
- (vi) Monkfish DAS restrictions for Monkfish-Only permit holders
- (vii) Scallop DAS restrictions

Therefore the Council is not required to conduct a baseline review of the Fishery Management Plan for the Northeast Skate Complex.

7.2 NEPA

In accordance with the National Environmental Policy Act as amended (NEPA), the Council has prepared an Environmental Assessment (EA) to determine whether further analysis and an Environmental Impact Statement (EIS) are needed. The EA has estimated the degree of impacts (short-term and cumulative) on the human environment, and the results justify a "Finding of No Significant Impact" (FONSI). Impact estimates are compared to the "No-Action." In the context of the current situation, these are the regulations that would be in place during 2004 if no action were taken to change them. Thus, No-Action is essentially the regulations that Amendment 10 specified and anticipated for 2004.

The SEIS for Amendment 10 analyzed the cumulative impact of scallop management since Framework 14 and projections of the impacts beyond 2004. The No-Action alternative in this document is the continuation of the current measures that are presently in place.

The Council has determined through an Environmental Assessment that preparing an EIS at this time is unnecessary to justify actions in this document, as noted in the FONSI. Several factors for the final action in Framework Adjustment 17 (this document) support this conclusion, including:

The scope of management adjustments is very limited, focusing only on the VMS implementation for the general category fishery and removal of broken trip charge.

Further rationale for the Finding of No Significant Impact is given below.

7.2.1 Consideration of NAO 216-6 Significance Criteria

In addition, National Oceanic and Atmospheric Administration Administrative Order (NAO) 216-6 (revised May 20, 1999) provides nine criteria for determining the significance of the impacts of a final fishery management action. These criteria are discussed below:

1. Can the final action be reasonably expected to jeopardize the sustainability of any target species that may be affected by the action?

The final action is not expected to endanger the long-term sustainability of the target species, i.e. sea scallops. The proposed action is expected to have indirect benefits on the sea scallop resource, and to improve the sustainability of scallop resource. A vessel monitoring system (VMS) will enable law enforcement personnel to locate general category vessels participating in the scallop fishery, thus improving enforcement's ability to deploy personnel and other resources in monitoring vessel offloads. The improvement in enforcement's effectiveness in monitoring the possession limit and the resulting increase in compliance may help to prevent fishing mortality from increasing beyond the sustainable levels due to illegal landings in excess of the 400 lb. general category possession limit. VMS will also provide better data for fishery management for monitoring the area boundaries that are a part of rotational area management. Such benefits for scallop management will help to keep the sea scallop resource at sustainable levels.

The removal of the broken trip program disincentive and rebates for charges on replacement trips is not expected to have any biological consequences or to jeopardize the sustainability of sea scallops. The Scallop FMP already has a built-in 20% buffer between the fishing mortality target and the threshold that defines overfishing. Furthermore, Framework 16/39 controlled access trip allocations were based on the assumption that there will be no broken trips and the entire allocated catch will be taken by the scallop fleet. Therefore, broken trip replacements where the combined catch equals the total allowed for the original trip would not change scallop fishing mortality and the sustainability.

2. Can the final action be reasonably expected to allow substantial damage to the ocean and coastal habitats and/or EFH as defined under the Magnuson-Stevens Act and identified in FMPs?

No direct changes in impacts on ocean and coastal habitats and/or EFH is expected from VMS requirement for general category vessels and from liberalizing the broken trip exemption program. Similarly, the distribution of fishing effort is not expected to change in response to the proposed action. General category vessels have historically participated in the sea scallop fishery, and there has been discussion that effort attributed to this sector has increased in recent years. Framework 17 proposes that some or all vessels with general category permits install and operate VMS to enhance monitoring of the general category catch. Although VMS implementation is not expected to have direct impacts, indirectly, more detailed reporting on effort distribution and fishing activity by general category vessels may be helpful for assessing the impacts of this fishery on EFH. This information will be even more useful to evaluate the effects on habitat, particularly in the Gulf of Maine and around Cape Cod, MA, where there are more habitat concerns than in the sandy-bottom areas in Southern New England and Mid-Atlantic waters.

In addition, the added VMS cost may reduce participation in the general category scallop fishery, and the decrease in fishing effort could potentially have a beneficial effect of ocean and coastal habitats and/or EFH. Because the proposed action requires a relatively small subset of vessels to operate a VCMS, these impacts are not expected to be substantial. This information could be used to improve habitat

management and therefore the proposed alternatives could have an indirect benefit for minimizing effects on essential fish habitat.

The removal of broken trip alternative is not expected to change impacts on ocean and coastal habitats and/or EFH as long as the scallop catches and total expected fishing effort remains at the levels that were allocated by Amendment 10 and Framework Adjustment 16/39. Replacement trips would be taken in the area where the broken trip occurred and while the area is open for scallop fishing..

3. Can the final action be reasonably expected to have a substantial adverse impact on public health or safety?

The proposed action is expected to improve public health and safety. Requiring general category vessels to have a VMS onboard will improve safety at sea. Since VMS is a system that is constantly monitored, when a vessel signal stops, it provides another method to alert shoreside authorities that the vessel is in trouble. Therefore, transmission of location information through VMS will add another layer of safety in the event of an emergency. Especially when vessels are unable to transmit a distress call, this location information can be vital to the effectiveness of search and rescue operations.

Elimination of the broken trip program disincentive will improve safety by removing one potential factor in a vessel captain's decision whether or not to terminate a trip. This is because vessels facing unsafe conditions can return to port without the threat of losing a portion of their authorized scallop landings. Rebate of charges against replacement trips during the 2005 fishing year and prior to implementation of Framework Adjustment 17 will address any actual or implied safety concerns with the broken trip charge as quickly as possible.

4. Can the final action be reasonably expected to have an adverse impact on endangered or threatened species, marine mammals, or critical habitat of these species?

The final action is not expected to have an adverse impact on sea turtles, which have been caught by scallop fishing gear. The Biological Opinion prepared for Amendment 10 to the Scallop FMP found that the scallop management program is not likely to jeopardize the continued existence of endangered and threatened species.

The proposed action is not expected to directly affect protected species or critical habitat of these species. It is not expected to appreciably change the amount or distribution of fishing effort by general category scallop fishery. Indirectly, however, more detailed reporting on catch, and in particular effort distribution and possibly other information, may enable managers to better evaluate the impacts of this on endangered or threatened species, marine mammals, or critical habitat of these species.

No changes in impacts on endangered species and protected resources is expected from liberalizing the broken trip exemption program, as long as the scallop catches and total expected fishing effort remains at the levels that were allocated by Amendment 10 and Framework Adjustment 16/39. Replacement trips would be taken in the area where the broken trip occurred and while the area is open for scallop fishing.

5. Can the final action be reasonably expected to result in cumulative adverse effects that could have a substantial effect on the target species or non-target species?

The cumulative effects of the final action on target and non-target species are described in Sections 6.5.4. and 6.5.5. The final action is not expected to result in cumulative adverse effects on target and non-target species. VMS requirement for general category vessels is expected to prevent an increase in scallop mortality from illegal landings in excess of 400 lb. general category possession limit. In addition, the added VMS cost may reduce participation in the general category scallop fishery, and the decrease in fishing effort could potentially have a beneficial effect both on scallop (target species) and also bycatch species. these effects are not expected to be substantial, however, since general category landings comprise a small percentage (less than 5%) of scallop landings. Similarly, the removal of the broken trip charge is not expected to result in any substantial effects on the target and non-target species because the controlled access trip allocations were made as if there were no broken trips and the entire allocated catch had been taken by the fleet.

6. Can the final action be reasonably expected to jeopardize the sustainability of any non-target species?

Due to catch limits and other measures to minimize bycatch and bycatch mortality, the final action is not expected to jeopardize the sustainability of non-target species. No changes in finfish bycatch is expected from VMS implementation and the removal of broken trip discharge as long as the scallop catches and total expected fishing effort remains at the levels that were allocated by Amendment 10 and Framework Adjustment 16/39. Furthermore, the added VMS cost could discourage additional participation in the general category scallop fishery, thus, could have a beneficial effect of reducing finfish bycatch compared to the amount that would occur without the added costs. Replacement trips would be taken in the area where the broken trip occurred and while the area is open for scallop fishing. These impacts are analyzed and discussed in Section 6.1.2.

7. Can the final action be expected to have a substantial impact on biodiversity and ecosystem function within the affected area (e.g., benthic productivity, predator-prey relationships, etc.)?

The final action is not expected to have a substantial impact on biodiversity and ecosystem function, because the intent of the action is to improve enforcement of the general category possession limit, prevent an increase in scallop mortality due to illegal landings and to improve safety.

8. Are significant social or economic impacts interrelated with significant natural or physical environmental effects?

There are no significant natural or physical environmental effects, so interrelations with significant social or economic impacts are moot.

9. To what degree are the effects on the quality of the human environment expected to be highly controversial?

The proposed action is not expected to be highly controversial. The VMS requirement will apply to the vessels with general category permits that has in possession or land more than an incidental amount of scallops, i.e., over 40 lb. scallop meats for commercial sale, in any trip. Only 276 out of 2,554 vessels with general category permits landed scallops more than 40 lb. on at least one trip during the 2003 fishing year. Therefore, this action will not impact the majority of the vessels with general category permits and will reduce the controversy regarding cost burden on vessels with incidental catches of scallops. Another potential source of controversy was related to the inconvenience and hardships on vessels if the VMS was operated 24 hour/7 day. The final action, however, reduces this controversy by allowing vessels to

power-down while in port. As a result, with the proposed action, the vessels will not have to rely on shore power or continuous battery power while in port, which may under some circumstances be unavailable.

More importantly, the proposed action is expected to reduce the controversy regarding the illegal landings of scallops due to the violations of the 400 lb. general category possession limit. Any increase in scallop fishing mortality beyond the sustainable levels could have adverse impacts on vessels that comply with the regulations. VMS is expected to improve enforcement's ability to monitor the possession limit more effectively. This in turn will reduce the risks of overfishing of the scallop resource due to violations.

Removal of the broken trip charge will help to reverse the highly controversial effects of this program on safety. Eliminating the automatic charge on replacement trips may reduce some of the alleged risks associated with the broken trip charge because vessels facing unsafe conditions can return to port without the threat of losing a portion of their authorized scallop landings. This measure will provide vessel operators more flexibility for all trips in the 2005 fishing year, even if they occur prior to the implementation of Framework Adjustment 17. Rebate of charges against replacement trips during the 2005 fishing year and prior to implementation of Framework Adjustment 17 should also reduce the controversy because it addresses any actual or implied safety concerns with the broken trip charge as quickly as possible.

In short, Council recommends several measures in the final action to reduce adverse impacts of regulations on the human environment, thereby reducing the potential controversiality of the final action.

7.2.2 Finding of No Significant Impact

To determine the significance of the action analyzed in this EA, NMFS is required by NEPA, 40 CFR 1508.27 and NOAA Administrative Order 216-6 Section 6.01b to consider the context and intensity of the proposed action. This determination is based on the factors from CEQ's implementing regulations at 40 CFR 1508.27 and based on the nine criteria discussed above for determining the significance of the impacts of a final fishery management action..

Based on the EA, review of the National Environmental Policy Act (NEPA) criteria for significant effects, and my knowledge of the predicted impacts, I have determined that the action to be implemented (Section 4.0) would not have a significant effect, individually or cumulatively, upon the quality of the human environment. Therefore, preparation of an EIS on the final action is not required under Section 102(2)(c) of NEPA, its implementing regulations (40 CFR Part 1500-1508), or NOAA/NMFS environmental review procedures (NAO 216-6).

Signature

Date

7.2.3 Point of Contact and Prepares

Questions concerning this document may be addressed to:

Mr. Paul Howard, Executive Director
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Framework Adjustment 17
March 11, 2005

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The list of preparers and agencies consulted are shown in Section 11.

7.2.4 Opportunity for Public Comment

The proposed action was developed during the period October 2004 through February 2005 and was discussed at the following meetings. Opportunities for public comment were provided at each of these meetings.

Meeting	Place	Date
Scallop Oversight	Comfort Inn - Warwick, RI	November 4, 2004
Council meeting	Courtyard by Marriot - Portsmouth, NH	November 16, 2004
Scallop Oversight	Sheraton - Revere, MA	January 26, 2005
Council meeting	Courtyard by Marriot - Portsmouth, NH	February 1, 2005

7.3 Endangered Species Act

Section 7 of the Endangered Species Act requires federal agencies conducting, authorizing or funding activities that affect threatened or endangered species to ensure that those effects do not jeopardize the continued existence of listed species. The NEFMC has concluded, at this writing, that the proposed framework adjustment and the prosecution of the scallop fishery is not likely to jeopardize any ESA-listed species or alter or modify any critical habitat, based on the discussion of impacts in this document. For further information on the potential impacts of the fishery and the proposed management action on listed and other protected species, see Section 6.1.4 of this document.

The Council acknowledges that endangered and threatened species may be affected by the measures proposed, but impacts should be minimal. The NEFMC is now seeking the concurrence of the NOAA Fisheries Service with respect to Framework Adjustment 17.

7.4 Marine Mammal Protection Act

The NEFMC has reviewed the impacts of the scallop fishery and this proposed action on marine mammals and has concluded that the proposed alternatives are consistent with the provisions of the MMPA, and will not alter existing measures to protect the species likely to inhabit the scallop management unit, such as take reduction plans. For further information on the potential impacts of the fishery and the proposed management action on marine mammals, see Section 7.0 of this document.

7.5 Executive Order 13158 (Marine Protected Areas)

7.6 Coastal Zone Management Act

The Council has determined that the final proposed alternatives comply with the rules and regulations of the Coastal Zone Management Act. This document has been sent to coastal states from Maine to North Carolina for review of compliance with individual state's CZMA management regulations.

7.7 Administrative Procedure Act

The Federal Administrative Procedure Act (APA) establishes procedural requirements applicable to rulemaking by Federal agencies. The purpose of the APA is to ensure public access to the Federal rulemaking process, and to give the public notice and an opportunity to comment on the proposed regulations before the agency promulgates new regulations. Specifically, the APA requires NMFS to solicit, review, and respond to public comments on rulemaking taken in the development of fishery management plans and subsequent amendments and modifications. Opportunities for public input and access to the rulemaking process for this regulatory action were provided through the Fishery Management Council process. For example, during the February 2, 2005 New England Fishery Management Council meeting, NMFS requested suggestions and information from the public on the preferred alternatives in the draft environmental assessment. The agency is not requesting relief from the requirements of the APA for notice and comment on rulemaking activities in regards to the proposed rule. Thus, this rulemaking is in compliance with the requirements of the APA.

7.8 Section 515 (Data Quality Act)

Following the procedures described in the Amendment 10 FSEIS, the data and analysis of impacts was prepared as described in the DQA compliance discussion in Amendment 10, utilizing the Council's Scallop, Groundfish, and Habitat technical teams (Plan Development Teams) for development and review of analyses. Pursuant to NOAA Fisheries guidelines implementing Section 515 of Public Law 106-554 (the Data Quality Act), all information products released to the public must first undergo a Pre-Dissemination Review to ensure and maximize the quality, objectivity, utility, and integrity of information (including statistical information) disseminated by Federal agencies. The following section addresses these requirements.

