DRAFT
Amendment 11 to the Atlantic Sea Scallop FMP

Including a
Draft Supplemental Environmental Impact Statement and
Initial Regulatory Flexibility Analysis

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

Draft Submission to NMFS:
Final Submission to NMFS:

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AMENDMENT 11 TO THE SEA SCALLOP FISHERY MANAGEMENT PLAN

Proposed Action: Implementation of measures to control capacity and mortality in the general category scallop fishery. Some measures under consideration are: a limited access program and/or hard-total allowable catch (hard TAC) for the general category fishery, approval of a mechanism for voluntary sectors in the general category fishery, establishment of a separate limited entry program for general category fishing in the Northern Gulf of Maine, potential adjustments to limited access scallop fishing under general category rules, allocation of total scallop catch and yellowtail flounder bycatch TAC between the limited access and general category fisheries, measures to allow better and more timely integration of recent data in the scallop management process, and other administrative provisions and adjustments.

Type of Statement: Draft Supplemental Environmental Impact Statement

Responsible Agencies: New England Fishery Management Council
National Marine Fisheries Service

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Abstract:
The New England Fishery Management Council and the NOAA Assistant Administrator for Fisheries propose to adjust measures to control capacity and mortality in the general category scallop fishery through Amendment 11 to the Scallop FMP, pursuant the Magnuson-Stevens Fishery Conservation and Management Act. This document includes a variety of measures the address the goals and objectives of the action. The Council has identified several measures as preferred alternatives for the public comment period. *[Insert a few sentences about which measures are preferred after the April Council meeting].*
This document includes all information and analyses required under the National Environmental Policy Act (NEPA), the M-S Act, the Regulatory Flexibility Act (RFA), and other applicable laws.

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EXCUTIVE SUMMARY

This amendment document and draft supplemental environmental impact statement (DSEIS) presents and evaluates management measures and alternatives to achieve specific goals and objectives for the Atlantic sea scallop fishery. This document was prepared by the New England Fishery Management Council and its Scallop Plan Development Team (PDT), in consultation with the National Marine Fisheries Service (NMFS, NOAA Fisheries) and the Mid-Atlantic Fishery Management Council (MAFMC). This amendment was developed in accordance with the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA, M-S Act) and the National Environmental Policy Act (NEPA), the former being the primary domestic legislation governing fisheries management in the U.S. Exclusive Economic Zone (EEZ). This document also addresses the requirements of other applicable laws (See Section 7.0).

In addition to the no action alternative, the Council is considering limited entry and hard-TAC alternatives to control capacity and mortality in the general category fishery. Within the limited entry alternatives there are numerous qualification alternatives for a limited access program, including different qualification time periods and past landings criteria. There are also various alternatives for how qualifying vessels would receive access to the scallop resource. Specifically, some alternatives are an individual allocation in pounds, or number of trips, and other alternatives consider a hard-TAC for qualified vessels. One stand alone alternative for access is an individual transferable quota alternative, and there is also a stand along hard-TAC option with limited entry. This action also includes specific limited entry permit provisions such as vessel upgrade, replacement, stacking and permit splitting restrictions. There are several alternatives designed to reduce incentive for limited access general category vessels to fish for scallop with trawl gear. This action is also considering a mechanism to allow voluntary sectors in the general category fishery.

This action is also considering measurers that will affect existing limited entry scallop vessels (full-time, part-time and occasional permits). There are alternatives in the document that permit or prohibit limited access vessels to fish under general category. There is also a section that considers allocating a portion of the total scallop catch to the general category fishery. There are several alternatives to allow better and more timely integration of recent data. Lastly, this action is considering several other alternatives not directly related to the main goals and objectives of the action related to a current trawl gear restriction and a higher possession limit of scallops east of the VMS demarcation line.

The Council's preferred alternative at this time includes:
[to be completed after the April Council meeting and Council selects preferred alternatives – list below is as approved by the Scallop Committee only]

- Allocation of 5% of the total scallop TAC to the general category fishery
- Implementation of a limited entry program for the general category fishery

- A vessel would qualify if it had a permit before the control date (November 1, 2004), landings of 1,000 pounds in any year during the 11-year time period of FY1994 through the control date.
- Allocation of access for qualifying vessels would be an individual allocation in trips, maintaining the 400 pound possession limit.
- Individual allocation would be based on a vessels best year indexed by number of years active in the fishery. Each qualifying vessel would receive a percent of the available TAC for general category.
- A separate Northern Gulf of Maine limited entry general category program would be adopted. Vessels could qualify for this permit if they landed at least one 100 pound trip in any fishing year since 1994 through the control date. Access to fish in this area would be at a reduced level (200 pounds per trip) with specific gear restrictions and the entire fishery would be under a hard-TAC. The NGOM area would close to all scallop fishing after the TAC was reached.
- Limited access vessels would be prohibited from fishing under general category unless they qualify under the same qualification criteria selected for the limited entry general category permit. Catch from that component of the fishery would be limited to 0.5% of the total scallop TAC. Qualifying vessels would also receive an individual allocation of trips based on their best year indexed by years active in the fishery.

There are other measures being considered in this action that the Council has not identified as preferred. It is possible that the Council will select on of these measures as part of the final action for these additional topics after the public comment period. The other measures under consideration that have no identified preferred alternative to date are: measures to reduce incentive to fish for scallops with trawl gear, a mechanism to approve voluntary sectors for the general category fishery, monitoring provisions, incidental catch, measures to allow better and more timely integrations of recent data, and other measures not directly related to goals and objectives of Amendment 11.

Summary of Impact Analysis

Analyses of the preferred alternatives as well as all management alternatives considered during the development of this amendment are provided in this document across a series of valued ecosystem components, or VECs. VECs represent the resources, areas, and human communities that may be affected by a proposed management action or alternatives, and by other actions that have occurred or will occur outside the Proposed Action. VECs are the focus of an EIS since they are the "place" where the impacts of management actions are exhibited. An analysis of impacts is performed on each VEC to assess whether the direct/indirect effects of an alternative adds to or subtracts from the effects that are already affecting the VEC from past, present and future actions outside the Proposed Action (i.e., cumulative effects). The VECs identified for Amendment 11 include: Atlantic sea scallop resource, physical environment and EFH, protected species, fishery-related businesses and communities, and other impacts.

The descriptive and analytic components of this document are constructed in a consistent manner. The Affected Environment section of this document traces the history of each

VEC and consequently addresses the impacts of past actions. The Affected Environment section (Section 4.0) is designed to enhance the readers' understanding of the historical, current, and near-future conditions (baselines and trends) in order to fully understand the anticipated environmental impacts of the management alternatives under consideration in this amendment.

To be completed after Council selects preferred alternatives
Impacts on Atlantic Sea Scallop Resource (Section 5.1)

Impacts on Physical Environment and Essential Fish Habitat (EFH) (Section5.2)

Impacts on Protected Resources (Section 5.3)

Impacts on Fishery-Related Businesses and Communities (Section5.4 and 5.5)

Other Impacts (Section 5.6)

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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
CAI – Closed Area I
CAII – 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
DSEIS – Draft Supplemental Environmental Impact Statement
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
FW18 – Framework Adjustment 18 to the Atlantic Sea Scallop Fishery Management Plan
GB – Georges Bank
GOM – Gulf of Maine
HAPC – Habitat Area of Particular Concern
LPUE – Landings per unit effort, usually a DAS in this document
IRFA – Initial Regulatory Flexibility Analysis
MA – Mid-Atlantic
MAFMC – Mid-Atlantic 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
NOAA – National Oceanographic Atmospheric Administration
RIR – Regulatory Impact Review
SAP – Special access program
SARC – Stock Assessment Review Committee
SAW – Stock assessment workshop
SBNMS – Stellwagen Bank Marine Sanctuary
SEIS – Supplemental Environmental Impact Statement
SMAST –School of Marine Science and Technology, University of Massachusetts Dartmouth

SNE – Southern New England
TAC – Total Allowable Catch. This includes discards for finfish species, but not for scallops which have a much lower discard mortality rate.
PDT – Scallop Plan Development Team
U10 – A classification for large scallops, less than 10 meats per pound.
USGS – United States Geological Survey
VIMS – Virginia Institute of Marine Science
VMS – Vessel Monitoring System

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1.0 BACKGROUND AND PURPOSE

1.1 SUMMARY OF PAST MANAGEMENT ACTIONS

The Atlantic Sea Scallop FMP management unit consists of the sea scallop Placopecten magellanicus (Gmelin) resource throughout its range in waters under the jurisdiction of the United States. This includes all populations of sea scallops from the shoreline to the outer boundary of the Exclusive Economic Zone (EEZ). The principal resource areas are the Northeast Peak of Georges Bank, westward to the Great South Channel, and southward along the continental shelf of the Mid-Atlantic.

The management unit also includes populations found within the Gulf of Maine and Cape Cod Bay. These areas include the territorial seas throughout the range, primarily in Maine (ME) and Massachusetts (MA). Fishing for sea scallops within state territorial waters is not subject to regulation under the FMP except for vessels that hold a Federal scallop permit when scalloping in state waters. Nevertheless, sea scallops within state waters are included within the management unit in recognition of market interactions and the need for complementary state management action.

The Council established the Scallop FMP in 1982. A number of Amendments and Framework Adjustments have been implemented since that time to adjust the original plan. Amendment 4 was implemented in 1994 and introduced major changes in scallop management, including a limited access program to stop the influx of new vessels, a day-at-sea (DAS) reduction plan to reduce mortality and prevent recruitment overfishing, new gear regulations to improve size selection and reduce bycatch, a vessel monitoring system to track a vessel's fishing effort, and an annual framework adjustment process to allow certain measures to be modified in response to changes in the fishery including scallop abundance. Limited access vessels were assigned different DAS limits according to which permit category they qualified for: full-time, part-time or occasional. Amendment 4 also established a planned reduction in the annual day-at-sea allocations for vessels with limited access scallop permits.

Also in 1994 Amendment 5 to the Northeast Multispecies FMP closed Closed Area I, Closed Area II, and the Nantucket Lightship Area to scallop fishing, because of concerns over finfish bycatch and disruption of spawning aggregations (See Figure 1).

In 1998, the Council developed Amendment 7 to the Scallop FMP, which was needed to change the overfishing definition, the day-at-sea schedule, and measures to meet new lower mortality targets to comply with new requirement under the Magnuson-Stevens Act. In addition, Amendment 7 also established two new scallop closed areas (Hudson Canyon and VA/NC Areas) in the Mid-Atlantic to protect concentrations of small scallops until they reached a larger size. Amendment 7 further reduced the DAS allocations under a 10-year 'rebuilding' period. Framework Adjustments 12, 14 and 15 to the Scallop FMP later adjusted the DAS allocations upward to meet the Amendment 7 fishing mortality targets.

In 1999 Framework Adjustment 11 to the Scallop FMP allowed the first scallop fishing within portions of the Georges Bank groundfish closed areas since 1994. Scallop resource surveys and

experimental fishing activities had identified areas where scallop biomass was very high due to no fishing in the intervening years. These surveys and experimental fisheries provided more precise estimates of total biomass as well as the distribution and amount of finfish bycatch and allowed the Council to open the southern part of Closed Area II.

In 2000 Framework Adjustment 13 to the Scallop FMP authorized full-time and part-time limited access vessels to take three trips in the southern part of Closed Area II during June 15 to August 14, 2000; one trip in the northeast corner of the Nantucket Lightship Area during August 15 to September 30, 2000; and two trips in the central part of Closed Area I from October 1, 2000 to January 31, 2001.

In 2001 Framework Adjustment 14 to the Scallop FMP implemented a new area access program to the Hudson Canyon and VA/NC Areas since scallop biomass had rapidly increased due to the enhanced survival of the strong 1997 and 1998 year classes, especially in the Hudson Canyon Area. Following the structure of the highly successful area access program for the Georges Bank closed areas in 2000; the framework adjustment allocated trips to limited access vessels and applied a scallop possession limit and a day-at-sea tradeoff. Unlike the Georges Bank closed area access program, however, Framework Adjustment 14 allowed vessels with general category scallop permits to land 100 lbs. of scallop meats from the Hudson Canyon and VA/NC Areas.

Framework Adjustment 15 (2003) to the Scallop FMP continued the measures implemented in Framework Adjustment 14, but increased the Hudson Canyon and VA/NC Area scallop possession limit from 18,000 to 21,000 lbs. per trip. This action was needed to achieve the objectives and fishing mortality target specified in Amendment 7, while the Council developed Amendment 10.

In 2004 Amendment 10 to the Scallop FMP introduced rotation area management and changed the way that the FMP allocates fishing effort for limited access scallop vessels. Instead of allocating an annual pool of DAS for limited vessels to fish in any area, vessels had to use a portion of their total DAS allocation in the controlled access areas defined by the plan, or exchange them with another vessel to fish in a different controlled access area. Vessels could fish their open area DAS in any area that was not designated a controlled access area. The amendment also adopted several alternatives to minimize impacts on EFH, including designating EFH closed areas, which included portions of the groundfish mortality closed areas.

Framework 16 to the Scallop FMP, implemented in November 2004, adjusted DAS allocations and defined the area rotation schedule for part of the 2004 fishing year and the 2005 fishing year. It also included: a) an access program for vessels with general category scallop permits with enhanced reporting requirements and a two-percent TAC set-aside; b) yellowtail flounder TACs and provisions to minimize bycatch; c) changes in finfish possession limits to minimize bycatch and bycatch mortality; d) seasons when scallop fishing would be allowed to minimize bycatch and bycatch mortality; e) enhanced sea sampling to improve precision of bycatch estimates; f) provisions to enhance enforcement monitoring and compliance; and g) a dredge-only restriction for fishing in the access areas to minimize bycatch and bycatch mortality.

Framework 16 also attempted to make the habitat closed area boundaries implemented under Amendment 10 consistent with the areas later implemented under Amendment 13 to the Northeast Multispecies FMP. However, in August 2005, the Court, in Oceana v. Evans, ruled that any revisions to the boundaries under the Scallop FMP must be implemented under a full rule making process via an FMP amendment rather than through the abbreviated rule-making process used in a framework adjustment, and reinstated the EFH closed areas implemented under Amendment 10 to the Scallop FMP. Thus, the habitat closed area boundaries implemented under Amendment 10 are currently in effect. As a result, the remaining areas accessible to scallop vessels under the rotational area management program are substantially smaller in Closed Area I and the Nantucket Lightship Closed Area than anticipated until the court ruling.

Framework 17 to the Scallop FMP was implemented in the fall of 2005. The purpose of the action was to provide more complete monitoring of the general category scallop fleet by requiring that vessels landing more than 40 pounds of scallop meats use monitoring systems (VMS). It revised the broken trip adjustment provision for limited access scallop vessels fishing in the Sea Scallop Area Access Program, by eliminating the broken trip "penalty", which may have had a negative influence on vessel operator decisions and safety at sea.

Framework 18 was implemented on June 15, 2006, which set management measures for fishing years 2006 and 2007. Limited access vessels were allocated a specific number of open area DAS for each fishing year, as well as a maximum number of trips for different access areas depending on their permit category. Specifically, Closed Area II and Nantucket Lightship were open in 2006 under restricted access, and Nantucket Lightship and Closed Area I are open in 2007. General category vessels are also permitted to fish in these access areas with a 400 pound possession limit up to a total number of trips for that component of the fleet. Both areas are subject to a bycatch TAC of yellowtail flounder, and when that bycatch TAC is projected to be caught the area closes to all scallop fishing. The Elephant Trunk area also opens as a result of this action with specific allocation of trips, opening dates, and seasonal closures to reduce potential interactions with sea turtles. An area called Delmarva was closed under this action to protect small scallops found in that area; the area is projected to open in 2010. Other measures were included in the action such as measures related to unused 2005 Hudson Canyon trips, transfer of access area trips to open areas if access areas close early if the YT bycatch TAC is attained, elimination of crew size restrictions in access areas, access area trips exchange program changes, broken trip program changes, and allocations for set-aside programs (1% for observer program and 2% for research).

During development of this action the Council also began developing Scallop Amendment 13 which considered re-activating the industry funded observer program. Since 1999, vessels required to carry an observer are authorized to land more than the possession limit from trips in access areas, and in open areas vessels are charged a reduced amount to help compensate for the cost of an observer. Observers were deployed through a contractual arrangement between National Marine Fisheries Service (NMFS) and an observer provider until June 2004. This arrangement was not renewed because of unresolved legal issues concerning the use of a contract to administer the industry funded observer program. For sometime NMFS funded observers while a solution to this issue was investigated. As funding became insufficient, an emergency rule went into effect that approved a new mechanism to use the observer set-aside funds through

a non-contracted vendor. Amendment 13 was necessary to make this temporary mechanism part of the regulations. The Council selected final measures for that action at the February 2007 Council meeting and it is expected to be implemented sometime in 2007.

The Council also initiated Framework 19 to the Scallop FMP in late 2006 to develop measures for the biennial action for fishing years 2008 and 2009. This action will include specifications for open area DAS for the limited access fishery and the scallop access area program. Depending on what is approved in Amendment 11 for the general category fishery, Framework 19 may also include specific allocation and management measures for the general category fishery if they are selected and approved in Amendment 11.

The Council initiated Phase I of the Essential Fish Habitat Omnibus Amendment in ?. The primary purpose of Phase I was to review EFH designations, consider HAPC alternatives, describe prey species, and evaluate non-fishing impacts. This action was an amendment to all FMPs in this region, and is Amendment 14 to the Scallop FMP. The Council approved Phase I at the February 2007 Council meeting and the document was submitted to NMFS is March 2007. It is expected to be implemented later in 2007.

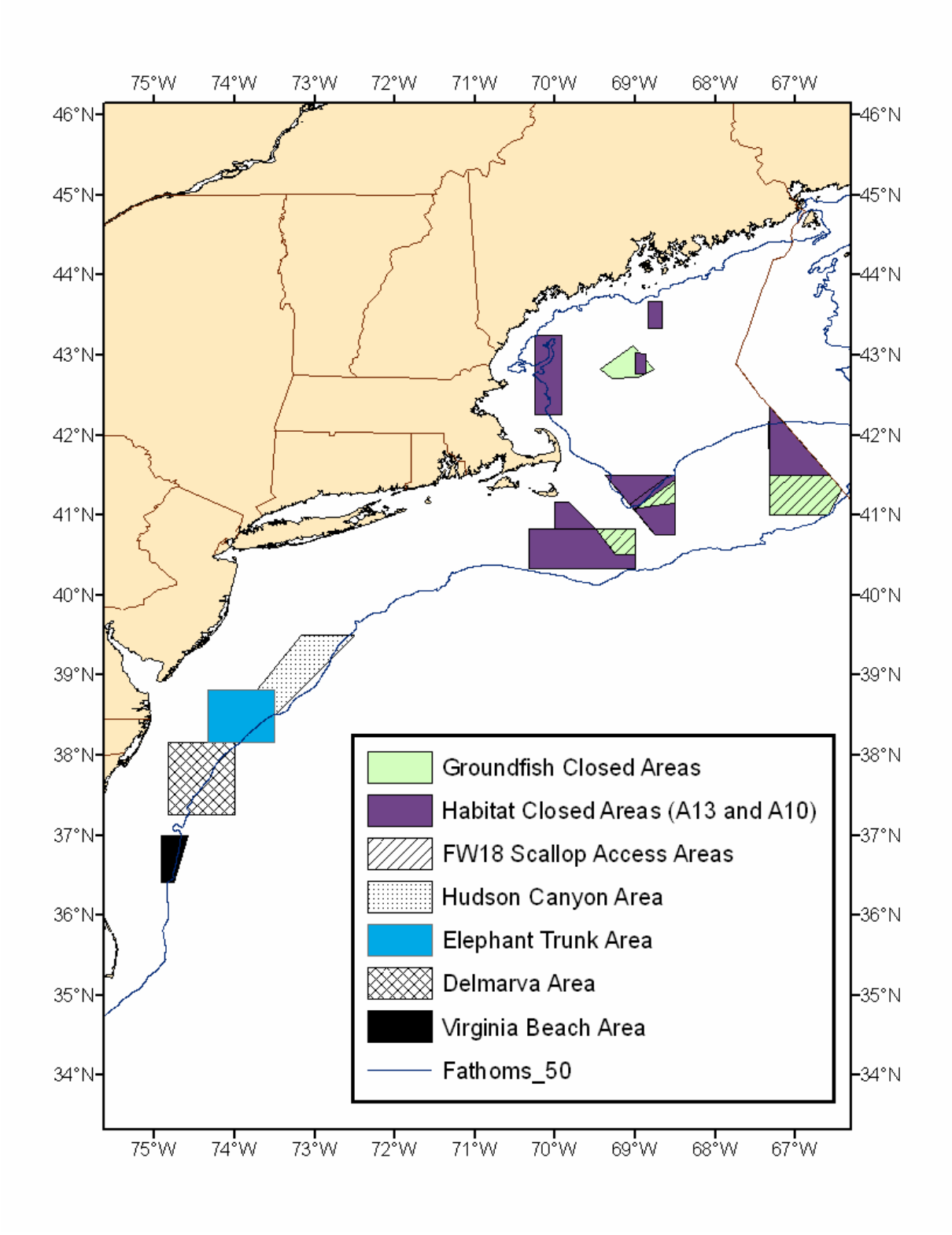
The Council was also developing Amendment 12 to the scallop FMP during development of Amendment 11. Similar to the EFH action, this action is an omnibus amendment to all FMPs in the region and focuses on defining a standardized bycatch reporting methodology (SBRM Amendment). Section 303(a)(11) of the Magnuson-Stevens Fishery Conservation and Management Act requires that all FMPs include "a standardized reporting methodology to assess the amount and type of bycatch occurring in the fishery." The SBRM Omnibus Amendment will ensure that all FMPs fully comply with the act. Amendment 10 and Framework 16 to the Scallop FMP were submitted to NMFS several years ago, and in 2004 Oceana, an environmental organization filed suit in the U.S. District Court challenging the SBRM elements of the FMP. The Court found the actions did not fully evaluate reporting methodologies, did not sufficiently address potentially important scientific evidence, and did not mandate a methodology for bycatch monitoring. Therefore, the Court remanded that the Secretary of Commerce take further action on the SBRM aspects of the Scallop FMP. SBRM is the combination of sampling design, data collection procedures, and analyses used to estimate bycatch and to determine the most appropriate allocation of observers across the relevant fishery modes. The Council has worked with NMFS in development of the SBRM Omnibus Amendment since 2005 and final action is expected in 2007.

Lastly, the Council plans to initiate Framework 20 at the April 2007 Council meeting. Framework 20 will be a limited action in scope that will extend measures implemented by emergency action to prevent overfishing in the 2007 fishing year. At the November 2007 Council meeting the Scallop PDT informed the Council that overfishing is likely to occur in 2007 under status quo measures implemented under Framework 18. The PDT presented several alternatives to reduce fishing mortality and ultimately the Council recommended that NMFS reduce the allocated number of trips for all scallop permit categories in the Elephant Trunk Access Area (ETA), delay the opening of the ETA, and prohibit vessels from possessing more than 50 bushels of in-shell scallops when leaving any controlled access area. NMFS agreed with the Council that the ETA has an unprecedented high abundance of scallops, which needs to be

husbanded with precaution to effectively preserve the long term health of the scallop resource and fishery and implemented these measure by emergency action.[1] This emergency action became effective on December 22, 2006 and will remain effective until June 20, 2007 (180 days). This action can be extended once more for an additional 180 days, but would then expire by the end of December 2007, and could not be extended by emergency action again. Under this scenario, the last two months of the fishing year are left (January-February 2008) and management would revert back to status quo measures under FW18. Specifically higher trips allocations in the Elephant Trunk Area for both limited access and general category fisheries. Therefore, the Council is considering an action that would extend the reduced fishing effort measures under emergency action through the end of the 2007 fishing year. If approved, the action would expire on March 1, 2008, when Framework 19 would be in place. In order for Framework 20 to be in place by the end of December 2007, the Council would have to make final decisions at the June 2007 Council meeting.

[1] The emergency rule published by NMFS on December 22, 2007 (**71 FR 76945**) included all measures recommended by the Council, except the prohibition on a vessel leaving an access area with more than 50 bu. of in-shell scallop was limited to the ETA only, not all access areas as recommended by the Council.

Figure 1 – Boundaries for scallop management areas



1.2 PURPOSE AND NEED

The primary need for this action is to implement more effective management measures to control fishing mortality by the general category sector of the scallop fishery. The first purpose of this amendment is to consider measures that will address capacity and fishing mortality in the general category fishery and allow the Council to develop alternatives that will more directly control the level of mortality from the general category fleet. This amendment is designed to meet all the requirements of the Magnuson-Stevens Fishery Conservation and Management Act, as well as other applicable laws.

To help focus this amendment during its development, the Council approved policy guidance at the January 2006 Council meeting. This guidance was used during scoping to help define the scope of issues that would be considered during the amendment. Some of this policy guidance has been changed related to statements about overfishing because based on an updated assessment completed in 2006, overfishing is no longer occurring.
The policy guidance reads:

> *Amendment 11 will focus on addressing capacity in the general category fishery by considering measures that will better control fishing mortality by this sector. Specifically, the amendment will consider limited entry and implementation of a hard total allowable catch (hard TAC) to prevent overfishing. This amendment will not consider measures that maintain the general category sector as an open access fishery with input controls as the only mechanism to manage general category effort (i.e. possession limits and crew restrictions).*

A secondary need identified for this action is related to allowing for better and more timely integration of sea scallop assessment results in the management process. The scallop fishing year is out of sync with the framework adjustment process and the timing of when survey data become available for analysis. As a result, actions have not been implemented at the start of the fishing year, TACs have been misestimated due to reliance on older data, and extra actions have been required to compensate. Therefore, the second purpose of this action is to consider measures that will address this mismatch to improve timing issues and allow for the use of the most recent data for management of the scallop resource.

1.3 VISION OF GENERAL CATEOGRY FISHERY

The Council recognizes that the general category scallop fishery has changed since development and implementation of Amendment 4 in 1994. While some of the participants are the same, many have changed and fishing behavior has evolved with time. The general category scallop fishery has been and still is very diverse. This component of the fishery is prosecuted by vessels of different size and gear types. For example, some general category vessels fish for scallops full-time but only seasonally, another component of the fleet lands scallops above incidental levels while fishing for other species, and some are full-time day boat vessels that target scallops year round.

This action will implement measures that will control capacity and mortality in the general category scallop fishery. In order to accommodate this diverse fleet, this amendment will consider a range of measures that take these differences into account. Specifically, this action is

considering a limited entry program, a hard TAC and other management measures to control capacity and mortality.

The overall intent of this action is to stabilize capacity and prevent overfishing from the general category fishery, and in doing so, the Council's vision of this general category fleet from this point forward is to maintain the diverse nature and flexibility within this component of the scallop fleet. Specifically, the Council intends to consider measures that will control mortality from this component of the fleet, but preserve the ability for vessels to participate in the general category fishery at different levels. This Council recognizes the importance of this sector of the fishery for small fishing communities, as a component of overall catch for some individual vessel owners, and the value this "dayboat" scallop product has in the scallop market. Overall, the Councils' vision of the general category fishery after Amendment 11 is implemented is a fleet made up of relatively small vessels, with possession limits to maintain the historical character of this fleet and provide opportunities to various participants including vessels from smaller coastal communities.

1.4 NOTICE OF INTENET AND SCOPING

The New England Fishery Management Council published a Notice of Intent (NOI) to announce its intent to develop Amendment 11 and prepare a supplemental EIS to analyze the impacts of the proposed management alternatives on February 6, 2006. The purpose of the NOI was to alert the interested public of the re-commencement of the scoping process and to provide for public participation in compliance with environmental documentation requirements.

NEPA provides a mechanism for identifying and evaluating environmental issues associated with Federal actions and for considering a reasonable range of alternatives to avoid or minimize adverse impacts to the extent practicable. The scoping process is the first and best opportunity for the public to raise issues and concerns for the Council to consider during the development of the amendment. The Council relies on input during scoping to both identify management measures and develop alternatives that meet the objectives of the Scallop FMP.

The Council approved a scoping document at the January 2006 Council meeting. The scoping document was available for the public to use during the scoping period from February 6 – March 6, 2006. Three scoping hearings were held in February 2006 and over 50 written comments were submitted during the scoping period. Comments received during scoping were considered carefully by the Council when developing the management alternatives under consideration in this amendment. A detailed summary of the scoping hearings and written scoping comments received is provided in Section 7.1.2. Appendix I includes copies of all the written scoping comments received.

2.0 GOALS AND OBJECTIVES

The Council has identified two goals and several objectives for Amendment 11 to the Scallop Fishery Management Plan. **The primary goal is to control capacity and mortality in the general category scallop fishery. The secondary goal is to allow for better and more timely integration of sea scallop assessment results in the management process.**

The general category scallop fishery is currently an open access fishery that was created and limited in Amendment 4 when limited access was implemented. Open access means any vessel that wants to apply for a permit can; there are no specific qualifications to receive a general category permit. The main control on mortality for this sector of the scallop fishery is a daily possession limit. Since implementation of Framework 17 (December 1, 2005), if a vessel intends to land more than 40 pounds of scallops per trip, that vessel is required to have a vessel monitoring system (VMS). If a vessel has VMS it is able to apply for a general category "B" permit, and that vessel can land up to 400 pounds of scallops per trip, rather than up to 40 pounds, the daily limit for general category "A" permits.

Since 1999, there has been considerable growth in fishing effort and landings by vessels with general category permits, primarily as a result of resource recovery and higher scallop prices. This additional effort has been a contributing factor to why the FMP has been exceeding the fishing mortality targets. Therefore, this amendment is considering a range of measures to reduce fishing mortality by this sector of the fishery, improving the ability of this plan to prevent overfishing of the scallop resource.

The second goal is to allow for better and more timely integration of sea scallop assessment results in the management process. As stated earlier, the scallop fishing year is out of sync with the framework adjustment process and the timing of when survey data become available for analysis. As a result, actions have not been implemented at the start of the fishing year, TACs have been misestimated due to reliance on older data, and extra actions have been required to compensate. A change in the fishing year is needed to correct for new analytic requirements for framework actions, extra steps in the framework approval process, and the higher uncertainty in area management results caused by using year-old data when the Council develops and analyzes management alternatives.

2.1 OBJECTIVES OF AMENDMENT 11

In order to achieve the two goals described in Section 2.0, the Council has identified the following list of objectives:

1. Allocate a portion of the total available scallop harvest to the general category scallop fishery (Section 3.1.7).
2. Establish criteria to qualify a number of vessels for a limited entry general category permit (Section 3.1.2).
3. Develop measures to prevent the limited entry general category fishery from exceeding their allocation (Section 3.1.2).
4. Develop measures to address incidental catch of scallops while fishing for other species (Section 3.1.8).
5. Determine means to incorporate the most recent sea scallop science and assessment results in management decisions (Section 3.2).

It is understood that when establishing criteria to qualify a number of vessels for a limited entry general category permit (Objective #2), Section 303 (b) (6) of the Magnuson-Stevens Act will guide the decisions made related to qualification criteria. Section 303 (b) (6) reads:

Establish a limited entry access system for the fishery in order to achieve optimum yield if, in developing such system, the Council and the Secretary take into account—
(A) present participation in the fishery, (B) historical fishing practices in, and dependence on, the fishery, (C) the economics of the fishery, (D) the capability of fishing vessels used in the fishery to engage in other fisheries, (E) the cultural and social framework relevant to the fishery and any affected fishing communities, and (F) any other relevant considerations.

3.0 MANAGEMENT ALTERNATIVES UNDER CONSIDERATION

3.1 MEASURES TO CONTROL CAPACITY AND MORTALITY IN THE GENERAL CATEGORY SCALLOP FISHERY (GOAL #1)

3.1.1 No Action

Under this alternative the general category fishery would remain an open access fishery. No changes to the current permit system for the general category scallop fishery would be implemented under this alternative.

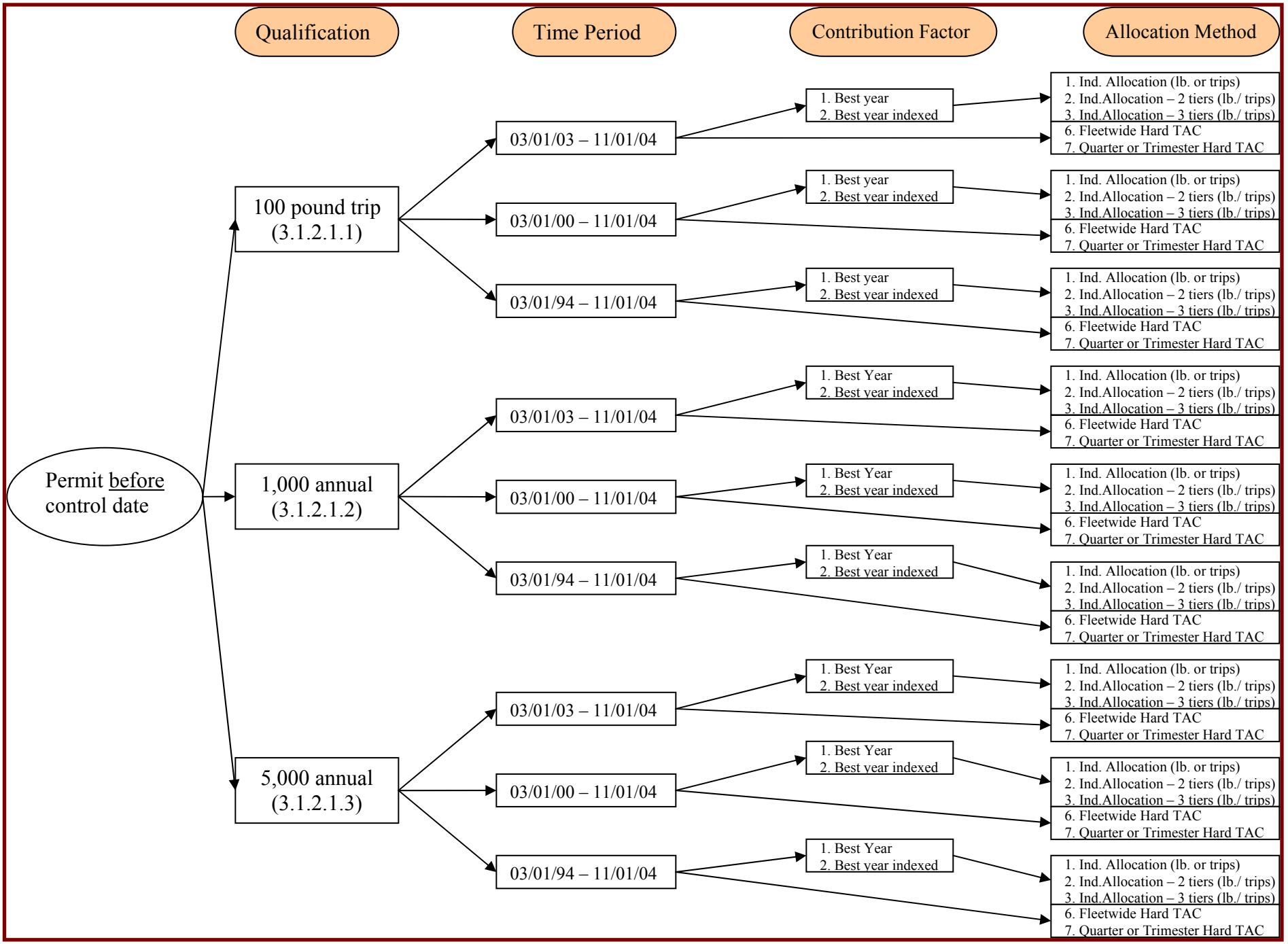
Rationale: This alternative is warranted if the Council determines that current regulations are sufficient to control capacity and mortality in the general category fishery.

3.1.2 Limited Entry (Objective #2 and #3)

In order to fish under general category rules a vessel would have to qualify for a limited access general category permit. All other vessels that do not qualify would be permitted to fish for scallops under incidental catch rules. The Council recommends three qualification criteria alternatives, three qualification time periods, two ways to calculate an allocation amount, and seven overall strategies for allocating access to vessels that qualify for a permit. Figure 2 summarizes the various alternatives and depicts how they can be packaged together.

Rationale: This alternative is consistent with the primary goal of this amendment to control capacity and mortality in the general category scallop fishery, as well as Objective #2 to establish criteria to qualify a number of vessels for a limited entry general category permit.

Figure 2 – Summary of alternatives under consideration for a limited entry general category permit (qualification criteria, qualification time period, contribution factor alternatives, and allocation methods)
(Note: Two stand alone allocation alternatives are not included in this matrix because the qualification criteria and time periods are specified in the alternative - Alternative 3.1.2.4.4 and Alternative 3.1.2.4.5).
(Figure on the next page)


Qualification
Time Period
Contribution Factor
Allocation Method
Permit before control date
100 pound trip (3.1.2.1.1)
1,000 annual (3.1.2.1.2)
5,000 annual (3.1.2.1.3)
03/01/03 – 11/01/04
03/01/00 – 11/01/04
03/01/94 – 11/01/04
1. Best year
2. Best year indexed
1. Best Year
2. Best year indexed
1. Ind. Allocation (lb. or trips)
2. Ind.Allocation – 2 tiers (lb./ trips)
3. Ind.Allocation – 3 tiers (lb./ trips)
6. Fleetwide Hard TAC
7. Quarter or Trimester Hard TAC

3.1.2.1 Qualification criteria alternatives

The Council recommends that three qualification criteria alternatives be considered. Both alternatives include having a general category scallop permit before the control date and some level of historical landings criteria. If a vessel meets the criteria selected from this section, and its landings are during the qualification time period selected in Section 3.1.2.2, then it will be considered for a limited access general category permit. If a vessel does not meet the criteria selected in this section, it can get an incidental scallop permit and land/possess scallops under the restrictions of that permit.

Rationale: Three alternatives are being considered. The first, landings of 100 or more pounds of scallop meat on one trip, is intended to include vessels with at least one trip above an incidental level of scallop catch while fishing for most other species. This alternative is the most inclusive. The second alternative is annual landings of 1,000 pounds in any fishing year during the qualification time period selected. The intent of this alternative is to include vessels that would be above an annual level of incidental scallop catch while fishing for other species. The last alternative is annual landings of 5,000 pounds in any fishing year during the qualification time period selected. This poundage was selected as an amount that would further reduce capacity as compared to the other alternatives under consideration, and it is the most restrictive in terms of the number of vessels that could qualify.

3.1.2.1.1 Permit before the control date and landings of 100 pounds or more on any one trip during the qualification time period

In order to qualify under this alternative a vessel would have to have had a permit before the control date (November 1, 2004) and landed at least one trip with 100 pounds or more of scallops (in meat weight). This poundage was selected as an amount that would be above an incidental level of scallop catch while fishing for most other species. A vessel would qualify for a limited access permit if it had a permit before the control date and at least one trip of 100 pounds of scallops or more during the qualification time period selected in Section 3.1.2.2.

3.1.2.1.2 Permit before the control date and annual landings of 1,000 pounds in one or more years during the qualification time period

In order to qualify under this alternative a vessel would have to have had a permit before the control date (November 1, 2004) and landed at least 1,000 pounds of scallops (in meat weight) during one fishing year. This poundage was selected as an amount that would be above an annual level of incidental scallop catch while fishing for most other species. A vessel would qualify for a limited access general category permit if it had a permit before the control date and could prove scallop landings above 1,000 pounds in any one year during the qualification time period selected in Section 3.1.2.2.

3.1.2.1.3 Permit before the control date and annual landings of 5,000 pounds in one or more years during the qualification time period

In order to qualify under this alternative a vessel would have to have had a permit before the control date (November 1, 2004) and landed at least 5,000 pounds of scallops (in meat weight) during one fishing year. This poundage was selected as an amount that would further reduce capacity as compared to the other alternatives under consideration. A vessel would qualify for a

limited access general category permit if it had a permit before the control date and could prove scallop landings above 5,000 pounds in any one year during the qualification time period selected in Section 3.1.2.2.

3.1.2.2 Qualification time period alternatives

In addition to the qualification criteria described above, a vessel has to meet the landings criteria during one of the three qualification time period alternatives described below. It is understood that landings criteria (100 pound trip, 1,000 annual pounds, or 5,000 annual pounds) must be from the same fishing year that a vessel had a general category permit. This restriction was added to prevent a vessel from having a federal general category permit one year and state water only landings a different year during the qualification time period, potentially qualifying for a federal limited entry general category permit with state water landings.

Rationale: Three qualification time period alternatives have been considered. The first March 1, 2003 through November 1, 2004 is the most restrictive, and would include recent participants in the fishery prior to the control date (November 1, 2004). The second alternative is March 1, 2000 through November 1, 2004. This alternative was included to consider more historic activity as well as recent activity. Lastly, March 1, 1994 through November 1, 2004 was included as the third alternative, which is the most inclusive. This alternative includes all fishing years since the general category permit was implemented under Amendment 4 through the control date.

3.1.2.2.1 Historical landings from March 1, 2003 through November 1, 2004

In order to qualify for a permit, a vessel would have to meet the landings criteria during scallop fishing year 2003 or scallop fishing year 2004 (but only through the control date, March 1, 2004 through November 1, 2004). The Council recommends this time period as an alternative that would consider recent participants in the fishery. This time period would include more recent investment and dependence on the fishery. The Council recommends that the last fishing year not extend past the control date, so a vessel would have to have had landings during the first eight months of the scallop fishing year. It was discussed that the qualification time period should be consistent with the control date.

3.1.2.2.2 Historical landings from March 1, 2000 through November 1, 2004

In order to qualify for a permit, a vessel would have to meet the landings criteria during scallop fishing year 2000, 2001, 2002, 2003 or the first eight months of scallop fishing year 2004 (March 1, 2004 through November 1, 2004). The Council recommends this time period as an alternative that would consider more historic activity as well as recent activity in the fishery. This time period would include vessels that may have fished several years ago, but not in the last two years as the alternative above. The Council recommends that the last fishing year not extend past the control date, so a vessel would have to have had landings during the first eight months of the scallop fishing year. It was discussed that the qualification time period should be consistent with the control date.

3.1.2.2.3 Historical landings from March 1, 1994 through November 1, 2004

In order to qualify for a permit, a vessel would have to meet the landings criteria during scallop fishing year 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003 or the first eight

months of scallop fishing year 2004 (March 1, 2004 through November 1, 2004). The Council recommends this time period as an alternative that would consider the entire time period from implementation of Amendment 4 when the general category permit was created through the control date. This time period would include the longest time series as compared to the other alternatives. The Council recommends that the last fishing year not extend past the control date, so a vessel would have to have had landings during the first eight months of the scallop fishing year. It was discussed that the qualification time period should be consistent with the control date.

3.1.2.3 Determination of qualification amount (contribution factor)

Once the universe of vessels is identified based on the qualification criteria and time period described above, there are two alternatives for determining a final qualification amount for each vessel. One alternative uses a vessels best year during the qualification time period, and one that uses a vessels best year but applies an index of years active in the scallop general category fishery. Several other alternatives were considered during the process but were rejected for various reasons, See Section 3.5.1.1.4 for a description of the other contribution factor alternatives that were considered and rejected.

A vessel will not be allocated a certain amount of pounds equal to their historical activity. Rather they will be allocated a percent of the total general category allocation based on their contribution to historical landings. Once each vessels contribution percentage is determined, their actual allocation will be scaled up or down depending on what overall allocation is selected for the general category sector. For example, if the qualification amount determined for the entire fleet is below the amount the Council decides to allocate that sector, all allocations will be scaled up to equal to final allocation for the general category sector. Conversely, if the individual qualification amounts are added together and they exceed the total allocation the Council has awarded the general category sector; individual allocation will be scaled down. Furthermore, since projected yield from the scallop fishery will vary, individual or tiered allocations will vary to match the percent allocated to the general category sector. The percent of the total projected yield will remain constant, but actual poundage will vary.

Rationale: Two alternatives are being considered for this section. One alternative is based on landings from a vessel's best year. A second alternative is also based on landings from a vessel's best year but is multiplied by an index factor related to years active in the fishery. The more years a vessel has been active, the higher the index value. This alternative was added as an option that gives more weight to vessels that have been in the fishery longer. Another alternative related to capping a vessels contribution was added to prevent some potentially miscoded or suspect records over 50,000 pounds from affecting the allocations for other vessels (Alternative 3.1.2.3.3).

3.1.2.3.1 Allocation based on best year

A vessels qualification would be based on scallop landings from its "best year" during the qualification time period. If a vessels best year is the eight months of 2004, which will count as a full fishing year; landings will not be pro-rated for a full fishing year. Keep in mind that the qualification amount per vessel may not actually be the amount a vessel is allocated. A vessels historical landings will determine the percent of general category landings that individual vessel

will be awarded. Their allocation may be further scaled up or down annually depending on the projected yield of the scallop resource and the overall allocation percent the Council selects for the general category fishery.

3.1.2.3.2 Allocation based on best year indexed by number of years active in the scallop fishery

A vessels qualification would be based on scallop landings from its "best year" during the qualification time period. Landings from that year would then be multiplied by an index that incorporates "years active" in the fishery. Active is defined as landing one or more pounds of scallops. Two options for this alternative are currently being considered in the document. **Option A** would use the following index values; if a vessel was active only one year landings from their best year would be multiplied by 0.9; two years = 0.95; three years = 1.0; four years = 1.05; and five years or more would be 1.10. **Option B** would use the following index values; if a vessel was active only one year landings from their best year would be multiplied by 0.75; two years = 0.875; three years = 1.0; four years = 1.125; and five years or more would be 1.25. These options increase the contribution factor for vessels that have been active in the fishery for several years, the actual amount allocated is not multiplied by the index value. A vessels historical landings (multiplied by the index value) will determine the percent of general category landings that individual vessel will be awarded. Their allocation may be further scaled up or down annually depending on the projected yield of the scallop resource and the overall allocation percent the Council selects for the general category fishery.

3.1.2.3.3 Cap of 50,000 pounds for individual contribution factor

Once the contribution factor is determined for each vessel using any of the alternatives above (Alternatives 3.1.2.3.1 through 3.1.2.3.2) this alternative would cap the contribution factor at 50,000 pounds. Only several vessels have more than this value based on the "best year" analysis of preliminary data. Even though these records have been reviewed, in some cases it is not certain what could have caused the records to be much higher than the possession limit. In some cases these few entries impact the allocation of other vessels, so putting a cap on the contribution factor will prevent some of these potentially miscoded or suspect records from affecting the allocations for all other vessels. This amount was identified as an appropriate level to cap the contribution factor at, so a vessel's contribution factor could not exceed 50,000 pounds if this alternative is selected. A vessel could be allocated more or less than this amount depending on the projected yield of the scallop resource and the overall allocation percent the Council selects for the general category fishery.

3.1.2.4 Allocation of access for general category limited access qualifiers

Once the universe of vessels is identified, and their individual qualification is determined the Council recommends that several alternatives be considered for allocation. The first system is an individual allocation; an individual amount in pounds or total number of trips would be awarded to individuals vessels that qualify. The second system would also be an individual allocation, but there would be two permit types (part-time and full-time). The part-time permit would have a reduced possession limit of 200 pounds, and the full-time permit category would have a possession limit of 400 pounds. All vessels that qualify would receive an equal allocation in pounds or total number of trips depending on which tier they qualify for. The third alternative is a tiered permit system; all vessels that qualify for each tier would receive an equal allocation in

pounds or total number of trips, all with a 400 pound possession limit. A fourth stand alone alternative was developed, which is also an individual allocation but access is in quota and is transferable. In addition, all vessels that had a permit before the control date would be given a permit, not just vessels that had landings during the qualification time period. However, a permit that did not have landings history would not be allocated specific access to the fishery, but would be permitted to lease or buy quota from another vessel. Lastly, the Council recommends that an alternative that allocated a fleetwide hard TAC be analyzed, rather than an individual based system. The Scallop Committee also recommends consideration of a seasonal TAC alternative (Alternative 3.1.2.4.7).

Rationale: The Council is considering several different strategies of access to the general category fishery in combination with limited access. One alternative is an individual allocation for each qualifying vessel. An individual poundage or number of trips would be allocated to each qualifying vessel. This alternative was included as a strategy that would provide flexible access to the fishery for varying levels of participation; every vessel would be allocated access based on their individual level of effort during the qualification time period selected. Under this alternative there is an option to modify the possession limit to 2,000 pounds rather than 400 pounds per trip. This option was included to consider an option that increases flexibility for participants in terms of landings per trip. It may be more cost effective for a vessel to harvest their individual allocation in more than 400 pound trips, so this option was added for consideration. The Council did want to include some possession limit to keep this permit type separate from the existing limited access permit type, where there is no daily possession limit.

There are two additional individual allocation alternatives with different permit types and tiers. One alternative has both a full time and part time permit with different possession limits; this alternative was developed to have one permit type for vessels that have more investment and dependence on the general category fishery, and the second permit type was intended to be for qualifiers that land scallops more incidentally while fishing for other species. The third alternative is also an individual allocation alternative, but there would only be three different allocation amounts (in pounds or number of trips) based on tiers, rather than individual access levels per vessel. This alternative was developed to consider an option that allocated access on an individual basis, but reduced the variation in allocation among qualifiers; only three different allocations would be granted under this alternative, full-time, part-time and occasional, similar to how the limited access scallop fishery. The poundage or number of trips would be the same for all vessels in each tier or permit category.

There are two stand alone allocation of access alternatives. Alternative 3.1.2.4.4 is an individual based allocation, but the intent of this alternative is to award a limited access general category permit to all vessels that had a general category permit from fishing year 2000 through the control date, regardless of landings history. However, specific access to the fishery would be based on historical landings, but if a vessel did not fish and did not land scallops during the qualification time period it would be given a permit and the right to lease or purchase quota from another qualifying vessel. This alternative is more of an individual *transferable* quota system open to all vessels that had a permit from 2000 through the control date. Alternative 3.1.2.4.5 is also a stand alone alternative with specific qualification criteria, and it is intended to be an alternative that uses limited entry, but does not allocate access on an individual basis, rather a

fleetwide TAC is set on a quarterly basis and all qualifiers have equal access to the resource until the TAC is reached.

Lastly, there are two hard TAC alternatives that use limited entry but similar to Alternative 3.1.2.4.5 described above, access in not allocated on an individual basis. One alternative is a fleetwide hard TAC for the entire fishing year, and one alternative is a fleetwide hard TAC broken down by quarter. These two alternatives were considered to utilize limited entry but not allocation on an individual or tiered permit system, all qualifying vessels would have the same access rights to the general category TAC.

3.1.2.4.1 Individual allocation for all qualifiers

Every vessel that qualifies for a permit based on the qualification criteria, time period, and determination approach would be allocated an individual allocation in pounds (**Option A**) or total number of trips (**Option B**). The allocation would be scaled depending on estimated projected yield and the percent that is allocated to the general category sector in this action. It is possible that all qualifiers could receive a different amount. Furthermore, depending on the qualification criteria, qualification time period and which determination of qualification amount alternative is selected, the number of vessels and individual percent allocations will vary. This alternative maintains the 400 pound possession limit. Alternative 3.1.2.4.1.1 below would increase the possession limit to 2,000 pounds per trip under this alternative.

For example, if individual allocation were based on the average pounds from the best three years for each vessel from the last 5 fishing years (2000-04, up to the control date), the sum of shares for the qualifiers would be around 2.0 million lbs. In this case, minimum allocation would vary between 35 lb. to 1,696 lb. depending on the qualification criteria (100 pound trip or 5,000 annual pounds) and the maximum allocation would be around 43,000 lb for all three qualification amount alternatives, based on a 2.0 million pound overall allocation.

3.1.2.4.1.1 Modify the 400 pound possession limit to 2,000 pounds per trip

This alternative is only being considered if individual allocations are allocated for limited access general category qualifiers. Any vessel that qualifies would be permitted to land up to 2,000 pounds per trip, regardless of trip length. For clarification, if Alternative 3.1.2.4.1 is selected but allocation is granted in number of trips (Option B) rather than poundage (Option A) and this option is selected, a vessel would be permitted to land up to 2,000 pounds per trip and it would only be charged one trip. Each trip would count as one trip regardless of the total landings up to 2,000 pounds. But if Option A was selected (in pounds) a vessel could be charged up to 2,000 pounds per trip depending on what the vessel landed.

[See PDT discussion of problems with Option B of this alternative. In summary, the PDT notes that this alternative is problematic when combined with allocation in trips. The PDT recommends that this alternative should not be coupled with Option B and if it is then a vessel should be charged more than one trip if is lands over 400 pounds per trip, otherwise estimated mortality could increase per trip.]

3.1.2.4.2 Individual allocation for two permit types (part-time and full-time)

Every vessel that qualifies for a permit based on the qualification criteria, time period, and determination approach would be allocated an individual allocation in pounds (**Option A**) or total number of trips (**Option B**). The major difference between this alternative and the previous one is that under this alternative there would be two permit types. A vessel would qualify for a full-time permit if they had landings of 5,000 pounds or more in one fishing year during the qualification time period. If Option A is selected, a vessel would be permitted to catch that amount in as many trips as they want with a maximum possession limit of 400 pounds per trip if allocated in pounds. If allocated in number of trips, those vessels would only be allowed to fish up to the total number of trips allocated per vessel in that tier (with a 400 pound maximum per trip).

Another permit type would exist for vessels that meet the criteria to get a limited access permit, but have not had more than 5,000 pounds of scallops in one year. These vessels would get a part-time general category permit and would be allocated individual poundage or number of trips based on their historical activity, but would be restricted to a 200 pound possession limit. Again, these vessels could land as much as they want on any one trip, but not in excess of 200 pounds.

The final allocation in pounds or trips to all vessels in either tier would be scaled depending on estimated projected yield and the percent that is allocated to the general category sector in this action. Furthermore, depending on the qualification criteria, qualification time period and which determination of qualification amount alternative is selected, the number of vessels and individual percent allocations will vary. See Table 71 for a description of the potential qualifiers and average allocations per permit type under the different qualification alternatives.

3.1.2.4.3 Individual allocation – equal allocation for three tiered permits

Every vessel that qualifies for a permit based on the qualification criteria, time period, and determination approach selected in previous sections would be allocated access to the fishery, but their allocation would be based on a tiered permit system. A tiered permit system would be developed based on landings (best year or best year indexed by years in the fishery) from the qualification time period for vessels that had a permit before the control date. In order to qualify for a certain tier a vessel would have to show landings within that tier for one year only during the qualification time period. The current possession limit of 400 pounds per trip would be maintained for all three tiers. Three tiers would be considered:

Tier 1: 20,000 pounds and above;
Tier 2: 5,000 – 19,999 pounds;
Tier 3: 100 – 4,999 pounds

(Note that the lower tier would adjust based on the qualification criteria selected. For example, if the 1,000 pound criteria were selected then Tier three would be 1,000 – 4,999 (not starting at 100 pounds). Similarly, if the 5,000 pound qualification criteria were selected, then there would only be two tiers (5,000 to 19,999 and 20,000 and above).

See Table 142 for a description of the potential qualifiers and average allocations per tier under the different qualification alternatives.

Option A – Allocation in equal pounds per tier
Each vessel that qualifies for a certain tier would get an equal allocation in pounds. That allocation would be based on the average pounds per vessel in the tier, but scaled, depending on estimated of projected yield and the percent that is allocated to the general category sector in this action. The percent of the total general category allocation that each tier would receive would depend on their historical share of total general category landings.

Option B – Allocation in equal number of trips per tier
Each vessel that qualifies for a certain tier would get an equal allocation in number of trips. That allocation would be based on the average pounds per vessel in the tier, but access would be allocated based on the number of 400 pound trips that average is closest to. For example, if the average for tier 3 is 2,500 pounds that would equal 6 trips (400 pounds X 6 trips = 2,400). A vessel would be permitted to land up to 400 pounds per trip, but each trip would count as 400 pounds; the vessel would not be permitted to land part of 400 pounds on more than one trip. The total number of trips allocated would be scaled, depending on estimated of projected yield and the percent that is allocated to the general category sector in this action. The percent of the total general category allocation that each tier would receive would depend on their historical share of total general category landings.

3.1.2.4.4 Stand alone alternative - Individual transferable quota

The Scallop Committee developed a stand alone qualification and allocation alternative. The intent of this alternative is to award a limited access general category permit to all vessels that had a general category permit from fishing year 2000 through the control date, regardless of landings history. However, specific access to the fishery would be based on historical landings, but if a vessel did not fish and did not land scallops during the qualification time period it would be given a permit and the right to lease or purchase quota from another qualifying vessel. A vessel would also be permitted to lease/sell part of their allocation. The specifics of the alternative are described in the bullets below:

- Any vessel that held a general category permit in any year between 2000 and the control date (November 1, 2004) would qualify for a limited access general category permit.
- Quota would be allocated on an individual basis using any of the qualification amount strategies (best year or best year indexed by years active).
- Quota may be leased or sold to another qualified limited access general category permit.
- Consolidation will be capped at (1%-5%) of quota (in pounds) per vessel.
- Retaining a 400 pound possession limit for all vessels that qualify.
- All purchases and sales of quota need to be in writing and within a fully automated system. Also any leases or purchases of quota must be between vessels within the same vessel baseline (if that measure is approved).

This alternative only has two variations depending on how individual qualification amounts are determined (best year or best year indexed by years active). The qualification criteria and time period are defined in the alternative (permit in any one year between FY2000 and the control date, November 1, 2004).

3.1.2.4.5 Stand alone alternative - Quarterly hard TAC with limited entry

This alternative would include a limited entry program for vessels with a general category permit before the control date and some level of landings that would determine which permit they qualify for. A vessel would qualify for a 200 pound permit if they landed 100-5,000 pounds in any fishing year from March 1, 1994 – November 1, 2004. A vessel would qualify for a 400 pound permit it they landed over 5,000 pounds in any one fishing year from 1994-2004. Qualifying vessels in either category could possess up to 200 or 400 pounds per trip (depending on the category they qualify for) and fish under a quarterly hard TAC. All vessels would have equal opportunity to fish, no individual or tiered allocation would be awarded.

Once the TAC is reached in that quarter all vessels can only possess up to 40 pounds of scallops per trip. This alternative was developed at the September 13 Committee meeting as an alternative that would combine limited entry but would not allocate access in pounds or trips to each qualifying vessel. Rather the fishery would be managed under a quarterly hard TAC, and vessels would be limited to the possession limit of their permit category. Once the quarterly hard TAC is reached, the fishery would close for both permit types, except for incidental catch. Table 1 describes the seasonal distribution of scallop landings by general category vessels from 2000 through 2005. The average for the years combined is roughly 24% for Quarter 1, 39% for Quarter 2, 23% for Quarter 3 and 14% for Quarter 4. Similar percentages could be considered for the quarterly hard TACs under this alternative. Once a quarterly hard TAC is reached, all vessels (current limited access and limited access general category vessels) could possess scallops under incidental rules.

3.1.2.4.6 Fleetwide hard-TAC under limited entry

A hard TAC would be developed for the general category sector of the fishery. Under this alternative, only vessels that qualify for a limited access general category permit would be permitted to fish for scallops up to 400 pounds per trip. Based on the criteria and time period selected, a specific universe of vessels would qualify for a limited access general category permit. Those vessels would then have equal access to the resource; no individual or tiered allocations would be awarded. When the Regional Administrator projects that TAC is going to be reached, the fishery would close. All vessels (current limited entry and limited entry general category vessels) would be permitted to land scallops under incidental rules after the hard TAC is reached.

3.1.2.4.7 Fleetwide hard-TAC by quarter/trimester under limited entry

A hard TAC would be developed for the general category sector of the fishery. Under this alternative, only vessels that qualify for a limited access general category permit would be permitted to fish for scallops up to 400 pounds per trip. A quarterly TAC would be set using data from FY2001-2006 to identify the appropriate percentage that should be allocated for each quarter. That percent per quarter would be applied to the total TAC awarded to the general category fishery. It is understood that the percent per quarter/trimester could vary per year based on new landings data and future projections. Unused TAC from one quarter would roll-over to a later quarter in the same fishing year, similar to what is done in the squid fishery (i.e. if quota from the first quarter is not caught, the remaining quota would roll over into the third quarter; if there is unused TAC at the end of the fishing year it does NOT roll-over into the next fishing year). Similarly, if there are any overages, they will be reduced in subsequent quarters and the

TAC for the following year will be reduced by that amount the following fishing year if the fishery exceeded the annual TAC. The first quarter would start on March 1 (unless this action changes the start of the fishing year). When the Regional Administrator projects that the quarterly TAC is going to be reached, the fishery would close until the start of the next quarter. Once a quarterly hard TAC is reached, all vessels (current limited access and limited access general category vessels) could possess scallops under incidental rules.

Based on preliminary analysis of all general category landings from the dealer database, landings from Quarter 1 and 3 are similar, Quarter 2 is the highest and Quarter 4 is significantly lower. Table 1 describes the seasonal distribution of scallop landings by general category vessels from 2000 through 2005. The average for the years combined is roughly 24% for Quarter 1, 39% for Quarter 2, 23% for Quarter 3 and 14% for Quarter 4. The percent of landings from each quarter is relatively consistent since 2001, but there seems to have been a shift toward Quarter 2 (June to August) in recent years as compared to landings from 1994 through 1999, and the high landings during Quarter 4 for FY2000 are rare. The DSEIS will include a range of percentages to consider once landings from dealer data as well as landings from just qualifying vessels are examined.

Table 1 - Seasonal distribution by quarter of landings by general category vessels (Dealer data FY2001-06)

FISHYEAR	Q1.Mar-May	Q2.June-Aug.	Q3.Sept.Nov.	Q4.Dec. to Feb.
2001	20%	52%	14%	14%
2002	35%	38%	15%	11%
2003	28%	43%	22%	6%
2004	17%	45%	24%	14%
2005	17%	44%	26%	13%
2006	34%	43%	11%	13%*
All years	25%	44%	19%	12%

*Estimated using dealer data for March 2006- Dec.2006.

Option B : Based on preliminary analysis of all general category landings from the dealer database, landings from Trimester 1 and 2 are similar (just over 40%) and the last trimester is closer to 16%. Table 2 describes the seasonal distribution of scallop landings by trimester for general category vessels from 2001 through 2006. The percent of landings from each trimester is relatively consistent, but landings from trimester 3 have increased in recent years. The DSEIS will include a range of percentages to consider once landings from dealer data as well as landings from just qualifying vessels are examined.

Table 2 - Seasonal distribution by trimester of landings by general category vessels (Dealer data FY2001-06)

FISHYEAR	T1. Mar-Jun	T2.Jul-Oct.	T3.Nov to Feb
2001	46.8%	37.0%	16.2%
2002	50.0%	35.8%	14.1%
2003	40.4%	48.5%	11.1%
2004	31.5%	48.9%	19.6%
2005	29.9%	51.0%	19.1%
2006	48.0%	33.9%	18.1%*
All years	41.1%	42.5%	16.4%

*Estimated using dealer data for March 2006- Dec.2006.

3.1.2.5 Limited entry permit provisions

This amendment will consider measures to govern activities such as vessel sales, limited access permit transfers, permit splitting, changes to vessel size, and establishment of vessel baselines to evaluate changes to vessel size. These measures would apply to all general category permits that qualify for limited access if limited access is adopted under Amendment 11. Unless noted, the provisions under consideration in this section are consistent with those in other limited access fisheries in the Northeast region.

Rationale: During the 1990s, a number of limited access programs were developed in the Northeast region to address the unrestricted growth in the number of commercial vessels fishing for several species. These programs were developed over a period of years, and a variety of approaches were chosen to address important activities such as vessel sales, limited access permit transfers, permit splitting, vessel size and horsepower upgrades, ownership restrictions and the establishment of vessel baseline specifications. Therefore, in 1998, NMFS and the Councils developed a set of amendments to these management programs to establish a consistent approach to these activities in all of the limited access programs. This action, known as the Consistency Amendment, established a single set of regulations in 1999 to standardize the administration of the limited access permit programs. It is understood that this action (Amendment 11) will be consistent with the Consistency Amendment unless noted in this section.

3.1.2.5.1 Fishing History and Permit Transfers

***Initial Eligibility*:** Consistent with other limited access programs established by the Council, initial eligibility for a general category scallop limited access permit must be established during the first year after the implementation of Amendment 11. In other words, the general category scallop limited access permits may not be applied for more than twelve months following the effective date of the final regulations for this action.

To prove that a vessel is eligible for the general category scallop limited access program under any landings criteria established through Amendment 11, applicants would have to submit third-party verification of landings history, such as dealer receipts. During the appeal process, if there is controversy over qualification, the Council recommends that NMFS apply/incorporate VTR data with dealer data for qualification purposes.

Use of NMFS Landings Data for Eligibility and Contribution Factor Determination:
[See PDT discussion regarding a pre-qualification process]
The Scallop Committee recommends that the Council consider adding a specific recommendation about the use of data in the landings database. It is difficult to determine the reason some dealers report making purchases from general category vessels landing in excess of 400 pounds for a trip. This could increase future allocations for some vessels, and reduce future allocation for other vessels. Also, a vessel may qualify with illegal landings if it landed more than 400 pounds on a trip and the landing appears in the dealer database. Limited access eligibility will be based on landings in the dealer database. The Council could include a measure that would cap landings per trip at 400 pounds for qualification purposes and contribution factor. The appeal process would allow a vessel owner to provide information to demonstrate that NMFS relied on incomplete data to deny eligibility and/or limit contribution

factor. If a vessel can prove through the appeal that landings records in the dealer data were inaccurate (e.g., were multiple landings reported as one by the dealer), then that vessel can appeal for permit qualification and/or a higher allocation contribution. The Council would have to decide if Vessel Trip Reports would be sufficient to clarify such dealer records or if additional proof that individual trips were conducted would be required.

Confirmation of permit history (CPH) for initial general category scallop limited access permit qualification: The owner of a qualifying vessel that has sunk, been destroyed, or been transferred to another person without the general category scallop fishing history but not yet replaced, would be required to apply for a Confirmation of Permit History (CPH) within the first year after the implementation of Amendment 11.

A vessel that sank or was destroyed can meet the "control date" eligibility requirement for a general category scallop limited access permit if it possessed a Federal general category scallop permit before November 1, 2004 (in at least one year during the qualification time period selected). Similarly, an individual who sold a vessel that possessed a Federal general category scallop permit before November 1, 2004, but who retained the general category scallop history through a written agreement signed by both parties in the vessel sale or transfer, can meet the "control date" eligibility requirement for a limited access permit. See Section 3.1.2.5.7 for more discussion of CPH provisions.

Appeals of denial of permit: An appeals procedure will be developed similar to that established for previous limited access programs. An applicant who has been denied a general category scallop limited access permit may appeal in writing to the Regional Administrator within 30 days of the denial. Any such appeal must be based on the grounds that the information used by the Regional Administrator was based on incorrect data, must be in writing, and must state the grounds for the appeal.

Appeal review: The Regional Administrator will appoint a designee who will make the initial decision on the appeal. The appellant may request a review of the initial decision by the Regional Administrator by so requesting in writing within 30 days of the notice of the initial decision. If the appellant does not request a review of the initial decision within 30 days, the initial decision is the final administrative action of the Department of Commerce. Such review will be conducted by a hearing officer appointed by the Regional Administrator. The hearing officer shall make findings and a recommendation to the Regional Administrator, which shall be advisory only. Upon receiving the findings and the recommendation, the Regional Administrator will issue a final decision on the appeal. The Regional Administrator's decision is the final administrative action of the Department of Commerce.

Status of vessels pending appeal: A vessel denied a general category scallop limited access permit may fish for scallops, provided that the denial has been appealed, the appeal is pending, and the vessel has on board a letter from the Regional Administrator authorizing the vessel to fish under general category scallop limited access restrictions. The Regional Administrator will issue such a letter for the pendency of any appeal. Any such decision is the final administrative action of the Department of Commerce on allowable fishing activity, pending a final decision on the appeal. The letter of authorization must be carried on board the vessel. If the appeal is

finally denied, the Regional Administrator shall send a notice of final denial to the vessel owner; the authorizing letter becomes invalid 5 days after receipt of the notice of denial.

3.1.2.5.1.1 No Action

The Consistency Amendment established a restriction that any fishing and permit history is presumed to transfer with a vessel at the time it is bought, sold or otherwise transferred from one owner to another, unless it is retained through a written agreement signed by both parties in the vessel sale or transfer. Under the recent Herring limited access amendment process, the Council decided to only grant a permit to the vessel, even if the history of the open access permit was retained by the seller in a written agreement to prevent additional permits from being issued. Under this alternative the history of a vessel is presumed to stay with the vessel, and only one permit can be issued.

3.1.2.5.1.2 One vessel potentially qualifying two permits

This alternative would permit one vessel to qualify two limited access general category permits if the following applies: *If a vessel owner that sells his permits to another vessel, but retains the general category scallop history on the purchase and sales agreement, the "seller" should be able to qualify for a permit. The "buyer" cannot qualify under that history; however, if the buyer qualifies under its own landings after the sale but during the qualification period the buyer could be granted a permit as well.*

Other than this scenario, or unless the Regional Administrator determines otherwise, no more than one vessel may qualify, at any one time, for a limited access permit or CPH based on that or another vessel's fishing and permit history. If more than one vessel owner claims eligibility for a limited access permit or CPH, based on one vessel's fishing and permit history, the Regional Administrator will determine who is entitled to qualify for the permit or CPH.

Rationale: During scoping it was raised that vessels have sold their vessel and permits but retained their open access general category history in the purchase and sales agreement. While in the past this open access history has not been considered for a limited access permit when separated from the vessel, in this case the Council is considering an alternative that would allow the "seller" to qualify for a permit if the history was retained. To prevent two permits being formed from one vessel, a stipulation was added that the "buyer" cannot qualify unless they have landed their own qualification since the date of purchase.

3.1.2.5.2 Vessel Upgrades

3.1.2.5.2.1 Option 1 (no upgrade restriction)

There would be no vessel upgrade restrictions. A vessel that qualifies for a limited access general category permit can replace their vessel to any size, or refit their vessel without any horsepower, gross tonnage or length restrictions. It is understood that if this alternative is selected, but a vessels is under another FMP with a vessel upgrade restriction, those restrictions would still apply.

3.1.2.5.2.2 Option 2 (10:10:20 upgrade restriction)

A vessel may be upgraded, whether through refitting or replacement, and be eligible to retain or renew a general category scallop limited access permit, only if the upgrade complies with the following:
(1) The vessel's horsepower may be increased only once, whether through refitting or replacement. Such an increase may not exceed **20 percent** of the horsepower of the vessel's baseline specifications, as applicable.
(2) The vessel's length, GRT, and NT may be increased only once, whether through refitting or replacement. Any increase in any of these three specifications of vessel size may not exceed **10 percent** of the vessel's baseline specifications, as applicable. If any of these three specifications is increased, any increase in the other two must be performed at the same time. This type of upgrade may be done separately from an engine horsepower upgrade.

3.1.2.5.2.2.1 Establishing Vessel Baselines

If an upgrade restriction is adopted, then establishing a vessel baseline would be necessary. A vessel's baseline refers to those specifications (Length Overall, Gross Registered Tons, Net Tons, and Horsepower) from which any future vessel size change is measured. Consistent with the other limited access programs that established baselines at the time they were initially implemented, the vessel baseline specifications for vessels that qualify for a limited access general category permit will be the specifications of the vessel that was initially issued a limited access permit as of the date that the initial vessel applied for such permit. If vessel upgrades are not implemented under this action, this measure is not relevant.

3.1.2.5.3 Vessel Replacements

The term *vessel replacement*, in general, refers to replacing an existing limited access vessel with another vessel. In addition to addressing increases in vessel size and horsepower, the consistency amendment also established a restriction that requires that the same entity must own both the limited access vessel (or fishing history) that is being replaced, and the replacement vessel. In order to maintain consistency with the other regional limited access programs, this provision will be adopted for the general category scallop limited access program.

3.1.2.5.4 Stacking of Permits

The Council recommends considering two alternatives for "stacking" or allowing vessels to consolidate access privileges on one vessel (in pounds or trips). It was assumed that the 400 pound possession limit would still be in effect even if stacking is approved unless Alternative 3.1.2.4.1.1 (with the IFQ alternative) is approved (alternative to modify the possession limit restriction to 2,000 pounds per trip).

3.1.2.5.4.1 No Action

An individual would not be permitted to stack limited access general category permits onto one vessel. Only one permit could be used per vessel. If an individual qualifies for more than one permit, he/she must fish those permits on different vessels.

Rationale: This is currently in place for all other limited access programs in this region.

3.1.2.5.4.2 Allow stacking limited to two permits

A vessel that qualifies for more than one limited access general category permit, or leases/purchases additional quota (if permitted in this action) would be permitted to stack their allocation onto one vessel. For example, if an individual currently owns two vessels and both qualify for a general category permit, that individual would be permitted to stack their access privileges onto one vessel to save operation costs. This alternative is not specific to permit type or amount of quota. So conceivably, two permits with the largest allocation could be stacked, and two permits with the smallest allocation could be stacked.

Rationale: This alternative was developed to allow some level of stacking, but to limit the level of potential consolidation to two permits. It was discussed that if many vessels qualify for a limited access permit and allocations are low, the Council may want to consider some level of stacking to allow vessels to consolidate to increase flexibility.

3.1.2.5.4.3 Allow stacking up to 60,000 pounds or 150 trips per vessel

This alternative would allow a vessel to stack up to 60,000 pounds or 150 trips (depending on how access is allocated) onto one vessel. This amount was identified as a "full-time" amount of general category scallop landings or number of trips on an annual basis. Therefore, if an individual has three vessels that qualify; Vessel A with 20,000 pounds, Vessel B with 30,000 and Vessel C with 40,000 pounds; that vessel could stack the quota from Vessel A and B, Vessel A and C, but not Vessel B and C because it would be in excess of 60,000 pounds.

Rationale: This alternative was developed to allow some level of stacking, but to limit the level of potential consolidation to 60,000 pounds or 150 trips (depending on how access is allocated) per vessel. During development of this action, this level of landings was identified as a level of effort for a "full-time" general category vessel.

3.1.2.5.5 Voluntary Relinquishment of Eligibility

The consistency amendment included a provision to provide a mechanism for a vessel owner to voluntarily exit a limited access fishery. In some circumstances, it could allow vessel owners to choose between different permits with different restrictions without being bound by the more restrictive requirement (e.g., lobster permit holders may choose to relinquish their other northeast region limited access permits to avoid being subject to the reporting requirements associated with those other permits). If a vessel's limited access permit history for the general category scallop fishery is voluntarily relinquished to the Regional Administrator, no limited access permit for that fishery may be reissued or renewed based on that vessel's history or to any other vessel relying on that vessel's history.

3.1.2.5.6 Permit Splitting

The consistency amendment established a measure that requires limited access permits issued to a vessel to stay together with the vessel as a "package." They may not be split apart and distributed among other vessels by making a vessel replacement because that would increase overall fleet capacity. Therefore, all limited access permits must be treated as a "package" for the purposes of vessel replacement, or for the purposes of limited access permit retention when a vessel is sold or transferred. The general category scallop limited access program will adopt this

restriction upon implementation of Amendment 11; therefore, a vessel could not sell a limited access general category permit separately from other limited access permits the vessel may have.

3.1.2.5.7 Permit Renewals and Confirmation of Permit History (CPH)

Continued Eligibility: This section refers to permit renewals and CPH once a vessel qualifies for a limited access general category permit. A vessel owner must maintain the limited access permit status for an eligible vessel by renewing the permits on an annual basis or applying for issuance of a CPH. A CPH is issued to a person who does not currently own a fishing vessel, but who has legally retained the fishing and permit history of the vessel for the purpose of transferring it to a replacement vessel at a future date. Annual renewal is considered important in establishing participants who have an active interest in maintaining their ability to participate in a limited access fishery, and conversely allowing permits to lapse and be cancelled for those who do not. The CPH is important in this regard because it provides a benefit to a vessel owner by securing a vessel history through a registration system.

Therefore, to be eligible to receive a general category scallop limited access permit, a vessel must have been issued a general category limited access permit in the preceding year, be replacing a vessel that was issued a general category scallop limited access permit for the preceding year, or be replacing a vessel that was issued a confirmation of permit history (CPH – see below). If a vessel's limited access permit history is cancelled through failure to renew or otherwise, no limited access permit for that fishery may be reissued or renewed based on that vessel's history or to any other vessel relying on that vessel's history.

All general category scallop limited access permits would be issued on an annual basis by the last day of the fishing year for which the permit is required, unless a CPH has been issued (see below). Application for such permits must be received no later than 30 days before the last day of the fishing year.

Confirmation of permit history (CPH): A person who does not currently own a fishing vessel, but who has owned a qualifying vessel that has sunk, been destroyed, or transferred to another person, must apply for and receive a CPH if the fishing and permit history of such vessel has been retained lawfully by the applicant. To be eligible to obtain a CPH, the applicant must show that the qualifying vessel meets the eligibility requirements for the general category scallop limited access permit in question. Issuance of a valid CPH preserves the eligibility of the applicant to apply for a limited access permit for a replacement vessel based on the qualifying vessel's fishing and permit history at a subsequent time. If fishing privileges have been assigned or allocated previously under this part, based on the qualifying vessel's fishing and permit history, the CPH also preserves such fishing privileges. A CPH must be applied for in order for the applicant to preserve the fishing rights and limited access eligibility of the qualifying vessel.

An application for a CPH must be received by the Regional Administrator no later than 30 days prior to the end of the first full fishing year in which a vessel permit cannot be issued. Failure to do so is considered abandonment of the permit. A CPH will remain valid until the fishing and permit history preserved by the CPH is used to qualify a replacement vessel for a limited access permit. Any decision regarding the issuance of a CPH for a qualifying vessel that has applied for or been issued previously a limited access permit is a final agency action subject to judicial

review. Information requirements for the CPH application are the same as those for a limited access permit. Vessel permit applicants who have been issued a CPH and who wish to obtain a vessel permit for a replacement vessel based upon the previous vessel history may do so pursuant the relevant upgrade restrictions.

3.1.2.5.8 Percentage Ownership Restriction

3.1.2.5.8.1 Maximum of 1-5% of total general category access

This alternative would establish some maximum that would be determined later based on the number of permits that are allocated. It is not clear yet what percentage of access is appropriate (1-5%) because the number of permits that are likely to qualify is unknown. This restriction would prevent a vessel from owning/leasing more than the maximum percent of access identified (either in total pounds or number of trips allocated to the general category fishery). It was pointed during development of this alternative that is a vessel owns more than the limit when the plan is implemented, they would be grandfathered in.

3.1.2.5.9 MULTISPECIES PERMIT RESTRICTIONS

This section is to clarify that vessels that qualify for a limited entry general category scallop permit would not be restricted by the regulations under the multispecies plan that prohibit a vessel from having both a limited access multispecies permit and a limited access scallop permit. Amendment 5 to the Multispecies FMP prohibited a vessel from having both unless that vessel qualified as a combination vessel. If limited entry is adopted under Amendment 11 for the general category fishery a vessel would be permitted to have both a limited access multispecies and limited access general category scallop permit. Since fishing under general category rules has been a component of fishing activity for many multispecies vessels, the current multispecies permit restriction should not apply for a limited access general category permit. Therefore, if a limited access multispecies vessel qualifies for a limited access general category permit, that vessel would not have to relinquish their multispecies permit.
[Committee added this clarification at the March 2007 meeting – unless the Council disagrees this section will be in the final DSEIS].

3.1.2.6 Measures to reduce incentive for limited entry qualifiers to fish for scallops with trawl gear

Rationale: The measures in this section were developed to consider alternatives that would reduce incentive for qualifying vessels to target scallops with trawl gear. One option would reduce the potential expansion of vessels to target scallops using trawl gear because it would only allow vessels that qualify with trawl gear to fish with trawl gear under a limited entry general category scallop permit. Another alternative would reduce the possession limit for qualifying vessels that use trawl gear to provide incentive to switch to dredge gear. A third alternative would allow qualifying vessels to use trawl gear but would indirectly limit it to vessels targeting other species. Specifically, scallops could only be 5% of the total regulated species onboard.

3.1.2.6.1 No Action

All limited access general category qualifiers would be permitted to use trawl gear and land up to 400 pounds of scallop meat per trip.

3.1.2.6.2 Prohibit a vessel from switching to trawl gear if it qualified under dredge gear

If a vessel qualifies for a limited access general category permit while using dredge gear, it would be prohibited from switching to net gear. Specifically, if a vessel used dredge gear at all to fish for scallops during the qualification time period, that vessel would qualify for a dredge only permit. Likewise, this permit would not be able to be sold to a vessel that plans to catch scallops with trawl gear. Once a permit is given to a vessel that qualified using dredge gear that access to the fishery would be restricted to dredge gear only. If a vessel qualifies for a trawl permit they would be permitted to land up to 400 pounds of scallop meat per trip using trawl gear.

3.1.2.6.3 Lower possession limit for vessels that qualify for a limited access general category permit and fish with trawl gear

This alternative would reduce the incentive to fish for scallops using trawl gear, but provide some level of landings to reduce scallop bycatch for vessels that fish with a trawl for other species and catch scallops incidentally. The Scallop Committee requested that the Scallop PDT review available data and provide what the "lower possession limit" should be.

The Scallop PDT analyzed VTR data from 2005 for trips landing scallops with trawl gear. Most trips where scallops were landed using trawl gear were targeting other species; however there are a number of vessels that target scallops using trawl gear. In summary, when general category vessels with trawl gear were targeting other species like groundfish, monkfish, skate, squid and scup, about 50% of the trips landed less than 300 pounds per trip. In fact, for many of the other species, average scallop landings were lower. Table 3 summarizes the average scallop landings per trip by target species for general category vessels using trawl gear. Based on these preliminary analyses the Scallop PDT recommended the following two alternatives (250 and 300 pounds) as a reduced possession limit to reduce the incentive to fish for scallops using trawl gear.

3.1.2.6.3.1 Reduced possession limit of 250 pounds of scallop meat (31.25 bu.)

3.1.2.6.3.2 Reduced possession limit of 300 pounds of scallop meat (37.5 bu.)

Table 3 - Percentiles of scallop landings per trip by target species for general category vessels using finfish trawls.

			Percentile						
Target species or group	**Trips**	**Vessels**	**5%**	**10%**	**25%**	**50%**	**75%**	**90%**	**95%**
Yellowtail flounder	152	68	50	60	114	231	369	400	400
Groundfish	163	69	45	50	65	100	150	380	400
Summer flounder	178	59	50	63	111	300	340	394	400
Skate	37	18	68	80	100	273	396	400	400
Monkfish	91	54	50	50	100	206	347	400	400
Scallops	2778	84	50	220	300	300	398	400	400
Scup	14	6	26	31	79	275	324	400	400
Loligo	9	7	59	73	150	300	300	314	342
Lobster	1	1	*	*	*	*	*	*	*
All	3423	203	50	97	286	300	395	400	400
All but scallops	645	160	50	50	90	180	340	400	400

3.1.2.6.4 A limited access general category qualifier can fish with trawl gear, but

scallops can not be more than 5% of total regulated species onboard

A vessel can use trawl gear and land up to 400 pounds of scallop meat per trip if they qualify for a limited entry general category permit, but scallop meat cannot be more than 5% of total weight of regulated species onboard. Regulated species (excluding sea scallops) includes all species managed under an FMP in New England and the Mid Atlantic (including species managed under the Atlantic Bluefish FMP, Atlantic Herring FMP, Atlantic Salmon FMP, Red Crab FMP, Squid Mackerel and Butterfish FMP, Monkfish FMP, Multispecies FMP, Skate FMP, Dogfish FMP, Summer flounder, Scup and Black Sea Bass FMP, Surfclam and Ocean quahog FMP, and Tilefish FMP). Species such as croaker are not technically a regulated species, so that species would not apply to the 95% of regulated species required onboard.

3.1.2.7 Sectors and Harvesting Cooperatives

3.1.2.7.1 No Action

A process for future sector allocations in the general category scallop fishery would not be established in Amendment 11.

3.1.2.7.2 Establish a process for sectors in the general category scallop fishery

This alternative would establish a process for the creation of fishing "sectors" and the allocation of TAC shares to the sectors. Groups may be formed around common fishing practices, common homeport or landing port, common fishing area, common marketing arrangements, etc. This section provides details on eligibility criteria, operations plan elements, monitoring and enforcement of sectors, allocation rules, and other related issues. How the sector chooses to harvest its allocation could include a wide range of arrangements, including, but not limited to, a plan that simply sub-divides the TAC or a measure of effort among the vessels.

Rationale: The purpose of establishing this process is to allow greater opportunities for fishery participants to proactively engage in resource governance, to provide greater flexibility for participants, to guide the appropriate development of capacity, and, last, to create outcomes that are more socially and economically relevant for fishing groups within the biological limitations of the fishery (TACs).

3.1.2.7.2.1 Participation

Only vessels with limited access general category permits are eligible to form sectors. Sectors are self-selecting, meaning that participation in a sector is voluntary, and that a set of mutually agreed upon vessels are eligible to participate. Any interested group that meets the eligibility criteria can submit a proposal for a sector. To initiate the process of sector creation, a group (two or more) of permit holders must agree to cooperate and submit a binding plan for management of that sector's allocation of TAC. Vessels electing to enter a sector are expected to cooperate and decide how to manage the allocation. Vessels that do not choose to participate in a sector will remain in the competitive "common pool" fishery and will fish under the un-allocated TAC(s).

Participation by non-limited access general category vessels in the sector is subject to approval by the Council as part of the action that implements the sector allocation, provided the details of such participation are specified in the sector's operations plan; however at this time the Council does not endorse participation by non-limited access qualifiers, but will consider it if part of an

actual proposal. The harvest of a sector allocation may not be limited only to sector members. A sector operations plan may specify that the sector will contract with non-sector vessels to harvest the sector allocation. In this case, if the Council endorses this approach, the landings history of the contracted vessels would not be used in the calculation of future sector shares, the contracted vessels may not build scallop catch history for themselves, and the operations plan will specify the contract details that will bind the contractor vessel to the rules of the sector.

3.1.2.7.2.2 Formation of a Sector – Operations Plan

A group that wants to form a sector and receive an allocation is required to submit a legally binding operations plan to the Council, which will ultimately require approval from the NMFS Regional Administrator. The operations plan must be agreed upon and signed by all members of the sector and, if approved, will constitute a contract.

The operations plan submitted by a self-selecting sector will be required to have, at a minimum, the following components:

- A list of all participants;
- A contract signed by all participants indicating their agreement to abide by the operations plan;
- An entity name, address, phone number, and the name and contact information for a sector representative (a manager or director) that NMFS can contact regarding sector management issues;
- A plan explaining how the sector will harvest its allocation, including contracts and methods to inform NMFS of changes in those arrangements over the year;
- The original distribution of catch history of vessels in the sector (maintaining vessel data confidentiality);
- A plan detailing how the sector will avoid exceeding its allocated TACs – this plan should include provisions for monitoring and enforcement of the sector regulations, including documentation of both landings and discards;
- Rules for entry to and exit from the sector, including sanctions and procedures for removing members for contract violations;
- Procedure for notifying NMFS if a member is no longer part of the sector for specified reasons;
- A process through which the operations plan can be amended by sector members (i.e., how the sector will make decisions to amend their operations plans);
- If the sector plans to contract for harvesting services with vessels other than those in that sector (see Monitoring, Enforcement, Transparency), details of such arrangements should be described in the operations plan;
- An appropriate NEPA document assessing the impacts of forming the sector is also required and must be submitted to NMFS through the Council – the development of the NEPA document is the responsibility of the applicants.

3.1.2.7.2.3 Sector Review, Approval, and Revocation

A sector will submit its operations plan and NEPA document to the NMFS Northeast Regional Office and the Council no less than one year prior to the date that it plans to begin operations. The Council will consider this plan in the course of the periodic framework adjustment or specification process and may, if approved, implement it through either of those processes. After

Council approval of a sector, the details of its operation will be primarily addressed between the sector and NMFS, although the Council will review and provide comment on these details.

The Regional Administrator may withdraw approval of a sector, after consultation with the Council, at anytime if it is determined that sector participants are not complying with the requirements of an approved operations plan or that the continuation of the operations plan will undermine achievement of fishing mortality objectives of the Sea Scallop FMP. Withdrawal of approval of a sector may only be done after notice and comment rulemaking as prescribed by the Administrative Procedure Act.

A sector is required to resubmit its operations plan to the NMFS Regional Office by SEPTEMBER 1? *(NMFS-what would the appropriate date be for scallops? July? And if start date of fishery changes this will need to adjust as well)* every year, whether or not the plan has changed. NMFS may consult with the Council and will solicit public comment on the operations plan for at least 15 days, through proposed rulemaking in the *Federal Register*. Upon review of the public comments, the Regional Administrator may approve or disapprove sector operations, through a final determination consistent with the Administrative Procedure Act.

3.1.2.7.2.4 Allocation of TAC to Sectors

The sector allocations represent a percentage share of TAC(s), not absolute amounts. TACs are established through the fishery specification process, which is currently a biennial process. If declining stock conditions or other factors result in the need to reduce fishing mortality, the TACs will likely be reduced accordingly. In this case, the sector's percentage share of the TAC will not change, but the amount of TAC (pounds of scallop meat) that this share represents may decrease due to reduced TACs. The same is true if the TACs increase for any reason. The calculations used in determining a sector's share are based on a vessel's qualification amount (depending on which alternative is selected that could be their best year or best year indexed by years active in the fishery.

Sector Share Determination

Sector shares cannot be calculated until NMFS makes its final determination of vessels eligible for limited access under the provisions of this amendment. When a sector proposal is submitted, NMFS will verify the qualification landings levels per vessel wanting to join a sector. The averages for vessels wanting to join a particular sector will be added together and divided by the sum of the qualification average. When this fraction is multiplied by 100, the result is the sector's percentage share of the TAC (see example below).

Membership Changes

If a pre-existing sector accepts a new member, the percentage share brought to the sector is based on that vessel's average qualification landings at the time it joins the sector (i.e., the vessel is treated as a 'sector of one' and a share based on the appropriate adjusted TACs is calculated. This new single-vessel-sector share is added to the pre-existing sector). If a vessel leaves a sector, that sector's share is reduced by the individual vessel share the exiting vessel had when it joined the sector.

Interaction Between Sectors

A vessel may *not* be a member of more than one sector.

Illustrative Example
Assumptions:

- 720 vessels qualify for a limited access general category permit;
- 10 vessels wish to form a sector in 2010;
- Total TAC for the general category fishery is projected to be 5.0 million pounds in 2010;
- The sum of the sector vessels' qualification average is 100,000 pounds (2%) of general category allocation.

This sector would be allocated 100,000 pounds in 2010. The remaining 4,900,000 pounds would be allocated to the rest of the limited access general category permit qualifiers in the "common pool".

3.1.2.7.2.5 Monitoring, Enforcement, and Transparency

It will be the responsibility of each sector to track its activity and enforce any provisions adopted through procedures established in the operations plan and agreed to through the sector contract. Therefore, sector contracts should describe graduated sanctions including grounds for expulsion.

Once a vessel enters into a sector, it cannot fish during that fishing year under the regulations that apply to the common pool. Additionally, vessels cannot shift from one sector to another during a single fishing year. Therefore, if a vessel leaves a sector for whatever reason, it cannot participate in the general category scallop fishery during the remainder of that fishing year.

For the purposes of enforcement, a sector is a legal entity that can be subject to NMFS enforcement action for violations of the regulations pertaining to sectors. Vessels operating within a sector would be responsible for judgments against the sector. Sector operations plans will specify how a sector will monitor its landings to assure that sector landings do not exceed the sector allocation. At the end of the fishing year, NMFS will evaluate landings using VMS, and any other available information to determine whether a sector has exceeded any of its allocations based on the list of participating vessels submitted in the operations plan. If a sector exceeds its TAC, the sector's quota will be reduced by the overage in the following year, and the sector may be subject to additional enforcement action. If the sector exceeds its TAC more than once, the sector's share may, after consultation with the Council, be reduced or the sector's authorization to operate will be withdrawn by NMFS.

3.1.2.7.2.6 Trading

Permanent or temporary transfers of quota between sectors or between sector and non-sector participants are not permitted. For purposes of harvesting a sector allocation only, vessels under contract to a sector are assumed to be part of that sector for the duration of that contract.

3.1.2.7.2.7 Movement Between Sectors

A vessel can only participate in one sector during a fishing year. Once a vessel elects to be in a sector or fish in the common pool for a given area, that vessel must remain with the sector or common pool for that area for the rest of the fishing year. Each sector will set its own rules on movement into and out of the sector.

3.1.2.7.2.8 Other Provisions

If a sector is approved, the Regional Administrator shall issue a Letter of Authorization to each vessel operator and/or owner belonging to the sector. The LOA shall authorize participation in the sector operations and may exempt participating vessels from one or more Federal fishing regulations as appropriate. The LOA also may include requirements and conditions deemed necessary to ensure effective administration of and compliance with the operations plan and the sector's allocation.

3.1.2.7.2.9 Measures to address "Excessive shares"

National Standard 4 of the Magnuson-Stevens Act states that:
"If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, such allocation shall be… carried out in such manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges."

NOAA's guidelines on the *avoidance of excessive share* portion of this standard (see 50 CFR Ch. VI: 600.325) state that "an allocation scheme must be designed to deter any person or other entity from acquiring an excessive share of fishing privileges, and to avoid creating conditions fostering inordinate control, by buyers or sellers, that would not otherwise exist."

Neither the language in National Standard 4 nor the NOAA guidelines specifically define "excessive share." A GAO report on Individual Fishing Quotas (GAO report # GAO-03-159) recommends that the NOAA develop guidance on factors to consider when regional councils define what would constitute an excessive share in future IFQ programs. In response to the GAO recommendation, NOAA agrees but notes that caps are not necessarily appropriate in all new IFQ fisheries. NOAA also stated that it will conduct research to provide guidance on the three categories of factors: (1) market effects, (2) distributional issues, and (3) equity considerations.

3.1.2.7.2.9.1 20% maximum allocation per sector

One sector could not be allocated more than 20% of the total general category allocation. Council decided to include this alternative to be consistent with the sector program in the multispecies plan. The maximum percent value could be changed in a future framework, perhaps after the Council considers an overall sector strategy; which it may do in the near future.

Rationale: This option was included to consider a maximum allocation per sector that would be consistent with the other sector management program in the region (Multispecies FMP). This amount may be revisited if and when the Council convenes a Committee in 2007 that is expected to develop standards and principles for sector management.

3.1.3 Hard Total Allowable Catch (Hard TAC)

One option to control mortality in the general category fishery aside from limited entry is implementing a hard total allowable catch limit. If this action does not implement a limited entry program for the general category fishery, a hard total allowable catch limit could be adopted, which would close fishing to that sector once a certain limit was reached. The TAC in future years for this component of the fishery would depend on the alternative the Council selects for

Section 3.1.7, allocation between limited access and general category fisheries. The range that is being considered is 2.5 to 11% of the total annual scallop catch, or the No Action alternative.

3.1.3.1 Fleet-wide hard TAC

A hard TAC would be developed for the general category fishery, and when the Regional Administrator projects that TAC is going to be reached, the fishery would close. If this alternative were selected the general category fishery would be managed by current input controls (possession limit) and a hard TAC. Once the Regional Administrator estimates that the fleet-wide hard TAC is projected to be caught, the general category fishery would close. The hard TAC would be based on the alternative selected for Section 3.1.7, allocation between limited access and general category fisheries. The range that is being considered is 2.5 to 11% of the total annual scallop catch, or the No Action alternative.

Rationale: This alternative is consistent with the primary goal of this amendment to control mortality in the general category scallop fishery; capacity would still be an issue.

3.1.4 Establish a Northern Gulf of Maine Scallop Management Area (NGOM)

During development of this action there has been considerable discussion of establishing a separate management system for general category scallop fishery in the Gulf of Maine. It has been argued that the fishery in this area is distinct, and the resource experiences sporadic abundance.

3.1.4.1 No Action

No specific measures would be considered for the Northern Gulf of Maine. Whatever is adopted under Amendment 11 would apply to the Northern Gulf of Maine; no separate limited entry program would be considered for that area.

3.1.4.2 Amendment 11 would not apply to the Northern Gulf of Maine

If this alternative is selected by the Council then any measures adopted in Amendment 11 pertaining to controlling capacity and mortality in the general category fishery would not apply to waters in either: **Option A** - the GOM exemption area north of 42°20N (See Figure 3 – hatched area north of 42°20) or **Option B** – waters in the EEZ north of 43N. An open access permit to fish for scallops under general category would remain for this area, and a vessel could land up to 400 pounds of scallops per trip if the have VMS (IB permit). Any vessel from any area would be permitted to apply for and fish under an open access NGOM general category permit. A hard TAC would be established for this area and if reached vessels would be limited to possession of up to 40 pounds of scallops after the TAC was reached. The Scallop Committee recommends that the hard TAC for this area include scallop landings in both federal and state waters. The actual TAC for this area would be defined in future framework actions based on information about the status of the resource in that area. The PDT will recommend a hard TAC and the Council will consider it in each biennial framework. To give the Council a sense of what the PDT would most likely base the TAC on below is some information that could be used to set the hard TAC. For example, the historical average of GOM landings from the data used in the scallop assessment for 2000-2005 is 0.62 million pounds. The Scallop PDT recommends that amount be reduced by a certain percentage (i.e. 20%) to prevent overfishing, enable rebuilding of

the scallop resource within the Gulf of Maine, and to account for the fact that most areas offshore in the NGOM that have supported scallop fishing in the past are now closed within habitat or groundfish mortality closed areas. If 0.62 million pounds were reduced by 20% then the average from the last six fishing years would be closer to 500,000 pounds.

If a region wide hard TAC or limited entry program is adopted under Amendment 11 it would not apply to this area. Therefore if a vessel fishes for scallops in this area, landings from this area would not count against an overall TAC, or an individual quota, they would only be reduced from the NGOM hard TAC.

Rationale: This alternative was recommended by the Scallop Committee as an alternative to help expedite the Amendment 11 process. It has been noted that one of the major factors that led to development of Amendment 11 was new entrants and increased effort in the general category fishery. However, the growth in general category fishing effort has not been in the Gulf of Maine. This alternative could be selected as a placeholder until assessment information is available to set more appropriate management measures in this area. The Scallop PDT did recommend that if this area was going to be managed separately a hard TAC should be considered so conservation objectives are not undermined.

3.1.4.3 Establish a Northern Gulf of Maine Management Area Limited Entry Program

This alternative would develop a separate limited entry general category program in the GOM exemption area north of 42°20N **(Option A)** (See Figure 3 – hatched area north of 42°20) or **Option B** – waters in the EEZ north of 43N. The bullets below describe the qualification criteria and restrictions for this permit as recommended by the Scallop Committee.

1. Create a NGOM scallop management area with a separate hard TAC. The TAC will be determined by historical landings until funding is secured to undertake a NGOM stock assessment. The actual TAC for this area would be defined in future framework actions based on information about the status of the resource in that area. The PDT will recommend a hard TAC and the Council will consider it in each biennial framework. The TAC will be determined by historical landings until funding is secured to undertake a NGOM stock assessment. To give the Council a sense of what the PDT would most likely base the TAC on below is some information that could be used to set the hard TAC. For example, the historical average of GOM landings from the data used in the scallop assessment for 2000-2005 is 0.62 million pounds. The Scallop PDT recommends that amount be reduced by a certain percentage (i.e. 20%). Landings from the NGOM area will not be counted against the General Category TAC.

2. To qualify for a NGOM scallop permit, one must have had a General Category scallop permit in any fishing year between 1994 and Nov. 1, 2004 and must have landed at least one 100 pound trip in the same fishing year in any area.

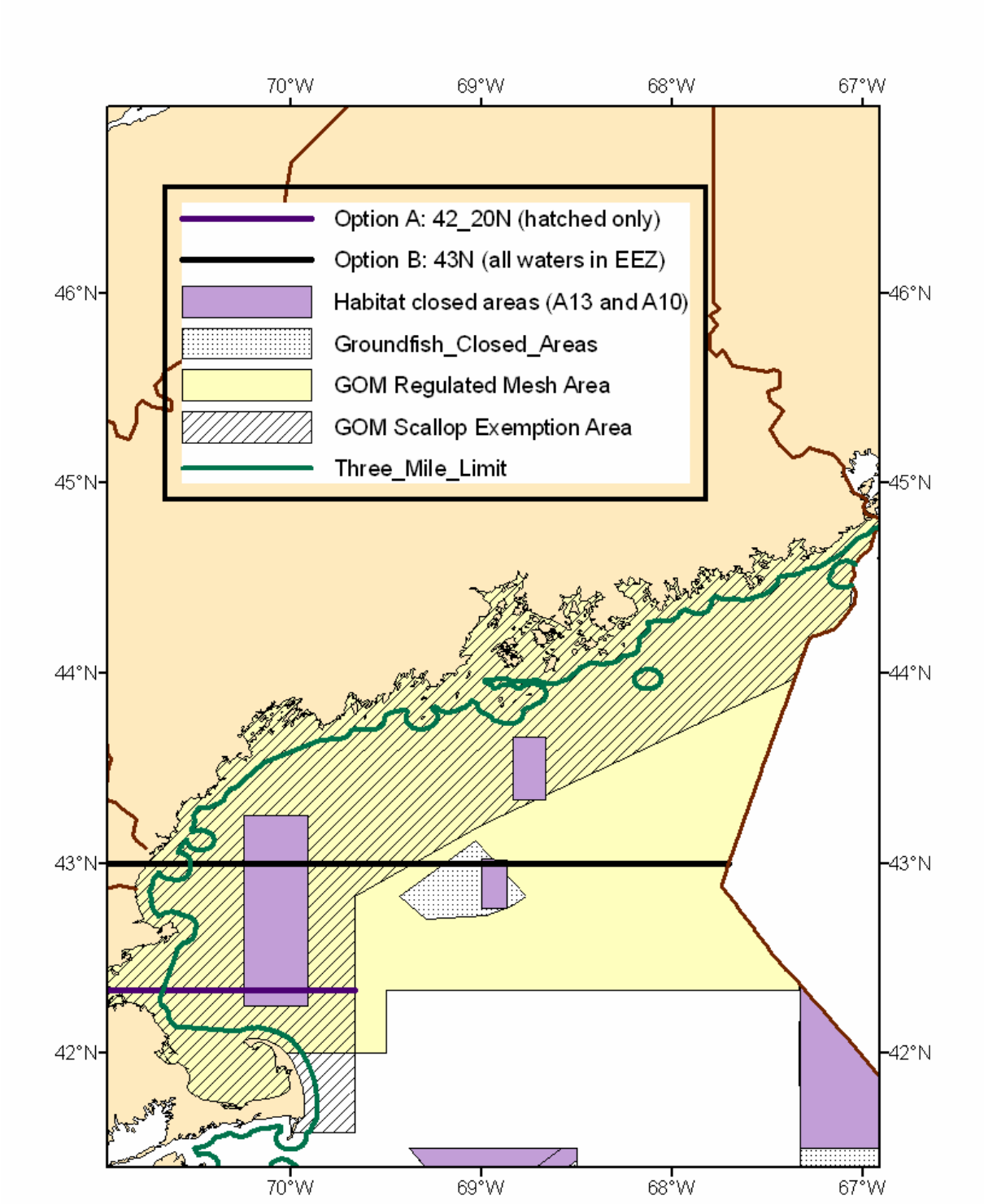
3. If a vessel qualifies for a NGOM permit they are restricted to fish for scallops in the NGOM area, and only until the TAC is reached for that area. Once that fishery closes a vessel could posses/land up to 40 pounds only when fishing for other species. Incidental landings less than 40 pounds per trip do not count against the TAC.

4. If a vessel qualifies for a limited entry general category permit their catch will be deducted from their individual allocation (in trips or pounds) regardless of where the scallops were caught. Those vessels can land up to 400 pounds per trip even in the NGOM (not restricted to 200 pound possession limit). If this vessel wants to fish in the NGOM it must declare into that area and those landings will be removed from the NGOM TAC.

5. Trip and Gear Restrictions for fishing in the NGOM Management Area:
    a. The Hard TAC back stop will be based on PDT analysis of historic landings and the PDT recommendation until an assessment of the NGOM is done to provide a better estimate of the resource.
        i. When the hard TAC is reached, the fishery in the NGOM Area will close for all Limited Access and General Category scallop vessels.
        ii. When the fishery is closed, then no vessel may posses more then 40 pounds of scallops in the NGOM.
        iii. Vessels fishing outside the NGOM Management Area that intend to land scallops in ME, MA or NH (depending on the boundary alternative selected) after the NGOM fishery is closed will have to have gear stowed and declare via VMS that they are transiting the NGOM with scallops on board.
    b. Vessels permitted to only fish in the NGOM Management Area will be limited to possession of 200 pounds of scallop meat per trip, maximum of one trip per day.
    c. All vessels fishing in the NGOM Management Area will be required to use VMS
    d. Vessels fishing in the NGOM Management Area must declare via VMS that they are fishing on a NGOM Management Area Scallop trip and must report scallop landing through VMS.
    e. Vessels fishing in the NGOM Management Area will be required to use a dredge no larger then 10.5 ft wide.

Rationale: The intent of this alternative is to provide opportunistic access for vessels that have some level of historical fishing in the NGOM. This alternative is designed to provide a reduced level of access to as many vessels as possible for sporadic times when the resource can support it. This fishery has been identified as a distinct component of the general category fishery and due to unique characteristics such as smaller vessels, sporadic fishable populations, and state regulations it is reasonable to consider management of this area separately from the overall program. General category management measures could be tailored to accommodate the distinct nature of this regional fishery without jeopardizing the success of the general category or limited access management program. Since this area is not surveyed as part of the federal scallop survey, and landings from this area are not included in the assessment, then a separate TAC is justified that will not be removed from the limited access or general category TAC.

Figure 3 – Potential boundaries for the NGOM Management Area



3.1.5 Monitoring Provisions

3.1.5.1 No Action

Whether limited entry is adopted or not, vessels would still be required to report scallop landings through vessel trip reports (VTR). Vessels are currently required to report all landings within one month after a trip has been taken.

3.1.5.2 Require landings and declaration of scallop trip through VMS

Same requirement no matter what strategy is adopted for controlling capacity and mortality (limited entry or hard TAC). Currently all general category vessels that want to land more than 40 pounds of scallops are required to have VMS, but they are not required to report landings through VMS. This alternative would add the requirement to report landings through VMS and a vessel would also be required to call in to NMFS when they are leaving port to declare that they are going on a general category scallop trip. Vessels would be required to call in the hailweight and VTR number for each trip through the VMS system.

Rationale: In order to improve monitoring of an individual quota, or fleetwide TAC, general category vessels would be required to report scallop landings through VMS. Requiring a vessel to report hailweight and VTR number would improve the ability for NMFS to link this data with other databases and enable NMFS to monitor the TAC on a more real-time basis.

3.1.5.3 Require landings and declaration of scallop trip through IVR system

Interactive Voice Reporting (IVR) is a system where vessels report landings on a weekly basis. Several TAC managed fisheries in the region use IVR. This alternative would require IVR in addition to VTR.

Rationale: In order to improve monitoring of an individual quota, or fleetwide TAC, general category vessels would be required to report scallop landings through IVR. This measure would reduce the time it takes NMFS to monitor an individual quota or fleetwide TAC.

3.1.6 Limited access fishing under general category rules

3.1.6.1 Permit or prohibit limited access vessels from fishing under general category

A limited access scallop permit owner is currently permitted to fish under general category rules when not on a DAS. This has been permitted as part of the limited access permit since implementation of limited entry under Amendment 4. A limited access vessel is permitted to possess/land up to 400 pounds of scallops per trip when not fishing under a scallop DAS, or after their individual DAS have been used.

Rationale: In order to reduce capacity and effort in the general category fishery the alternatives in this section are considering alternatives that would prohibit limited access vessels from fishing under general category rules. One alternative prohibits all limited access vessels from fishing under general category rules (Alternative 3.1.6.1.4). Two alternatives only allow limited access vessels to fish under general category rules if they qualify under the same criteria as general category vessels (Alternative 3.1.6.1.2 and Alternative 3.1.6.1.3 would be limited to part-time

and occasional vessels). The No Action alternative would allow all limited access vessels to fish under general category rules as currently permitted.

3.1.6.1.1 No Action

Permit all limited access vessels (full-time, part-time and occasional) to possess/land up to 400 pounds of scallops per trip when not fishing under a scallop DAS, or after their individual DAS have been used.

3.1.6.1.2 Permit limited access vessels that qualify under general category rules

This alternative would only allow limited access vessels that qualify under the same criteria selected for the limited access general category permit to fish under general category rules. Limited access vessels that do not qualify would be permitted to land/possess scallops under incidental rules while fishing for other species. The landings from this sector of the fishery could be deducted from the general category or limited access portion of the total harvest. If VMS is required for limited access general category permitted vessels, it is understood that vessels with occasional limited access permits that qualify would be required to use VMS. To be clear, a limited access vessel would be permitted to also have a limited access general category permit if it qualified.

3.1.6.1.3 Permit occasional or part-time limited access vessels that qualify under general category rules

This alternative would only allow occasional and part-time limited access vessels that qualify under the same criteria selected for the limited access general category permit to fish under general category rules. This alternative would exclude full-time vessels from qualifying for a limited entry general category permit. Limited access vessels that do not qualify would be permitted to land/possess scallops under incidental rules while fishing for other species. The landings from this sector of the fishery could be deducted from the general category or limited access portion of the total harvest. If VMS is required for limited access general category permitted vessels, it is understood that vessels with occasional limited access permits that qualify would be required to use VMS. To be clear, a limited access vessel would be permitted to also have a limited access general category permit if it qualified.

3.1.6.1.4 Prohibit all limited access vessels from fishing under general category rules

Vessels with a limited access permit (full-time, part-time and occasional) would no longer be permitted to fish under general category rules while not on a scallop DAS. All limited access vessels would be allowed to land/possess scallops under incidental rules while fishing for other species (See Section 0).

3.1.6.2 Allocation of quota to limited access vessels under general category

If the Council determines that limited access vessels that qualify for a general category permit under the same qualification criteria should receive a general category permit, then that effort would have to be attributed to (or removed from) either the general category allocation or the limited access allocation. If the Council decides not to permit limited access vessels to fish under general category rules then this section is irrelevant.

Rationale: If limited access vessels are permitted to land under general category rules and a hard TAC is implemented for the general category fishery under this action then scallops landed by limited access vessels under general category rules will have to be deducted from either the TAC awarded to the general category fleet, or a separate TAC awarded to the limited access fishery for scallops caught under general category rules.

3.1.6.2.1 Landings from this sector of the fishery would be deducted from the general category allocation

Similar to how these landings have been recorded in the past, landings from limited access vessels that qualify to fish under general category rules would be counted against the allocation for the general category sector.

3.1.6.2.2 Landings from this sector of the fishery would be deducted from a separate allocation added onto the general category allocation

An additional allocation would be given to limited access vessels that qualify to fish under general category rules (Section 3.1.6.1.2 or 3.1.6.1.3). The allocation would be based on the historical average since implementation of Amendment 4, understood to be about 0.5% of the total catch. Individual allocations would be scaled to equal a total of about 0.5% of the total projected yield of the scallop fishery.

3.1.7 Allocation between limited access and general category fisheries (Objective #1)

Both general category and limited access landings have fluctuated over time. Table 4 summarizes the catch and percent of total catch from each component of the fishery since 1994.

Table 4 – Scallop landings from general category vessels, limited access vessels under DAS, and limited access vessels under general category from 1994 to present

Fish Year	Total scallop landings (LA and GC)	Total scallop landings by General Category vessels only		Total scallop landing by Limited Access vessels under DAS		Total scallop landings by limited access vessels outside DAS (on 400 lb trips)	
		LBS	**%**	**LBS**	**%**	**LBS**	**%**
1994	14,907,265	95,268	0.64%	14,713,046	98.70%	98,951	0.66%
1995	15,807,941	123,967	0.78%	15,603,104	98.70%	80,870	0.51%
1996	16,447,682	204,635	1.24%	16,175,248	98.34%	67,799	0.41%
1997	12,619,221	310,049	2.46%	12,122,375	96.06%	186,797	1.48%
1998	11,186,468	164,435	1.47%	10,528,707	94.12%	493,326	4.41%
1999	21,286,244	150,482	0.71%	20,713,733	97.31%	422,029	1.98%
2000	32,929,475	357,691	1.09%	32,259,404	97.97%	312,380	0.95%
2001	45,164,706	1,216,947	2.69%	43,659,686	96.67%	288,073	0.64%
2002	49,808,416	983,775	1.98%	48,641,573	97.66%	183,068	0.37%
2003	54,778,793	1,809,071	3.30%	52,781,614	96.35%	188,108	0.34%
2004	61,714,971	3,245,661	5.26%	58,106,020	94.15%	363,290	0.59%
2005	53,214,097	7,495,884	14.09%	44,917,224	84.41%	800,989	1.51%
2006*	56,149,105	6,838,083	12.18%	48,886,653	87.07%	424,369	0.76%

** Preliminary data – 2006 fishing year not complete*

3.1.7.1 No Action

The Council would not allocate a certain percentage of the total available scallop harvest to the general category sector. Currently the landings from the general category sector are estimated, and then limited access specifications are set to harvest the remaining portion of available harvest. The landings from the general category sector are not an actual allocation, and vessels may under or over-harvest the estimated amount. This alternative could be selected whether limited access is recommended or not. Similarly, if a hard TAC is recommended this alternative could also be selected.

Rationale: Sectors of the fishery would not be allocated a specific TAC. Rather a target TAC would be determined and measures would be put in place for both fisheries to stay within that target TAC. If a portion of the fishery exceeds the target TAC no measures would be taken.

3.1.7.2 Allocation for general category vessels

The Council approved at the April 2006 Council meeting that the range of 2.5 to 11% allocation of the total available scallop harvest be considered for the general category fishery in Amendment 11. The rationale for the lower bound of the range was to consider the approximate historical average since Amendment 4 was implemented (1994-2005). The rationale for the upper bound is to consider an amount that reflects the percent of current landings (based on available data from fishing year 2005) from vessels with general category permits before the control date. Based on available landings data for 2005, approximately 80% of all general category landings were from vessels that had a permit before the control date, and 80% of the approximate 14% of total scallop landings is roughly 11% of the total scallop landings for 2005. Since this action is considering the control date as a component of the qualification criteria, the Council voiced that it is appropriate to include in the range of allocation alternatives an amount that reflects the current participation of vessels that would qualify if having a permit before the control date were the only qualifying criteria.

The Council added that a higher percentage than historic norms is justified for economic and social reasons, recognizing this fishery is an important component of fishing communities along the coast. It was further suggested that a relatively high value compared to historic norms is appropriate to consider for analysis since the general category sector landed 14% in 2005, and if the resource remains healthy then a higher percentage may be more appropriate in the long term. In addition, this range is responsive to the advisory panel requests. Lastly, the Scallop Committee suggested that is important to analyze a relatively high percent to illustrate the potential consequences of a high allocation value. The Council did not identify specific allocation percentages within the range under consideration, so the Scallop PDT will examine a feasible number of alternatives between 2.5 and 11%. The Council can select any value within the range so long as the specific alternative is analyzed and available to the Council before final decisions are made. Table 5 describes an example of possible allocations within the approved range for TAC values from 40-70 million pounds. The scallop assessment is currently being updated and is part of SARC 45. Scallop biological reference points are being reviewed and the assessment is expected to be available in mid-June, hopefully before the Council is scheduled to make final decisions on Amendment 11. In the meantime, the analyses in this document include the most updated assessment information including biological projections using survey results

from 2006. These methods and estimates were approved by the Council Statistical Committee in June 2006.

Table 5 - Estimate of the lower and upper bounds of the range approved for consideration in Amendment 11 for the general category allocation with various TAC values (40-70 million pounds).

	2.5%	11.0%
40.0	1.0	4.4
50.0	1.3	5.5
60.0	1.5	6.6
70.0	1.8	7.7

It is understood that whatever alternative is selected to control capacity and mortality in the general category fishery, the total amount allocated to the general category permit owners would be roughly equal to the overall percent selected in this alternative. Furthermore, the percent will remain the same in future years, but the total and individual poundage will vary based on changes in projected yield. Therefore, total and individual allocations in the general category fishery will be specified in each biennial framework, or whatever action implements specifications for future fishing years.

Rationale: This alternative is being considered so that the total harvest from the general category fishery can be controlled. A total amount of scallops would be allocated to the general category fishery and measures would be implemented to stay below the allocated amount. If this plan adopts individual allocation then a vessel is in violation if it lands more than the share it was allocated.

3.1.7.3 Allocation of yellowtail flounder bycatch TAC in access areas

The Council is considering allocating a specific portion of the yellowtail flounder bycatch TAC to each fishery (limited access and general category).

Rationale: In an effort to reduce the potential for one component of the fishery closing an access area to all scallop fishing this section considers allocating a portion of the total bycatch cap to the general category fishery equivalent to the percentage of total scallop TAC being considered in this action (2.5% - 11%). Each fishery would be permitted to fish in an access area until their portion of the total yellowtail flounder bycatch TAC was caught.

3.1.7.3.1 No Action

Currently 10% of the yellowtail flounder TAC (Georges Bank and SNE) is set aside as bycatch for the scallop fishery in access areas. Limited access scallop vessels are permitted to land the yellowtail flounder they catch as bycatch, but the general category fleet is not. The 10% bycatch cap is monitored through observer coverage and total bycatch estimates are extrapolated from that data. The regulations consider YT bycatch from both the limited access and general category sectors under the same TAC and once the bycatch TAC is reached, the access area would close to all vessels.

3.1.7.3.2 Allocate a proportional allocation of the 10% bycatch cap to the general category fishery

Rather than both fisheries being under the 10% cap equally, this alternative would actually divide the bycatch TAC between the limited access and general category fisheries. Whatever overall allocation of the scallop yield is given to the general category fishery (2.5%-11%), that same percentage of the yellowtail flounder bycatch cap would be given to the general category fleet for access areas. It is understood that this catch could not be retained by general category vessels; they still would not be permitted to land the yellowtail flounder that they catch. This alternative would prevent one sector of the fishery closing the access area for the other sector. For example, if the 10% bycatch TAC was reached for Closed Area II during the winter months by limited access vessels before the majority of the general category sector could access area, this alternative would prevent one sector from closing the access area for another sector.

3.1.8 Incidental Catch (Objective #4)

3.1.8.1 No Action

All vessels with an incidental scallop permit would be allowed to possess and land up to 40 pounds of scallop meat per trip. All general category vessels that do not qualify for a limited access permit could get an incidental permit. All vessels that qualify for a limited access general category permit (if one is adopted in this action), and all current limited access scallop permit owners would be permitted to land up to 40 pounds of scallops per trip when targeting other species. The incidental permit would remain open access; any vessel can apply for one. A vessel would not be required to have VMS to land/possess 40 pounds of scallops under an incidental permit.

Rationale: The Scallop PDT has not expressed concern about scallop mortality from incidental catch. If scallops are returned to the water relatively quickly, mortality of incidental scallop catch is expected to be relatively low. Some input during scoping recommended changing the incidental limit, but the Council decided that 40 pounds is an appropriate amount to prevent incentive to target scallops and reduce bycatch.

3.2 MEASURES TO ALLOW BETTER AND MORE TIMELY INTEGRATION OF RECENT DATA (GOAL #2, OBJECTIVE #5)

This was identified as the second goal of Amendment 11 because the scallop fishing year is out of sync with the framework adjustment process and the timing of when survey data become available for analysis. As a result, actions have not been implemented at the start of the fishing year, TACs have been misestimated due to reliance on older data, and extra actions have been required to compensate. Furthermore, there are numerous analytic requirements and extra steps in the framework approval process that make it difficult to implement measures in a timely way. See Section 5.1.8 for detailed background information on this issue and examples of when the timing of the fishing year has been problematic for effective management of the scallop resource. The Council has convened a Scallop Survey Advisory Committee who will provide input on this section during development of the DSEIS as well as other recommendations for the scallop survey program.

3.2.1 No Action

No additional measures would be implemented to improve the integration of recent data in the management process. Specifically, the scallop fishing year would remain at March 1.

Rationale: It may be possible to make minor changes to when the survey is conducted and how quickly the data can be processed for management use. However, this alternative may run the risk of late implementation and increased uncertainty in TAC estimates if these changes cannot be made.

3.2.2 Change the issuance date of general category permits from May 1 to March 1

Whether limited access is implemented by this action or not, this alternative would change the issuance date of general category permits from May 1 to March 1. This change would improve integration of fishery data into the management decision process. Currently, the limited access portion of the fishery is issued a permit on March 1, the start of the scallop fishing year. Because the general category permit is not issued until two months later there is a lag time is summarizing scallop landings data.

Rationale: This alternative would slightly improve integration of fishery dependent data because permits would be issues sooner and in conjunction with the scallop fishing year. This alternative will not address the timing issue of when survey data become available for analysis.

3.2.3 Change the start of the fishing year to May 1

The scallop fishing year would be changed to start May 1.

Rationale: This alternative would be most effective if the survey can be moved earlier in the year and data available in June. If data can be available in June, then an action can be initiated, developed, and analyzed in time for May 1 implementation. This alternative would allow for the most recent survey data to be used if the survey schedule could be shifted earlier several months.

3.2.4 Change the start of the fishing year to August 1

The scallop fishing year would be changed to start August 1.

Rationale: This alternative allows sufficient time to audit and analyze survey data collected through August, and the survey schedule would not have to be changed. This alternative does not require NMFS and cooperative industry survey projects to conduct research earlier in the year and would allow for the most recent data available to be used for management purposes.

3.3 OTHER MEASURES NOT DIRECTLY RELATED TO GOALS AND OBJECTIVES OF AMENDMENT 11

3.3.1 Trawl gear restriction

3.3.1.1 No Action

The regulations described in the section below would continue. All trawl vessels would be restricted to a 144 ft. trawl sweep.

3.3.1.2 Clarification of trawl gear restriction for vessels fishing under a multispecies or monkfish DAS

During development of Amendment 11 the Council became aware of a regulation that was not consistent with Council intent related to interpretation of a net size restriction (§648.51).

> (a) *Trawl vessel gear restrictions*. Trawl vessels issued a limited access scallop permit under §648.4(a)(2) while fishing under or subject to the DAS allocation program for scallops and authorized to fish with or possess on board trawl nets pursuant to §648.51(f), any trawl vessels in possession of more than 40 lb (18.14 kg) of shucked, or 5 bu. (176.2 L) of in-shell scallops in or from the EEZ, and any trawl vessels fishing for scallops in the EEZ, must comply with the following:
>
> (1) *Maximum sweep*. The trawl sweep of nets shall not exceed 144 ft (43.9 m), as measured by the total length of the footrope that is directly attached to the webbing, unless the net is stowed and not available for immediate use, as specified in §648.23.

The Council intended the144 ft. net sweep restriction to be exclusive to the scallop plan for all vessels targeting scallops using a net, and not to apply this restriction in other fisheries where scallops are caught more incidentally. This alternative would clarify that the 144 ft. net sweep restriction is intended for all vessels authorized to be in possession in excess of 40 pounds of scallops, except for vessels with a general category 1B permit and fishing under a multispecies or monkfish DAS. These vessels would not be restricted by the 144 net sweep restriction.

Table 6 summarizes the number of vessels that have both a general category scallop permit and a multispecies or monkfish permit. As of the last application date during 1994-2004 (control date), there were about 4,777 vessels that applied and received a general category permit, and 2,484 of these permits were renewed during 2004 application year. There were 2,505 vessels that received multispecies permit in 2004 (application year) that had a general category permit any one or more years during 1994-2004 (application year and before the control date). Similarly, there were 1,925 vessels that both had monkfish and general category permit during the period 1994-2004.

Table 6. Monkfish and Multispecies permits held by vessels by general category permits by last application date (unique numbers up to the control date)

Application Year and up to the control date	Monkfish permit	Multispecies Permit	General category permit
1994		107	149
1995		228	281
1996		202	262
1997		206	241
1998		137	142
1999	39	155	140
2000	111	226	210
2001	126	227	208
2002	166	266	268
2003	256	376	392
2004	1925	2505	2484
Grand Total	2623	4635	4777

Rationale: It was not the intent of the Council that this net restriction would apply to trawl vessels not directing on scallops. Since this change cannot be accomplished through a technical correction, this alternative would clarify that a trawl vessel fishing under a multispecies or monkfish DAS would not be restricted by the 144 ft. net sweep regulation.

3.3.2 Possession limit of 50 bushels

3.3.2.1 No Action

Current regulations would apply related to the possession limit of 50 bushels of in-shell scallops for all 1B general category scallop vessels.

3.3.2.2 Possession limit of 50 bushels shoreward of the VMS demarcation line and up to 100 bushels east of that line

The regulations currently permit a vessel to be in possession of either 400 pounds of scallop meat or 50 bushels of in-shell scallops if they have a 1B general category permit. However, 50 bushels of in-shell scallops does no equate to 400 pounds of scallop meat. Therefore, if a vessel wants to land scallop meat, it is technically in violation if it possesses for example 70 bushels to cut out 400 pounds of meat. The Scallop Committee recommends that an alternative be considered that would modify the regulations so that "a vessel could not possess, or land per trip more than 50 bu. (17.62 hl) of in-shell scallops shoreward of the VMS Demarcation Line, but could possess up to 100 bushels east of the demarcation line". This modification would allow a vessel to be in possession of more than 50 bushels east of the demarcation line so they are not in violation of current regulations if it takes more than 50 bushels to cut out 400 pounds of scallop meat. The 100 bushel maximum east of the demarcation line was added to reduce incentives for cheating and highgrading. The Committee recommends that the regulations described in Section 648.52 (d) below, should apply for all vessels with a general category 1B permit, not just vessels fishing in or transiting the area south of 42°20N.

§ 648.52 Possession and landing limits

a) Owners or operators of vessels with a limited access scallop permit that have declared out of the DAS program as specified in §648.10 or that have used up their DAS allocations, and vessels issued a VMS general scallop permit, unless exempted under the state waters exemption program described under §648.54, are prohibited from possessing or landing per trip more than 400 lb (181.44 kg) of shucked, or 50 bu. (17.62 hL) of in-shell scallops, with no more than one scallop trip of 400 lb (181.44 kg) of shucked, or 50 bu. (17.62 hL) of in-shell scallops, allowable in any calendar day.

d) Owners or operators of vessels issued limited access or general category scallop permits fishing in or transiting the area south of 42°20'N. Latitude at any time during a trip are prohibited from fishing for, possessing, or landing per trip more than 50 bu. (17.62 hl) of in-shell scallops shoreward of the VMS Demarcation Line**,** unless when fishing under the state waters exemption specified under §648.54.

Rationale: This alternative would allow a vessel to harvest the amount of in-shell scallop (which varies by area and season) it takes to reach the 400 pound of meat possession limit. Currently a vessel is in violation if they have more than 50 bushels north of 42°20N, although it is common knowledge that 50 bushels do not equal 400 pounds of scallop meat. Since general category vessels are now required to have VMS to land more than 40 pounds of scallops, possession limits can be enforced inside the demarcation line because the fishing vessels location is know. The Committee recommends that a maximum of 100 bushels be added east of the demarcation line to reduce incentives for cheating and highgrading.

3.4 ADDITIONAL MEASURES THAT CAN BE IMPLEMENTED BY A FRAMEWORK ACTION TO THE SCALLOP FMP

Depending on which measures are selected as final measures for Amendment 11 will determine the specific measures that should be added to the list of frameworkable items. Any new measures that need to be adjusted on an annual or biennial basis as a result of this action would be added to the list of frameworkable items. For example, if limited entry for general category vessels is adopted under Amendment 11, with an individual, tiered, or fleetwide allocation, the specific allocations for vessels would require adjustment through the biennial framework process.

3.5 CONSIDERED AND REJECTED ALTERNATIVES

3.5.1 Measures to control capacity and mortality in the general category scallop fishery (Goal #1)

3.5.1.1 Limited Entry (Objective #2)

3.5.1.1.1 Qualification criteria alternatives

3.5.1.1.1.1 Use of the control date only

In order to qualify for a limited access general category permit, a vessel would have to have had a permit before the control date, November 1, 2004.

Rationale for Rejection: The Committee considered this alternative and recommended not including it for analysis. The Committee felt that this criterion was not sufficient enough for controlling capacity and mortality in the general category fishery and additional criterion was necessary like historical landings. Furthermore, there is one alternative in the document that would give a permit to all vessels that had a permit before the control date even if they did not have landings, and those vessels would be able to purchase/lease quota from another vessel that qualified for access to the fishery with landings.

3.5.1.1.1.2 Use of the control date AND date VMS was required

In order to qualify for a limited access general category permit, a vessel would have to have had a permit before the control date, November 1, 2004 AND obtained VMS (permit 1B) before the December 1, 2006 deadline.

3.5.1.1.1.3 Use of control date, date VMS was required, and additional criteria in pounds or trips

In order to qualify for a general category permit, a vessel would have to have had a permit before the control date, November 1, 2004 AND obtained VMS (permit 1B) before the December 1, 2006 deadline AND qualify for additional criteria based on historical effort in pounds or trips. .

Rationale for Rejection: These alternatives were rejected because the Scallop Committee agreed with comments made at the general category scallop advisory panel meeting that using the VMS date would be unfair. It is unfair to exclude people based on the VMS date because there was no warning; it was never mentioned in the notice that getting VMS could be used as a qualifier, so that is wrong. There is a big difference between knowing you have to get VMS to participate in the fishery for the following year, and having to get VMS to participate in the fishery forever.

3.5.1.1.2 Qualification time period alternatives

3.5.1.1.2.1 Historical landings through fishing year 2004

Originally the qualification time period alternatives went through all of fishing year 2004, not just until the control date, November 1, 2004. For example, one alternative was FY2000-FY2004, which is five full fishing years.

Rationale for Rejection: The Committee decided to revise the qualification time period alternatives to end at the control date to be consistent with the other qualification criteria alternatives. The Committee did not think it was desirable to have landings after the control date count toward qualification for a permit that had to be issued before the control date.

3.5.1.1.3 Qualification exception for vessels from Southern New England

The general category advisors recommended an alternative for a qualification exception for vessels homeported near the Southern New England (SNE) exemption area. They discussed that vessels from this area have not been able to fish near their homeport since 1996 due to the closure to protect SNE yellowtail flounder. Vessels have only been permitted to fish in the SNE exemption area for six months of 2004. It was recommended that their landings history for qualification should be prorated. Specifically, if a limited access program is developed with multiple years for qualification criteria in trips and/or pounds, the SNE exemption area should be

considered an exception area for qualification purposes. Landings for qualification should be pro-rated or weighted for vessels homeported between 72° 30 to 70° 00.

The PDT reviewed this recommendation and while they voiced concern about exceptions they suggested a modification to this alternative. The way the alternative is written now is problematic related to limiting that exception to vessels that are from a certain area. Instead it was suggested that a qualification exception could be considered for vessels that have landings reported in VTR from that area from 1994-2004, rather than being from a certain geographical area. They cautioned that there may be other areas where regulations have prohibited vessels from fishing all year in areas near their homeport, and SNE yellowtail is in poor shape and reducing impacts on this species would be beneficial.

Rationale for Rejection: The Committee discussed this alternative and a motion was made to include it in the document, but the motion was not seconded so failed. The Committee discussed that exceptions are dangerous, and this would set a precedent for vessels from other areas to claim the same. Furthermore, it was noted that these vessels could have relocated and fished in other areas.

3.5.1.1.4 Determination of qualification amount

3.5.1.1.4.1 Allocation based on weighting of historical annual landings

The Committee did recommend one weighting alternative, but several others were considered. For example, four strategies were presented to the Committee and three of them were not selected. One approach took a vessels best year and multiplied the total by a weighting factor that would represent years active in the fishery. A second approach took all annual landings for a vessel and multiplied each year by a by a weight relative to participation in the fishery. One example of this approach gave higher weights to more recent years (approach recommended by the Committee) and a second example gave higher weights to earlier years the second example was considered and rejected. The last method presented was a combination of the first two. [The detailed analyses of these weighting examples were presented in a document to the Committee on May 17, 2006 and are available upon request].

Rationale for Rejection: The Committee decided to recommend one weighting alternative only, not four individual alternatives. The Committee recommends that the strategy that uses all years of history and gives a higher weight to more recent years was the more desirable. This strategy would benefit vessels that have been active in the fishery for more than one year, but provide a higher weight to more recent years (arguably vessels with more current dependence on the fishery).

3.5.1.1.4.2 Allocation based on average of best three years

A vessels qualification would be based on an average of their best three fishing years. If a vessel did not fish for three years during the qualification time period, zeros will be factored in, thus reducing the overall percentage that vessel would be allocated. Landings from 2004 will only be from March 1, 2004 through November 1, 2004 (eight month period); landings from that year will not be pro-rated for a full fishing year. Keep in mind that the qualification amount per vessel may not actually be the amount a vessel is allocated. A vessels historical landings will

determine the percent of general category landings that individual vessel will be awarded. Their allocation may be further scaled up or down annually depending on the projected yield of the scallop resource and the overall allocation percent the Council selects for the general category fishery. *This alternative will only be coupled with the longer time series alternatives, it will not be considered for the alternative that is based on FY2003-November 1, 2004.*

Rationale for Rejection: The Council considered a handful of alternatives to determine a vessels contribution factor. After preliminary analyses were done this alternative was inferior to other alternatives still being considered in the document. When some of the qualification alternatives are combined some unintended consequences may result in terms of individual allocations greatly exceeding a vessel's best year, which increases distribution impacts on individual vessels. Furthermore, it is difficult for a vessel to predict their contribution with this alternative and NMFS has to confirm more than one year of landings data for this alternative (as well as the following alternatives below). All three of the alternatives in this section (best three years averaged, average of all years and weighting alternatives will disadvantage vessels that did not fish or had a low level of landings in some years due to reasons beyond their control, such as vessel repairs, illness etc.

3.5.1.1.4.3 Allocation based on an average of all years during the qualification time period selected

A vessels qualification would be based on an average of their landings during all years during the qualification time period selected. Landings from 2004 will only be from March 1, 2004 through November 1, 2004 (eight month period); landings from that year will not be pro-rated for a full fishing year. Keep in mind that the qualification amount per vessel may not actually be the amount a vessel is allocated. A vessels historical landings will determine the percent of general category landings that individual vessel will be awarded. Their allocation may be further scaled up or down annually depending on the projected yield of the scallop resource and the overall allocation percent the Council selects for the general category fishery.

Rationale for Rejection: Same as above.

3.5.1.1.4.4 Allocation based on weighting of historical annual landings

A vessels qualification would be weighted; lower weights for earlier years and higher weights for more recent years. Annual landings would be determined for each vessel, and each annual total would be multiplied by a weighting factor; for example, 1.0 for 2004 landings, 0.9 for 2003, 0.8 for 2002 etc. The average of the weighted totals for each year would determine a vessels final qualification percent. The DSEIS is going to consider several different weighting amounts for the Council to consider. Landings from 2004 will only be from March 1, 2004 through November 1, 2004 (eight month period); landings from that year will not be pro-rated for a full fishing year. Keep in mind that the qualification amount per vessel may not actually be the amount a vessel is allocated. A vessels historical landings will determine the percent of general category landings that individual vessel will be awarded. Their allocation may be further scaled up or down annually depending on the projected yield of the scallop resource and the overall allocation percent the Council selects for the general category fishery.

Rationale for Rejection: Same as above.

3.5.1.1.5 Allocation of access for general category limited access qualifiers

3.5.1.1.5.1 Individual fishing quota for two permit types (part-time and full-time)

The advisors originally recommended this alternative as one that would allocate and individual fishing quota for the full time permits and a hard TAC for the part time permits. The Committee decided to refine that recommendation to be an individual fishing quota for both permit types based on historical landings.

Rationale for Rejection: The Committee decided not to consider an alternative that uses a hard TAC because it would promote derby style fishing. This causes many problems such as vessel safety, price, product quality etc. Furthermore, it was discussed that monitoring a relatively small TAC (only a fraction of the general category TAC) could be problematic.

3.5.1.1.5.2 Full-time permit allocated in 2,000 pound increments

The general category advisors suggested an alternative for vessels that qualify for the full-time permit under this alternative. It was suggested that a vessels best year should be used, but rather than allocating a different value for each vessel, their best year would be rounded into tiers of 2,000 pound increments. For example, a vessel whose best year was 6,450 would be allocated 6,000 pounds since it falls within the 5-7,000 pound increment. This strategy was recommended as a compromise of allocating each vessel an individual allocation and allocating only several tiers.

Rationale for Rejection: The Committee considered this alternative and did not recommend including it for analysis. The Committee felt that the individual allocation alternative and the tiered permit system were sufficient enough and it may be difficult to monitor and administer all these different tiers.

3.5.1.1.6 Limited entry permit provisions

3.5.1.1.6.1 Special consideration for vessels under construction or written contract for purchase

To qualify for a limited access general category scallop permit, a vessel must meet the qualification criteria using the control date, or the vessel owner must show proof that the vessel was under new construction or written contract for purchase as of November 1, 2004 (the control date), and was issued a general category permit after the control date AND that vessel landed a specific amount of scallops that demonstrates serious participation and dependence on the fishery during a certain time period after the control date (e.g. November 2, 2004 through February 28, 2005, November 2, 2004 through November 1, 2005, or November 2, 2004 through Feb 28, 2006).

Table 7 summarizes the number of additional vessels that could possibly qualify for a limited entry general category permit if the qualifying time period is extended beyond the control date. This would include all vessels that can show landings beyond the control date, no additional criteria have been added such as level of dependence, substantial investment in a new vessel etc.

Table 7 – Summary of potential qualifiers if qualification time period is extended, based on dealer data

Qualification	Number of	Increase in qualifiers	Increase in qualifiers

criteria	Qualifiers 2000 through control date	Through end of 2004 fishing year*	Through end of 2005 fishing year
100 lb. Criteria	550	26	250 (65 have permit after CD)
1000 lb. Criteria	370	28	254 (63 have permit after CD)
5000 lb. Criteria	186	10	202 (47 have permit after CD)

*All of the new qualifiers if CD is extended the end of 2004 fishing year have permits on or before the CD.

Rationale for Rejection: This alternative was developed to consider an alternative that would waive the requirement to have a permit and landings before the control date for vessels that could prove substantial investment before the control date and high dependence on the fishery after the control date (higher landings requirements). The Committee considered this alternative and decided to reject it because this alternative would extend the qualification criteria for "latecomers" without consideration for vessels that may have had a permit and some landings before the control date, but not higher dependence on the fishery until after the control date. It was viewed as unfair to only have this alternative that would extend the qualification for one group of vessels and not another group that may not get a permit for other circumstances. When the Committee tried to develop language that would accommodate several different groups of vessels that may have special circumstances, the number of vessels that could potentially qualify was estimated to be higher than a desirable number of 1A qualifiers.

3.5.1.1.7 Measures to reduce incentive for limited entry qualifiers to fish for scallops with trawl gear

3.5.1.1.7.1 Prohibit the use of trawls in the general category fishery, with an exception for vessels on a multispecies DAS

This alternative would prevent all limited access general category qualifiers from landings scallops with trawls. However, there would be an exception for vessels fishing under a multispecies DAS. It was raised during scoping that there is a component of the general category fishery that lands scallops while on a multispecies DAS and those vessels should be able to continue that activity, and have scallop landings as a component of overall catch with trawl gear. Since multispecies DAS are limited, the amount of fishing for scallops with trawls in the multispecies fishery is limited.

Rationale for Rejection: This alternative was removed from consideration at the June 2006 Council meeting. The majority of the Council was uncomfortable with this alternative because it makes an exception for the multispecies fishery only. Preliminary data of scallop catch from vessels using trawl gear suggests that the multispecies fishery does not currently land more scallops on average per trip than other trawl fisheries. The only component of the multispecies fishery that does land close to the 400 pound possession limit is vessels participating in SAPs.

3.5.1.1.7.2 Lower possession limit for net fisheries other than under a multispecies DAS

For any net fishery (i.e. fishing on a limited access regulated species) not operating under a DAS, a vessel that qualifies for a limited access general category permit may use a net and land up to 200 pounds per trip, even if their permit allows them to land up to 400 pounds. This provision would not allow a vessel to land more scallops than it would be permitted to under its limited access general category permit. This alternative is similar to Section 3.1.2.6.3, with an exception

for vessels fishing under a multispecies DAS. These vessels would not be restricted to the lower possession limit.

Rationale for Rejection: Same as above.

3.5.1.1.8 Sectors and Harvesting Cooperatives

3.5.1.1.8.1 Add "mechanism to adopt sectors and harvesting cooperatives" as a frameworkable item

This alternative would add "mechanism to adopt sectors and harvesting cooperatives" to the list of framworkable items. The Council could then decide to consider and approve sectors in a future framework, rather than an amendment.

Rationale for Rejection: NOAA Counsel advised that this mechanism would have to be adopted by an amendment; therefore, the Committee recommended adding this as a framworkable item be considered and rejected.

3.5.1.2 Alternative to modify the possession limit restriction

The Scallop Committee recommended inclusion of an alternative that would change the current 400 pound possession limit to a 400 pounds per 24-hour day restriction, with a cap of no more than five days to be landed at once. If a vessel is on a multiple day trip it would be permitted to bring in more than 400 pounds on one trip. For example, if a vessel went on a three- day trip (which could be confirmed through VMS), it could possess and land up to 1,200 pounds of scallop meat, or if it was a two-day trip, the vessel could land/possess up to 800 pounds. This alternative would apply to both access area trips and open area trips, but a vessel would be restricted to a five day limit, or 2,000 pounds per five-day trip.

Rationale for Rejection: Aspects of this alternative were incorporated into Alternative 3.1.2.4.1.1 at the June 2006 Council meeting, but it is now limited to the IFQ alternative only. The majority of the Council was uncomfortable with the potential unintended consequences of this alternative. For example, this alternative may have the potential to change fishing behavior if vessels can land 2,000 pounds on one trip, potentially having safety impacts. The current "dayboat" fleet provides a valuable product to the market, and increasing the possession limit may impact that product for some vessels. In addition, the price/demand of a general category permit would likely increase if the possession limit were increased to 2,000 pounds, and it would be more attractive for limited access vessels to fish under general category rules if the possession limit increased.

3.5.1.3 Hard Total Allowable Catch (Hard TAC)

3.5.1.3.1 Hard TACs by area, quarter, or combination of area and quarter

A hard TAC would be developed for certain areas, or both area and quarter. The Scallop Committee recommends that the document consider an alternative that would develop a quarterly TAC for qualifying vessels (Alternative 3.1.2.4.7). Once the Regional Administrator projects the TAC for that area is going to be reached, the fishery would close. This option could be implemented for only vessels that qualify for a limited access general category permit, or if the

Council decides not to implement limited entry. It is not clear yet whether vessels would be restricted to certain areas, or if they would be permitted to move freely to different areas.

Rationale for Rejection: The Committee did not spend a significant amount of time developing hard-TAC alternatives based on input from scoping and derby concerns. The Council wanted to leave one hard-TAC option in for consideration (Section 3.1.3).

3.5.1.3.2 Hard TAC on an individual basis

The general category fishery could be managed by current input controls (possession limits) and a hard TAC on an individual basis. If coupled with limited access all qualifiers would get an equal allocation. If under open access vessels would apply for a permit annually, and after the Regional Administrator determines the general category TAC for the year and the number of vessels, each vessel would be allocated an equal share of the general category TAC. Each vessel would be permitted to land up to 400 pounds per trip until their individual hard-TAC was caught. A vessel would be responsible to monitor their own TAC, and would be in violation if they land/possess more than their individual TAC. After an individual TAC is caught, a vessel could land/possess scallops and under an incidental permit while fishing for other species.

Rationale for Rejection: There are administrative and monitoring issues with this alternative. It is very complex, and may be impossible to implement under open access.

3.5.1.4 Monitoring Provisions

3.5.1.4.1 Daily dealer reporting

This alternative would require federal dealers to report scallop landings on a daily basis only if Amendment 11 implements limited entry for the general category scallop fishery and allocation is in pounds (if in number of trips or TAC no daily reporting required).

Rationale for Rejection: The Committee considered this alternative and determined that the cost and burden to dealers would not outweigh the benefits of daily reporting. Daily reporting may improve monitoring of an individual quota or TAC for the general category fishery, but daily reporting for one species does not seem feasible at this time.

3.5.1.5 Limited access fishing under general category rules

[None]

3.5.1.6 Allocation between limited access and general category fisheries (Objective #1)

3.5.1.6.1 Allocation for vessels that qualify for a general category limited access permit

3.5.1.6.1.1 Examine a range of 2-5% of the total allocable catch

3.5.1.6.1.2 Examine a range of 5-15% of the total allowable catch

3.5.1.6.1.3 Examine a range of 2-15% of the total allowable catch

3.5.1.6.1.4 Examine a range of 2-35% of the total allowable catch

Rationale for Rejection: The Scallop Committee considered all these ranges, and originally recommended 2.5 – 12.5%. They identified 12.5% at their first meeting as an upper bound that would reflect the negative consequences of a high allocation, so any amount higher than that would be unreasonable based on the Committee rationale for the alternative they selected for consideration. The Council ultimately selected 2.5 to 11% as the final range for consideration.

3.5.1.6.1.5 Adjust allocation between general category and limited access sectors if total projected catch is above 60 million pounds

If total annual projected catch is above 60 million pounds, the difference in allocation should be split equally between the general category and limited access sectors. For example, if projected catch is 70 million, then 10 million should be allocated 50% to general category and 50% to limited access; so 5 million pounds would be added to the allocated portion of 60 million for each sector.

Rationale for Rejection: The Scallop Committee did not recommend including this for analysis.

3.5.1.6.2 Allocation for limited access general category qualifiers between open and access areas

During development of alternatives the advisors, PDT and Committee have discussed the complication of allocation for limited access general category qualifiers in terms of open areas versus access areas. The alternatives in this section describe how the general category allocation would be allocated in terms of open areas or access areas.

3.5.1.6.2.1 No Action

Currently the general category has been allocated 2% of the TAC for each access area, allocated in a fleetwide total number of trips. For example, in 2006 577 trips were allocated to the general category fleet in Nantucket Lightship, which was about 2% of the TAC for that access area (577 trips x 400 pounds = 230,800 pounds). This allocation decision is currently made during the biennial specification process. So if this alternative is selected, it is understood that a specific percentage of the TAC per access area would be allocated to the general category fleet, converted into a total number of fleetwide trips. It is understood that this allocation (2% or otherwise) could be variable for each area in future years. The framework would analyze the impacts of variable allocations.

3.5.1.6.2.2 Allocate the same percent that is allocated overall for each access area

This alternative would allocate an equal percent of access area TAC to what the Council selects for overall allocation for the general category fishery (Section 3.1.7). For example, this document is considering allocating a portion of the total TAC (2.5% to 11%) to the general category fishery. If the Council selects 2.5%, then the general category would be allocated 2.5% of the TAC in all access areas as well (starting in FY2008). On the other hand if the Council decides to allocate 11% of the TAC to the general category fishery, then 11% of each access area would be allocated to that sector of the fleet (starting in FY2008). It is assumed that the allocation for access areas would still be a fleetwide total allocation of trips, not on an individual basis. Once the total number of trips is taken, the access area would close for all general category vessels.

Rationale for Rejection: All of Section 3.5.1.6.2 was moved to the considered but rejected section at the June 2006 Council meeting. It was discussed that it may not be effective to allocate the same percent per access area to the general category fishery. About 2% of the total TAC has been allocated to the general category fishery in previous access programs, but it was noted during this process that it may be most effective to consider variable percents for different access areas. For example, the 2% allocated in Closed Area II has never been caught by the general category fishery. It was discussed that these decisions are best considered in future framework actions that set specifications and allocations for the access area program and there is nothing in current regulations to prevent different percentages from being considered.

3.5.1.7 Incidental Catch (Objective #4)

3.5.1.7.1 Consider an incidental catch for different fisheries appropriate for each fishery

Examine available bycatch data and define what an appropriate incidental catch limit would be for different fisheries. For example, if data reflects that 30 pounds is appropriate for the fluke fishery then the incidental catch for that fishery should be adjusted downward. And if data reflects that 300 pounds is appropriate for the Closed Area II SAP groundfish fishery, then the incidental catch for that fishery should be adjusted upward from 40 pounds.

Rationale for Rejection: The PDT reviewed this alternative and recommended it be considered and rejected for the following reasons:1) it is not well defined, 2) would be very difficult to analyze because there is very little observer data for the general category fishery, 3) it is very difficult to define when a vessel is "in" a certain fishery, 4) incidental catch is not a large concern for mortality and it is possible that vessels that land more than 40 pounds under general category now (like some components of the groundfish fishery) are likely to qualify for a limited access general category permit anyway]. The Committee agreed with these recommendations and rejected this alternative for consideration.

3.5.1.7.2 Prohibit landing of incidental catch (zero possession limit)

This option would prevent all vessels from landing scallops unless under a limited access or limited access general category scallop permit. Limited access vessels not on a scallop DAS would be prohibited from possessing scallops. Vessels that qualify for a general category limited entry permit would be prohibited from possessing scallops when fishing for other species and not

on a general category trip. And all other vessels that currently are permitted to land an incidental catch of 40 pounds under a general category 1A permit would be prohibited from possessing or landings scallops.

Rationale for Rejection: The Committee does not recommend that the incidental scallop permit be changed under this action. The PDT notes that incidental catch does not have a large impact on mortality and the current incidental catch permit reduces scallop bycatch when vessels are targeting other species.

3.5.1.7.3 Any vessel participating in a special access program(SAP) program can land up to 400 pounds of scallops per trip whether they qualify for a limited entry general category permit or not

A vessel participating in a SAP would be exempt from general category rules. Specifically, if limited entry was approved these vessels would not have to qualify and could land up to 400 pounds of scallops when on a SAP trip. These vessels would not be permitted to land scallops over 40 pounds when not on a SAP trip. If a vessel does qualify for a limited entry general category permit and it is approved, scallop landings from SAP trips would not count against an individual quota or hard TAC. Landings from these trips are considered incidental and increasing the limit from 40 to 400 pounds is a bycatch reduction measure.

Rationale for Rejection: While preliminary data show that SAP trips are on average close to the 400 pound possession limit, discard mortality of scallops is considered low.

3.5.2 Measures to allow better and more timely integration of recent data (Goal #2, Objective #5)

3.5.2.1 Annual management of scallops

This alternative would change scallop specification setting to an annual basis rather than biennially as it currently is. Biennial management was approved under Amendment 10 and this alternative would change that process to an annual cycle. Any measures like DAS, TACs, and access area allocations would be made on an annual basis, rather than every two years.

Rationale for Rejection: This alternative would reduce uncertainty in setting TACs two years out using older data. It would improve integration of more recent survey and fishery data; however it does not address the timing issue of the survey. Data from the most recent survey conducted in the summer would not be available for the specifications set that following March; therefore, specifications would be based on year old data. In addition, there are currently not enough resources available or time for the Council to consider specifications every year for this fishery. It would leave no time for development of actions to adjust the FMP in general, all available time and resources would be spent on the annual specifications.

3.5.3 Other measures not directly related to goals and objectives of Amendment 11

3.5.3.1 Formation of sectors for the existing limited access scallop fishery

This alternative would establish a process for the creation of fishing "sectors" and the allocation of TAC shares to the sectors, specific to the limited access scallop fishery. Groups may be

formed around common fishing practices, common homeport or landing port, common fishing area, common marketing arrangements, etc. Details on eligibility criteria, operations plan elements, monitoring and enforcement of sectors, allocation rules, and other related issues would have to be defined. How the sector chooses to harvest its allocation could include a wide range of arrangements, including, but not limited to, a plan that simply sub-divides the TAC or a measure of effort among the vessels.

The purpose of establishing this process is to allow greater opportunities for fishery participants to proactively engage in resource governance, to provide greater flexibility for participants, to guide the appropriate development of capacity, and, last, to create outcomes that are more socially and economically relevant for fishing groups within the biological limitations of the fishery (TACs).

Rationale for Rejection: The Council rejected this option for inclusion in Amendment 11 because this action is primarily focused on the general category fishery. Rather the Council has created a stand alone committee for 2007 that will focus on development of sector management in the Northeast region. An omnibus plan may be developed including overall guidelines and principles for sector management and potential creation of sectors in all fisheries in this region. The Council determined that this would be a more comprehensive way to address potential issues with sectors in the limited access scallop fishery.