Utility

Utility means that disseminated information is useful to its intended users. "Useful" means that the content of the information is helpful, beneficial, or serviceable to its intended users, or that the information supports the usefulness of other disseminated information by making it more accessible or easier to read, see, understand, obtain or use. The intended users of the information contained in this document are vessels participating in the general category scallop fishery and limited access scallop fishery. However, federally permitted scallop dealers and members of the general public may also benefit from this information. The information contained in this document will be helpful and beneficial to owners of vessels holding a limited access or general category permit since it will notify these individuals of changes in management measures for the fishery. This information will enable these individuals to adjust their fishing practices, and make appropriate business decisions based on the new management measures and corresponding regulations.

The information being provided in this framework document concerning the general category and limited access scallop fishery is updated information based on landings and effort information for the 2003 fishing year which includes a 12-month period from March 2003 to February 2004. This data corresponded to the most recent information available for a complete fishing year, since the 2004 fishing year data is available only for months January to April. In addition, this framework includes new data on broken trips by the limited access scallop vessels from May 2004 to February 2005 provided by NMFS Northeast Regional Office. The data included on the status of scallop resource are 2003 scallop survey data from the R/V Albatross annual scallop dredge survey, the 2003 video survey scallop density analysis provided by Dr. Stokesbury of SMAST and Dr. Rago of the NEFSC, and maps of bottom substrate observations from the 2003 video survey data conducted by SMAST.

Information concerning changes to scallop management measures is new information that has been developed through a multi-stage process that involved members of the public. Therefore, the information pertaining to management measures contained in this document has been improved based on comments from the public, fishing industry, members of the Council, and NOAA Fisheries. The media being used in the dissemination of the information contained in this document will be contained in a Federal Register notice announcing the proposed and final rules for this action. This information will be made available through printed publication and on the Internet website for the Northeast Regional Office (NERO) of NOAA Fisheries.

Integrity

Integrity refers to security--the protection of information from unauthorized access or revision, to ensure that the information is not compromised through corruption or falsification. Prior to dissemination, NOAA information, independent of the specific intended distribution mechanism, is safeguarded from improper access, modification, or destruction, to a degree commensurate with the risk and magnitude of harm that could result from the loss, misuse, or unauthorized access to or modification of such information.

Objectivity

Objective information is presented in an accurate, clear, complete, and unbiased manner, and in proper context. The substance of the information is accurate, reliable, and unbiased; in the scientific, financial, or statistical context, original and supporting data are generated and the analytical results are developed using sound, commonly accepted scientific and research methods used in analyses in Amendment 10 to the Sea Scallop FMP. "Accurate" means that information is within an acceptable degree of imprecision or error appropriate to the particular kind of information at issue and otherwise meets commonly accepted scientific, financial, and statistical standards.

Several sources of data were used in the development of this document, including the analysis of impacts. These data sources include, but are not limited to, landings data from vessel trip reports, landings data from individual voice reports, information concerning DAS usage from the DAS call-in system, data from the dealer weighouts purchase reports, and ex-vessel price information. Although there are some limitations to the data used in the analysis of impacts of management measures, and in the description of the affected environment, these data are considered to be the best available.

The policy choices (i.e., management measures) to be contained in this specifications package are supported by the best available scientific information. Qualitative discussion is provided in cases where quantitative information was unavailable, utilizing appropriate proxies and reference points as necessary.

The review process for any action under an FMP involves the Northeast Regional Office (NERO) of NOAA Fisheries, the Northeast Fisheries Science Center (Center), and NOAA Fisheries Headquarters (Headquarters). The Council review process involves public meetings at which affected stakeholders have the opportunity to provide comments on the proposed changes to the FMP. Reviews by staff at NERO are conducted by those with expertise in fisheries management and policy, habitat conservation, protected species, and compliance with the applicable law. The Center's technical review is conducted by senior level scientists with specialties in population dynamics, stock assessment methods, demersal resources, population biology, and the social sciences. Final approval of this Framework action and clearance of the proposed and final rules is conducted by staff at NOAA Fisheries Headquarters, the Department of Commerce, and the U.S. Office of Management and Budget. This review process is standard for any action under an FMP, and provides input from individuals having various expertises that were not directly involved in the development of the action. Thus, the review process for any FMP amendment, including the proposed regulations in Framework 17, is performed by technically qualified individuals to ensure the action is valid, complete, unbiased, objective and relevant.

7.9 Paperwork Reduction Act

The analysis for Amendment 10 included an estimate and description of the burden (time and cost) of preparing, submitting, and administration of new data collection requirements for the Amendment 10 proposed action. Any new requirements or requirements that would alter the burden hour estimates will be described and evaluated in a new PRA analysis under a separate cover.

7.10 Executive Order 12898 – Environmental Justice

Executive Order (E.O.) 12898 requires that, “to the greatest extent practicable and permitted by law... each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States and its territories and possessions...” The outcomes that have been predicted in this framework adjustment may differentially affect some populations. Nonetheless, many of the participants in the scallop limited access and general category scallop fishery may come from lower income and or ethnic minority populations. These populations may be more vulnerable to more restrictive management measures. For example, in many ports crew may be comprised of ethnic minorities, and many regions in which fishing is an important livelihood can also be economically impoverished.

7.11 Initial Regulatory Flexibility Act

7.11.1 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 Framework 17 document, and the relevant sections are identified by reference to this document.

7.11.2 Problem Statement and Objectives

The purpose of the action is described in Section 3.1 and the need for management (statement of the problem) is described in Section 3.2 of the Framework 17 document.

7.11.3 Management Alternatives and Rationale

The proposed action is described in Section 1.3 of the Framework document and in Section 4.0. Alternatives to the proposed action are summarized in section 5.0. Economic impacts are examined in subsections of Section 6.2.

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

7.11.4.1 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 \$3.5 million according to the dealer's data for the 2001, 2002 and 2003 fishing years. Table 4 in Section 5.1 shows that annual revenue from all species including scallops averaged about \$ 814,000 per full-time vessel, \$405,800 per part-time vessel, and \$121,800 per occasional vessel during the 2003 fishing year. The average annual revenue per vessel that participated in the general category scallop fishery was \$235,300 in 2003 (Table 40). For those vessels that will be impacted by the proposed action, the average annual revenue was estimated to be \$165,845 for the 2003 fishing year (Table 48 below).

The proposed regulations of Framework 17 would affect vessels with limited access scallop and general category permits. Section 5.1 (Description of the Fishery) and Section 6.4 (Social Impacts) of the Framework 17 document provides 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 the limited access vessels are shown in Table 4 and extensive information on the general category vessels are shown in Section 5.1.2. The current information on the number of scallop permits for the years 1994 to 2003 are provided in Table 3, in Affected Environment. According to the recent permit data, there were 289 vessels that obtained full-time limited access permits in 2003, including 37 small-dredge and 16 scallop trawl permits. In the same year, there were also 34 part-time and 10 occasional limited access permits in the sea scallop fishery. In addition, 2,554 permits were issued to vessels in the open access General Category.

7.11.4.2 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. Framework 17 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 Framework, including the proposed action and the nonpreferred alternatives, require all or a subset of vessels with general category permits to operate a VMS. The proposed action also includes the removal of broken trip disincentive to improve safety. The resulting changes from these actions in terms of 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 proposed alternatives on revenues, costs, and profits of an average vessel are discussed in relevant subsections of 6.2. Section 4.0 of Framework 17 describes the alternatives proposed by the Council and discusses the rationale for the Council's choice of each component of the proposed option. The economic impacts of the individual measures considered by this Framework, including VMS implementation and removal of broken trip disincentive are analyzed in the following sections of Framework 17. The following section provides a summary of the economic impacts from the proposed measures, compares these impacts with the impacts from significant alternatives, and discusses

the mitigating factors. The relevant section of Framework 17, which discusses the rationale of each measure, is also identified.

7.11.4.2.1 Economic Impacts of VMS Implementation on Small Business Entities

Rationale for the proposed action is provided in Section 4.1.1 and the economic impacts of the proposed VMS implementation for the general category vessels are examined relative to “no action” in Section 6.2.1. “No action” is defined as the continuation of the present regulations, which do not require vessels with general category permits to carry a VMS. Therefore, the economic impacts of alternatives for VMS implementation are compared to the “no action” (status quo) scenario with no VMS requirement. The number of affected vessels, their scallop landings, and total costs for VMS implementation are summarized in Table 47 for each alternative. Proposed action is equivalent to Alternative 2 in all tables.

Table 47. General Category Vessels and VMS Alternatives

Data	Alternatives and maximum scallop landings per trip				
	Alt. 1 All general category permits	Alt.2 Proposed Action >40 lb.	Alt.3a >100 lb.	Alt.3b >200 lb.	Alt.3c >300 lb
Number of vessels required to have a VMS	2,554	276	232	175	144
Number of affected vessels (i.e., vessels that do not already have a VMS)	2,344	223	192	156	132
Scallop landings as a percent of total general category landings	100%	99.9%	99.4%	96.8%	94.2%
Total costs for VMS and monthly service for the general category fleet during 2005 (Skymate:\$3,565)	8,356,360	794,995	684,480	556,140	470,580
Total costs for VMS and monthly service for the general category fleet during 2005 (Boatracs:\$4,735)	12,093,190	1,306,860	1,098,520	828,625	681,840
Annual service costs for Skymate (2006 on)	1,517,506	144,370	124,301	100,994	85,457
Annual service costs for Boatracs (2006 on)	2,953,440	280,980	241,920	196,560	166,320

Summary of the impacts of the proposed option and mitigating factors:

The proposed action will provide VMS monitoring for the vessels that usually land scallops in excess of incidental amount (40 lb. per trip) allowed for personal use, while exempting a large number of vessels that are less likely to land scallops or to exceed the possession limit. It will also allow vessels to power-down while in port as explained in Section 4.1.1.2. There were 2,554 vessels with general category permits in the 2003 fishing year; 2,278 of these vessels either did not have any landings or landed up to 40 lb. of scallops per trip, and 2,121 of them did not have a VMS. These vessels will not be required to operate a VMS and will still retain their permit as long as their landings per trip do not exceed 40 lb. of scallops. However, the proposed action will affect about 223 vessels that do not already have a VMS out of a total 276 vessels that landed over 40 lb. of scallops per trip during the 2003 fishing year. These 276 vessels landed over 99.9% of the general category scallop landings in 2003 (Table 47).

If all of these 223 vessels choose to install and operate a VMS, total costs to the industry will range between \$795,000 to \$1,307,000 during the initial year of implementation. The proposed action is expected to have indirect economic benefits, however, due to improved enforcement of the general category possession limit. These benefits and costs were discussed in detail in Section 6.2.1.1.2 and Section 6.2.1.1.3. The economic impacts on vessels were analyzed in Section 6.2.1.1.7 and summarized below:

- The initial investment costs for VMS including the installation charge, activation fee, and monthly service are estimated to be \$3,565 for Skymate to \$4,735 for Boatracs as discussed in Section

6.2.1.1.6. After this initial investment in the first year of implementation, the costs of VMS implementation for vessels will decline substantially, and will consist of monthly service charges estimated to be \$1,260 for Boatracs and \$647 for Skymate for 12 months. The discussion below summarizes the results in terms of the less expensive Skymate units, while showing the results for Boatracs in parenthesis.

Table 48. Impacts of Proposed VMS requirement on general category vessels

Data	VMS costs exceed scallop revenue		VMS costs are less than scallop revenue		Grand Total
	Boatracs (\$4,735)	Skymate (\$3,565)	Boatracs (\$4,735)	Skymate (\$3,565)	
Number of vessels	87	79	136	144	223
Average annual scallop revenue per vessel	1,569	1,323	52,651	49,948	32,722
Average annual scallop landings per vessel (lb.)	324	274	11,325	10,742	7,033
Average number of trips per vessel	4	3	38	37	25
Average scallop pounds per trip	87	82	296	294	284
Average annual total revenue from scallop trips	10,769	9,183	59,244	57,421	40,332
Average annual total revenue from all trips	172,888	176,930	154,781	153,570	161,845
Scallop Revenue as a percent of total annual revenue	6.2%	5.2%	38.3%	37.4%	24.9%
Initial VMS costs as a percent of scallop revenue	>100%	>100%	9.0%	7.1%	10.9%
Annual service costs as a percent of scallop revenue	80.3%	48.9%	2.4%	1.3%	2.0%
Initial VMS cost as a percent of Total Annual Revenue	2.7%	2.0%	3.1%	2.3%	2.2%
Annual service costs as a percent of Total Annual Revenue	0.7%	0.4%	0.8%	0.4%	0.4%
Loss in revenue if scallop landings were reduced to 40 lb. per trip					
Total annual loss	(850)	(759)	(8,350)	(7,980)	(5,415)
Percent of total revenue	-0.5%	-0.4%	-5.4%	-5.2%	-3.3%

- Table 48 shows the general category vessels that will be impacted by the proposed action in two groups according to their scallop revenue relative to VMS costs for Boatracs or Skymate units. The costs for VMS equipment and service will exceed the scallop revenue for 79 (87) vessels if they chose to install Skymate (Boatracs) units. These groups of vessels include those that mostly land scallops as a bycatch from a few trips, usually in amounts much below the 400 lb. possession limit.
- Table 48 shows that the scallop landings per trip was less than 90 lb., and annual revenue per vessel from scallops averaged about \$1,323 to \$1,569 this for group of vessels, lower than the costs for VMS for either Skymate or Boatracs units. Therefore, the proposed action will have negative economic impacts on these vessels if they choose to install a VMS and continue catching over 40 lb. of scallops per trip. Because investing in VMS will entirely eliminate their profits from scallop catch, however, some vessels in this group may choose to lower their scallop landings to the incidental amount (40 lb.) per trip in order to retain their general category permit without having a VMS onboard. The revenue loss from such a strategy is not expected to be large since these vessels do not derive significant amounts of revenue from scallops to begin with. As Table 48 shows, the average reduction in scallop revenue would be \$760 annually, or less than 1% of total revenue per vessel, if scallop landings by these vessels per trip were lowered to 40 lb. per trip.
- Over one-half of the vessels that will be impacted by the proposed action, or 144 (136) vessels out of a total 223 vessels, had revenue from scallops either equal to or in excess of estimated VMS costs for Skymate (Boatracs). The majority of these vessels targeted scallops during those trips when they

landed scallops, and earned, on the average, close to or over \$50,000 in scallop revenue during the 2003 fishing year. Average VMS costs for this group of vessels during the first year are estimated to be 7% (9%) of their annual revenue from scallops for Skymate (Boatracs) units, and will decline to 1.3% (2.4%) of scallop revenue after the first year of implementation. Therefore, for this group of vessels, the financial burden from the VMS requirement will be less as a proportion of scallop revenue. Nevertheless, the proposed action will still reduce the profitability of the scallop trips for these vessels in the short-term, although these negative impacts will decline in the subsequent years since the costs will only comprise the service charge for VMS operation. Because they earn significant amounts of revenue from scallop trips, these vessels are not likely to reduce their scallop landings to the incidental amount (40 lb.) per trip in order avoid the costs of operating a VMS.