4.0 AFFECTED ENVIRONMENT

The environment affected by the sea scallop fishery as a whole is described in Section 7 of Amendment 10 to the Sea Scallop FMP (NEFMC 2003). That description is incorporated herein by reference. The Scallop Plan Development Team completed a Stock Assessment and Fishery Evaluation Report (SAFE Report) in Framework 18 (NEFMC, 2005), and will update that SAFE Report in Framework 19 (expected submission in 2007). Updated data and analysis of the fishery will be completed, including the update assessment of the scallop resource, new estimates on safety trends, new analyses of limited access scallop effort distribution, and new estimates of finfish bycatch in both the controlled access and open areas.

A benchmark assessment for Atlantic sea scallop is scheduled for June 2007. All the parameters of the scallop stock assessment will be reviewed and the Stock Assessment Review Committee (SARC) will approve an updated assessment that will be summarized in Framework 19 as well. Since this action is falling in-between SAFE Reports it will simply summarize information from the most recent SAFE Report and update relevant data through fishing year 2006 (to date). This section will include focused information on the general category since that is the primary component of the fishery this action is addressing. This section includes a summary of information known about the scallop resource, EFH, and threatened, endangered and other protected species within the area the scallop fishery takes place. Furthermore, data about the fishery is included, as well as bycatch of non-target species in the scallop fishery. Furthermore, an update of fishery information is included through fishing year 2006 (to date).

4.1 THE ATLANTIC SEA SCALLOP RESOURCE

The biological environment potentially affected by this action includes fishery resources. This section will focus on those fishery resources for which data are readily available, namely those targeted by commercial fisheries.

The management unit for the Scallop FMP consists of the sea scallop resource throughout its range in waters under the jurisdiction of the U.S. The six resource areas generally recognized within the management unit are: (1) Delmarva; (2) New York Bight; (3) South Channel; (4) Southeast part of Georges Bank; (5) Northeast peak and the northern part of Georges Bank; and (6) the Gulf of Maine. The Delmarva area includes scallops as far south as North Carolina (NEFMC 2003).

The Atlantic sea scallop (Placopecten magellanicus (Gmelin)) is a bivalve mollusk distributed along the continental shelf, typically on sand and gravel bottoms, from North Carolina to the north coast of the Gulf of St. Lawrence (Hart and Chute, 2004). Large concentrations of sea scallops are found on Georges Bank and the Mid-Atlantic shelf, while smaller concentrations are found along coastal Maine, in the Bay of Fundy (Digby grounds), in the Gulf of St. Lawrence, on St. Pierre and Browns Bank, and Port au Port Bay, Newfoundland (NEFMC 2003).

Atlantic sea scallops generally occur on gravel or sand bottoms where temperatures remain below 20° C. They typically occur in shallow water (less than 40 m depth) north of Georges Bank, thought they have been occasionally observed in waters over 350 m deep in the Gulf of Maine (Hart and Chute, 2004). On Georges Bank sea scallops typically occur between 30 and

110 m depth, while they are distributed between 20 and 80 m in the Mid-Atlantic. The major U.S. fishing grounds are Georges Bank and the Mid-Atlantic Bight, though a relatively small scallop fishery does exist in the Gulf of Maine, generally in shallow, nearshore waters (Hart and Rago, 2006, Smith, 1891).

The Atlantic sea scallop has separate sexes with external fertilization. The pelagic larval stage lasts 4-7 weeks and settlement usually occurs on firm sand, gravel, shells, etc. Scallops are generally sexually mature at age 2, but more significant gamete production may not occur until age 4 (MacDonald, and Thompson, 1986). Scallops grow rapidly during the first few years of life and can quadruple their meat weight between the ages of 3 to 5 (NEFSC, 2004). Currently, scallops recruit to the fishery when they are about 4-5 years old, but historically 3 year old scallops were often exploited, which reduced the overall reproductive capacity of the resource. Spawning generally occurs in late summer or early autumn. DuPaul et al. (1989) found evidence of spring and autumn spawning in the Mid-Atlantic Bight area and Almeida et al. (1994) and Dibacco et al. (1995) found evidence of limited winter-early spring spawning on Georges Bank.

4.1.1 Atlantic sea scallop assessment

The federal scallop survey is the primary source of data used in the biological component of the scallop assessment. The scallop dredge survey has been conducted in a consistent manner since 1979. An 8-foot modified scallop dredge is used with a 2" rings and a 1.5" liner. Tows are 15 minutes in length at a speed of 3.8 knots, and stations are identified using a random-stratified design. About 500 stations are completed each year on Georges Bank and the Mid-Atlantic. Currently there is a Scallop Survey Advisory Panel (SSAP) reviewing the scallop survey and making recommendations about how future surveys should be conducted, since the vessel platform currently being used (R/V Albatross IV) is going out of service. The panel is considering all types of modifications to the scallop survey program and recommendations will be made through the Council in the near future.

The scallop assessment was last reviewed at SAW 39 in 2004. The invertebrate subcommittee updated the status of the scallop resource, evaluated stock status, provided short-term projections of biomass and catch, updated biological reference points, evaluated information by various current survey approaches, and discussed stock assessment modeling approaches using both fishery independent and dependent data.

Primary components of the assessment process are defining parameters for scallop growth, maturity and fecundity, shell height/meat weight relationships, recruitment, and estimates of natural mortality. These data are combined with fishery data (landings and discards) to estimate fishing mortality rates and biological reference points used in the status determination. The per-recruit reference points F_{max} and B_{max} are used by managers as proxies for F_{msy} and B_{msy} because the stock-recruitment relationship for scallops is not well defined. B_{max} is defined as in survey units (meat weight in grams per tow) and is the product of BPR_{max} (biomass per recruit at $F=F_{max}$) times median historical recruitment. For scallops B_{max} was calculated as 5.6 kg/tow (NEFSC, 2003). Sea scallops are overfished when the survey biomass index for the whole stock falls below ½ B_{max}. F_{max} is the fishing mortality rate for fully recruited scallops that generates maximum yield-per-recruit. Overfishing occurs if fishing mortality exceeds the F_{msy} proxy

(F_{max}). Management is currently based on an overfishing threshold of $F_{max} = 0.24$ and a target of $0.8F_{max} = F_{target} = 0.2$.

Status Determinations

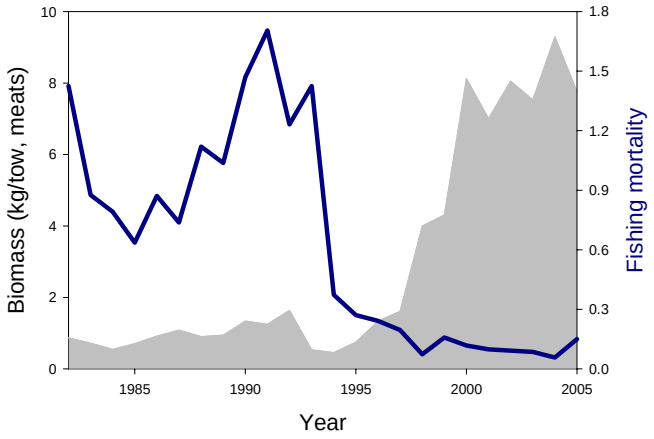
Stock status has been fluctuating for scallops in recent years. Overall biomass has increased almost without interruption since 1997 (Figure 4). Overall biomass in 2004 was 8.2 kg/tow, 54% above the target. Fishing mortality declined from high levels near 1.0 (60% annual exploitation) before 1994 to near the maximum threshold (F=0.24) in 1998-2000. Since then, fishing mortality has gradually increased to 0.35 in 2004 and has decreased since then.

Going back to 2003, scallop biomass was about 7.6 kg/tow, above B_{max} of 5.6 kg/tow, so the stock was not overfished. However, the fishing mortality estimate for 2003 was 0.30, above the 0.24 threshold so overfishing was occurring. Again in 2004, overall biomass peaked at 8.2 kg/tow so the stock was not overfished, but fishing mortality was 0.35 overall so overfishing was still occurring. In 2005, scallop biomass was at 7.8 kg/tow above B_{max} of 5.6 kg/tow so scallops were not overfished. Furthermore, overall fishing mortality reduced to 0.22, slightly under the overfishing threshold of 0.24, so overfishing was no longer occurring. The estimates for 2006 are not complete yet, but preliminary calculations suggest an overall biomass index of 7.1 kg/tow. After the summer survey data in 2006 were incorporated into the projection model, overfishing was projected to occur in 2007 under status quo measures implemented by Framework 18. Therefore, NMFS took interim action to reduce the number of trips allocated in the Elephant Trunk Access Area to reduce overall mortality. Projections suggest that a reduction in these trips should reduce fishing mortality from 0.26 to 0.22. Therefore, for 2007 overfishing is no longer projected to occur.

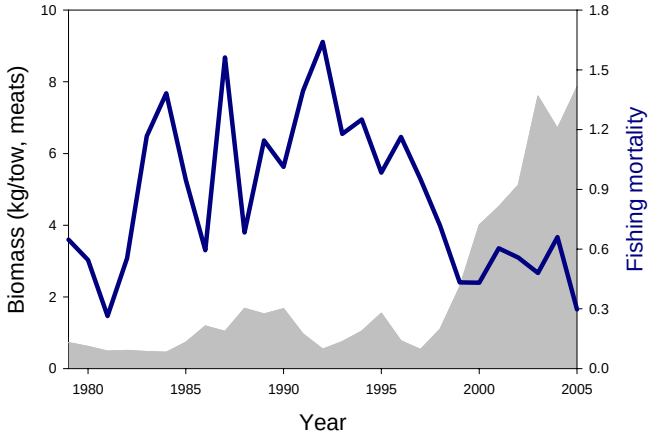
When the Scallop PDT updated the projections for 2007 they informed the Council of several assumptions in the projection that could be overestimating biomass. These assumptions are going to be reviewed at the benchmark assessment this summer, and future estimates may be adjusted based on the proceedings at SAW45. First, there is increasing evidence that growth in the Mid-Atlantic in general, and in the Elephant Trunk Area specifically, is slower than what is assumed in the projection model. Second, the data used for the shell height/meat weight relationship is from scallops caught in July when scallops have better yield in terms of meat weight at a given shell size. Therefore, using the shell height/meat weight from this period of time will produce a more robust estimate of biomass. Incorporating estimates from other times during the year would prevent an overly optimistic estimate of biomass based on a July number only. Lastly, the model assumes a 20% discard mortality rate, and while that is a reasonable estimate for scallops region wide, in areas like the Elephant Trunk access area, a higher discard mortality rate may be justified, especially in warmer months when air and water temperatures are higher. The benchmark assessment scheduled for June 2007 (SAW 45) will review the parameters currently used in the scallop assessment and it is possible that some of these factors like growth, shell height meat/weight relationships and discard mortality rates may change, which could affect the overall estimate of B_{max} and F_{max}.

Figure 4 - Sea scallop survey biomass and estimated fishing mortality for Georges Bank, Mid-Atlantic, and combined.

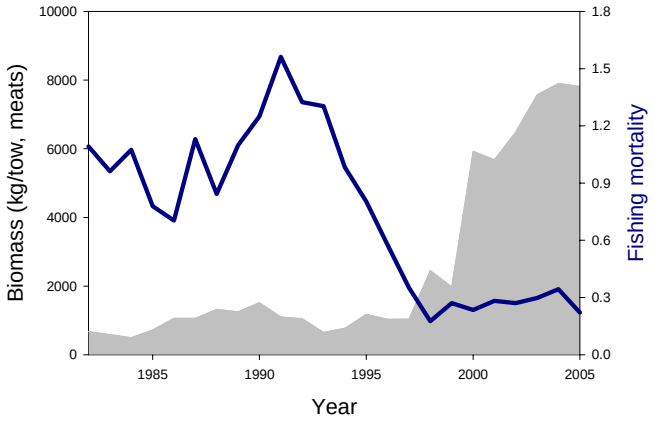
(a) Georges Bank



(b) Mid-Atlantic



(c) Overall



Scallop Biomass in 2006

Despite fishing mortality being above the target in recent years, the resource remains in relatively good condition, with a greater share of the landings coming from older and larger scallops. Two very strong year classes have been protected by the Elephant Trunk Area (ETA) closure and higher sustainable yield is forecasted particularly when the benefits of the ETA closure are realized in 2007. Over one-quarter of the total scallop biomass is contained in the ETA. The 2006 survey did see a reduction in biomass in both open and access areas. Allocations under Framework 19 for fishing years 2008 and 2009 are expected to be lower than previous years, though projected catch is still higher than the historical average.

Since 1994 scallop biomass on Georges Bank has increased by a factor of 18 and in the Mid-Atlantic Bight by a factor of 8 (Hart and Rago, 2006). This recent "boom" is likely the result of a combination of improved management (that has increased average meat weight of landed scallops) and very strong recruitment on both Georges Bank and the Mid-Atlantic. Figure 5 shows trends in biomass on Georges Bank since 1984. Biomass in open areas, the access areas, and overall were at lower levels until the mid 1990s. Biomass has increased dramatically in the access areas and overall the preliminary calculation for 2006 is 7.1 kg/tow, well above the B_{max} of 5.6 kg/tow. Figure 6 show the mean weight per tow for the survey in 2006, and preliminary calculations suggest that biomass on Georges Bank is 6.3 kg/tow projections. The highest concentrations of biomass on Georges Bank are currently on the northern edge of Georges Bank and within the Closed Area I and Nantucket Lightship closed areas.

Overall biomass in the Mid-Atlantic has increased since the mid 1990s as well, particularly in the scallop rotational closed areas. Figure 7 shows that while the Hudson Canyon area was closed from 1998 through 2001, biomass increased; similarly since 2004 when the Elephant Trunk area was closed biomass in that area has steadily increased as well. Figure 8 shows the mean weight per tow for the survey in 2006, and the primary calculations suggest that biomass in the Mid-Atlantic is 7.8 kg/tow.

However, for the last several years there has been poor recruitment on Georges Bank. While recruitment is still above average in the Mid-Atlantic, growth rates are likely to be less than projections estimated; therefore, short term yields are expected to be lower. Projected catch is still above the historical average, but lower than the record level of landings the fishery has experienced in recent years.

Figure 5 – Georges Bank sea scallop biomass (open areas in dots, closed areas in dashes, and overall in solid line)

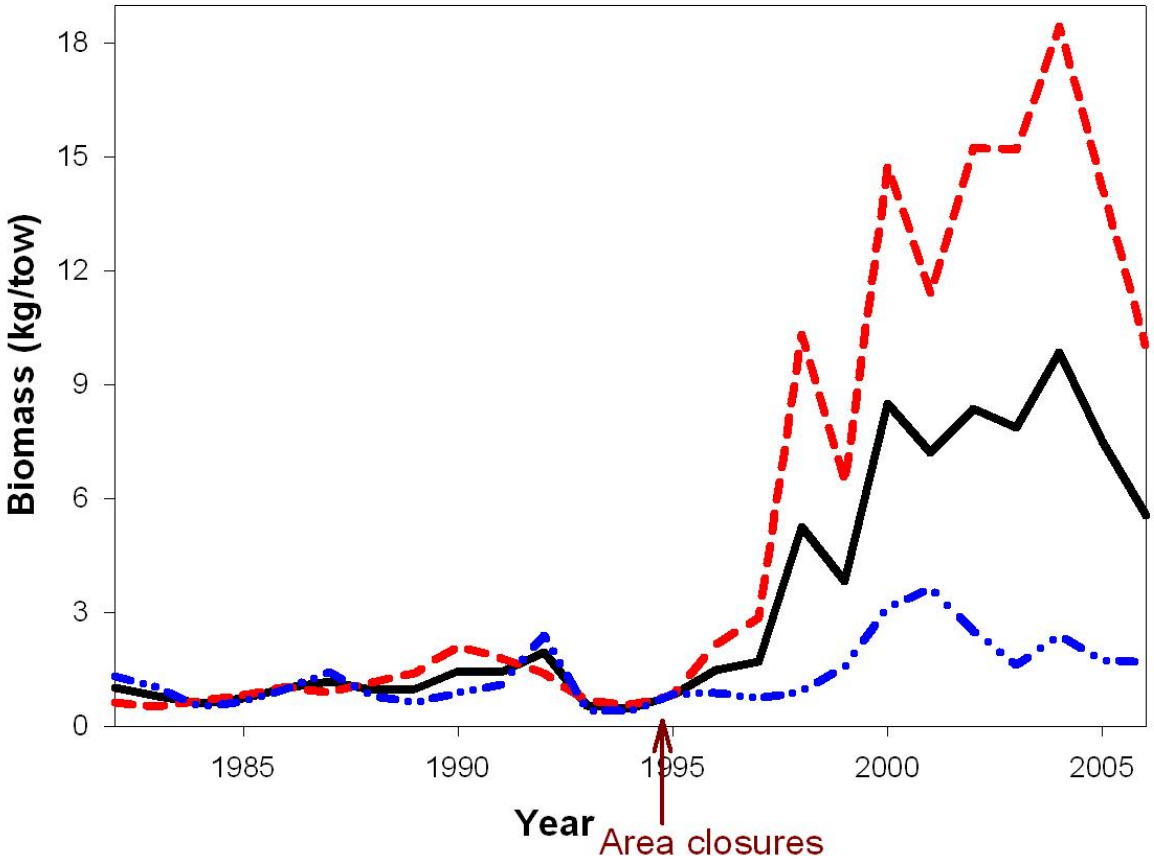


Figure 6 – Georges Bank biomass in kg/tow from the 2006 sea scallop survey

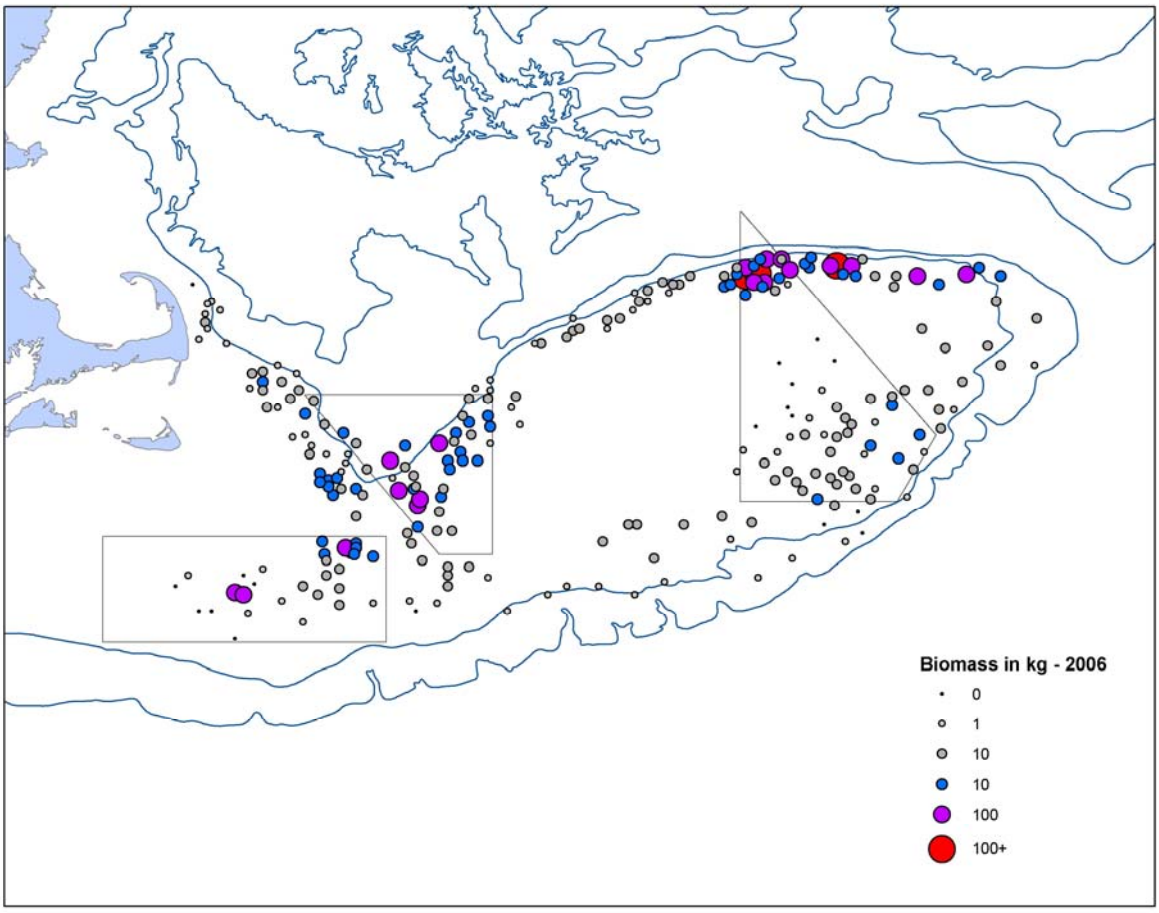


Figure 7 - Mid-Atlantic sea scallop biomass (open areas in dash/dots, Hudson Canyon in dots, Elephant trunk in dashes and overall in solid line)

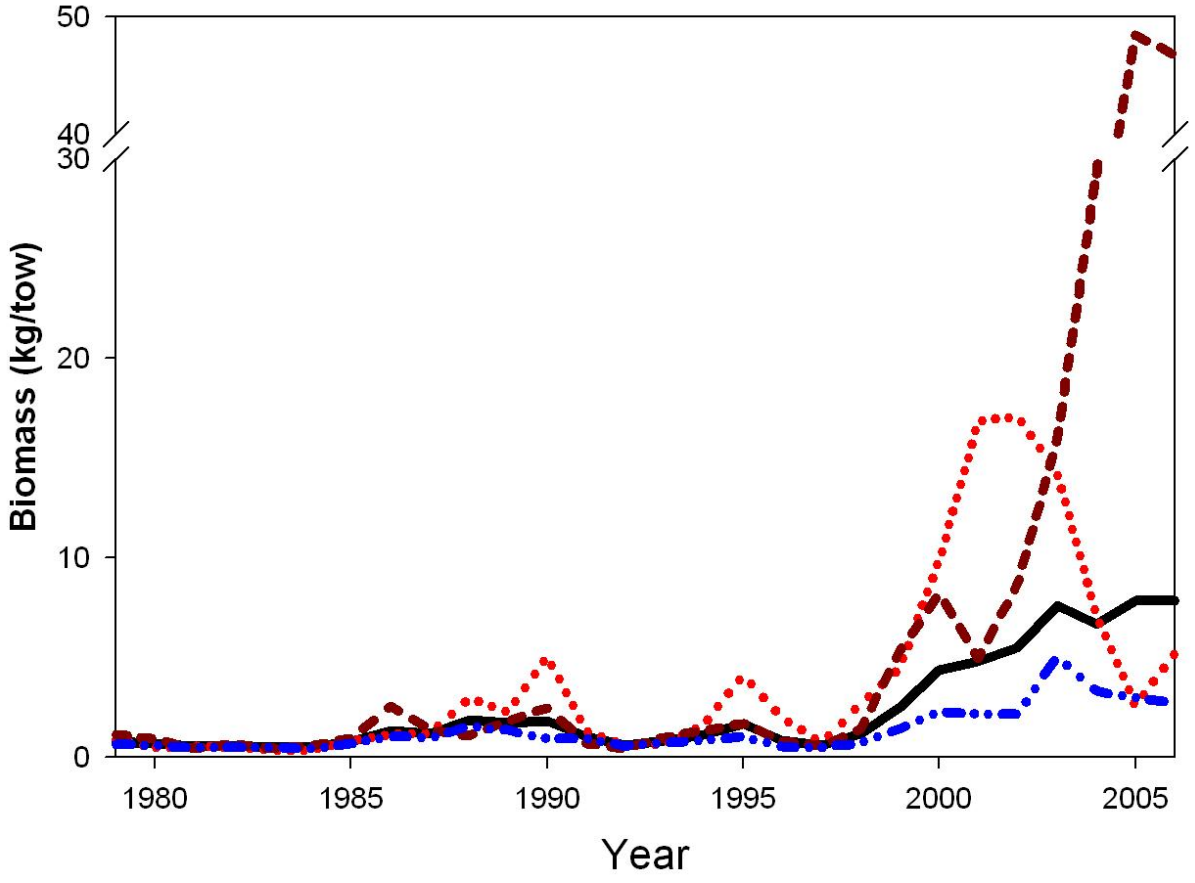
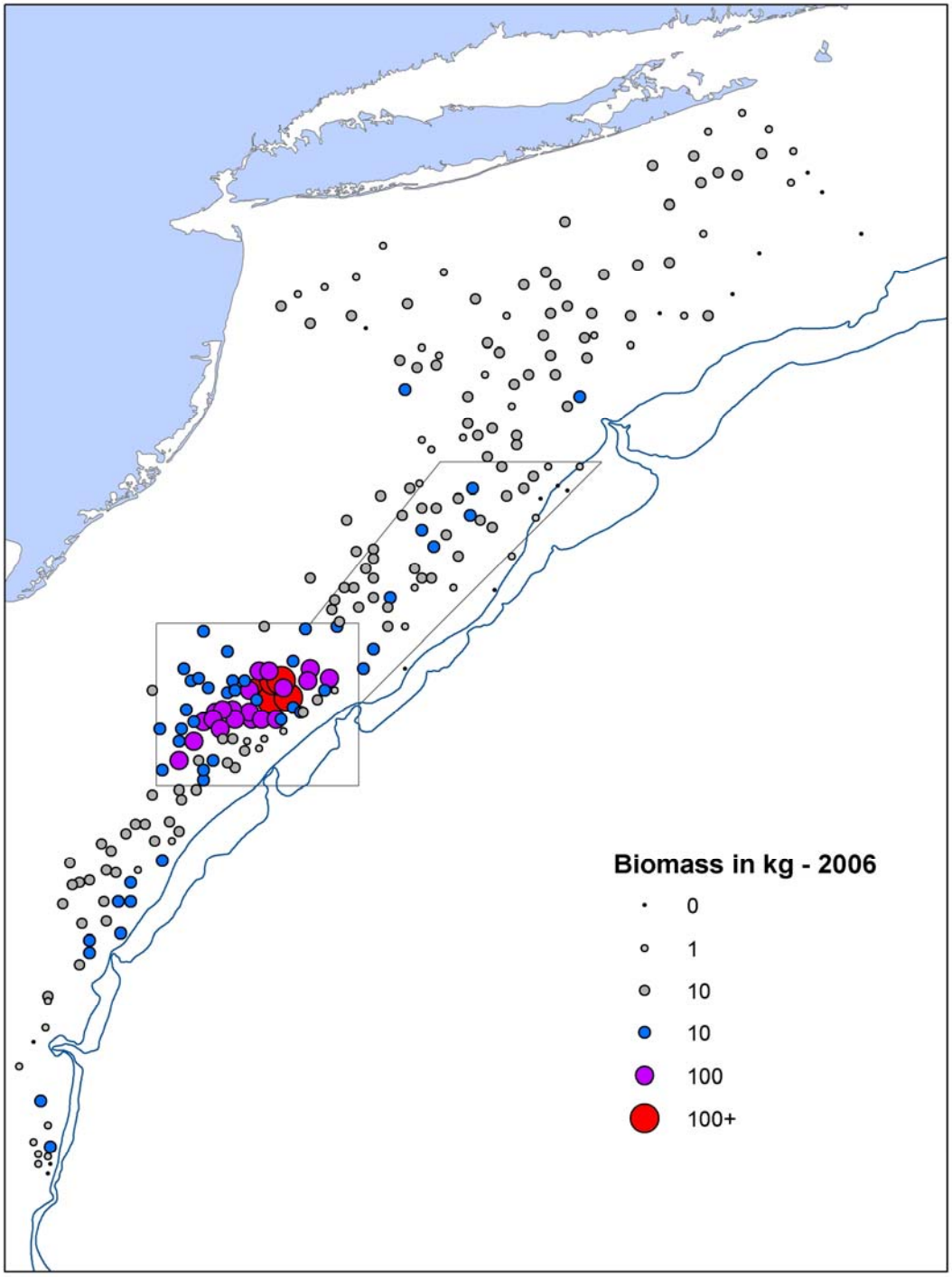


Figure 8 – Mid-Atlantic biomass in kg/tow from the 2006 sea scallop survey



4.2 PHYSICAL ENVIRONMENT AND ESSENTIAL FISH HABITAT (EFH)

The description of the affected environment is presented to provide sufficient background information on the various resources and entities likely to be affected by the actions proposed or under consideration in the SEIS. Several recent reports have been published which add to our understanding of the physical and biological environment of this region. This section deals with the *affected* environment and does not present the effects of the proposed management program.

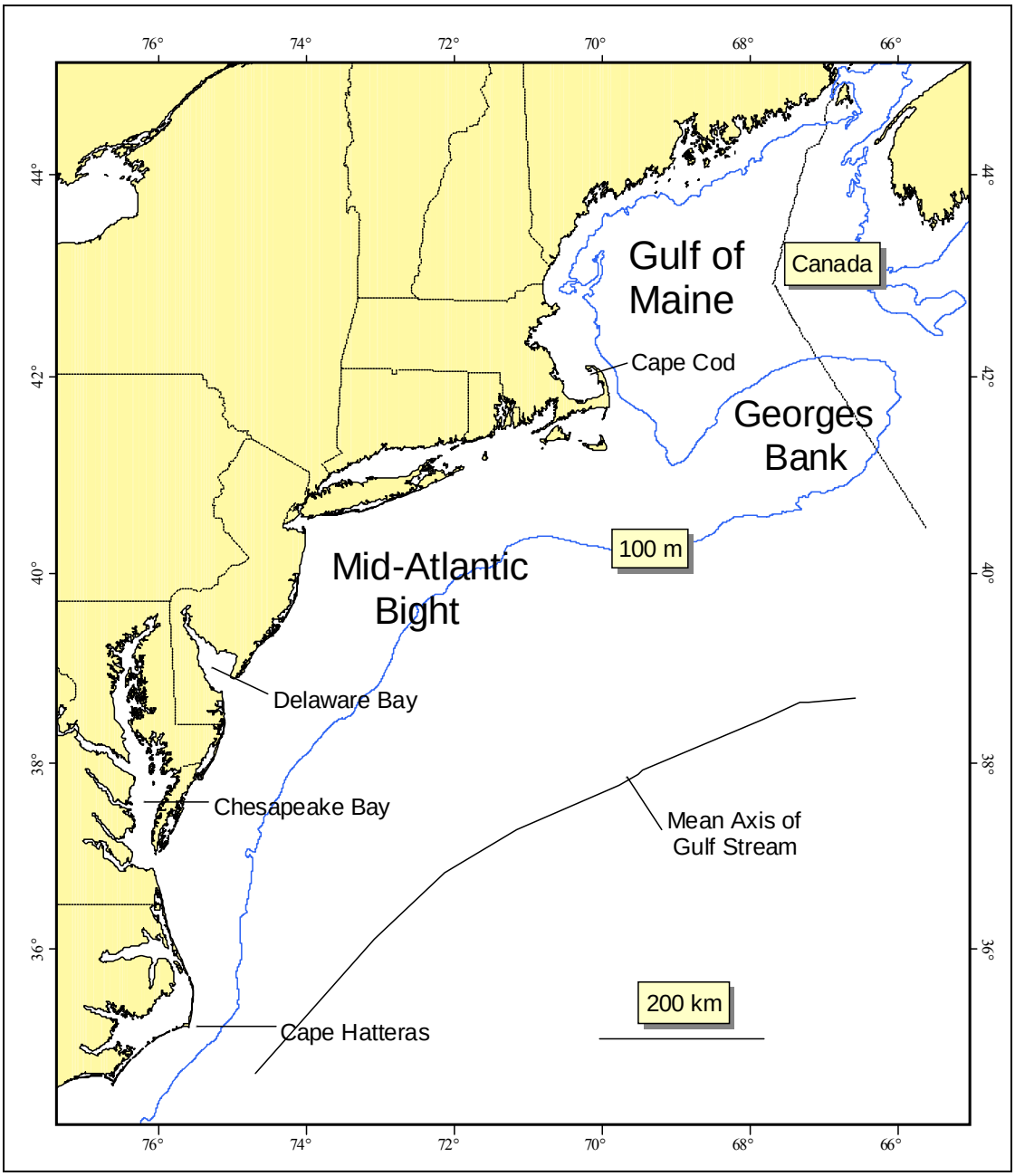
4.2.1 Physical Environment

This section contains a description of the physical environment of the Atlantic sea scallop fishery, including physical habitat conditions in the terrestrial/inshore areas and continental shelf and slope of the Gulf of Maine – Georges Bank and Mid-Atlantic regions.

The Northeast shelf ecosystem (Figure 9) has been described as including the area from the Gulf of Maine south to the state of 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 2000m. A number of distinct sub-systems comprise the region, including the Gulf of Maine, Georges Bank, the Mid-Atlantic Bight, the continental slope, and some of the New England Seamounts. 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. Pertinent aspects of the physical characteristics of each of these systems are described in sections that follow. This review is based on several summary reviews (Backus 1987; Schmitz et al. 1987; Tucholke 1987; Wiebe et al. 1987; Cook 1988; Stumpf and Biggs 1988; Abernathy 1989; Dorsey 1998; Townsend 1992; Mountain et al. 1994; Conkling 1995; Beardsley et al. 1996; Brooks 1996; Sherman et al. 1996; Kelley 1998; NEFMC 1998; EPA 2003; Packer 2003; StormCenter Communications, Inc. 2004). Literature citations are not included for generally accepted concepts; however, new research and specific results of research findings are cited.

Figure 9 - U.S. Northeast Shelf Ecosystem



4.2.1.1 Inshore

The Gulf of Maine includes more than 59,570 km^2 (23,000 mi^2) of estuarine drainage areas, and the long State of Maine coast supports the largest number of estuaries; west to east, important ones are Saco Bay, Casco Bay, Merrymeeting Bay, Sheepscot Bay, Muscongus Bay, Penobscot Bay, Blue Hill Bay, Frenchman Bay, Narraguagus Bay, Englishman Bay, Machias Bay, Cobscook Bay, and Passamaquoddy Bay (which straddles the international border). Among the major estuaries in the southwestern part of the Gulf are Massachusetts Bay and Great Bay in the State of New Hampshire. Estuarine features such as salt marshes, mud flats, and submerged aquatic vegetation are critical to inshore and offshore fishery resources of the Gulf. Estuaries are important for nutrient recycling, primary production, and function as important breeding and feeding grounds for many fish and shellfish populations and shorebirds, migratory waterfowl, and mammals. Sheltered areas may support salt marshes at higher tide levels, intertidal mudflats, and seagrass beds and muddy substratum subtidally; salt marshes are not as prominent in the Gulf region as they are farther south. Sandy beaches are also found more extensively farther south than in the Gulf.

The coast of the Gulf of Maine consists of rocky intertidal zones and sand beaches that are important habitats for fishery resources of the Gulf. As with the estuaries, coastal areas are important for nutrient recycling and primary production. Exposed or high wave energy places with bedrock or boulders support seaweed communities both intertidally and subtidally. Fishery resources may depend upon particular habitat features of the rocky intertidal/subtidal that provide important levels of refuge and nutrient sources.

Human activities in the surrounding watersheds influences the chemical loading of nutrients (especially nitrogen and phosphorus) and contaminants (heavy metals and organic) that enter estuarine systems. The biological effects of the loading is influenced by processes occurring within the estuaries, such as hydrology (balance between freshwater input from rivers and tidal/wind forced saltwater transport from ocean), sediment type on the bottom and bioavailability of contaminants to biota, metabolism of imported non-living dissolved organic carbon (DOC) and particulate organic carbon (POC) by biota in the water column and sediments, burial of DOC and POC in the sediments and chemical coagulation processes that transport toxics attached to suspended particles to the bottom, geochemical processes linking the sediments to the water column, biological processes that convert nutrients to phytoplankton and POC to DOC, and export of living and non-living total organic matter (TOC = DOC + POC) to the coastal ocean. These physical, chemical, geological and biological processes provide the context for the water column and benthic sedimentary habitat characteristics and biological/physical structure.

Another important set of estuarine characteristics is the seasonal/interannual changes in temperature and salinity as influenced by changes in the positive and negative stages of the North Atlantic Oscillation (NAO). The NAO is based on atmospheric pressure differences between the North Atlantic Ocean (Greenland or Iceland) and Mid-Atlantic regions (Lisbon or Azores) which influence the strength of the westerly winds. As pointed out by Oviatt (2004) for Narragansett Bay, the positive NAO index is associated with warmer water temperatures, higher salinity values, decline of winter-spring diatom bloom and higher early spring zooplankton

abundance (due to increased grazing by benthic filter feeders and macrozooplankton), decrease in demersal fish biomass (including winter flounder, windowpane flounder, red hake) and increase in demersal decapods (crabs and lobsters), and immigration of smaller, southern pelagic fish species (anchovy, butterfish, long finned squid). The negative NAO index is associated with colder, less saline water masses with lower nutrient values and a well developed winter-spring diatom bloom and strong recruitment of benthic fauna (polychaetes).The warmer winters and increased spring zooplankton levels fueled increases in ctenophore grazing on zooplankton and fish/invertebrate larvae. This grazing activity influences recruitment of fish and shellfish and increases the summer phytoplankton biomass. The opposite pattern occurs during cold winters. Thus large scale meteorological events affect the interannual temperature and salinity seasonal patterns in Narragansett Bay and other East coast estuaries.

4.2.1.2 Gulf of Maine/Georges Bank/Mid-Atlantic

Gulf of Maine

Although not obvious in appearance, the Gulf of Maine is actually an enclosed coastal sea of 90,700 km^2, bounded on the east by Browns Bank, on the north by the Nova Scotian (Scotian) Shelf, on the west by the New England states and on the south by Cape Cod and Georges Bank (GB). The Gulf of Maine (GOM) was glacially derived, and is characterized by a system of deep basins, moraines and rocky protrusions with limited access to the open ocean. This geomorphology influences complex oceanographic processes which result in a rich biological community.

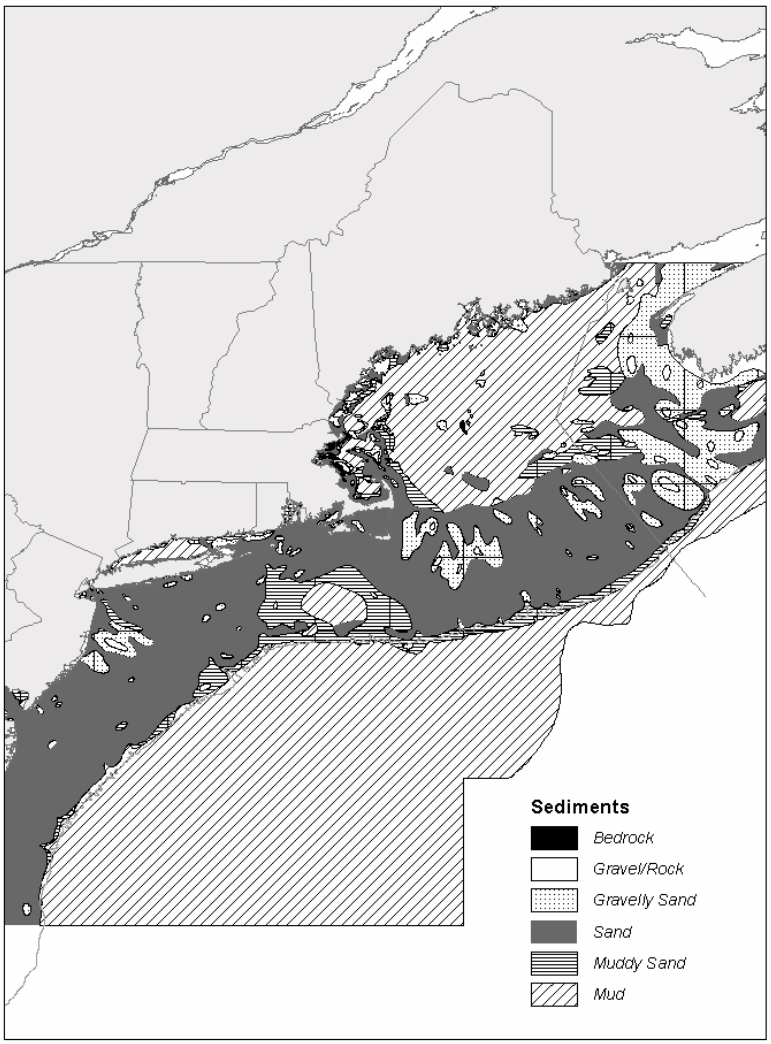
The Gulf of Maine is topographically unlike any other part of the continental border along the U.S. east coast. It contains 21 distinct basins separated by ridges, banks, and swells. The three (3) largest basins are Wilkinson, Georges, and Jordan. Depths in the basins exceed 250 m, with a maximum depth of 350 m in Georges Basin, just north of Georges Bank. The Northeast Channel between Georges Bank and Browns Bank, leads into Georges Basin, and is one of the primary avenues for exchange of water between the GOM and the North Atlantic Ocean.

High points within the Gulf include irregular ridges, such as Cashes Ledge, which peaks at 9 m below the surface, as well as lower flat-topped banks and gentle swells. Some of these rises are remnants of the sedimentary shelf left after the glaciers removed most of it. Others are glacial moraines and a few, like Cashes Ledge, are out-croppings of bedrock. Very fine sediment particles created and eroded by the glaciers have collected in thick deposits over much of the Gulf of Maine, particularly in its deep basins. These mud deposits blanket and obscure the irregularities of the underlying bedrock, forming topographically smooth terrains. Some shallower basins are covered with mud as well, including some in coastal waters. In the rises between the basins, other materials are usually at the surface. Unsorted glacial till covers some morainal areas, as on Sewell Ridge to the north of Georges Basin and on Truxton Swell to the south of Jordan Basin. Sand predominates on some high areas and gravel, sometimes with boulders, predominates on others.

Coastal sediments exhibit a high degree of small-scale variability. Bedrock is the predominant substrate along the western edge of the Gulf of Maine north of Cape Cod in a narrow band out to a depth of about 60 m. Rocky areas become less common with increasing depth, but some rock outcrops poke through the mud covering the deeper sea floor. Mud is the second most common

substrate on the inner continental shelf. Mud predominates in coastal valleys and basins that often border abruptly on rocky substrates. Many of these basins extend without interruption into deeper water. Gravel, often mixed with shell, is common adjacent to bedrock outcrops and in fractures in the rock. Large expanses of gravel are not common, but do occur near reworked glacial moraines and in areas where the seabed has been scoured by bottom currents. Gravel is most abundant at depths of 20-40 m, except in eastern Maine where a gravel-covered plain exists to depths of at least 100 m. Bottom currents are stronger in eastern Maine where the mean tidal range exceeds 5 m. Sandy areas are relatively rare along the inner shelf of the western Gulf of Maine, but are more common south of Casco Bay, especially offshore of sandy beaches.

Figure 10 - Distribution of surficial sediments, Gulf of Maine, Georges Bank, and the Mid-Atlantic Bight (modified from original map by Poppe *et al.* 1989a, b)



An intense seasonal cycle of winter cooling and turnover, springtime freshwater runoff, and summer warming influences oceanographic and biologic processes in the Gulf of Maine. The Gulf has a general counterclockwise nontidal surface current that flows around its coastal margin. It is primarily driven by fresh, cold Scotian Shelf water that enters over the Scotian Shelf and through the Northeast Channel, and freshwater river runoff, which is particularly important in the spring. Dense relatively warm and saline slope water entering through the bottom of the Northeast Channel from the continental slope also influences gyre formation. The gyre moves surface waters at a rate of approximately 7 nm/day, with a single revolution around the entire Gulf taking about three (3) months. These surface gyres are more pronounced in spring and summer; with winter, they weaken and become more influenced by the wind. Counterclockwise gyres generally form in Jordan, Wilkinson, and Georges Basins and the Northeast Channel as well; they circulate more slowly, taking about a year for deep Gulf water to cycle through the basin system. In the summer, the water of these basins becomes layered into warm, nutrient-poor surface water; cold, nutrient-rich intermediate water; and cool, high-salinity bottom water. Water exits the Gulf primarily through the 75 m deep Great South Channel, between western Georges Bank and Nantucket Shoals. Water also flows out of the Gulf over the eastern portion of Georges Bank.

Stratification of surface waters during spring and summer seals off a mid-depth layer of water that preserves winter salinity and temperatures. This cold layer of water is called "Maine intermediate water" (MIW) and is located between more saline Maine bottom water and the warmer, stratified Maine surface water. The stratified surface layer is most pronounced in the deep portions of the western GOM. Tidal mixing of shallow areas prevents thermal stratification and results in thermal fronts between the stratified areas and cooler mixed areas. Typically, mixed areas include Georges Bank, the southwest Scotian Shelf, eastern Maine coastal waters, and the narrow coastal band surrounding the remainder of the Gulf.

The Northeast Channel provides an exit for cold MIW and outgoing surface water while it allows warmer more saline slope water to move in along the bottom and spill into the deeper basins. The influx of water occurs in pulses, and appears to be seasonal, with lower flow in late winter and a maximum in early summer.

Gulf of Maine circulation and water properties can vary significantly from year to year. Notable episodic events include shelf-slope interactions such as the entrainment of shelf water by Gulf Stream rings, and strong winds that can create currents as high as 1.1 meters/second over Georges Bank. Warm core Gulf Stream rings can also influence upwelling and nutrient exchange on the Scotian shelf, and affect the water masses entering the GOM. Annual and seasonal inflow variations also affect water circulation.

Internal waves are episodic and can greatly affect the biological properties of certain habitats. Internal waves can shift water layers vertically, so that habitats normally surrounded by cold MIW are temporarily bathed in warm, organic-rich surface water. On Cashes Ledge, it is thought that deeper nutrient rich water is driven into the photic zone, providing for increased productivity. Localized areas of upwelling interaction occur in numerous places throughout the Gulf.

Georges Bank

Georges Bank is a shallow (3-150 m depth), elongate (161 km wide by 322 km long) extension of the continental shelf which was formed by the Wisconsinian glacial episode and is characterized by a steep slope on its northern edge and a broad, flat, gently sloping southern flank. The Great South Channel lies to the west of the bank and separates it from Nantucket Shoals and the mainland. Natural processes continue to erode and rework the sediments on Georges Bank. It is anticipated that erosion and reworking of sediments will reduce the amount of sand available to the sand sheets, and cause an overall coarsening of the bottom sediments (Valentine et al.,1993).

Glacial retreat during the late Pleistocene deposited the bottom sediments currently observed on the eastern section of Georges Bank, and the sediments have been continuously reworked and redistributed by the action of rising sea level, and by tidal, storm and other currents. The strong, erosive currents affect the character of the biological community. Bottom topography on Georges Bank is characterized by linear ridges in the western shoal areas; a relatively smooth, gently dipping sea floor on the deeper, easternmost part; a highly energetic peak in the north with sand ridges up to 30 m high and extensive gravel pavement, and steeper and smoother topography incised by submarine canyons on the southeastern margin. The nature of the seabed sediments varies widely, ranging from sand to mixtures of sand and gravel, patches of gravel pavement, and very small exposures of clay.

The central region of the bank is shallow; shoals and troughs characterize the bottom, with sand dunes superimposed upon them. The two most prominent elevations on the ridge and trough area are Cultivator and Georges Shoals. This shoal and trough area is a region of strong currents, with average flood and ebb tidal currents greater than 4 km per hour, and as high as 7 km per hour. The dunes migrate at variable rates, and the ridges may move, also. In an area that lies between the central part and Northeast Peak, Almeida et al. (2000) identified high energy areas as between 35-65 m deep, where sand is transported on a daily basis by tidal currents; and a low energy area at depths > 65 m that is affected only by storm currents. The area west of the Great South Channel, known as Nantucket shoals, is similar in nature to the central region of the bank. Currents in these areas are strongest where water depth is shallower than 50 m. This type of traveling dune and swale morphology is also found in the Mid-Atlantic Bight.

The Great South Channel separates the main part of Georges Bank from Nantucket Shoals. Sediments in the Great South Channel include gravel pavement and mounds, some scattered boulders, sand with storm generated ripples, scattered shell and mussel beds. Tidal and storm currents may range from moderate to strong, depending upon location and storm activity (Valentine, pers. comm).

In the Georges Bank region, strong oceanographic frontal systems occur between water masses of the Gulf of Maine, Georges Bank, and the Atlantic Ocean. These water masses differ in temperature, salinity, nutrient concentration, and planktonic communities, which influence productivity and may influence fish abundance and distribution. Tidal currents over the shallow top of Georges Bank can be very strong, and keep the waters over the bank well mixed vertically. This results in a tidal front that separates the cool waters of the well-mixed shallows

of the central bank from the warmer, seasonally stratified shelf waters on the shoreward and seaward sides of the bank. There is a persistent clockwise gyre around the Bank; a strong semidiurnal tidal flow predominantly northwest and southeast; and very strong, intermittent, storm-induced currents; all of which can all occur simultaneously. The clockwise gyre is instrumental in distribution of the planktonic community, including larval fish. For example, Lough and Potter (1993) describe passive drift of Atlantic cod and haddock eggs and larvae in a southwest residual pattern around Georges Bank. Larval concentrations are found at varying depths along the southern edge between 60-100 m.

Mid-Atlantic Bight

The Mid-Atlantic Bight includes the shelf and slope waters from Georges Bank south to Cape Hatteras, and east to the Gulf Stream. Like the rest of the continental shelf, the topography of the Mid-Atlantic Bight was shaped largely by sea level fluctuations caused by past ice ages. Unlike Georges Bank, glaciers did not advance onto the Mid-Atlantic Bight shelf, and the sandy sediments are generally finer-grained than those on the bank. The shelf's basic morphology and sediments derive from the retreat of the last ice sheet, and the subsequent rise in sea level. Since that time, currents and waves have modified this basic structure.

Shelf and slope waters of the Mid-Atlantic Bight have a slow southwestward flow that is occasionally interrupted by warm core rings or meanders from the Gulf Stream. On average, shelf water moves parallel to bathymetry isobars at speeds of 5-10 cm/second at the surface and 2 cm/second or less at the bottom. Storm events can cause much more energetic variations in flow. Tidal currents on the inner shelf have a higher flow rate of 20 cm/second that increases to 100 cm/second near inlets.

Slope water tends to be warmer than shelf water because of its proximity to the Gulf Stream, and also tends to be more saline. The abrupt gradient where these two water masses meet is called the shelf-slope front. This front is usually located at the edge of the shelf and touches bottom at about 75-100 m depth of water, and then slopes up to the east (seaward) towards the ocean surface. It reaches surface waters approximately 25-55 km further offshore. The position of the front is highly variable, and can be influenced by many physical factors. Vertical structure of temperature and salinity within the front can develop complex patterns because of the interleaving of shelf and slope waters – for example cold shelf waters can protrude offshore, or warmer slope water can intrude up onto the shelf.

The seasonal effects of warming and cooling increase in shallower, near shore waters. Stratification of the water column occurs over the shelf and the top layer of slope water during the spring-summer and is usually established by early June. Fall mixing results in homogenous shelf and upper slope waters by October in most years. A permanent thermocline exists in slope waters from 200-600 m. Temperatures decrease at the rate of about 0.02°C per meter and remain relatively constant except for occasional incursions of Gulf stream eddies or meanders. Below 600 m, temperature declines, and usually averages about 2.2°C at 4000 m. A warm, mixed layer approximately 40 m thick resides above the permanent thermocline.

The "cold pool" is an annual phenomenon particularly important to the Mid-Atlantic Bight. It stretches from the Gulf of Maine along the outer edge of Georges Bank and then southwest to

Cape Hatteras. It becomes identifiable with the onset of thermal stratification in the spring and lasts into early fall until normal seasonal mixing occurs. It usually exists along the bottom between the 40 m and 100 m isobaths and extends up into the water column for about 35 m, to the bottom of the seasonal thermocline. The cold pool usually represents about 30% of the volume of shelf water. Minimum temperatures for the cold pool occur in early spring and summer, and range from 1.1°C to 4.7°C.

The shelf slopes gently from shore out to between 100 and 200 km offshore where it transforms to the slope (100 – 200 m water depth) at the shelf break. In both the Mid-Atlantic and on Georges Bank, numerous canyons incise the slope, and some cut up onto the shelf itself. The primary morphological features of the shelf include shallow shelf valleys and channels, shoal massifs, scarps, and low sand ridges and swales (Figure 11).

Most of these structures are relic except for some sand ridges and smaller sand-formed features. Shelf valleys and slope canyons were formed by rivers of melted glacier that deposited sediments on the outer shelf edge as they entered the ocean. Most valleys cut about 10 m into the shelf, with the exception of the Hudson Shelf Valley, which is about 35 m deep. The valleys were partially filled as glacial meltwater transported sediments seaward from land. Rising sea level also left behind a lengthy scarp near the shelf break from Chesapeake Bay north to the eastern end of Long Island. Shoal retreat massifs were produced by extensive deposition at a cape or estuary mouth. Massifs were also formed as estuaries retreated across the shelf.

The sediment type covering most of the shelf in the Mid-Atlantic Bight is sand, with some relatively small, localized areas of gravel and gravelly sand (
Figure 10). On the slope, muddy sand and mud predominate. Sediments are fairly uniformly distributed over the shelf in this region. A sheet of sand and gravel varying in thickness from 0 to 10 m covers most of the shelf. The mean bottom flow from the constant southwesterly current is not fast enough to move sand, so sediment transport must be episodic and storm-related. Net sediment movement is in the same southwesterly direction as the current. The sands are mostly medium- to coarse-grained, with finer sand in the Hudson Shelf Valley and on the outer shelf. Mud is rare over most of the shelf, but is common in the Hudson Shelf Valley. Occasionally relic estuarine mud deposits are re-exposed in the swales between sand ridges. Fine sediment content increases rapidly at the shelf break, which is sometimes called the “mud line,” and sediments are 70-100% fine-grained on the slope.

Figure 11 - Mid-Atlantic Bight submarine morphology. Source: Stumpf and Biggs (1988).

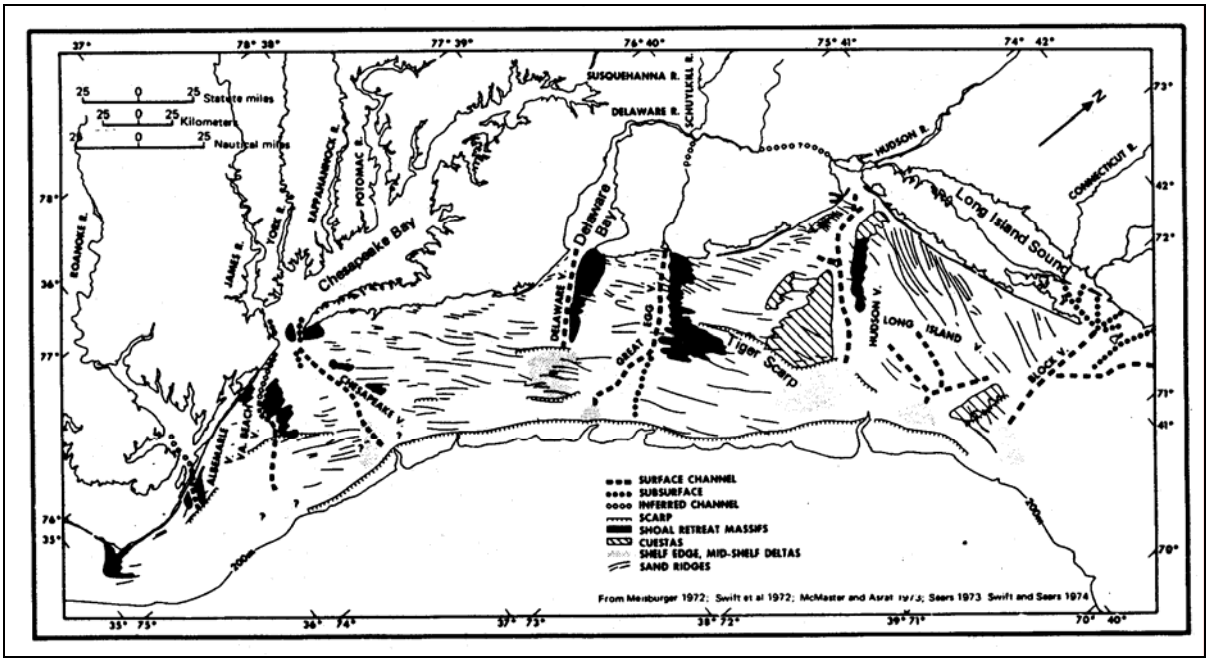
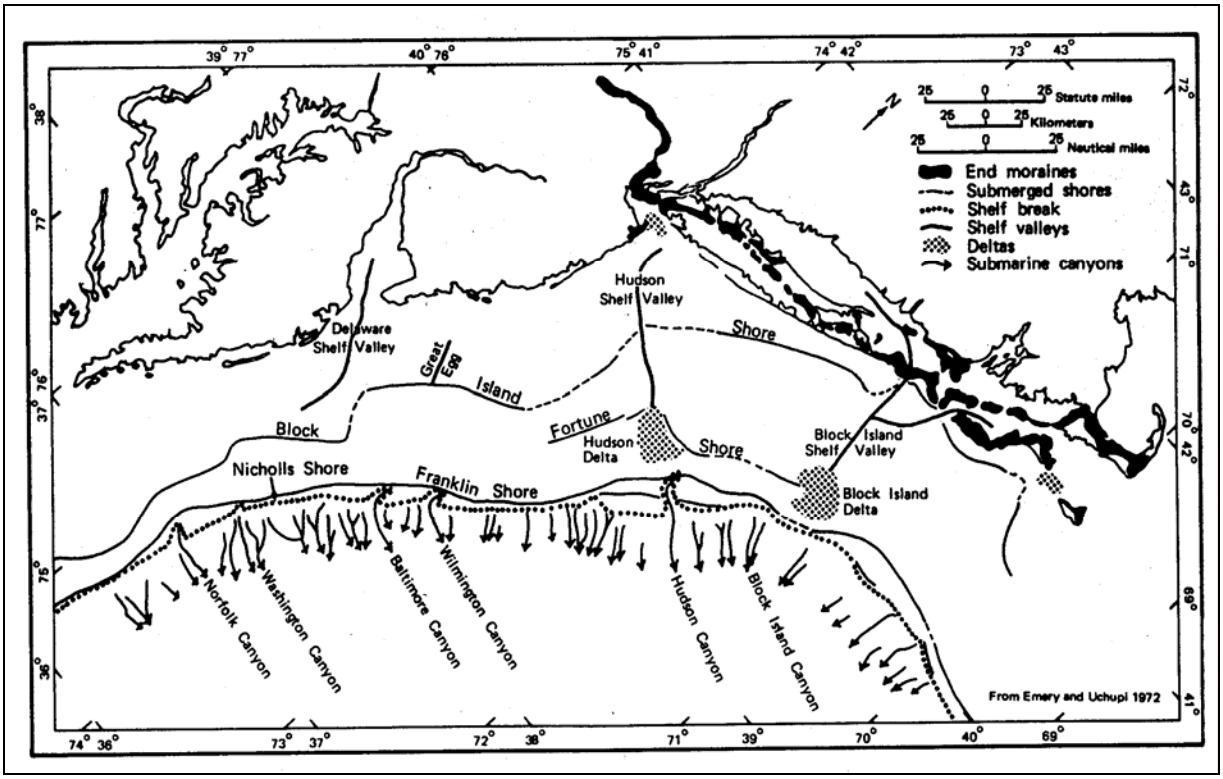


Figure 12 - Major features of the Mid-Atlantic and Southern New England continental shelf. Source: Stumpf and Biggs (1988).



In addition to sand ridges that were formed during rising sea level, some sand ridges have been formed since the end of the last ice age. Their formation is not well understood; however, they appear to develop from the sediments that erode from the shore face. They maintain their shape, so it is assumed that they are in equilibrium with modern current and storm regimes. They are usually grouped, with heights of about 10 m, lengths of 10-50 km and spacing of 2 km. Ridges are usually oriented at a slight angle towards shore, running in length from northeast to southwest. The seaward face usually has the steepest slope. Sand ridges are often covered with smaller similar forms such as sand waves, megaripples, and ripples. Swales occur between sand ridges. Since ridges are higher than the adjacent swales, they are exposed to more energy from water currents, and experience more sediment mobility than swales. Ridges tend to contain less fine sand, silt and clay while relatively sheltered swales contain more of the finer particles. Swales have greater benthic macrofaunal density, species richness and biomass, due in part to the increased abundance of detrital food and the physically less rigorous conditions.

Low sand waves are usually found in patches of 5-10 with heights of about 2 m, lengths of 50-100 m and 1-2 km between patches. Sand waves are primarily found on the inner shelf, and often observed on sides of sand ridges. They may remain intact over several seasons. Megaripples occur on sand waves or separately on the inner or central shelf. During the winter storm season, they may cover as much as 15% of the inner shelf. They tend to form in large patches and usually have lengths of 3-5 m with heights of 0.5-1 m. Megaripples tend to survive for less than a season. They can form during a storm and reshape the upper 50-100 cm of the sediments within a few hours. Ripples are also found everywhere on the shelf, and appear or disappear within hours or days, depending upon storms and currents. Ripples usually have lengths of about 1-150 cm and heights of a few centimeters.

The northern portion of the Mid-Atlantic Bight is sometimes referred to as the southern New England Shelf. Some of the features of this area were described earlier; however, one other formation of this region that deserves note is the “mud patch” which is located on the outer shelf just southwest of Nantucket Shoals and southeast of Long Island (Figure 12). Tidal currents in this area slow significantly, which allows silts and clays to settle out. The mud is mixed with sand, and is occasionally re-suspended by large storms. This habitat is an anomaly of the outer continental shelf.

4.2.2 Essential Fish Habitat / Biological Environment

Essential Fish Habitat
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):

<u>Otter Trawls</u>

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 Table 8 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 8 - 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	A	Mod	Mod	0-500, mostly	soft bottom along

Species	Life Stage	Vulnerability to Otter Trawling	Vulnerability to Scallop Dredging	Depth in meters (EFH Designation)	Substrate (EFH Designation)
Skate				<111	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

Species	Life Stage	Vulnerability to Otter Trawling	Vulnerability to Scallop Dredging	Depth in meters (EFH Designation)	Substrate (EFH Designation)
					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

Biological Environment

From a biological perspective, habitats provide living things with the basic life requirements of nourishment and shelter. Habitats may also provide a broader range of benefits to the ecosystem. An illustration of the broader context is the way seagrasses physically stabilize the substrate and help recirculate oxygen and nutrients. In this general discussion, we will focus on the primary, direct value of habitats to federally managed species—feeding and shelter from predation.

The spatial and temporal variation of prey abundance influences the survivorship, recruitment, development, and spatial distribution of organisms at every trophic level. For example, phytoplankton abundance and distribution are a great influence on ichthyoplankton community structure and distribution. In addition, the migratory behavior of juvenile and adult fish is directly related to seasonal patterns of prey abundance and changes in environmental conditions, especially water temperature. Prey supply is particularly critical for the starvation-prone early life history stages of fish.

The availability of food for planktivores is highly influenced by oceanographic properties. The seasonal warming of surface waters in temperate latitudes produces vertical stratification of the water column, which isolates sunlit surface waters from deeper, nutrient-rich water, leading to reduced primary productivity. In certain areas, upwelling, induced by wind, storms, and tidal mixing, inject nutrients back into the photic zone, stimulating primary production. Changes in primary production from upwelling and other oceanographic processes affect the amount of organic matter available for other organisms higher up in the food chain, and thus influence their abundance and distribution. Some of the organic matter produced in the photic zone sinks to the bottom and provides food for benthic organisms. In this way, oceanographic properties can also influence the food availability for sessile benthic organisms. In shallower water, benthic macro and microalgae also contribute to primary production. Recent research on benthic primary productivity indicates that benthic microalgae may contribute more to primary production than has been originally estimated (Cahoon 1999).

Benthic organisms provide an important food source for many managed species. Populations of bottom-dwelling sand lance are important food sources for many piscivorous species, and benthic invertebrates are the main source of nutrition for many demersal fishes. Temporal and spatial variations in benthic community structure affect the distribution and abundance of bottom-feeding fish. Likewise, the abundance and species composition of benthic communities are affected by a number of environmental factors including temperature, sediment type, and the amount of organic matter.

In addition to providing food sources, another important functional value of benthic habitat is the shelter and refuge from predators provided by structure. Three -dimensional structure is provided by physical features such as boulders, cobbles and pebbles, sand waves and ripples, and mounds, burrows and depressions created by organisms. Structure is also provided by attached and emergent epifauna. The importance of benthic habitat complexity was discussed by Auster (1998) and Auster and Langton (1999) in the context of providing a conceptual model to visualize patterns in fishing gear impacts across a gradient of habitat types. Based on this model, habitat value increases with increased structural complexity, from the lowest value in flat sand

and mud to the highest value in piled boulders. The importance of habitat complexity to federally managed species is a key issue in the Northeast Region.

4.2.2.1 Inshore

Gulf of Maine to Long Island Sound

As described by Tyrrell (2005), the Gulf of Maine rocky intertidal zone is often inhabited by an abundance of brown seaweeds. At high tide, the algae form an underwater canopy similar to a kelp forest. When the tide is low, the algae lie on the rocks and protect snails, mussels, barnacles, and crabs from exposure to sun, wind, rain, and bird predators. Typical canopy-forming fucoid brown algal species are collectively known as rockweed and include knotted wrack (*Ascophyllum nodosum*), bladder wrack (*Fucus vesiculosus*), and spiral wrack (*Fucus spiralis*). *Ascophyllum nodosum* and *Fucus vesiculosus* are found in the mid-intertidal zone, and *F. spiralis* is found in the upper intertidal zone. Their abundance and primary productivity contributes to the high productivity of the rocky intertidal shores, which is nearly ten times greater than that of the adjacent open ocean (Harvey et al. 1995). On rocky shores, invertebrates and algae live in horizontal zones between the high and low tide marks. The zones reflect the varying abilities of species to tolerate the environmental conditions, predation, and competitive pressures at different heights. The highest zone is the splash zone, which is colored darkly by lichens that tolerate salt spray. Just below the splash zone, acorn barnacles inhabit the high intertidal zone. On wave-exposed shores, blue mussels often populate the middle and low intertidal zone with many small invertebrates living in crevices among them. At less wave exposed sites, rockweeds may dominate the mid-intertidal zone, and red algae (*Chondrus crispus* and *Mastocarpus stellatus*) may cover the low intertidal zone. Tide pools form in depressions in intertidal rock outcrops and provide habitat for some animals and algae that otherwise might not survive exposure to air.

Boulders in the Gulf of Maine intertidal zone support similar species as rocky outcrops because they are not frequently overturned by waves due to their large size (Tyrrell 2005). They serve as substrate for algae, mollusks, barnacles, hydroids, and other sessile organisms. In addition, boulders provide shelter from wind, sun, rain, and predators for small organisms that can take shelter underneath and beside them. Fish forage less efficiently in boulder fields than on flat, rocky outcrops because the boulders offer hiding places for prey (Tyrrell 2005).

Southern New England

For Southern New England, a distinct pattern of vegetation is observed, with a narrow band of tall *Spartina alterniflora* occupying the low marsh, areas flooded twice daily by tides, and with high marsh areas flooded less frequently and forming a mosaic of vegetation types that may include *Spartina patens*, *Distichlis spicata*, the short form of *S. alterniflora*, and *Juncus gerardii*. Salt marsh panes, shallow depressions on the marsh surface often vegetated with forbs, and salt marsh pools can be present throughout the high marsh mosaic (Roman et al. 2000).

Habitats dominated by seagrass and other submerged aquatic vegetation occur along the estuarine gradient from marine to freshwater tidal portions of estuaries from the State of Maine to Long Island (Roman et al. 2000). Seagrass species include eelgrass (*Zosteria marina*) and widgeon grass (*Ruppia maritima*); both of which have broad salinity tolerances, although *Ruppia* commonly occurs in brackish to freshwater estuarine areas or in salt marsh pools (Richardson

1980; Thayer et al. 1984). Within freshwater or brackish water tidal portions of the relatively shallow Hudson and Connecticut River estuaries, submerged aquatic vegetation can be extensive (e.g., *Ruppia, Vallisneria americana*, *Potamogeton perfoliatus*) (Roman et al. 2000). In the Hudson River, beds of submerged vegetation, primarily *Vallisneria*, can occupy as much as 20% of the river bottom in areas shallow enough for establishment and growth of these light-limited plants (Harley and Findlay 1994).

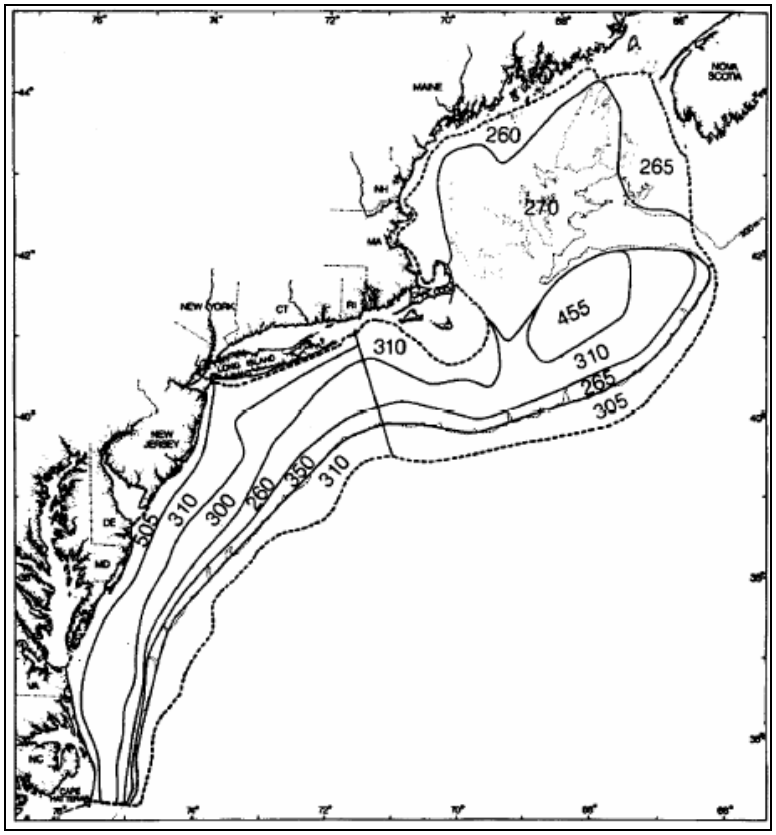
Salt marshes and submerged aquatic vegetation (sea grasses and macroalgae) provide an important food supplement in the form of detritus (POC) to the estuarine food web. This supplements the phytoplankton production in the water column and the riverine input of DOC/POC from the larger watershed that support the grazing food chain. The geomorphology (size, shape, volume, etc.) and hydrology of the estuary determine how important this detritus food web is in supplementing the grazing food chain. In general the detritus food web is an important supplement in shallow coastal embayments surrounded by wetlands or adjacent to urban areas which have high loading rates for DOC and POC.

Much of the POC in estuaries is converted to DOC by microbes, which is then exported to the coastal ocean. In the coastal ocean the ratio of DOC/POC/phytoplankton carbon is roughly 75:5:1. Much of the non-living DOC and POC is processed by the microbial loop (which is why P<R), while the phytoplankton carbon and some of the POC (detritus) supports the grazing food chain that leads to fish/shellfish. It is not known whether the microbial food loop is linked to the grazing food chain through the activity of micro-, meso- and macrozooplankton and filter feeding macrobenthic organisms, or whether most of the carbon in the microbial loop is respired (sink). Biogeochemical cycling is dominated by the lower trophic levels in the water column (microbial loop) with the majority of the primary production supported by recycled nutrients (ammonium). In the coastal ocean the spring or fall phytoplankton bloom is supported by new nutrients (nitrate) introduced from the bottom waters into the surface waters. This bloom transports carbon from diatoms to zooplankton which lies at the base of the grazing food chain supporting pelagic (directly) and demersal fish (indirectly).

4.2.2.2 Gulf of Maine/Georges Bank/Mid-Atlantic

The following summary of phytoplankton primary productivity and chlorophyll *a* of the Northeast shelf ecosystem and the sources for this summary can be found in Sherman et al. (2003). Estimates of annual total phytoplankton primary production from Nova Scotia to Cape Hatteras are shown in Figure 13 by region. Annual production on the shelf ranges from 10,834 to 21,043 kJ m^{-2} yr^{-1} (260-505 gCm^{-2} yr^{-1}) with the annual average of 350 gCm^{-2} yr^{-1}. The areas of highest estimated production on the shelf occur on the central, shallow portion of Georges Bank [18,960 kJ m^{-2} yr^{-1} (445 gCm^{-2} yr^{-1})] and along the coast between the States of New Jersey and North Carolina [21,043 kJ m^{-2} yr^{-1} (505 gCm^{-2} yr^{-1})] which correspond to the areas with consistently high chlorophyll *a* concentrations (O'Reilly and Zetlin 1998). The areas of the shelf with the lowest estimated annual production include the outer shelf area between Cape Hatteras, the southern edge of Georges Bank and nearshore Gulf of Maine, and the mid-shelf area between Delaware Bay and Chesapeake Bay.

Figure 13 - Estimated annual primary production in the Northeast shelf ecosystem

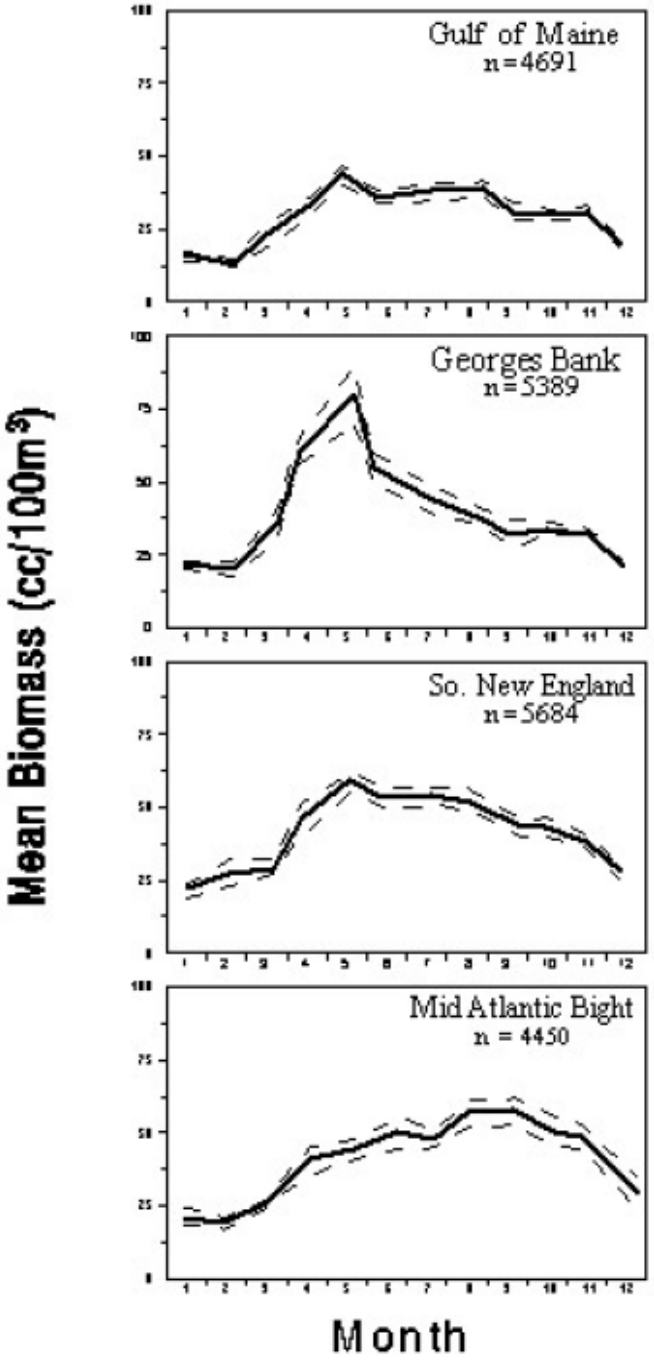


The regions selected are based on the recurring seasonal patterns of chlorophyll distribution along the continental shelf. Source: Sherman et al. (2003).

Sherman et al. (2003) also discussed the zooplankton of the Northeast shelf ecosystem. The zooplankton biodiversity during the NEFSC Marine Resources Monitoring, Assessment and Prediction (MARMAP) ichthyoplankton surveys of the shelf during the 1970s and 1980s included 394 taxa, with 50 dominant in at least one location in one (1) or more seasons. Taxa included copepods, chaetognaths, barnacle larvae, cladocerans, appendicularia, doliolids, brachyuran larvae, echinoderm larvae, and thaliaceans (Sherman et al. 1988). The annual cycle of zooplankton biomass on the Northeast shelf ecosystem is shown in Figure 14.

In the Gulf of Maine, biomass peaks during spring (44 cc/100 m^3) and remains high through the summer (36-39 cc/100 m^3). The biomass declines in autumn (September) to a winter low (January-February). On Georges Bank, the spring increase in biomass peaks in May at a level that is nearly twice the spring peak in the Gulf of Maine, followed by a decline that continues through autumn to a winter minimum (< 20.2 cc/100 m^3). The waters of Southern New England maintain a relatively high biomass from May through August (55-60 cc/100 m^3). The annual decline in biomass extends from late August through autumn to a winter minimum. Further south in the Mid-Atlantic Bight, the annual peak is not reached until late August and September (60 cc/100 m^3) followed by a decline from November until the annual minimum in February (19 cc/100 m^3) (Sherman et al. 2003).

Figure 14 - The annual cycle of zooplankton biomass on the Northeast shelf ecosystem.
The solid line is the time series monthly mean sample displacement volume and the dashed lines represent the 95% confidence interval. Source: Sherman et al. (2003).



Gulf of Maine

The Gulf of Maine's geologic features, when coupled with the vertical variation in water properties, result in a great diversity of habitat types. The greatest numbers of invertebrates in this region are classified as mollusks, followed by annelids, crustaceans, and echinoderms (Theroux and Wigley 1998). By weight, the order of taxa changes to echinoderms, mollusks, annelids and cnidarians. Watling (1998) used numerical classification techniques to separate benthic invertebrate samples into seven types of bottom assemblages. These assemblages are identified in Table 9 and their distribution is depicted in Figure 15. This classification system considers benthic assemblage, substrate type and water properties.

An in-depth review of GOM habitat types has been prepared by Brown (1993). Although still preliminary, this classification system is a promising approach. It builds on a number of other schemes, including Cowardin et al. (1979), and tailors them to the State of Maine's marine and estuarine environments. A significant factor that is included in this review (but has been neglected in others) is a measure of "energy" in a habitat. Energy could be a reflection of wind, waves, or currents present. This is a particularly important consideration in a review of fishing gear impacts since it indicates the natural disturbance regime of a habitat. The amount and type of natural disturbance is in turn an indication of the habitat's resistance to and recoverability from disturbance by fishing gear. Although this work appears to be complete in its description of habitat types; unfortunately, the distributions of many of the habitats are unknown.

Demersal fish assemblages for the Gulf of Maine and Georges Bank were part of broad scale geographic investigations conducted by Mahon et al. (1998) and Gabriel (1992). Both these studies and a more limited study by Overholtz and Tyler (1985) on Georges Bank found assemblages that were consistent over space and time in this region. In her analysis, Gabriel (1992) found that the most persistent feature over time in assemblage structure from Nova Scotia to Cape Hatteras was the boundary separating assemblages between the Gulf of Maine and Georges Bank, which occurred at approximately the 100 m isobath on northern Georges Bank.

Overholtz and Tyler (1985) identified five (5) assemblages for Georges Bank (Table 10). The Gulf of Maine-deep assemblage included a number of species found in other assemblages, with the exception of American plaice and witch flounder, which were unique to this assemblage. Gabriel's (1992) approach did not allow species to co-occur in assemblages, and also classified these two species as unique to the deepwater Gulf of Maine-Georges Bank assemblage. Results of these two studies are compared in Table 10. Auster et al. (2001) went a step further, and related species clusters on Stellwagen Bank to reflectance values of different substrate types in an attempt to use fish distribution as a proxy for seafloor habitat distribution. They found significant reflectance associations for 12 of 20 species, including American plaice (fine substrate), and haddock (coarse substrate). Species clusters and associated substrate types are given in Table 11.

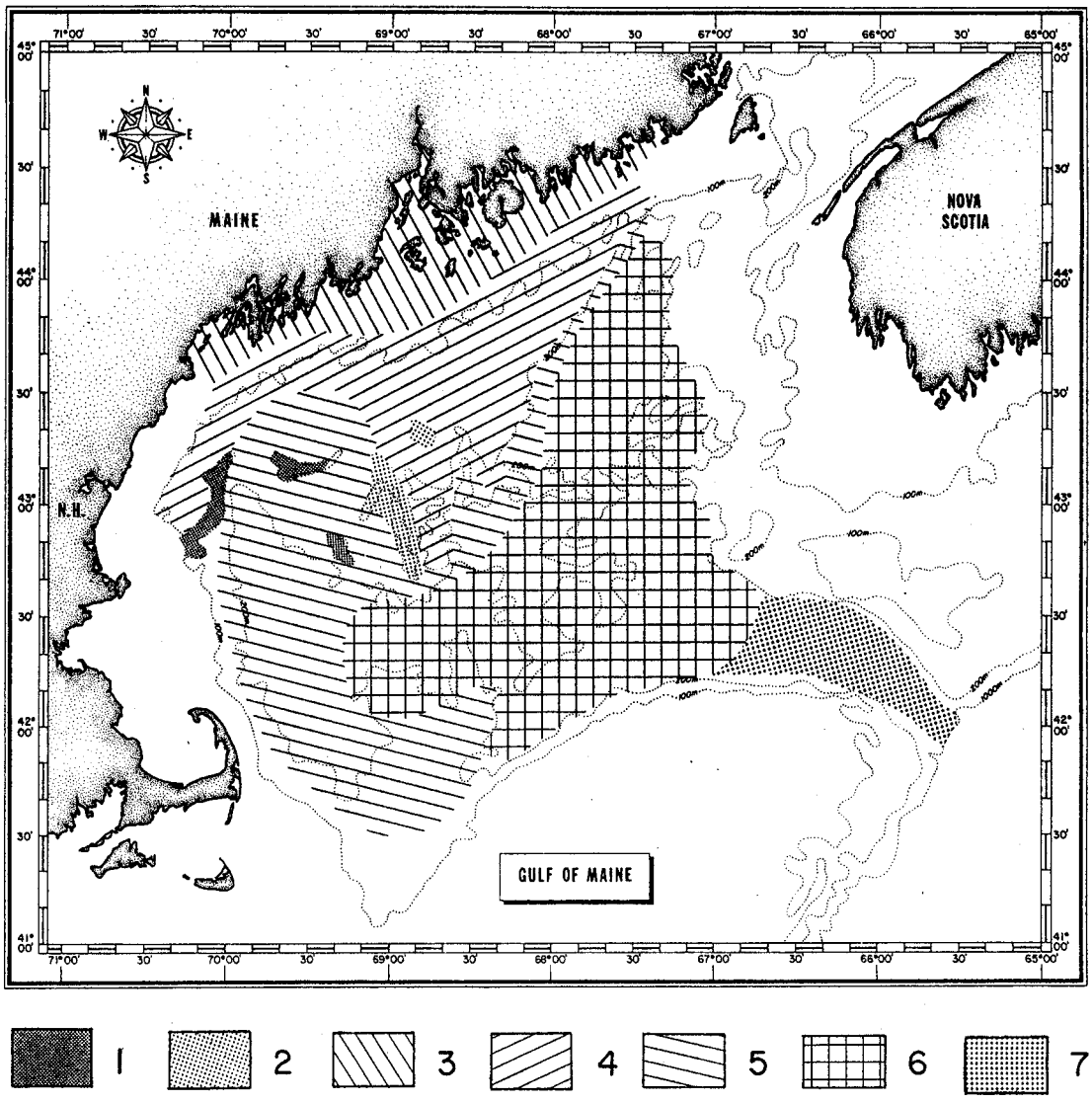
Auster (2002) did a multivariate analysis of annual trawl survey data at six year intervals (i.e.; 1970, 1975, 1981, 1987, 1993) from the Georges Bank-GOM region. Results demonstrated consistent patterns of a singular deep and shallow assemblage of fishes across the region. The shallow water assemblage occurred on Georges Bank and around the rim of the Gulf of Maine,

while the deep water assemblage occurred within the deeper basins of the GOM proper. While patterns of species dominance shifted over time, the actual distribution of assemblages remained relatively constant (i.e.; there were shifts in assemblage boundaries that were attributed in part due to shifting station locations within survey strata). The differences between this study and the Overholtz and Tyler (1985) and Gabriel (1992) studies can in part be attributed to differences in spatial boundaries of the data. That is, multivariate approaches produce clusters and the variation in the data sets, based on variations in assemblage composition over space and time, produce variable boundaries. Overholtz and Tyler (1985) found a consistent pattern over Georges Bank alone while Auster (2002) showed a singular assemblage at the spatial scale that produced relevant patterns. Gabriel (1992) also found a deep assemblage within the GOM region and is consistent with the Auster (2002) study.

Table 9 - Gulf of Maine benthic assemblages as identified by Watling (1998).

Benthic Assemblage	Benthic Community Description
1	Comprises all sandy offshore banks, most prominently Jeffreys Ledge, Fippennies Ledge, and Platts Bank; depth on top of banks about 70 m; substrate usually coarse sand with some gravel; fauna characteristically sand dwellers with an abundant interstitial component.
2	Comprises the rocky offshore ledges, such as Cashes Ledge, Sigsbee Ridge and Three Dory Ridge; substrate either rock ridge outcrop or very large boulders, often with a covering of very fine sediment; fauna predominantly sponges, tunicates, bryozoans, hydroids, and other hard bottom dwellers; overlying water usually cold Gulf of Maine Intermediate Water.
3	Probably extends all along the coast of the Gulf of Maine in water depths less than 60 m; bottom waters warm in summer and cold in winter; fauna rich and diverse, primarily polychaetes and crustaceans; probably consists of several (sub-) assemblages due to heterogeneity of substrate and water conditions near shore and at mouths of bays.
4	Extends over the soft bottom at depths of 60 to 140 m, well within the cold Gulf of Maine Intermediate Water; bottom sediments primarily fine muds; fauna dominated by polychaetes, shrimp, and cerianthid anemones.
5	A mixed assemblage comprising elements from the cold water fauna as well as a few deeper water species with broader temperature tolerances; overlying water often a mixture of Intermediate Water and Bottom Water, but generally colder than 7° C most of the year; fauna sparse, diversity low, dominated by a few polychaetes, with brittle stars, sea pens, shrimp, and cerianthid also present.
6	Comprises the fauna of the deep basins; bottom sediments generally very fine muds, but may have a gravel component in the offshore morainal regions; overlying water usually 7 to 8° C, with little variation; fauna shows some bathyal affinities but densities are not high, dominated by brittle stars and sea pens, and sporadically by a tube-making amphipod.
7	The true upper slope fauna that extends into the Northeast Channel; water temperatures are always above 8° and salinities are at least 35 ppt; sediments may be either fine muds or a mixture of mud and gravel.

Figure 15 - Distribution of the seven (7) major benthic assemblages in the Gulf of Maine as determined from both soft bottom quantitative sampling and qualitative hard bottom sampling.



The assemblages are characterized as follows: 1. sandy offshore banks; 2. rocky offshore ledges; 3. shallow (< 50 m) temperate bottoms with mixed substrate; 4. boreal muddy bottom, overlain by Maine Intermediate Water, 50 – 160 m (approx.); 5. cold deep water, species with broad tolerances, muddy bottom; 6. deep basin warm water, muddy bottom; 7. upper slope water, mixed sediment. Source: Watling 1998.

Table 10 - Comparison of demersal fish assemblages of Georges Bank and Gulf of Maine identified by Overholtz and Tyler (1985) (Georges Bank only) and Gabriel (1992).

Overholtz and Tyler (1984) – Georges Bank		Gabriel (1992) – Georges Bank and Gulf of Maine	
Assemblage	**Species**	**Species**	**Assemblage**
Slope & Canyon	offshore hake blackbelly rosefish Gulf stream flounder fourspot flounder monkfish, whiting white hake, red hake	offshore hake blackbelly rosefish Gulf stream flounder fawn cusk-eel, longfin hake, armored sea robin	Deepwater
Intermediate	whiting red hake monkfish Atlantic cod, haddock, ocean pout, yellowtail flounder, winter skate, little skate, sea raven, longhorn sculpin	whiting red hake monkfish short-finned squid, spiny dogfish, cusk	Combination of Deepwater Gulf of Maine/Georges Bank & Gulf of Maine-Georges Bank Transition
Shallow	Atlantic cod haddock pollock whiting white hake red hake monkfish ocean pout yellowtail flounder windowpane winter flounder winter skate little skate longhorn sculpin summer flounder sea raven, sand lance	Atlantic cod haddock pollock yellowtail flounder windowpane winter flounder winter skate little skate longhorn sculpin	Gulf of Maine-Georges Bank Transition Zone Shallow Water Georges Bank-Southern New England
Gulf of Maine-Deep	white hake American plaice witch flounder thorny skate whiting, Atlantic cod, haddock, cusk Atlantic wolfish	white hake American plaice witch flounder thorny skate, redfish	Deepwater Gulf of Maine-Georges Bank
Northeast Peak	Atlantic cod haddock pollock ocean pout, winter flounder, white hake, thorny skate, longhorn sculpin	Atlantic cod haddock pollock	Gulf of Maine-Georges Bank Transition Zone

Gabriel analyzed a greater number of species and did not overlap assemblages.

Table 11 - Ten dominant species and mean abundance/tow^{-1} from each cluster species group and its associated substrate type as determined by reflectance value, from Stellwagen Bank, Gulf of Maine (Auster et al. 2001).

SUBSTRATE TYPE					
Coarse		**Coarse**		**Wide Range**	
Species	**Mean**	**Species**	**Mean**	**Species**	**Mean**
Northern Sand Lance	1172.0	Haddock	13.1	American plaice	63.3
Atlantic herring	72.2	Atlantic cod	7.3	Northern sand lance	53.0
Spiny dogfish	38.4	American plaice	5.3	Atlantic herring	28.5
Atlantic cod	37.4	Whiting	3.3	Whiting	22.4
Longhorn sculpin	29.7	Longhorn sculpin	2.0	Acadian redfish	16.0
American plaice	28.0	Yellowtail flounder	1.9	Atlantic cod	14.0
Haddock	25.7	Spiny dogfish	1.6	Longhorn sculpin	9.5
Yellowtail flounder	20.2	Acadian redfish	1.6	Haddock	9.1
Whiting	7.5	Ocean pout	1.3	Pollock	7.9
Ocean pout	9.0	Alewife	1.1	Red hake	6.2
No. tows = 83		No. tows = 60		No. tows = 159	
SUBSTRATE TYPE					
Fine		**Fine**			
Species	**Mean**	**Species**	**Mean**		
American plaice	152.0	Whiting	275.0		
Acadian redfish	31.3	American plaice	97.1		
Whiting	29.5	Atlantic mackerel	42.0		
Atlantic herring	28.0	Pollock	41.1		
Red hake	26.1	Alewife	37.2		
Witch flounder	23.8	Atlantic herring	32.0		
Atlantic cod	13.1	Atlantic cod	18.1		
Haddock	12.7	Longhorn sculpin	16.8		
Longhorn sculpin	12.5	Red hake	15.2		
Daubed shanney	11.4	Haddock	13.2		
No. tows = 66		No. tows = 20			

Georges Bank

The interaction of several environmental factors including availability and type of sediment, current speed and direction, and bottom topography have been found to combine to form seven sedimentary provinces on eastern Georges Bank (Valentine et al. 1993), which are outlined in Table 12 and depicted in Figure 16.

Theroux and Grosslein (1987) identified four (4) macrobenthic invertebrate assemblages that corresponded with previous work in the geographic area. They noted that it is impossible to define distinct boundaries between assemblages because of the considerable intergrading that occurs between adjacent assemblages; however, the assemblages are distinguishable. Their assemblages are associated with those identified by Valentine et al. (1993) in Table 12.

The Western Basin assemblage (Theroux and Grosslein 1987) is found in the upper Great South Channel region at the northwestern corner of Georges Bank, in comparatively deep water (150-200 m) with relatively slow currents and fine bottom sediments of silt, clay and muddy sand. Fauna are comprised mainly of small burrowing detritivores and deposit feeders, and carnivorous

scavengers. Representative organisms include bivalves (Thyasira flexuosa, Nucula tenuis, Musculus discors), annelids (Nephtys incisa, Paramphinome pulchella, Onuphis opalina, Sternaspis scutata), the brittle star Ophiura sarsi, the amphipod Haploops tubicola, and red crab (Geryon quedens). Valentine et al. 1993 did not identify a comparable assemblage; however, this assemblage is geographically located adjacent to Assemblage 5 as described by Watling (1998) (Table 9 and Figure 15).

The Northeast Peak assemblage is found along the Northern Edge and Northeast Peak, which varies in depth and current strength and includes coarse sediments, mainly gravel and coarse sand with interspersed boulders, cobbles, and pebbles. Fauna tend to be sessile (cnidarians, brachiopods, barnacles, and tubiferous annelids) or free-living (brittle stars, crustaceans, and polychaetes), with a characteristic absence of burrowing forms. Representative organisms include amphipods (*Acanthonotozoma serratum, Tiron spiniferum*), the isopod *Rocinela americana*, the barnacle *Balanus hameri*, annelids (*Harmothoe imbricata, Eunice pennata, Nothria conchylega,* and *Glycera capitata*), sea scallops (*Placopecten magellanicus*), brittle stars (*Ophiacantha bidentata, Ophiopholis aculeata*), and soft corals (*Primnoa resedaeformis*, *Paragorgia arborea*).

The Central Georges Bank assemblage occupies the greatest area, including the central and northern portions of Georges Bank in depths less than 100 m. Medium grained shifting sands predominate this dynamic area of strong currents. Organisms tend to be small to moderately large in size with burrowing or motile habits. Sand dollars (*Echinarachnius parma*) are most characteristic of this assemblage. Other representative species include mysids (*Neomysis americana*, *Mysidopsis bigelowi*), the isopod *Chiridotea tuftsi*, the cumacean *Leptocuma minor*, the amphipod *Protohaustorius wigleyi*, annelids (*Sthenelais limicola, Goniadella gracilis, Scalibregma inflatum*), gastropods (*Lunatia heros*, *Nassarius trivittatus*), the starfish *Asterias vulgaris*, the shrimp *Crangon septemspinosa*, and the crab *Cancer irroratus*.

The Southern Georges assemblage is found on the southern and southwestern flanks at depths from 80-200 m, where fine grained sands and moderate currents predominate. Many southern species exist here at the northern limits of their range. Dominant fauna include amphipods, copepods, euphausiids, and the starfish genus *Astropecten*. Representative organisms include amphipods (*Ampelisca compressa, Erichthonius rubricornis, Synchelidium americanum*), the cumacean *Diastylis quadrispinosa,* annelids (*Aglaophamus circinata, Nephtys squamosa, Apistobranchus tullbergi*), crabs (*Euprognatha rastellifera, Catapagurus sharreri*), and the shrimp *Munida iris*.

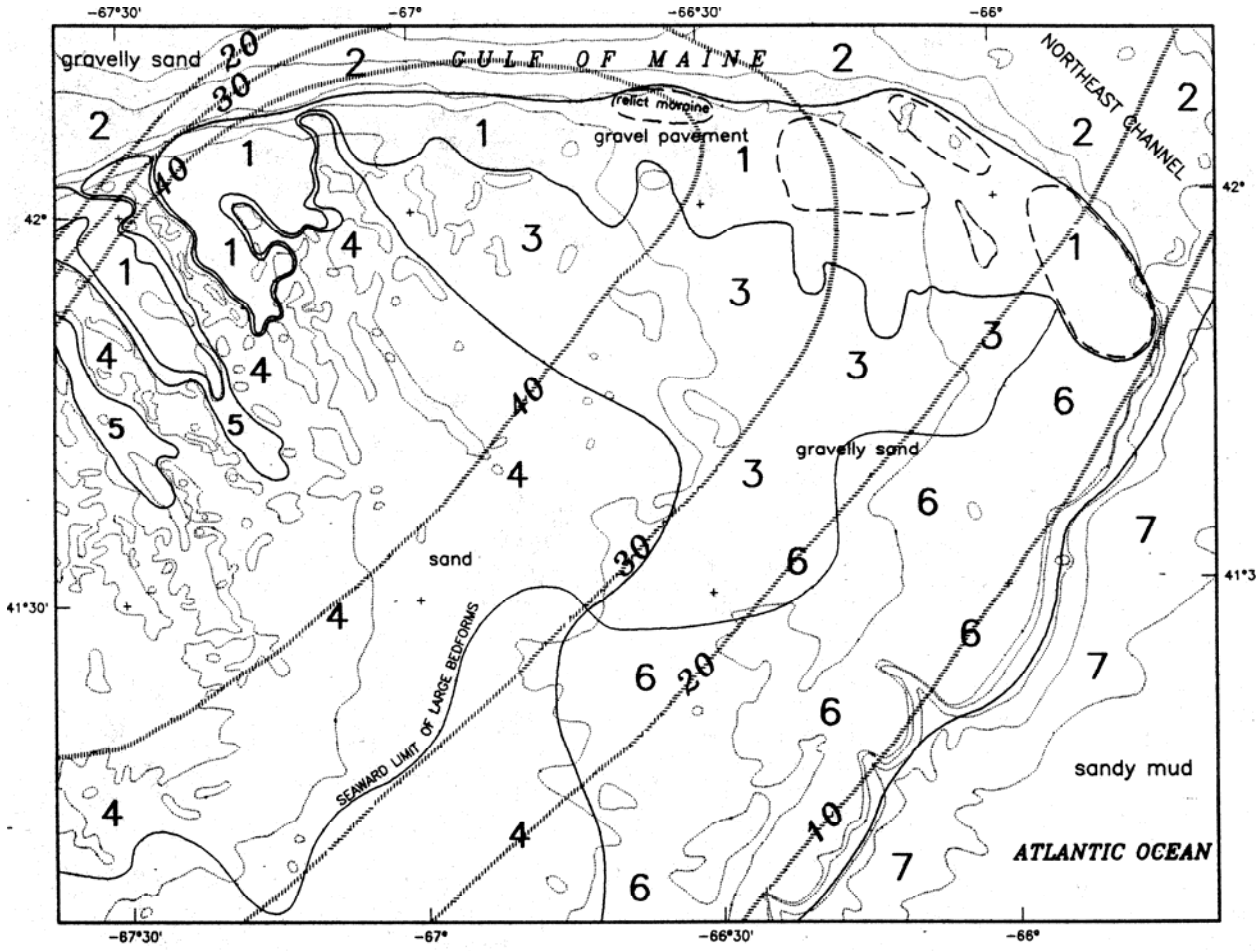
Table 12 - Sedimentary provinces of eastern Georges Bank.

Sedimentary Province	Depth (m)	Description	Benthic Assemblage
Northern Edge / Northeast Peak (1)	40-200	Dominated by gravel with few deposits of coarse sand; boulders common in some areas; predominantly a tightly packed pebble pavement. Representative epifauna bryozoa, hydrozoa, *anemones,* and *calcareous* worm tubes. *Strong tidal and storm currents.*	Northeast Peak
Northern Slope	200-240	Variable sediment type (gravel, gravelly sand, and	Northeast Peak

Sedimentary Province	Depth (m)	Description	Benthic Assemblage
and Northeast Channel (2)		sand) and scattered bedforms. This is a transition zone between the northern edge gravel and the sandy and silty sediment of the Gulf of Maine and the southern bank slope. *Strong tidal and storm currents.*	
North / Central Shelf (3)	60-120	Highly variable sediment type (ranging from gravel to sand) with common rippled sand and large bedforms; patchy gravel lag deposits. *Minimal epifauna on gravel due to sand movement.*	Central Georges
Central and Southwestern Shelf - *shoal ridges* (4)	10-80	Dominated by sand (commonly fine- and medium-grained) with large sand ridges, dunes, waves, and ripples. Small bedforms in southern part. *Minimal epifauna on gravel due to sand movement.*	Central Georges
Central and Southwestern Shelf - *shoal troughs* (5)	40-60	Gravel (including gravel lag) and gravelly sand between large sand ridges. Patchy large bedforms. Strong currents. (Few samples; submersible observations noted presence of gravel lag, rippled gravelly sand, and large bedforms.) *Minimal epifauna on gravel due to sand movement.*	Central Georges
Southeastern Shelf (6)	80-200	Rippled gravelly sand (commonly medium- and fine-grained) with patchy large bedforms and gravel lag. Weaker currents; ripples are formed by intermittent storm currents. Representative epifauna include sponges attached to shell fragments.	Southern Georges
Southeastern Slope (7)	400-2000	Silt and clay greater than 10% of sediment associated with sand (commonly medium- and fine-grained); with rippled sand on shallow slope and smooth silty sand deeper.	none

As defined by Valentine et al. (1993) and Valentine and Lough (1991) with additional comments by Valentine (personal communication) and benthic assemblages assigned from Theroux and Grosslein (1987).

Figure 16 - Sedimentary provinces of eastern Georges Bank based on criteria of sea floor morphology, texture, sediment movement and bedforms, and mean tidal bottom current speed (cm/sec).



Relict moraines (bouldery sea floor) are enclosed by dashed lines. Source: Valentine and Lough (1991).

Along with high levels of primary productivity, Georges Bank has been historically characterized by high levels of fish production. Several studies have attempted to identify demersal fish assemblages over large spatial scales. Overholtz and Tyler (1985) found five depth-related groundfish assemblages for Georges Bank and the Gulf of Maine that were persistent temporally and spatially. Depth and salinity were identified as major physical influences explaining assemblage structure. Gabriel (1992) identified six assemblages, which are compared with the results of Overholtz and Tyler (1985) in Table 10. Mahon et al. (1998) found similar results.

A few recent studies (Garrison 2000, 2001; Garrison and Link 2000) demonstrate the persistence of spatio-temporal overlap among numerically dominant, commercially valuable and /or ecologically important species. The studies by Garrison and associates utilized an index of spatial overlap based on the NOAA spring and fall bottom trawl surveys. He found that among the community of fish species on Georges Bank, only a very few species have high spatial overlaps with other species. The most notable example is silver hake (whiting), which had a

very high overlap with most other species, suggestive of a broad distribution. Trends in spatial overlap over time generally reflect changes in species abundance. During the 1960s, haddock and yellowtail flounder were both widely distributed and had high spatial overlaps with other species. As abundance of these species declined through the 1970s into the 1990s, their spatial range contracted and their overlaps with other species subsequently declined. In contrast to this, species whose abundance has increased through time show an expansion of ranges and increased spatial overlap with other species. Interestingly and to confirm other studies of fish assemblages, the major species assemblages have been generally consistent across time given the changes in relative abundance.

Seasonal trends in spatial overlap are also apparent. Spiny dogfish, for example, has a far stronger association and a far broader range of species' associations in the winter than it does in the summer. Similarly, winter skate is a more prevalent co-correspondent in winter than other times of the year. This metric, like the spatial overlap trend over time, is sensitive to abundance as evidenced by the lack of spatial overlap between Atlantic halibut and any other species.

Mid-Atlantic Bight

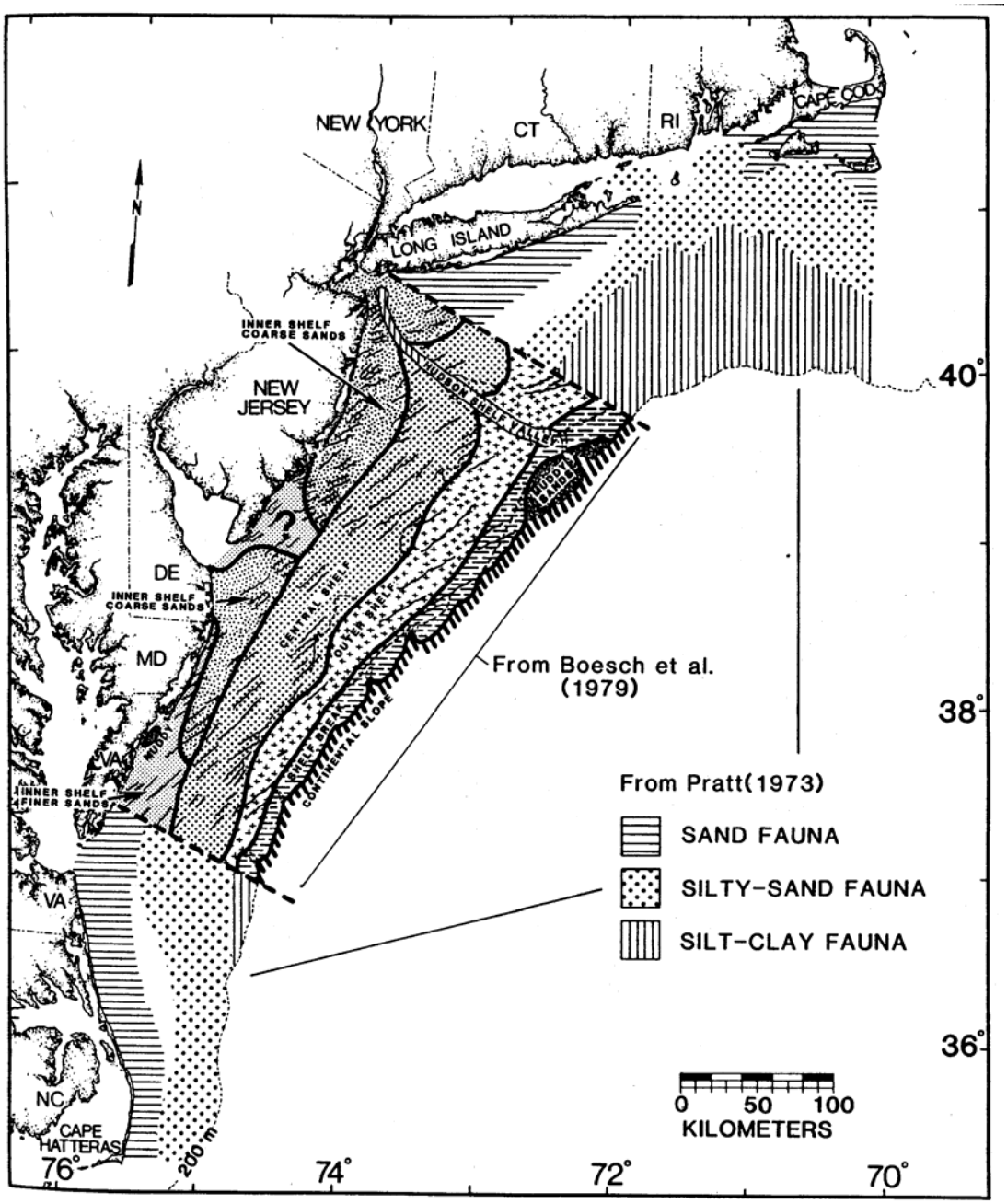
Three broad faunal zones related to water depth and sediment type were identified for the Mid-Atlantic by Pratt (1973). The "sand fauna" zone was defined for sandy sediments (1% or less silt) which are at least occasionally disturbed by waves, from shore out to 50 m. The "silty sand fauna" zone occurred immediately offshore from the sand fauna zone, in stable sands containing at least a few percent silt and slightly more (2%) organic material. Silts and clays become predominant at the shelf break and line the Hudson Shelf Valley, and support the "silt-clay fauna."

Building on Pratt's (1973) work, the Mid-Atlantic shelf was further divided by Boesch (1979) into seven bathymetric/morphologic subdivisions based on faunal assemblages (Table 13, Figure 17). Sediments in the region studied (Hudson Shelf Valley south to Chesapeake Bay) were dominated by sand with little finer material. Ridges and swales are important morphological features in this area. Sediments are coarser on the ridges, and the swales have greater benthic macrofaunal density, species richness and biomass. Faunal species composition differed between these features, and Boesch (1979) incorporated this variation in his subdivisions; much overlap of species distributions was found between depth zones, so the faunal assemblages represented more of a continuum than distinct zones.

Table 13 - Mid-Atlantic habitat types as described by Pratt (1973) and Boesch (1979) with characteristic macrofauna as identified in Boesch (1979).

Habitat Type (after Boesch 1979)	**Description**		
	Depth (m)	**Characterization (Pratt faunal zone)**	**Characteristic Benthic Macrofauna**
Inner shelf	0-30	characterized by coarse sands with finer sands off MD and VA (sand zone)	Polychaetes: Polygordius, Goniadella, Spiophanes
Central shelf	30-50	(sand zone)	Polychaetes: Spiophanes, Goniadella Amphipod: Pseudunciola
Central and inner shelf swales	0-50	occurs in swales between sand ridges (sand zone)	*Polychaetes:* Spiophanes, Lumbrineris, Polygordius
Outer shelf	50-100	(silty sand zone)	Amphipods: Ampelisca vadorum, Erichthonius Polychaetes: Spiophanes
Outer shelf swales	50-100	occurs in swales between sand ridges (silty sand zone)	Amphipods: Ampelisca agassizi, Unciola, Erichthonius
Shelf break	100-200	(silt-clay zone)	not given
Continental slope	>200	(none)	not given

Figure 17 - Schematic representation of major macrofaunal zones on the Mid-Atlantic shelf.



Wigley and Theroux (1981) found a general trend in declining macrobenthic invertebrate density from coastal areas offshore to the slope, and on the shelf from Southern New England south to the Commonwealth of Virginia and State of North Carolina. There were no detectable trends in density from north to south on the slope. Number of individuals was greatest in gravel sediments, and declined in sand-gravel, sand-shell, sand, shell, silty sand, silt, and finally, clay. However, biomass of benthic macrofauna was greatest in shell habitat, followed by silty sand, gravel, sand-gravel, sand, sand-shell, silt, and clay.

Demersal fish assemblages were described at a broad geographic scale for the continental shelf and slope from Cape Chidley, Labrador to Cape Hatteras, North Carolina (Mahon et al.1998) and from Nova Scotia to Cape Hatteras (Gabriel 1992). Factors influencing species distribution included latitude and depth.

Results of these studies were similar to an earlier study confined to the Mid-Atlantic Bight continental shelf (Colvocoresses and Musick 1984). In this study, there were clear variations in species abundances, yet they demonstrated consistent patterns of community composition and distribution among demersal fishes of the Mid-Atlantic shelf. This is especially true for five (5) strongly recurring species associations that varied slightly by season (Table 14). The boundaries between fish assemblages generally followed isotherms and isobaths. The assemblages were largely similar between the spring and fall collections, with the most notable change being a northward and shoreward shift in the temperate group in the spring.

Table 14 - Major recurrent demersal finfish assemblages of the Mid-Atlantic Bight during spring and fall as determined by Colvocoresses and Musick (1984).

Season	Species Assemblage				
	Boreal	**Warm temperate**	**Inner shelf**	**Outer shelf**	**Slope**
Spring	Atlantic cod little skate sea raven monkfish winter flounder longhorn sculpin ocean pout whiting red hake white hake spiny dogfish	black sea bass summer flounder butterfish scup spotted hake northern searobin	windowpane	fourspot flounder	shortnose greeneye offshore hake blackbelly rosefish white hake
Fall	white hake whiting red hake monkfish longhorn sculpin winter flounder yellowtail flounder witch flounder little skate spiny dogfish	black sea bass summer flounder butterfish scup spotted hake northern searobin smooth dogfish	windowpane	fourspot flounder fawn cusk eel gulf stream flounder	shortnose greeneye offshore hake blackbelly rosefish white hake witch flounder

Steimle and Zetlin (2000) described representative finfish species and epibenthic/epibiotic and motile epibenthic invertebrates associated with Mid-Atlantic reef habitats (Table 15). Most of these reefs are human-made structures.

Table 15 - Mid-Atlantic reef types, location, and representative flora and fauna, as described in Steimle and Zetlin (2000).

Location (Type)	Representative Flora and Fauna		
	Epibenthic/Epibiotic	**Motile Epibenthic Invertebrates**	**Fish**
Estuarine (Oyster reefs, blue mussel beds,other hard surfaces, semi-hard clay and Spartina peat reefs)	Oyster, barnacles, ribbed mussel, blue mussel, algae, sponges, tube worms, anemones, hydroids, bryozoans, slipper shell, jingle shell, northern stone coral, sea whips, tunicates, caprellid amphipods, wood borers	Xanthid crabs, blue crab, rock crabs, spider crab, juvenile American lobsters, sea stars	Gobies, spot, striped bass, black sea bass, white perch, toadfish, scup, drum, croaker, spot, sheepshead porgy, pinfish, juvenile and adult tautog, pinfish, northern puffer, cunner, sculpins, juvenile and adult Atlantic cod, rock gunnel, conger eel, American eel, red hake, ocean pout, white hake, juvenile pollock
Coastal (exposed rock/soft marl, harder rock, wrecks & artificial reefs, kelp, other materials)	Boring mollusks (piddocks), red algae, sponges, anemones, hydroids, northern stone coral, soft coral, sea whips, barnacles, blue mussel, horse mussel, bryozoans, skeleton and tubiculous amphipods, polychaetes, jingle shell, sea stars	American lobster, Jonah crab, rock crabs, spider crab, sea stars, urchins, squid egg clusters	Black sea bass, pinfish, scup, cunner, red hake, gray triggerfish, black brouper, smooth dogfish, sumemr flounder, scad, bluefish amberjack, Atlantic cod, tautog, ocean pout, conger eel, sea raven, rock gunnel, radiated shanny
Shelf (rocks & boulders, wrecks & artificial reefs, other solid substrates)	Boring mollusks (piddocks) red algae, sponges, anemones, hydroids, stone coral, soft coral, sea whips, barnacles, blue mussels, horse mussels, bryozoans, amphipods, polychaetes	American lobster, Jonah crabs, rock crabs, spider crabs, sea stars, urchins, squid egg clusters (with addition of some deepwater taxa at shelf edge)	Black sea bass, scup, tautog, cunner, gag, sheepshead porgy, round herring, sardines, amberjack, spadefish, gray triggerfish, mackerels, small tunas, spottail pinfish, tautog, Atlantic cod, ocean pout, red hake, conger eel, cunner, sea raven, rock gunnel, pollock, white hake
Outer shelf (reefs and clay burrows including "pueblo village community")			Tilefish, white hake, conger eel

4.3 PROTECTED RESOURCES

The following protected species are found in the environment in which the sea scallop fishery is prosecuted. A number of them are listed under the Endangered Species Act of 1973 (ESA) as endangered or threatened, while others are identified as protected under the Marine Mammal Protection Act of 1972 (MMPA). Two right whale critical habitat designations also are located within the action area. An update and summary is provided here to facilitate consideration of the species most likely to interact with the scallop fishery relative to the proposed action.

A more complete description of protected resources inhabiting the action area is provided in Amendment 10 to the Sea Scallop FMP (See Amendment 10 to the Atlantic Sea Scallop Fishery Management Plan, Section 7.2.7, Protected Species, for a complete list. An electronic version of the document is available at http://www.nefmc.org/scallops/index.html.).

Cetaceans	***Status***
Northern right whale (*Eubalaena glacialis*)	Endangered
Humpback whale (*Megaptera novaeangliae*)	Endangered
Fin whale (*Balaenoptera physalus*)	Endangered
Blue whale (*Balaenoptera musculus*)	Endangered
Sei whale (*Balaenoptera borealis*)	Endangered
Sperm whale (*Physeter macrocephalus*)	Endangered
Minke whale (*Balaenoptera acutorostrata*)	Protected
Pilot whale (*Globicephala* spp.)	Protected
Spotted dolphin (*Stenella frontalis*)	Protected
Risso's dolphin (*Grampus griseus*)	Protected
White-sided dolphin (*Lagenorhynchus acutus*)	Protected
Common dolphin (*Delphinus delphis*)	Protected
Bottlenose dolphin: coastal stocks (*Tursiops truncatus*)	Protected
Harbor porpoise (*Phocoena phocoena*)	Protected
Seals	
Harbor seal (*Phoca vitulina*)	Protected
Gray seal (*Halichoerus grypus*)	Protected
Harp seal (*Phoca groenlandica*)	Protected
Hooded seal (*Crystophora cristata*)	Protected
Sea Turtles	
Leatherback sea turtle (*Dermochelys coriacea*)	Endangered
Kemp's ridley sea turtle (*Lepidochelys kempii*)	Endangered
Green sea turtle (*Chelonia mydas*)	Endangered*
Loggerhead sea turtle (*Caretta caretta*)	Threatened
Fish	
Shortnose sturgeon (*Acipenser brevirostrum*)	Endangered
Atlantic salmon (*Salmo salar*)	Endangered

Critical Habitat Designations
Right whale Cape Cod Bay
Great South Channel

** Green turtles in U.S. waters are listed as threatened except for the Florida breeding population which is listed as endangered.*

Threatened and Endangered Species Not Likely to be Affected by the Alternatives Under Consideration

According to the most recent Biological Opinion (Opinion) provided by NMFS dated 9/18/06, the agency has previously determined that species not likely to be affected by the Scallop Fishery Management Plan or by the operation of the fishery include the shortnose sturgeon, the Gulf of Mane distinct population segment of Atlantic salmon and hawksbill sea turtles, as well as North Atlantic right, humpback fin, sei and sperm whales, all of which are listed as endangered species under the ESA. NMFS also concluded that neither the Sea Scallop FMP nor the fishery has had any adverse effects on habitat features in right whale critical habitat areas.

Threatened and Endangered Species Potentially Affected Adversely by the Alternatives Under Consideration

The recent Opinion identified species that may be adversely affected by the Scallop FMP and the fishery --- loggerhead, leatherback, Kemp's ridley and green sea turtles while concluding that the fishery would not likely jeopardize the continued existence of threatened and endangered sea turtles. Further discussions in Amendment 11 will therefore focus on these species. Summary information is provided here that broadly describes the general distribution of sea turtles within the scallop action area, as well as the known interactions with sea scallop gear.

Additional background information on the relevant sea turtle species can be found in a number of published documents. These include sea turtle status reviews and biological reports (NMFS and USFWS 1995; Hirth 1997; USFWS 1997; Marine Turtle Expert Working Group (TEWG) 1998 & 2000), and recovery plans for Endangered Species Act-listed sea turtles and marine mammals (NMFS 1991; NMFS and USFWS 1991a; NMFS and USFWS 1991b; NMFS and USFWS 1992; NMFS 1998; USFWS and NMFS 1992; NMFS 2005).

Loggerhead, leatherback, Kemp's ridley, and green sea turtles occur seasonally in southern New England and Mid-Atlantic continental shelf waters north of Cape Hatteras. In general, turtles move up the coast from southern wintering areas as water temperatures warm in the spring (James *et al*. 2005; Morreale and Standora 2005; Braun-McNeill and Epperly 2004; Morreale and Standora 1998; Musick and Limpus 1997; Shoop and Kenney 1992; Keinath *et al.* 1987). The trend is reversed in the fall as water temperatures cool. By December, turtles have passed Cape Hatteras, returning to more southern waters for the winter (James *et al*. 2005; Morreale and Standora 2005; Braun-McNeill and Epperly 2004; Morreale and Standora 1998; Musick and Limpus 1997; Shoop and Kenney 1992; Keinath *et al.* 1987). Hard-shelled species are typically observed as far north as Cape Cod whereas the more cold-tolerant leatherbacks are observed in more northern Gulf of Maine waters in the summer and fall (Shoop and Kenney 1992; STSSN database).

Sea turtles are known to be captured in scallop dredge and trawl gear, gear types that are used in the fisheries affected by this action. Interactions with scallop gear are likely where sea turtle distribution overlaps with the operation of the fishery. All four species overlap, in part, with the distribution of scallop dredge and trawl gear operations (insert maps here).To date, with one exception, known interactions with scallop trawl and dredge gear have occurred in the Mid-Atlantic during the months of June through October, although interactions also could occur

during May and November given the variability of sea turtle seasonal movements and the range of the scallop fishery. Turtle interactions in fish trawl gear have occurred throughout most of the year (see Murray 2007). The one exception is a ridley taken on southern Georges Bank in August 2005 that occurred south of 41 09' N.

The most recent Biological Opinion (BO) issued by NMFS (September 18, 2006), summarizes most of the information available to date concerning sea turtle interactions with scallop gear, including research on factors affecting estimated bycatch rates in the dredge fishery. The BO states that 64 sea turtles have been observed captured in scallop gear during the period 1996-2005. All have been identified as hard-shelled sea turtles (loggerheads, Kemp's ridleys, or greens); however, 18 have not been specifically identified to species. Four were four were fresh dead upon retrieval or died on the vessel, 1 was alive but required resuscitation, 26 were alive but injured, 20 were alive and uninjured and 13 were listed as alive but condition unknown. Since the BO was published, these numbers have been adjusted and if only on-watch takes and non-decomposed takes were included, the total number from 1996-2005 would be 61. Of the 61 on watch takes of non-decomposed turtles, 44 were identified to species (one green and 43 loggerheads) and 17 were not identified to species. In terms of condition for those 61, approximately 20 alive/not injured, 25 alive/injured, 11 alive/condition unknown, 1 alive/resuscitated, and 4 dead/fresh (either fresh dead upon retrieval or died on the vessel).

The 2006 Biological Opinion also discussed observed takes of sea turtles in scallop trawl gear. In October 2004, three loggerheads were observed taken in separate tows on a single trip by a vessel operating off of the Delmarva Peninsula. All three were uninjured and released. Five sea turtles, all identified as loggerheads, were observed captured in scallop trawl gear during the 2005 scallop fishing year. Four of the five were described as alive/uninjured, with the fifth requiring resuscitation.

Subsequent to issuance of the 2006 BO, Murray (2007) the average annual bycatch of loggerhead sea turtles in Mid-Atlantic scallop trawl gear during 2004-2005. Using three methods to generate six different estimates, Murray reported point estimates ranging from 81-191 turtles. (Separate confidence intervals for each estimate ranged from a minimum of 20 turtles to a maximum of 320 turtles).

During 2005 two loggerhead turtles and 1 Kemp's ridley turtle were caught in scallop dredge gear when an observer was off-watch (Murray 2007). When an observer is off-watch, only a limited amount of information is recorded for the haul by the Captain, so information from off-watch hauls are not normally used to calculate bycatch rates in the fishery (see Murray 2007 for more information). No turtle bycatch were observed during 2005 when an observer was on-watch. Therefore, based on traditional sampling protocols, no turtle bycatch occurred in scallop dredge gear during 2005 so the observed bycatch rate was zero. Total estimated bycatch in scallop dredge gear in 2005 was zero, although there is no evidence to suggest that the 2005 estimate is a good predictor of bycatch in subsequent years (Murray, 2007).

Sea Turtle Conservation

Below is a summary of some of the regulations in place for turtle conservation. On December 3, 2002, the agency published a final rule (67 *Federal Register* 71895) establishing seasonally

adjusted gear restrictions by closing portions of the mid-Atlantic EEZ waters to fishing with large-mesh (>8") to protect migrating sea turtles, following an interim final rule published March 21 that year. Note this area overlaps with only part of the scallop fishery and this gear type is not managed under the Scallop FMP. The basis of this rule was that sea turtles migrate northward as water temperatures warmed. At the time the interim and final rules were published, there was no evidence that the primary fishery involved – monkfish – was being prosecuted in state waters. In 2002, when most monkfish fishermen were not permitted under the FMP to fish in the EEZ and the rest were faced with the sea turtle closures, the proportion of North Carolina monkfish landings from state waters increased five-fold to 92%, posing an unforeseen risk to migrating sea turtles since they were not protected in state waters. In response, NMFS published a final rule on April 26, 2006 (71 *Federal Register* 24776) that included modifications to the large-mesh gillnet restrictions. Specifically, the new final rule revises the gillnet restrictions to apply to stretched mesh that is 7 inches or greater and extends the prohibition on the use of such gear to North Carolina and Virginia state waters. Federal and state waters north of Chincoteague, VA remain unaffected by the large-mesh gillnet restrictions.

NMFS has recently finalized a rule (71 FR 50361, August 23, 2006) that requires modification of scallop dredge gear by use of a chain mat when the gear is fished in Mid-Atlantic waters south of 49 9.0'N from the shoreline to the outer boundary of the EEZ during the period May 1 through November 30 each year. The intent of the dredge gear modification is to reduce the severity of some turtle interactions that might occur by preventing turtles from entering the dredge bag.

On February 15, 2007 the agency also issued an advance notice of proposed rulemaking to announce it is considering amendments to the regulatory requirements for turtle excluder devices (TEDs). Among other issues, specific changes include increasing the size of the TED escape opening currently required for sea scallop trawl gear and moving the current northern boundary of the Summer Flounder Fishery-Sea Turtle Protection Area off Cape Charles, Virginia to a point farther north. The objective of the proposed measures is to effectively protect all life stages and species of sea turtle in Atlantic trawl fisheries where they are vulnerable to incidental capture and mortality.

4.4 FISHERY-RELATED BUSINESSES AND COMMUNITIES

4.4.1 Scallop Permits

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. The limited access fishery was established since Amendment 4 to the Scallop FMP was developed and implemented in 1994 (NEFMC 2003). The limited access vessels consist of full-time, part-time and occasional vessels with subcategories within each permit group. Depending on the type of limited access permit for which the vessel qualified, a scallop limited access vessel may have the option of fishing with any gear type (permit categories 2, 3 and 4), with a small dredge (categories 5 and 6), or with trawl nets (categories 7, 8 and 9). Fishing effort for vessels that possess limited access permits is managed through the use of crew size restrictions, gear restrictions, and DAS allocations.

Days-at-Sea and trip allocations for special access areas are similarly varied by permit category. Owners of limited access vessels assigned to either the part-time or occasional categories (permit categories 3 and 4, respectively) may opt to be placed one category higher (permit categories 5 and 6, respectively), provided they agree to comply with the small dredge program restrictions. Vessels in the small dredge program must: (1) fish exclusively with one dredge no more than 10.5 ft in width; (2) the vessel may not have more than one dredge on board or in use; and (3) the vessel may have no more than five people, including the operator, on board (NEFMC 2003).

The number of limited access vessels increased from 280 in 1999 to 359 in 2005 (Table 16). The number of general category permits has been about 2,000 per year until recent years, and was just under 3,000 in 2005.

Table 16. Scallop Permits by Application Year

PERMIT CATEGORY	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006*
Full-time	229	227	217	204	203	213	220	224	234	238	242	247	249
Full-time small dredge	6	4	5	3	2	1	3	13	25	39	48	56	55
Full-time net boat	30	32	28	27	23	16	17	16	16	16	15	18	14
Total full-time	265	263	250	234	228	230	240	253	275	293	305	321	318
Part-time	27	22	19	16	11	12	16	14	14	10	4	3	2
Part-time small dredge	11	7	8	9	7	3	4	6	8	19	26	29	30
Part-time trawl	31	30	27	30	27	22	20	18	10	8	3		
Total part-time	69	59	54	55	45	37	40	38	32	37	33	32	32
Occasional	6	3	3	2	3	4	4	5	4	3	3	1	1
Occasional trawl	28	26	25	24	19	20	16	19	15	8	5	5	
Total occasional	34	29	28	26	22	24	20	24	19	11	8	6	1
Total Limited access	368	351	332	315	295	291	300	315	326	342	346	359	351
General category	1992	2075	2003	2002	1939	2096	2263	2378	2512	2574	2827	2950	2501

Updated in Oct.2006.

4.4.2 Trends in scallop landings, revenue and prices

The scallop fishery is one of the most valuable U.S. fisheries (NMFS 2003). U.S. landings exceeded 54.6 million pounds in 2003 fishing year and 62.1 million pounds in 2004, a new record. The 2004 U.S. ex-vessel sea scallop revenues were about $307 million making the sea scallop fishery the second most valuable in the northeastern United States (NMFS 2004c). The historical trends in sea scallop landings, revenues, prices are shown in Table 17 for the period 1994-2006. The period from 1994-1998 corresponds to the implementation of Amendment 4, when the Council began managing the scallop fishery through limited access controls. As Table 1 shows, overfishing in the previous period combined with the effort reduction measures and closure of the Georges Bank groundfish areas to scallop fishing resulted in a dramatic decline in scallop landings, averaging only 15.5 million lb. per year during this period. The period from 1999 to 2004 corresponds, however, to the rebuilding of the sea scallop biomass. As a result of this recovery, landings almost doubled to 21.1 million in 1999 from 11.2 million lb. in 1998, and have increased over 50 million lb. since 2002. During the same period, landings per unit effort, i.e. per day-at-sea used, more than doubled compared to the levels during 1994-1998, lowering

the fishing costs per pound of scallops and benefiting the vessels participating in the sea scallop fishery.

Table 17 – Scallop landings and revenues by fishing year

Fishing year	Landings (million lb.)	Revenue (million $, 2004 prices)	Ex-vessel Price (2004 prices)	Average landings (lb.) per day-at-sea used
1994	15.3	$74.3	$4.9	428
1995	15.8	$80.2	$5.1	463
1996	16.4	$92.8	$5.6	465
1997	12.8	$82.8	$6.5	402
1998	11.2	$67.7	$6.0	406
1999	21.1	$115.1	$5.5	904
2000	33.2	$163.2	$4.9	1,329
2001	45.5	$166.2	$3.7	1,557
2002	49.9	$193.5	$3.9	1,623
2003	54.6	$225.0	$4.1	1,668
2004	62.1	$307.0	$4.9	2,013
2005	53.3	$408.1	$7.5	1,810*
2006	56.1*	$347.3*	$5.9*	1,710*

* Preliminary estimates

In terms of future yield and revenue from this fishery, Table 18 describes the total expected yield from the scallop resource for the next 11 years based on the most recent projections available (simulations used for the Interim Action in December 2006 to reduce the number of Elephant Trunk trips). For example, total landings is estimated to be around 56 million pounds in 2008, roughly equal to landings in 2005 fishing year, and range between 61 lb. to 68 million lb. afterwards. The scallop assessment is currently under review (SARC 45, June 2007) and these projections may vary based on the results of that assessment.

Table 18. Estimated Scallop Landings, Prices and Revenues (in 2006 prices, based on projections used in EA for ETA)

Fishing year	Meat Count	Total landings	LPUE	DAS	Price	Total Revenue
2007	16	61	1,810	33,653	6.76	429
2008	15	56	2,279	24,496	7.66	428
2009	14	61	2,366	25,736	6.90	419
2010	13	64	2,449	26,361	6.41	411
2011	13	66	2,437	27,392	6.09	405
2012	14	67	2,394	28,143	5.94	400
2013	14	66	2,353	27,922	6.16	405
2014	14	67	2,341	28,685	5.92	399
2015	14	68	2,327	28,911	5.90	398
2016	14	64	2,301	27,835	6.38	410
2017	14	67	2,315	28,672	6.04	402

4.4.3 Limited Access Fishery

This action is focused on the general category fishery so most of the analyses in this section will focus on that component of the fishery, but this section will summarize some updated information about the limited access fishery. Section 4.5.3 of Framework 18 includes

information about the limited access fishery for the most recent SAFE Report. Additional information on this component of the fishery will be updated in Framework 19 for the next biennial SAFE Report.

In summary, the majority of scallops are landed by limited access vessels (Table 40). Total landings by this sector of the fishery have increased from a low of 10.5 million pounds in 1998 to a record high of 58.1 million pounds in 2004. About 325 active limited access vessels have landed scallops under limited access in recent years (Table 19). That number includes all three permit categories (full-time, part-time and occasional). The number of individual trips were over 4,000 in 2004, rose to over 5,000 in 2005 and for most of 2006 fishing year were below 3,000. Average revenue per vessel has been about 1.0 million dollars in recent years. Table 20 summarizes the vessel distribution for limited access vessels over time (length and gross tonnage).

Table 19. Active limited access scallop vessels for recent fishing years (Dealer data)

Permit Type	Data	2004	2005	2006*
Limited Access	Number of vessels	323	334	323
	Total number of trips	4,521	5,292	2,758
	Scallop pounds per vessel	184,194	134,442	127,001
	Average scallop revenue per vessel	940,065	1,038,976	772,914
	Average total revenue per vessel	988,401	1,072,991	803,873
	Total scallop landings	59,494,630	44,903,637	41,021,231

**Preliminary estimates including January 2007. Fishing year February 28, 2007.*

Table 20. Vessel size distribution for limited access vessels.

Length	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
LARGE (greater than 70 ft)	287	287	266	251	244	244	249	256	262	273	283	274
MEDIUM (between 70 and 50 ft)	64	55	56	52	43	40	43	48	49	51	47	46
SMALL (less than 50 ft)	17	10	10	9	8	7	8	11	15	17	16	8
GRT	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Less or equal to 50 GRT	28	18	17	15	12	9	11	13	18	20	18	10
Between 50 and 100 GRT	49	48	50	48	41	38	35	42	41	44	44	42
Between 100 and 150 GRT	125	123	111	106	98	100	108	110	116	123	125	123
Between 150 and 175 GRT	75	74	69	62	64	64	63	66	65	69	74	70
Greater than 175 GRT	91	89	85	81	80	80	83	84	86	85	85	83

Source: vessel permit information.

4.4.4 General Category Fishery

There were 2,873 general category permits (compared to 363 limited access permits) issued in fishing year 2005. While the limited access fleet consists mainly of large, full-time dredge vessels (on average 78 feet long and 138 GRT), general category vessels are predominantly small ones under 50 ft in length (Table 21). The number of general category vessels has increased 44% between 1994 and 2005 (compared to a 1.3% decrease 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 50ft in 1994, compared to 71% in 2005. While the length of general category vessels has varied between a mean of 45 and 48 annually, the advent of the VMS

category in 2005 shows that vessels with VMS (1B permits) tend to be larger. 82% of 1A vessels in 2005 were less than 50ft, while over half of the 1B vessels were greater than 50ft (Table 22).

Table 21 - General category vessels by length and tonnage, 1994-2006

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Length													
Less than 50 ft.	1274	1370	1325	1317	1318	1456	1602	1698	1822	1864	2048	2031	1729
50-70 ft.	401	396	383	385	363	379	388	392	392	400	425	441	391
Greater than 70 ft.	317	308	295	300	258	261	273	288	298	310	354	401	370
total	*1992*	*2074*	*2003*	*2002*	*1939*	*2096*	*2263*	*2378*	*2512*	*2574*	*2827*	*2873*	*2490*
Tonnage													
0-50 GRT	1421	1515	1468	1465	1454	1597	1750	1845	1968	2013	2214	2205	1880
50.1-100 GRT	245	238	229	226	218	223	233	241	240	249	268	270	256
100.1-150 GRT	213	209	203	197	169	172	172	180	188	196	222	267	235
gt 150 GRT	113	112	103	114	98	101	104	108	114	114	120	129	119
total	*1992*	*2074*	*2003*	*2002*	*1939*	*2093**	*2259**	*2374**	*2510**	*2572**	*2824**	*2871**	*2490*

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

Table 22 - Length and tonnage of VMS and non-VMS permits, 2005-2006

	Ave. length, all general category	No. of 1A permits	Ave. length of 1A permits	Average GRT of 1A permits	No. of 1B permits	Ave. length of 1B permits	Ave. GRT of 1B permits
2005	45.9	2013	41.0	28.3	860	57.5	67.4
2006	46.4	1533	39.6	26.1	958	57.2	65.7

Source: NE Permit Data.

While there were close to 3,000 general category permits in 2005, the number of active vessels that have landed at least one pound of scallops is much lower (Table 23). For example, in 2004 about 426 vessels landed scallops under general category and that number went above 600 vessels in 2005. The average number of scallop trips per general category vessel has increased in recent years. Most vessels took less than ten general category trips before 2000 (Table 24). Since then the number has increased and recently over 100 vessels have taken over 90 trips per year. Similarly the distribution of vessels in terms of the number of trips per year and average scallop landings per trip are described in Table 25 and Table 26 . These tables show that the number of vessels that take more than 50 trips per year for example, has increased in recent years as well as the average pounds landed per trip.

Table 23. Number of active general category vessels and scallop landings (lb.)

Data	2004 fish year	2005 fish year	2006 fishyear*
Number of vessels	426	607	535
Total scallop landings (lb.)	3,375,921	7,185,181	4,420,917

Source: Dealer Data
*March 2006 to Sept. 2006, preliminary numbers.

Table 24. Average number of scallop trips (data partially corrected for 2000-04 fish years)

FISHYEAR	<10 trips	10-29 trips	30-49 trips	50-69 trips	70-89 trips	>=90 trips	Grand Total
1994	2.5	13.5	39.5				3.9
1995	2.5	15.7	36.2	52.0			5.5
1996	3.0	17.0	40.8	59.0	78.3	110.0	9.2
1997	3.0	15.9	38.7	60.5	74.0	96.0	8.4
1998	3.2	16.8	39.4	59.2	81.0		8.7
1999	2.6	17.1	34.0	67.5	77.0	101.0	7.1
2000	2.9	16.9	34.3	61.3	79.8	124.0	9.5
2001	3.1	17.0	37.3	55.9	82.0	120.5	17.6
2002	3.4	16.2	37.4	56.7	81.0	123.3	13.2
2003	3.0	16.2	38.8	62.7	77.3	114.3	17.8
2004	3.6	16.9	39.6	59.0	76.4	110.6	20.9
*2005	3.9	19.1	39.1	60.3	77.5	124.5	35.1
Grand Total	3.1	17.0	38.7	59.8	78.0	119.4	16.8

*Preliminary numbers

Table 25. Number of vessels by number of scallop trips

FISHYEAR	<10 trips	10-29 trips	30-49 trips	50-69 trips	70-89 trips	>=90 trips	Grand Total
1994	135	13	NA				150
1995	137	21	5	NA			164
1996	161	33	10	NA	4	NA	210
1997	168	57	7	NA	NA	NA	236
1998	159	33	7	6	NA		206
1999	157	29	NA	NA	NA	NA	192
2000	156	37	4	4	5	NA	207
2001	182	40	26	10	9	11	278
2002	191	73	19	7	3	6	299
2003	200	63	28	15	10	12	328
2004	246	78	42	25	14	22	427
*2005	228	112	93	66	43	56	598
Grand Total	2120	589	244	139	91	112	3295

NA: Indicates that there were 3 or less vessels in this group. *Preliminary numbers

Table 26. Average scallop pounds per trip (data partially corrected for 2000-04 fish years)

FISHYEAR	<10 trips	10-29 trips	30-49 trips	50-69 trips	70-89 trips	>=90 trips	Grand Total
1994	192	124	42				185
1995	154	108	108	6			146
1996	88	123	62	161	111	55	93
1997	104	136	68	115	179	77	111
1998	NA	106	53	91	101		NA
1999	101	88	252	43	65	72	99
2000	127	181	198	54	172	693	141
2001	107	207	275	270	375	214	156
2002	138	267	244	248	261	230	182
2003	116	227	277	306	311	301	173
2004	209	255	293	292	372	363	244
*2005	290	296	290	309	309	333	299

*Preliminary numbers

Table 28 to Table 32 provide information on general category vessels in terms of annual scallop landing per vessel, the percentage of total revenue from scallops, revenue from other fisheries and landings by gross tonnage. The majority of the active scallop vessels derived 10% or less of their total revenue from scallops, whereas an increasing number of vessels earned 90% or more of their fishing revenue from scallops in the recent years (Table 27). Only 26 vessels, however, landed 30,000 lb. or more scallops during 2004 with an average of 96% dependence on scallop income (Table 28). Average landings for these vessels were 39,411 lb. and average gross tonnage was 59 (Table 30 and Table 31). Since these were smaller vessels, their trip and fixed costs would less than compared to larger boats.

It is clear that the vessels that landed smaller amounts of scallops per year had less dependence on scallop revenue compared to the vessels that target scallops and land large volumes. For example, 150 vessels during 2004 fishing year landed less than 1000 lb. of scallops and derived on the average 18% of their income from scallops. Similarly, 109 vessels in 2004 landed between 1000 lb. to 4,999 lb. and derived on the average 30% of their revenue from scallops. The average dependence on scallop revenue increased above 60% for vessels that landed 5000 lb. or more scallops (Table 28).

Table 27. Number of general category vessels by percent revenue from scallops

Fish Year	Percent of revenue from scallops						Grand Total
	<10%	10%-29%	30%-49%	50%-69%	70%-89%	>=90%	
1994	110	10	4	4*		15	143
1995	118	12	10	6*		18	164
1996	126	24	11	10*		39	210
1997	144	22	10	8	4	43	231
1998	137	17	6	7*		36	203
1999	143	10	7	3*		28	191
2000	143	19	11	3*		25	201
2001	160	23	11	5	9	66	274
2002	170	27	15	5	7	73	297
2003	181	26	13	12	10	83	325
2004	183	29	15	18	17	111	373

* In order to protect confidentiality the two groups are combined.

Table 28. Percentage of scallop revenue by annual scallop landings.

Fish year	Annual scallop landings per vessel					
	<1000 lb.	1000-4999	5000-9999 lb.	10000-19999 lb.	20000-29999 lb.	>=30000 lb.
1994	9%	49%				
1995	10%	55%		NA		
1996	19%	49%	61%	NA		
1997	16%	52%	NA	73%		
1998	15%	56%	72%	NA		
1999	14%	43%	88%			
2000	8%	49%	40%	34%	NA	NA
2001	15%	50%	48%	64%	96%	73%
2002	15%	47%	53%	71%	69%	82%
2003	12%	51%	83%	78%	71%	80%
2004	18%	30%	63%	84%	79%	96%

Table 29. Revenue from other fisheries

Fish year	Annual scallop landings per vessel					
	<1000 lb.	1000-4999	5000-9999 lb.	10000-19999 lb.	20000-29999 lb.	>=30000 lb.
1994	205,421	85,870				
1995	186,240	44,653		NA		
1996	206,549	38,375	42,843	NA		
1997	191,436	49,233	-	25,611		
1998	225,341	65,429	37,967	-		
1999	242,167	96,282	15,315			
2000	267,126	91,958	316,307	145,705	NA	NA
2001	255,467	101,487	153,971	93,917	10,254	51,004
2002	269,894	109,095	132,708	161,266	73,499	53,298
2003	278,314	118,894	65,771	117,374	160,116	62,429
2004	177,427	182,422	126,460	36,281	52,365	11,241

Table 30. Number of vessels by annual scallop landings.

Fish year	Annual scallop landings per vessel					
	<1000 lb.	1000-4999	5000-9999 lb.	10000-19999 lb.	20000-29999 lb.	>=30000 lb.
1994	119	24				
1995	134	29		NA		
1996	166	34	8	NA		
1997	171	54	NA	4		
1998	163	33	6	NA		
1999	164	22	5			
2000	150	34	11	4	NA	NA
2001	169	45	18	23	11	8
2002	170	72	30	16	4	5
2003	186	58	28	30	11	12
2004	150	109	33	44	11	26

Table 31. Average scallop pounds per vessel for each group.

Fish year	Annual scallop landings per vessel					
	<1000 lb.	1000-4999	5000-9999 lb.	10000-19999 lb.	20000-29999 lb.	>=30000 lb.
1994	157	2287				
1995	176	2343		NA		
1996	209	2275	7027	NA		
1997	231	2154	NA	14699		
1998	220	2186	6506	NA		
1999	218	2090	6737			
2000	223	2328	6619	13561	NA	NA
2001	251	2552	7059	13285	24619	38028
2002	245	2448	6913	14339	22592	41999
2003	249	2855	6281	14481	26594	37960
2004	352	2010	7711	14301	25613	39411

Table 32. Average GRT by annual scallop landings.

Fish year	Annual scallop landings per vessel					
	<1000 lb.	1000-4999	5000-9999 lb.	10000-19999 lb.	20000-29999 lb.	>=30000 lb.
1994	87	41				
1995	87	31		15		
1996	71	29	22	16		
1997	68	31	17	21		
1998	70	37	41	27		
1999	74	45	24			
2000	81	46	68	58	50	36
2001	92	35	44	40	29	41
2002	99	46	42	36	33	66
2003	79	51	38	49	56	66
2004	75	86	64	50	63	59

Table 33 through Table 35 describe general category landings by gear type. These tables are generated by VTR data and since all VTR records do not include gear information the number of vessels in these tables will differ from other tables that summarize general category vessels and landings from dealer data. Primary gear is defined as the gear used to land more than 50% of scallop pounds. These data with gear type were only available through fishing year 2004. Most general category effort is and has been from vessels using scallop dredge and other trawl gear (Table 33). The number of vessels using scallop trawl gear has increased in recent years as well. In terms of landings, most scallop landings under general category are with dredge gear (Table 34). Scallop landings with other trawl gear was relatively high in 2000 and 2001 and again in 2003 and 2004, but landings with scallop trawl gear have increased in both 2003 and 2004. Table 35 shows the percent of general category landings by primary gear per year.

Table 33. Number of general category vessels by primary gear and fishing year

Fishing year	Scallop dredge	Other dredge	Scallop trawl	Other trawl	Misc. gear	Grand Total
1994	24	NA	NA	47	6	80
1995	33	3		61	4	101
1996	67	NA	NA	62	6	137
1997	88	NA	NA	73	4	166
1998	71	NA	NA	64	NA	141
1999	50	NA	NA	82	NA	138
2000	45	NA	NA	94	3	147
2001	103	3	4	94	NA	205
2002	116	NA	9	102	NA	229
2003	110	NA	14	113	NA	240
2004	141	3	25	141	5	315

Table 34. General category scallop landings by primary gear (lb.)

Fishing year	Scallop dredge	Other dredge	Scallop trawl	Other trawl	Misc. gear	Grand Total
1994	22,303	995	796	7,696	1,259	33,049
1995	44,325	146	-	13,952	452	58,875
1996	152,541	14	52	8,878	4,060	165,544
1997	187,055	286		14,826	2,159	204,326
1998	117,331	656	5,573	16,273	470	140,303
1999	62,666	6,884	11,520	19,987	45	101,102
2000	119,496	14,929	10,460	185,892	337	331,114
2001	857,648	12,500	20,475	203,775	7	1,094,405
2002	748,152	28,647	52,878	47,735	-	877,412
2003	1,006,763	35,761	238,421	174,624	41	1,455,610
2004	1,579,190	34,852	352,308	384,802	7,970	2,359,123

Table 35. Percentage of general category scallop landings by primary gear

Fishing year	Scallop dredge	Other dredge	Scallop trawl	Other trawl	Misc. gear	Grand Total
1994	67.48%	3.01%	2.41%	23.29%	3.81%	100.00%
1995	75.29%	0.25%	0.00%	23.70%	0.77%	100.00%
1996	92.15%	0.01%	0.03%	5.36%	2.45%	100.00%
1997	91.55%	0.14%	0.00%	7.26%	1.06%	100.00%
1998	83.63%	0.47%	3.97%	11.60%	0.34%	100.00%
1999	61.98%	6.81%	11.39%	19.77%	0.04%	100.00%
2000	36.09%	4.51%	3.16%	56.14%	0.10%	100.00%
2001	78.37%	1.14%	1.87%	18.62%	0.00%	100.00%
2002	85.27%	3.26%	6.03%	5.44%	0.00%	100.00%
2003	69.16%	2.46%	16.38%	12.00%	0.00%	100.00%
2004	66.94%	1.48%	14.93%	16.31%	0.34%	100.00%

Overall, the general category fleet is marked by broad regional differences, with the New England fleet primarily also a groundfish and lobster fleet and the Mid-Atlantic fleet participating in other regional fisheries such as surf clam, ocean quahog, and summer flounder fisheries (Table 36 and Table 37). 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 38). In general, 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 almost 97% of their total landed value in fishing year 2005). However, active general category vessels overall have come to increasingly rely on scallops, especially in the Mid-Atlantic where in fishing year 2005 scallops accounted for 44% of their landed value. In actual trips taken by general category vessels, most scallops trips are a directed fishery on scallops (see Table 39), and almost ¾ of all general category scallops trips in 2005 involved the use of the scallop dredge (see Social Impact Analysis Section 5.5). Of the 501 trips in which pounds of scallops landed accounted for less than 10% of the total pounds landed, virtually all trips used some form of trawl, and primarily targeted groundfish and monkfish, or summer flounder. Of the 1301 unique vessels that have landed scallops under the general category permit since its inception in 1994, only 8 vessels have landed scallops in all of these years, primarily as bycatch. Of the 454 vessels that have only landed general category scallops in one year, nearly half (218) of these have landed scallops only in 2004, 2005, or 2006. Likewise, nearly half (124 out of 303) vessels that only landed general category scallops in two years have done so during the 2005-2006 fishing

years. That over half of these vessels have landed in years other than the recent ones speaks to the how the fishery has enabled flexible participation by different sectors of the fleet.

Table 36 - Landed value for general category vessels homeported in New England by species

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006*
Scallops	0.3	0.4	1.2	1.0	1.0	0.8	0.7	2.6	1.7	2.3	3.1	7.5	10.3
Am. Plaice Flounder	7.6	7.4	7.3	6.2	6.0	4.4	5.2	5.1	4.3	3.0	2.2	1.6	1.9
Cod	17.7	14.5	14.1	12.5	13.5	11.8	13.8	16.8	15.0	12.7	10.2	7.9	8.0
Haddock	0.5	0.6	0.9	2.5	4.5	4.8	6.4	7.9	9.4	8.1	8.9	7.1	6.2
Herring	0.9	0.7	1.7	4.3	3.5	2.7	2.9	2.8	2.6	6.6	7.3	7.5	8.8
Lobster	3.4	4.1	4.9	4.8	4.2	6.0	5.9	4.9	4.9	5.3	7.0	15.4	11.7
Monkfish	9.2	12.3	12.0	11.5	11.7	18.1	19.8	16.6	14.6	14.5	12.6	13.5	11.7
Ocean Quahog	0.6	1.3	1.7	5.1	4.9	4.7	4.2	5.1	4.6	3.5	3.1	1.8	0.0
Shrimp (Pandalid)	5.3	8.1	6.7	5.6	1.9	2.4	0.9	0.4	1.0	0.4	0.6	0.3	0.2
Silver Hake	4.1	3.5	3.6	3.6	3.2	4.0	3.4	3.2	1.8	2.3	2.1	2.0	2.7
Squid (Loligo)	6.8	6.9	3.9	8.1	7.2	8.4	4.9	4.6	7.1	7.6	7.7	5.7	6.0
Summer Flounder	4.5	4.0	2.6	3.1	2.7	2.7	2.5	2.4	2.6	3.2	3.0	3.3	3.2
Winter Flounder	6.0	6.7	8.4	8.1	7.9	6.3	6.1	6.6	6.7	5.4	5.5	4.0	5.5
Witch Flounder	4.8	4.5	4.3	3.6	3.8	3.5	3.7	4.2	4.6	4.7	4.4	3.5	3.8
Yellowtail Flounder	5.0	3.7	4.6	4.5	6.0	5.3	7.6	6.3	6.5	5.8	5.3	3.6	3.0
Other	23.2	21.4	22.3	15.7	18.0	14.0	11.9	10.7	12.7	14.5	17.1	15.3	17.1

*Only shows species that accounted for at least 5% of landed value for active general category vessels (i.e. those landing at least one lb of scallops). Years are fishing years not calendar years; 2006 is year to date as of data run on Sept 27, 2006. Source: dealer weighout data.

Table 37 - Landed value for general category vessels homeported in Mid-Atlantic by species

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006*
Scallops	0.7	0.1	0.1	0.9	0.2	0.4	1.3	2.4	2.7	3.7	10.5	30.5	44.0
Monkfish	1.0	2.3	2.8	2.5	4.2	10.4	8.2	7.9	6.0	6.6	3.5	5.6	4.5
Ocean Quahog	21.8	17.6	16.7	8.7	6.7	5.8	7.0	9.8	15.0	16.9	14.1	7.7	0.0
Shrimp (Penaeid)	0.0	0.1	0.0	3.1	2.2	5.5	7.4	2.8	3.2	1.3	0.0	0.0	0.0
Silver Hake	4.8	8.6	9.5	9.9	9.8	5.2	4.7	5.2	3.4	3.2	2.5	1.4	1.7
Squid (Loligo)	11.2	12.0	8.7	17.1	14.7	15.4	12.8	9.0	7.3	5.8	5.5	5.2	5.7
Summer Flounder	8.0	7.4	8.5	8.2	8.4	7.9	7.6	6.0	8.6	9.7	10.5	9.2	8.4
Surf Clam	25.0	20.5	19.2	17.6	14.1	14.5	14.5	28.3	29.3	27.1	24.4	17.6	2.0
Other	27.4	31.3	34.5	31.9	39.7	35.0	36.4	28.6	24.5	25.7	29.1	22.8	33.6

*Only shows species that accounted for at least 5% of landed value for active general category vessels (i.e. those landing at least one lb of scallops). Years are fishing years not calendar years; 2006 is year to date as of data run on Sept 27, 2006. Source: dealer weighout data.