- There are several mitigating factors, however, that could minimize the negative economic impacts of VMS implementation for the general category vessels that are required to operate a VMS. As discussed above, the proposed action provides the flexibility to any vessel with a general category permit to retain it without having a VMS on board as long as scallop catch per trip is limited to the incidental amount (40 lb.) per trip. Therefore, many vessels that do not land any or land only a small amount of scallops per trip could avoid VMS costs without experiencing a significant amount of revenue loss and without giving up their general category permit.
- For other general category vessels that already earn significant amounts of revenue from scallop trips in excess of the VMS costs, there could be an opportunity to cover these costs fully or in part by taking more trips and/or by increasing the scallop catch per trip. Also, the recent publication of the control date for general category scallop fishery and a potential limited entry program into the general category scallop fishery could provide an economic incentive for some vessels to increase landing of scallops and thus to operate a VMS even if they do not presently participate in the fishery.
- The amount of additional scallop catch necessary to compensate a vessel for the VMS equipment and service charge depends on how many extra trips a vessel must take and on how the additional scallop revenues are shared between the vessel owner and the crew. Table 38 estimated the scallop pounds that is necessary to pay for the VMS equipment and service charge. At a minimum, about an additional 783 (1,041) pounds of scallops would be required to cover the VMS costs for Skymate (Boatracs) units assuming that these pounds could be landed at no extra cost to the vessel, and all of the revenues from scallops are applied towards VMS costs (See Section 6.2.1.1.7 and from Table 39 to Table 44 for further analysis). More realistically, however, the vessel owner has to compensate the crew for the extra pounds landed and also pay a part of the trip expenses incurred while fishing for additional scallops. As estimated in Section 6.2.1.1.6 and Table 38 about 2000 lb. (2,600 lb.) of scallops would be necessary to cover the costs for a Skymate (Boatracs) unit, assuming a lay system of 40/60 and assuming that scallops constitute the only source of revenue from those trips. These pounds would translate into an additional 5 (6.5) day trips at landings of 400 lb. of scallops per trip for Skymate (Boatracs) units.
- The actual scallop pounds that would cover the VMS costs would probably be less than these amounts given that some of the trip expenses could be covered from additional revenue from other species landed. In addition, some vessels may choose to finance the costs for VMS equipment by a bank loan over a longer period of time instead of paying for it in full during the first year in order to minimize the impacts on their cash flow. For example, spreading the VMS costs over 4 years would reduce the cost burden to \$1,583 (\$2,376) for Skymate (Boatracs) from \$3,564 (\$4,735) during the first year. These annualized costs for Skymate (Boatracs) units could be covered by taking an additional 2.2 (3.3) trips and by landing 400 lb. of scallops on each trip (Table 38).
- The discussion provided above comparing the VMS costs with the scallop revenue showed that the proposed action could have differential impacts on vessels depending on the level of their

participation in the general category scallop fishery. In order to assess the significance of the proposed action according to the profitability criterion of RFA, however, the VMS costs should be compared with total profits per vessel. This analysis compares VMS costs with total vessel revenue from all species in order to analyze if the proposed regulation will significantly reduce the profit for a substantial number of small entities. Table 48 shows that for most vessels VMS equipment and service costs constitute a relatively small proportion of total revenue for most vessels regardless of whether their scallop revenue exceeds or falls below the VMS costs, ranging from an average 2.0% to 2.3% of total revenue for Skymate units and from 2.7% to 3.1% for Boatracs units. If some vessels choose to recover part of the VMS costs by taking additional trips and/or by increasing scallop catch per trip, the reduction in total revenue will be less than these percentages. For these reasons, the proposed action is not expected to reduce substantially total revenue and profits of the general category vessels that are required to operate a VMS.

- In addition, there will be economic benefits from VMS implementation, although these benefits cannot be estimated quantitatively. General category vessels that comply with the 400 lb. possession limit and that have earnings from scallops significantly exceeding VMS costs will benefit from better monitoring of the possession limit. The proposed action will also have indirect economic benefits on the limited access scallop vessels through improved enforcement of the 400 lb. general category possession limit. If there is no action, scallop mortality could increase beyond sustainable levels due to illegal landings of scallops reducing the stock biomass for the scallop resource. As a result, the future yield and revenues from the scallop resource could decline. Therefore, better enforcement of the possession limit will help to prevent future revenue loss from the scallop fishery if overfishing of the resource occurs due to violations of the general category possession limit or if stringent measures on the limited access and general category fleet need to be taken to prevent such overfishing.
- Both the limited access and the general category vessels will benefit from better management of the scallop resource made possible by better data on the location of the fishing activity. Finally, all general category vessels are expected to benefit from the additional safety benefits from having a VMS on board. Section 6.2.1.1.7 provides a comparative analysis of economic impacts on vessels from a RFA perspective of the proposed action and the alternatives.
- The power-down exemption proposed by this framework action will allow vessels to turn the VMS off while in port and will help to reduce compliance costs from VMS implementation.

In summary, over both the short- and long-term, the proposed action is not expected to reduce significantly the total revenue and profit for the general category vessels that are required to operate a VMS. Also because the vessels that are required to operate a VMS constitute only a small subset, or about 10%, of all vessels with a general category permit, the proposed action will not impact a substantial number of small entities.

Comparison of the impacts of the alternative options:

The proposed action minimizes the costs for the small business entities operating in the general category scallop fishery as compared to the non-selected alternative 1, according to which all vessels with general category permits would be required to operate a VMS. If all 2,554 vessels with general category permits installed a VMS, total costs would range between from \$8.3 million to \$12.1 million depending on the choice of VMS units to be installed. Because most of these vessels did not land any scallops or landed only an incidental amount, Alternative 1 would impose a financial burden on these vessels far exceeding their revenue from scallops. Alternatives 3a to 3c, however, would include a smaller subset of small business entities in VMS implementation, 232 vessels for alternative 3a, and 144 vessels for alternative 3c, and result in lower costs for the general category fleet compared to the proposed action (Table 47). On the other hand, exempting a large number general category vessels would create the same enforcement problems in monitoring the possession limit for the subset of vessels not required to install VMS. The

larger the number of vessels that are exempted from VMS requirement, the more difficult it would be to improve the enforcement efficiency in monitoring possession limits. In addition, alternatives 3a to 3c would create another possession limit to monitor and would reduce the enforcement benefits associated with the VMS implementation. For these reasons the Council did not select alternatives 3a, 3b, and 3c.

7.11.4.2.2 Economic Impacts of Removal of Broken Trip Disincentive and Rebate of Charges

Rationale for the proposed action is provided in Section 4.2.1, and economic impacts are analyzed in Section 6.2.2. “No action” is defined as the continuation of the present regulations, which includes an automatic DAS-charge for the replacement trips and prorates the possession limit at a 1,500 per day-at-sea equivalent.

Summary of the impacts of the proposed option and mitigating factors:

Suspending the replacement trip charge will have positive economic impacts by reducing the losses from broken trips for the limited access scallop vessels that fish in controlled access areas. The proposed action would prevent such revenue loss because it would allow vessels to land the difference between the possession limit and the amount of scallops they landed during the broken trip. In other words, total pounds landed from the broken and the replacement trip will add up to the possession limit (18,000 lb. for 2004 fishing year) for that area. As estimated in Table 45, Section 6.2.2.1.1, assuming that the number of broken trip applications will be the same as they were during 2004 fishing year, an additional \$1.6 million in revenue for the scallop fishery could be recovered by eliminating the automatic charge on the replacement trips. The impacts of the proposed rebate for the 2005 fishing year is also expected to be positive because vessel owners will be able to land the full amount of the possession limit through replacement trips and the rebates even if they occur prior to the implementation of Framework Adjustment 17. In summary, the proposed modification of the broken trip program is not expected to reduce the total revenue and profit for the limited vessels and it is not expected to have significant impacts on small business entities.

Comparison of the impacts of the alternative options:

There are no significant alternatives to the proposed action that minimize economic impacts on small business entities.

7.12 Regulatory Impact Review / E.O. 12866

7.12.1 Introduction

The Regulatory Impact Review (RIR) provides an assessment of the costs and benefits of proposed actions and other alternatives in accordance with the guidelines established by Executive Order 12866. The regulatory philosophy of Executive Order 12866 stresses that in deciding whether and how to regulate, agencies should assess all costs and benefits of all regulatory alternatives and choose those approaches that maximize the net benefits to the society.

The RIR also serves as a basis for determining whether any proposed regulations are a “significant regulatory action” under the criteria provided in Executive Order 12866 and whether the proposed regulations will have a significant economic impact on a substantial number of small entities in compliance with the Regulatory Flexibility Act of 1980 (RFA).

This RIR summarizes the effects of the proposed management plan and other alternatives considered in this framework that has been developed to rebuild the scallop resource. The Framework 17 document

contains all the elements of the RIR/RFA, and the relevant sections are identified by reference to the document.

The purpose of and the need for action are described in Section 3.1 and Section 3.2. The description of the proposed alternative and the non-selected alternatives including the “no action” alternative is provided in Section 4.0. The description of fishery is provided in Section 5.1, which coincides with Section 7.1 of Amendment 10.

7.12.2 Economic Impacts

Section 6.2 evaluated the economic impacts of Framework 17 alternatives considered by the Council. Sources of uncertainty are identified in Section 6.2.3. The economic impacts of the individual measures considered by Framework 17 are discussed in the following sections and the numerical results are presented in the tables included in those sections:

- Economic Impacts VMS implementation and power-down exemption, proposed action and alternatives: Section 6.2.1.
- Economic Impacts of no action corresponding to VMS implementation: Section 6.2.1.2
- Economic Impacts of removal of broken trip disincentive and rebate for replacement trips for 2005 fishing year: Section 6.2.2.
- Economic Impacts of no action (status quo) broken trip program 6.2.2.2.

The Initial Regulatory Flexibility Analysis, which evaluates the impacts of management alternatives on small businesses, is provided in Section 7.11

7.12.3 Summary of Regulatory Impacts

The economic impacts of the proposed regulations on the scallop fishery, consumers, and on the total economic benefits to the nation are summarized below. The economic costs and benefits of the final alternatives are compared with the “no action” alternative. For proposed measures regarding VMS implementation, “no action” is defined as the continuation of the present regulations, which do not require vessels with general category permits to carry a VMS, except those vessels that choose to fish in the Georges Bank controlled access areas. For measures regarding the removal of the broken trip charge, “no action” is defined as the continuation of the regulations implemented by Amendment 10 that pertain to broken trip reporting requirements found in Paragraph §648.60(c)(5)(i). In other words, “no action” would retain the automatic the two DAS/3,000 lb. disincentive for the replacement trips.

Summary of economic impacts for the VMS implementation:

- The proposed action will increase both the costs and the benefits for the scallop fishery. Although economic costs from VMS implementation, including the expenditures on VMS equipment and monthly service charge are known, the economic benefits from VMS implementation could only be analyzed from a qualitative perspective. This is because the benefits will materialize through improved monitoring and enforcement of the possession limit, vessel safety benefits, and better data for scallop fishery management. These benefits cannot be estimated in dollars.
- VMS implementation will require a monetary investment by many general category vessels that do not presently own a VMS. The economic impacts of the proposed action on vessels with general category permits were analyzed in detail in Section 7.11 (IRFA) above, and will be summarized here for the general category fleet as a whole. The proposed action will require only those vessels with scallop landings of more than 40 lb. per trip to install and operate a VMS. It will affect about 223 vessels that do not already have a VMS, out of a total 276 vessels in this

category (Table 47). If all of these vessels choose to install and operate a VMS, total costs to the industry will range between \$795,000 to \$1,307,000 during the initial year of implementation (for Skymate and Boatracs, respectively).

- Many general category vessels (about 79 to 87 out of 223 vessels) included in the VMS requirement are estimated to have an annual scallop revenue lower than the VMS costs (Table 36, Section 6.2.1). If these vessels do not renew their general category permit or reduce their landings of scallops to 40 pounds or less per trip in order to avoid installing a VMS, the VMS costs would be lower than estimated above. In such a case, however, scallop revenues will also decline although by an insignificant amount (by a total of \$105,000) relative to the total revenues by the general category fleet (Table 36). However, the costs of VMS implementation should be compared to the benefits of improved enforcement on the scallop resource, yield and revenues.
- Although the proposed action will increase the fishing costs, it is not expected to reduce significantly the revenues and profits of most these vessels required to install and operate a VMS. There are several mitigating factors that could minimize the negative economic impacts of VMS implementation. The proposed action provides the flexibility to any vessel with a general category permit to retain it without having a VMS on board as long as scallop catch per trip is limited to the incidental amount (40 lb.) per trip. Therefore, many vessels that do not land any or land only a small amount of scallops per trip could avoid VMS costs without experiencing a significant amount of revenue loss and without giving up their general category permit. For other general category vessels that already earn significant amounts of revenue from scallop trips in excess of the VMS costs, there could be an opportunity to cover these costs fully or in part by taking more trips and/or by increasing the scallop catch per trip (see Section 7.11, IRFA).
- VMS implementation is expected to have indirect economic benefits on the scallop industry through improved monitoring and enforcement of the 400 lb. general category possession limit. If the possession limit cannot be effectively enforced, fishing for scallops with a general category permit could become more attractive to fishermen who usually target other species. If there is no action, that is, there are no new regulations to prevent such an increase in fishing effort, scallop mortality could increase beyond sustainable levels, reducing the stock biomass for the scallop resource. As a result, the future yield and revenues from the scallop resource could decline. Under the “no action” scenario, impacts on the consumer benefits may be negative due to reduced scallop landings in the future, possibly coupled with higher scallop prices. Similarly, producer benefits would decline due to lower landings and revenues, and higher fishing costs per pound of scallops if overfishing leads to a reduction in the productivity of the scallop resource.
- Therefore, the proposed action is expected to have positive economic impacts compared to “no action,” by improving compliance with the 400 lb. general category possession limit, thereby preventing an unexpected increase in overfishing due to illegal landings and thus a reduction in future scallop landings and revenues. For the same reasons, the total economic benefits of the proposed action, as measured by the sum of the producer and consumer surpluses, is expected to be positive compared to “no action.”
- VMS will also provide better data for fishery management, particularly for areas that are more frequently targeted by small vessels fishing inshore of the typical scallop fishing areas. The other benefit would be better monitoring of area boundaries that are a part of rotational area management. Such benefits for scallop management will help to maintain the optimum yield and economic benefits from the fishery, although these benefits cannot be quantified.
- VMS could also have potential vessel safety benefits. Since VMS is a system that is constantly monitored, when a vessel signal stops, it provides another method to alert shoreside authorities that the vessel is in trouble. Although these benefits cannot be quantified in terms of dollars, they

nevertheless may provide economic benefits to the extent that they reduce the chances for loss of property (vessel) and life in emergency situations.