Table 38 - 2005 permits held by General Category scallop vessels

Plan	%	Plan	%	Plan	%
Bluefish	78.0	Lobster (LOI)	0.04	Scup	27.6
Black Sea Bass	27.1	Monkfish	76.4	Skates	64.9
Dogfish	76.7	Multispecies	78.5	Surf Clam	53.0
Summer Flounder	29.2	Ocean Quahog	51.8	Squid-Mackerel-Butterfish	73.9
Herring	61.7	Red Crab	41.6	Tilefish	53.7
Lobster (LO)	52.7				

Source: NE Permit Data.

Table 39 - General Category trip characteristics

% of scallop lbs. on a trip		No. of trips	No. of boats	Scallops	Fluke	Squid	Monkfish	Groundfish	Lobster	Ocean Quahog	All else	Tot. effort /Ave. crew
	Tot.	501	140	105,552	682,464	7,458	850,454	5,392,321	119,292	0	1,942,325	2,175
< 10%	Ave.			210.7	1362.2	14.9	1697.5	10763.1	238.1	0.0	3876.9	4.0
10 -	Tot.	110	32	24,481	26,706	144	6,726	14,368	174	17,184	41,760	468
25%	Ave.			222.6	242.8	1.3	61.2	130.6	1.6	156.2	379.6	3.0
25 -50	Tot.	130	43	50,057	34,923	1,300	5,315	15,595	203	1,920	13,943	445
%	Ave.			385.1	268.6	10.0	40.9	120.0	1.6	14.8	107.3	3.0
50% or	Tot.	18732	467	7,325,911	26,850	1,502	98,315	2,308	2,032	0	11,963	5,781
more	Ave.			391.1	1.4	0.1	5.3	0.1	0.1	0.0	0.6	3.0

Source: logbooks, year 2005. Note: only includes trips that landed at least 40 lbs of scallops. Percentage of scallops is in terms of pounds landed; effort refers to crew size multiplied by days absent; average by trip.

While the scallop landings by general category boats have increased since 2001, they have increased for the entire fleet as well. The actual share of the total scallop landings by general category boats until 2004 has not, according to weighout records, exceeded 3.3%, although since then that share has risen as high as 14% (Table 40). The change in the last several years has occurred in the increasing percentage of the general category landings landed by vessels homeported in the Mid-Atlantic region (Table 41), and the shift of fishing effort by general category vessels to Mid-Atlantic fishing grounds (Figure 18 through Figure 30).

Table 40 - Scallop landings from general category vessels, limited access vessels under DAS, and limited access vessels under general category from 1994 to present

Fish Year	Total scallop landings (LA and GC)	Total scallop landings by General Category vessels only		Total scallop landing by Limited Access vessels under DAS		Total scallop landings by limited access vessels outside DAS (on 400 lb trips)	
		LBS	**%**	**LBS**	**%**	**LBS**	**%**
1994	14,907,265	95,268	0.64%	14,713,046	98.70%	98,951	0.66%
1995	15,807,941	123,967	0.78%	15,603,104	98.70%	80,870	0.51%
1996	16,447,682	204,635	1.24%	16,175,248	98.34%	67,799	0.41%
1997	12,619,221	310,049	2.46%	12,122,375	96.06%	186,797	1.48%
1998	11,186,468	164,435	1.47%	10,528,707	94.12%	493,326	4.41%
1999	21,286,244	150,482	0.71%	20,713,733	97.31%	422,029	1.98%
2000	32,929,475	357,691	1.09%	32,259,404	97.97%	312,380	0.95%
2001	45,164,706	1,216,947	2.69%	43,659,686	96.67%	288,073	0.64%
2002	49,808,416	983,775	1.98%	48,641,573	97.66%	183,068	0.37%
2003	54,778,793	1,809,071	3.30%	52,781,614	96.35%	188,108	0.34%
2004	61,714,971	3,245,661	5.26%	58,106,020	94.15%	363,290	0.59%
2005	53,214,097	7,495,884	14.09%	44,917,224	84.41%	800,989	1.51%
2006	56,149,105	6,838,083	12.18%	48,886,653	87.07%	424,369	0.76%

Data still preliminary for 2006

Table 41 – Summary of general category landings by region from 1994 to date

Fish Year	No. of General Category 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	181	0.6	12.9	87.1
1995	180	0.8	11.1	88.9
1996	216	1.2	3.8	96.2
1997	235	2.5	27.3	72.7
1998	204	1.5	8.7	91.3
1999	189	0.7	33.0	67.0
2000	202	1.1	61.7	38.3
2001	275	2.7	31.7	68.0
2002	294	2.0	45.9	53.9
2003	332	3.3	44.7	48.4
2004	427	5.3	67.1	28.8
2005	604	14.1	69.5	24.0
2006	627	12.2	65.8	29.0

Data still preliminary for 2006

Figure 18- Location of general category trips for calendar year 1994 based on valid location data from vessel trip reports (VTR)
Note: All trips above 1,200 pounds of scallop meat were eliminated from the figure (73 records). Typo in legend: FW18 lawsuit settlement should read FW16.

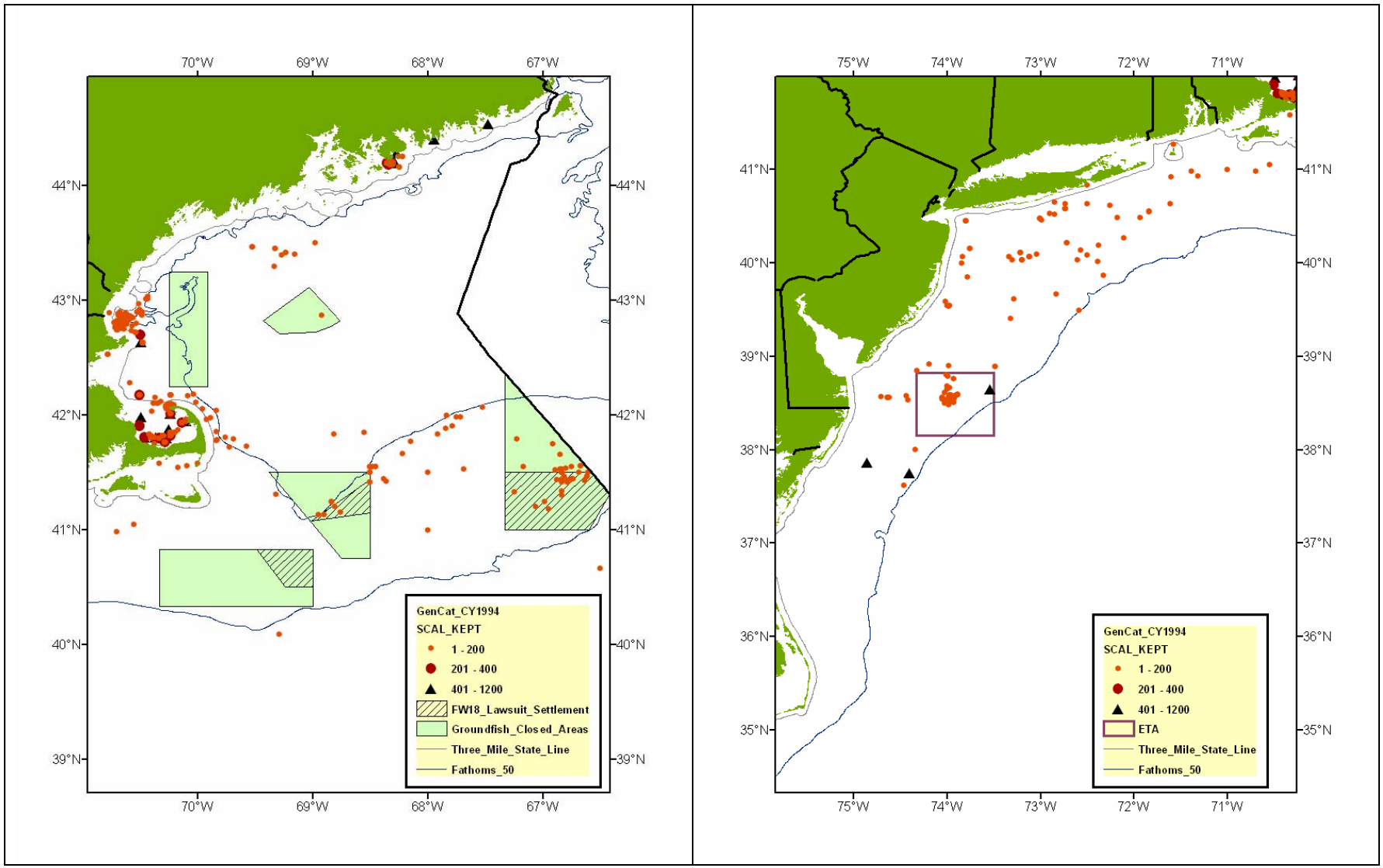


Figure 19- Location of general category trips for calendar year 1995 based on valid location data from vessel trip reports (VTR)
Note: All trips above 1,200 pounds of scallop meat were eliminated from the figure (65 records). Typo in legend: FW18 lawsuit settlement should read FW16.

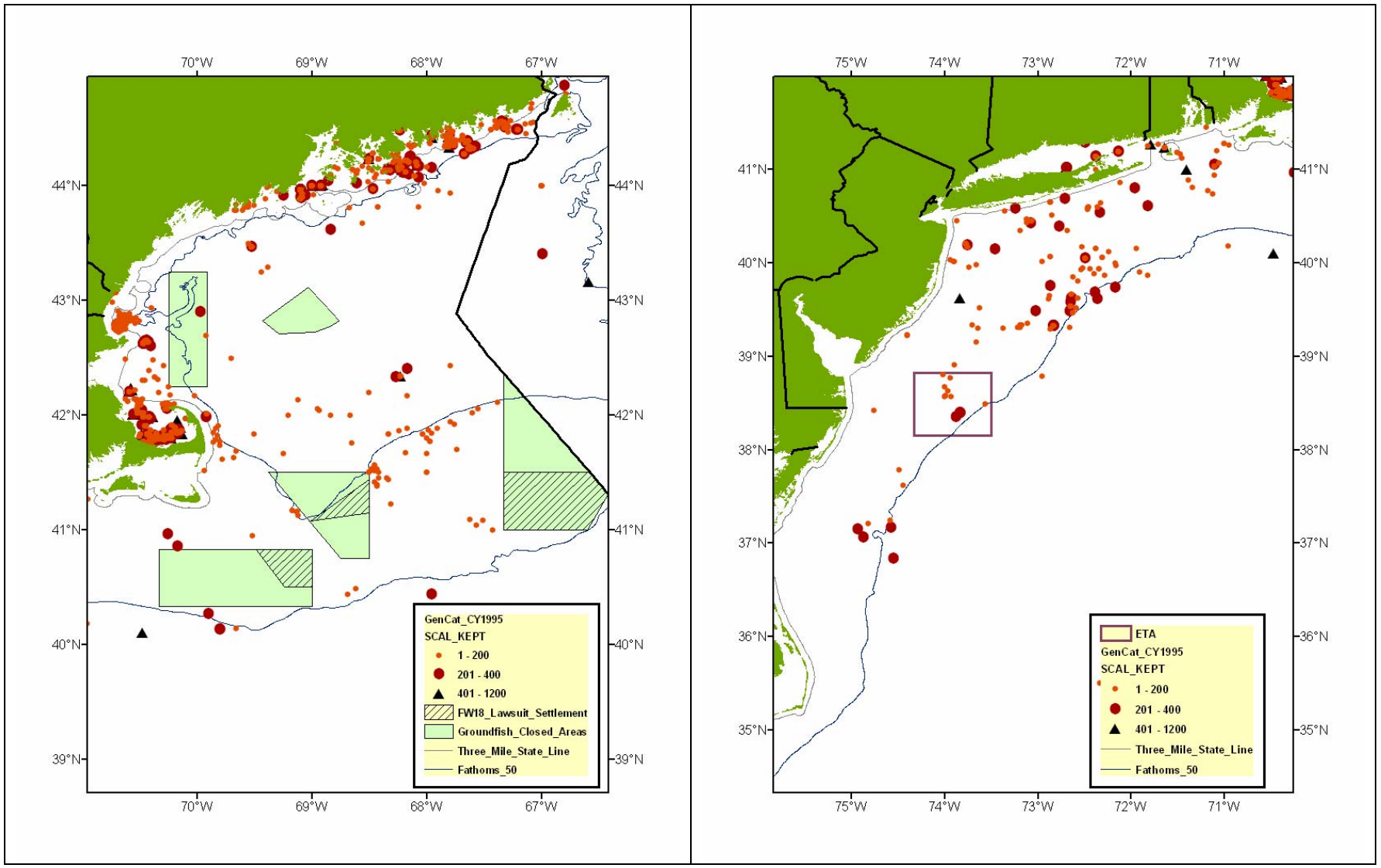


Figure 20- Location of general category trips for calendar year 1996 based on valid location data from vessel trip reports (VTR)
Note: All trips above 1,200 pounds of scallop meat were eliminated from the figure (77 records). Typo in legend: FW18 lawsuit settlement should read FW16.

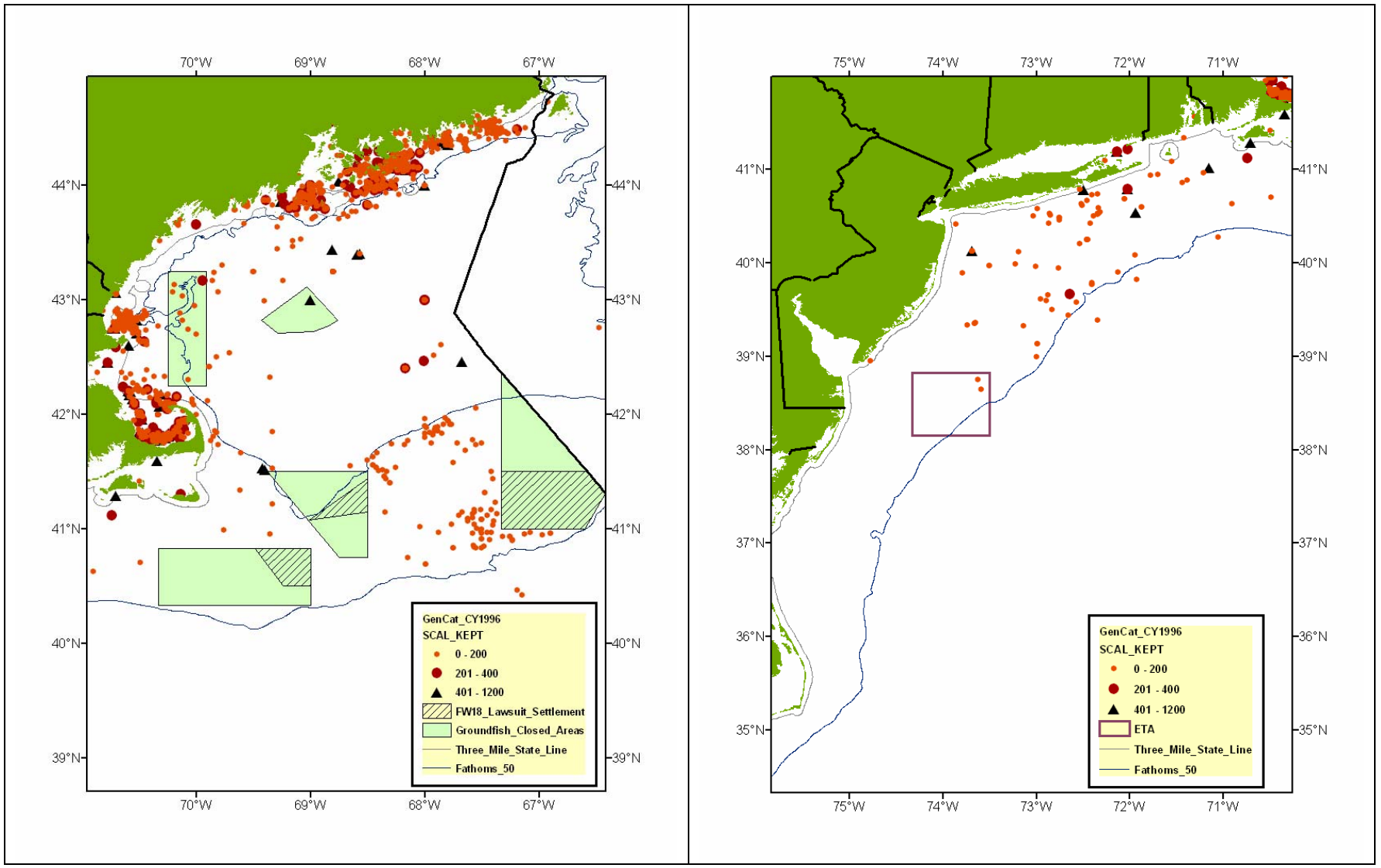


Figure 21- Location of general category trips for calendar year 1997 based on valid location data from vessel trip reports (VTR)
Note: All trips above 1,200 pounds of scallop meat were eliminated from the figure (75 records). Typo in legend: FW18 lawsuit settlement should read FW16.

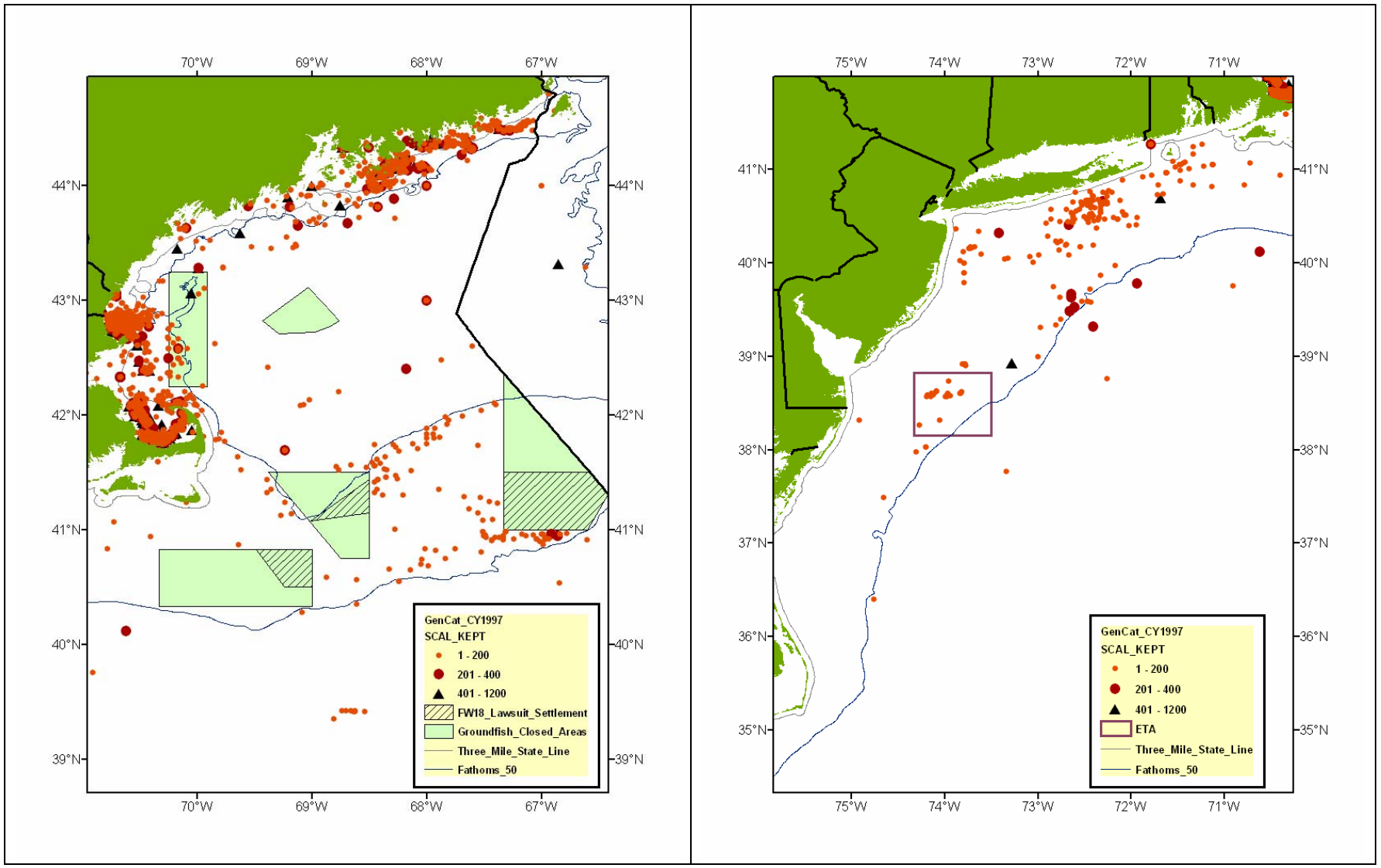


Figure 22- Location of general category trips for calendar year 1998 based on valid location data from vessel trip reports (VTR)
Note: All trips above 1,200 pounds of scallop meat were eliminated from the figure (26 records). Typo in legend: FW18 lawsuit settlement should read FW16.

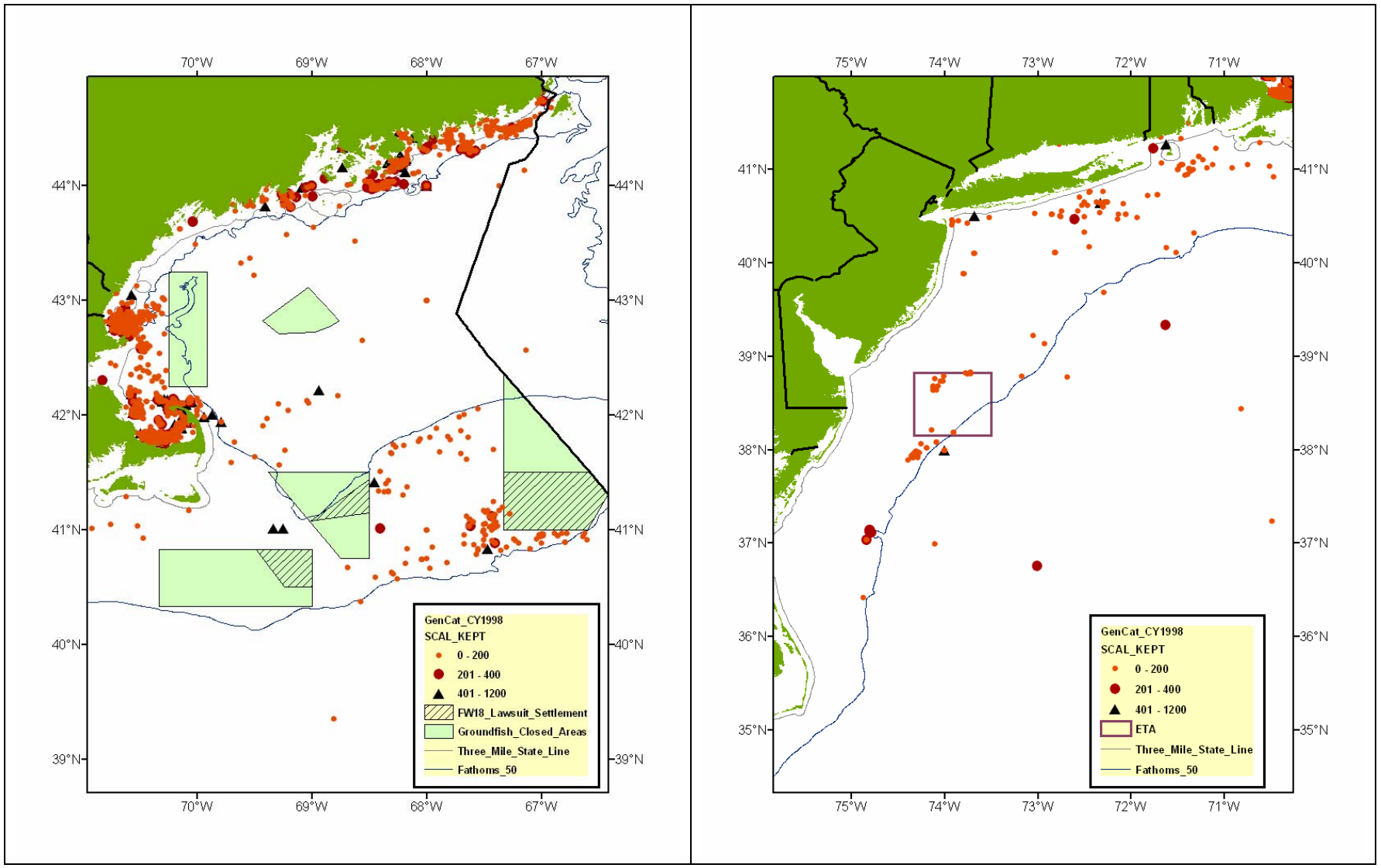


Figure 23- Location of general category trips for calendar year 1999 based on valid location data from vessel trip reports (VTR)
Note: All trips above 1,200 pounds of scallop meat were eliminated from the figure (28 records). Typo in legend: FW18 lawsuit settlement should read FW16.

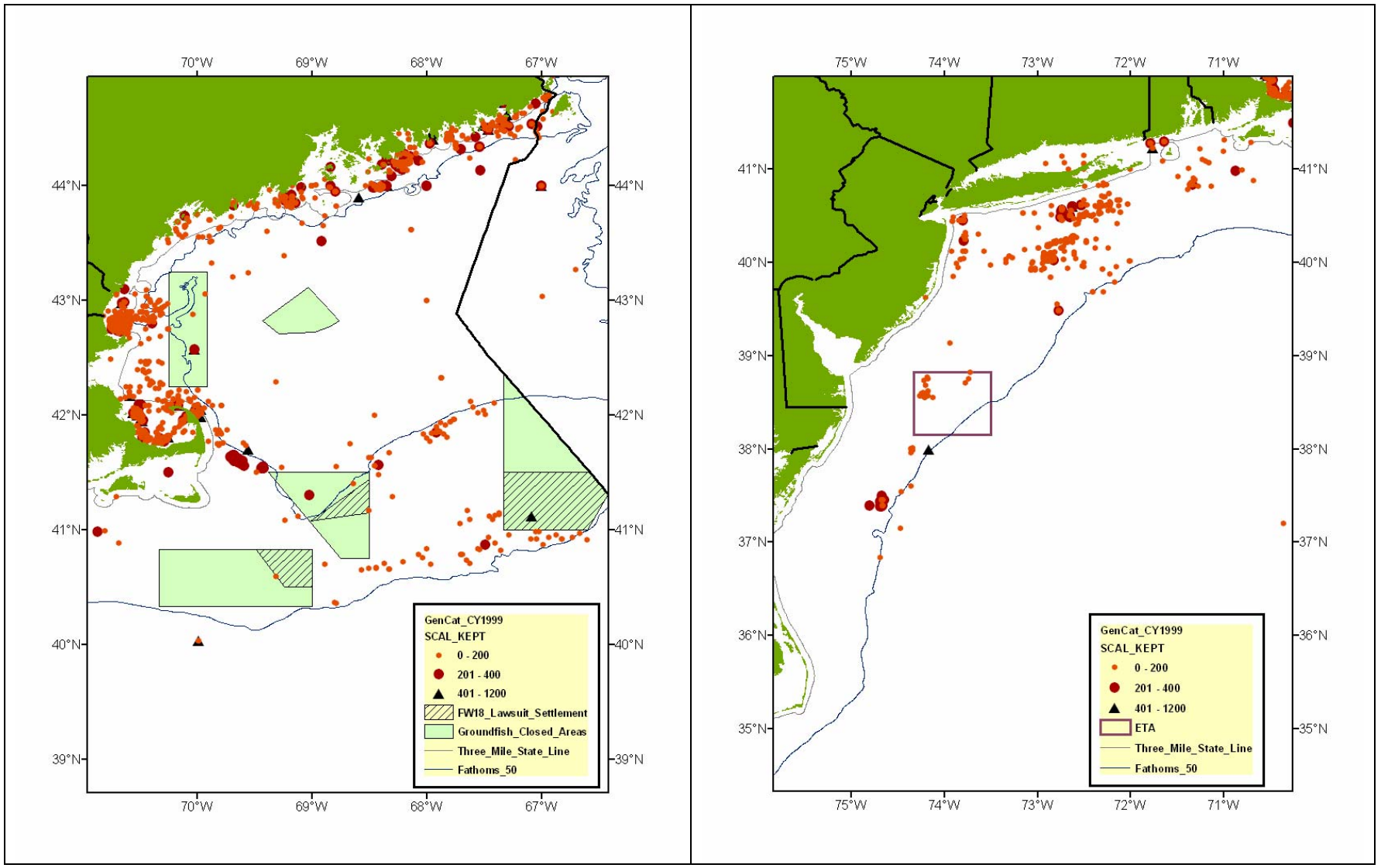


Figure 24- Location of general category trips for calendar year 2000 based on valid location data from vessel trip reports (VTR)
Note: All trips above 1,200 pounds of scallop meat were eliminated from the figure (84 records). Typo in legend: FW18 lawsuit settlement should read FW16.

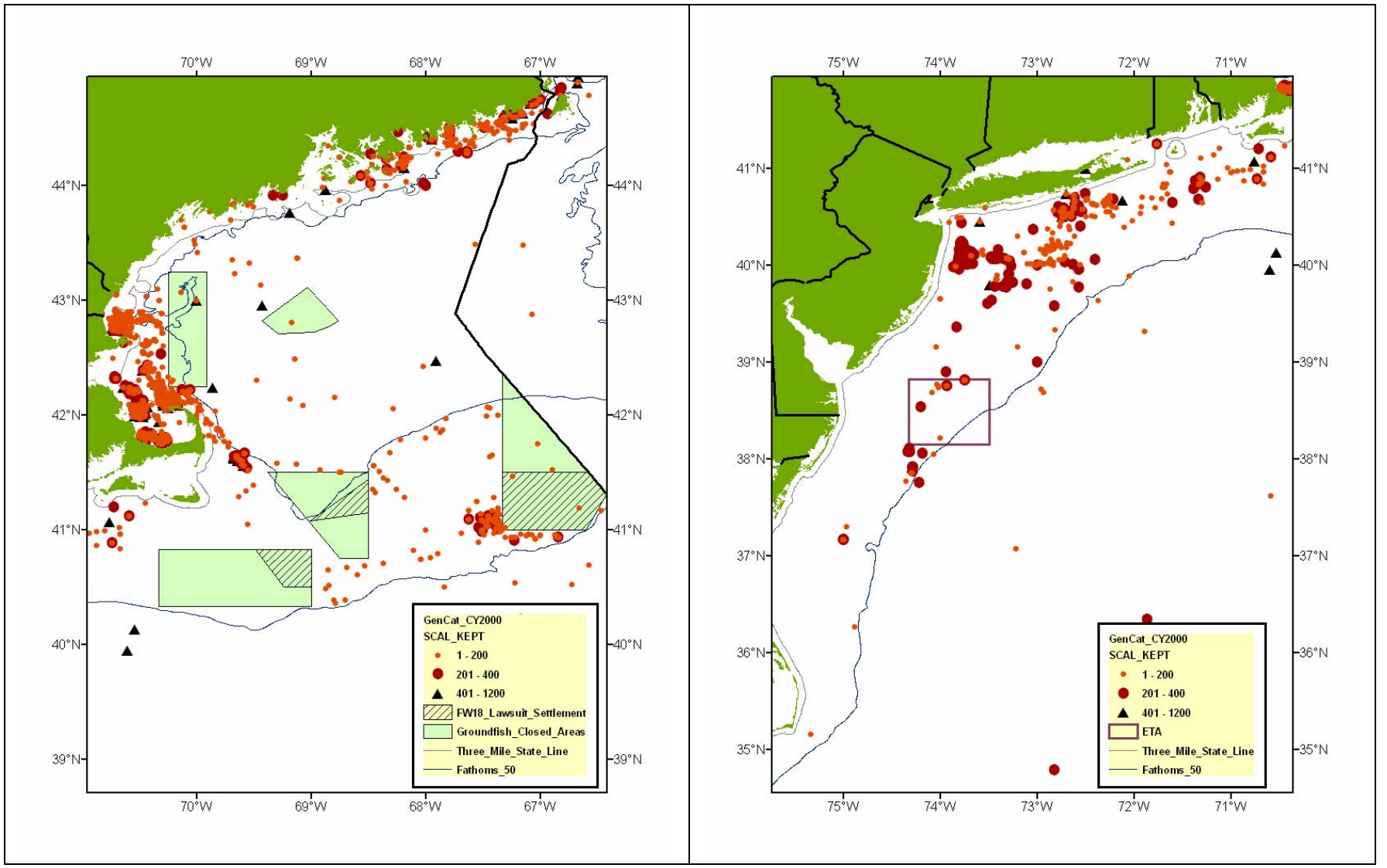


Figure 25- Location of general category trips for calendar year 2001 based on valid location data from vessel trip reports (VTR)
Note: All trips above 1,200 pounds of scallop meat were eliminated from the figure (77 records). Typo in legend: FW18 lawsuit settlement should read FW16.

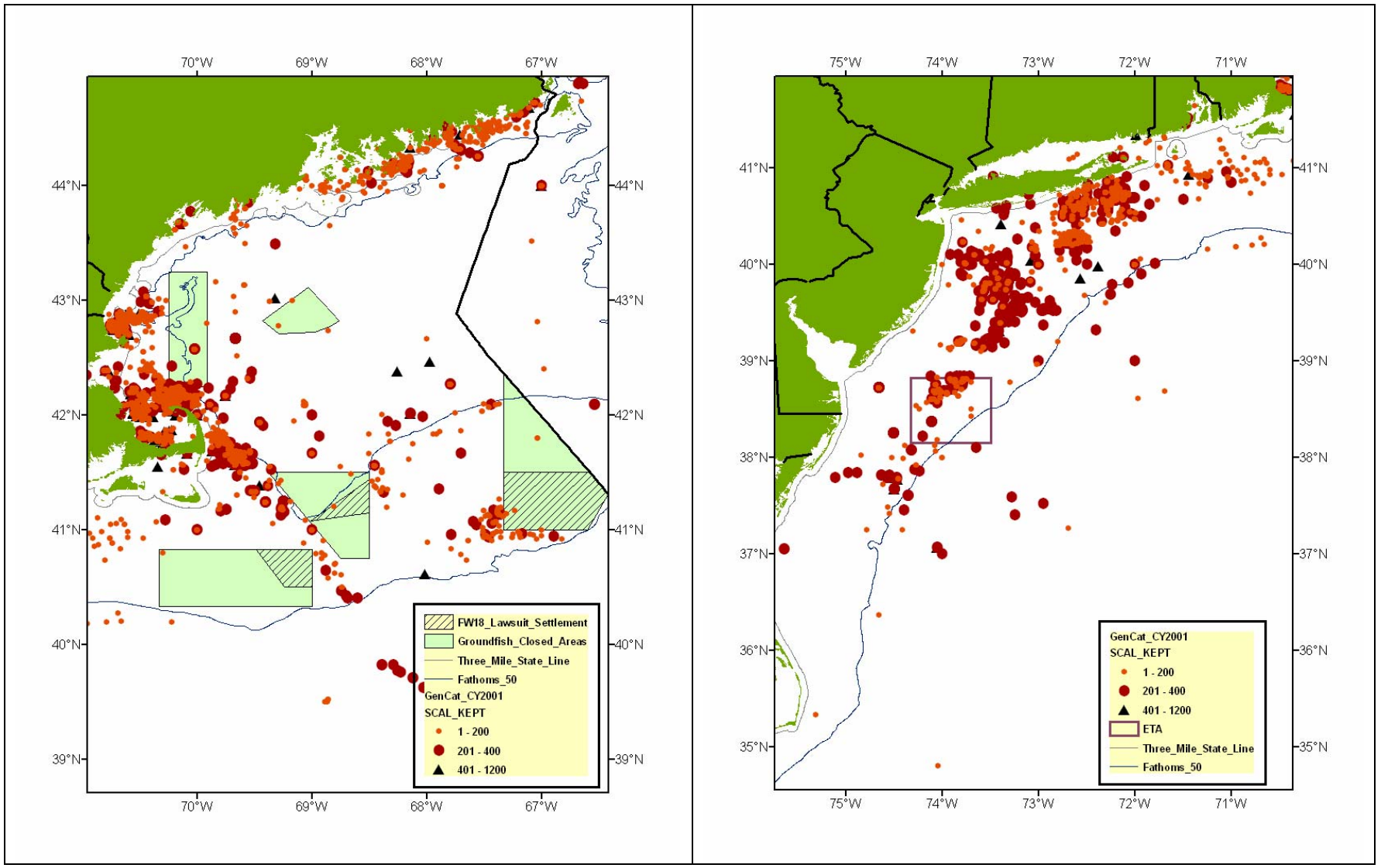


Figure 26- Location of general category trips for calendar year 2002 based on valid location data from vessel trip reports (VTR)
Note: All trips above 1,200 pounds of scallop meat were eliminated from the figure (107 records). Typo in legend: FW18 lawsuit settlement should read FW16.

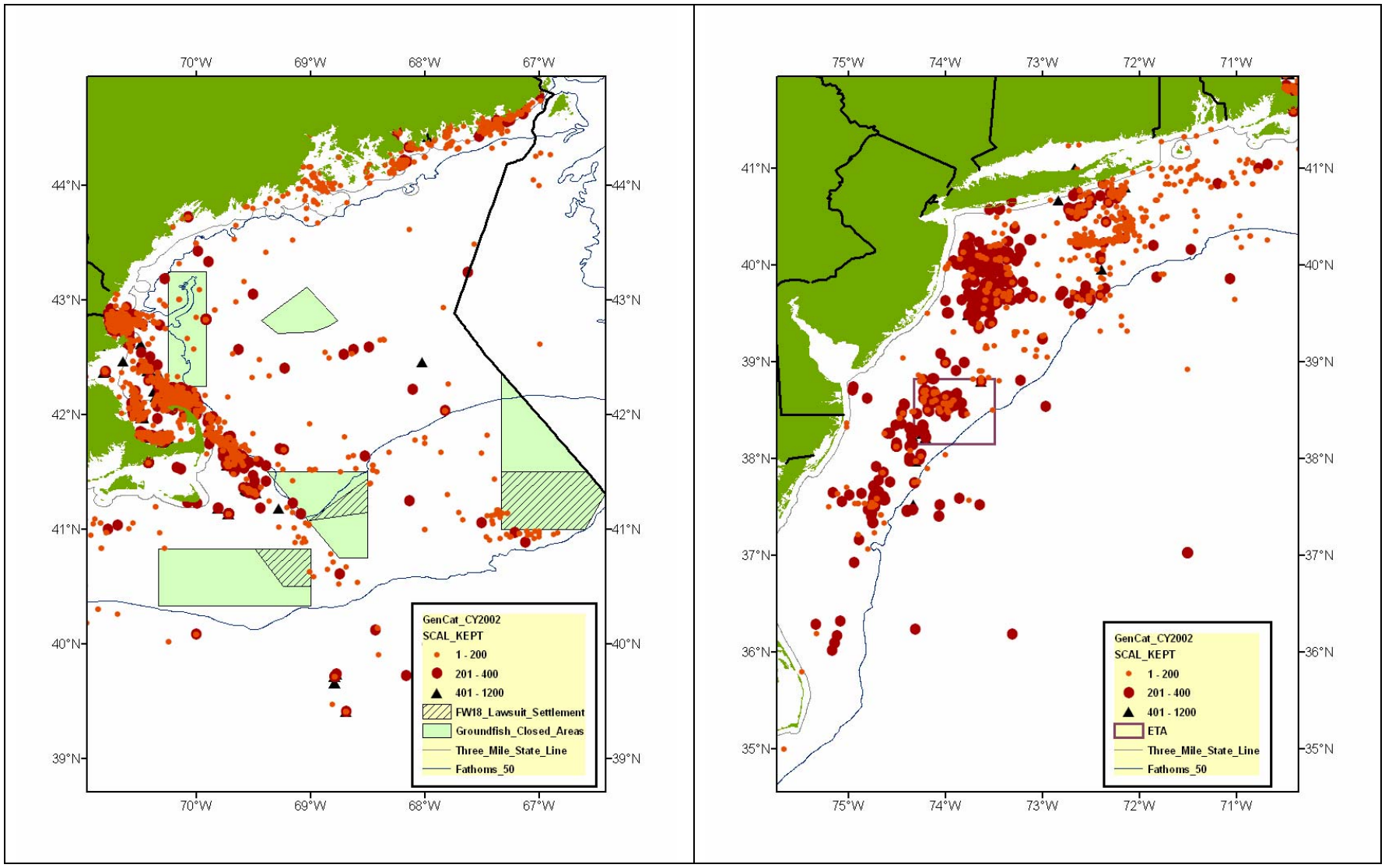


Figure 27- Location of general category trips for calendar year 2003 based on valid location data from vessel trip reports (VTR)
Note: All trips above 1,200 pounds of scallop meat were eliminated from the figure (111 records). Typo in legend: FW18 lawsuit settlement should read FW16.

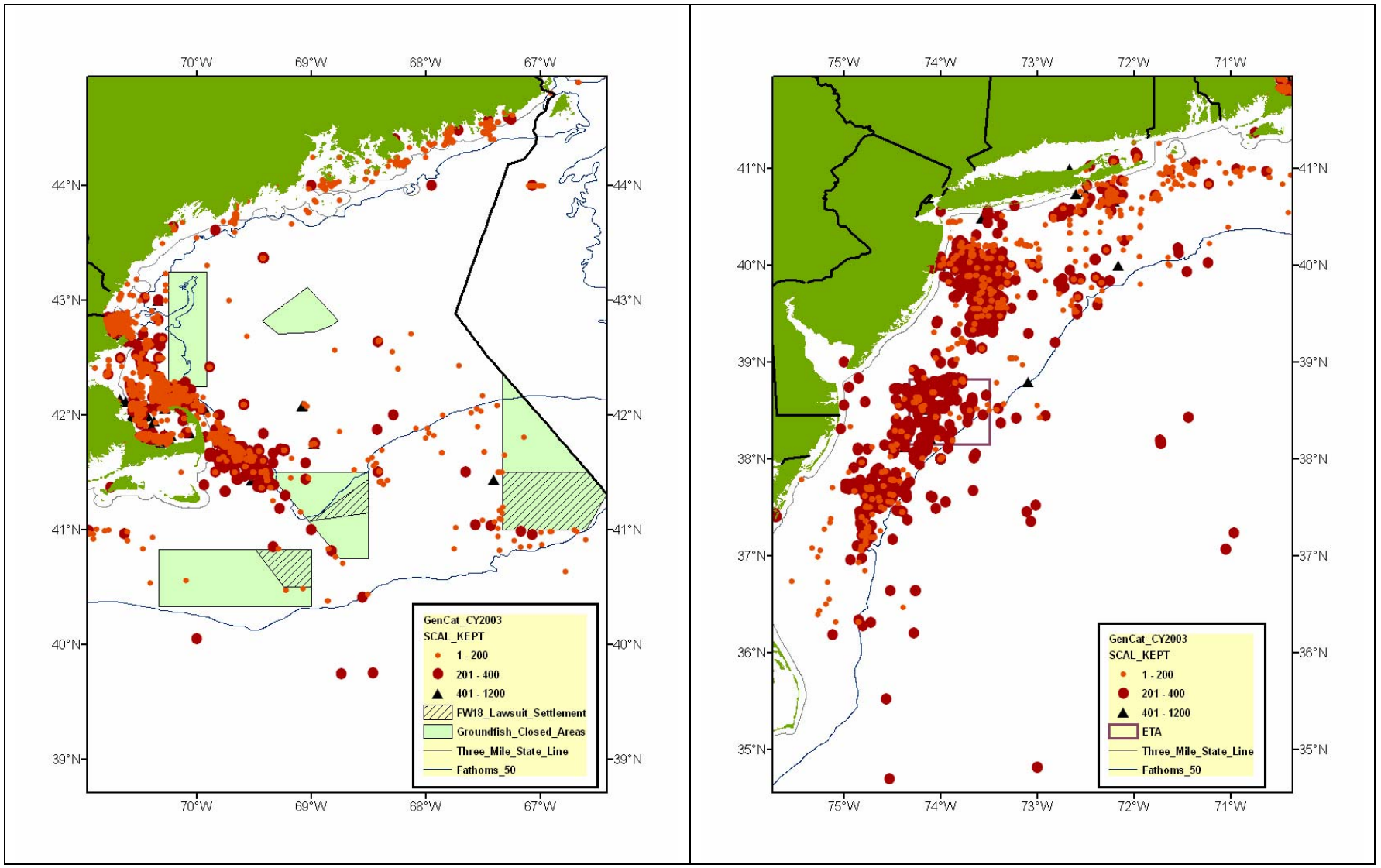


Figure 28- Location of general category trips for calendar year 2004 based on valid location data from vessel trip reports (VTR)
Note: All trips above 1,200 pounds of scallop meat were eliminated from the figure (122 records). Typo in legend: FW18 lawsuit settlement should read FW16.

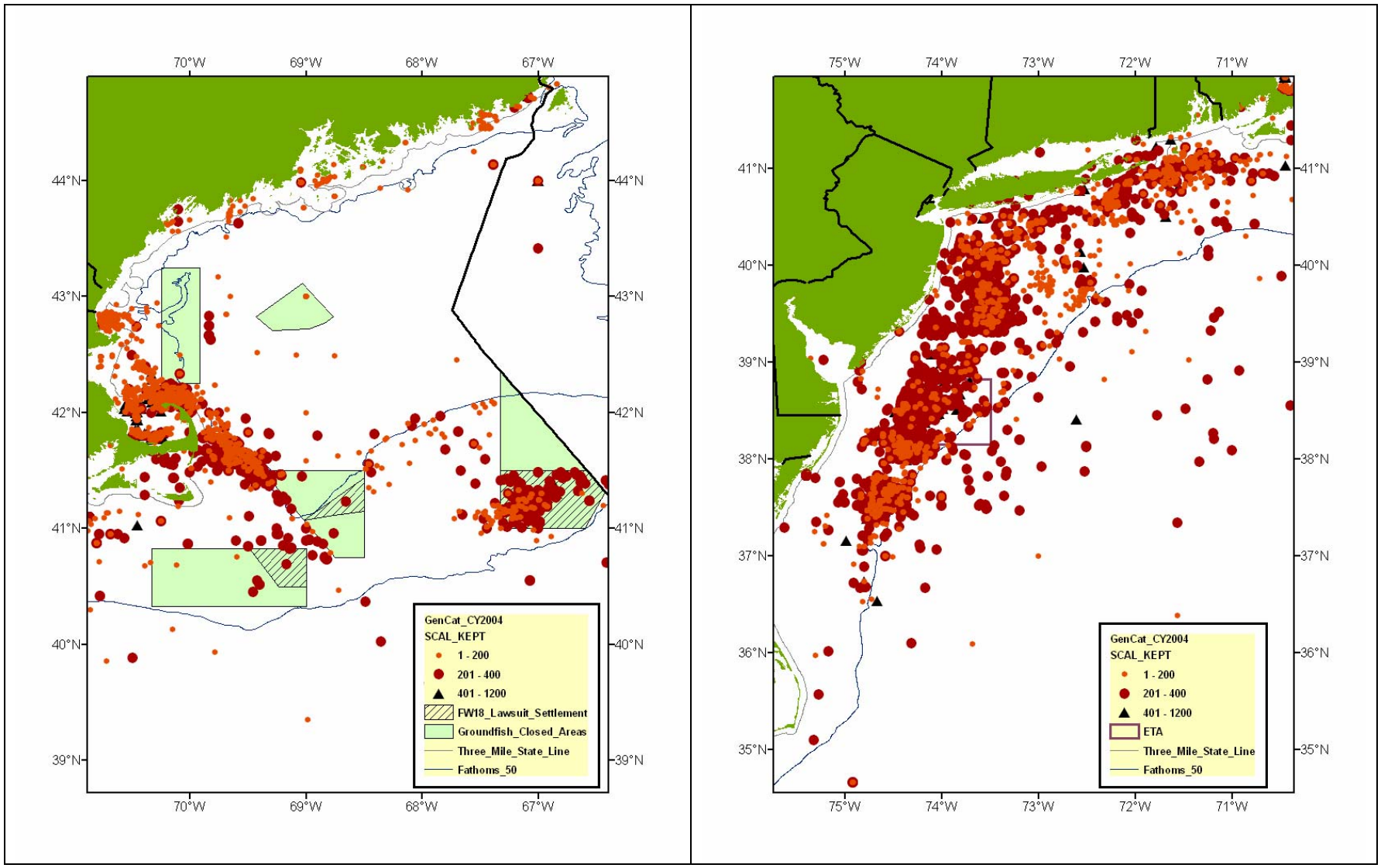


Figure 29- Location of general category trips for calendar year 2005 based on valid location data from vessel trip reports (VTR)
Note: All trips above 1,200 pounds of scallop meat were eliminated from the figure (201 records). Typo in legend: FW18 lawsuit settlement should read FW16.

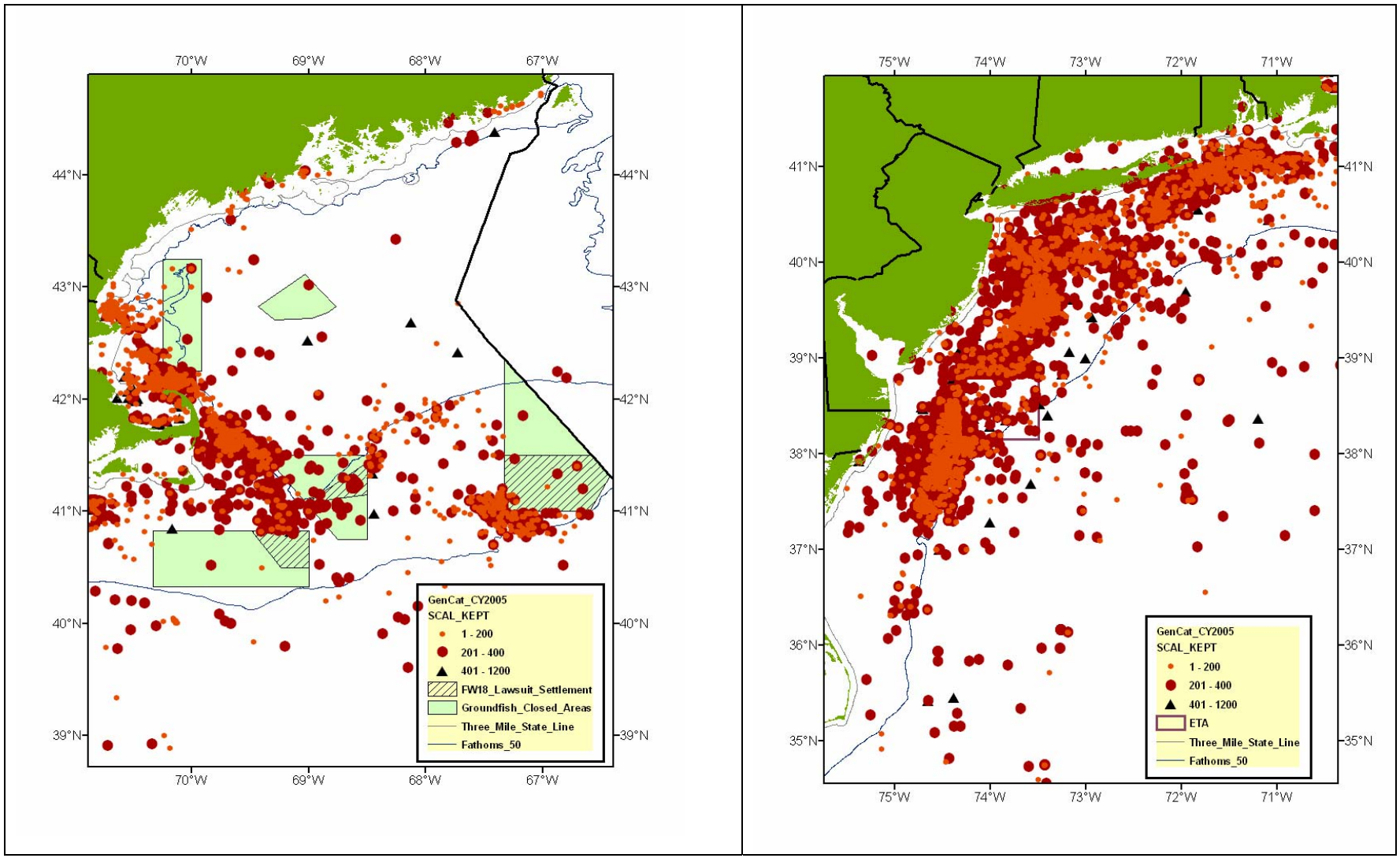
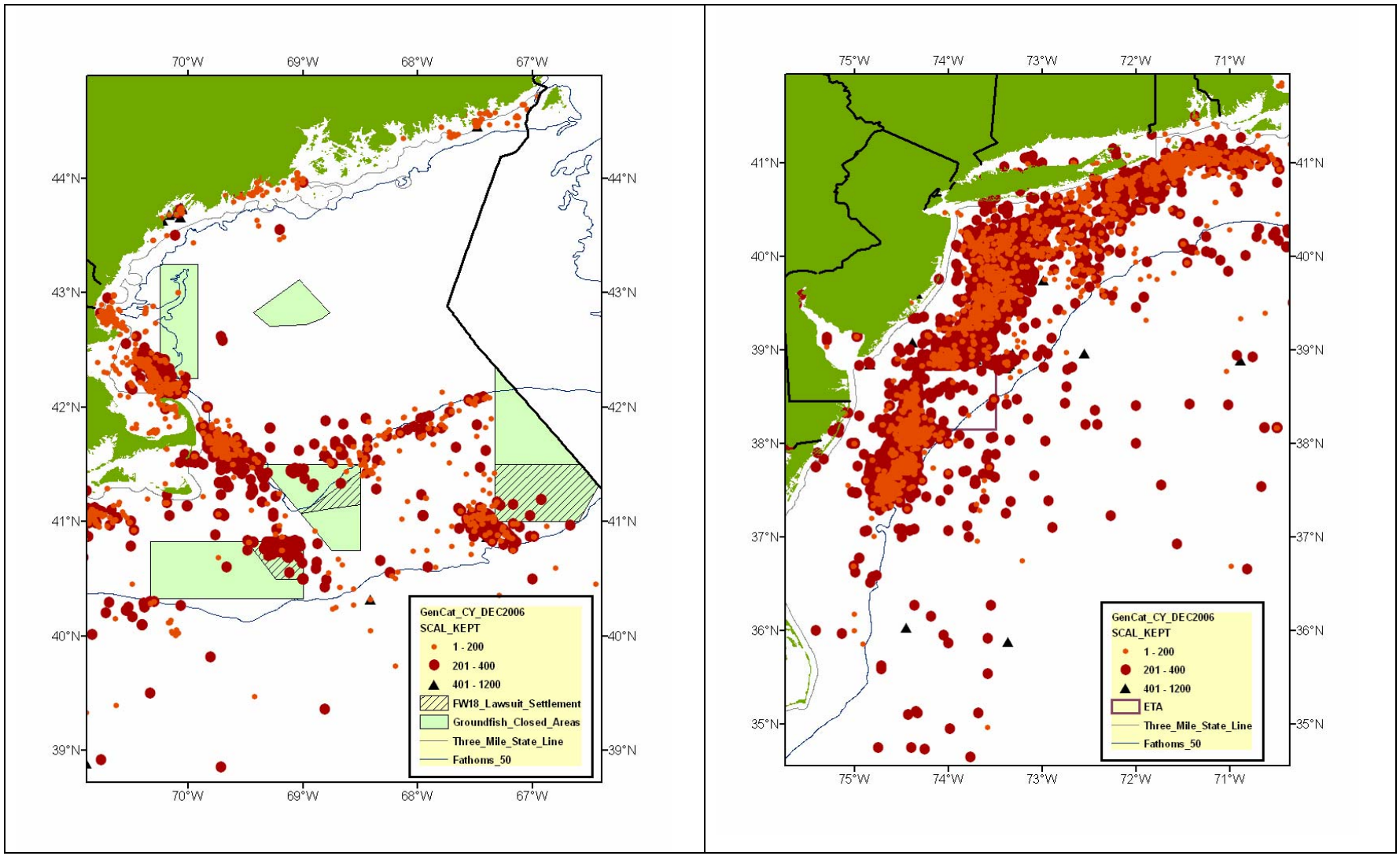


Figure 30- Location of general category trips for calendar year 2006 (not complete-data pulled mid-December 2006) based on valid location data from vessel trip reports (VTR)

Note: All trips above 1,200 pounds of scallop meat were eliminated from the figure (119 records). Typo in legend: FW18 lawsuit settlement should read FW16.



4.4.4.1 The scallop ports for general category vessels

While the fleet is spread throughout the eastern seaboard, the majority of general category permits are found in Massachusetts, Maine, New Jersey, Rhode Island, and New York (Table 42 and Table 43). Some states, in particular North Carolina, have a high percentage of vessels with VMS, or 1B permits (Table 43). Most general category vessels found in the Northeast are relatively small throughout, though somewhat larger in states with larger numbers of VMS permits (Table 42 and Table 43). For the general category fleet, the ports Gloucester, New Bedford, Point Judith, Chatham, Cape May, Portland, Barnegat Light, and Montauk have the highest number of permitted vessels in 2005 (Table 44). Many of these ports are traditionally groundfish ports. New Bedford, a port now dominated by limited access scallop fishing, had the highest number of VMS permits in 2005 (Table 45). A number of ports have seen large increases in the number of general category permits, with at least a 40% change from the number of permitted vessels in 2005 compared with the average since the permits have begun, i.e. 1994. These ports are Cape May, NJ (170% increase), Barnegat Light, NJ (180%), Portsmouth, NH (140%), Stonington, ME (140%), Atlantic City, NJ (210%), Wanchese, NC (190%), Harpswell, ME (160%), Rye, NH (140%), Ocean City, MD (230%).

Table 42 - General category permits by homeport state, with average length, 1995-2004

	1995		1996		1997		1998		1999		2000		2001		2002		2003		2004	
ST	Ave. ft	#	Ave. ft	#	Ave. ft	#	Ave. ft	#	Ave. ft	#	Ave. ft	#	Ave. ft	#	Ave. ft	#	Ave. ft	#	Ave. ft	#
AK	.	0	.	0	.	0	.	0	.	0	.	0	.	0	.	0	112	1	112	1
AL	.	0	.	0	90	2	90	2	90	1	90	1	.	0	.	0	.	0	.	0
CT	83	18	91	15	53	20	52	22	49	24	48	30	50	29	50	36	46	44	46	39
DE	52	10	52	9	54	10	57	8	52	11	51	11	51	11	52	11	57	16	56	17
FL	60	10	52	7	60	6	60	6	50	4	50	4	50	4	41	3	46	6	58	10
GA	.	0	.	0	.	0	.	0	.	0	58	1	76	4	76	4	78	3	76	7
LA	.	0	74	2	72	1	72	1	.	0	.	0	.	0	.	0	.	0	.	0
MA	46	825	46	854	46	817	46	843	44	812	44	834	43	872	43	922	42	997	42	991
MD	55	5	61	4	51	6	51	7	49	10	49	8	50	11	48	12	47	14	47	19
ME	42	508	41	558	41	556	42	491	42	459	42	503	41	551	41	556	41	548	41	561
MS	.	0	80	1	85	1	.	0	.	0	.	0	.	0	.	0	.	0	.	0
NC	72	39	72	30	71	34	70	37	68	41	66	43	62	56	62	68	60	77	60	94
NH	38	75	38	74	40	78	40	87	40	87	40	89	44	99	43	110	41	117	42	111
NJ	57	144	56	152	55	140	55	144	55	143	53	188	52	213	53	246	54	265	52	289
NY	51	158	52	156	52	146	51	152	51	145	50	162	49	173	49	156	49	164	47	179
PA	89	1	89	1	89	1	60	2	.	0	.	0	.	0	31	1	.	0	.	0
RI	55	152	55	170	57	155	56	157	56	160	55	165	54	175	53	180	54	179	53	184
SC	.	0	.	0	.	0	.	0	47	1	47	1	47	1	44	2	41	1	.	0
TX	77	2	77	2	70	1	70	1	70	1	70	1	.	0	.	0	.	0	55	1
VA	65	45	62	37	64	28	62	41	60	40	51	55	49	62	49	69	47	76	46	70
VT	.	0	23	2	23	1	23	1	.	0	.	0	.	0	.	0	17	1	.	0
WA	.	0	.	0	.	0	.	0	.	0	.	0	135	2	135	2	77	3	67	1

Source: NE Permit Data.

Table 43 - VMS general category permits by homeport state, with average length, 2005-2006

1A:	2005		2006		1B:	2005		2006	
ST	Ave. ft	#	Ave. ft	#	ST	Ave. ft	#	Ave. ft	#
AK	112	1	.	0	AL	79	2	79	2
AL	74	9	85	1	CT	53	20	54	23
CT	43	31	41	22	DE	57	15	60	13
DE	44	17	45	14	FL	76	14	75	10
FL	57	15	39	4	GA	70	9	70	11
GA	69	7	70	4	LA	77	1	77	1
HI	77	1	.	0	MA	56	270	56	282
MA	37	675	36	543	MD	49	25	49	32
MD	46	31	44	23	ME	48	113	48	141
ME	37	490	36	363	MS	79	1	79	1
NC	49	69	45	33	NC	65	92	65	103
NH	40	100	41	86	NH	44	22	45	23
NJ	47	214	48	172	NJ	60	135	61	161
NY	44	162	43	125	NY	55	52	56	56
RI	47	132	46	112	RI	67	56	67	60
TX	77	13	49	2	SC	58	1	58	1
VA	40	45	41	29	TX	77	13	67	1
					VA	58	32	59	35
					WA	138	1	138	1

Source: NE Permit Data.

Table 44 - General category vessels by homeport and county (2001–2006)

County, State	2005	2006	Home Port	2001	2002	2003	2004	2005	2006
Essex,MA	287	253	Beverly	12	8	10	10	9	7
			Danvers	1	1	1	1	1	1
			Essex	1	1	1	1	1	0
			Georgetown	1	1	1	1	1	0
			Gloucester	172	195	190	193	184	168
			Ipswich	1	2	2	1	1	1
			Lynn	3	4	4	4	4	2
			Manchester	5	6	5	9	6	5
			Marblehead	10	11	13	12	13	12
			Methuen	1	1	1	1	1	1
			Nahant	1	1	1	1	1	2
			Newburyport	20	25	26	24	22	18
			Rockport	23	30	28	25	22	19
			Rowley	0	0	1	1	1	1
			Salem	3	3	6	4	4	3
			Salisbury	10	14	14	12	11	9
			Swampscott	3	4	5	2	4	4
			West Newbury	2	5	5	3	1	0
Barnstable,MA	261	226	Barnstable	30	30	24	23	20	15
			Bourne	0	0	1	1	2	2
			Brewster	0	2	1	1	1	0
			Buzzards Bay	1	1	0	0	1	0
			Chatham	77	89	93	86	78	76
			Dennis	9	9	8	7	7	6
			East Dennis	2	4	4	3	4	3
			Eastham	3	4	3	3	3	2
			Falmouth	6	6	6	7	7	4
			Harwich	26	27	23	25	28	26
			Marstons Mills	0	0	0	0	1	1
			Orleans	23	21	20	19	20	13
			Provincetown	30	29	31	36	31	23
			Sandwich	19	22	22	25	20	18
			South Yarmouth	3	2	2	2	2	2
			Truro	4	5	6	8	6	7
			Wellfleet	10	11	9	13	13	11
			Woods Hole	8	8	9	9	5	7
			Yarmouth	10	12	11	12	12	10
Bristol,MA	185	162	Dartmouth	1	1	2	2	5	3
			Fairhaven	23	26	30	27	26	23
			Fall River	3	3	3	4	4	1

			New Bedford	123	123	124	128	130	118
			Taunton	1	1	0	1	1	1
			Westport	21	20	19	20	19	16
Suffolk,NY	147	122	Amity Harbor	1	1	1	1	1	1
			Aquebogue	1	1	0	1	1	1
			Babylon	2	2	4	3	2	0
			Bay Shore	0	0	0	1	3	1
			Captree Island	0	0	1	2	1	0
			Center Moriches	0	0	1	2	2	2
			East Hampton	0	1	1	1	1	0
			East Islip	0	0	0	2	1	1
			East Moriches	1	1	1	1	1	1
			East Quogue	2	2	2	1	2	2
			Greenport	8	7	8	8	8	4
			Hampton Bays	15	12	11	8	9	10
			Huntington	0	2	1	1	1	1
			Islip	3	3	4	7	6	5
			Lindenhurst	0	0	0	0	0	1
			Long Island	0	0	0	1	1	0
			Mattituck	2	5	4	6	5	3
			Montauk	42	44	50	59	59	53
			Moriches	1	1	1	1	1	1
			Mount Sinai	0	0	0	0	1	0
			Northport	6	7	5	7	7	6
			Sayville	0	1	1	1	1	0
			Shelter Island	0	1	1	1	1	1
			Shinnecock	30	28	29	34	28	26
			Southampton	1	1	1	1	2	1
			West Sayville	2	2	2	2	2	1
Cumberland,ME	143	124	Bailey Island	3	4	3	3	2	3
			Brunswick	0	1	1	1	1	2
			Cape Elizabeth	2	3	2	2	1	1
			Chebeague Island	1	1	1	1	2	2
			Cundys Harbor	14	15	14	12	13	14
			Falmouth	2	2	3	2	3	2
			Freeport	8	7	5	2	3	2
			Harpswell	18	16	21	28	28	24
			Long Island	3	3	3	6	4	3
			North Yarmouth	0	0	0	1	1	1
			Orrs Island	5	8	6	9	8	6
			Portland	67	65	75	74	66	57
			Scarborough	2	3	4	6	3	1
			South Portland	5	4	3	3	4	2
			Westbrook	1	1	1	1	1	1
			Windham	0	0	0	0	0	1
			Yarmouth	2	2	2	2	3	2
Plymouth,MA	141	122	Duxbury	2	1	1	1	1	1
			Green Harbor	19	16	17	18	18	17
			Hull	13	14	10	10	9	8
			Kingston	3	3	2	2	2	0
			Marion	4	4	5	6	5	4
			Marshfield	19	17	20	20	20	18
			Mattapoisett	5	5	6	5	6	3
			Ocean Bluff-Brant Rock	12	12	14	15	13	10
			Pembroke	0	1	1	1	1	1
			Plymouth	33	32	36	42	31	25
			Rockland	1	1	1	1	1	1
			Scituate	37	41	41	42	33	33
			Wareham	0	0	0	0	1	1
Washington,ME	130	115	Addison	6	10	8	9	10	7
			Beals	16	14	13	11	13	12
			Bucks Harbor	12	14	15	16	14	10
			Cutler	8	7	5	6	6	6
			Dyer Bay	0	0	2	2	1	2
			Eastern Harbor	1	3	4	4	3	3
			Eastport	6	5	5	6	4	4
			Harrington	4	4	3	2	4	2
			Jonesboro	2	2	1	1	1	1
			Jonesport	30	29	31	31	32	32
			Lubec	7	8	12	11	15	12

			Machias	0	0	0	2	2	1
			Machiasport	0	2	2	3	6	4
			Milbridge	7	5	6	7	6	6
			Roque Bluffs	2	3	3	3	3	3
			Steuben	11	9	10	8	7	7
			Trescott	1	1	1	1	1	1
			West Jonesport	2	2	3	2	2	2
Washington,RI	128	121	Block Island	3	5	6	5	5	4
			Charlestown	4	5	6	4	3	3
			Davisville	1	1	1	1	1	1
			Galilee	8	7	3	4	4	3
			Narragansett	15	15	15	14	13	9
			North Kingstown	0	0	0	0	1	0
			Point Judith	79	80	84	87	90	90
			Saunderstown	1	1	1	1	1	1
			Snug Harbor	0	0	0	1	1	1
			South Kingstown	0	0	1	1	1	1
			Wakefield	11	10	9	8	7	7
			Wickford	1	1	1	2	1	1
Ocean,NJ	124	121	Barnegat	1	1	0	0	1	1
			Barnegat Light	48	51	59	63	63	61
			Beach Haven	1	2	1	1	1	1
			Bricktown	4	8	8	6	5	3
			Lavallette	1	1	1	1	1	1
			Manahawkin	0	2	1	1	1	0
			Point Pleasant	33	34	31	35	37	37
			Point Pleasant Beach	3	4	4	5	5	7
			Toms River	1	1	1	1	0	1
			Tuckerton	3	3	3	3	2	1
			Waretown	4	6	8	7	8	7
			West Creek	0	0	0	0	0	1
Rockingham,NH	117	108	East Kingston	0	0	0	1	1	1
			Exeter	0	0	1	2	1	1
			Greenland	1	1	1	1	1	0
			Hampton	20	21	19	23	22	17
			Hampton Beach	2	1	1	1	1	1
			Hampton Falls	4	3	3	2	2	2
			New Castle	1	1	1	1	3	2
			Newington	7	7	7	2	1	0
			Portsmouth	38	40	38	52	47	43
			Rye	12	14	15	20	20	20
			Seabrook	24	26	20	20	17	20
			South Hampton	0	1	1	1	1	1
Cape May,NJ	101	97	Cape May	43	42	48	63	73	73
			Cape May Court House	0	1	1	1	1	1
			Ocean City	1	2	2	2	3	2
			Sea Isle City	8	9	10	12	12	9
			Seaville	0	0	2	2	1	1
			Wildwood	12	11	10	10	8	8
			Wildwood Crest	2	3	4	3	3	3
Hancock,ME	98	67	Bar Harbor	7	4	3	4	4	3
			Bass Harbor	0	0	3	2	1	1
			Birch Harbor	1	1	2	2	2	2
			Blue Hill	1	1	1	2	1	1
			Brooklin	3	2	2	3	1	1
			Brooksville	5	4	4	4	4	4
			Cape Rosier	2	2	2	2	1	0
			Castine	0	0	0	0	0	1
			Corea	0	1	2	3	3	1
			Deer Isle	2	4	2	8	7	4
			Frenchboro	2	1	1	3	2	1
			Gouldsboro	1	1	1	1	1	1
			Hancock	2	2	4	3	2	0
			Little Deer Isle	0	0	0	0	1	0
			Northeast Harbor	1	3	2	4	3	3
			Prospect Harbor	2	2	2	4	3	2
			Salsbury Cove	1	1	1	1	1	1
			Seal Harbor	0	0	0	1	1	0
			Southwest Harbor	7	8	9	7	7	4
			Stonington	19	21	20	26	30	22

			Sullivan	0	0	0	0	1	0
			Swans Island	9	6	6	3	3	2
			Trenton	1	1	0	1	2	0
			Winter Harbor	11	14	13	19	17	13
Knox,ME	94	76	Criehaven	0	0	1	1	1	1
			Cushing	0	3	2	4	6	5
			Friendship	7	9	9	11	13	11
			Isle Au Haut	1	0	1	1	1	0
			Matinicus Isle	1	1	1	1	1	1
			Owls Head	9	9	13	11	8	8
			Pleasant Point	0	0	0	0	0	1
			Port Clyde	17	15	16	18	16	14
			Rockland	11	11	10	11	12	9
			Rockport	0	0	0	0	1	1
			Saint George	0	0	0	3	2	2
			South Thomaston	3	1	3	5	6	3
			Spruce Head	8	8	8	9	9	7
			Tenants Harbor	5	7	4	5	5	5
			Vinalhaven	6	5	10	12	13	8
York,ME	59	54	Biddeford	1	1	1	2	2	2
			Camp Ellis	1	0	0	1	1	1
			Cape Porpoise	8	9	7	10	9	9
			Eliot	0	0	0	0	1	3
			Hollis	0	0	0	0	1	1
			Kennebunkport	6	4	3	3	5	3
			Kittery	13	12	13	12	11	10
			Kittery Point	7	5	7	6	5	5
			Ogunquit	2	3	3	2	3	4
			Perkins Cove	0	0	0	1	1	1
			Saco	7	9	8	8	9	8
			Wells	4	4	4	4	5	4
			York	4	4	2	2	3	2
			York Harbor	4	3	2	3	3	1
Monmouth,NJ	59	55	Atlantic Highlands	1	1	1	1	1	1
			Belford	26	26	26	30	28	28
			Belmar	6	5	6	7	8	7
			Brielle	4	4	5	6	3	3
			Highlands	4	4	5	4	5	3
			Manasquan	4	3	3	6	4	4
			Middletown	1	0	0	1	1	0
			Neptune	1	1	2	2	2	2
			Shark River Inlet	2	3	4	5	7	6
			West Long Branch	0	0	0	0	0	1
Lincoln,ME	55	51	Boothbay	6	5	4	4	3	3
			Boothbay Harbor	8	7	5	6	4	4
			Bremen	8	7	8	5	7	7
			Bristol	1	1	2	1	3	2
			East Boothbay	2	3	2	2	2	2
			Monhegan	5	3	3	2	1	2
			New Harbor	5	4	5	6	6	4
			Pemaquid	0	0	1	2	1	1
			Pemaquid Harbor	0	0	0	0	1	1
			Round Pond	1	2	3	4	3	2
			South Bristol	12	9	8	12	13	13
			Southport	3	4	4	4	5	5
			Trevett	1	1	1	1	1	1
			Westport	2	4	3	3	4	3
			Wiscasset	2	1	1	1	1	1
Newport,RI	54	49	Jamestown	3	3	2	1	2	3
			Little Compton	4	6	6	8	7	6
			Newport	26	27	26	29	30	26
			Portsmouth	2	2	1	1	1	0
			Sakonnet	2	2	4	5	7	7
			Tiverton	10	8	12	8	7	7
Nassau,NY	43	36	Atlantic Beach	0	0	1	2	3	0
			East Atlantic Beach	0	0	0	0	1	1
			East Rockaway	0	0	0	1	1	1
			Freeport	7	8	9	10	12	11
			Glen Cove	2	2	3	2	1	1
			Island Park	1	3	5	5	3	2

			Long Beach	0	0	1	1	1	2
			Massapequa	1	1	1	1	1	0
			Oceanside	1	2	4	12	13	12
			Point Lookout	4	4	5	5	5	5
			Wantagh	0	0	1	1	2	1
Dare,NC	42	36	Avon	1	1	1	1	1	1
			Hatteras	1	2	2	4	2	3
			Kill Devil Hills	0	0	1	1	2	1
			Manns Harbor	1	1	1	1	1	1
			Manteo	2	2	2	2	2	1
			Stumpy Point	1	1	1	2	2	1
			Wanchese	15	18	22	26	32	28
New London,CT	41	37	Groton	1	3	3	2	2	1
			Mystic	0	1	1	1	3	3
			New London	11	10	8	11	10	10
			Niantic	0	1	1	3	2	1
			Noank	6	8	8	9	10	9
			Pawcatuck	1	1	2	1	1	1
			Stonington	10	11	10	12	12	12
			Waterford	0	0	0	0	1	0
Atlantic,NJ	41	40	Atlantic City	18	23	22	26	35	36
			Brigantine	1	1	1	3	3	2
			Egg Harbor Township	0	0	0	1	1	1
			Northfield	0	0	0	0	1	1
			Somers Point	0	0	0	0	1	0
Suffolk,MA	32	28	Boston	23	28	25	32	32	28
Carteret,NC	30	24	Atlantic	1	1	1	1	2	1
			Atlantic Beach	0	0	0	0	1	1
			Beaufort	12	13	15	17	18	15
			Gloucester	0	0	0	2	2	0
			Harkers Island	0	0	0	0	1	0
			Marshallberg	0	0	0	1	1	1
			Morehead City	1	1	1	2	1	1
			Newport	1	1	1	3	3	4
			Williston	0	0	0	0	1	1
Worcester,MD	27	30	Berlin	1	1	1	1	2	2
			Ocean City	10	8	12	17	23	26
			Snow Hill	0	1	1	1	1	1
			West Ocean City	1	1	1	1	1	1
Hyde,NC	25	19	Engelhard	5	4	6	10	13	10
			Scranton	0	0	1	1	2	1
			Swan Quarter	3	5	5	7	10	8
Dukes,MA	24	20	Aquinnah	0	0	0	1	1	0
			Chilmark	8	9	10	12	11	9
			Edgartown	4	7	6	5	5	4
			Gosnold	1	1	1	1	1	1
			Oak Bluffs	4	3	2	1	1	1
			Vineyard Haven	3	4	5	6	5	5
Cumberland,NJ	24	20	Heislerville	2	2	2	3	3	3
			Matts Landing	1	1	1	1	1	1
			Mauricetown	0	0	1	1	2	2
			Millville	0	0	2	1	3	3
			Port Norris	2	3	8	15	15	11
Pamlico,NC	23	24	Bayboro	3	3	3	2	4	4
			Grantsboro	1	1	1	1	1	1
			Hobucken	1	0	3	1	1	1
			Lowland	2	2	2	5	7	7
			Merritt	0	0	0	1	1	0
			Oriental	2	4	4	10	9	11
Accomack,VA	22	18	Chincoteague	6	9	12	10	10	9
			Davis Wharf	1	1	1	1	1	1
			Greenbackville	0	1	1	1	1	1
			Harborton	1	0	0	0	1	0
			Onancock	4	4	3	1	1	0
			Sanford	0	0	1	1	1	1
			Saxis	3	3	3	4	4	4
			Tangier	2	2	2	2	2	2
			Wachapreague	1	0	1	1	1	0
Beaufort,NC	20	14	Bath	1	1	1	4	2	1
			Belhaven	4	6	7	11	17	13

			Wright Creek	1	1	1	1	1	0
Sagadahoc,ME	19	14	Arrowsic	1	1	1	1	1	0
			Bath	1	1	0	0	1	2
			Five Islands	2	2	2	0	1	0
			Georgetown	1	1	1	3	3	2
			Phippsburg	3	2	2	4	4	3
			Sebasco Estates	6	6	6	7	7	6
			West Bath	0	1	0	0	1	0
			West Point	3	3	3	2	1	1
Sussex,DE	17	14	Dagsboro	1	1	1	1	1	1
			Laurel	0	0	0	1	1	0
			Lewes	1	2	3	5	7	6
			Milford	3	4	4	5	5	5
			Millsboro	1	1	1	1	2	1
			Rehoboth Beach	1	1	1	2	1	1
Norfolk (City),VA	16	14	Norfolk	18	20	18	17	16	14
New York,NY	14	13	New York	13	15	11	12	14	13
Onslow,NC	14	13	Sneads Ferry	1	1	4	6	13	12
			Swansboro	0	0	0	0	1	1
Talbot,MD	13	9	Tilghman	0	0	0	7	13	9
New Castle,DE	11	9	Newport	0	0	0	0	1	1
			Odessa	0	0	0	1	1	1
			Port Penn	0	0	0	0	1	0
			Townsend	0	0	0	1	1	1
			Wilmington	3	5	5	5	7	6
Brevard,FL	11	7	Cape Canaveral	0	0	2	8	10	7
			Cocoa Beach	0	0	0	0	1	0
Calhoun,TX	11	0	Port Lavaca	0	0	0	0	11	0
Nantucket,MA	10	10	Nantucket	7	9	10	10	10	10
Glynn,GA	10	10	Brunswick	2	3	6	7	9	9
			Saint Simons Island	0	0	0	0	1	1
Gloucester,VA	8	5	Gloucester	0	1	1	2	2	0
			Gloucester Point	0	0	0	0	2	2
			Hayes	3	1	1	4	4	3
Newport News,VA	8	6	Newport News	0	1	2	2	8	6
Somerset,MD	7	7	Crisfield	0	0	2	2	5	6
			Rumbley	0	0	0	0	1	1
			Smith Island	0	1	1	1	1	0
Virginia Beach (City),VA	6	6	Virginia Beach	10	9	9	9	6	6
Kings,NY	6	7	Brooklyn	3	3	5	6	6	7
Duval,FL	6	2	Jacksonville	1	1	1	3	5	1
			Mayport	0	0	0	0	1	1
Mobile,AL	6	3	Bayou La Batre	0	0	0	1	1	1
			Citronelle	0	0	0	0	1	1
			Mobile	0	0	0	0	4	1
Craven,NC	5	4	New Bern	1	0	0	1	5	4
Baldwin,AL	5	0	Fairhope	0	0	0	0	5	0
Providence,RI	4	1	Cranston	0	0	0	0	1	0
			Providence	3	2	2	2	2	1
			Riverside	1	1	1	1	1	0
Norfolk,MA	4	3	Cohasset	3	5	2	3	2	1
			Dover	1	1	1	1	1	1
			Holbrook	0	0	0	1	1	1
Waldo,ME	4	2	Belfast	1	3	3	3	3	2
			Dark Harbor	0	0	0	0	1	0
Hampton (City),VA	4	4	Hallwood	0	0	1	1	1	0
			Hampton	4	3	1	0	3	4
Kent,DE	4	4	Bowers	1	1	1	1	1	1
			Frederica	0	1	1	1	1	1
			Leipsic	0	0	0	1	1	1
			Port Mahon	0	0	0	0	1	1
New Haven,CT	4	3	Branford	0	1	0	1	1	1
			Guilford	0	1	1	2	1	0
			Milford	1	1	0	0	2	2
Strafford,NH	4	1	Dover	0	0	0	2	2	0
			Durham	0	0	1	1	2	1
Dorchester,MD	4	5	Cambridge	0	0	0	0	4	4
			Fishing Creek	0	0	0	0	0	1
Fairfield,CT	3	3	Bridgeport	4	2	2	1	1	1

			Greenwich	0	1	1	0	1	1
			Norwalk	0	1	0	1	1	1
Wicomico,MD	3	2	Nanticoke	0	0	0	1	1	1
			Quantico	0	0	0	0	1	0
			Willards	0	1	1	1	1	1
Middlesex,CT	3	2	Essex	0	0	1	0	1	0
			Old Saybrook	1	1	1	3	2	2
Mcintosh,GA	3	2	Crescent	1	0	1	0	1	0
			Darien	1	0	0	1	1	1
			Townsend	0	0	0	0	1	1
Franklin,FL	3	2	Apalachicola	0	0	0	2	2	1
			Carrabelle	0	1	1	1	1	1
Chatham,GA	3	3	Savannah	0	0	0	0	2	2
			Tybee Island	0	0	0	0	1	1
Northampton,VA	2	4	Exmore	0	0	0	1	1	2
			Nassawadox	1	2	1	1	1	2
Kent,RI	2	1	Warwick	3	3	3	3	2	1
Brunswick,NC	2	2	Shallotte	0	0	2	2	2	2
Virginia Beach, VA	2	1	Rudee Inlet	1	2	2	2	2	1
Poquoson (City),VA	2	2	Poquoson	1	1	1	1	2	2
Queens,NY	2	2	Broad Channel	0	0	0	1	1	1
			Howard Beach	0	0	0	0	1	1
Pasco,FL	2	0	New Port Richey	0	0	1	2	2	0
Pinellas,FL	2	0	Tarpon Springs	0	0	0	2	2	0
Dade,FL	1	1	Miami	2	2	1	1	1	1
Worcester,MA	1	1	Barre	0	0	0	0	1	1
Mathews,VA	1	0	Mathews	1	1	1	1	1	0
Richmond,NY	1	1	Staten Island	1	1	2	1	1	1
Penobscot,ME	1	1	Hampden	1	1	1	1	1	1
Northumberland,VA	1	0	Heathsville	0	0	0	1	1	0
King,WA	1	1	Seattle	2	2	1	1	1	1
Orleans,LA	1	1	New Orleans	0	0	0	0	1	1
Middlesex,VA	1	1	Deltaville	1	1	1	1	1	1
Collier,FL	1	1	Chokoloskee	0	1	1	1	1	1
York,VA	1	1	Seaford	1	0	0	0	1	1
Aleutians West,AK	1	0	Dutch Harbor	0	1	1	1	1	0
St. Lucie,FL	1	1	Fort Pierce	0	0	1	1	1	1
Aransas,TX	1	1	Rockport	0	0	1	1	1	1
Richmond (City),VA	1	2	Richmond	0	0	0	1	1	2
Jackson,MS	1	1	Pascagoula	0	0	0	0	1	1
Sarasota,FL	1	0	Sarasota	0	0	0	1	1	0
Anne Arundel,MD	1	1	Edgewater	0	0	0	0	1	1
Queen Anne's,MD	1	1	Chester	0	0	0	0	1	1
Hillsborough,NH	1	0	Nashua	0	0	0	1	1	0
Columbia,NY	1	1	Stuyvesant	0	0	0	0	1	1
Charleston,SC	1	1	Mount Pleasant	0	0	0	0	1	1
Hillsborough,FL	1	0	Lutz	0	0	0	0	1	0
Honolulu,HI	1	0	Honolulu	0	0	0	0	1	0
Matagorda,TX	1	0	Palacios	0	0	0	0	1	0
Chesapeake,VA	1	0	Chesapeake	0	0	0	0	1	0
Portsmouth,VA	1	0	Portsmouth	0	0	0	0	1	0
Galveston,TX	0	1	Galveston	0	0	0	0	0	1
Jefferson,TX	0	1	Port Arthur	0	0	0	0	0	1

Source: NE Permit data. NOTE: only ports with at least 1 vessel in 2005 or 2006 are shown.

Most general category vessels seem to fish near their homeport, but some are more mobile. General category trip locations from VTR data were plotted by homeport state from calendar years 2001 through 2004 to give a sense of where recent fishing activity has taken place by homeport state. In general most activity is near each homeport state; however, some vessels from states such as Maine, Massachusetts, Rhode Island, New York and Virginia do have some vessels that travel to fish for scallops during different portions of the year (Figure 31 through Figure 35). A figure for Delaware was not included because of data confidentiality issues (less than three vessels had reported scallop landings for these years from that state).

Figure 31 - General Category trips from vessels homeported in Maine (dark circles in figure on left) and New Hampshire (dark circles in figure on right) compared to all general category trips from calendar years 2001-2004

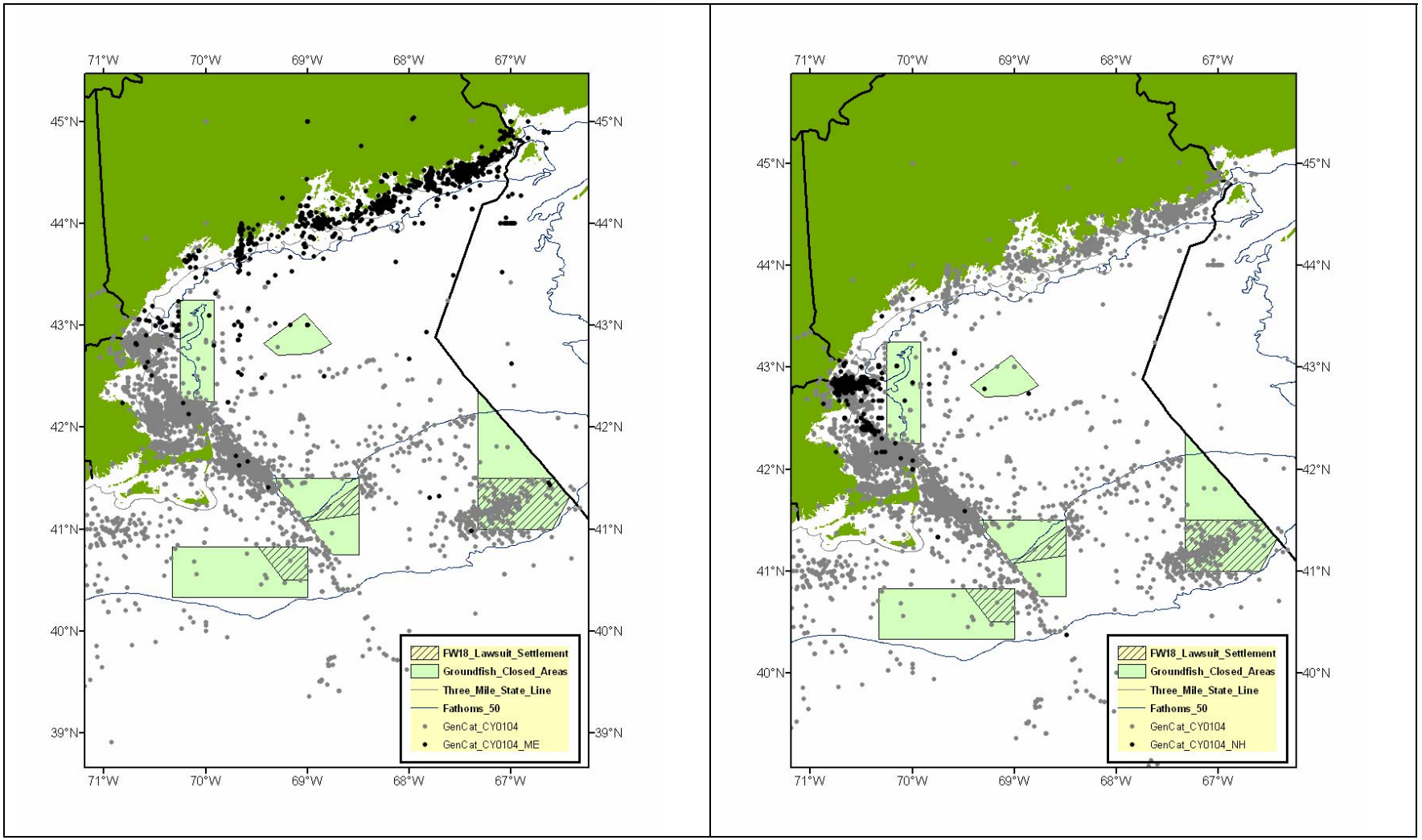


Figure 32 - General Category trips from vessels homeported in Massachusetts (dark circles in figure on left) and Rhode Island (dark circles in figure on right) compared to all general category trips from calendar years 2001-2004
Typo in legend: FW18 lawsuit settlement should read FW16.

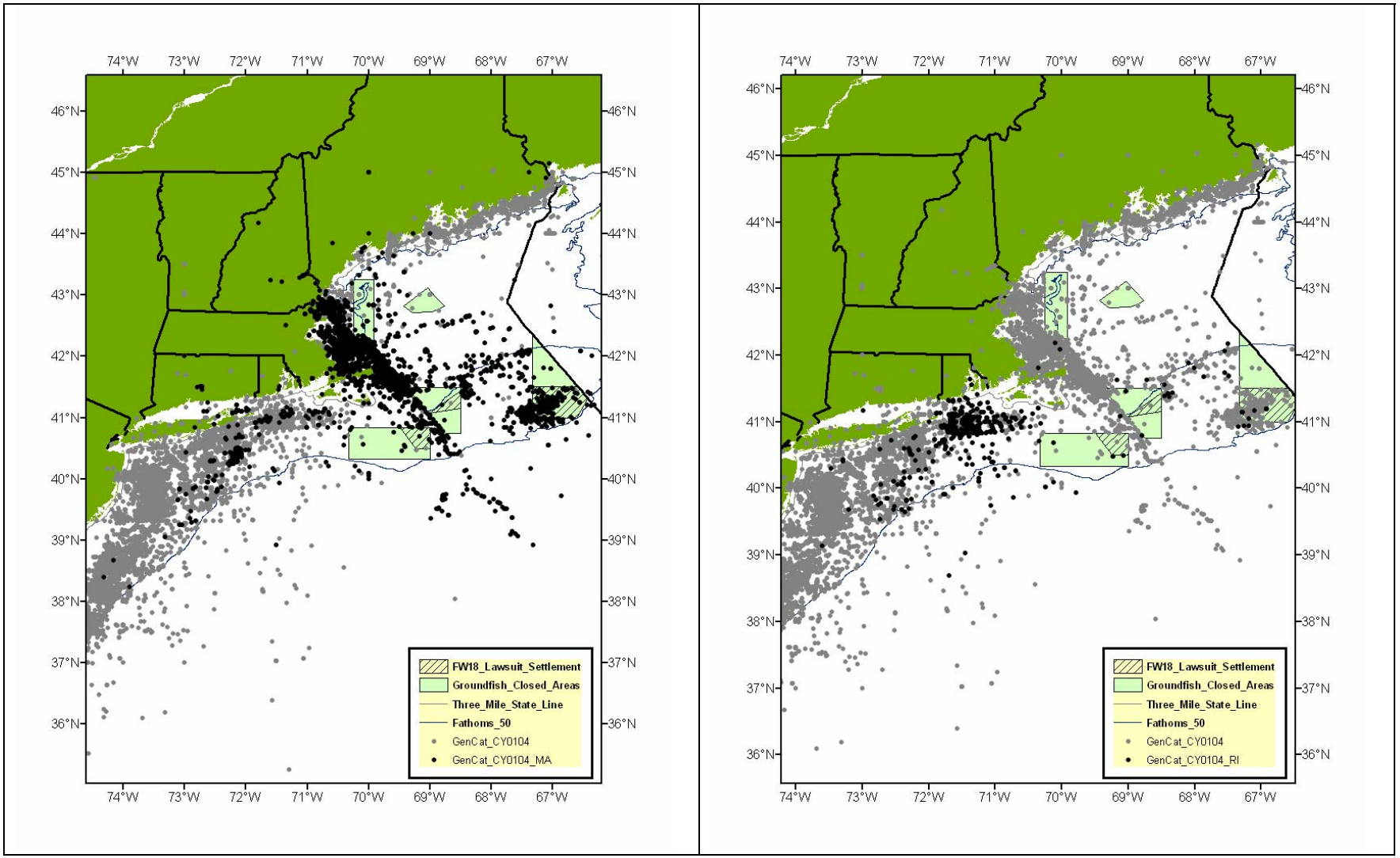


Figure 33 - General Category trips from vessels homeported in Connecticut (dark circles in figure on left) and New York (dark circles in figure on right) compared to all general category trips from calendar years 2001-2004
Typo in legend: FW18 lawsuit settlement should read FW16.

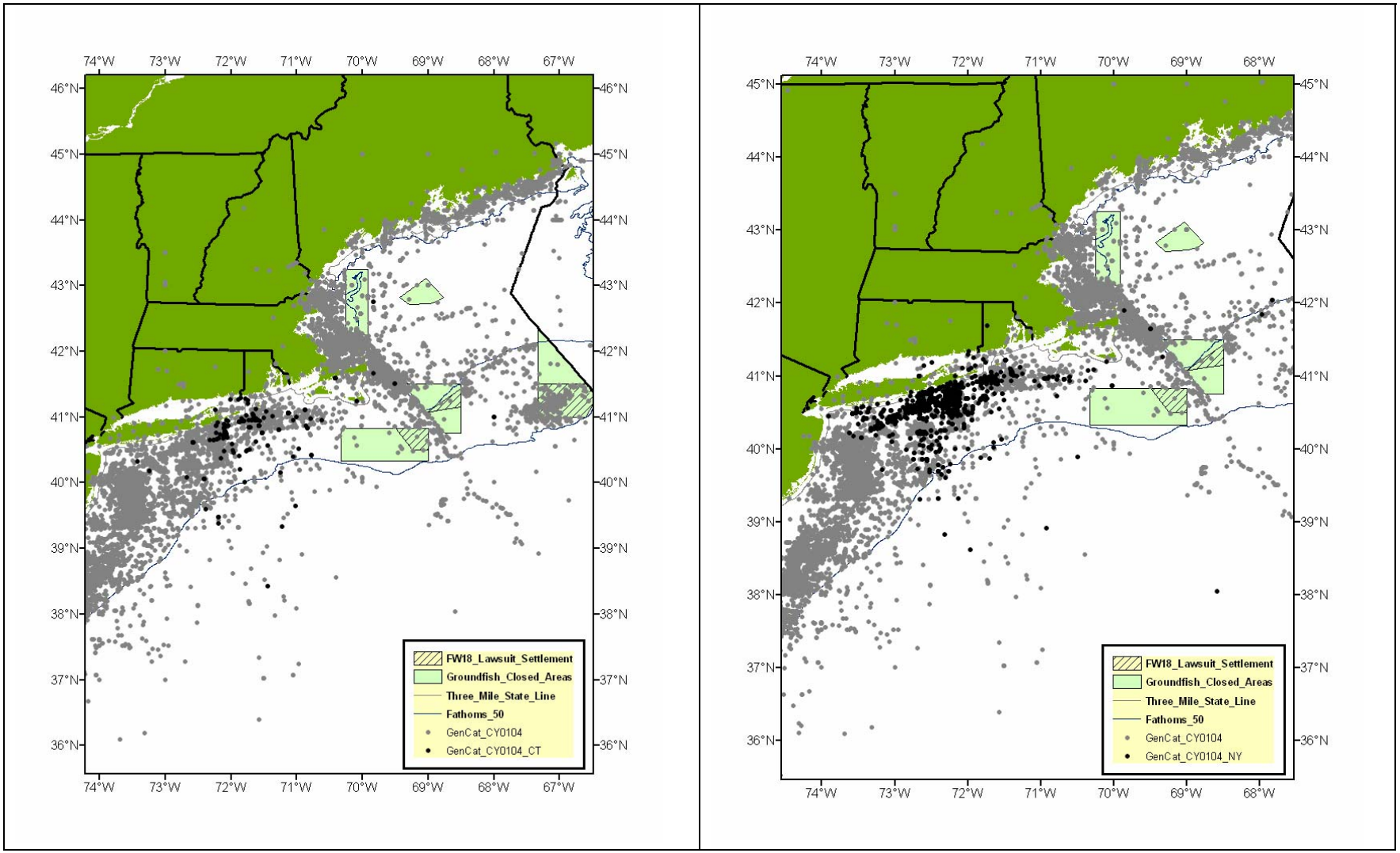


Figure 34 - General Category trips from vessels homeported in New Jersey (dark circles in figure on left) and Maryland (dark circles in figure on right) compared to all general category trips from calendar years 2001-2004
Typo in legend: FW18 lawsuit settlement should read FW16.

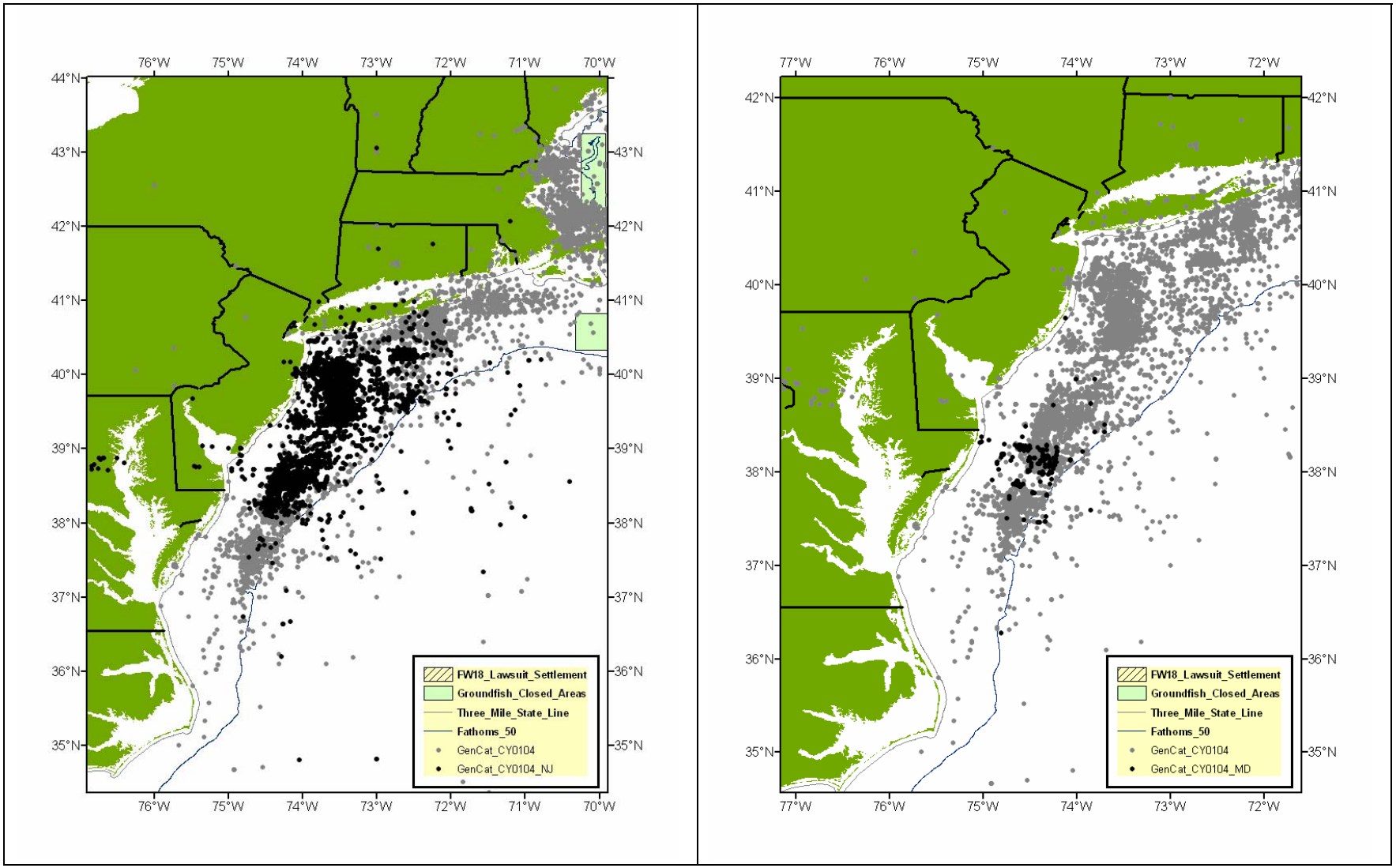
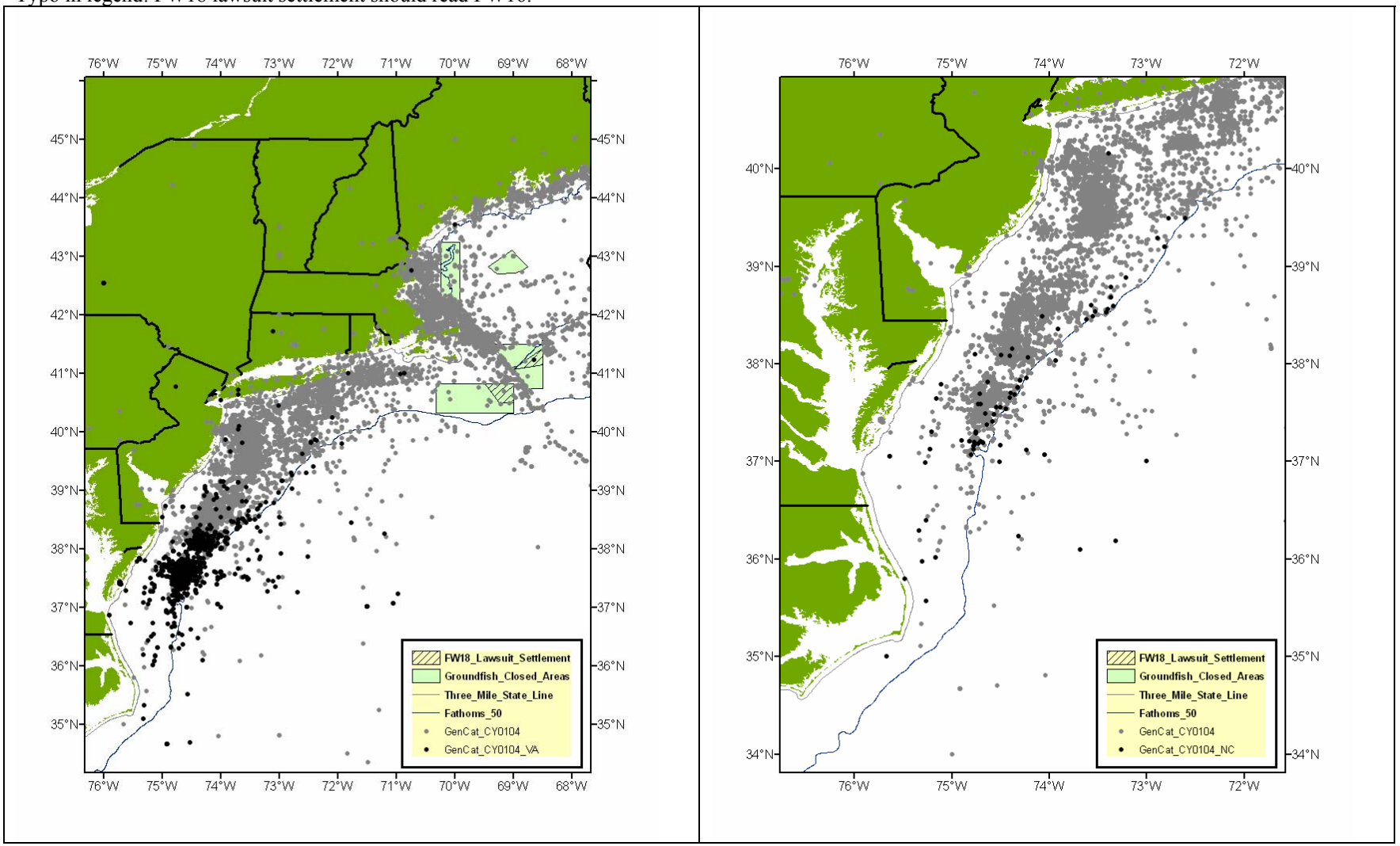


Figure 35 - General Category trips from vessels homeported in Virginia (dark circles in figure on left) and North Carolina (dark circles in figure on right) compared to all general category trips from calendar years 2001-2004
Typo in legend: FW18 lawsuit settlement should read FW16.



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 45 and Table 46 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. The shift in geographic activity to the Mid-Atlantic by the general category fleet can also be seen in terms of landing ports, with the predominance in 2005 of Mid-Atlantic ports such as Chincoteague, Cape May, and Barnegat Light. Only Gloucester, New Bedford, and Cape Cod in general show consistency during the 90's into the current season, but ports in Maine no longer show significant scallop landings. 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 grounds (Table 46). Here, North Carolina ports show more activity, and some Maine ports continue to have some importance, perhaps reflecting a seasonal movement of vessels from their customary ports to more active scallop grounds.

Table 45 - Landed pounds and value of scallops by general category vessels, 2000-2006

	Value of scallops landed by general category vessels (in thousands of dollars)							Percentage to total value landed by all vessels in port						
Landing Port	2000	2001	2002	2003	2004	2005	2006	2000	2001	2002	2003	2004	2005	2006
Chincoteague (Accomack VA)	16	70	202	922	2080	9298	4087	0.3	1.3	2.9	8.3	9.5	41.8	54.6
Cape May (Cape May NJ)	236	589	570	474	2136	8599	3300	0.5	1.1	0.9	0.5	1.7	9.6	12.8
Barnegat Light* (Ocean NJ)	261	382	995	1796	4731	7536	1834	0.9	1.3	3.2	4.9	10.0	24.7	48.9
Ocean City (Worcester MD)	41	40	67	132	433	4511	3899	0.3	0.2	0.5	0.2	0.8	27.4	63.2
New Bedford (Bristol MA)	278	467	87	1122	2811	3532	3980	0.1	0.1	0.0	0.3	0.6	0.7	1.8
Provincetown (Barnstable MA)	110	2060	501	582	549	3417	1749	1.2	21.6	6.7	8.3	5.5	33.1	45.0
Point Pleasant (Ocean NJ)	110	218	458	478	735	3226	2659	0.3	0.6	1.1	1.1	1.8	10.4	28.5
Chatham (Barnstable MA)	4	479	104	400	1634	2710	1201	0.0	2.0	0.5	1.9	6.4	11.1	12.2
Atlantic City (Atlantic NJ)	.	9	.	0	67	2241	1207	.	0.0	.	0.0	0.2	11.0	67.3
Hampton Bays (Suffolk NY)	417	451	94	157	499	1534	703	2.2	2.6	0.6	1.2	3.6	13.2	16.6
Wildwood (Cape May NJ)	119	500	141	287	463	1372	387	1.1	3.9	1.1	2.1	3.6	20.3	23.0
Montauk (Suffolk NY)	6	7	0	1	431	1346	1271	0.0	0.0	0.0	0.0	1.5	4.8	10.8
Hampton (Hampton VA)	2	9	8	164	80	1308	1113	0.0	0.0	0.0	0.3	0.2	4.2	10.7
Point Judith (Washington RI)	8	16	21	31	334	1145	732	0.0	0.0	0.0	0.0	0.5	1.7	2.4
Gloucester (Essex MA)	80	942	683	462	115	1131	518	0.1	1.2	0.9	0.6	0.1	1.5	1.7
Stonington (New London CT)	.	.	.	.	.	895	558	.	.	.	.	.	4.9	7.4
Harwich Port (Barnstable MA)	.	426	110	285	194	755	73	.	3.6	1.3	6.2	3.6	17.6	6.3
Newport News (New. News VA)	2	1	389	34	66	751	437	0.0	0.0	0.5	0.0	0.1	1.1	2.0
Hyannisport (Barnstable MA)	.	.	.	.	30	573	150	.	.	.	.	0.9	12.0	9.7
Islip (Suffolk NY)	.	.	0	.	0	470	231	.	.	0.0	.	0.0	40.0	36.2
Shinnecock (Suffolk NY)	.	.	.	.	8	320	185	.	.	.	.	1.0	24.8	29.9
Wellfleet (Barnstable MA)	23	66	32	111	47	277	27	4.5	11.5	4.2	13.1	2.0	6.8	1.3
Nantucket (Nantucket MA)	0	0	0	1	36	273	93	0.0	0.0	0.0	0.1	1.8	11.2	8.7
Newport (Newport RI)	15	0	3	1	37	272	128	0.1	0.0	0.0	0.0	0.2	1.0	1.0
New London (New London CT)	.	.	.	.	.	219	11	.	.	.	.	.	5.6	0.7
Sandwich (Barnstable MA)	155	201	248	225	124	214	170	1.4	1.5	1.9	1.9	1.1	3.0	10.1
Barnstable (Barnstable MA)	.	.	.	.	29	167	318	.	.	.	.	1.1	7.0	26.9
Edgartown (Dukes MA)	.	.	.	.	29	136	5	.	.	.	.	3.2	8.6	0.7
Westport (Bristol MA)	2	.	.	.	27	111	58	0.0	.	.	.	0.7	3.0	5.1
Brielle (Monmouth NJ)	.	.	.	.	.	109	9	.	.	.	.	.	92.3	99.3

Source: dealer weighout data. Note: Years are fishing years Barnegat Light includes Long Beach; graph only includes ports with at least 100,000 landed value in 2005; 2006 is year to date as of Sept 28, 2006.

Table 46 - Distribution of general category landed value of scallops by associated homeport

	Value of scallops to homeport, landed by general category vessels (in thousands of dollars)							Percentage to dealer-reported value by all vessels in homeport						
Homeport (County State)	2000	2001	2002	2003	2004	2005	2006	2000	2001	2002	2003	2004	2005	2006
Barnegat Light (Ocean NJ)	*	382	1006	1700	4955	6693	1892	0	4	11	15	29	36	66
Provincetown (Barnstable MA)	96	712	352	351	391	3247	1640	8	38	19	22	27	75	81
Cape May (Cape May NJ)	48	53	119	133	961	3089	2107	0	0	0	0	2	5	5
New Bedford (Bristol MA)	131	403	241	647	1258	2744	3235	0	0	0	1	1	1	3
Point Pleasant (Ocean NJ)	*	*	213	200	378	2533	1672	0	0	5	4	5	23	30
Atlantic City (Atlantic NJ)	0	0	0	2	101	2526	2372	0	0	.	0	2	12	91
Beaufort (Carteret NC)	0	*	15	67	289	1928	757	0	3	1	4	13	62	63
Ocean City (Worcester MD)	*	*	*	*	661	1790	1167	1	2	12	1	32	59	92
Belhaven (Beaufort NC)	*	*	128	155	457	1662	494	0	2	10	11	35	59	45
Newport News (Newport News VA)	0	0	0	*	*	1508	*	0	0	0	1	0	7	1
Cape Canaveral (Brevard FL)	0	0	0	*	371	1452	393	0	0	0	9	16	40	18
Gloucester (Essex MA)	26	309	352	330	333	1283	456	2	19	17	9	8	38	33
Sneads Ferry (Onslow NC)	0	0	0	0	0	1102	470	.	.	.	.	.	100	82
Egg Harbor Township (Atlantic NJ)	0	0	0	0	0	*	*	.	.	.	.	.	99	100
Lowland (Pamlico NC)	0	0	0	0	*	*	*	0	0	0	0	0	16	10
Shinnecock (Suffolk NY)	277	219	41	78	318	980	352	15	11	3	4	15	34	39
New Bern (Craven NC)	0	0	0	0	0	961	*	0	0	0	0	0	13	4
Engelhard (Hyde NC)	0	*	*	*	280	912	239	.	3	2	15	20	39	16
Swan Quarter (Hyde NC)	*	0	0	*	*	876	354	0	0	0	5	7	27	15
Chatham (Barnstable MA)	0	296	40	273	188	814	502	.	27	6	40	28	38	44
Stonington (Hancock ME)	*	134	146	85	189	791	157	12	100	98	100	100	99	100
Wildwood (Cape May NJ)	81	*	89	210	312	678	231	2	1	2	6	8	21	20
Norfolk (Norfolk (City) VA)	*	7	25	79	344	669	474	0	0	0	0	2	4	5
Lubec (Washington ME)	0	54	*	149	375	647	119	0	90	100	100	99	96	100
Shallotte (Brunswick NC)	0	0	0	0	*	*	*	.	.	.	.	99	99	99
Tilghman (Talbot MD)	0	0	0	0	0	590	808	.	.	.	.	.	100	100
Wanchese (Dare NC)	3	2	10	20	84	577	220	0	0	0	0	1	6	4
Wellfleet (Barnstable MA)	*	287	139	848	311	564	172	8	33	99	98	94	90	99
Montauk (Suffolk NY)	65	19	6	*	115	508	325	2	1	0	0	6	7	12
Barnstable (Barnstable MA)	*	248	185	58	72	501	404	22	17	14	4	4	18	19
Brunswick (Glynn GA)	0	0	*	*	139	476	285	.	.	98	100	100	100	85
Portsmouth (Rockingham NH)	0	*	*	*	70	438	512	0	0	0	2	4	24	89
New London (New London CT)	0	0	0	0	*	433	79	0	.	.	0	32	10	3
Waretown (Ocean NJ)	0	0	0	0	0	*	*	.	.	.	.	.	98	98
Kittery (York ME)	0	0	0	0	0	414	236	.	.	.	.	.	98	95
Westport (Bristol MA)	0	0	0	0	30	391	400	.	.	.	.	8	55	65
Nanticoke (Wicomico MD)	0	0	0	0	0	*	*	.	.	.	.	.	100	100
Bayboro (Pamlico NC)	0	26	*	*	*	376	*	0	3	0	0	5	36	12
Apalachicola (Franklin FL)	0	0	0	0	0	*	*	.	.	.	.	.	100	99
Stonington (New London CT)	*	0	0	0	*	367	357	1	0	0	0	0	6	11
Port Norris (Cumberland NJ)	0	0	0	*	*	321	53	.	.	.	100	100	100	98
Islip (Suffolk NY)	0	0	0	0	*	*	*	.	.	.	.	0	79	94
South Bristol (Lincoln ME)	0	0	0	0	113	313	*	.	.	.	.	31	66	45
Bucks Harbor (Washington ME)	*	159	58	133	*	*	*	100	100	100	67	100	99	100
Jacksonville (Duval FL)	0	0	0	0	0	*	0	0	0	0	.	0	21	0
Oriental (Pamlico NC)	0	*	*	20	51	284	238	0	0	0	0	1	4	5
Jonesport (Washington ME)	0	53	59	*	*	283	*	.	37	87	100	100	54	100
Newport (Newport RI)	*	*	*	*	40	279	124	0	0	0	0	2	17	10
Sandwich (Barnstable MA)	128	349	177	189	135	260	192	27	48	23	16	33	79	76
Point Judith (Washington RI)	15	12	18	20	89	254	108	0	0	0	0	1	2	1
Southampton (Suffolk NY)	*	*	*	*	*	*	*	30	52	9	28	12	63	63
Mobile (Mobile AL)	0	0	0	0	0	*	*	.	.	.	.	.	100	99
Laurel (Sussex DE)	0	0	0	0	*	*	0	.	.	.	.	100	100	.
Morehead City (Carteret NC)	0	0	*	*	*	*	*	.	.	23	59	75	81	72
Hampton Bays (Suffolk NY)	42	87	*	2	*	*	355	4	15	0	1	30	88	56
Harwich (Barnstable MA)	*	115	0	0	0	*	*	2	39	.	.	.	75	100
Belmar (Monmouth NJ)	0	0	0	0	0	187	217	.	.	.	.	.	78	85
Orleans (Barnstable MA)	0	*	*	0	*	*	0	.	100	1	.	97	92	.
Edgartown (Dukes MA)	0	0	0	0	*	*	*	.	.	.	.	100	100	100

Manasquan (Monmouth NJ)	0	0	0	0	0	*	*	.	.	.	.	.	95	96
Newport (Carteret NC)	0	*	*	*	*	*	*	0	0	7	8	12	19	12
Huntington (Suffolk NY)	0	0	0	0	0	*	*	.	.	.	.	.	96	99
Owls Head (Knox ME)	0	*	*	139	*	*	*	0	1	8	38	38	24	8
Wilmington (New Castle DE)	0	0	*	*	66	*	137	0	0	1	2	3	9	95
Portland (Cumberland ME)	*	3	25	31	*	158	27	1	1	2	2	7	23	5
Darien (Mcintosh GA)	0	0	0	0	0	*	*	.	.	.	.	.	99	100
Grantsboro (Pamlico NC)	0	0	0	0	0	*	*	.	.	.	.	.	100	33
Northeast Harbor (Hancock ME)	*	0	*	*	*	*	*	100	.	100	100	97	100	100
Mattituck (Suffolk NY)	0	0	0	*	*	*	*	.	.	.	0	22	92	34
Point Pleasant Beach (Ocean NJ)	0	0	*	*	*	149	538	0	0	1	0	1	8	90
Atlantic (Carteret NC)	0	0	0	*	*	*	*	0	0	0	0	0	3	1
Chincoteague (Accomack VA)	*	0	0	*	65	*	*	73	.	.	45	74	90	71
Machiasport (Washington ME)	0	0	0	0	0	*	*	.	.	.	.	.	100	100
Boston (Suffolk MA)	14	*	3	*	82	*	*	1	0	0	0	2	8	0
Williston (Carteret NC)	0	0	0	0	0	*	*	.	.	.	.	.	100	40
Heislerville (Cumberland NJ)	0	0	0	0	0	*	0	.	.	.	.	.	100	.
Rockport (Essex MA)	0	*	41	79	49	128	113	.	0	12	24	15	41	57
Harrington (Washington ME)	0	0	*	*	0	*	*	.	.	4	100	.	97	100
Winter Harbor (Hancock ME)	0	0	0	0	0	*	*	.	.	.	.	.	77	99
Kittery Point (York ME)	0	0	0	0	*	*	*	.	.	.	.	100	100	100
Greenport (Suffolk NY)	30	3	*	*	66	115	*	2	0	0	1	14	12	0
Marshallberg (Carteret NC)	0	0	0	0	0	*	*	.	.	.	.	0	99	62
Matts Landing (Cumberland NJ)	0	0	0	*	*	*	0	.	.	.	49	99	93	.
Ocean City (Cape May NJ)	0	0	*	0	*	*	0	.	.	100	.	97	100	.
Virginia Beach (Virginia Beach VA)	0	0	*	*	*	*	*	0	0	3	4	25	98	1

Note: Only ports with at least 100,000 in landed valued in 2005. * Cannot report landings for ports with less than 3 active vessels.
Source: dealer weighout and permit records.

4.4.5 Limited access fishing under general category rules

The level of fishing effort by limited access vessels under general category has fluctuated over time. Table 40 summarizes scallop landings by limited access vessels for trips equal to or less than 400 pounds per trip. The level of landings and number of vessels that have participated in this component of the fishery has varied with time. When catch per day was lower for limited access vessels in the late 1990s for example, the amount of scalloping under general category was relatively high. From 2000-2004 landing were in the ballpark of 200 to 300,000 pounds from this activity, or about 0.5% of total landings. There has been an increase in limited access trips under 400 pounds in recent years (2005 and 2006). The number of limited access vessels with trips less than 400 pounds is described in Table 47. In general, most limited access vessels have taken at least one trip under 400 pounds. Furthermore, according to Table 48, most trips were over 100 pounds.

Table 49 describes the average scallops landed under 400 pound trips for each limited access permit category over time. For part-time vessels in particular, landings under 400 pound trips have been relatively high for most years going back to 1994. And in terms of percent of total scallop landings from trips less than 400 pounds, the majority of scallop landings for occasional vessels are from trips less than 400 pounds and for some years the same is true for part-time vessels (Table 50).

Table 47. Number of limited access vessels taking general category trips (i.e.,<=400 lb. trips) by permit category

FYEAR	FT	PT	OT	Grand Total
1994	137	28	14	179
1995	113	18	9	140
1996	108	24	NA	NA
1997	90	20	3	113
1998	99	16	3	118
1999	89	21	5	115
2000	144	38	10	192
2001	126	52	16	194
2002	114	34	16	164
2003	198	51	15	264
2004	207	45	12	264
2005*	232	44	4	280

** Preliminary data*

Table 48. Number of limited access vessels taking general category trips (i.e.,<=400 lb. trips) by MAX. trip lb. category

FYEAR	<100 lb.	>=100 lb.	Grand Total
1994	46	133	179
1995	30	110	140
1996	33	101	134
1997	21	92	113
1998	30	88	118
1999	27	88	115
2000	56	136	192
2001	50	144	194
2002	36	128	164
2003	72	192	264
2004	21	243	264
2005*	10	270	280

** Preliminary data*

Table 49. Average scallop pounds per vessel from general category trips (i.e.,<=400 lb. trips)

FYEAR	FT	PT	OT	Grand Total
1994	642	236	202	544
1995	551	495	524	542
1996	457	569	NA	NA
1997	715	1174	60	779
1998	1568	554	129	1394
1999	1770	2232	537	1800
2000	1517	4969	378	2141
2001	1734	4070	456	2255
2002	673	3963	772	1364
2003	788	4732	382	1527
2004	1815	9925	630	3143
2005*	4130	11657	5692	5335

**Preliminary data*

Table 50. General category scallop landings as a % of total scallop landings (i.e.,<=400 lb. trips)

FYEAR	FT	PT	OT	Grand Total
1994	5%	69%	89%	22%
1995	5%	40%	67%	14%
1996	5%	33%	NA	NA
1997	3%	28%	100%	10%
1998	6%	17%	100%	10%
1999	5%	17%	70%	10%
2000	3%	9%	81%	8%
2001	3%	8%	75%	10%
2002	4%	10%	66%	11%
2003	1%	5%	100%	8%
2004	3%	16%	76%	8%
2005*	6%	15%	87%	8%

** Preliminary data*

Table 51 summarizes the limited access vessels that have trips under 400 pounds by primary port. This table gives a better sense of what areas and permit types are currently active in this activity. For example, most part-time and occasional vessels that fished under general category in 2005 are from New York and New Jersey. Furthermore, most full-time vessels that fished under general category in 2005 were from the Mid-Atlantic as well, only 15 of 72 vessels were from states in New England. In terms of dependence on this activity, Table 52 describes the portion of total revenue from general category fishing for these limited access vessels. About 3% of average revenue for the full-time vessels that participated in general category fishing came from trips under 400 pounds. While over 15% of total revenue from scallops for part-time and occasional vessels came from trips under general category.

Table 51. Limited access vessels with general category landings by primary port of landing in 2005 fishing year

State of landing	Full-time		Part-time and occasional	
	Number of vessels	GRT (Average)	Number of vessels	GRT (Average)
MA+NH	15	118	5	90
NY+NJ	28	133	14	111
Oth.Mid.At.	29	144	7	108
All	72	134	26	106

Table 52. Dependence on general category scallop landings as a % of total revenue in 2005 fishing year for limited access vessels

Permit category	Number of active vessels with general category trips	Total revenue per vessel	Scallop revenue per vessel	Scallop revenue as a % of total revenue	General category scallop lb. as a % of total scallop lb.	General category revenue as a % of total revenue
Full-time	72	$1,183,552	$1,073,259	91.4%	3.2%	2.9%
Part-time+Occasional	26	$710,539	$591,089	80.9%	15.8%	12.8%

4.4.6 Cost of fishing in the sea scallop fishery

This section provides information on the variable and fixed costs of fishing for both general category and limited access vessels. Fishery management measures not only affect the level of landings and prices of fish, but also have an impact on the trip and operating costs of fishing. The restrictions on the number of days-at-sea vessels can fish in a given year, or on the number of trips they can take to certain areas, and/or the restrictions on the number of crew they can employ are examples of measures that can reduce or increase those expenses. Since costs constitute a fundamental part of the producer surplus, crew shares and profits, the evaluation of net national benefits and the analysis of economic impacts on vessels require an estimation of these costs.

4.4.6.1 Variable Costs

Variable and fixed costs for the general category scallop vessels were updated using the observer cost data for the 2002-2005 period. All the costs were adjusted for inflation and expressed in 2004 prices. There were a total of 342 observations included in the data for 105 unique vessels with general category permit, of which 55 were scallop dredge and 50 were trawl vessels. Most of the data were collected in 2005 (235 observations) as shown in Table 53.

The variable costs for a scallop vessel are defined as those expenses that increase or decrease with the level of fishing activity. The trip costs include food, ice, water and fuel, and are usually paid by crew in the scallop fishery out of their shares from the gross stock. Other variable costs include trip costs, expenses on gear and supplies. Average trip costs, including food, fuel, oil, ice, water, and fishing supplies, amounted to $328 per day-at-sea in 2005. It is difficult to reach a conclusion regarding the trends in trip costs over time since a different number of vessels with varying gross tonnage and horsepower were included in the cost data for each year. For example, observer data for 2002 included only 4 small general category vessels with an average 15 gross tons, considerably smaller than the 87 general category vessels included in 2005 sample avergaing 79 gross tons. However, there has been an increasing trend in the fuel costs per DAS as the fuel prices almost doubled in 2005 as compared to 2002-03 fishing years. As a result, the share of fuel costs amounted to 89% of trip costs in 2005.

Table 53. Trip characteristics per general category vessel during 2002-2005 (in 2004 inflation adjusted prices)

Data	Year				Average of 2002-2005
	2002	2003	2004	2005	
Number of observed trips	5	6	96	235	342
Number of unique vessels	4	4	42	87	137
GRT	15	59	59	79	70
HP	310	431	424	449	437
Crew	3.0	2.5	3.0	3.2	3.1
DAS per trip	1.3	1.4	1.5	1.7	1.6
Scallop lb. per trip	317	358	424	371	383
Scallop lb. per DA	283	274	247	233	241
Average fuel costs per DAS ($)	50	152	202	283	247
Fuel costs as a % of total trip costs	64%	79%	86%	89%	87%
Average of food costs per DAS ($)	19	28	18	24	22
Other trip costs (Ice, water, supply, oil)	11	13	19	21	20
Average trip costs per DAS ($)	80	193	238	328	289
Average fuel price (nominal)	1.0	1.0	1.5	2.1	1.9

Using annual PPI for the fish year for all finished goods (used seasonally adjusted monthly numbers to derive PPI for the fish year).

Table 54. Trip costs by gross tonnage during 2001-2005 (in 2004 inflation adjusted prices)

Data	Gross tonnage		
	Less than 50 GRT	50-99 GRT	100 GRT or larger
Number of vessels	61	27	49
GRT (average)	26	72	125
HP (average)	381	400	547
Crew (average)	3	3	4
DAS per trip (average)	1.3	1.8	1.9
Average fuel costs per DAS ($)	193	292	290
Average total trip costs per DAS ($)	224	332	324

Table 55. Trip costs per limited access vessels during 2002-2005

Data	Year				Average of 2001-2005
	2002	2003	2004	2005	
Number of observed trips	37	74	151	105	367
Number of unique vessels	26	49	103	84	262
GRT	156	161	151	144	151
HP	815	827	792	769	794
Crew	7	7	7	7	7
DAS per trip	9	12	9	8	9
Scallop lb. per trip	12,097	17,239	17,521	15,947	16,382
Scallop lb. per DA	1,150	1,473	1,925	1,511	1,625
Average fuel costs per DAS ($)	428	535	562	768	605
Fuel costs as a % of total trip costs	59%	64%	63%	70%	65%
Average of food costs per DAS ($)	170	153	157	180	164
Other trip costs (Ice, water, supply, oil)	132	147	177	147	158
Average total trip costs per DAS ($)	730	835	896	1094	928
Average fuel price (nominal)	1.0	1.1	1.4	2.1	1.5

Table 56. Trip costs per limited access vessel during 2002-2005

	Data	Year			
		2002	2003	2004	2005
Less than 100 grt	Number of unique vessels	3		8	6
	GRT	88		78	78
	HP	447		476	493
	Crew	5		6	6
	DAS per trip	10		5	5
	Average fuel costs per DAS ($)	285		422	618
	Average total trip costs per DAS ($)	469		675	811
100 to 149 GRT	Number of unique vessels	6	14	39	25
	GRT	131	128	131	130
	HP	749	618	610	594
	Crew	7	7	6	6
	DAS per trip	8	9	8	8
	Average fuel costs per DAS ($)	415	434	488	669
	Average total trip costs per DAS ($)	721	662	782	1,036

150 GRT or larger	Number of unique vessels	15	29	47	34
	GRT	184	180	178	178
	HP	945	960	965	1,012
	Crew	7	7	7	6
	DAS per trip	10	13	10	10
	Average fuel costs per DAS ($)	462	584	647	923
	Average total trip costs per DAS ($)	755	895	955	1,157

4.4.6.2 Fixed Costs

The fixed costs include those expenses that are not usually related to the level of fishing activity or output. These are insurance, maintenance, license, repairs, office expenses, professional fees, dues, and utility, interest, and dock expenses. The expenses on insurance, maintenance, repairs and replacement of engine, electrical and processing equipment, gear and other equipment are collected by observer data since 2001 and provided by Economic Analysis Division of Northeast Fisheries Science Center, Woods Hole. There are unfortunately only 40 scallop vessels in the dataset that had data for all of these items. The data for these vessels, most of which were limited access vessels, are shown in **Table 57**. Average fixed costs for these vessels are about $160,486. Because of the small sample of vessels, it is not possible to reach a conclusion regarding the trends in fixed costs since 2001. It must be cautioned that these costs do not include interest payments on mortgage, and a variety of other expenses such as office expenses, accounting and bank fees. Therefore, actual fixed costs of vessels could be higher than these numbers shown in the following Tables.

Table 57. Annual fixed costs for general category scallop vessels by year (for active vessels only). 2004 prices

Data	2002	2003	2004	2005	2002-05 Average
Number of vessels	26	40	90	143	299
GRT	65	81	81	84	81
HP	384	433	444	461	445
Insurance ($, in 2004 prices)	15,694	20,197	22,103	24,968	22,661
Maintenance ($, in 2004 prices)	27,878	24,200	30,796	29,434	29,008
Repairs and replacement ($, in 2004 prices)	31,647	29,866	32,312	27,364	29,561
Total fixed cost ($ in 2004 prices)	75,218	74,263	85,211	81,767	81,230

Note: only those observations for which data on all items,ie.e. insur, maint. and repairs was available included in these Tables. A few outlieers are eliminated.

Table 58. Annual fixed costs of active general category vessels by ton class 2002-05 average, 2004 prices

Data	<=50 GRT	51-100 GRT	101-150 GRT	>150	Grand Total
Number of vessels	114	68	89	28	299
GRT	24	77	129	166	81
HP	338	383	553	690	445
Maintenance ($ in 2004 prices)	8,144	22,071	36,006	40,782	22,661
Repairs ($ in 2004 prices)	13,605	31,617	44,101	37,417	29,008
Insurance ($ in 2004 prices)	21,425	23,081	43,940	32,713	29,561
Total fixed cost ($ in 2004 prices)	43,174	76,768	124,047	110,912	81,230

Table 59. Annual fixed costs for limited access scallop vessels by year (for active vessels only). 2004 prices

Data	2002	2003	2004	2005	2002-05 Average
Number of vessels	11	24	35	27	97
GRT	153	154	145	158	152
HP	753	792	756	821	783
Insurance ($, in 2004 prices)	30,194	47,756	51,381	54,603	48,978
Maintenance ($, in 2004 prices)	54,147	66,420	39,861	60,172	53,706
Repairs and replacement ($, in 2004 prices)	62,893	86,124	60,495	39,098	61,152
Total fixed cost ($ in 2004 prices)	147,234	200,299	151,737	153,873	163,836

Table 60. Annual fixed costs of limited access scallop vessels by ton class 2002-05 average, 2004 prices

Data	51-100 GRT	101-150 GRT	>150	Grand Total
Number of vessels	7	37	53	97
GRT	89	130	175	152
HP	406	689	897	783
Maintenance ($ in 2004 prices)	23,751	44,505	55,433	48,978
Repairs ($ in 2004 prices)	28,490	52,980	57,543	53,706
Insurance ($ in 2004 prices)	106,736	51,519	61,857	61,152
Total fixed cost ($ in 2004 prices)	158,977	149,005	174,832	163,836

Table 61. Annual fixed costs of full-time limited access scallop vessels by ton class 2002-05 average, 2004 prices

Data	101-150 GRT	>150	Grand Total
Number of vessels	28	50	78
GRT	130	175	159
HP	715	889	827
Maintenance ($ in 2004 prices)	48,963	55,459	53,127
Repairs ($ in 2004 prices)	52,562	54,411	53,747
Insurance ($ in 2004 prices)	60,006	55,748	57,277
Total fixed cost ($ in 2004 prices)	161,531	165,618	164,151

4.5 OTHER FISHERIES

4.5.1 Other fisheries general category vessels are involved in

The general category fleet is heterogeneous and most vessels have other federal permits. Table 62 describes the number of permits in other fisheries held by general category IB permit owners for application year 2005. Furthermore, Table 63 describes the percent of general category vessels that have other permits by fishery. About three quarters of all general category vessels in 2005 had one of the following permits, bluefish, dogfish, monkfish, multispecies and/or a squid-mackerel butterfish permit.

Table 62. Other permits held by General category vessels with 1B permits during the 2005 application year

PLAN	Total
Bluefish	662
Black sea bass	225
Dogfish	673
FLS	307
Herring	543
Lobster	689
Monkfish	701
Multispecies	721
Ocean quahog	475
Red crab	429
Scallop	2
GC Scallop 1A	651
Scup	250
Summer flounder	484
GC Scallop 1B	836

Table 63 - 2005 permits held by General Category scallop vessels

Plan	%	Plan	%	Plan	%
Bluefish	78.0	Lobster (LOI)	0.04	Scup	27.6
Black Sea Bass	27.1	Monkfish	76.4	Skates	64.9
Dogfish	76.7	Multispecies	78.5	Surf Clam	53.0
Summer Flounder	29.2	Ocean Quahog	51.8	Squid-Mackerel-Butterfish	73.9
Herring	61.7	Red Crab	41.6	Tilefish	53.7
Lobster (LO)	52.7				

Source: NE Permit Data.

Table 39 summarizes the trip characteristics of general category vessels from 2005. In general, most trips directed on scallops (over 50% or more of total fish landed per trip). When the percent of scallop pounds landed was lower (0-25%) other species these vessels landed were higher per trip such as groundfish, monkfish, and fluke. In terms of dependence on other fisheries, Table 36 and Table 37 summarize the landed value of all species from general category vessels from New England and the Mid-Atlantic. For New England, scallops were a small percent of total landings until 2005 (7.5%) and 2006(10.3%). Consistently higher species in terms of percent of total landed value have been cod and monkfish. For the Mid-Atlantic, scallops have increased dramatically in terms of the overall landed value for vessels homeported in this region. In 2004, about

10% of all landed species were scallops, it rose to about 30% for 2005, and so far for 2006 it is about 44%.

In terms of revenue, Table 27 through Table 29summarize the percent of total revenue from scallops for general category vessels and revenue from other fisheries. The majority of the active scallop vessels derived 10% or less of their total revenue from scallops, whereas an increasing number of vessels earned 90% or more of their fishing revenue from scallops in the recent years. Only 26 vessels; however, landed 30,000 lb. or more scallops during 2004 with an average of 96% dependence on scallop income.

Table 192 describes the composition of revenue for general category vessels, based on their total revenue from scallops. For example, on average, vessels that make less than 10% of their total revenue from scallops have revenue in other fisheries such as multispecies, loligo squid, clam, etc. There is also a significant number of vessels that depend on scallops for over 90% of total income. For fishing years 2001-2005 the number of vessels with over 90% dependence on scallops has increased from 76 to 483.

4.5.2 Non-target species and bycatch

Non-target species, or bycatch include species caught by scallop gear that are not landed, including small scallops. The impacts of the scallop fishery on bycatch have been minimized to the extent practicable. Amendment 10 analyzed the impacts of new management measures (ring size, larger twine top, open area DAS, etc.) on bycatch, relying mainly on recent gear surveys and the general relationship between total area swept and bycatch. In general, the larger twine top mesh allowed greater escapement of many but not all finfish species with minor losses of sea scallops (particularly in areas having larger scallops). The effects of the increase to a 4" minimum ring size were assessed for various species observed in field trials, but the major effect came from a greater efficiency in catching scallops over 110-120 mm. Efficiency was forecast to increase by about 10-15%, reducing area swept by the same amount. Since most species were caught incidentally less frequently in dredges with larger rings and efficiency improved in most areas, Amendment 10 estimated that bycatch would decline, particularly in areas having most scallops larger than 110-120 mm. The increase to a minimum 4" ring in all areas did not occur until December 2004, however. Amendment 10 also estimated that the reductions in open area DAS would also reduce total area swept and increase scallop LPUE, particularly of larger scallops in the long-term. Appendix IX of Amendment 10 details scallop and finfish bycatch estimates in the scallop fishery (http://www.nefmc.org/scallops/index.html).

Framework 16/39 estimated the total bycatch of many finfish species from observed trips taken in controlled access areas. It also estimated the amount of sampling needed in each area to estimate the total bycatch of a given species with various levels of precision. In general, rotational area management is designed to improve and maintain high scallop yield, while minimize impacts on groundfish mortality and other finfish catches. Access programs may even reduce fishing mortality for some finfish species, because the total amount of fishing time in the access areas is very low compared with fishing time in open areas. See Sections 6.1.1.2 and 6.1.1.3 of Framework 16/39 for more information about the expected impacts on bycatch from that action. Catches of regulated species in the

access areas were expected to be less than 10% of the overall TAC in the Multispecies FMP. This amount is less than a level that the Groundfish PDT identified as having a possible repercussion for meeting the groundfish mortality targets and having an effect on rebuilding overfished groundfish stocks. Many of the impacts are expected to be similar for Framework 18 since this that action implemented similar specifications for rotational area management in similar areas for fishing years 2006 and 2007.

Groundfish Mortality Closed Areas

The groundfish closed areas were originally established to reduce the effects of fishing on spawning cod and haddock, in particular Closed Areas I and II. Peak spawning activity occurs in February to April, coinciding with the original seasonal closures. After spawning, these fish often disperse to other areas during their annual migration. Yellowtail flounder is another species that was intended to be protected by the groundfish closed areas. The Georges Bank stock is predominately found on the southeastern and northwestern portions of Georges Bank, overlapping the proposed access areas in Closed Areas I and II. Unlike spawning cod and haddock, however, yellowtail flounder tend to remain in these locations year around. The Southern New England stock of yellowtail flounder was one of the primary intended beneficiaries of the Nantucket Lightship Area. Most of this stock occurs in the portions of the Nantucket Lightship Area that will remain closed to scallop fishing, or in other areas of Southern New England and the Mid-Atlantic region where scallop fishing occurs in open areas. More details about the biological characteristics of groundfish species in the closed areas is provided in the FSEIS for Amendment 13 to the Multispecies FMP.

The biological characteristics of other species found in the groundfish closed areas and the proposed access areas can be found in the Skate FMP and Monkfish FMP EIS documents. In general, several skate species are often found in the proposed access areas. The Skate FMP identified the conservation associated with the groundfish closed areas to be an important component of limiting mortality on skates. Although monkfish inhabit and are caught in the groundfish closed areas, the center of the monkfish distribution is in the Gulf of Maine to the north, and in deeper waters off Southern New England to the west.

Appendix V of Framework 18 summarizes the spatial and temporal distribution of observed hauls and also summarizes the mean catch rates (lbs/hr) of commonly observed species in scallop dredge incidental catches. Recently, NMFS has increased sea sampling on trips made by scallop vessels using dredges. Since 1999, sea sampling in access areas had been enhanced by an industry-funded TAC set-aside program. During this time, 584 scallop trips and 31,230 tows had been observed. NMFS also increased sampling on open area trips, particularly in the Mid-Atlantic, in response to new observations of interactions with sea turtles in the Hudson Canyon Area (on access area trips using observers funded by the TAC set-aside). Sampling increased from 26 trips and 1,348 tows in 2002 to 77 trips and 4,896 tows in 2003, enabling NMFS to estimate the total incidental captures of sea turtles during 2003. Sampling again increased to 173 trips and 8,100 tows in 2004, almost and eight-fold increase from the sampling level during 1992 to 2002.

5.0 ENVIRONMENTAL IMPACTS

The impacts of the alternatives on different aspects of the affected environment are described below. The various impacts on the scallop resource are described in Section 5.1 and the expected impacts on the physical environment and EFH are summarized in Section 5.2. In addition, the impacts on threatened, endangered and other protected species are summarized in Section 5.3. Section 5.4 includes the economic analyses and Section 5.5 summarizes the social impacts of alternatives under consideration. Lastly, Section 5.6 summarizes other impacts including impacts on non-target species, other fisheries, and enforcement and safety. The cumulative effects of the alternatives considered in this action on all of these valued ecosystem components (VECs) combined is summarized in Section 5.7.

5.1 IMPACTS ON SCALLOP RESOURCE

5.1.1 Measures to control capacity and mortality in the general category scallop fishery

5.1.1.1 No Action

Under this alternative, the general category fishery would remain an open access fishery. No changes to the current permit system for the general category scallop fishery would be implemented under this alternative.

Based on recent trends in the general category fishery, this alternative makes it difficult for the Scallop FMP to prevent overfishing (Alternative 3.1.1). The general category fishery is open access, and if conditions are right in terms of scallop price and availability of resource relatively close to shore, the only limit on general category effort is a possession limit. Currently, approximately 3,000 general category open access permits exist, and these permits could be used to fish for scallops under general category rules 365 days a year (2,950 permits for FY2005). Since Framework 17, a general category vessel is required to have VMS if they want to land more than 40 pounds of scallops. This could reduce the number of vessels permitted to land up to 400 pounds a day, but there is nothing in the regulations preventing any vessel from getting a general category VMS permit. Therefore, the capacity and fishing mortality of this portion of the scallop fishery could exceed what is estimated by the management program and risk overfishing of the resource.

The Scallop PDT is able to predict mortality from the limited access portion of the fishery fairly well, but the mortality from the general category fishery is for the most part an educated guess because it is an open access fishery. Under No Action, there is an increased likelihood that overfishing could occur. Under open access it is very difficult to predict the level of effort from the general category fishery, so it is inevitable that estimations will underestimate mortality, especially if levels of general category effort continue to increase. For example, if regulations in other fisheries increase and vessels decide to fish under general category to recover revenue lost in other fisheries, this component of the scallop fishery may further expand. The estimate of mortality from the general category fishery for FY2006 ended up being close to what actually occurred for

that portion of the fishery, but if the estimate were lower, overfishing would have likely occurred in 2006.

It is difficult to estimate quantitative biological consequences of the No Action alternative because the open access nature of the fishery complicates estimating fishing mortality from this component of the fleet. The Scallop PDT considered running the projections with several estimates of general category mortality under No Action, but any value used would be very subjective. As previously stated, open access may increase the risk that estimates could be inaccurate and that fishing mortality estimates could be exceeded. In addition, this component of the fishery tends to fish in nearshore waters, which are currently below average in terms of scallop abundance. The No Action alternative would not help reduce potential fishing pressure in open areas along the coast and could lead to localized overfishing in those areas. In general, the fishing strategy for a general category vessel is different than a limited access vessel because their cost structure is very different. A larger vessel cannot afford to fish in an area with low scallop abundance so they will move. A smaller vessel has lower costs and may continue fishing in an area where scallops are less abundant. This difference could lead to localized overfishing if smaller vessels can still afford to fish in such areas and there is little control on total mortality from those vessels.

In addition, under the No Action alternative there is limited control on the potential growth of the general category fishery aside from elements outside of the scallop management arena, such as price, opportunity in other fisheries, etc. If effort in the general category fishery increases beyond estimates used in scallop projections for management and that level of effort may lead to overfishing, it is possible that future reductions could be made to reduce impacts on the scallop resource. But those reductions could only occur in future years and the only measure that could be taken to reduce mortality from the general category fishery under No Action would be to reduce the possession limit. Therefore, reductions in mortality would most likely come from the limited access component of the fishery since that component of the fishery is managed with tools (e.g. DAS) that can be reduced to directly reduce fishing mortality.

5.1.1.2 Limited Entry

In order to fish under general category rules a vessel would have to qualify for a limited access general category permit. All other vessels that do not qualify would be permitted to fish for scallops under incidental catch rules. Limited entry in and of itself would have positive impacts on the resource as compared to the No Action alternative by reducing the number of potential participants. The alternatives under consideration would reduce the potential pool of participants from 143 to around 705 (depending on which qualification alternatives are selected). However, if qualifiers are still permitted to fish up to 400 pounds per day 365 days a year, the ability to prevent overfishing from this component of the fishery is reduced.

5.1.1.2.1 Qualification criteria alternatives

Three alternatives are being considered: landings of 100 or more pounds of scallop meat on one trip (Alternative 3.1.2.1.1); annual landings of 1,000 pounds in any fishing year

during the qualification time period selected (Alternative 3.1.2.1.2); and annual landings of 5,000 pounds in any fishing year during the qualification time period selected (Alternative 3.1.2.1.3).

In terms of impacts on the scallop resource there is no significant difference between these three qualification criteria alternatives provided that the total removal of scallops from the vessels that qualify is the same. For example, more vessels will qualify under the 100 pound alternative, but the total amount of scallops removed from this group of vessels should be the same as the other alternatives. The difference is that each qualifying vessel would be allocated a smaller percent of the total general category TAC, or if a hard TAC is adopted, all qualifiers would be prohibited from landing scallops under general category rules once the TAC is caught. Therefore, the direct impacts of the three qualification criteria alternatives on the scallop resource are minimal.

5.1.1.2.2 Qualification time period alternatives

In addition to the qualification criteria described above, a vessel has to meet the landings criteria during one of three qualification time period alternatives: March 1, 2003 through November 1, 2004 (Alternative 3.1.2.2.1); March 1, 2000 through November 1, 2004 (Alternative 3.1.2.2.2); and March 1, 1994 through November 1, 2004 (Alternative 3.1.2.2.3).

In terms of impacts on the scallop resource there is no significant difference between these three time period alternatives provided that the total removal of scallops from the vessels that qualify is the same. Similar to the section above, these three alternatives will influence how many vessels qualify, not directly affecting the scallop resource if additional limits on effort or a hard TAC is adopted. Therefore, the direct impacts of the three qualification time period alternatives on the scallop resource are minimal.

5.1.1.2.3 Determination of qualification amount (contribution factor)

Once the universe of vessels is identified there are two alternatives for determining a final qualification amount for each vessel. One alternative uses a vessels best year during the qualification time period (Alternative 3.1.2.3.1), and one that uses a vessels best year but applies an index of years active in the scallop general category fishery (Alternative 3.1.2.3.2). There is an additional alternative under this section that would cap an individual's contribution factor at 50,000 pounds (Alternative 3.1.2.3.3).

Since these alternatives only affect the contribution factor used to determine a vessels access to the resource (allocation), these alternatives will not have direct impacts on the scallop resource.

5.1.1.2.4 Allocation of access for general category limited access qualifiers

The DSEIS includes several alternatives for allocation combined with limited entry. The first system is an individual allocation; an individual amount in pounds or total number of trips would be awarded to individual vessels that qualify. The second system would also be an individual allocation, but there would be two permit types (part-time and full-time). The part-time permit would have a reduced possession limit of 200 pounds, and the full-

time permit category would have a possession limit of 400 pounds. All vessels that qualify would receive an equal allocation in pounds or total number of trips depending on which tier they qualify for. The third alternative is a tiered permit system; all vessels that qualify for each tier would receive an equal allocation in pounds or total number of trips, all with a 400 pound possession limit. A fourth stand alone alternative was developed, which is an individual transferable fishing quota system, but all vessels that had a permit before the control date would be given a permit, not just vessels that had landings during the qualification time period. However, a permit that did not have landings history would not be allocated specific access to the fishery, but would be permitted to lease or buy quota from another vessel. Lastly, the Council recommends that an alternative that allocated a fleetwide hard TAC be analyzed, rather than an individual based system. There is also a seasonal hard TAC alternative.

Most of these alternatives include an individual allocation program. The major differences between these alternatives in terms of impacts are mostly economic and social in nature (See Section 5.4.8). In general, the impacts on the scallop resource from all the individual allocation alternatives are expected to be similar because there is a total amount of scallops that is permitted to be removed under each alternative. However, there are potential differential impacts on the scallop resource from a system that allocates in pounds versus trips. If qualifying vessels are awarded access in trips could increase incentive for vessels to change behavior and land up to the maximum 400 pound limit, since the total number of trips would be limited. If some general category vessels only land a more incidental level of scallops now (40-400 pounds), the allocation in trip alternatives may increase effort if these vessels change behavior to land more scallops per trip, thus negative impacts on the scallop resource. This potential increase in effort is limited however because there is a maximum TAC for the entire fleet under both the individual pound and trip alternatives.

A fleetwide hard TAC without limited entry (Alternative 3.1.3) would control mortality in the general category fishery. However, excess capacity would likely result because more vessels would have permits to catch the general category TAC than needed. Even with limited entry there still will likely be excess capacity, but to a much less degree. Hard TACs without limited entry can have negative impacts of derby fisheries, see Section 5.4.8.6 for a discussion of these impact on the fishery. If the fleetwide hard TAC with limited entry is divided up by quarter (Alternative 3.1.2.4.7 Option A) or trimester (Option B) that will improve negative impacts of a derby fishery, but depending on when the quarters/trimesters are defined could have an impact on the scallop resource. For example, meat weight varies as much as 20% per year, so mortality could be higher if the quarterly hard TAC is not divided to reflect that change in meat weight. However, since the quarters/trimesters are going to be divided based on historical landings, then the periods of time with higher meat weights (spring and summer) are probably reflected in the breakdown of quarterly/trimester landings, so potential impacts on scallop mortality from allocating more TAC in a season with lower meat weights is reduced.

5.1.1.2.5 Limited entry permit provisions

This amendment will consider measures to govern activities such as vessel sales, limited access permit transfers, permit splitting, changes to vessel size, and establishment of vessel baselines to evaluate changes to vessel size, etc.. These measures would apply to all general category permits that qualify for limited access if limited access is adopted under Amendment 11.

The alternatives under consideration for limited entry permit provisions are not expected to have any direct impacts on the scallop resource. There are alternatives related to vessel upgrade restrictions, which could allow a vessel to increase its fishing power (Alternative 3.1.2.5.2.1 and Alternative 3.1.2.5.2.2), but if this action also limits the total harvest of limited entry qualifiers, then these alternatives would not ultimately impact the scallop resource. Likewise, there is an alternative that could potentially qualify two limited access general category permits from one vessel (Alternative 3.1.2.5.1.2). While this alternative could increase capacity, if the total fishing mortality for the general category fishery is limited (i.e. hard-TAC) then there should be no additional impacts from this alternative on the scallop resource.

5.1.1.2.6 Measures to reduce incentive for limited entry qualifiers to fish for scallops with trawl gear

These alternatives reduce incentive for qualifying vessels to target scallops with trawl gear. The Scallop PDT analyzed VTR data from 2005 for trips landing scallops with trawl gear. Most trips where scallops were landed using trawl gear were targeting other species; however there are a number of vessels that target scallops using trawl gear. In summary, when general category vessels with trawl gear were targeting other species like groundfish, monkfish, skate, squid and scup, about 50% of the trips landed less than 300 pounds per trip. In fact, for many of the other species, average scallop landings were lower. Table 64 summarizes the average scallop landings per trip by target species for general category vessels using trawl gear.

Table 64 - Percentiles of scallop landings per trip by target species for general category vessels using finfish trawls.