- Because it is not possible to estimate benefits from VMS implementation in dollars, net benefits, that is total economic benefits minus costs (VMS equipment and service costs) cannot be quantified. However, after the initial investment in VMS the annual costs will decline substantially (to \$144,000 for Skymate and \$280,000 for Boatracs), comprising only the service charge. Given that these costs constitute only 2% to 4% of the total scallop revenue by general category vessels, there is reason to expect that over the long-run the benefits will exceed these costs. Better enforcement of the possession limit will undoubtedly help to prevent future revenue loss from the scallop fishery if overfishing of the resource occurs due to the illegal landings or if stringent measures need to be taken to prevent such overfishing.
- Although the VMS implementation is expected to benefit most vessels in the scallop fishery, these benefits may not necessarily be equally distributed. The general category vessels that comply with the 400 lb. possession limit and that have earnings from scallops significantly exceeding VMS costs will benefit from VMS implementation. These vessels will also benefit from better management of the scallop resource made possible by better data on the location of the fishing activity. Finally, all general category vessels are expected to benefit from the additional safety benefits from having a VMS on board. Although the benefits from VMS cannot be estimated quantitatively, they will be higher for vessels that target on and derive a significant proportion of revenue from scallops. The vessels with incidental landings of scallops may have little to benefit from improved enforcement of the possession limit and the positive impacts on the scallop resource.
- Proposed action (Alternative 2) minimizes the total compliance costs for the general category fleet as compared to the non-selected alternative 1, according to which all vessels with general category permits would be required to operate a VMS. If all 2,554 vessels with general category permit installed a VMS, total costs would range between from \$8.3 million to \$12.1 million depending on the choice of VMS units to be installed (Table 36, Section 6.2.1). Alternatives 3a to 3b, however, result in lower costs for the general category fleet compared to the proposed action because they require a smaller subset of vessels to install a VMS. On the other hand, the enforcement benefits discussed above will be less for these alternatives because they will include a smaller number of vessels.
- The power-down exemption proposed by this framework action will allow vessels to turn the VMS off while in port and will help to reduce compliance costs from VMS implementation.
- The removal of broken trip charge and the proposed rebate for the 2005 fishing year is expected to have positive impacts on the limited access vessels. It will allow every vessel to harvest the full amount of the possession limit through replacement trips and the rebates (Section 6.2.2, Economic Impacts). Because compliance with the scallop possession limit is sufficiently monitored and ensures that the total catch does not exceed the TAC, no adverse biological and economical impacts are expected due the implementation of these measures.
- By preventing a potential decline in scallop biomass and catch rates in the long run, the proposed measures are expected to increase the productivity of the scallop industry.
- The cumulative impacts of the proposed action, and the past actions including the Amendment 10 and Framework 16 to the scallop FMP, are estimated to be positive for the scallop fishery. Although VMS requirement will increase costs for about 10% of the vessels with general category permits (223 out of a total 2,554 vessels), the proposed action is expected to have positive cumulative economic impacts by improving safety, by reducing losses from broken trips

and by better monitoring of the possession limit, benefiting both limited access and general category vessels participating in the scallop fishery.

7.12.4 Enforcement Costs

In general, the enforcement costs and benefits of the proposed options for Framework 17 are within the range of impacts addressed in Section 8.9 of the Amendment 10 document, which included a discussion of VMS requirements for limited access and general category vessels. Section 6.3 of this document provides a qualitative analysis of the benefits and costs of the VMS implementation alternatives for general category vessels including the power-down exemption, proposed action for removal of broken trip disincentive and rebates for broken trips for 2005 fishing year. The impacts of the proposed action on enforcement costs could be summarized as follows:

- The proposed alternatives for VMS implementation including power-down alternative are not expected to have substantial impacts on administrative and enforcement costs. In fact, the VMS implementation may lower some of the enforcement costs by improving enforcement's ability to deploy personnel and other resources more efficiently and by improve its effectiveness in monitoring area rotation compliance.
- The proposed broken trip exemption, however, especially the provision to allow vessels to operate without turning on VMS when they are inside of the VMS demarcation line, will increase the enforcement complexity, and thus could reduce some of the enforcement benefits associated with VMS implementation.
- The enforcement benefits are expected to be proportional to the number of vessels included in the VMS implementation. While exempting a subset of general category vessels would reduce the overall costs of VMS requirement for the general category fleet, it also would create the same enforcement problems in monitoring the possession limit for the subset of vessels not required to install VMS. From this perspective, non-preferred alternative 1, could result in largest enforcement benefits by requiring all vessels with general category permits to have a VMS. On the other hand, the same alternative could present a challenge in terms of the current enforcement resources, and could increase the personnel costs of enforcement associated with monitoring VMS activity of a large number of vessels with general category permits. If there is no extra funding to meet the increased costs, overall efficiency of enforcement for fishery regulations in general could decline if a reallocation of resources was required to monitor VMS activity.
- The proposed action will provide, however, VMS monitoring for the majority of general category fishing activity, while exempting a large number of vessels that are less likely to land scallop or to exceed the possession limit (see the discussion above in economic impacts). In other words, the proposed action represents an improvement over the present system of dockside monitoring of the possession limit and it also balances considerations for enforcement efficiency with the concerns for increased compliance costs for general category vessels.
- The proposed action regarding the removal of broken trip disincentive is not expected to have significant impacts on enforcement costs or benefits. Broken trip rebates will increase administrative costs slightly since NMFS will have to let the fishermen know that they are entitled to another replacement trip and keep track of these trips. However, this increase in costs is not expected to be significant because NMFS already tracks the broken trips and have procedures in place for doing so.

7.12.5 Determination of Significant Regulatory Action

Executive order 12866 defines a "significant regulatory action" as one that is likely to result in: a) an annual effect on the economy of \$100 million or more, or one which adversely affects in a material way the economy, a sector of the economy, productivity, jobs, the environment, public health or safety, or

state, local, or tribal governments or communities; b) a serious inconsistency or interference with an action taken or planned by another agency; c) a budgetary impact on entitlements, grants, user fees, or loan programs, or the rights and obligations of recipients thereof; d) novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this executive order.

The preceding analysis shows that Framework 17 would not constitute a "significant regulatory action" since it will not raise novel legal and policy issues, other than those that were already addressed and analyzed in Amendment 10. VMS requirements were already applied for the scallop limited access fishery and this action includes a subset of general category vessels in the same implementation. Similarly, this action revises the existing broken trip exemption program implemented by Amendment 10. The proposed action is expected to have positive impacts, but these impacts are estimated to be less than \$100 million given that the entire scallop revenue generated by the general category scallop fishery was only \$7.3 million in 2003. VMS implementation will also have marginal impacts on compliance costs. The removal of broken trip discharge and rebate of charges against replacement trips for the 2005 fishing year will have safety benefits with no significant impacts on economic benefits. Therefore, the proposed regulations may not have an annual impact on the economy of \$100 million or more. The proposed alternatives will not, however, adversely affect in a material way the economy, productivity, competition, public health or safety, jobs or state, local, or tribal governments or communities in the long run. The proposed action also does not interfere with an action planned by another agency, since no other agency regulates the level of scallop harvest. It does not materially alter the budgetary impact of entitlements, grants, user fees, or loan programs, or the rights and obligations of recipients.

7.13 Executive Order 13132 (Federalism)

The E.O. on federalism establishes nine fundamental federalism principles for Federal agencies to follow when developing and implementing actions with federalism implications. Section 12.4 of the Red Crab FMP describes how the management plan is in compliance with this order. Furthermore, this action does not contain policies with Federalism implications, thus preparation of an assessment under E.O. 13132 is not warranted.

The proposed action does not affect any of the fisheries management measures listed below,

- (i) NE Multispecies year-round closed areas
- (ii) NE Multispecies DAS restrictions
- (iii) Gillnet gear restrictions
- (iv) Lobster restricted gear areas
- (v) Gear restrictions for small mesh fisheries
- (vi) Monkfish DAS restrictions for Monkfish-Only permit holders
- (vii) Scallop DAS restrictions

Therefore the Council is not required to conduct a baseline review of the Fishery Management Plan for the Northeast Skate Complex.

8 COMMENTS AND RESPONSES

During the development of the proposed action, the Council received the following comments from various members of the fishing industry on the framework adjustment and the alternatives under consideration.

1. The FMP must take into consideration the inability for many general category vessels to supply shore side power for continuous VMS operation, like what is allowed in the Herring FMP.

Initially, the alternatives would have required vessels with general category permits to operate VMS 24/7, except for a specific exemption for vessels that would be out of operation for a continuous period of several weeks or months. This would have been consistent with the requirements to operate VMS that apply to limited access scallop vessels. Proposed power-down alternative (Section 4.1.1,2) allows vessels with general category permits to power down the VMS equipment when in port after the landings have been offloaded at a shore side dealer and when the vessel is tied to a fixed dock or mooring. The VMS must be re-powered when the vessel is embarking on a fishing trip, or whenever the vessel is seaward of the VMS demarcation line.

2. The power-down provisions must maintain the integrity of the VMS system for enforcement to monitor compliance with the 400 lbs. scallop meat landing limit.

The Council recognized the need for vessels to power down VMS equipment when in port, but yet require that the VMS be in operation on all fishing trips in a clear and unambiguous way. The Herring FMP provisions were too liberal for monitoring fishing and offloading activity while in port (it is not as crucial in the Herring FMP because the VMS is used to determine fishing effort distribution, not enforce a landing limit. Thus general category vessels will be required to offload their catch before powering down the VMS and be required to power up the VMS when embarking on a fishing trip (for any species) and whenever the vessel is seaward of the VMS demarcation line. The Council did not feel it was necessary to require VMS operation when the vessel moved locally to load supplies, get fuel and ice, or to have repairs and maintenance done to the vessel.

3. The FMP must make the existing broken trip program more flexible, to reduce the risk of losing authorized scallop landings when vessels have to return to port because of bad weather or other emergencies. This risk potentially causes vessels to remain at sea longer than they should, compromising safety.

Proposed action (Section 4.2.1) will remove the broken trip disincentive and vessels will be able to land the authorized scallop landings from a controlled access area, even if the vessel has to return to port because of bad weather or other emergencies.

4. The criteria for determining when a general category vessel must install and operate VMS equipment should be consistent with the provisions of the permit and not create another threshold to be enforced.

The Council chose a 40 lb. limit on any trip to define when a vessel needs to operate VMS equipment (see Section 4.1.1). This limit is consistent with the provisions of the permit, since a vessel needs no permit to land less than 40 lbs. of scallop meats.

5. The FMP should not impose monitoring costs on vessels that do not target or land scallops.

The Council selected a threshold that is consistent with a landing of 40 or more pounds of scallop meats for commercial sale. Thus, these vessels are in a commercial fishing operation and are therefore capable of supporting the costs of a VMS. The VMS costs were analyzed in Section 6.2.1. Vessels landing scallops as an incidental catch also derive fish revenue from other landings and are thus also capable of supporting the cost of the VMS equipment. On the other hand, nearly 2200 of the 2500 general category permits landed no scallops or landed less than 40 lbs. of scallops on every trip. The alternative in Section 4.1.1 exempts these vessels from the proposed VMS requirement and greatly reduces the program costs, compared to the alternative 1 in Section 4.1.3.1 which would require all vessels with general category permits to install and operate VMS equipment. Doing so may have forced a considerable number of

vessels to unnecessarily give up their general category permit, because they could not justify the cost to land a small amount (or no) scallops.

6. Vessels that fish for scallops in the Gulf of Maine should be exempt from the VMS requirements, because most of the problem with the 400 lb. possession limit compliance is in Southern New England and the Mid-Atlantic regions.

The Council rejected an area based exemption, due to the mobility of the scallop fleet to fish in areas where compliance with the 400 lb. possession limit has been a problem. An area based exemption creates loopholes that were unacceptable to managers.

7. Relief from the broken trip program disincentive is needed as quickly as possible. Will the review process for the VMS requirements slow down the approval of the broken trip program changes?

Framework Adjustment 17 approval is expected during the summer of 2005. VMS approval may take a bit longer due to Paperwork Reduction Act approval requirements, but other measures in the framework could be implemented sooner if the VMS requirements are delayed. Nonetheless, the framework action would rebate the scallop landing deductions from replacement trips, retroactive to March 1, 2005. This action should reduce the risk to vessels making trips in the 2005 fishing year, either to the Hudson Canyon Area or to the Georges Bank access areas.

8. Why is VMS equipment necessary to monitor compliance with a scallop possession limit?

Landings of 400 lbs. or less are easily and quickly offloaded to trucks or other non-traditional points of landing. This aspect, coupled with the sheer number of boats that can possibly land scallops, makes it hard to monitor fishing and offloading activity. Furthermore the smaller size of vessels with general category permits opens up a considerable number of additional ports where offloading might occur. The VMS data will enable law enforcement to monitor hotspots of activity and thus more effectively deploy personnel to check on compliance. This will also induce better compliance, since it is more likely that a vessel will be checked.

9 APPENDIX A: DETAILED TABLES AND GRAPHS

Table 49. Other Permits Held by Active General Category Vessels

Number of Other Permits Held	Number of Vessels With General Category Permits *
1	58
2	73
3	92
4	88
5	130
6	130
7	191
8	196
9	249
10	270
11	254
12	238
13	225
14	176
15	116
16	86
17	1

*Including the temporary and interim lobster permits.