			Percentile						
Target species or group	**Trips**	**Vessels**	**5%**	**10%**	**25%**	**50%**	**75%**	**90%**	**95%**
Yellowtail flounder	152	68	50	60	114	231	369	400	400
Groundfish	163	69	45	50	65	100	150	380	400
Summer flounder	178	59	50	63	111	300	340	394	400
Skate	37	18	68	80	100	273	396	400	400
Monkfish	91	54	50	50	100	206	347	400	400
Scallops	2778	84	50	220	300	300	398	400	400
Scup	14	6	26	31	79	275	324	400	400
Loligo	9	7	59	73	150	300	300	314	342
Lobster	1	1	*	*	*	*	*	*	*
All	3423	203	50	97	286	300	395	400	400
All but scallops	645	160	50	50	90	180	340	400	400

Alternative 3.1.2.6.2 was developed to prevent an expansion in general category scallop effort using trawl gear and Alternative 3.1.2.6.3 was developed to reduce incentive to fish for scallops with trawl gear. Trawl gear is believed to have greater impacts on scallop

mortality because it is capable of catching smaller scallops. Based on comparative fishing experiments between scallop trawl and dredge gear in 1997 and 1998 in the Mid-Atlantic, trawl vessels were found to be more efficient at catching sea scallops less than 90mm and dredge gear is more efficient at catching larger scallops (Rudders et al, 2000). The trawl vessels in this study caught and kept smaller scallops; therefore by reducing incentive to fish for scallops with trawl gear could reduce mortality. Since dredge gear is more efficient at catching larger scallops, fewer scallops are harvested to reach the same overall poundage of scallop meat. The differences in relative harvest efficiency may be explained by behavioral characteristics of the sea scallop. Smaller scallops (less than 100mm) have been found to be highly mobile (Caddy, 1968, Dadswell and Weihs, 1990), and as a dredge approaches they elicit a flight response (Caddy, 1968, Worms and Latienge, 1986). However, larger scallops with a shell height greater than 100mm are more sedentary and live in shallow depressions in the substrate (Bourne, 1964). Since dredge gear scrapes just beneath the surface, it is more effective at catching the larger scallops that trawl gear may skim over. Furthermore, the dredge ring size used in this research was 3.5-inches; dredge ring width is now required to be at least 4-inches and net size has not changed for trawl vessels. Therefore, the difference in selectivity patterns between the two gear types is probably even greater with 4-inch rings.

One strategy of the rotational management program adopted in the Scallop FMP is to maximize yield per recruit and increase the spawning potential of the resource; therefore, if smaller scallops can remain in the ocean for a longer period of time there are beneficial impacts on the overall scallop resource.

The majority of limited access and general category scallop landings are by dredge vessels. Table 188 shows the breakdown of scallop landings by gear type for the general category permit category for FY2005. If an alternative in this section is adopted it is possible that the level of landings by trawl vessels would decrease. Figure 36 shows the location of general category trips with scallop landings using otter trawl gear from calendar years 2001 through 2004. Figure 37 shows the location of general category trips with scallop landings using scallop trawl gear from the same fishing years, and Figure 38 is for scallop dredge gear.

Figure 36 – Location of general category trips from calendar years 2001-2004 on vessels with fish otter trawl gear (dark circles) over all general category trips (lighter circles) (VTR data)
Note: typo in legend – FW18 lawsuit settlement should read FW16 lawsuit settlement

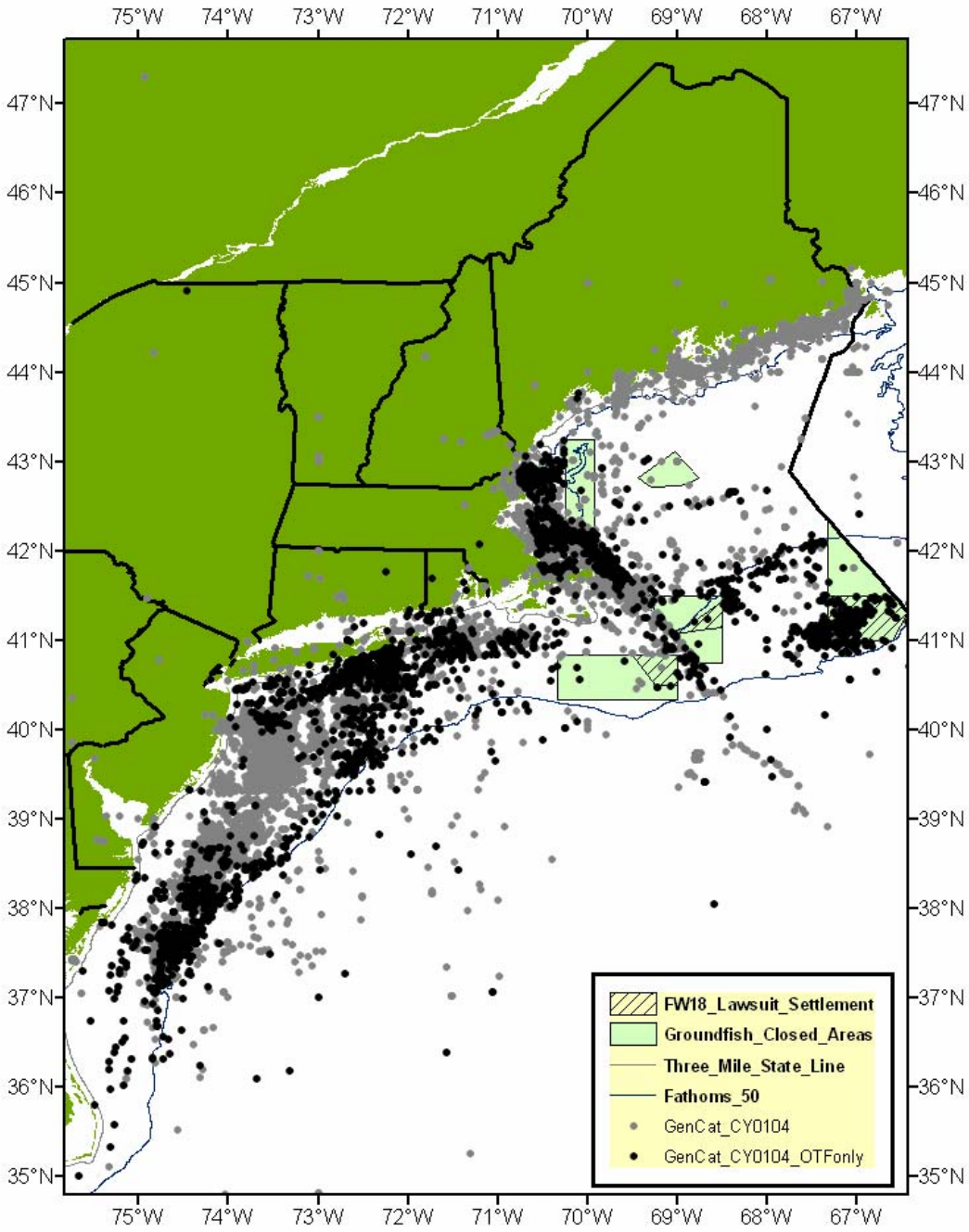


Figure 37 – Location of general category trips from calendar years 2001-2004 on vessels with scallop trawl gear (dark circles) over all general category trips (lighter circles) (VTR data)
Note: typo in legend – FW18 lawsuit settlement should read FW16 lawsuit settlement

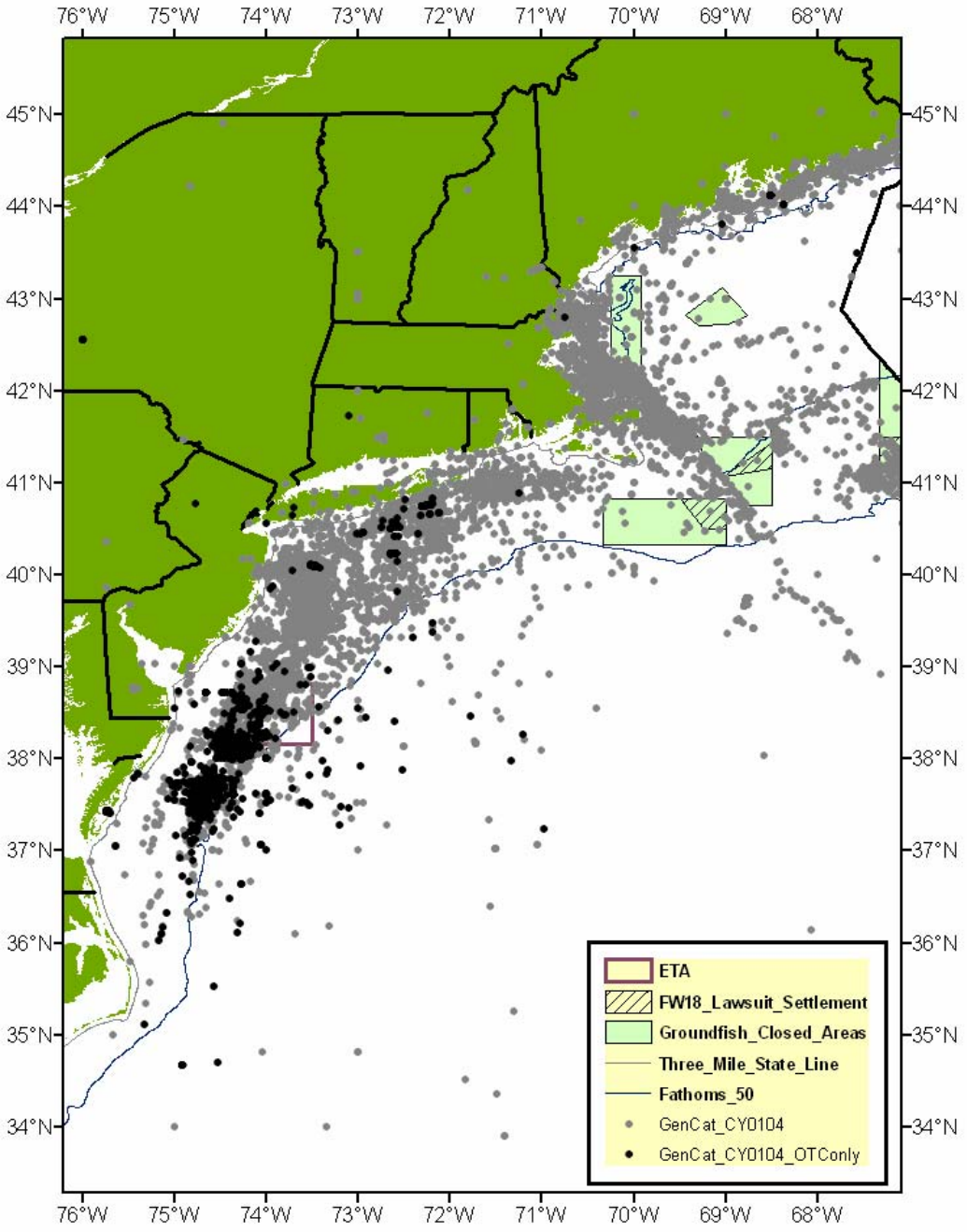
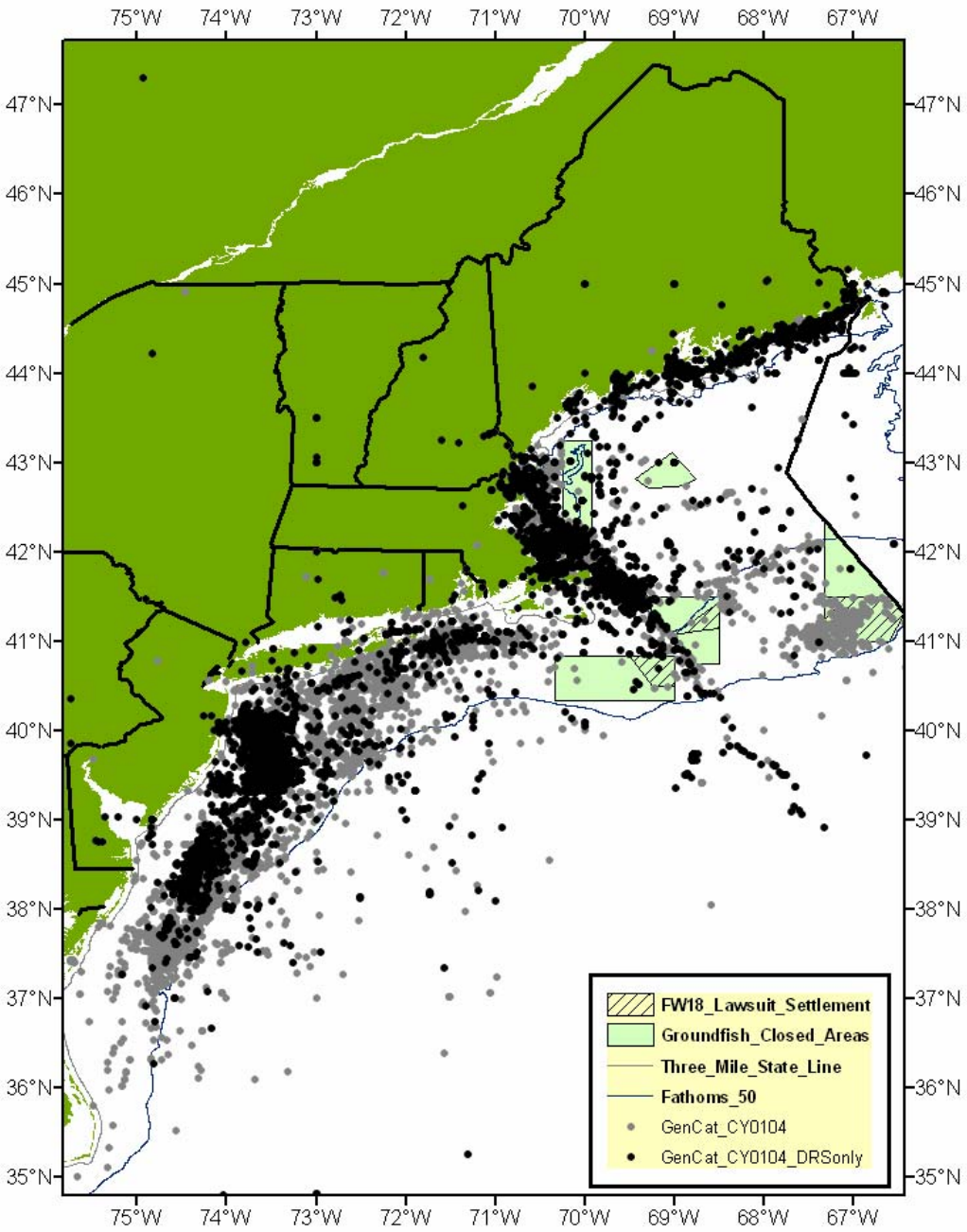


Figure 38 - Location of general category trips from calendar years 2001-2004 on vessels with scallop dredge gear (dark circles) over all general category trips (lighter circles) (VTR data)
Note: typo in legend – FW18 lawsuit settlement should read FW16 lawsuit settlement



Alternatives 3.1.2.6.3.1 and 3.1.2.6.3.2

The analyses below were used to describe general category effort in terms of gear type and to help identify lower possession limits to consider in this action. In general, these analyses suggest that fishing mortality is higher for trawl gear versus dredge gear based on the number of kept scallops per trip. Therefore, the alternatives that reduce incentives to fish for scallops with trawl gear are expected to have positive impacts on the scallop resource.

The substantial majority of trips targeting scallops with dredges landed nearly 400 lbs. on each trip, with more than 50% of the trips landing at least 395 lbs. (Table 65). Seventy-five percent of trips landed more than 322 lbs. and 90% landed more than 200 lbs. In comparison, there were 2,457 trips in 2005 that targeted scallops with a scallop trawl (Table 66). Not surprisingly, the scallop landings per trip were very similar to the profile by vessels using dredges. Fifty percent of the trips landed more than 380 lbs. of scallops and 75% landed more than 300 lbs. Similarly, 90% of trips targeting scallops with scallop trawls landed more than 250 lbs.

Table 65. Percentiles of scallop landings per trip by target species for general category vessels using **dredges**

			Percentile						
Target species or group	**Trips**	**Vessels**	**5%**	**10%**	**25%**	**50%**	**75%**	**90%**	**95%**
Summer flounder	18	2	*	*	*	*	*	*	*
Skate	6	3	161	163	184	245	268	313	331
Monkfish	4	5	100	140	259	329	343	364	370
Scallops	12461	327	120	200	322	395	400	400	400
Scup	1	1	*	*	*	*	*	*	*
All	12489	328	120	200	322	395	400	400	400

Table 66. Percentiles of scallop landings per trip by target species for general category vessels using scallop **trawls**.

			Percentile						
Target species or group	**Trips**	**Vessels**	**5%**	**10%**	**25%**	**50%**	**75%**	**90%**	**95%**
Summer flounder	8	6	124	179	318	395	400	400	400
Skate	3	1	*	*	*	*	*	*	*
Monkfish	3	3	45	46	47	48	174	250	275
Scallops	2457	72	76	250	300	380	400	400	400
All	2471	72	70	248	300	380	400	400	400

5.1.1.2.7 Sectors and Harvesting Cooperatives

This action is considering a process for the creation of fishing "sectors" and the allocation of TAC shares to the sectors within the general category fishery. Groups may be formed around common fishing practices, common homeport or landing port, common fishing area, common marketing arrangements, etc. This DSEIS details the eligibility criteria, operations plan elements, monitoring and enforcement of sectors, allocation rules, and other related issues.

None of the options related to establishing a sector are expected to have impacts on the scallop resource. In fact, if any the indirect impacts may be beneficial since voluntary sectors may be able to identify ways to fish more efficiently, potentially reducing bottom contact time and impacts on scallops and other species. It is presumed that a self-selecting sector will have a plan to manage their allocation in a way that mutually benefits the sector members and avoids wasteful fishing practices. Ideally, sector management would increase the long term sustainability of the scallop resource by creating a sense of stewardship and self-governance.

5.1.1.3 Hard Total Allowable Catch (Hard TAC)

One option to control mortality in the general category fishery aside from limited entry is implementing a hard total allowable catch limit. A hard TAC would be developed for the general category fishery, and when the Regional Administrator projects that TAC is going to be reached, the fishery would close.

In terms of impacts on the resource, the total removal of scallops from this alternative and the alternatives with limited entry should be similar. However, a fleetwide hard-TAC may have behavioral effects that could increase impacts on the scallop resource. For example, a hard TAC would increase the incentive to race for fish. If the entire general category hard TAC was available to all vessels with an open access permit it is likely that the TAC would be caught relatively quickly, potentially reducing optimal use of the resource. Furthermore, if the fishing year remains the same and the TAC is set at the start of the fishing year then most effort would be expected following the start of the fishing year. If the TAC is caught before average meat weights are at their maximum, then mortality will be higher.

5.1.2 Establish a Northern Gulf of Maine Scallop Management Area (NGOM)

During development of this action there has been considerable discussion of establishing a separate management system for the general category scallop fishery in the Gulf of Maine. It has been argued that the fishery in this area is distinct, and the resource experiences sporadic abundance.

5.1.3 Background on the scallop fishery in the Gulf of Maine

According to Amendment 10, all scallops in the US EEZ belong to a single stock. However, based on survey data and fishing patterns the stock can be divided into several regional components such as Georges Bank, Mid-Atlantic, Southern New England, and Gulf of Maine. According to SARC 39 (2004), biologically the stock is likely composed of smaller regional meta-populations with some movement of larvae from areas in the north to the south. While most scallops are harvested in depths between 30 and 100 meters, there are relatively small known amounts of sea scallop biomass in near-shore relatively shallow waters within the Gulf of Maine.

During discussions of Amendment 11 there has been some confusion about whether scallops in the Gulf of Maine are part of the scallop assessment. The sea scallop assessment determines the status of the stock, including the rate of removal or exploitation rate (based on fishery dependent data) and the current stock size or biomass

(measured using fishery independent data). The federal scallop survey is the primary source of fishery independent data used to estimate biomass or stock size. The federal scallop survey has been conducted annually since 1977 in Georges Bank, Mid-Atlantic and occasionally in other areas. However, the most recent assessment only uses data from 1982-2003 for Georges Bank because that is when the northern edge of Georges Bank was first surveyed. In addition, data from 1979-2003 are used for the Mid-Atlantic region. The assessment does not include data from stations in the Gulf of Maine or Southern New England because they are not sampled regularly.[2]

The other component of the assessment incorporates fishery dependent data to calculate the exploitation rate, or rate of removal by the fishery. Fishing mortality is estimated using commercial landings data from port samples and dealer data prior to April 1994, and on dealer and VTR data after April 1994. The landings are prorated based on location information provided by the industry into one of four areas (Georges Bank, Mid-Atlantic, Gulf of Maine, and Southern New England). While landings are recorded in these four areas, only landings from Georges Bank and the Mid-Atlantic are used in the fishing mortality estimate. Therefore, removals from the Gulf of Maine and Southern New England are not included in the assessment either.

Figure 39 depicts the overall landings from the Gulf of Maine from 1964 through 2003 according to data from SARC 39 (2004). Mean landings from this area for this time series are 1.21 million pounds (547 mt.). The vast majority of landings from the Gulf of Maine are within state waters. There are a few abundant areas offshore in federal waters, but many of these areas are currently within habitat closed areas so are not accessible to the scallop fishery (Jefferies Bank, Cashes Ledge, Stellwagen Bank). Schick (pers. comm.) provided the following as federal waters areas off the Maine coast which have historically been productive for scalloping:

- Jeffreys Ledge
- Platts Bank
- Fippennies Ledge
- Great Duck Island (off Mt. Desert Is.)
- Libby Islands (off Machiasport)

The following information on Maine offshore scallop fishing is from Walton (1980):

> "Offshore (scalloping) areas are not as completely documented but localized fisheries have occurred in the vicinity of Jeffreys Ledge and Cashes Ledge. Other areas may include Platts Bank and off Machias Seal Island. It is difficult to quantify historical production for these areas since data are not available and production peaks tend to coincide with the appearance of one or more successful year classes in a given area.

[2] See SARC 39, specifically the *SAW 39 Report* for additional information regarding the data used in the sea scallop assessment.

The sea scallop has been characterized by irregular abundance in most areas of the coast and this probably results from biological and environmental factors. This variability has tended to generate cyclic fisheries in which the discovery of a large population of harvestable scallops leads to a rapid expansion of the fishery and the subsequent depletion of the stock. This variability occurs in both inshore and offshore areas; the 1975-76 scallop fishery in the Castine area of Penobscot Bay and the 1979-80 fishery off Jeffreys Basin are examples of the rapid expansion of harvesting of newly discovered scallop beds…

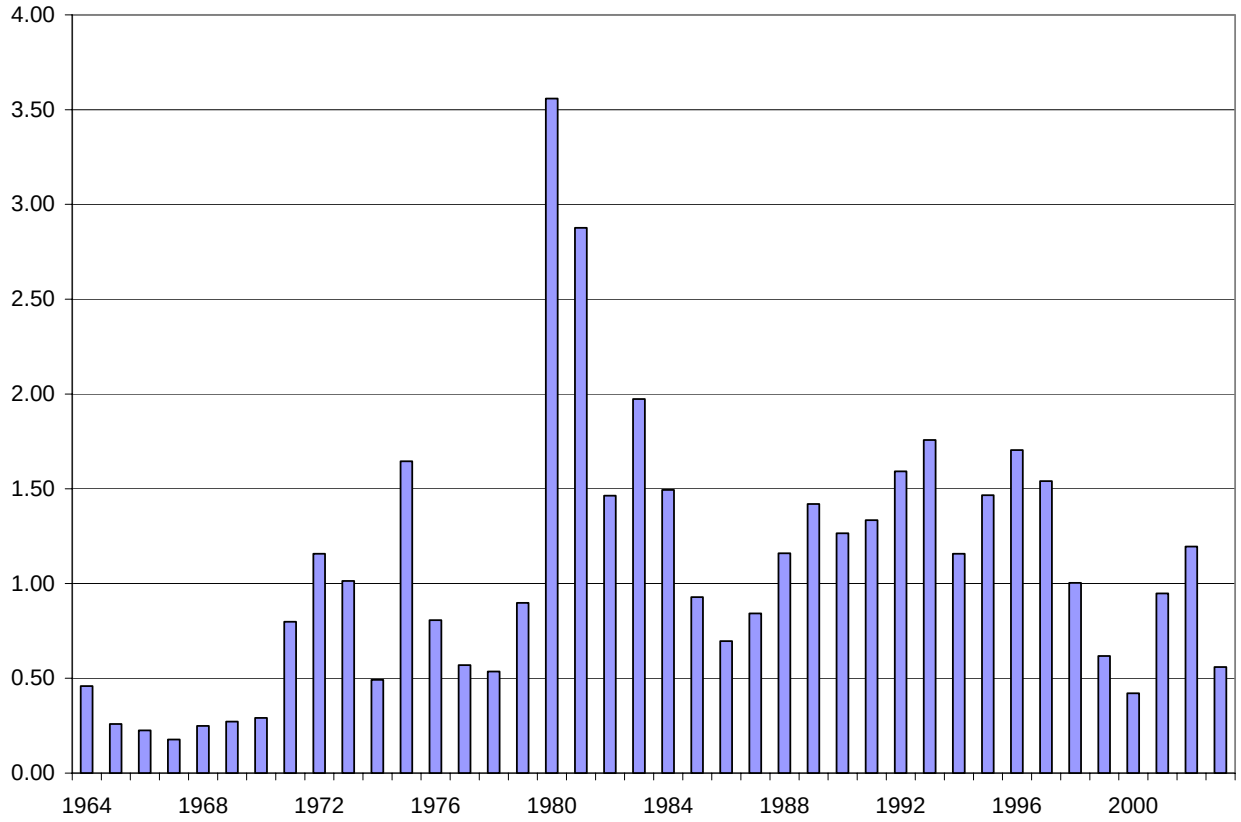
Offshore scalloping is not well documented for the Gulf of Maine fisheries. Landings data for 1979 (Richard Barnard, NMFS, personal communication) do indicate some recent harvesting patterns and are presented in Table 67.

Table 67 – Maine scallop landings, 1979 (shucked meat in pounds). (Source: Walton, 1980)

	Coastal Area			
Location	Eastern (511)	Central (512)	Western (513)	**Totals**
0-3 miles, offshore	128,741	461,678	12,054	602,473
3-12 miles, offshore	0	1,903	492	2,395
Beyond 12 miles	0	32,606	67,424	100,030

Jeffreys Ledge (514)	11,012
Cashes Ledge (515)	69,646
Georges Bank (523)	292,826
Georges Bank (524)	85,263
Total	558,777

Figure 39 – Annual landings (in million pounds) from the Gulf of Maine (Source: SARC 39-data includes all landings reported through VTR)



Overall, landings from the Gulf of Maine are very small in comparison to total landings.

Figure 40 displays the portion of total landings from the Gulf of Maine as compared to total annual landings. On average for this 40 year time series, landings from the GOM account for roughly 7.6% of total landings, as high as 26.2% in 1972 and as low as 1.0% in 2003 (Table 68). In 1980, landings from the GOM reached as high as 3.56 million pounds (17.7% of the total) and as low as 0.18 million pounds in 1967, or 2.5% of total landings. While landings were 0.56 million pounds in 2003, the percent of total landing from this area was only about 1% since landings have been so high from the Mid-Atlantic area.

Figure 40 – Annual landings by area (Source: SARC 39 Report)

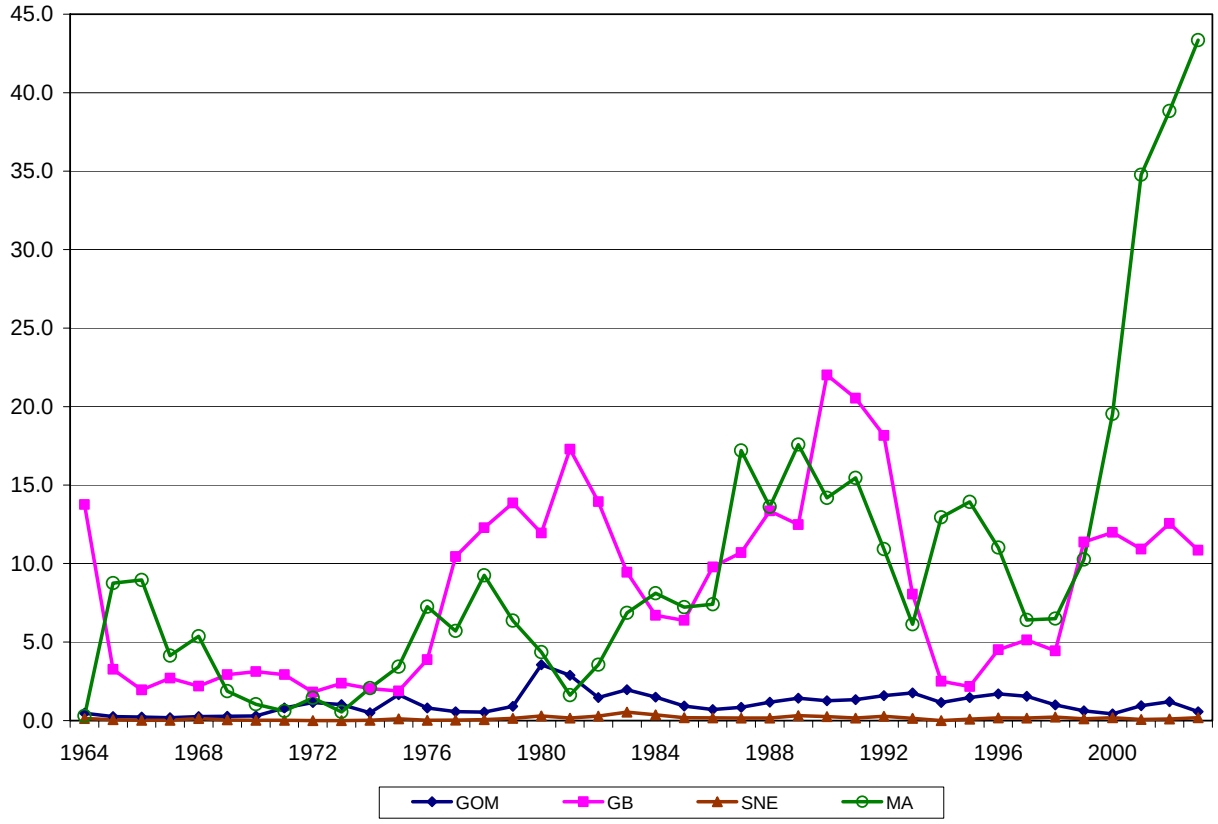


Table 68 – Summary of annual landings by area from 1964-2003 (Source: SARC 39 Report).

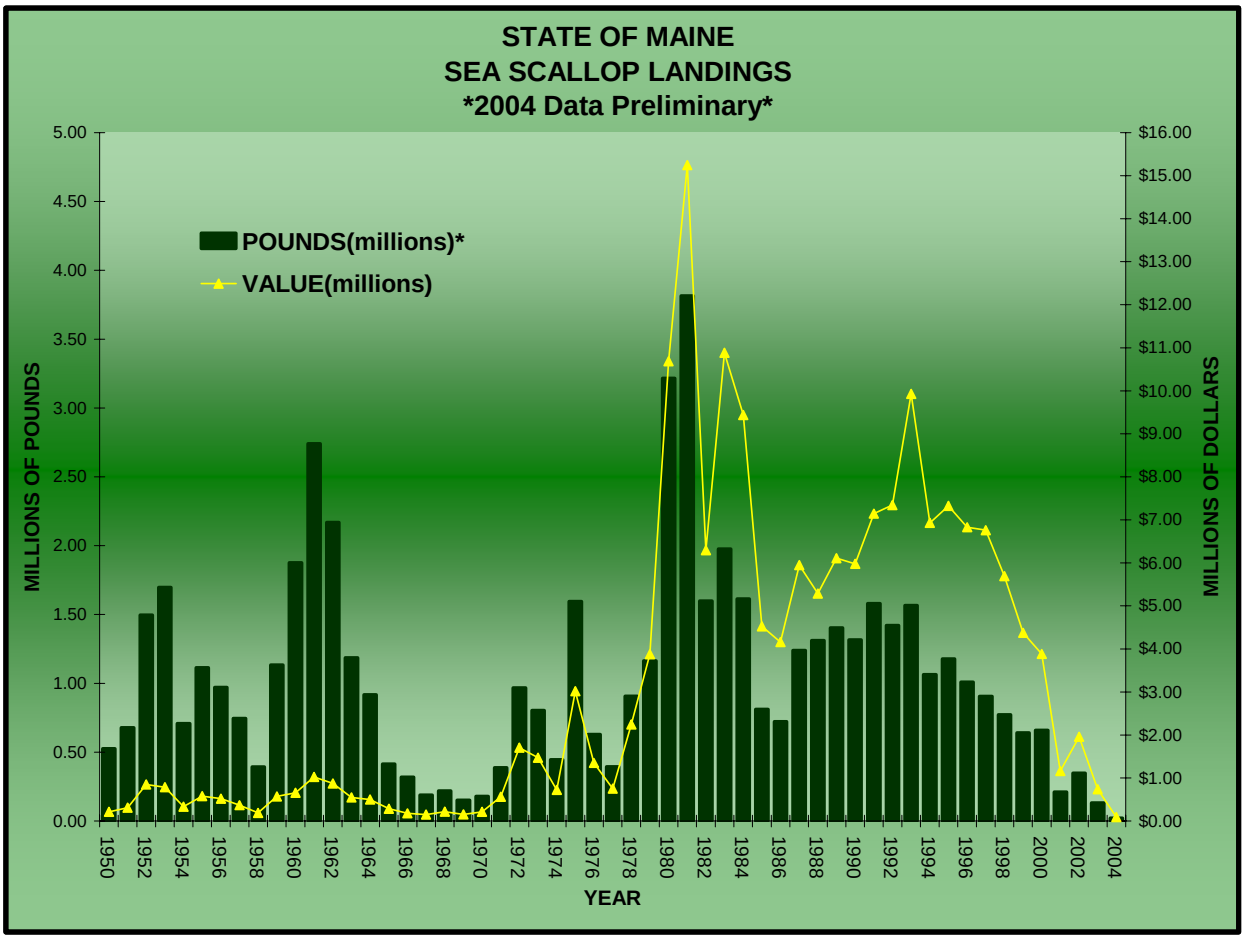
Year	GOM		GB		SNE		MA		Total
1964	0.46	3.1%	13.76	94.0%	0.12	0.8%	0.30	2.1%	14.64
1965	0.26	2.1%	3.27	26.5%	0.06	0.5%	8.76	71.0%	12.34
1966	0.22	2.0%	1.95	17.5%	0.02	0.2%	8.95	80.3%	11.14
1967	0.18	2.5%	2.69	38.4%	0.02	0.3%	4.13	58.9%	7.02
1968	0.25	3.1%	2.19	27.6%	0.12	1.6%	5.37	67.7%	7.94
1969	0.27	5.3%	2.92	57.1%	0.04	0.8%	1.88	36.7%	5.11
1970	0.29	6.5%	3.12	69.8%	0.01	0.3%	1.04	23.3%	4.47
1971	0.80	18.4%	2.93	67.4%	0.02	0.4%	0.60	13.9%	4.35
1972	1.16	26.2%	1.81	40.9%	0.00	0.1%	1.45	32.8%	4.42
1973	1.01	25.7%	2.38	60.3%	0.01	0.2%	0.55	13.9%	3.95
1974	0.49	10.7%	2.04	44.3%	0.01	0.2%	2.07	44.8%	4.61
1975	1.64	23.2%	1.89	26.7%	0.11	1.6%	3.43	48.5%	7.08
1976	0.81	6.8%	3.88	32.5%	0.02	0.1%	7.25	60.6%	11.95
1977	0.57	3.4%	10.44	62.3%	0.02	0.1%	5.71	34.1%	16.75
1978	0.54	2.4%	12.28	55.5%	0.06	0.3%	9.25	41.8%	22.12
1979	0.90	4.2%	13.86	65.2%	0.15	0.7%	6.37	29.9%	21.27
1980	3.56	17.7%	11.95	59.3%	0.29	1.5%	4.35	21.6%	20.15
1981	2.88	13.1%	17.29	78.8%	0.15	0.7%	1.61	7.3%	21.93
1982	1.46	7.6%	13.94	72.5%	0.28	1.4%	3.55	18.5%	19.23
1983	1.97	10.5%	9.44	50.2%	0.54	2.8%	6.85	36.4%	18.81
1984	1.49	9.0%	6.71	40.3%	0.36	2.2%	8.10	48.6%	16.67
1985	0.93	6.3%	6.38	43.4%	0.18	1.2%	7.22	49.1%	14.71
1986	0.70	3.9%	9.78	54.2%	0.17	1.0%	7.41	41.0%	18.06
1987	0.84	2.9%	10.69	37.0%	0.15	0.5%	17.20	59.5%	28.89
1988	1.16	4.1%	13.35	47.2%	0.15	0.5%	13.62	48.2%	28.28
1989	1.42	4.5%	12.48	39.3%	0.30	1.0%	17.58	55.3%	31.78
1990	1.27	3.4%	22.01	58.4%	0.26	0.7%	14.19	37.6%	37.71
1991	1.33	3.6%	20.53	54.8%	0.16	0.4%	15.46	41.2%	37.47
1992	1.59	5.1%	18.16	58.7%	0.27	0.9%	10.92	35.3%	30.95
1993	1.76	10.9%	8.06	50.1%	0.15	0.9%	6.12	38.1%	16.08
1994	1.16	7.0%	2.51	15.1%	0.00	0.0%	12.95	77.9%	16.61
1995	1.47	8.3%	2.16	12.3%	0.08	0.4%	13.93	79.0%	17.64
1996	1.70	9.8%	4.51	25.9%	0.16	0.9%	11.02	63.4%	17.40
1997	1.54	11.6%	5.13	38.7%	0.15	1.1%	6.42	48.5%	13.24
1998	1.00	8.2%	4.44	36.5%	0.22	1.8%	6.50	53.4%	12.17
1999	0.62	2.8%	11.36	50.8%	0.12	0.5%	10.26	45.9%	22.36
2000	0.42	1.3%	11.99	37.3%	0.19	0.6%	19.53	60.8%	32.13
2001	0.95	2.0%	10.92	23.4%	0.07	0.1%	34.76	74.4%	46.70
2002	1.19	2.3%	12.55	23.8%	0.09	0.2%	38.83	73.7%	52.67
2003	0.56	1.0%	10.85	19.8%	0.19	0.3%	43.34	78.9%	54.94
Mean	1.21	7.6%	10.36	45.3%	0.19	0.7%	14.81	46.4%	19.64

[Will update this table with values for 2004 - 2006 based on table used in SARC45]

5.1.3.1 Focus on scallop fishing in the state of Maine

In the late 19th and early 20th century the sea scallop fishery primarily took place in near shore waters within the Gulf of Maine (Smith, 1891). In 2005, a final report was published on monitoring and enhancement in the Maine scallop fishery (Schick and Feindel, 2005). The report explains that fishermen from Maine have pursued the scallop fishery since the mid 1880s. The value of the inshore scallop fishery in Maine is generally among the top ten valued marine species for the state, and under certain market and resource conditions its overall value has been second only to lobster. The report also explains that the scallop fleet in Maine is very diverse including lobstermen, draggers, and divers. Some vessels are very mobile and fish in areas outside the Gulf of Maine, while many others stay in local waters. Figure 41 summarizes scallop landings and revenues from Maine state dealers from 1950 through 2004 (preliminary). Note that reporting by state dealers is voluntary in the state of Maine, so these values may not capture all landings.

Figure 41 – Summary of scallop landings and revenues reported through Maine state dealers



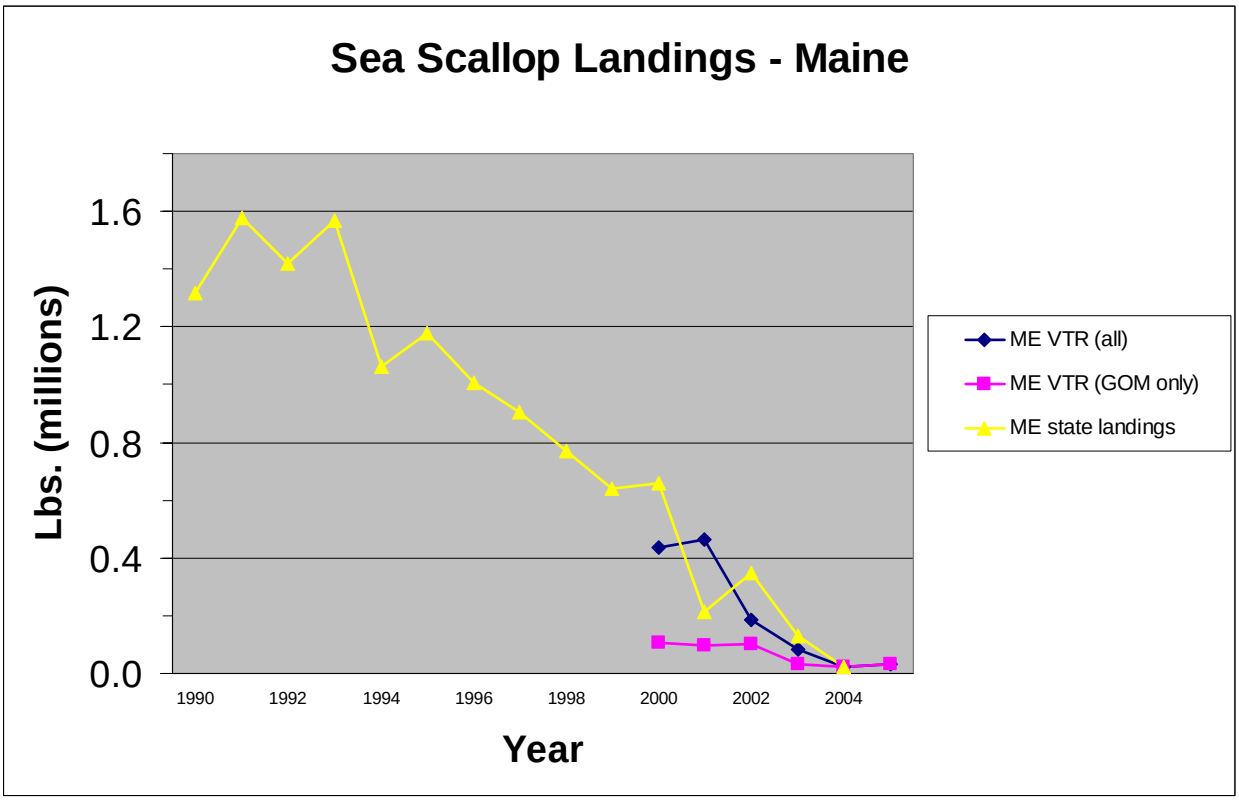
The primary management measures within state waters in Maine are: 1) a fishing season that is 4.5 months in length (December 1 to April 15); 2) a shell height minimum of 4inches, and 3) several gear restrictions including a 3.5 inch minimum ring size and max dredge width of 10 ft. 6 in. (smaller in some areas). Vessels fishing within state waters are not restricted by the 400 pound possession limit, but average landings per trip within state waters in Maine are lower than 400 pounds. In fact, according to port sample data from the Schick and Feindel report, average landings per trip was 57 pounds of meat for draggers (ranging from 2-180 pounds), and 38 pounds of meat per trip for divers (ranging from 2-140 pounds per trip per diver).

Vessels from Maine with a federal permit are required to report landings through VTR. However, vessels from Maine that do not have a federal permit and only fish in state waters are not required to report landings; state dealers report landings on a voluntary basis. Table 69 summarizes landings that have been reported by vessels from Maine through VTR, as well as total landings voluntarily reported by Maine state dealers (these figures include landings from limited access vessels from Maine).

Table 69 – Scallop landings from vessels homeported in Maine (ME VTR = federal vessels caught in all areas; ME VTR GOM only = landings from federal vessels caught in statistical areas 464, 465, 467, 511, 512, 513, 514, and 515; ME state landings = landings reported voluntarily by Maine state dealers

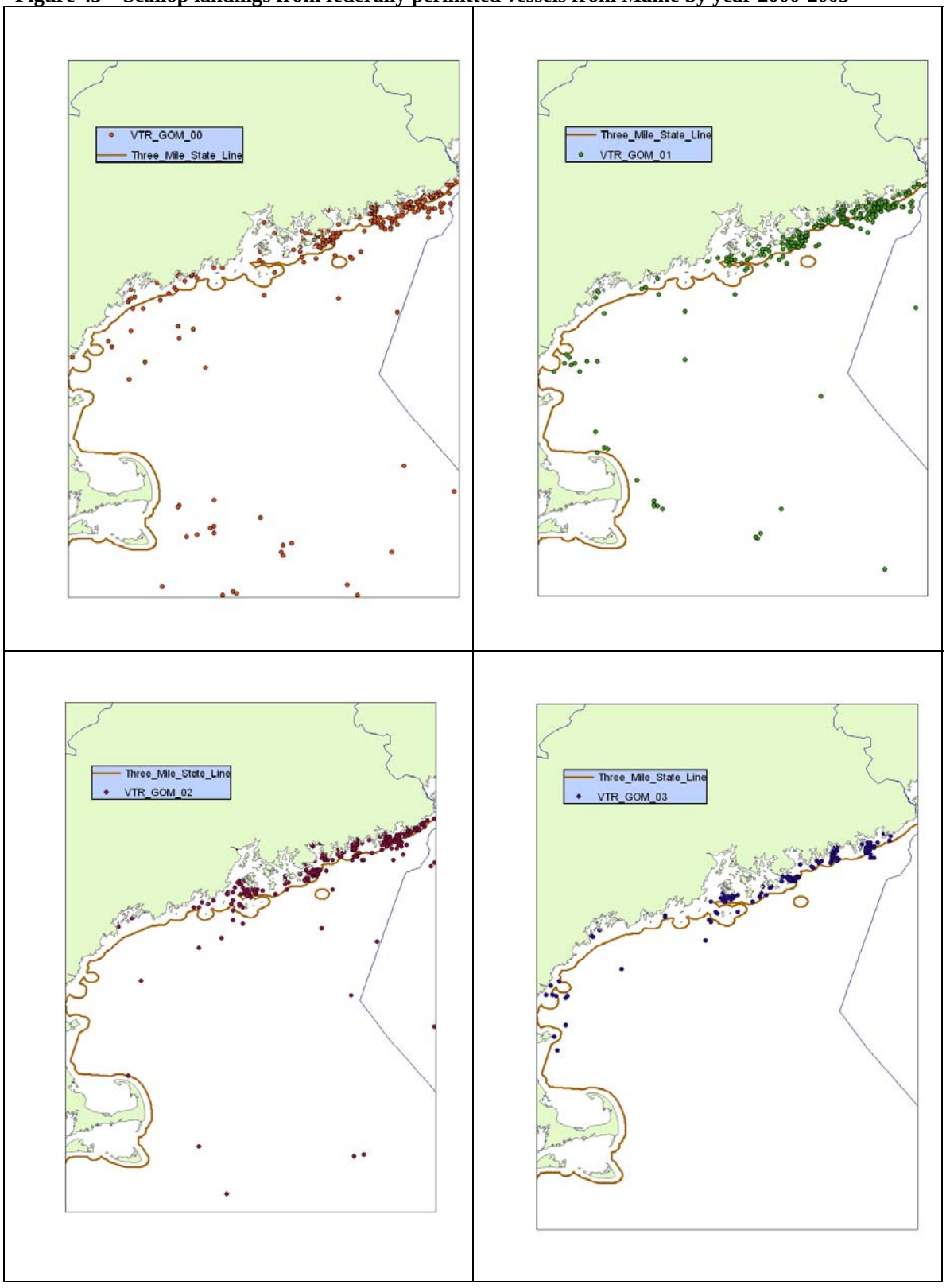
	ME VTR (all)	ME VTR (GOM only)	ME state landings
1990			1315773
1991			1579577
1992			1419839
1993			1566321
1994			1063608
1995			1177506
1996			1008329
1997			905137
1998			771471
1999			641692
2000	436556	105586	658568
2001	465603	97776	211558
2002	187041	101235	348470
2003	81602	31199	131849
2004	24852	23053	21433
2005	33804	31654	

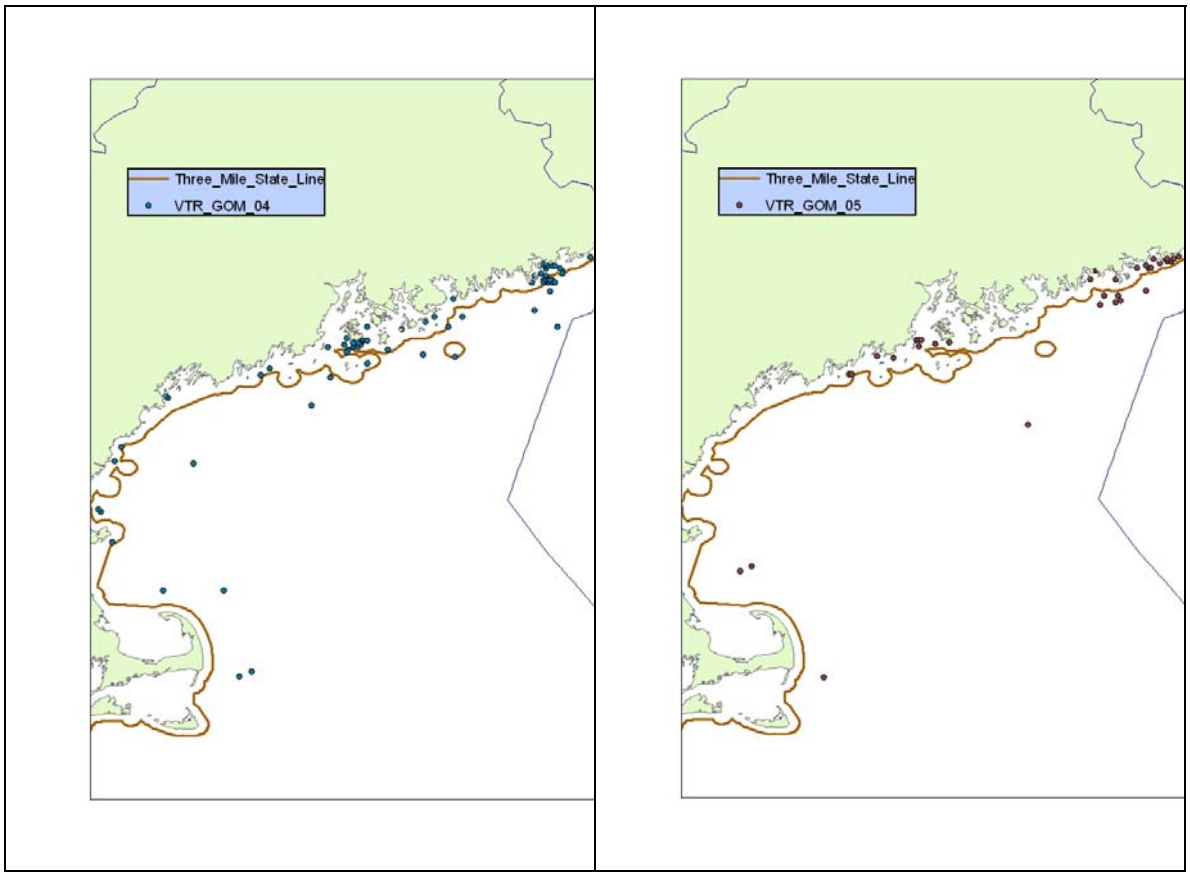
Figure 42 – Scallop Landings from vessels in Maine (federally permitted and state vessels)



VTR data from vessels homeported in Maine are plotted in the figures below from calendar years 2000-2005 (Figure 43). These data include both limited access and general category vessels. When considering these figures it is important to note that about one-third of the records did not have a location that could be plotted (no latitude/longitude recorded); therefore these figures do not represent the location of all landings by federal vessels from Maine, only landings where a vessel reported location. The majority of records with a reported location are within Maine state waters. The statistical areas that had the highest number of trips for all years combined for these years were 511, 512, 513, 467 and 521.

Figure 43 – Scallop landings from federally permitted vessels from Maine by year 2000-2005

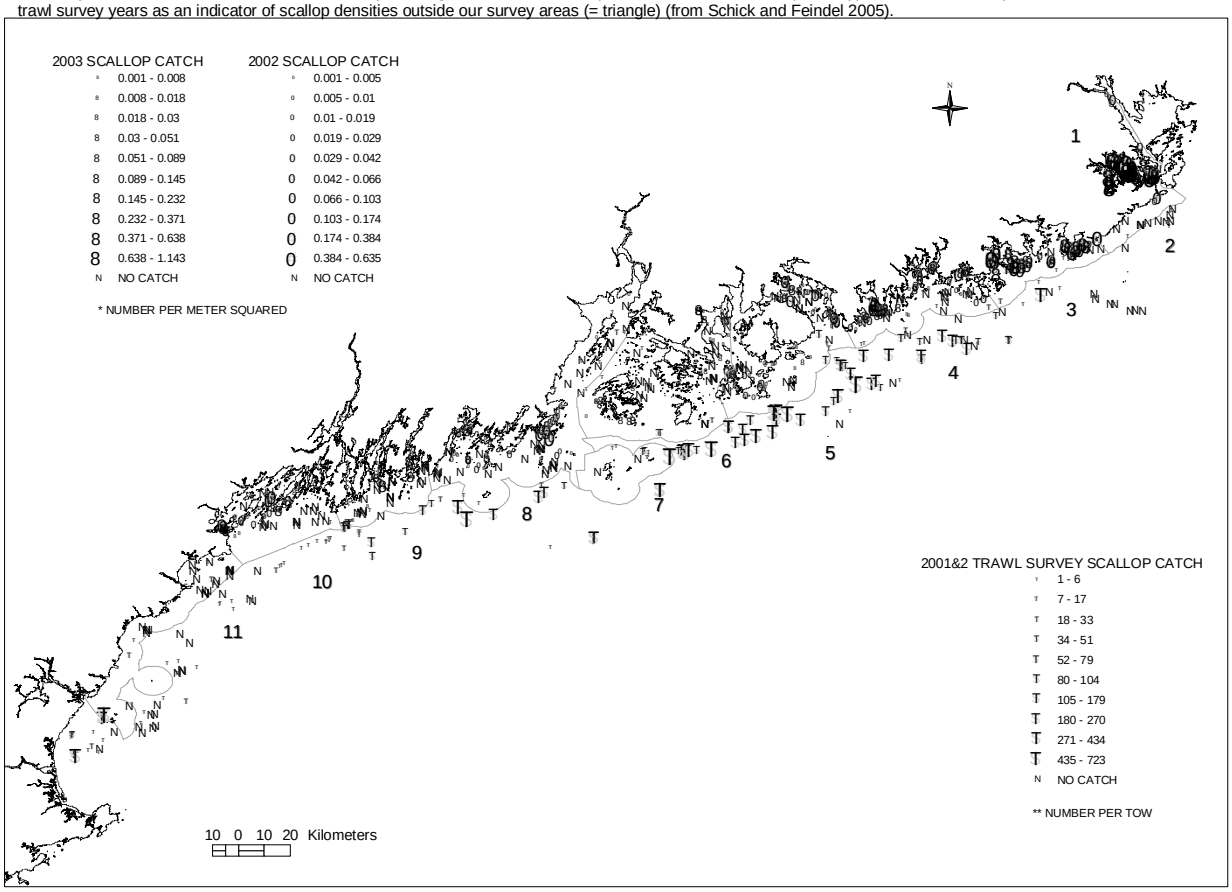




Maine DMR began a fishery-independent survey of the Maine nearshore scallop fishery in 2002. Schick and Feindel (2005) describe survey rationale, objectives, methodology and results in detail. A portion of the survey was designed to conduct a stock assessment of the Maine nearshore area which is currently most productive and also subject to special regulations (Cobscook Bay). Distribution and relative abundance of scallops from this survey are shown in Figure 10. The resource appeared healthiest in zones 1 (Cobscook Bay, which also had high seed density) and 3 (Machias Bay). Zone 4 (Gouldsboro Bay) was marked by intermediate catches relative to what was known anecdotally about past abundance, and Zones 5 and 6 (Mt. Desert Is. and Stonington) had poor abundance relative to past history from fishermen. The resource in Zones 7-10 (Isle au Haut to Casco Bay) was variable and patchy in terms of density and seed occurrence.

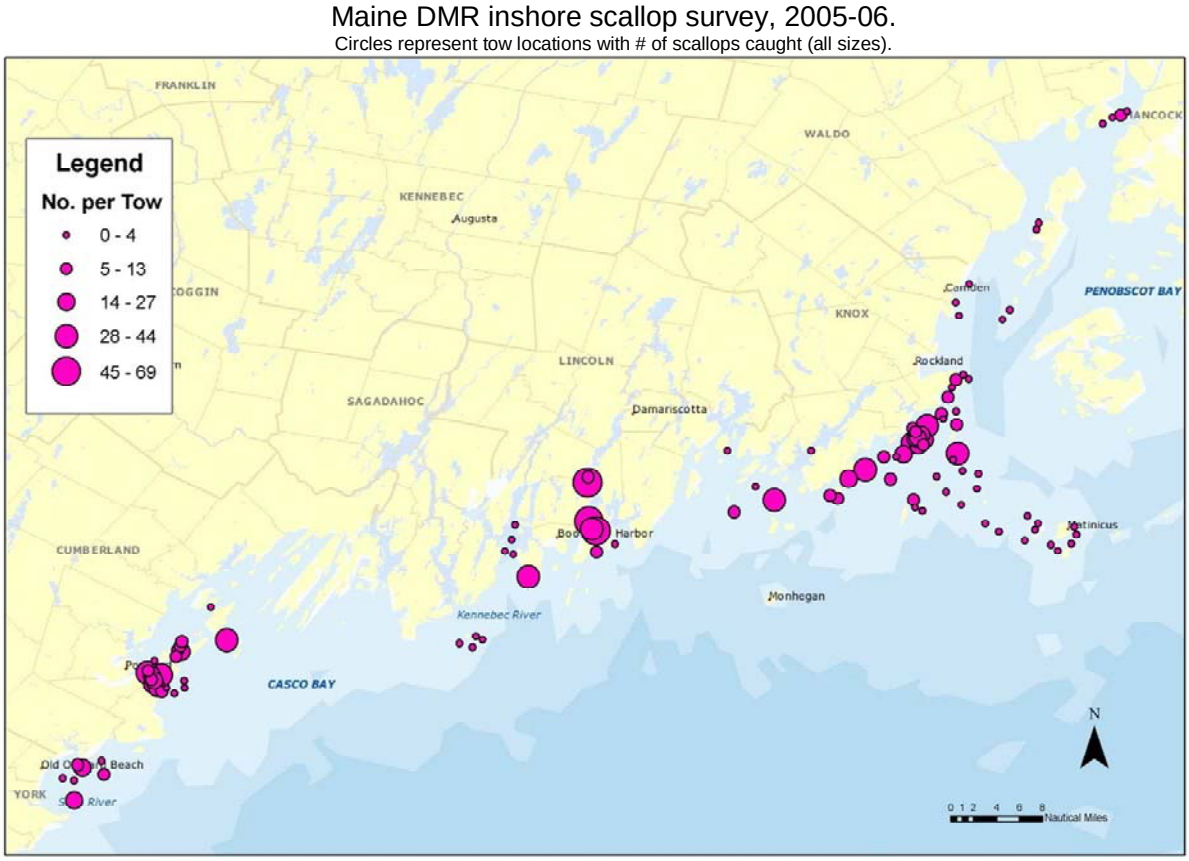
Figure 44 – Maine DMR Inshore Scallop Survey (2002-03)

Summary of coastwide abundance data and survey coverage for 2002 and 2003 (Maine DMR Inshore Scallop Survey). Also shows scallop data for 2001 and 2002 trawl survey years as an indicator of scallop densities outside our survey areas (= triangle) (from Schick and Feindel 2005).



The survey was updated in fall 2005-spring 2006 (Fig. 11) in the western section of the coast (Zones 8-11) and will be continued in fall 2006 in the eastern section of the coast (Zones 1-7), including Cobscook Bay.

Figure 45- Updated Maine DMR Inshore Scallop Survey (2005-06)



5.1.3.2 No Action

No specific measures would be considered for the Northern Gulf of Maine. Whatever is adopted under Amendment 11 would apply to the Northern Gulf of Maine; no separate limited entry program would be considered for that area.

This alternative would not have additional impacts on the scallop resource, since whatever is adopted in Amendment 11 would apply to this area as well. Therefore, whatever measures were selected to reduce capacity and mortality in the general category scallop fishery would apply to this area as well. See Sections 5.1.1.2 and 5.1.1.3 for a description of the biological impacts of the alternatives to reduce capacity and mortality in the general category fishery.

5.1.3.3 Amendment 11 would not apply to the Northern Gulf of Maine

If this alternative is selected by the Council then any measures adopted in Amendment 11 pertaining to controlling capacity and mortality in the general category fishery would not apply to waters in either: **Option A** - the GOM exemption area north of 42°20N (See Figure 3– hatched area north of 42°20) or **Option B** – waters in the EEZ north of 43N.

An open access permit to fish for scallops under general category would remain for this area, and a vessel could land up to 400 pounds of scallops per trip if the have VMS (IB permit). Any vessel from any area would be permitted to apply for and fish under an open access NGOM general category permit. A hard TAC would be established for this area and if reached vessels would be limited to possession of up to 40 pounds of scallops after the TAC was reached. The Scallop Committee recommends that the hard TAC for this area include scallop landings in both federal and state waters.

In terms of impacts on the scallop resource only, the number of vessels that have access to fish is not the issue so long as there is a total limit on removal (i.e. hard TAC). Since this alternative includes a hard TAC the potential negative impacts of open access are reduced. Once the TAC is reached the area is closed to all general category fishing. There has not been a large set of scallops in the GOM for sometime, so the incentive to fish for scallops in this area has been minimal. While this alternative would make a GOM general category permit available to any vessel, many vessels are not expected to fish for scallops in this area since it is far from traditional scallop ports and most of the areas that have had scallop beds are in state waters or are presently in closed areas. However, if a set of scallops do recruit in this area, there is a risk of overfishing the area with open access.

There may be some negative impacts on portions of the scallop resource related to the boundary options (Option A and Option B). The statistical areas used in the scallop assessment for the GOM are 512, 513, 515, 514 and portions of 464, 465, and 511 that are within the US EEZ. Therefore, both boundaries (Option A and B) are contained within the larger area used as the GOM for the scallop assessment. Option A adds additional area to the south of Option B which could have impacts on vessels that live and fish south of Option B that are directed general category vessels that would not want open access vessels having access to this area while they may be under limited access controls. Specifically, any area where limited access and open access vessels can participate simultaneously can be problematic without sufficient controls for both permit types.

5.1.3.4 Establish a Northern Gulf of Maine Management Area Limited Entry Program

This alternative would develop a separate limited entry general category program in the GOM exemption area north of 42°20N **(Option A)** (See Figure 3 – hatched area north of 42°20) or **Option B** – waters in the EEZ north of 43N. See Section 3.1.4.3 for the specifics about this alternative. Since this area would be under a hard TAC and limited entry there are not substantial biological impacts so long as the TAC is set at an appropriate level and can be effectively monitored.

The number of vessels that are expected to qualify under this alternative is 705, these are the same vessels that would qualify under the least restrictive qualification alternative for a general category limited access permit. If the most restrictive alternative is selected for the limited access general category permit (2003-2004 time period and 5,000 annual pounds) then only 134 vessels would qualify for that permit. Provided that the TAC is

set at the appropriate level and can be effectively monitored, this alternative should not have additional impacts on the scallop resource within the GOM. See Table 151 for a description of the vessels that would qualify for this permit.

5.1.4 Monitoring Provisions

5.1.4.1 No Action

Whether limited entry is adopted or not, vessels would still be required to report scallop landings through vessel trip reports (VTR). Vessels are currently required to report all landings within one month after a trip has been taken.

This alternative has indirect benefits on the scallop resource because reporting through VTR improves monitoring of fishing effort in the general category fishery.

5.1.4.2 Require landings and declaration of scallop trip through VMS

This alternative would require all general category vessels to report landings through VMS, and a vessel would also be required to call in to NMFS when they are leaving port to declare that they are going on a general category scallop trip. Vessels would be required to call in the hailweight and VTR number for each trip through the VMS system.

This alternative has additional indirect benefits on the scallop resource as compared to the No Action alternative because reporting through VMS improves monitoring of fishing effort in the general category fishery. It would be very difficult, if not impossible to monitor a hard TAC in real time without required reporting of hailweight through VMS.

5.1.4.3 Require landings and declaration of scallop trip through IVR system

Interactive Voice Reporting (IVR) is a system where vessels report landings on a weekly basis. This alternative would require IVR in addition to VTR.

This alternative has additional indirect benefits on the scallop resource as compared to the No Action alternative because reporting through IVR improves monitoring of fishing effort in the general category fishery. IVR is used in other fisheries to monitor a TAC, but it is not as real time as VMS reporting and does not include location information.

5.1.5 Limited access fishing under general category rules

5.1.5.1 Permit or prohibit limited access vessels from fishing under general category

The amount of limited access effort under general category has fluctuated over time (See Section 4.4.5 for a description of this sector of the fishery). When conditions are right (i.e. abundant resource nearshore, good scallop prices, reduced opportunity under limited access privileges, etc.) and it is economic for limited access vessels to fish under general category, this component of effort is expected to increase. This type of effort is somewhat limited by factors such as price, cost of fuel etc. Therefore, the No Action alternative for this section (to permit all limited access vessels to fish under general

category rules outside a DAS) it is not expected to have substantial impacts on the scallop resource.

Alternative 3.1.6.1.2 would only allow limited access vessels that qualify under the same criteria selected for the limited access general category permit to fish under general category rules. A component of the limited access scallop fishery has participated under general category consistently over time. So long as this effort is controlled as under the same limited access general category alternatives, the impacts on the scallop resource are expected to be minimal (similar impacts as Alternative 3.1.6.1.3). Alternative 3.1.6.1.4 would prohibit all limited access permits (full-time, part-time and occasional) from fishing under general category rules while not on a scallop DAS. This alternative would reduce impacts on the scallop resource, but if the expected mortality from this component of the fishery is "reallocated" or assumed to shift to a different component of the fishery then benefits are reduced. For example, if about 0.5% of the annual TAC has come from this component of the fishery, and limited access vessels are no longer permitted to fish under general category and this assumed mortality is then shifted to the limited access fishery overall TAC in future projections, then overall impacts on the scallop resource are not reduced and are similar to the No Action alternative.

5.1.5.2 Allocation of quota to limited access vessels under general category

If the Council determines that limited access vessels that qualify for a general category permit under the same qualification criteria should receive a general category permit, then that effort would have to be attributed to (or removed from) either the general category allocation or the limited access allocation. If the Council decides not to permit limited access vessels to fish under general category rules then this section is irrelevant.

Whether the catch is reduced from the limited access portion of the total TAC (Alternative 3.1.6.2.1) or the general category portion (Alternative 3.1.6.2.2) these alternatives are not expected to have impacts on the scallop resource since they are related to how scallop catch is allocated and monitored.

5.1.6 Allocation between limited access and general category fisheries (Objective #1)

5.1.6.1 No Action

The Council would not allocate a certain percentage of the total available scallop harvest to the general category sector. Currently annual landings from the general category sector are estimated, and then limited access specifications are set to harvest the remaining portion of available harvest. The landings from the general category sector are not an actual allocation, and vessels may under or over-harvest the estimated amount.

There could be short term biological impacts of this alternative. If the general category fishery exceeds the amount they were projected to catch, fishing mortality from that sector would cause the total estimated fishing mortality to be higher. It may be possible that future management could account for that overage and reduce future fishing mortality by reductions in trips, poundage, or access in either component of the fishery,

but there could be short term impacts on the scallop resource if projections are exceeded. This is also true for the projections of limited access fishing mortality, but the controls on that component of the fishery are currently more direct (open area DAS and possession limits for access area trips). So estimates have a greater degree of accountability and overages can be adjusted for more directly.

5.1.6.2 Allocation of total scallop TAC for general category vessels

The range of total TAC that would be allocated to the general category fishery under this alternative is 2.5-11%. It is understood that whatever alternative is selected to control capacity and mortality in the general category fishery, the total amount allocated to the general category permit owners would be roughly equal to the overall percent selected in this alternative.

Currently the fishing mortality from the general category sector is estimated, and even with limited entry, the primary mechanism controlling total fishing mortality would be a possession limit (unless other measures are adopted). This alternative is not necessary for controlling the effort, rather it identifies the maximum for the general category sector. Likewise, future management measures would have to be developed to ensure that both components of the scallop fishery do not exceed their allocations under this alternative. This alternative could have beneficial short term impacts on the scallop resource by enabling management measures to have more direct control on the amount of scallops removed by the general category fishery.

In general, general category vessels are less efficient because they use smaller gear and fewer crew. However, total bottom contact time is not necessarily higher per pound of scallop meat caught. For example, if a general category vessel uses one ten-foot dredge, and a limited access vessel uses two 15-foot dredges, the limited access vessel has three times as much gear in contact with the bottom. The amount of scallops caught is proportional to the length of dredge being used, not whether it is being pulled by a limited access or general category vessel. Because the economic incentives for the two fleets are different, there may be impacts on the scallop resource as a result. In general, vessels will fish to reduce time at sea and maximize profits. Limited access vessels in particular are under DAS, so these vessels need to maximize all their time spent at sea. These vessels are also more mobile, so if there are areas offshore that are more abundant, the limited access vessels are more likely to fish in areas with high abundance to reduce time spent at sea. While general category vessels cannot fish everywhere because they are more limited by vessel size etc., they are not managed by DAS so do not have the same incentives to maximize time at sea; therefore, these vessels may spend more time fishing in sub-optimal areas to harvest the daily possession limit.

5.1.6.3 Allocation of yellowtail flounder bycatch TAC in access areas

The Council is considering allocating a specific portion of the yellowtail flounder bycatch TAC to each fishery (limited access and general category). Currently 10% of the yellowtail flounder TAC (Georges Bank and SNE) is set aside as bycatch for the scallop fishery in access areas (limited access and general category together).

Under the No Action alternative, once bycatch TAC is reached, the access area would close to all vessels. On its own this alternative is not expected to have direct impacts on the scallop resource. If anything, the YT bycatch TAC may reduce scallop mortality if the TAC is reached before all access area trips are made. For example, in 2006 the YT bycatch TAC was reached in both access areas (Nantucket Lightship and Closed Area II) before all limited access vessels made their allocated trips; therefore, the fishing mortality associated with those trips was never realized and the resource in that area benefited as a result. However, under a rotational area management system if areas close prematurely and scallops are not harvested at the optimal time, overall benefits are reduced.

Rather than both fisheries being under the same 10% cap, Alternative 3.1.7.3.2 would actually divide the bycatch TAC between the limited access and general category fisheries. Whatever overall allocation of the projected scallop catch is allocated to the general category fishery (2.5%-11%), that same percentage of the yellowtail flounder bycatch cap would also be allocate to the general category fleet for access areas. This alternative is not expected to have direct impacts on the scallop resource. The estimated fishing mortality from an access area assumes all trips are taken, so if dividing that TAC enables one component of the fishery to fish longer, the impacts of those trips have already been accounted for.

There is not sufficient data in the observer database to ascertain whether there are significant differences between bycatch rates on general category and limited access vessels. Some finfish have an escape response when a dredge is approaching, so it could be argued that it would be easier for a finfish to escape a smaller dredge (used on general category vessels as compared to larger dredges on limited access vessels). However, yellowtail flounder do not have a behavioral escape response, rather these fish tend to remain on the bottom or further burrow in the sediment, so it is uncertain if dredge size would affect yellowtail flounder bycatch. Both fleets are required to use 10-inch twine top to reduce finfish bycatch in all areas. There is an experimental fishing permit that is currently researching bycatch on general category vessels east of Cape Cod. It is possible that this study will show that general category vessels may have different bycatch rates than limited access vessels.

5.1.7 Incidental Catch (Objective #4)

5.1.7.1 No Action

All vessels with an incidental scallop permit would be allowed to possess and land up to 40 pounds of scallop meat per trip. The incidental permit would remain open access; any vessel can apply for one.

The Scallop PDT is not concerned about scallop mortality from incidental catch. If scallops are returned to the water relatively quickly, mortality of incidental scallop catch is expected to be relatively low. Other possession limits were considered during development of Amendment 11, but this amount was determined to be an appropriate incidental catch limit.

5.1.8 Measures to allow better and more timely integration of recent data

(Goal #2, Objective #5)

This was identified as the second goal of Amendment 11 because the scallop fishing year is out of sync with the framework adjustment process and the timing of when survey data become available for analysis. Alternative 3.2.2 would improve integration of general category landings information, and Alternatives 3.2.3 and 3.2.4 focus on adjusting the start date of the fishing year to improve timing and integration of scallop survey data.

Background on fishing year issue

The details of the current system are described below, identifying general milestones and issues with the management timeline. Several examples of when the start of the fishing year has been problematic have been included for additional information. The scallop fishing year is out of sync with the framework adjustment process and the timing of when survey data become available for analysis. As a result, actions have not been implemented at the start of the fishing year, TACs have been misestimated due to reliance on older data, and extra actions have been required to compensate. A change in the fishing year is needed to correct for new analytic requirements for framework actions, additional steps in the framework approval process, and the higher uncertainty in area management results caused by using year-old data when the Council develops and analyzes management alternatives.

The Council is currently convening a Scallop Survey Advisory Group whose analysis and recommendations will be made during the development of Amendment 11. Although minor changes in the surveys are possible, survey vessels and support personnel are unavailable early enough in the year (February to March) to conduct the surveys in time to develop and analyze (often complex) framework alternatives for an initial framework meeting in June and a final framework meeting in September. September approval is required to enable the Council to submit the framework adjustment so that NMFS can conduct the review and implementation can occur by March 1.

The primary source of resource data comes from NMFS RV Albatross survey, conducted in late July and early August. Preliminary (i.e. unaudited) data become available for analysis several weeks later, but the earliest that biological projections can be completed is in early September. Other surveys (SMAST video survey, for example) augment this primary source of information, often improving precision for specific areas to estimate biomass. These surveys are often conducted in May to October, when conditions are favorable and when the projects can be conducted with approved set-aside funding. IN 2006, some data from additional surveys were available in September, but a substantial amount of work was done by the researchers to speed up auditing and analysis so that survey information from cruises conducted in summer/early fall 2006 could be incorporated in the measures for fishing year 2007.

Once the biological projections (i.e. biomass forecasts by area) are available and the management alternatives have been identified, there are a slew of additional analyses which must be completed based on this information. These analyses include allocation estimates and analysis of effects, in order for the Council to make an informed decision. These analyses of the alternatives estimate economic effects, social effects, community

effects, as well as effects on bycatch and habitat. Council documents must also analyze cumulative effects, which include the synergistic effects on the environment of past, present, and reasonably foreseeable actions, as well as potential interactive effects caused by management of other fisheries and activities. Some of these analyses are needed for the final framework meeting, but others are completed before the Council submits the document to the Secretary of Commerce. These analyses and the associated document development generally take a minimum of 6 to 8 weeks from the time that biological projections can be done.

Using the most recent survey data, the earliest time that the Council can approve a framework action is in November with a document submission in late November or early December. NMFS review process includes a publication of a proposed rule and response to comments, as well as a formal review by NMFS headquarters, the EPA, the Corp of Engineers, and OMB. This review process usually takes 5 to 6 months, meaning that if the survey data can produce biological projections in early September, the earliest a framework action can be implemented is in early June, well after the start of the fishing year (currently March 1).

There is some thought that the NMFS scallop survey can occur at another time and/or be replaced by cooperative industry surveys. The Council and NMFS is working on these issues using a scallop survey advisory panel (SSAP) to make recommendations. There is some possibility that the new NOAA research vessel can conduct the survey earlier, in late May or early June but it is impossible that the survey can be conducted earlier than this due to conflicts with the spring groundfish survey. On the other hand, cooperative industry surveys would have to also conduct their surveys earlier in the year, with sufficient coverage, sampling intensity, consistency, and permanence to replace the NMFS survey. Industry survey data would have to be freely available to Council and NMFS scientists for analysis in a timely manner.