Table 50. General Category Vessels by Homeport and County (2000–2004)

Homeport county, State	Ave.	2000	2001	2002	2003	2004	Homeport	Ave.	2000	2001	2002	2003	2004
Aleutians West AK	0	0	0	1	1	1	Dutch Harbor	0	0	0	1	1	1
Mobile AL	1	1	1	0	0	1	Bayou La Batre	1	1	1	0	0	1
Fairfield CT	2	2	5	5	3	2	Bridgeport	1	2	4	2	2	1
Middlesex CT	1	2	1	1	2	3	Norwalk	0	0	0	1	0	1
New Haven CT	1	0	1	3	1	3	Old Saybrook	1	1	1	1	1	3
New London CT	31	31	37	43	42	44	Branford	0	0	0	1	0	1
							Guilford	1	0	0	1	1	2
							Groton	2	2	1	3	3	2
							Ledyard	0	0	0	0	0	1
							Mystic	0	0	0	1	1	1
							New London	8	9	12	11	9	10
							Niantic	0	0	0	1	1	3
							Noank	5	6	6	8	8	8
							Pawcatuck	0	0	1	1	2	1
							Stonington	15	14	17	18	18	18
Kent DE	1	2	1	2	2	3	Bowers	1	2	1	1	1	1
							Frederica	0	0	0	1	1	1
							Leipsic	0	0	0	0	0	1
New Castle DE	5	3	3	5	5	6	Townsend	0	0	0	0	0	1
							Wilmington	5	3	3	5	5	5
Sussex DE	7	7	7	9	10	15	Dagsboro	0	0	1	1	1	1
							Laurel	0	0	0	0	0	1
							Lewes	2	1	1	2	3	5
							Milford	2	2	3	4	4	5
							Millsboro	2	3	1	1	1	1
							Rehoboth Beach	1	1	1	1	1	2
Brevard FL	4	2	3	2	4	7	Cape Canaveral	3	2	3	2	4	7
Broward FL	0	0	0	0	0	1	Port Everglades	0	0	0	0	0	1
Collier FL	0	0	0	1	1	1	Chokoloskee	0	0	0	1	1	1

Dade FL	4	4	3	2	1	1	Miami	4	4	3	2	1	1
Duval FL	2	2	2	2	1	1	Jacksonville	2	2	2	2	1	1
Franklin FL	0	0	0	1	1	2	Apalachicola	0	0	0	0	0	1
							Carrabelle	0	0	0	1	1	1
Lee FL	0	0	0	0	1	1	Cape Coral	0	0	0	0	1	1
Monroe FL	2	1	1	3	2	2	Key West	1	0	0	1	1	1
							Marathon	1	1	1	2	1	1
Pasco FL	0	0	0	0	2	2	New Port Richey	0	0	0	0	1	2
Pinellas FL	0	0	0	0	0	2	Tarpon Springs	0	0	0	0	0	2
Sarasota FL	0	0	0	0	0	1	Sarasota	0	0	0	0	0	1
St. Lucie FL	0	0	0	0	1	1	Fort Pierce	0	0	0	0	1	1
Glynn GA	2	2	2	3	6	5	Brunswick	2	2	2	3	6	5
Terrebonne LA	0	0	0	0	0	1	Houma	0	0	0	0	0	1
Barnstable MA	243	235	269	287	276	267	Barnstable	28	25	31	31	25	25
							Bourne	0	0	0	0	1	1
							Brewster	0	0	0	2	1	1
							Chatham	74	71	77	89	93	82
							Dennis	7	9	9	9	8	6
							East Dennis	4	3	2	4	4	3
							Eastham	2	3	3	4	3	3
							Falmouth	4	4	6	6	6	7
							Harwich	22	22	26	27	23	26
							Orleans	18	17	23	21	20	18
							Pocasset	1	1	1	1	1	1
							Provincetown	29	25	30	29	31	33
							Sandwich	19	20	19	22	22	23
							South Yarmouth	2	3	3	2	2	1
							Truro	5	5	4	5	6	7
							Wellfleet	11	7	11	11	9	10
							Woods Hole	7	7	8	8	9	8
Bristol MA	284	266	278	287	295	290	Yarmouth	6	7	10	12	11	12
							Dartmouth	3	2	1	1	2	2
							Fairhaven	35	37	34	35	38	35
							Fall River	4	3	3	3	3	4
							New Bedford	220	197	217	225	231	230
							North Dighton	0	0	0	1	1	1
							Taunton	1	1	1	1	0	1
Dukes MA	19	18	20	24	24	24	Westport	20	24	22	21	20	17
							Chilmark	6	6	8	9	10	11
							Edgartown	5	5	4	7	6	5
							Gosnold	1	1	1	1	1	1
							Oak Bluffs	3	4	4	3	2	1
							Vineyard Haven	3	2	3	4	5	6
Essex MA	262	254	272	315	315	293	Beverly	11	13	12	8	10	10
							Danvers	1	2	1	1	1	1
							Essex	0	0	1	1	1	1
							Georgetown	1	1	1	1	1	1
							Gloucester	165	158	173	197	191	180
							Haverhill	0	0	0	0	0	1
							Ipswich	1	1	1	2	2	1
							Lynn	3	3	3	4	4	4
							Manchester	6	6	5	6	5	8
							Marblehead	8	10	10	11	13	12
							Methuen	1	1	1	1	1	1
							Nahant	1	1	1	1	1	1
							Newbury	2	1	1	1	1	1
							Newburyport	20	21	20	25	25	22
							Rockport	20	21	23	30	28	25
							Rowley	0	0	0	0	1	1
							Salem	3	2	3	3	6	4
							Salisbury	10	8	10	14	14	13
							Swampscott	3	3	3	4	5	4
							West Newbury	2	2	2	4	5	2
Middlesex MA	3	3	1	1	1	1	Bedford	1	1	1	1	1	1
Nantucket MA	6	6	7	9	10	10	Nantucket	6	6	7	9	10	10
Norfolk MA	5	5	8	9	4	6	Cohasset	2	2	3	5	2	3
							Dover	1	1	1	1	1	1
							Holbrook	0	0	0	0	0	1
							Quincy	1	1	3	3	1	1
Plymouth MA	141	164	152	149	158	149	Duxbury	2	2	2	1	1	1

								Green Harbor	17	19	19	16	17	17
								Hull	9	13	13	14	10	9
								Kingston	2	3	3	3	2	2
								Marion	2	3	4	4	5	3
								Marshfield	15	22	19	17	20	18
								Mattapoisset	5	6	5	5	6	5
								Ocean Bluff-Brant Rock	10	15	12	12	14	15
								Pembroke	0	0	0	1	1	1
								Plymouth	31	29	33	32	36	38
								Rockland	1	1	1	1	1	1
								Scituate	38	45	37	40	41	39
Suffolk MA	31	22	25	30	27	31		Boston	31	22	25	30	27	31
Somerset MD	1	1	0	2	3	2		Crisfield	0	0	0	0	2	1
								Smith Island	0	0	0	1	1	1
Wicomico MD	1	1	0	1	1	1		Willards	0	0	0	1	1	1
Worcester MD	11	11	14	13	17	20		Berlin	0	1	1	1	1	1
								Ocean City	9	9	12	10	14	17
								Snow Hill	0	0	0	1	1	1
								West Ocean City	1	1	1	1	1	1
Cumberland ME	133	141	134	138	146	142		Bailey Island	3	3	3	4	3	2
								Brunswick	0	0	0	1	1	1
								Cape Elizabeth	3	2	2	3	2	2
								Chebeague Island	2	2	1	1	1	1
								Cundys Harbor	14	12	13	15	14	12
								Falmouth	2	3	2	2	3	2
								Freeport	5	6	8	7	5	2
								Harpswell	15	18	18	16	21	25
								Long Island	2	3	3	3	3	5
								Orrs Island	4	4	5	8	6	6
								Portland	70	72	67	65	76	71
								Scarborough	3	2	2	3	4	6
								South Freeport	0	1	1	1	1	1
								South Portland	5	7	5	4	3	3
								Westbrook	1	1	1	1	1	1
								Yarmouth	2	3	2	2	2	2
Hancock ME	91	96	90	89	87	100		Bar Harbor	9	8	7	4	4	5
								Bass Harbor	3	1	1	2	4	3
								Birch Harbor	1	1	1	1	2	2
								Blue Hill	1	2	1	1	1	2
								Brooklin	4	3	3	2	2	3
								Brooksville	3	5	5	4	4	3
								Cape Rosier	2	2	2	2	2	2
								Corea	1	1	0	1	2	3
								Deer Isle	3	4	2	4	2	6
								Franklin	0	0	0	0	0	1
								Frenchboro	2	2	2	1	1	2
								Gouldsboro	1	1	1	1	1	1
								Hancock	1	2	2	2	4	4
								Northeast Harbor	2	1	1	3	2	4
								Prospect Harbor	2	3	2	2	2	4
								Seal Harbor	0	0	0	0	0	1
								Southwest Harbor	11	9	9	10	11	8
								Stonington	21	22	19	21	20	26
								Sunshine	1	1	1	1	1	1
								Swans Island	5	8	9	6	6	3
Knox ME	69	61	73	74	83	88		Winter Harbor	10	11	11	14	13	16
								Criehaven	0	0	0	0	1	1
								Cushing	2	1	0	3	2	4
								Friendship	6	4	7	9	9	9
								Isle Au Haut	0	0	1	0	1	1
								Matinicus Isle	1	1	1	1	1	1
								Owls Head	8	8	12	12	15	11
								Port Clyde	15	16	17	15	16	19
								Rockland	12	8	11	11	10	11
								Saint George	1	1	0	0	0	2
								South Thomaston	2	2	3	1	3	4
								Spruce Head	8	7	8	8	8	9
								Tenants Harbor	5	4	5	7	4	5
								Thomaston	1	1	1	1	1	1
								Vinalhaven	7	8	6	5	10	10

Lincoln ME	61	64	62	54	52	48	Boothbay	6	6	6	5	4	5
							Boothbay Harbor	7	8	9	7	5	4
							Bremen	8	7	8	7	8	5
							Bristol	1	1	1	1	2	1
							Monhegan	3	3	5	3	3	2
							New Harbor	7	8	5	4	5	6
							Pemaquid	1	1	0	0	1	2
							Round Pond	2	2	1	2	3	4
							South Bristol	11	12	12	9	8	11
							Southport	3	5	3	4	4	3
							Trevett	1	1	1	1	1	1
							Westport	2	2	2	4	3	3
							Wiscasset	1	2	2	1	1	1
Penobscot ME	1	1	1	1	1	1	Hampden	1	1	1	1	1	1
Sagadahoc ME	29	29	19	19	17	19	Arrowsic	1	1	1	1	1	1
							Georgetown	1	1	1	1	1	3
							Phippsburg	4	4	3	2	2	4
							Sebasco	3	3	1	1	1	2
							Sebasco Estates	10	8	6	6	6	7
							West Point	3	4	3	3	3	2
Waldo ME	2	2	4	4	3	4	Belfast	1	0	1	3	3	3
							Winterport	0	0	0	1	0	1
Washington ME	103	101	121	122	127	117	Addison	6	5	6	10	8	9
							Beals	13	15	17	16	15	11
							Bucks Harbor	13	11	12	14	15	13
							Cutler	5	3	8	7	5	4
							Dyer Bay	0	0	0	0	2	2
							Eastern Harbor	2	1	1	3	4	4
							Eastport	4	4	6	5	5	5
							Harrington	3	3	4	4	3	2
							Jonesboro	1	1	2	2	1	1
							Jonesport	23	27	30	29	31	28
							Kennebec	0	0	0	0	0	1
							Lubec	7	9	7	8	12	12
							Machias	0	0	0	0	0	2
							Machiasport	1	0	0	2	2	2
							Milb.ridge	6	4	7	5	6	7
							Pigeon Hill	1	0	0	0	1	1
							Roque Bluffs	3	3	2	3	3	2
							Steuben	10	10	11	9	10	8
							Trescott	1	1	1	1	1	1
							West Jonesport	2	2	2	2	3	2
York ME	51	64	61	57	54	52	Biddeford	1	3	1	1	1	2
							Camp Ellis	1	1	1	0	0	1
							Cape Neddick	0	0	0	0	1	1
							Cape Porpoise	7	8	8	9	7	10
							Kennebunkport	4	5	6	4	3	2
							Kittery	11	14	13	12	13	12
							Kittery Point	4	5	7	5	7	5
							Ogunquit	2	3	2	3	3	2
							Perkins Cove	0	0	0	0	0	1
							Saco	6	9	7	9	8	9
							Wells	2	2	4	4	4	3
							York	4	5	4	4	2	2
							York Harbor	3	4	4	3	2	2
Beaufort NC	9	8	9	11	13	16	Aurora	2	1	2	2	3	2
							Bath	1	1	1	1	1	3
							Belhaven	5	5	5	7	8	10
							Wright Creek	1	1	1	1	1	1
Brunswick NC	1	2	2	2	4	2	Shalotte	0	0	0	0	2	2
Carteret NC	21	20	22	25	25	30	Atlantic	5	4	4	4	4	4
							Beaufort	10	13	13	14	15	17
							Marshallb.erg	1	0	1	1	1	2
							Morehead City	1	0	1	1	1	2
							Newport	2	2	2	2	2	4
							Salter Path	0	0	0	0	0	1
Craven NC	5	6	8	8	8	9	New Bern	5	6	8	8	8	9
Dare NC	23	24	30	33	37	37	Avon	0	1	1	1	1	1
							Hatteras	1	0	1	2	2	4
							Manns Harbor	1	1	1	1	1	1

							Manteo	1	2	2	2	2	2
							Wanchese	19	18	23	25	29	29
Hyde NC	9	9	12	14	17	22	Engelhard	4	4	6	5	7	11
							Scranton	1	1	1	1	2	2
							Swan Quarter	4	4	5	8	8	9
Onslow NC	1	0	1	1	4	5	Sneads Ferry	1	0	1	1	4	5
Pamlico NC	26	23	28	31	35	38	Bayboro	3	2	5	7	6	5
							Grantsboro	0	0	1	1	1	1
							Hobucken	2	1	2	1	3	1
							Lowland	9	9	9	9	10	10
							Merritt	0	0	0	0	0	1
							Oriental	7	7	7	9	11	18
							Vandemere	4	3	4	4	4	2
Carroll NH	0	0	0	0	1	1	Tamworth	0	0	0	0	1	1
Hillsborough NH	0	0	0	0	0	1	Nashua	0	0	0	0	0	1
Rockingham NH	95	100	111	118	110	115	Exeter	1	0	0	0	1	1
							Greenland	1	1	1	1	1	1
							Hampton	18	16	20	21	19	21
							Hampton Beach	1	1	2	1	1	1
							Hampton Falls	3	3	4	3	3	2
							Hampton Harbor	0	0	0	1	1	1
							New Castle	2	1	1	1	1	1
							Newington	3	7	7	7	7	2
							Portsmouth	33	40	39	41	39	48
							Rye	13	10	12	14	15	18
							Seabrook	20	21	24	26	20	17
							Seabrook Beach	0	0	1	1	1	1
							South Hampton	0	0	0	1	1	1
Strafford NH	1	0	0	0	1	3	Dover	0	0	0	0	0	2
							Durham	0	0	0	0	1	1
Atlantic NJ	15	12	20	25	23	29	Atlantic City	13	11	18	23	22	25
							Brigantine	1	1	1	1	1	2
							Egg Harbor Township	0	0	0	0	0	1
							Ventnor City	0	0	0	0	0	1
Cape May NJ	98	102	105	114	131	141	Cape May	74	77	79	86	100	111
							Cape May Court House	0	0	0	1	1	1
							Ocean City	1	0	1	2	2	1
							Sea Isle City	6	8	8	9	10	11
							Seaville	0	0	0	0	2	2
							Wildwood	13	12	14	13	12	12
							Wildwood Crest	2	3	2	3	4	3
Cumberland NJ	4	3	5	7	15	14	Heislerville	1	2	2	2	2	2
							Matts Landing	0	1	1	1	1	1
							Mauricetown	0	0	0	0	1	1
							Port Norris	2	0	2	3	8	10
Middlesex NJ	2	2	1	1	1	1	East Brunswick	1	1	1	1	1	1
Monmouth NJ	50	52	52	49	55	58	Atlantic Highlands	0	1	1	1	1	1
							Belford	26	26	26	26	26	29
							Belmar	5	5	6	5	6	7
							Brielle	4	5	4	4	5	4
							Highlands	4	5	4	4	5	4
							Manasquan	3	3	4	3	3	6
							Neptune	2	1	1	1	2	2
							Sea Bright	1	3	2	1	2	1
							Shark River Inlet	3	2	2	3	4	4
Ocean NJ	87	91	114	129	133	133	Barnegat Light	40	45	58	60	69	68
							Beach Haven	1	1	1	2	1	1
							Bricktown	4	4	4	8	8	5
							Lavallette	1	1	1	1	1	1
							Manahawkin	0	0	0	2	1	1
							Point Pleasant	31	31	36	38	35	39
							Point Pleasant Beach	4	3	4	5	5	6
							Toms River	1	1	1	1	1	1
							Tuckerton	1	2	3	3	3	4
							Waretown	4	2	4	6	8	7
Kings NY	5	6	3	4	5	6	Brooklyn	5	5	3	3	5	6
Nassau NY	23	22	20	21	31	34	Atlantic Beach	0	0	0	0	1	2
							Baldwin	1	2	2	1	1	1
							East Rockaway	0	0	0	0	0	1
							Freeport	9	9	7	8	9	10

							Glen Cove	1	1	2	2	3	2
							Island Park	2	3	1	3	5	5
							Long Beach	0	0	0	0	1	1
							Massapequa	0	0	1	1	1	1
							Oceanside	1	1	1	2	4	5
							Point Lookout	6	5	4	4	5	5
							Wantagh	0	0	0	0	1	1
New York NY	15	14	13	15	11	11	New York	15	14	13	15	11	11
Queens NY	0	0	0	0	0	1	Broad Channel	0	0	0	0	0	1
Richmond NY	1	1	1	1	2	1	Staten Island	1	1	1	1	2	1
Suffolk NY	118	130	118	123	130	143	Amity Harbor	1	1	1	1	1	1
							Aquebogue	0	0	1	1	0	1
							Babylon	2	2	2	2	4	3
							Bay Shore	0	0	0	0	0	1
							Captree Island	0	0	0	0	1	2
							Center Moriches	0	0	0	0	1	2
							East Hampton	1	1	0	1	1	1
							East Islip	0	0	0	0	0	1
							East Moriches	1	1	1	1	1	1
							East Quogue	1	1	2	2	2	1
							Greenport	9	9	8	7	8	8
							Hampton Bays	15	17	15	12	11	10
							Huntington	0	0	0	2	1	1
							Islip	3	2	3	3	4	6
							Kismet	0	0	0	1	1	1
							Mattituck	2	2	2	5	4	4
							Montauk	41	45	42	44	50	54
							Moriches	1	2	1	1	1	1
							Northport	5	6	6	7	5	7
							Sayville	0	1	0	1	1	1
							Shelter Island	0	0	0	1	1	1
							Shinnecock	28	30	29	28	29	31
							Southampton	1	1	1	1	1	1
							Southold	0	0	0	0	0	1
							West Sayville	2	2	2	2	2	2
Kent RI	3	4	3	3	3	1	Warwick	3	4	3	3	3	1
Newport RI	39	42	47	48	51	47	Jamestown	3	4	3	3	2	1
							Little Compton	3	3	4	6	6	7
							Newport	21	21	26	27	26	25
							Portsmouth	2	1	2	2	1	1
							Sakonnet	3	4	2	2	4	5
							Tiverton	5	9	10	8	12	8
Providence RI	6	5	4	4	4	4	Providence	5	4	3	3	3	3
							Riverside	1	1	1	1	1	1
Washington RI	124	131	129	128	130	127	Avondale	0	0	0	0	0	1
							Block Island	3	4	3	5	6	5
							Charlestown	4	4	4	5	6	4
							Davisville	2	5	2	1	1	1
							Galilee	6	7	8	7	3	4
							Narragansett	12	15	15	15	15	13
							Point Judith	81	80	82	83	87	87
							Saunderstown	1	1	1	1	1	1
							Snug Harbor	0	1	0	0	0	1
							South Kingstown	0	0	0	0	1	1
							Wakefield	9	9	11	10	9	7
							Wickford	2	2	1	1	1	2
Aransas TX	0	0	0	0	1	1	Rockport	0	0	0	0	1	1
Harris TX	2	1	1	1	1	1	Houston	2	1	1	1	1	1
Accomack VA	11	16	19	21	25	19	Chincoteague	5	6	6	9	12	10
							Davis Wharf	1	1	1	1	1	1
							Greenbackville	0	0	0	1	1	1
							Sanford	0	0	0	0	1	1
							Saxis	1	1	3	3	3	3
							Tangier	1	2	2	2	2	2
							Wachapreague	0	1	1	0	1	1
Gloucester VA	2	2	4	3	3	6	Gloucester	0	0	0	1	1	1
							Hayes	1	2	3	1	1	4
							Perrin	0	0	1	1	1	1
Hampton (City) VA	10	9	10	9	8	8	Hallwood	0	0	0	0	1	1
							Hampton	10	9	10	9	7	7

Isle Of Wight VA	2	4	2	2	2	2	Carrollton	2	4	2	2	2	2
Mathews VA	3	4	3	4	2	2	Gwynn	1	3	1	3	1	1
							Mathews	1	1	1	1	1	1
Middlesex VA	0	0	1	1	1	1	Deltaville	0	0	1	1	1	1
Newport News (City) VA	16	20	21	22	23	23	Newport News	16	20	21	22	23	23
Norfolk (City) VA	67	48	45	47	45	38	Norfolk	66	48	45	46	45	38
Northampton VA	3	7	6	9	3	2	Exmore	0	0	0	0	0	1
							Nassawadox	0	0	1	2	1	1
Northumberland VA	1	2	1	1	1	2	Heathsville	0	0	0	0	0	1
							Wicomico Church	1	1	1	1	1	1
Poquoson (City) VA	1	2	2	2	3	3	Poquoson	1	2	2	2	3	3
Richmond (City) VA	1	1	1	1	1	2	Richmond	1	1	1	1	1	2
Virginia Beach (City) VA	8	14	12	12	12	12	Virginia Beach	8	13	11	10	10	10
							Rudee Inlet	1	1	1	2	2	2
York VA	2	0	2	3	4	4	Seaford	2	0	2	3	4	4
King WA	1	2	2	2	1	1	Seattle	1	2	2	2	1	1

Source: NE Permit data. NOTE: only ports with at least 1 vessels in 2004 are shown.

Table 51. Top Ten General Category Landing Ports (by Landed Value in 1997)

Port	Value of scallops landed by general category vessels (in thousands of dollars)								
	1995	1996	1997	1998	1999	2000	2001	2002	2003
New Bedford (Bristol MA)	38	584	744	529	556	460	759	523	392
Stonington (Hancock ME)	19	262	227	153	10	11	40	50	14
Southwest Harbor (Hancock ME)	.	98	184	167	276	33	113	85	24
Gloucester (Essex MA)	.	178	164	61	95	80	942	683	462
Sandwich (Barnstable MA)	34	277	120	215	195	155	201	248	225
Newport News (Newport News City VA)	4	.	75	32	8	2	1	3	34
Other Washington (Washington ME)	29	14	64	18	.	.	.	.	.
Wellfleet (Barnstable MA)	.	54	64	45	17	23	66	32	111
Tremont (Hancock ME)	19	14	62	15	.	.	.	.	.
Rockport (Essex MA)	.	57	60	0	.	.	.	62	103

Source: dealer weighout data

Table 52. General Category Vessels Classified by Annual Revenue from Scallops (All Vessels)

Annual Scallop Revenue	Number of Vessels	Average Scallop catch (Pounds per Trip)	Number of Trips	Average Scallop Revenue as a Percent of Total Trip Revenue from Scallop Trips	Average Annual Scallop as a Percent of Total Annual Revenue from All Trips	Maximum Scallop Landings per Trip (Average per Vessel)	Average Annual Scallop Revenue per Vessel	Minimum Scallop Catch (Pounds per Trip)	Average Annual Scallop Landings per Vessel
\$1,000–\$9,999	100	121	545	60%	27%	979	3,048	20	657
\$10,000–\$49,000	71	223	1,610	95%	59%	514	23,663	64	5,057
≤\$1,000	107	39	214	41%	4%	210	349	1	77
≥\$50,000	53	338	3,534	94%	72%	>400 Pounds	104,508	103	22,549
Grand Total	331	276	5,903	67%	34%	28,151	22,843	1	4,919

Table 53. Composition of General Category Trips by Pounds per Trip and Gear (2003 Trip Data from Dealers database)

Gear	Pounds per Trip	Number of Trips	Number of Vessels	Scallop Landings (lb.)	% of Landings by lb. per trip group	Scallop Revenue (\$)	Scallop Revenue per Vessel (Ave.)
Dredge, Quahog	≤40	23	10	427	0.3%	1,419	142
	41 - 100	38	12	2,710	2.2%	11,057	921
	101 - 200	71	9	10,664	8.5%	44,213	4,913
	201 - 300	87	10	21,614	17.2%	85,860	8,586
	301 - 400	233	8	87,794	69.9%	344,449	43,056
	> 500	3	3	1,952	1.6%	6,907	2,302
Total		456	53	125,588	100.0%	495,827	9,355
Dredge, Scallop	≤40	322	85	7,956	0.7%	56,983	670
	> 500	152	45	191,023	17.8%	928,998	20,644
	41 - 100	631	122	44,067	4.1%	309,941	2,541
	101 - 200	721	122	106,705	10.0%	597,921	4,901
	201 - 300	608	98	151,688	14.2%	734,993	7,500
	301 - 400	1,330	96	498,657	46.6%	2,346,653	24,444
	401 - 500	170	52	71,032	6.6%	348,480	6,702
Total		3,934	620	1,071,128	100.0%	5,323,969	8,587
Trawl, Otter, Bottom	≤40	300	110	6,083	0.9%	30,304	275
	> 500	41	20	41,264	6.0%	183,388	9,169
	41 - 100	299	95	20,981	3.1%	137,330	1,446
	101 - 200	335	81	49,223	7.2%	272,925	3,369
	201 - 300	247	58	62,161	9.1%	276,524	4,768
	301 - 400	1,220	56	468,016	68.2%	1,937,809	34,604
	401 - 500	94	19	38,099	5.6%	158,847	8,360
Total		2,536	439	685,827	100.0%	2,997,127	6,827

Note: In this and the following Tables, maximum scallop landings exceed 400 lb. per trip for some vessels according to the dealer database. This could be due to errors in the database, however, since 400 lb. is above the legal possession limit. Recording live pounds as meat pounds, landing two different 24-hour trips within the same calendar day, or other data mistakes could be the source of these errors. Therefore, these numbers should be interpreted with caution.

Table 54. Scallop Revenue by State Landed According to Pounds per Trip

State Landed	≤100	101–300	301–400	>400	Grand Total
MA	320,762	1,038,511	1,342,837	483,881	3,185,991
RI	10,895	15,528	NA	NA	32,745
NH	6,591	18,324	18,191		43,106
ME	36,985	25,085	7,597	32,876	102,543
NC	3,035	7,075	12,707		22,817
NJ	25,371	312,387	1,662,303	832,883	2,832,944
NY	20,333	92,122	38,568	6,855	157,878
MD	7,211	66,401	54,284	NA	NA
VA	11,825	71,643	889,422	77,960	1,050,850
Grand Total	443,008	1,647,076	4,030,049	1,440,973	7,561,106

Table 55. Number of Trips by State Landed According to Pounds per Trip

State Landed	≤100	101–300	301–400	>400	Grand Total
MA	14%	18%	13%	2%	48%
RI	1%	0%	NA	NA	2%
NH	1%	0%	0%	0%	1%
ME	2%	0%	0%	0%	3%
NC	0%	0%	0%	0%	0%
NJ	2%	5%	16%	4%	27%
NY	2%	2%	0%	0%	4%
MD	1%	1%	1%	NA	NA
VA	1%	2%	10%	0%	13%
Grand Total	23%	29%	41%	7%	100%

Table 56. Scallop Landings by State Landed According to Pounds per Trip

State Landed	≤100	101–300	301–400	>400	Grand Total
MA	3%	12%	18%	7%	39%
RI	0%	0%	NA	NA	NA
NH	0%	0%	0%	0%	1%
ME	0%	0%	0%	0%	1%
NC	0%	0%	0%	0%	0%
NJ	0%	4%	22%	10%	37%
NY	0%	1%	1%	0%	2%
MD	0%	1%	1%	NA	NA
VA	0%	1%	14%	1%	17%
Grand Total	4%	21%	57%	19%	100%

Table 57. Scallop Revenue by State Landed According to Pounds per Trip

State Landed	≤100	101–300	301–400	>400	Grand Total
MA	4%	14%	18%	6%	42%
RI	0%	0%	NA	NA	NA
NH	0%	0%	0%	0%	1%
ME	0%	0%	0%	0%	1%
NC	0%	0%	0%	0%	0%
NJ	0%	4%	22%	11%	37%
NY	0%	1%	1%	0%	2%
MD	0%	1%	1%	NA	NA
VA	0%	1%	12%	1%	14%
Grand Total	6%	22%	53%	19%	100%

Table 58. Number of Vessels by State Landed and Primary State (Trip Data)

State Landed	≤100	101–300	301–400	>400	Number of Vessels by Primary State
MA	197	181	74	67	129
RI	36	16	NA	NA	35
NH	16	7	3		10
ME	25	15	3	5	40
					214
NC	9	9	5		32
NJ	45	53	30	38	43
NY	27	14	6	3	26
MD	10	11	6	NA	6
VA	35	47	27	8	10
					117
Grand Total	400	353	156	124	331

Table 59. Summary of Scallop permit trends, DAS allocations and DAS use from 1994 to 2004.

Sum of VESSELS		AP_YEAR										
Fishery	Category	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Scallop	Full-time	227	227	214	203	202	207	219	223	229	236	234
	Full-time small dredge	5	4	5	3	2	1	3	13	25	37	45
	Full-time trawl	30	32	27	23	23	16	17	16	16	16	14
	General category	1,960	2,067	1,984	1,993	1,930	2,074	2,247	2,293	2,493	2,536	2,367
	Occasional	4	3	2	2	3	4	4	5	4	2	1
	Occasional trawl	28	26	25	20	19	20	16	15	15	8	5
	Part-time	26	21	18	16	11	11	15	14	13	10	4
	Part-time small dredge	8	6	8	8	6	3	4	6	8	17	21
	Part-time trawl	30	28	27	30	26	18	20	18	10	7	3
Scallop Total		2,318	2,414	2,310	2,298	2,222	2,354	2,545	2,603	2,813	2,869	2,694
Limited access permits by allocation type												
	Full-time	262	263	246	229	227	224	239	252	270	289	293
	Part-time	64	55	53	54	43	32	39	38	31	34	28
	Occasional	32	29	27	22	22	24	20	20	19	10	6
	Total	358	347	326	305	292	280	298	310	320	333	327
	Allocation	59,214	52,310	49,040	41,399	34,937	33,910	30,752	32,264	34,078	36,412	38,392
	DAS used	36,747	33,490	34,404	30,830	27,089	23,074	24,958	28,198	30,065	30,082	26,830
	DAS allocated per vessel											
	Full-time	204	182	182	164	142	142	120	120	120	120	126
	Part-time	82	73	73	66	57	57	48	48	48	48	50
	Occasional	17	15	15	14	12	12	10	10	10	10	11

Note: Data for 2004 are preliminary through December 2004, or are projected based on seasonal DAS use trends and estimates in Framework Adjustment 16/39.

Table 60. Summary of Ports Affected

Port Landed	Alternative 2						Alternative 3a					
	No. of Trips	Ave. crew size	Ave. lb.	Ave. vessel length	Total lb. landed	No. of vessels	No. of Trips	Ave. crew size	Ave. lb.	Ave. vessel length	Total lb. landed	No. of vessels
Barnstable, MA	64	3	323	51	20671	9	64	3	323	51	20671	9
Chatham, MA	715	3	329	41	235431	24	715	3	329	41	235431	24
Gloucester, MA	476	2	233	40	110952	24	476	2	233	40	110952	24
New Bedford, MA	81	3	147	66	11887	42	81	3	147	66	11887	42
Newburyport, MA	213	2	243	41	51853	9	213	2	243	41	51853	9
Plymouth, MA	70	2	140	47	9833	7	70	2	140	47	9833	7
Provincetown, MA	511	3	277	58	141714	22	511	3	277	58	141714	22
Rockport, MA	66	2	216	42	14241	6	66	2	216	42	14241	6
Sandwich, MA	508	1	142	41	72193	11	508	1	142	41	72193	11
Scituate, MA	58	2	147	39	8548	3	58	2	147	39	8548	3
Ocean City, MD	46	2	302	44	13879	6	46	2	302	44	13879	6
Bucks Harbor, ME	11	3	166	43	1823	3	11	3	166	43	1823	3
Stonington, ME	63	1	86	40	5433	4	63	1	86	40	5433	4
Beaufort, NC	10	3	185	73	1848	3	10	3	185	73	1848	3
Wanchese, NC	8	3	237	60	1893	5	8	3	237	60	1893	5
Portsmouth, NH	53	3	205	39	10839	3	53	3	205	39	10839	3
Seabrook, NH	11	1	195	42	2147	3	11	1	195	42	2147	3
Barnegat, NJ	9	2	377	47	3394	4	9	2	377	47	3394	4
Cape May, NJ	232	3	363	66	84164	14	232	3	363	66	84164	14
Long Beach, NJ	812	2	375	51	304571	12	812	2	375	51	304571	12
Point Pleasant, NJ	237	3	362	66	85772	10	237	3	362	66	85772	10
Wildwood, NJ	119	3	340	79	40455	4	119	3	340	79	40455	4
Shinnecock, NY	53	2	220	51	11646	12	53	2	220	51	11646	12
Point Judith, RI	47	3	177	56	8321	11	47	3	177	56	8321	11
Chincoteague, VA	580	4	374	62	216738	16	580	4	374	62	216738	16
Hampton, VA	33	3	196	74	6479	12	33	3	196	74	6479	12
Newport News, VA	9	3	271	67	2438	4	9	3	271	67	2438	4
Homeport												
Barnstable, MA	175	1	131	43	22880	4	175	1	131	43	22880	4
Chatham, MA	131	3	357	40	46814	4	131	3	357	40	46814	4
Fairhaven, MA	113	3	333	59	37593	5	111	3	338	59	37499	4
Gloucester, MA	415	2	246	40	101930	13	415	2	246	40	101930	13
New Bedford, MA	183	3	254	57	46567	31	175	3	263	56	46076	23
Newburyport, MA	141	2	203	41	28578	7	131	2	214	42	28066	6
Provincetown, MA	340	2	253	57	86150	10	339	2	254	57	86100	9
Rockport, MA	67	2	226	42	15165	4	67	2	226	42	15165	4
Sandwich, MA	294	2	142	42	41745	5	294	2	142	42	41745	5
Wellfleet, MA	199	2	254	47	50585	3	199	2	254	47	50585	3
Ocean City, MD	11	2	273	51	3001	3	*	*	*	*	*	2
Bucks Harbor, ME	130	3	299	38	38855	3	130	3	299	38	38855	3
Owls Head, ME	143	3	302	39	43184	4	143	3	302	39	43184	4
Rockland, ME	61	3	290	63	17661	3	61	3	290	63	17661	3
Stonington, ME	148	2	200	40	29529	6	126	2	225	40	28311	5
Beaufort, NC	49	3	317	72	15528	4	48	3	322	72	15438	3
Belhaven, NC	122	4	374	57	45686	3	122	4	374	57	45686	3
Oriental, NC	36	3	276	56	9918	3	36	3	276	56	9918	3
Wanchese, NC	15	3	224	75	3356	5	15	3	224	75	3356	5
Hampton, NH	20	2	116	41	2326	3	*	*	*	*	*	2
Seabrook, NH	14	1	197	41	2757	3	*	*	*	*	*	2
Barnegat Light, NJ	834	2	375	51	312740	12	834	2	375	51	312740	12
Cape May, NJ	62	3	290	66	17949	4	62	3	290	66	17949	4
Point Pleasant, NJ	47	3	213	81	10016	5	45	4	219	82	9873	3
Shinnecock, NY	19	2	135	51	2570	6	17	2	143	50	2437	4
Narragansett, RI	15	3	164	58	2462	3	15	3	164	58	2462	3
Point Judith, RI	43	3	158	57	6793	11	40	3	166	56	6631	8
Norfolk, VA	12	3	160	66	1919	4	12	3	160	66	1919	4
Alternative 3b						Alternative 3c						

Port Landed	No. of Trips	Ave. crew size	Ave. lb.	Ave. vessel length	Total lb. landed	No. of vessels	No. of Trips	Ave. crew size	Ave. lb.	Ave. vessel length	Total lb. landed	No. of vessels
Barnstable, MA	64	3	323	51	20671	9	64	3	323	51	20671	9
Chatham, MA	715	3	329	41	235431	24	715	3	329	41	235431	24
Gloucester, MA	476	2	233	40	110952	24	476	2	233	40	110952	24
New Bedford, MA	81	3	147	66	11887	42	81	3	147	66	11887	42
Newburyport, MA	213	2	243	41	51853	9	213	2	243	41	51853	9
Plymouth, MA	70	2	140	47	9833	7	70	2	140	47	9833	7
Provincetown, MA	511	3	277	58	141714	22	511	3	277	58	141714	22
Rockport, MA	66	2	216	42	14241	6	66	2	216	42	14241	6
Sandwich, MA	508	1	142	41	72193	11	508	1	142	41	72193	11
Scituate, MA	58	2	147	39	8548	3	58	2	147	39	8548	3
Ocean City, MD	46	2	302	44	13879	6	46	2	302	44	13879	6
Bucks Harbor, ME	11	3	166	43	1823	3	11	3	166	43	1823	3
Stonington, ME	63	1	86	40	5433	4	63	1	86	40	5433	4
Beaufort, NC	10	3	185	73	1848	3	10	3	185	73	1848	3
Wanchese, NC	8	3	237	60	1893	5	8	3	237	60	1893	5
Portsmouth, NH	53	3	205	39	10839	3	53	3	205	39	10839	3
Seabrook, NH	11	1	195	42	2147	3	11	1	195	42	2147	3
Barnegat, NJ	9	2	377	47	3394	4	9	2	377	47	3394	4
Cape May, NJ	232	3	363	66	84164	14	232	3	363	66	84164	14
Long Beach, NJ	812	2	375	51	304571	12	812	2	375	51	304571	12
Point Pleasant, NJ	237	3	362	66	85772	10	237	3	362	66	85772	10
Wildwood, NJ	119	3	340	79	40455	4	119	3	340	79	40455	4
Shinnecock, NY	53	2	220	51	11646	12	53	2	220	51	11646	12
Point Judith, RI	47	3	177	56	8321	11	47	3	177	56	8321	11
Chincoteague, VA	580	4	374	62	216738	16	580	4	374	62	216738	16
Hampton, VA	33	3	196	74	6479	12	33	3	196	74	6479	12
Newport News, VA	9	3	271	67	2438	4	9	3	271	67	2438	4
Homeport												
Barnstable, MA	175	1	131	43	22880	4	175	1	131	43	22880	4
Chatham, MA	*	*	*	*	*	2	*	*	*	*	*	2
Fairhaven, MA	108	3	344	60	37199	3	108	3	344	60	37199	3
Gloucester, MA	405	2	249	40	100725	11	405	2	249	40	100725	11
New Bedford, MA	160	3	278	55	44500	16	140	2	297	53	41645	10
Newburyport, MA	127	2	218	41	27731	5	85	2	234	41	19921	3
Provincetown, MA	339	2	254	57	86100	9	339	2	254	57	86100	9
Rockport, MA	67	2	226	42	15165	4	53	2	241	42	12772	3
Sandwich, MA	294	2	142	42	41745	5	275	1	137	41	37581	3
Wellfleet, MA	199	2	254	47	50585	3	199	2	254	47	50585	3
Ocean City, MD	*	*	*	*	*	2	*	*	*	*	*	2
Bucks Harbor, ME	*	*	*	*	*	2	*	*	*	*	*	2
Owls Head, ME	138	3	309	39	42703	3	138	3	309	39	42703	3
Rockland, ME	61	3	290	63	17661	3	61	3	290	63	17661	3
Stonington, ME	122	2	230	40	28058	4	122	2	230	40	28058	4
Beaufort, NC	48	3	322	72	15438	3	48	3	322	72	15438	3
Belhaven, NC	122	4	374	57	45686	3	122	4	374	57	45686	3
Oriental, NC	36	3	276	56	9918	3	36	3	276	56	9918	3
Wanchese, NC	8	3	304	76	2435	3	*	*	*	*	*	2
Hampton, NH	*	*	*	*	*	1	0	0	0	0	0	0
Seabrook, NH	*	*	*	*	*	2	*	*	*	*	*	1
Barnegat Light, NJ	834	2	375	51	312740	12	834	2	375	51	312740	12
Cape May, NJ	62	3	290	66	17949	4	62	3	290	66	17949	4
Point Pleasant, NJ	*	*	*	*	*	2	*	*	*	*	*	1
Shinnecock, NY	4	2	328	52	1312	3	*	*	*	*	*	2
Narragansett, RI	*	*	*	*	*	1	*	*	*	*	*	1
Point Judith, RI	*	*	*	*	*	1	*	*	*	*	*	1
Norfolk, VA	11	3	158	68	1735	3	*	*	*	*	*	2

Source: Year 2003 logbook data and NE permit data. Note: does not include ports with only one or two vessels, for confidentiality. See table 2.

Table 61. Most affected port-communities, census demographic information (2000)

	Stoning ton	Barnstabl e (Town)	Sandwich	Provincet own	Newburyp ort	Barneгат Light	Chinco -teague
Total Population, 2000	1121	47821	3038	3173	17242	772	4317
Percent Male	47.0	47.9	46.3	53.8	46.7	49.9	48.1
Percent Female	53.0	52.1	53.7	46.2	53.3	50.1	51.9
Total Population, 1990	1252	40958	2998	3374	16351	681	3572
Median age (years)	41.6	42.3	47.5	45.4	40.9	54.9	46.1
% 18 years and over	76.6	78	80.9	92.4	79.3	85.6	82
% 65 years and over	18.3	20.1	23.9	18.3	14	34.3	20.9
% White	98.4	91.9	98.2	88.2	98.1	100.0	98.0
% Black or African American	0.0	2.2	0.8	6.6	0.2	0.0	0.2
% American Indian and Alaska Native	0.7	0.6	0.0	0.8	0.0	0.0	0.0
% Asian	0.2	0.8	0.0	0.6	0.6	0.0	0.8
% Some other race	0.0	1.8	0.0	0.8	0.5	0.0	0.3
% Two or more races	0.7	2.7	1.1	3.0	0.6	0.0	0.7
% Hispanic or Latino (of any race)	0.4	1.9	0.4	2.7	1.5	0.3	0.3
Percent of Population with at least high school completed	76.7	90.4	88.2	85.1	90.3	92.1	71.4
Unemployment Rate (Population 16 and over)	6.6	4.7	2.9	20.4	2.9	2.6	6.6
Percent employed in occupation category (Farming, fishing and forestry)	20.9	0.4	1.0	1.0	0.2	6.5	6.5
Median Household Income	28894	46811	56184	32731	58557	52361	28514
Percent of Aggregate Income from Social Security and Retirement	16.4	14.0	17.6	9.9	6.3	22.1	18.8
Percent of Population with income below poverty	12.7	8.8	4.5	15.5	5.2	4.7	12.7
Housing for seasonal, recreational, or occasional use	38.9	19.4	18.0	48.1	2.6	63.1	43.6
Port landings in comparison to aggregate census income	103.8	0.2	5.5	4.7	0.2	54.5	2.8
Associated Homeport landings in comparison to aggregate census income	1.4	0.2	2.0	2.9	0.1	53.8	0.4

Table 62. Scallop trips by general category vessels—2004

	Vessels Reporting	Trips	Landing Events	Average Scallop Landing	Landings Over 400 Pounds	Average Percent of Total Landings per Trip	Total Scallop Landings	Percent of Scallops Landed
All trips landing scallops	145	726	732	348.4	112	14.9%	255,050	100.0%
Trips with >50% scallops	81	576	581	410.9	110	99.5%	238,711	93.6%
Scallop dredges	63	484	484	450.6	107	99.9%	218,082	85.5%
Scallop trawls	7	36	36	180.7	2	87.9%	6,505	2.6%

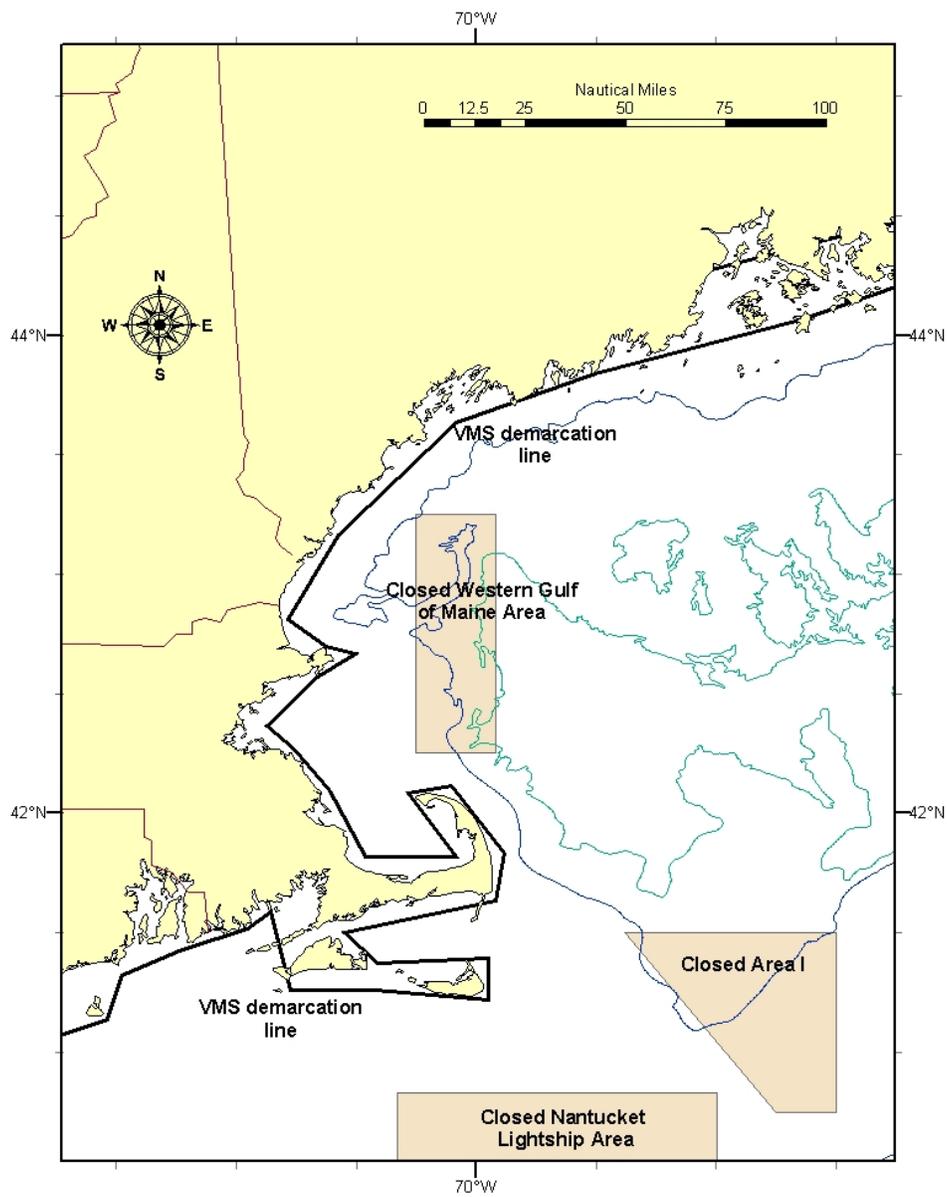


Figure 9-1. Georges Bank VMS Demarcation Line

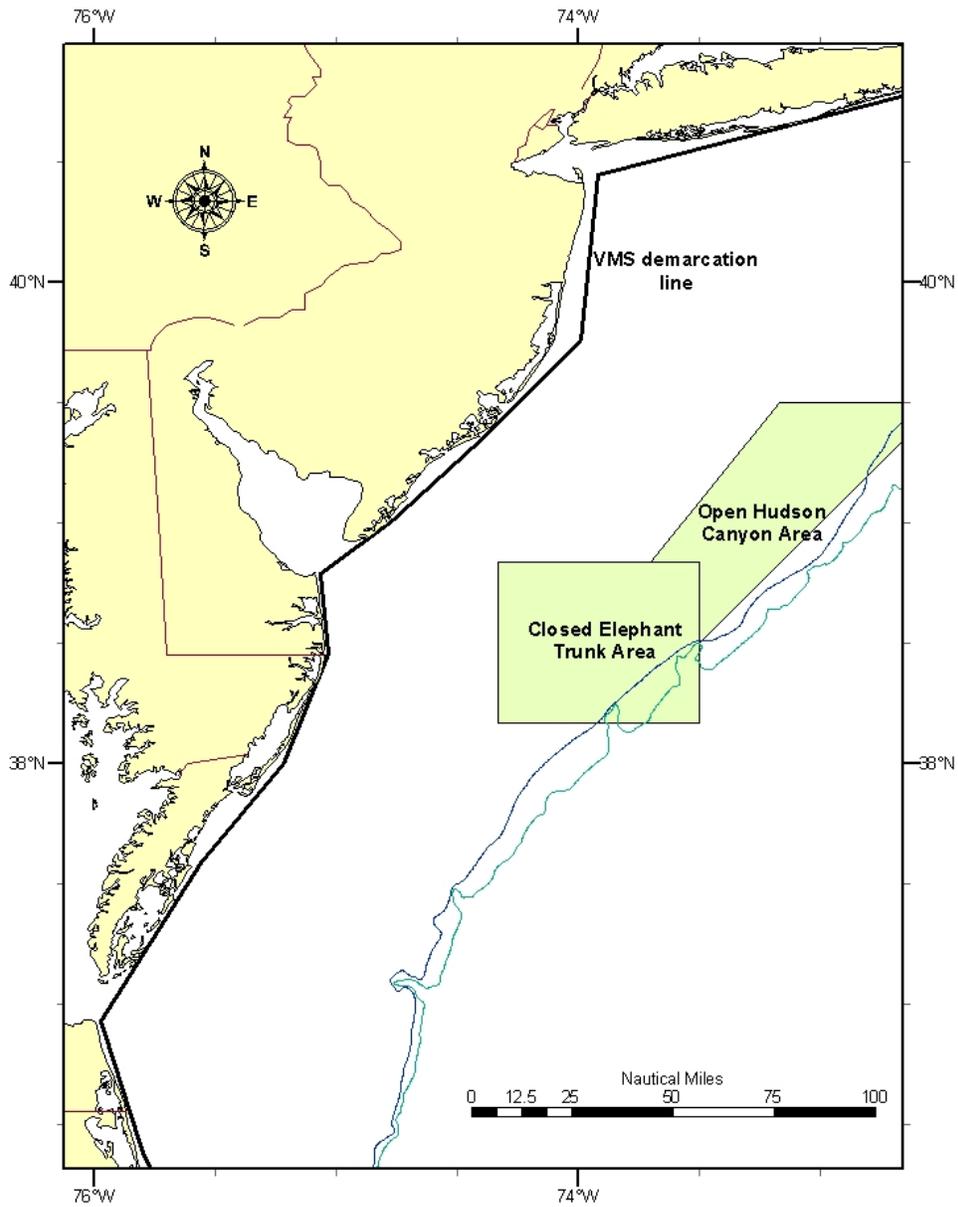


Figure 9-2. Mid-Atlantic VMS Demarcation Line

10 GLOSSARY

Annual fishing mortality target – a rate of removals that when applied over a fishing year is consistent with the objectives of the FMP.

Annual potential increase – the percent increase in total or relative biomass that would occur during a one-year interval if no fishing occurs (i.e. zero fishing mortality). Projection models take into account the size frequency distribution of the population, the expected growth of individuals at each size class, and natural mortality.

Area based management – in contrast to resource wide allocations of TAC or days, vessels would receive authorization to fish in specific areas, consistent with that area's status, productivity, and environmental characteristics. Area based management does not have to rotate closures to be effective.

Area rotation – a management system that selectively closes areas to fishing for short to medium durations to protect small scallops from capture by commercial fishing until the scallops reach a more optimum size. Closed areas would later re-open under special management rules until the resource in that area is similar to other open fishing areas. Area rotation is a special subset of area based management that relies on an area closure strategy to achieve the desired results when there are sufficient differences in the status of the management areas.

Bmax – a theoretical value when the scallop stock with median recruitment is fished at Fmax. For a stock without a stock-recruitment relationship, like sea scallops, this stock biomass produces MSY when fished at Fmax.

Biological Opinion – an ESA document prepared by either the NMFS or USFWS describing the impacts of a specific Federal action, including an FMP, on endangered or threatened species. The Biological Opinion concludes whether or not the NMFS/USFWS believe that the actions are likely to jeopardize the continued existence of any of the protected species, and provides recommendations for avoiding those adverse impacts.

Closed rotation area – an area that is temporarily closed to postpone mortality on abundant, small scallops.

Consumer surplus - The net benefit consumers gain from consuming fish based on the price they would be willing to pay for them. Consumer surplus will increase when fish prices decline and/or landings go up.

Contagious recruitment – similar amounts of scallop settlement in related areas. When scallop settlement is above average in one area, it tends to be above average in neighboring areas.

Controlled access – a program that allows fishing in a specified area under rules that differ from the normal fishery management rules that apply to normal, open fishing areas. Often controlled access areas have a scallop TAC, a scallop possession limit, and area-specific trip and DAS allocations. Other regulations may apply to achieve certain conservation objectives.

Critical habitat – an area that has been specifically designated under the ESA as an area within the overall geographical region occupied by an endangered or threatened species on which are found the physical or biological features essential to conservation of the species.

Day-at-sea (DAS) – is each 24-hour period that a vessel is on a scallop trip (i.e. not declared out of the day-at-sea program) while seaward of the Colregs line.

Day-at-sea tradeoff – the number of days automatically charged for fishing for scallops in designated areas, regardless of the time actually fished.

Day-at-sea use – the amount of time that a vessel spends seaward of the Colregs line on a scallop trip.

Days-at-sea accumulated – days charged against a vessel's annual day-at-sea allocations, including day-at-sea tradeoffs. Trips in controlled access areas are often charged a pre-established amount of DAS, regardless of the actual duration of the trip.

Endangered species – a species that is in danger of extinction throughout all or a significant portion of its range.

ESA - Endangered Species Act of 1973 as amended.

Exploitable biomass - the total meat weight of scallops that are selected by fishing, accounting for gear and cull size, at the beginning of the fishing year .

Fmax – a fishing mortality rate that under equilibrium conditions produces maximum yield-per-recruit. This parameter serves as a proxy for Fmsy for stocks that do not exhibit a stock-recruitment relationship, i.e. recruitment levels are driven mostly by environmental conditions.

Fixed costs - These costs include expenses that are generally independent of the level of fishing activity, i.e., DAS-used, such as insurance, license, half of repairs, office expenses, professional fees, dues, utility, interest, dock expenses, bank, rent, store, auto, travel, and employee benefits.

Fixed duration closure – a rotational closure that would be closed for a pre-determined length of time.

Fixed rotational management area boundaries – pre-defined specifications of areas to be used to manage area rotation.

FMP – Fishery Management Plan.

Heterogeneity – spatial differences in the scallop resource, life history, or the marine environment.

Incidental Take Statement – a section of a Biological Opinion that allows the take of a specific number of endangered species without threat of prosecution under the ESA. For the Scallop FMP, an incidental take statement has been issued for a limited number of sea turtles to be taken by permitted scallop vessels.

IWC – International Whaling Commission; an international group that sets international quotas and/or establishes moratoria on harvesting of whales.

Localized overfishing – a pattern of fishing that locally exceeds the optimum rate, considering the age structure of the population, recruitment, growth, and natural mortality. This effect may cause mortality that is higher than appropriate on small scallops while under-fishing other areas with large scallops (assuming that the overall amount of effort achieves the mortality target for the entire stock). The combined effect is to reduce the yield from the fishery through the loss of fast-growing small scallops and the loss of biomass from natural mortality on very large scallops.

Long-term closure area – an area closed to scallop fishing for reasons other than achieving area rotation objectives. These areas may be closed to minimize habitat impacts, avoid bycatch, or for other reasons.

LPUE – Similar to catch per unit effort (CPUE), commonly used terminology in fisheries, LPUE in the Scallop FMP refers to the amount of landings per DAS a vessel achieves. This value is dependent on the scallop abundance and catch rate, but also depends on the shucking capacity of the crew and vessel, since most of the scallop catch must be shucked at sea. Since discard mortality for sea scallops is low, discards are not included as a measure of catch in the calculation of LPUE.

Magnuson Act – Magnuson Stevens Act of 1976 as amended.

Meat yield – the weight of a scallop meat in proportion to the total weight or size of a scallop. Scallops of similar size often have different meat yields due to energy going into spawning activity or due to the availability of food.

MMPA - Marine Mammal Protection Act of 1972 as amended.

NAAA - The Northwest Atlantic Analysis Area was a geographic area used in the habitat metric analysis. It's boundary to the North is the Hague line, the NC/SC border to the South, the coastline to the West, and the 500 fathom depth contour to the East.

NEPA – National Environmental Policy Act of 1972 as amended.

Net economic benefits - Total economic benefits measure the benefits both to the consumers and producers and are estimated by summing consumer and producer surpluses. Net economic benefits show, however, the change in total economic benefits net of no action.

NMFS – National Marine Fisheries Service.

Nominal versus real economic values - The nominal value of fishing revenues, prices, costs and economic benefits are simply their current monetary values unadjusted for inflation. Real values are obtained, however, by correcting the current values for the inflation.

Open area – a scallop fishing area that is open to regular scallop fishing rules. The target fishing mortality rate is the resource-wide target.

Operating expenses or variable costs - The operating costs measures the expenses that vary with the level of the fishing activity including food, ice, water, fuel, gear, supplies and half of the annual repairs.

Opportunity cost - The cost of forgoing the next best opportunity. For example, if a fisher's next best income alternative is to work in construction, the wage he would receive from construction work is his opportunity cost.

PDT – Scallop plan Development Team; a committee of experts that contributed to and developed the technical analysis and evaluation of alternatives.

Potential biomass increase - the annual change in the total biomass of scallop meats if no fishing occurs.

Producer surplus -Producer surplus for a particular fishery shows the net benefits to harvesters, including vessel owners and the crew, and is measured by the difference between total revenue and operating costs.

Recently re-opened area – an area that has recently re-opened to scallop fishing following a period of closure that postponed mortality on small scallops. The annual TAC and target fishing mortality rate is defined by time-averaged fishing mortality that allows the area-specific target to deviate from the norm. Special rules (i.e. day-at-sea allocations or trips with possession limits and day-at-sea tradeoffs may apply.

Recruitment – a new year class of scallops measured by the resource survey. Scallop larvae are pelagic and settle to the bottom after 30-45 days after spawning. The resource survey, using a lined dredge, is able to capture scallops between 20 – 40 mm, but more reliably at between 40 and 60 mm. Recruitment in this document refers to a new year class that is observable in the survey, at around two years after the eggs had been fertilized and spawned.

Recruitment overfishing – a high level of fishing mortality that causes spawning stock biomass to decline to levels that significantly depresses recruitment. Because sea scallops are very productive, this mortality rate is substantially higher than F_{max} and the biomass where recruitment is threatened is much lower than the present biomass target.

SAFE Report – A Stock Assessment and Fishery Evaluation Report, required by the Sustainable Fisheries Act. This report describes the present condition of the resource and managed fisheries, and in New England it is prepared by the Council through its Plan Development Teams (PDT) or Monitoring Committees (MC). The Scallop PDT is the MC for the Atlantic Sea Scallop FMP and prepares this report.

Scallop productivity – the maximum average amount of biomass that can be taken from a defined area.

Shucking – a manual process of cutting scallop meats from the shell and viscera.

Size selection – in the scallop fishery, size selection occurs at two points: when the fishing gear captures the scallop and when the crew culls the catch before shucking. At the first point, size selection depends on escapement through the dredge rings, twine top, or trawl meshes. At the second point, size selection depends on the size of the catch and marketability. Small scallops are less valuable and more time consuming to shuck a pound of meats. These factors influence whether the crew retains scallops at a smaller or larger size. Size selection by the fishery is the combined effect of mortality from landed scallops, from discard mortality, and from non-catch mortality from the fishing gear. Except under certain rare conditions, most of the mortality has been associated with the landed portion of the catch.

TAC – Total allowable catch is an estimate of the weight of scallops that may be captured by fishing at a target fishing mortality rate. The TAC could apply to specific areas under area based management rules.

Take – a term under the MMPA and ESA that means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct with respect to either a marine mammal or endangered species.

Ten-minute square – an approximate rectangle with the dimensions of 10-minutes of longitude and 10-minutes of latitude.

Threatened species – any species that is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

11 LIST OF PREPARERS AND AGENCIES CONSULTED

This document was prepared through the cooperative efforts of the Scallop PDT and Framework 17 Working Group consisting of Dr. Demet Haksever, Pete Christopher, Dr. Stan Wang, Dr. Julie Olson, and Gino Moro and the staffs of NMFS and the New England Fishery Management Council.

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11.2 Agencies Consulted

The following agencies were consulted in the preparation of this document:

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New England Fishery Management Council, which includes representatives from the following additional organizations:
Connecticut Department of Environmental Protection
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Massachusetts Division of Marine Fisheries
New Hampshire Fish and Game
Maine Department of Marine Resources
National Marine Fisheries Service, NOAA, Department of Commerce
United States Coast Guard, Department of Homeland Security

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