Even if the survey is conducted a couple of months earlier, it still takes about 9-12 months to process and assimilate the data to set specifications, analyze the effects, choose final measures, submit a final document, conduct a formal government review, and publish final rules. This is consistent with the analysis of the fishing year in Amendment 10, when the Council last rejected a change in the fishing year. Figure 46 identifies the timing of various steps with the No Action alternative (March 1 FY start date) and other alternatives under consideration (May 1 and August 1 start dates).

Changing the fishing year enables the Council to use up to date information and allow for timely implementation of new specifications increasing the certainty that framework measures will prevent overfishing, achieve the intended objectives, and maximize net benefits. The No Action alternative increases the business risk to fishermen, vessel owners, and the industry due to mid-year implementation of delayed measures and frequent corrective action.

This type of adjustment has occurred several times in the past after recent survey information becomes available. Most recently, Framework 18 was not implemented on

time, primarily because the key survey data and biological projections became available in early September, a week before the final framework meeting where the Council selects final measures. The PDT also found it impossible to complete the needed analyses due to conflicts between planned summer research activities and analytic needs.

Because the supporting analyses were not available at the September Council meeting, the final meeting was postponed to November and the annual specification was not implemented until early June 2006. Fortunately, the main effects of the delay were minor: the open area DAS reverted to the default value and the Hudson Canyon Area will be subject to fishing using open area DAS instead of being closed as intended in Framework 18. Open area DAS use will count against the eventual Framework 18 DAS allocation and it is unlikely that many vessels will use open area DAS in the Hudson Canyon Area due to its depleted condition relative to other open areas.

Another example of problems caused by the mismatch with the data and fishing year is a need to re-evaluate and adjust the Elephant Trunk Area (ETA) trip allocations before the area opens in 2007. Because the PDT had to rely on 2004 survey data to estimate the 2007 TAC and develop management alternatives, there was a considerable level of uncertainty about forecasting biomass out three years (from 2004 to 2007) using the biological projections. A considerable proportion of ETA scallops in 2004 were small and the scallop rotation area at the time of the survey had just been closed to protect them from fishing. Growth, mortality, and scallop movement between when the survey occurs and when the area re-opens for fishing also add uncertainty. The further the forecast is the more sensitive the projection is to assumptions of recruitment, natural mortality and growth; therefore, the less reliable the forecast is.

Because of the added uncertainty, the Council developed a rather complex strategy to adjust and compensate for changes in the eventual TAC, to be measured by 2006 surveys (by Notice Action). The Council also applied a more conservative strategy than might otherwise be required to avoid overexploitation of the ETA if the biomass projections overestimate the 2007 biomass. The Council adopted an ETA TAC that is about half of what might otherwise be indicated by a three-year access program. Essentially, the Council halved the fishing mortality target and adopted what amounts to a five-year harvest strategy for a rotation area closed for three years. It remains to be seen how well this approach will work.

The strategy adopted in Framework 18 for the ETA requires a considerable amount of extra work and analysis during 2006 to re-evaluate the Framework 18 allocations. Applying a precautionary approach to ETA management may forego some yield in the short term, but because the ETA scallops are just reaching optimal size, a reduced TAC and postponed harvest is unlikely to have negative consequences – unless a mass mortality event occurs due to predation, disease, or temperature. In other words, there is an elevated level of risk associated with the management strategy the Council adopted in Framework 18 in response to the higher uncertainty of using 2004 instead of 2005 survey data.

5.1.8.1 No Action

No additional measures would be implemented to improve the integration of recent data in the management process. Specifically, the scallop fishing year would remain at March 1.

This alternative may have negative indirect impacts on the scallop resource because it does not enable the Council to integrate the most recent scallop survey results into analyses used to make decisions for scallop management. Overall, a March 1 start date increases uncertainty and risk because future management decisions are based on older data, which could have indirect impacts on the scallop resource.

5.1.8.2 Change the issuance date of general category permits from May 1 to March 1

Whether limited access is implemented by this action or not, this alternative would change the issuance date of general category permits from May 1 to March 1. Currently, the limited access portion of the fishery is issued a permit on March 1, the start of the scallop fishing year. Because the general category permit is not issued until two months later there is a lag time is summarizing scallop landings data.

This change would improve integration of fishery data into the management decision process, but would not address the timing issue related to integration of recent survey data.

5.1.8.3 Change the start of the fishing year to May 1

The scallop fishing year would be changed to start May 1.

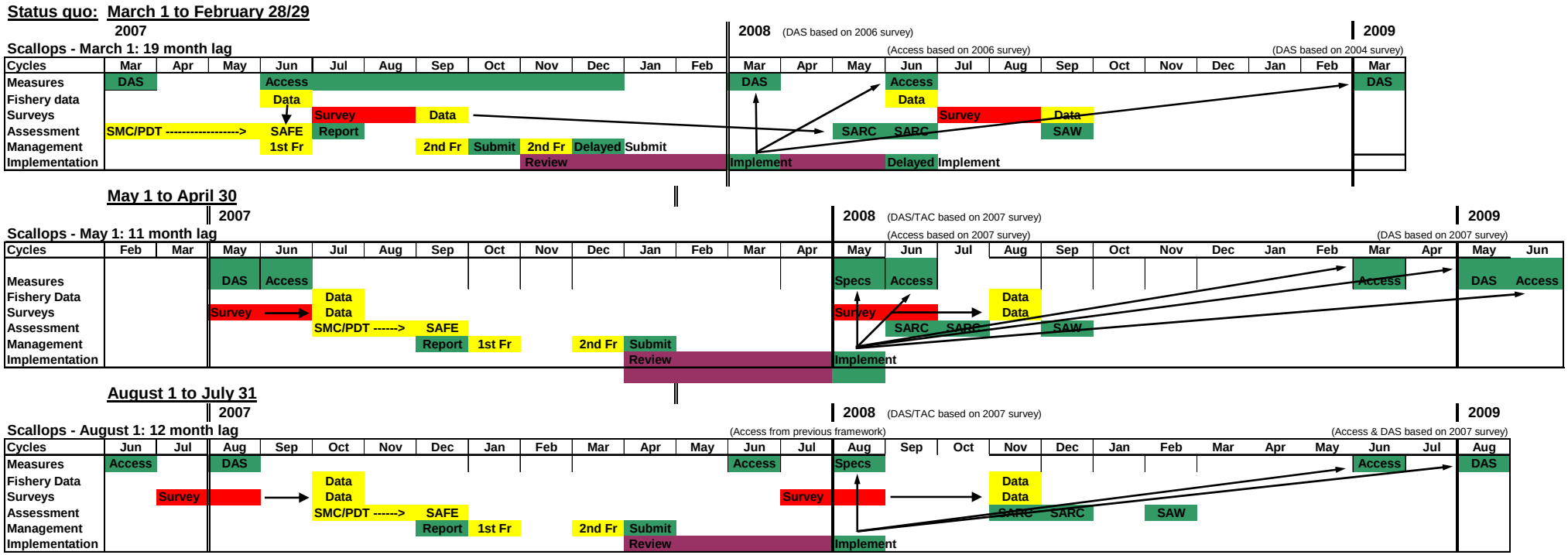
This alternative is expected to have indirect positive impacts on the scallop resource by enabling the Council to use up to date information and allow for more timely implementation of new specifications. If the current survey is rescheduled to late May or early June, the fishing year should begin on May 1, reducing uncertainty and risk.

5.1.8.4 Change the start of the fishing year to August 1

The scallop fishing year would be changed to start August 1.

This alternative is expected to have indirect positive impacts on the scallop resource by enabling the Council to use up to date information and allow for more timely implementation of new specifications. If the current survey cannot be pushed earlier and remains in late summer, the fishing year should begin on August 1, reducing uncertainty and risk.

Figure 46 – Comparison of potential timelines for the alternatives to allow better and more timely integration of recent data



5.1.9 Other measures not directly related to goals and objectives of Amendment 11

5.1.9.1 Trawl gear restriction

5.1.9.1.1 No Action

All trawl vessels would be restricted to a 144 ft. trawl sweep.

This alternative has unintended consequences on vessels that are targeting other species aside from scallops. The restriction on trawl sweep size may have beneficial impacts on scallop mortality by restricting the maximum size of trawl gear, but the Council intended this restriction for vessels targeting scallops, not vessels that catch scallop incidentally.

5.1.9.1.2 Clarification of trawl gear restriction for vessels fishing under a multispecies or monkfish DAS

The Council intended the144 ft. net sweep restriction to be exclusive to the scallop plan for all vessels targeting scallops using a net, and not to apply this restriction in other fisheries where scallops are caught more incidentally. This alternative would clarify that the 144 ft. net sweep restriction is intended for all vessels authorized to be in possession in excess of 40 pounds of scallops, except for vessels with a general category 1B permit and fishing under a multispecies or monkfish DAS. These vessels would not be restricted by the 144 net sweep restriction.

This alternative is not expected to have impacts on the scallop resource. Vessels that are targeting scallops with a net are still restricted to a 144 ft. net sweep. This alternative is intended to clarify the regulations for vessels that are fishing for other species and catch scallops incidentally.

5.1.9.2 Possession limit of 50 bushels

5.1.9.2.1 No Action

Current regulations would apply related to the possession limit of 50 bushels of in-shell scallops for all 1B general category scallop vessels.

Limiting the amount of in-shell scallops a vessel can be in possession of reduces non-harvest mortality, thus is beneficial for the scallop resource. It reduces the incentive to highgrade, and if a vessel wants to shuck its catch and needs more than 50 bushels to reach the 400 pound possession limit, that vessel will have to shuck some of its catch before possessing over 50 bushels. This restriction potentially reduces fishing time if the shucked product from 50 bushels ends up being 400 pounds (i.e. the vessel may not have to make another tow if the in-shell product on deck ends up equaling 400 pounds of shucked scallop meat). However, in practice it is common that over 50 bushels are needed to shuck 400 pounds of scallop meat. Therefore, this alternative causes vessels to often be out of compliance during normal fishing operations.

5.1.9.2.2 Possession limit of 50 bushels shoreward of the VMS demarcation line and up to 100 bushels east of that line

The regulations currently permit a vessel to be in possession of either 400 pounds of scallop meat or 50 bushels of in-shell scallops if they have a 1B general category permit. However, 50 bushels of in-shell scallops does no equate to 400 pounds of scallop meat. Therefore, if a vessel wants to land scallop meat, it is technically in violation if it possesses for example 70 bushels to cut out 400 pounds of meat. This alternative would not allow a vessel to possess, or land per trip more than 50 bu. (17.62 hl) of in-shell scallops shoreward of the VMS Demarcation Line, but it could possess up to 100 bushels east of the demarcation line.

Recognizing that 50 bushels is usually less than 400 pounds of scallop meat, this alternative would allow a vessel to be in possession of up to 100 bushels east of the demarcation line. This alternative would allow a vessel to shuck scallops up to 400 pounds of meat and not run the risk of being in possession of more than the trip limit. While this alternative could allow a vessel to catch more than 50 bushels or 400 pounds, the vessel would have to discard any additional catch before crossing the demarcation line, hopefully reducing non-harvest mortality.

5.2 IMAPCTS ON PHYSICAL ENVIRONMENT AND EFH

The objective of Amendment 11 is to implement measures to control capacity and mortality in the general category scallop fishery. Some measures under consideration are: a limited access program and/or hard-total allowable catch (hard TAC) for the general category fishery, approval of a mechanism for voluntary sectors in the general category fishery, establishment of a separate limited entry program for general category fishing in the Northern Gulf of Maine, potential adjustments to limited access scallop fishing under general category rules, allocation of total scallop catch and yellowtail flounder bycatch TAC between the limited access and general category fisheries, measures to allow better and more timely integration of recent data in the scallop management process, and other administrative provisions and adjustments.

5.2.1 Measures to control capacity and mortality in the general category scallop fishery

5.2.1.1 No Action

Under this alternative the general category fishery would remain an open access fishery. Based on recent trends in the general category fishery, this alternative makes it difficult for the Scallop FMP to prevent overfishing. The General Category vessels are only limited by a possession limit and are allowed to fish 365 days a year under the No Action alternative. If scallop prices and market conditions continue to improve as they have been, it is expected that General Category vessels will steadily increase their effort to meet demand. As such, this additional effort from both trawl and dredge gears will negatively impact the physical environment and EFH. However, the impacts of the additional effort are difficult to assess because the incremental effects of this additional effort may be relatively small in open access areas that are also impacted by bottom trawlers in other fisheries and limited access scallop dredge vessels.

5.2.1.2 Limited Entry

Qualification criteria, time period and determination of qualification amount (3.1.2.1 – 3.1.2.3)
In terms of impacts on the physical environment and EFH, there is no significant difference between the three qualification criteria alternatives, the three time period qualification alternatives and the qualification amount provided that the total removal of scallops by the vessels that qualify is the same. Therefore, the alternatives only influence how many vessels qualify, and do not directly affect the scallop resource and EFH if additional limits on effort or a hard TAC is adopted. Alternatives 3.1.2.3.1 and 3.1.2.3.2 only affect the contribution factor used to determine a vessels access to the resource (allocation), therefore, these alternatives will not have any adverse impacts on the physical environment and EFH.

Allocation of access to GC limited entry permit holders (3.1.2.4)
In general, the impacts on EFH from all the individual allocation alternatives are expected to be similar because there is a total amount of scallops that is permitted to be removed under each alternative. However, the allocation in trip alternatives, as opposed to poundage allocations, may increase effort if these vessels change behavior to land more scallops per trip, thus negative impacts on EFH. This potential increase in effort is limited however because there is a maximum TAC for the entire fleet under both the individual pound and trip alternatives.

Limited entry permit provisions (3.1.2.5)
While this alternative could increase capacity, if the total fishing mortality for the general category fishery is limited (i.e. hard-TAC) then no additional impacts from this alternative on the physical environment and EFH are expected.

Measures to reduce incentive for limited entry qualifiers to fish for scallops with trawl gear (3.1.2.6)
In general, fishing mortality is higher for trawl gear versus dredge gear based on the number of kept scallops per trip (See Section 5.1.1.2.6). Therefore, the alternatives that reduce incentives to fish for scallops with trawl gear are expected to have positive impacts on the scallop resource but it is unclear whether this alternative will result in more or less area swept by either trawls or dredges. The relative impact of these two gears is the same (see Amendment 10 Gear Effects Evaluation) so one can speculate that the transfer of effort between trawls and dredges will be conservation neutral on the physical environment and EFH. As such, there would be no adverse impacts of these alternatives on the physical environment and EFH.

Sectors and Harvesting Cooperatives (3.1.2.7)
None of the options related to establishing a sector are expected to have negative impacts on the physical environment and EFH. In fact, the indirect impacts may be beneficial since voluntary sectors may be able to identify ways to fish more efficiently, potentially reducing bottom contact time and impacts on the physical environment and EFH. It is presumed that a self-selecting sector will have a plan to manage their allocation in a way that mutually benefits the sector members and avoids wasteful fishing practices. Therefore, the impacts of this alternative on the physical environment and EFH would be neutral to positive.

5.2.1.3 Hard Total Allowable Catch Limit (Hard TAC)

The total number of scallops that would be harvested if this alternative and the limited entry alternatives are adopted should be similar, however, with high scallop prices and a limited amount of total catch, a hard TAC may induce a race to fish and cause the TAC to be met more quickly. However, these effects may be reduced by the possession limit of 400 pounds per trip. Typically a hard TAC fishery without trip or possession limits usually can trigger a derby fishery as the participants are not restricted to how much they can catch or possess until after the TAC is reached. Any hard TAC system has the potential for the TAC to be reached earlier than a non-TAC fishery due to the competition among the participants and this situation can result in unsafe fishing practices and fishing more intensively. While the initial fishing pressure may be more intense under a hard TAC system than without, it is unclear if this will result in more or less impacts to the physical environment and EFH because the non-hard TAC system would merely spread out the effort over a longer portion of the year which may not allow the physical environment and EFH as much time to recover from the effects of scallop fishing.

5.2.1.4 Establish a Northern Gulf of Maine Scallop Management Area (NGOM)

No Action
This alternative would not have additional impacts on the physical environment and EFH since whatever is adopted in Amendment 11 would apply to this area as well.

Amendment 11 would not apply to the Northern Gulf of Maine
If this alternative is selected by the Council then any measures adopted in Amendment 11 pertaining to controlling capacity and mortality in the general category fishery would not apply. A hard TAC in both state- and federal-waters would be established for this area and if reached, vessels would be limited to possession of up to 400 pounds of scallops per trip before the TAC is reached and 40 pounds of scallops per trip after the TAC is reached. There has not been a large set of scallops in the GOM for sometime, so the incentive to fish for scallops in this area has been minimal. While this alternative would make a GOM general category permit available to any vessel, many vessels are not expected to fish for scallops in this area since it is far from traditional scallop ports and most of the areas that have had scallop beds are in state waters or are presently in closed areas. With no limited entry program, this alternative could cause fishing to concentrate in the beginning of the year, which could be good or bad for habitat because the intensity of the habitat impacts would increase initially; however, this leaves more time for the habitat to recover during the rest of the fishing year. The vessel remains restricted by the 400 pound per trip possession limit which will reduce the incentive for a derby fishery as is common in a hard-TAC fishery with no possession or trip limits. This could offset the potential for a more concentrated fishery in the beginning of the fishing year. However, it is difficult to predict the behavior of the fishery at this time. Therefore, the habitat impacts of this alternative relative to the No Action alternative are uncertain.

Establish a Northern Gulf of Maine Management Area Limited Entry
Since this area would be under a hard TAC, entry into the fishery would be limited and the 400 pound trip possession limit would remain, fishing effort would more likely be spread out over a longer portion of the fishing year as the incentive to fish before the TAC is met is mitigated by the limiting of participants in the fishery under the limited entry program. The vessel remains restricted by the 400 pound per trip possession limit which will reduce the incentive for a derby fishery as is common in a hard-TAC fishery with no possession or trip limits. This could offset the potential for a more concentrated fishery in the beginning of the fishing year. However, it is difficult to predict the behavior of the fishery at this time. Therefore, the habitat impacts of this alternative relative to the No Action alternative are uncertain.

5.2.1.5 Monitoring Provisions

This alternative is largely administrative and, therefore would not impact the physical environment and EFH. However, an increased understanding of where General Category scallop vessels fish through the data collected in the vessel monitoring system (VMS) and or IVR may lead to a better understanding of which parts of the affected physical and EFH environment are being impacted.

5.2.1.6 Limited access fishing under general category rules

Permit or prohibit limited access vessels from fishing under General Category
No Action:
The overall cost of operation for a General Category vessel is lower than a Limited Access vessel because general category vessels on average operate smaller vessels, have smaller crews, lower gear costs, etc. Therefore, general category vessel "can afford" to fish on a resource that is less optimal to get 400 pounds because their overhead is lower. However, many limited access

vessels would not bother to fish for 400 pounds unless the resource available is concentrated and prices are high because their costs of operation are greater.

It should be noted that it has been quite profitable for both fleets to fish for 400 pounds in recent years because the resource nearshore has been in good shape and the price for scallops has been higher than normal, so the economic incentives to fish for 400 pounds a day have existed.

As a permit privilege under the No Action, the Limited Access permit holders were allowed to fish under the General Category provisions while not on a scallop DAS. Because most LA permit holders were required to forfeit permits in other fisheries, some vessels make General Category trips when their LA DAS are used, but this level of effort is not expected to increase dramatically since there is a possession limit.

Limited access permit holders subjected to same rules as General Category vessels:
A component of the limited access scallop fishery has participated under general category regulations consistently over time. If the LA vessels qualified under the selected permit qualification for a General Category permit, this alternative will subject the LA vessel to the GC rules while fishing on a GC permit. However, since only a small portion of the LA fishery has traditionally fished in the General Category, this alternative will reduce the capacity of the General Category fishery. This may not benefit habitat in the short-term nor the long-term since not all of the LA boats will opt into General Category rules. If the Limited Access participation in the General Category fishery is reduced overall, this alternative could have positive impacts on habitat.

Prohibit all limited access permit holders (full-time, part-time and occasional) from fishing under general category rules while not on a scallop DAS:
This option restricts participation in the General Category fishery more than the other alternatives because it does not allow any Limited Access vessels to fish under the General Category provisions. This alternative reduces the capacity of the Limited Access fleet by eliminating the option to fish under both Limited Access and general category provisions. This alternative is expected to have positive impacts on habitat by reducing potential effort by the Limited Access fishery under General Category rules.

Allocation of quota to limited access vessels under general category
These alternatives are not expected to have impacts on the physical environment and EFH since they are related to how scallop catch is allocated and monitored.

5.2.1.7 Allocation between limited access and general category fisheries (Objective #1)

No Action
Under the No Action, no allocation of a certain percentage of the total available scallop harvest to the general category sector would occur. Because the General Category vessels are not subjected to a hard allocation, they may over- or under-fish the estimated amount. Continuation of this practice, in light of the increase in effort by the General Category in recent years, could result in negative impacts to the physical environment and EFH. Without a hard TAC or other output control for the general category fishery it makes it very difficult to predict fishing

mortality for that sector, thus projections may underestimate impacts on the scallop resource and EFH.

Allocation of projected TAC for general category vessels
This alternative is not necessary for controlling effort, rather it identifies the maximum annual harvest for the general category sector. The General Category fishery is generally limited to the inshore areas as the vessels are smaller than the Limited Access fishery. In recent years, the General Category catch has been higher than average (11%) as a percentage of the overall TAC in the fishery. If one of the higher percentages is chosen and allocated to the GC vessels and the vessels retain similar characteristics (size, etc.), there may be negative impacts on nearshore habitat as the general category fishery primarily fishes in inshore areas that are more vulnerable to bottom disturbance.

Allocation of yellowtail flounder bycatch TAC in access areas
Under the No Action alternative, 10% of the yellowtail flounder TAC (Georges Bank and SNE) is set aside as bycatch for the scallop fishery in access areas. The 10% bycatch cap is monitored through observer coverage and total bycatch estimates are extrapolated from that data. Currently YT bycatch from both the limited access and general category sectors are under the same TAC and once the bycatch TAC is reached, the access area would close to all vessels. Because the General Category vessels are allocated a fleetwide allocation of access area trips, there may be less incentive to avoid bycatch. Further, the general category sector is more inclined to use all access trips in areas closer to shore (Closed Area I and NLCA) then offshore access areas like Closed Area II. So general category vessels may contribute more to the YT bycatch in some areas, and less in others. Furthermore, areas may open when it is more advantageous for one fleet to fish in an area than another, and if the bycatch TAC is reached in the early part of the year, the other fleet may not be able to take advantage of the access area because the total YT bycatch TAC has been caught.

An alternative to the No Action is to divide the bycatch TAC between the limited access and general category fisheries. Whatever overall allocation of the scallop yield is given to the general category fishery (2.5%-11%), that same percentage of the yellowtail flounder bycatch cap would be given to the general category fleet for access areas. This catch could not be retained or landed by general category vessels. This alternative would prevent one sector of the fishery closing the access area for the other sector. For example, if the 10% bycatch TAC was reached for Closed Area II during the winter months by limited access vessels before the majority of the general category sector could access area, this alternative would prevent one sector from closing the access area for another sector. Because this alternative allows a sector to continue fishing in the access areas when the area is closed to the other sector due to the bycatch cap being met, it could better enable all allocated effort in an access area to be fished. If this alternative is approved at the same rate for all access areas, some areas like Closed Area II for the general category may not reach the TAC. The impacts of this alternative overall on EFH are minimal because they are indirect. If by dividing the TAC the TAC is not caught as fast, then it is possible that all effort allocated to that area could be fished. But if dividing the TAC does not affect the speed of either fleet catching their portion of the TAC then there are no impacts of this alternative.

5.2.2 Measures to allow better and more timely integration of recent data

These alternatives are administrative in nature and suggest changing the beginning of the fishing year to better incorporate data into the management process in a timely manner. Therefore, no impacts to the physical environment and EFH are expected. However, if more recent information can be integrated into the projections used for management, estimated of fishing mortality and impacts should be more accurate.

5.2.3 Other measures not directly related to goals and objectives of amendment 11

Trawl gear restriction

Current regulatory language would remain and all trawl vessels would be restricted to a 144 ft. trawl sweep. The Council intended the144 ft. net sweep restriction to be exclusive to the scallop plan for all vessels targeting scallops using a net, and not to apply this restriction in other fisheries where scallops are caught more incidentally. The alternative to the No Action is to clarify that this trawl restriction is not intended for all vessels authorized to be in possession in excess of 40 pounds of scallops, except for vessels with a general category 1B permit and fishing under a multispecies or monkfish DAS. While this alternative could increase the size of the trawl net sweep that is in contact with the seafloor, this restriction was implemented incorrectly, and this alternative would make that regulatory change, so no habitat impacts are expected.

Possession limit of 50 bushels

No Action:

Current regulations would apply that limit possession to 50 bushels of in-shell scallops for all 1B general category scallop vessels. So if a vessel wants to land scallop meat, it would have to shuck at sea and not possess more than the 50 bushel equivalent of meats and in-shell scallops. This alternative reduces the ability for a vessel high-grade while fishing. But if a vessel wanted to catch 50 bushels and shuck scallops on the way back in, if 50 bushels comes out to be less than 400 pounds, this restriction could reduce fishing time and, therefore, positively impact the physical environment and EFH, unless the vessel decides to stay at sea and shuck 50 bushels and then make additional tows to total 400 pounds of meat.

Possession limit of 50 bushels shoreward of the VMS demarcation line and up to 100 bushels east of that line:

This alternative is independent of any other alternatives in the DSEIS and would not allow a vessel to possess, or land per trip more than 50 bu. (17.62 hl) of in-shell scallops shoreward of the VMS Demarcation Line, but it could possess up to 100 bushels east of the demarcation line. This alternative could result in an increase of fishing effort for vessels that want to shuck at sea and land the 400 pound possession limit of scallop meat because they could catch up to 100 bushels of in-shell scallops to cut out 400 pounds of meat. Therefore, this alternative could increase time gear is spent on the bottom as compared to the No Action alternative, which may result in negative impacts to the physical environment and EFH.

5.2.4 Summary of Impacts to Physical Environment and EFH

The impacts of the alternatives under consideration are included in Table 70.

Table 70. Summary of Impacts to Physical Environment and EFH of AM11 Alternatives

Alternatives	Physical Environment and Essential Fish Habitat Impacts	Discussion
Measures to control capacity and mortality in the general category scallop fishery		
No Action	Unknown	Impacts of the additional effort are difficult to assess because the incremental effects of this additional effort may be relatively small in open access areas that are also impacted by bottom trawlers and limited access scallop dredge vessels.
Limited Entry		
Qualification criteria, time period and amount	0	Only affect the contribution factor used to determine a vessels access to the resource (allocation), these alternatives will not have any adverse impacts.
Allocation of access to GC limited entry permit holders	0/-	May increase effort if vessels allocated by trips vs. poundage change behavior to land more scallops per trip. Potential increase in effort is limited however because there is a maximum TAC for the entire fleet.
Limited entry permit provisions	0	While this alternative could increase capacity, if the total fishing mortality for the general category fishery is limited (i.e. hard-TAC) then there should be no additional impacts.
Measures to reduce incentive for limited entry qualifiers to fish for scallops with trawl gear	0	Transfer of effort between trawls and dredges will be conservation neutral on the physical environment and EFH. As such, there would be no adverse impacts.
Sectors and Harvesting Cooperatives	0/+	Indirect impacts may be beneficial since voluntary sectors may be able to identify ways to fish more efficiently, potentially reducing bottom contact time and impacts.
Hard Total Allowable Catch (Hard TAC)	Unknown	While the initial fishing pressure may be more intense under a hard TAC system than without, it is unclear if this will result in more or less impacts because the non-hard TAC system would merely spread out the effort over a longer portion of the year which may not allow the physical environment and EFH as much time to recover from the effects of scallop fishing.
Establish a Northern Gulf of Maine Scallop Management Area (NGOM)		
No Action		
Amendment 11 would not apply to the Northern Gulf of Maine	Unknown	Vessel remains restricted by the 400 pound per trip possession limit which will reduce the incentive for a derby fishery as is common in a hard-TAC fishery with no possession or trip limits. This could offset the potential for a more concentrated fishery in the beginning of the fishing year. However, it is difficult to predict the behavior of the fishery at this time. Therefore, the habitat impacts are impossible to predict.
Establish a Northern Gulf of Maine Management Area	Unknown	Vessel remains restricted by the 400 pound per trip possession limit which will reduce the incentive for a

Alternatives	Physical Environment and Essential Fish Habitat Impacts	Discussion
Limited Entry program		derby fishery as is common in a hard-TAC fishery with no possession or trip limits. This could offset the potential for a more concentrated fishery in the beginning of the fishing year. However, it is difficult to predict the behavior of the fishery at this time. Therefore, the habitat impacts are impossible to predict.
Monitoring Provisions	0	Administrative.
Measures to control capacity and mortality in the general category scallop fishery		
Permit or prohibit limited access vessels from fishing under General Category	+	If the Limited Access participation in the General Category fishery is reduced by option have GC rules apply to LA vessel, as expected, positive impacts are expected on habitat. If LA permit holders are not allowed to fish under the GC rules, positive impacts on habitat are expected by limiting the effort of the Limited Access fishery through non-participation in the General Category fishery while not on a scallop DAS.
Allocation of quota to limited access vessels under general category	0	Administrative.
Allocation between limited access and general category fisheries		
Allocation of projected TAC for general category vessels	0/-	May be negative impacts on habitat as this effort is usually expended in inshore areas that are more vulnerable to bottom disturbance.
Allocation of yellowtail flounder bycatch TAC in access areas	0/-	May result negative impacts if effort in the access areas increases as the area won't be closed to all fishing once bycatch cap is met. If the access area is an offshore area where the General Category do not usually fish (Closed Area II), this negative impact may not result.
Measures to allow better and more timely integration of recent data	0	Administrative
Other measures not directly related to goals and objectives of amendment 11		
Trawl gear restriction	0	Administrative clarification.
Possession limit of 50 bushels	-	May result in negative impacts due to an increase of fishing effort by allowing the vessel to catch more than the current limit of 50 bushels.

5.3 IMPACTS ON PROTECTED RESOURCES

5.3.1 Background

The Amendment 11 alternatives are evaluated below for their impacts on protected resources with a focus on threatened and endangered sea turtles, as noted in Section 4.0. As with the analyses provided in the last scallop management action, Framework Adjustment 18/39 to the Sea Scallop FMP, the species considered here are loggerhead, leatherback, Kemp's ridley and green sea turtles.

Both scallop dredge and scallop trawl gear will be addressed in this section, generally collectively, given they are the most commonly used gears by general category and limited access vessels in this fishery. Although general category permit holders also fish with a number of other gear types and accordingly may take scallops incidentally when engaged in other fisheries, the effects of those additional fishing activities and gears relative to impacts on sea turtles will not be addressed in this action.

As background and as summarized in the 9/18/06 Biological Opinion prepared by NMFS, the sea scallop fishery management program employs a limited access permit system and controls DAS use in scallop open areas. It is not clear to me which if any of the statements that follow this are supposed to be from the 9/18/06 BO so my comments are based on the assumption that the statements below are meant to be a summary of the info from the 9/18/06 BO. Limited numbers of trips with trip limits also are allowed in designated rotational access areas.

As indicated most recently in the Scallop FMP (Framework Adjustment 18), major harvest areas include Georges Bank, with less activity in the Gulf of Maine. Both are regions in which turtles are far less likely to be found relative to Mid-Atlantic waters where effort and scallop catch levels have increased in recent years. While there have been increases in scallop fishing effort in both regions, new directed general category scallop fishing effort has been added to the Mid-Atlantic fishery since 1994 (Figures 18-30). Although scallop fishing is a year-round activity, the distribution of turtles throughout most of the Mid-Atlantic is seasonal --- December through April. Therefore, a portion of scallop fishing occurs at times when turtles are not likely to be present.

With respect to sea turtle interactions with the fishery overall, it is tempting to attribute increases in turtle interactions over this period to increased effort, but it is equally noteworthy that there were very low levels of observer coverage throughout the fishery up to 2003. More uncertainty is added to any consideration of these issues given that observed turtle interactions were less in 2004 and 2005 compared to 2003.

Additional actions also may affect they nature of scallop fishery/ sea turtles interactions. Federally permitted scallop dredge gear now must be modified by adding an arrangement of horizontal and vertical chains, referred to as "chain mats", between the sweep and the cutting bar in an area that extends south of 41° 9.0 N from the shoreline to the outer boundary of the EEZ during May 1 through November 30 each year (71 FR 50361). The requirement is expected to reduce the severity of some turtle interactions with scallop dredge gear.

The Elephant Trunk Access Area in the Mid-Atlantic opened on March 1, 2007, allowing full-time limited access vessels to make three trips between the opening date and June 20, 2007, with the possibility of an additional six-month extension of the open period. Part-time vessels may take two trips in the ETAA but can also substitute these with Nantucket Lightship and Closed I trips in a specifically allowed manner. Continued access to the Georges Bank areas will likely help reduce levels of fishing in the Mid-Atlantic region where sea turtle interactions are more likely to occur. The general category scallop fleet trip allocation is 865 trips in the ETAA.

The ETAA also will be closed seasonally to scallop fishing from September 1 - October 31, 2007, effective through 2012. This 2-month closure is intended to provide protection for threatened and endangered sea turtles that may interact with the scallop fishery in the Mid-Atlantic and to reduce small scallop and finfish discard mortality. Similarly, the Delmarva Area is closed to protect small scallops in that area. The projected opening date is 2010.

5.3.2 Measures to Control Capacity and Mortality in the General Category Scallop Fishery

Limited Entry

As an effort control tool, limited entry is generally viewed as a potential benefit to protected species in New England fisheries management. Under No Action, an unlimited number of participants could harvest sea scallops with an open access permit without meaningful controls on fishing mortality and any associated bycatch. In the limited entry scenarios under consideration there are three qualification criteria alternatives, three qualification time periods and two ways to calculate an allocation amount.

As indicated by the economic analyses in Section xxx, the qualification criteria alternatives will have significant impacts on the number of general category vessels that may qualify for limited access. Of the alternatives that require a vessel to have a specific amount of landings, the number of qualifying vessels increases with the smaller the poundage criteria or a longer qualification time period. The 100 pound criteria combined with the 11 year qualification period will result in the maximum number of participants, 705, qualifying for limited access. The 5,000 pound criteria combined with the two-year qualification period will qualify the least number of vessels, 143. Total scallop landings for qualifiers based on their best year of landings, however, do not increase significantly even if the 11 year qualifying period is used because of relatively low scallop landings by general category vessels prior to the 2000 fishing year. According to the economic impact analyses provided, the poundage criteria has a larger effect on the number of qualifiers compared to the time periods under consideration.

By controlling fishing effort, any of the qualification criteria will likely reduce impacts on protected resources by potentially reducing risks of encounters with scallop gear, in comparison to no action. The alternative with the highest poundage may confer more optimal benefits because it qualifies the least number of vessels. Ultimately, however it is the amount of fishing effort occurring in areas and during seasons when turtles are most abundant that most affects increases or decreases in risks to sea turtles and not exclusively the number of vessels participating in the fishery. The issue is complicated further by the issues discussed in Murray

(2004). Bycatch is influenced by water temperature, which fluctuates from year to year, while depth was not found to be a significant predictor of bycatch in the analyses conducted for the same report, there was discussion of the potential for hot spots to occur at certain depths that may or may not overlay with the fishery.

Determination of Qualification Amount
Taking into consideration the above statements, the impacts of the alternatives to determine the qualification amount relative to NO Action will similarly have potentially positive impacts on protected species by defining and limiting each vessel's allocation of scallops in terms of a percent of the total general category allocation. Determining the differences in the impacts between the specific alternatives as well as the 50,000 cap is not possible given the information currently available on sea turtle bycatch.

Allocation of Access for Qualifiers
In general, the impacts on protected turtle species resulting from the individual allocation alternatives are likely to be minimal because a total amount of scallops will be removed under each alternative. Effort increases, and consequently negative impacts on protected species could occur if access is granted in trips and not in pounds. Some general category vessels may have historically landed an incidental level of scallops but could change their behavior and land more scallops with their limited number of trips.

Limited Entry Permit Provisions
Measures to govern activities such as vessel sales, limited access permit transfers, permit-splitting, and changes to a vessel's size would apply to all general category permits that qualify for limited access if such a program is adopted. With the exception of vessel upgrade restrictions, in which a vessel might increase fishing power and the possibility in which one vessel could qualify two limited access general category permits, all measures relate to efficiency and consolidation and would not likely result in increases in fishing effort. A possibility also exists that the two exceptions also may not increase effort, but like the other measures, could enhance efficiency by actually decreasing overall fishing time for boats that, for example, take advantage of the upgrade provision. Few measurable impacts to potentially affected turtle species are likely to result should these measures be adopted.

Measures to reduce incentive for limited entry qualifiers to fish for scallops with trawl gear
Because scallop trawl gear is believed to have greater impacts on scallop mortality, several alternatives reduce the incentive for qualifying vessels to target scallops with trawl gear. Because estimates of sea turtle bycatch in the scallop trawl fishery have become available only in 2007, it is difficult to determine if the measures being considered will affect sea turtle interactions if fishing with trawls overall declines. It should be noted, however, that the condition of turtles taken in the scallop trawl fishery (Murray 2007) indicates a greater number of animals taken alive versus those in the scallop dredge fishery which had prepondererance of animals recorded as either injured or dead (Murray 2005).

Sectors and Harvesting Cooperatives
A sector or harvesting cooperative system would apportion part or all of fishery resources to various industry sectors. Sectors would be formed voluntarily based on gear used, permit

category, vessel size, homeport, area fished, or some other grouping. Vessels not in a sector would remain in a common pool and operate under approved Council management. Allocation of sector TACs also would be determined by the Council. If the Council approves the general framework for allowing the formation of a sector, a detailed sector operations plan would be submitted to and approved by the NMFS Regional Administrator.

Because the details of sector management will be included in the operations plan and submission will be accompanied by appropriate NEPA documents, impacts on protected resources would evaluated by the proponents at that time and accepted by the agency with any accompanying caveats on the sector operations.

5.3.3 Hard Total Allowable Catch (Hard TAC)

Hard catch TACs are conservation measures developed to minimize the risk of exceeding fishing mortality objectives in defined circumstances. They should not affect protected species other than, if adopted, they could result in the curtailment of activities in certain areas. Depending on season and location, the removal of effort could result in some unquantifiable benefits to sea turtles.

Other alternatives, however, may affect protected species differently. A fleetwide hard TAC without limited entry is a scenario in which short-term effort might increase and accordingly potential negative impacts to sea turtles if there is overlap an overlap with sea turtle high use areas. Without the controls of limited entry, an undetermined number of vessels could enter the fishery to compete for the TAC. A division of the TAC by quarter or trimester could remedy the potential derby situation and its possible negative impacts, but only if the overlap between turtle high use seasons and areas and scallop effort is also considered.

5.3.4 Establish a Northern Gulf of Maine Scallop Management Area (NGOM)

The alternatives under consideration with respect to a distinct NGOM scallop management area are not likely to affect sea turtles in any way that is discernable from No Action. Given that scallop gear/turtle interactions have never been observed or reported for the Gulf of Maine and that the operation of a fishery is opportunistic depending on the resource availability, the presence or absence of a management system that is separate from the overall program developed for general category vessels should result in few if any measurable impacts on sea turtles. Further, the northern limit for hard shelled species is considered northern Cape Cod. While leatherback turtles have a broader distribution, they are only seasonally present GOM waters.

5.3.5 Monitoring Provisions

Whether there are additional reporting requirements through VMS or an IVR system, indirect but potentially positive benefits may result if more detailed reporting on catch, and in particular effort distribution and possibly other information, contributes to a better evaluation of the impacts of this fishery on protected and other marine resources. More timely information has clear benefits over the monthly reporting that is currently required for general category vessels.

5.3.6 Limited Access Fishing Under General Category Rules; Allocation of Quota to Limited Access Vessels Fishing Under General Category Rules

An alternative is proposed that would reduce capacity and effort in the general category fishery by prohibiting limited access vessels from fishing under general category rules. Under No Action, limited access vessels may fish under general category rules when not on a scallop DAS, or after their individual DAS have been used.

An additional alternative under consideration would allow limited access fishing under general category rules if a vessel qualifies under the same criteria that will apply to a limited access general category permit. A variation would allow only occasional and part-time limited access vessels to participate in the general category fishery if they qualify under the criteria selected for general category limited access.

With the exception of the prohibition on limited access vessels in the general category fishery possibly resulting in an effort reduction that could, in turn, reduce the risk of sea turtle/scallop gear interactions, the alternatives above are likely to have few discernable impacts on protected resources. In the remaining alternatives, effort will be either removed or attributed to either the general category or limited access allocation or placed in a separate allocation. In each case, effort will be neither removed nor added but reallocated. As evidenced in Murray (2007), and with the caveat that observer coverage has been lower on general category vessels overall, interactions with sea turtles can and do occur on both general category and limited access trawl vessels fishing with the same gear during months when sea turtles are most abundant.

5.3.7 Allocation Between Limited Access and General Category Fisheries

Whatever level is adopted, conservation measures to control harvest, such as a defined allocation of catch to general category scallop vessels versus a target TAC that is not accompanied by "backstop" measures to prevent the fishery from exceeding the TAC (No Action), are likely to have indirect and potentially beneficial impacts on protected species such as sea turtles. Direct limits on harvest effectively control effort and may, in turn, limit potential risks of interactions with sea turtles when overlaps with the affected species and the fishery occur.

Allocation of yellowtail flounder bycatch TAC in access areas
Allocation of the yellowtail flounder TAC would divide the yellowtail bycatch between the limited access and general category fisheries at a defined level. This management tool prevents one or the other fishery from taking the entire TAC and forcing the closure of the scallop fishery. Since it does not affect the overall TAC itself, impacts of the measure on sea turtles will likely not be measurable nor very different from No Action. The yellowtail flounder TACs also are applicable only to the Georges Bank fishery, an area in which sea turtles are rarely encountered.

5.3.8 Incidental Catch

The allowance of an incidental catch of up to 40 pounds is not expected to affect scallop fishing effort and as such will not likely have any impacts on sea turtles or their potential interactions with the fishery.

5.3.9 Measures to allow more timely integration of recent data

Possible changes to the start of the fishing year may affect protected species, depending on when the fishery begins and which allocation access alternative is adopted (IFQ versus a hard-TAC without limited entry). While the change would improve the integration of fishery data into the management process, a fleet-wide hard TAC could increase the likelihood of derby fishing at the start of the fishing year. This outcome may have potentially negative results in the Mid-Atlantic if the fishing year begins on May 1 or August 1 --- a period when turtles are generally most abundant throughout the area. No Action would have a lower likelihood of potentially negative impacts, as would the issuance of general category permits on March 1. While turtles may be present in the Mid-Atlantic and even in areas subject to heavy fishing effort, the majority of animals are generally still south of the Mid-Atlantic in warmer waters in late winter.

5.3.10 Other Measures Not Directly Related to the Goals and Objectives of Amendment 11

Trawl Sweep Restriction

The trawl sweep measure would retain the 144-foot restriction for scallop vessels but would clarify that vessels fishing on monkfish or multispecies DAS would not be bound by the requirement. This would not trigger any change to the impacts of scallop management measures or the fishery on sea turtles but may have impacts that are unknown at this time if effort in other fisheries is affected.

Fifty Bushel Possession Limit East of the Demarcation Line

When adopted few if any impacts were attributable to the 50 bushel measure. The proposed change, a modification that addresses operational aspects of the fishery, would promote enforceability but is not likely affect sea turtles in any measurable way.

5.4 ECONOMIC IMPACTS

5.4.1 Overview of economic impacts

This section summarizes the economic analyses of the alternatives proposed by the Council through Amendment 11 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 refers to continuation the general category fishery as an open access fishery subject to the 400 lb. trip limit (Section 5.4.2).

5.4.1.1 Summary of impacts of limited entry, qualification criteria and period alternatives

The overall economic impacts of the limited entry are expected to be positive for the sea scallop fishery compared to taking no action. Since with no action there are no limits on the number of trips a vessel could take and no limits on the number of vessels able to participate in the general category fishery, total fishing effort in this fishery could increase in response to higher scallop prices, to an increase in resource productivity, or to changes in fishing opportunities in other fisheries. As a result, scallop mortality could exceed sustainable levels, reducing the stock biomass, the future yield, and revenues from the scallop resource. Limited access by itself, will not entirely eliminate these possible effects, but it will reduce the risks of overfishing of the scallop resource by preventing new entry to the general category fishery and by restricting the number of participants in this fishery to vessels that meet the poundage qualification criteria within a qualification time period.

In addition to having a general category permit before the control date, Amendment 11 includes three qualification criteria alternatives (100 pound trip, 1,000 annual pounds, and 5,000 annual pounds), which are combined with three qualification time period alternatives (11 years, 5 years and 2 years before the control date) to determine the vessels that qualify for limited access. There is also a stand alone alternative that would qualify all vessels that had a permit during the 5-year qualification period for limited access (3562 permits), but which would allocate an individual quota only to those vessels with landings of scallops of one pound or more (677 vessels). Table 71 shows the number of qualifiers for each of these alternatives, with qualification poundage determined according to each vessel's best year of scallop landings. The number of limited access vessels that may qualify for access to general category fishery is shown in Table 72. The impacts of these alternatives on limited access qualifiers could be summarized as follows:

- The poundage criteria have a larger affect on the number of qualifiers compared to the qualification time period. For example, reducing time period for qualification from 11 years to 5 years the number of qualified vessels from 459 vessels to 369 vessels with the 1000 lb. criteria. On the other hand, holding the qualification time period constant at 11 years, but increasing the poundage criteria to 5000 lb. would reduce the number of qualified vessels even more, to 203 general category permit holders (Table 71).
- A longer time period would result in more vessels that were not active recently to qualify for limited access. For example, only 234 vessels out of 459 qualifiers with 11 year and 1000 lb. qualification criteria participated in the fishery in 2005 fishing year. Reducing qualification period will result in smaller number of vessels that were not active in recent years to qualify for limited access (Table 71).

- The number of limited access vessels that would qualify for general category access would increase significantly to 126 vessels, 96 full-time and 30 part-time and occasional, if 1000 lb. criteria and 11 year period is selected as the period of qualification from 57 (35) vessels for 5 year (2 year) qualification period (Table 72). 11 year period include the years from 1994 to 1998, during when the scallop productivity and average LPUE was low. Some limited access vessels may have taken more general category trips to compensate for the decline in scallop landings when they fished under day-at-sea during those early years, or some of the day-at-sea trips could have been included as general category trips (See Section 5.4.10.1 for further explanation).

Table 71. Number of qualifying general category vessels and estimated landings based on an individual allocation system and best year of landings during the specified time period.

Time period (Up to the control date)	Qualification Criteria	Number of vessels that were active and qualify for limited access	Average Best year landings per vessel (lb.)	Total best year scallop landings (lb)	2005 fish year	
					Number of active General category vessels	General category revenue as % of total revenue
11 years 4777 unique general category permits, 924 active vessels	100 lb. Criteria	705	6,084	4,289,220	318	50%
	1000 lb. Criteria	459	9,124	4,187,916	234	60%
	5000 lb. Criteria	203	17,757	3,604,671	131	80%
5 years 3562 unique general category permits, 677 active vessels	Stand-alone ITQ	677	5,872	3,975,344	344	48%
	100 lb. Criteria	548	7,232	3,963,136	301	51%
	1000 lb. Criteria	369	10,524	3,883,356	224	61%
	5000 lb. Criteria	188	18,475	3,473,300	130	80%
2 years 2876 unique general category permits, 482 active vessels	100 lb. Criteria	399	7,443	2,969,757	270	53%
	1000 lb. Criteria	277	10,518	2,913,486	201	62%
	5000 lb. Criteria	143	18,245	2,609,035	114	81%

Table 72. Number of qualifying limited access vessels and estimated landings based on an individual allocation system and best year of landings during the specified time period (total of full-time, part-time and occasional)

Time period (Up to the control date)	Qualification Criteria	Number of vessels that were active and qualify for limited access		Average Best year landings per vessel (lb.)	Total best year scallop landings (lb)	General category scallop revenue as a % of total revenue (FT, 2005 fishing year)	General category scallop revenue as a % of total revenue (PT+OC, 2005 FY)
		Full-time	PT and OC				
11 years 367 active vessels with limited access permit	100 lb. Criteria	267	78	2,427	705,519	4%	18%
	1000 lb. Criteria	96	30	5,665	601,745	6%	20%
	5000 lb. Criteria	22	7	17,004	393,458	10%	22%
5 years 231 active vessels with limited access permit	Stand-alone ITQ	174	57	9,303	455,528	3%	11%
	100 lb. Criteria	144	49	2,973	453,204	3%	11%
	1000 lb. Criteria	38	19	7,707	393,286	5%	17%
	5000 lb. Criteria	12	7	17,862	310,442	9%	22%
2 years 131 active vessels with limited access permit	100 lb. Criteria	88	23	4,224	305,561	3%	13%
	1000 lb. Criteria	26	9	10,508	269,725	3%	20%
	5000 lb. Criteria	7	5	19,341	216,214	8%	22%

The combined impacts of the qualification alternatives and time-period on the general category permit holders are examined in Section 5.4.3 and the impacts of alternatives for limited access

vessels are analyzed in Section 5.4.10. An analysis of general category qualifiers by primary state of landing is provided in Section 5.4.4.

5.4.1.2 Summary of impacts of general category TAC combined with access and allocation alternatives

Amendment 11 includes alternatives that would control scallop fishing mortality in the general category fishery by allocating a separate TAC for this sector. In general, the economic impacts of the TAC are expected to be positive for the sea scallop fishery as a whole compared to taking no action for the following reasons:

- In the absence of measures that control overall scallop landings by general category vessels, it is still possible for the fishing mortality to increase beyond the target levels if the vessels that qualify for limited access increase the number of trips targeting scallops. This could have negative impacts on both the limited access and the general category vessels as scallop catch per day-at-sea declines and fishing costs per pound of scallops increase.
- Since any increase in overfishing of the scallop resource will need to be corrected through framework action according to the Sea Scallop FMP, the Council could reduce the DAS allocations for limited access vessels, negatively impacting the group of vessels that has been subject to strict effort controls since 1994. The Council could also reduce the possession limit for all general category vessels, affecting negatively most of the general category vessels that participate in the fishery and depend on scallops as a significant source of income.

If the general category fishery is managed by hard TAC, however, without limited access and/or without allocation of quota to individual vessels (either an individual quota or allocations to tiers), it could lead to a race to fish and market gluts, which could have negative economic impacts especially on smaller vessels that fish seasonally and cannot access all areas due to the constraints on their capacity. Fleet-wide hard TAC by trimester (3.1.2.4.7, Option B) or by quarter (3.1.2.4.7, Option A) will spread out the fishing season and reduce negative impacts from derby fishing and market gluts to some extent.

TAC management combined with limited entry and allocation for individual vessels (in terms of IQ in pounds or trips) will prevent derby-style fishing and the negative economic impacts associated with it. According to the individual allocation system (3.1.2.4.1), each vessel's share will be determined by determining their historical activity during a qualification time period. A vessel's contribution to historic landings can be calculated based on its best year or the best year indexed for years active in the scallop fishery.

These alternatives will determine the individual share of each vessel in the overall TAC for the general category fleet, which will be used to calculate individual allocations per vessel either in terms of pounds (Option A) or trips (Option B) corresponding to each TAC level. Trip allocation has an advantage over quota allocation in terms of monitoring and enforcement since with VMS it is easier to determine the number of trips per vessel than to monitor landings per trip. On the other hand, if some vessels land less than 400 lb. of scallops from their trips, total general category scallop landings could fall below the general category TAC, resulting in reduced revenue for the general category fleet. Trip allocation could also provide incentive for vessels

spend more time at sea to increase their trip landings to the possession limit. This could increase trip costs and could also have some safety impacts if the trip is extended, for example, during difficult weather conditions.

Two permit alternative would qualify any vessel that had landings of 5,000 lb. or more scallops for the full-time permit with a possession limit of 400 pounds, while any vessels landed less than 5000 lb. will receive part-time permit and would be restricted to a 200 pound possession limit (3.1.2.4.2). The three-tiered allocation alternative would allocate equal pounds to each vessel within each tier (3.1.2.4.3). Stand alone ITQ alternative (3.1.2.4.4) would allocate an individual quota only to those vessels with landings of scallops of one pound or more and permit trading or leasing of quo among all qualifiers, that is all vessels that had a permit during the 5-year qualification period for limited access. The economic impacts of these alternatives are analyzed in Section 5.4.8 below.

According to the alternative proposed by this amendment (3.1.7.2), the amount of TAC that will be allocated to the general category fishery will be based on a certain percentage of total available scallop harvest from the fishery, ranging from 2.5% to 11%. If this alternative were not selected, the TAC could be based on historical landings of the general category fishery or some other amount determined by the Council in future actions.

The economic impacts of the TAC alternatives on general category and limited access vessels are examined in detail in Section 5.4.11 for scallop harvest levels ranging from 40 million lb. to 70 million lb. The biological simulations for the next 11 years indicated that sustainable scallop yield could vary between 56 million lb. (for the 2008 fishing year) to 68 million lb. (for the 2015 fishing year, Table 18), but levels less than these amounts (40 to 50 million lb.) were also included in this analysis to evaluate impacts in less favorable scallop resource conditions. The economic impacts will vary according to the level of general category TAC as follows:

- TAC management will have distributional impacts on general category and limited access vessels. Landings and revenues for each percent of general category TAC are compared in Table 73 to the upper bound of 11%, which is close to the status quo level. (According to Framework 18, the allocations for limited access vessels were determined by assuming that general category landings will constitute 11% of total scallop landings in 2006 and about 10% of total scallop landings in the 2007 fishing year.)
- If the general category is allocated at 2.5% of total scallop harvest, scallop landings and revenues for this fishery as whole and also for an average vessel could decline by 77% , whereas that of the limited access fishery could increase by 10% compared to an 11% TAC allocation for the general category fishery. In order words, a lower TAC for general category will have larger negative proportional impacts on general category vessels due to the lower volume of scallop landings by the general category vessels compared to landings by the limited access fishery. A higher percentage TAC will reduce the negative impacts on general category vessels, but will lower the positive economic impacts on the limited access vessels compared to status quo levels of 10% to 11%.

Table 73. Impacts of allocation on landings and revenues of the general category and limited access fleets

Total Scallop TAC (Million lb.)	GC TAC as a % of Total TAC	General category TAC (lb.)	Limited access landings, (lb.)	Estimated DAS-used per limited access vessel (1)	% Change in landings and revenue compared to 11% for GC TAC	
					General category	Limited access
40	2.50%	1.0	39.0	51	-77%	10%
40	5%	2.0	38.0	49	-55%	7%
40	7%	2.8	37.2	48	-36%	4%
40	10%	4.0	36.0	47	-9%	1%
40	11%	4.4	35.6	46	0%	0%
50	2.50%	1.3	48.8	63	-77%	10%
50	5%	2.5	47.5	62	-55%	7%
50	7%	3.5	46.5	61	-36%	4%
50	10%	5.0	45.0	59	-9%	1%
50	11%	5.5	44.5	58	0%	0%
60	2.50%	1.5	58.5	76	-77%	10%
60	5%	3.0	57.0	74	-55%	7%
60	7%	4.2	55.8	73	-36%	4%
60	10%	6.0	54.0	70	-9%	1%
60	11%	6.6	53.4	70	0%	0%
70	2.50%	1.8	68.3	89	-77%	10%
70	5%	3.5	66.5	87	-55%	7%
70	7%	4.9	65.1	85	-36%	4%
70	10%	7.0	63.0	82	-9%	1%
70	11%	7.7	62.3	81	0%	0%

(1) Assuming 334 full-time equivalent vessels and LPUE of 2,300 pounds per day-at-sea (see Section 5.4.11.3).

- TAC management could have significant negative economic impacts on general category vessels (compared to status quo) to the extent that it is different from the historical levels and/or from the level of scallop landings in recent years. At a total scallop harvest of 50 million lb., for example, a general category TAC less than 6.5% will reduce the total general category landings below the levels in 2004 fishing year (3.2 million lb.) and will reduce the general category landings by one-half compared to the level of landings in 2005 fishing year (7.4 million lb.).
- The impacts of a TAC for general category fishery will not be uniform among the qualifying vessels, however, and will vary according to the qualification criteria and qualification period alternatives. Qualification of a smaller number of vessels for general category access will reduce the negative impacts of a low TAC on vessels that have a higher dependence on general category fishery as a source of income. Clearly, the number of qualifiers will decline and average allocation per vessel will increase as qualification poundage criteria increases and length of qualification period shortens (Table 74). On the other hand, higher poundage and shorter qualification period alternatives will increase the negative impacts on vessels that will have no access to the general category fishery in the future (see discussion below in 5.4.1.3).
- The allocations for individual vessels qualify for limited access will vary from the averages shown in Table 74. General category vessels are shown in three groups in Table 75 according to their best year scallops landings during the qualification period. These groups also correspond to three tiers proposed by alternative 3.1.2.4.3, with tier-3

including vessels with 20,000 lb. or more landings and tier-1 those with scallop landings of less than 5000 lb. Similarly, tier-3 includes vessels with full-time permits and tiers 1 and 2 include vessels with part-time permits as proposed by alternative 3.1.2.4.2. Average allocation for each group is estimated for a total scallop harvest of 50 million lb. at varying percentage TAC for general category fishery.

- A general category TAC lower than the present levels of general category landings will reduce the allocations per vessel in the same proportion for each group of qualifiers. The absolute impacts as measured in terms of pounds of scallops will be larger, however, for vessels that land scallops in larger volumes and have a higher dependence on scallop fishing for their income. For example, for 62 vessels with historical landings of 20,000 or more scallops, a 11% TAC will result in an average allocation of 48,688 lb. with 1000 lb. criteria and 5-year qualification period. If the percentage TAC is set at 2.5%, however, these group of vessels would receive about 11,508 lb., a decline of more than 37,000 lb. Because scallop landings per vessel from best year averaged about 35,000 lb. for this group, a percentage TAC of less than 7% will result in an allocation lower than this average, except with 5000 lb. and 5 year criteria or with 2 year qualification period. On the other hand, the 181 vessels that landed less than 5000 lb. during the same period will have their allocations reduced by a smaller amount, by about 3,400 lb. if a 2.5 % TAC is applied (1,096 lb.) instead of an 11% TAC (4,489 lb.).
- The economic impacts of these alternatives on general category vessel landings, revenues, crew incomes and boat shares are examined in Section 5.4.11.2 for harvest levels ranging from 40 million to 70 million pounds of scallops. For example, for a vessel that have a high dependence on scallop revenue and landed about 35,000 lb. pounds., a 2.5% TAC could result in a 97% to 118% decline and 5% TAC in 58% to 71% decline, and a 7% TAC in 19% to 24% decline in boat shares depending on scallop prices (Table 173).
- The impacts of general category TAC on limited access revenues, crew income and vessel shares are analyzed in Section 5.4.11.3. A 2.5% TAC for general category is estimated to increase DAS-used per limited access vessel by 5 days compared to 11% TAC if the total scallop harvest was about 40 to 50 million lb. This increase is estimated generate about 15% to 19% increase in net boat share depending on LPUE and scallop price. A 5% TAC is estimated to increase boat shares by 11% to 13%, and a 7% TAC is estimated to increase boat shares by 7% to 9%, compared to an 11% TAC (Table 176 and Table 177).

Table 74. Average scallop pounds per vessel by percentage of scallop harvest allocated to general category fishery

Total scallop harvest (Million lb.)	General category TAC as a % of total harvest	GC TAC (Mil. lb.)	11 Year period			5 year period				2 year period		
			100 lb. Criteria (705 vessels)	1000 lb. Criteria (459 vessels	5000 lb. Criteria (203 vessels)	Stand alone-ITQ (677 vessels)	100 lb. criteria (548 vessels)	1000 lb. Criteria (369 vessels)	5000 lb. Criteria (188 vessels)	100 lb. Criteria (399 vessels)	1000 lb. Criteria (277 vessels)	5000 lb. Criteria (143 vessels)
40	2.50%	1.0	1,418	2,179	4,926	1,477	1,825	2,710	5,319	2,506	3,610	6,993
40	5%	2.0	2,837	4,357	9,852	2,954	3,650	5,420	10,638	5,013	7,220	13,986
40	7%	2.8	3,972	6,100	13,793	4,136	5,109	7,588	14,894	7,018	10,108	19,580
40	10%	4.0	5,674	8,715	19,704	5,908	7,299	10,840	21,277	10,025	14,440	27,972
40	11%	4.4	6,241	9,586	21,675	6,499	8,029	11,924	23,404	11,028	15,884	30,769
50	2.50%	1.3	1,773	2,723	6,158	1,846	2,281	3,388	6,649	3,133	4,513	8,741
50	5%	2.5	3,546	5,447	12,315	3,693	4,562	6,775	13,298	6,266	9,025	17,483
50	7%	3.5	4,965	7,625	17,241	5,170	6,387	9,485	18,617	8,772	12,635	24,476
50	10%	5.0	7,092	10,893	24,631	7,386	9,124	13,550	26,596	12,531	18,051	34,965
50	11%	5.5	7,801	11,983	27,094	8,124	10,036	14,905	29,255	13,784	19,856	38,462
60	2.50%	1.5	2,128	3,268	7,389	2,216	2,737	4,065	7,979	3,759	5,415	10,490
60	5%	3.0	4,255	6,536	14,778	4,431	5,474	8,130	15,957	7,519	10,830	20,979
60	7%	4.2	5,957	9,150	20,690	6,204	7,664	11,382	22,340	10,526	15,162	29,371
60	10%	6.0	8,511	13,072	29,557	8,863	10,949	16,260	31,915	15,038	21,661	41,958
60	11%	6.6	9,362	14,379	32,512	9,749	12,044	17,886	35,106	16,541	23,827	46,154
70	2.50%	1.8	2,482	3,813	8,621	2,585	3,193	4,743	9,309	4,386	6,318	12,238
70	5%	3.5	4,965	7,625	17,241	5,170	6,387	9,485	18,617	8,772	12,635	24,476
70	7%	4.9	6,950	10,675	24,138	7,238	8,942	13,279	26,064	12,281	17,690	34,266
70	10%	7.0	9,929	15,251	34,483	10,340	12,774	18,970	37,234	17,544	25,271	48,951
70	11%	7.7	10,922	16,776	37,931	11,374	14,051	20,867	40,957	19,298	27,798	53,846

Table 75. Distributional impacts of qualification criteria and qualification period alternatives combined with % TAC.

Best year landings per vessel (lb)		11 Year period			5 year period				2 year period		
		100 lb. Criteria	1000 lb. Criteria	5000 lb. Criteria	Stand alone-ITQ	100 lb. criteria	1000 lb. Criteria	5000 lb. Criteria	100 lb. Criteria	1000 lb. Criteria	5000 lb. Criteria
>=20,000 lb. (average pounds of scallops per vessel were about 35,000 lb.)											
Number of vessels		62	62	62	62	62	62	62	44	44	44
% share of TAC		49.7%	50.9%	59.1%	53.6%	53.8%	54.9%	61.4%	51.1%	52.0%	58.1%
% TAC	GC TAC (Mil.lb.)	**Average allocation (pounds) per general category vessel at 50 million lb. scallop harvest**									
2.50% 5% 7% 10% 11%	1.3	10,419	10,671	12,398	11,241	11,276	11,508	12,867	15,084	15,376	17,170
	2.5	20,037	20,522	23,842	21,617	21,685	22,131	24,744	29,008	29,569	33,019
	3.5	28,052	28,730	33,379	30,264	30,360	30,983	34,641	40,612	41,396	46,226
	5.0	40,074	41,043	47,684	43,235	43,371	44,262	49,488	58,017	59,137	66,038
	5.5	44,081	45,147	52,452	47,558	47,708	48,688	54,436	63,818	65,051	72,642
5000 lb. to 19,999 lb. (average pounds of scallops per vessel were over 10,000 lb.)											
Number of vessels		141	141	141	126	126	126	126	99	99	99
% share of TAC		34.3%	35.2%	40.9%	33.8%	33.9%	34.6%	38.6%	36.8%	37.5%	41.9%
% TAC	GC TAC (Mil.lb.)	**Average allocation (pounds) per general category vessel at 50 million lb. scallop harvest**									
2.50% 5% 7% 10% 11%	1.3	3,167	3,243	3,768	3,482	3,493	3,565	3,986	4,832	4,925	5,500
	2.5	6,090	6,237	7,246	6,697	6,718	6,856	7,666	9,292	9,471	10,577
	3.5	8,526	8,732	10,145	9,376	9,405	9,599	10,732	13,009	13,260	14,807
	5.0	12,179	12,474	14,492	13,394	13,436	13,712	15,331	18,584	18,943	21,153
	5.5	13,397	13,721	15,942	14,733	14,780	15,084	16,864	20,442	20,837	23,269
<5000 lb. (average pounds of scallops per vessel ranged between 1,300 lb. with 100 lb. criteria to 2,300 lb. with 1000 lb. criteria)											
Number of vessels		502	256	None	489	360	181	None	256	134	None
% share of TAC		16.0%	13.9%	0.0%	12.6%	12.4%	10.6%	0.0%	12.2%	10.5%	0.0%
% TAC	GC TAC (Mil.lb.)	**Average allocation (pounds) per general category vessel at 50 million lb. scallop harvest**									
2.50% 5% 7% 10% 11%	1.3	572	980	No allo.	465	618	1,049	No allo.	855	1,404	No allo.
	2.5	1,113	1,905	No allo.	904	1,202	2,041	No allo.	1,662	2,731	No allo.
	3.5	1,558	2,667	No allo.	1,266	1,683	2,857	No allo.	2,326	3,823	No allo.
	5.0	2,226	3,809	No allo.	1,809	2,404	4,081	No allo.	3,324	5,461	No allo.
	5.5	2,449	4,190	No allo.	1,990	2,644	4,489	No allo.	3,656	6,007	No allo.

The impacts of qualification criteria and period alternatives on the vessels that could qualify for limited access combined with the impacts for different levels of general category TAC are analyzed in Section 5.4.5. The economic impacts of the contribution factor alternatives (including capping contributions at 50,000 lb.) combined with qualification criteria, period, and impacts of TAC are provided in Section 5.4.7. The impacts of the allocation access alternatives, including individual quota, tiered permits, and hard TAC alternatives are discussed in Section 5.4.8.

5.4.1.3 Summary of impacts of the qualification criteria and qualification period alternatives on recent participants in the fishery

The impacts of qualification criteria and period alternatives will not be uniform on the following groups of vessels, grouped here for purposes of demonstration according to their permit dates and their period of activity in the general category fishery (Table 76):

- Vessels that had a permit and were active before the control date and qualify for limited access (Group 1). Limited entry, in itself, will have positive economic impacts on the qualifying vessels since there will be a smaller pool of general category vessels to share any level of TAC allocated to this fishery. Limited access will protect the profits of these vessels from declining due to new entries especially during favorable times when scallop productivity and/or prices are high. Higher poundage criteria will qualify a larger proportion of vessels that have a higher dependence on scallop revenue compared to lower poundage alternatives. On the other hand, 100 lb. criteria combined with longer qualification period will distribute benefits of limited access among a larger number of vessels.

  There will also be distributional impacts among the qualified vessels according to whether they participated in the general category fishery in the recent years and derived revenue from scallops. A longer qualification period will provide access to more vessels that were not active in the fishery in recent years. For example, only 318 out of 705 vessels that qualify with a 100 lb. criteria and an 11-year period participated in the general category fishery in 2005, landing 3.8 million lb. of scallops. Allocation of quota to all 705 vessels will reduce the share of qualifiers that were active in the recent years, and will have negative economic impacts on these vessels if level of TAC allocated to the general category is lower than the recent levels. Higher poundage criteria or a shorter time period will reduce the number of qualifiers that were not active in the recent years and reduce the negative impacts on active qualifiers.

- Vessels that had a permit and were active before the control date but do not qualify for limited access due to the poundage criteria (Group 2): The number of these vessels will increase as the poundage criteria increases and the length of the qualification period shortens. The majority of these vessels were not active during recent years and therefore will not face a reduction in current revenue from scallops. For example, 219 vessels do not qualify for limited access because they did not land 100 lb. from any one trip during the 11-year qualification period. Only 46 out of these 219 vessels landed scallops in the 2005 fishing year. Higher poundage criteria will have impacts on more vessels in this

group. For example, with 5-year qualification period and 5000 lb. criteria, 214 out 489 vessels would not qualify for limited access landed 1.2 million pounds and earned $9.1 million revenue from scallops. On the average, this the vessels in Group 2 derived a lower percentage of revenue, less than 30%, from scallops in 2005 compared to vessels that qualify for limited entry (50% or above).

- Vessels that had a permit before the control date but were not active until after the control date and thus do not qualify for limited access (Group 3): All of the qualification criteria alternatives will have negative impacts on these vessels since they will have no access to the general category fishery. The number of such vessels that were active in 2005 varies from 152 vessels for an 11-year qualification period to 210 vessels for a 2-year qualification period. The smaller the period of qualification, the more vessels that will be negatively impacted. For example, 210 vessels will disqualify for limited entry with the 2-year qualification period because they did not land any scallops in the 2003 and 2004 fishing years. These same vessels landed 2.1 million lb. of scallops and earned $16.1 million revenue from scallops in the 2005 fishing year. It seems that these vessels derived over 50% of their revenue from scallops.

- Vessels that did not have a permit before the control date and thus do not qualify for limited access but were active during the recent years (Group 4): Control date criteria will have adverse economic impacts on 81 vessels that did not have a permit before the control date and were active in the fishery in the 2005 fishing year. These 81 vessels landed 1.4 million pounds of scallops in 2005 and earned $11.2 million from scallop fishing.

Table 76. Impacts by qualification criteria and time period alternatives compared to the recent participation in the fishery

Time Period	Qual Pound	Qualify	Vessel Group	The number of vessels active before the control date	2005 Fishing year					
					Number of active vessels	Scallop Revenue as a % of Total Revenue	Average scallop revenue per vessel ($)	Average Revenue from other species per vessel	Average total revenue per vessel ($)	Total scallop revenue ($)
General category vessels that had a permit before the control date										
11 Years	Not active	NO	Group3	0	152	62%	86,069	133,974	220,043	13,082,434
	100	NO	Group2	219	46	22%	38,431	336,142	374,573	1,767,825
		YES	Group1	705	318	50%	91,806	209,199	301,005	29,194,439
	1000	NO	Group2	465	130	24%	41,490	347,717	389,207	5,393,692
		YES	Group1	459	234	60%	109,267	157,199	266,467	25,568,572
	5000	NO	Group2	721	233	28%	42,152	312,814	354,966	9,821,372
		YES	Group1	203	131	80%	161,381	69,482	230,863	21,140,892
5 years	Not active	NO	Group3	0	172	58%	81,021	148,091	229,112	13,935,636
	Stand alone	YES	Group1	677	344	48%	87,526	223,489	311,015	30,109,062
	100	NO	Group2	129	43	24%	37,044	288,418	325,462	1,592,874
		YES	Group1	548	301	51%	94,738	214,213	308,952	28,516,188
	1000	NO	Group2	308	120	23%	39,283	345,405	384,688	4,713,964
		YES	Group1	369	224	61%	113,371	158,177	271,548	25,395,098
	5000	NO	Group2	489	214	29%	42,581	316,778	359,359	9,112,295
		YES	Group1	188	130	80%	161,514	69,921	231,435	20,996,767
2 Years	Not active	NO	Group3	0	210	54%	77,154	177,612	254,766	16,202,289
	100	NO	Group2	83	36	24%	34,371	244,157	278,528	1,237,369
		YES	Group1	399	270	53%	98,537	208,384	306,921	26,605,040
	1000	NO	Group2	205	105	26%	42,961	312,458	355,419	4,510,888
		YES	Group1	277	201	62%	116,077	160,424	276,501	23,331,521
	5000	NO	Group2	339	192	31%	44,868	297,568	342,436	8,614,703
		YES	Group1	143	114	81%	168,664	69,476	238,140	19,227,706
General category vessels that had a permit only <u>after</u> the control date										
Do not qualify			Group4	0	81	87%	139,066	13,772	152,838	11,264,313

Section 5.4.6 provides an analysis of economic impacts on the vessels that participated in the general category fishery during recent years.

5.4.2 The impacts of no action

Under no action the general category fishery would remain an open access fishery subject to the 400 lb. trip limit. Since there are no limits on the number of trips a vessel could take or no limits on the number of vessels to participate in the general category fishery, total fishing effort could increase in response to higher prices and/or increase in resource productivity. This has been the case during the last six years, as the number vessels participated in the general category fishery increased steadily from 204 in 2000 to 603 in 2005 fishing year (Table 40) and the general category landings increased from 1.09% in 2000 to 14.09% of the total scallop landings in 2005 fishing year. With the present regulations there is no guarantee that the general category fishing

effort and scallop fishing mortality from this fishery will not continue to increase in the future as it has been in the past. For example, if an additional 400 new vessels entered the general category fishery in the next five to six years and total number active general category vessels increased to 1000 vessels landing an average of 10,000 lb. per year as it has been during the last couple of years, total landings by this fishery could exceed 10 million lb. of scallops. It is not possible to predict accurately the potential increase or decrease in effort and scallop landings by general category fishery since that would depend on many factors such as scallop prices, costs, relative earning from other fisheries and productivity of the scallop resource. Potentially, it is always possible, however, for the new entry into the general category to accelerate, and general category scallop landings to grow excessively as it has been since the last couple of years. If there is no action, that is, there are no new regulations to prevent an increase in fishing effort by the general category fishery, however, there will always be a potential risk for the scallop mortality to increase beyond sustainable levels, and for the stock biomass for the scallop resource to decline due to overfishing. If that happens, there is no question that the future yield and revenues from the scallop resource would decline, negatively affecting the vessels both with general category and/or limited access scallop permits. Under the "no action" scenario, impacts on the consumer benefits may also be negative due to reduced scallop landings in the future, coupled with possibly higher scallop prices. Similarly, producer benefits would decline over the long-term 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).

However, any short term increase in overfishing of the scallop resource will need to be corrected by framework action according to the Amendment 10 to the Sea Scallop FMP regulations. If there is an increase in scallop fishing mortality due to increase in general category effort, the Council could adopt stringent regulations to reduce overfishing and achieve target mortality. For example, the DAS allocations for the limited access vessels could be reduced, negatively impacting the group of vessels that has been subject to strict effort controls since 1994. For example, in Framework 18, DAS allocations for the limited access vessels by assuming that general category landings will reach 11% of total scallop harvest in 2006 and 10% of the harvest in 2006. According to the dealer data for fishing years 2005 and 2006, however, actual landings by general category fishery were above these levels, with 14.09% of total landings in 2005 and 12.18% of total scallop landings in 2006. Under no action, the DAS allocations for limited access vessels could be reduced in the future frameworks to adjust for this unexpected increase in general category landings. Such an action would undoubtedly redistribute income from the limited access vessels to the vessels with general category permits. The Council could also reduce the possession limit for all general category trips, affecting negatively all the general category vessels participate in the fishery and depend on scallops as a significant source of income.

5.4.3 The impacts of limited access, the qualification criteria and time period alternatives on general category permit holders and on the number of vessels that qualify for limited access

The overall economic impacts of the limited entry are expected to be positive for the sea scallop fishery compared to taking no action. Since with no action there are no limits on the number of trips a vessel could take and no limits on the number of vessels able to participate in the general

category fishery, total fishing effort in this fishery could increase in response to higher scallop prices, to an increase in resource productivity, or to changes in fishing opportunities in other fisheries. As a result, scallop mortality could exceed sustainable levels, reducing the stock biomass, the future yield, and revenues from the scallop resource. Limited access by itself, will not entirely eliminate these possible effects, but it will reduce the risks of overfishing of the scallop resource by preventing new entry to the general category fishery and by restricting the number of participants in this fishery to vessels that meet the poundage qualification criteria within a qualification time period. The distributional economic impacts of limited access will not be uniform, however, since some vessels will be prevented from access to the general category fishery in the future.

This section provides an analysis of the control date, qualification time period and qualification poundage criteria alternatives on the general category permit holders (both the number of permit holders that qualify and do not qualify for limited access). The economic impacts of these alternatives on the active participants of the general category scallop fishery are discussed in Section 5.4.6 relative to the recent activity of these vessels. In Section 5.4.5 these impacts are analyzed in combination with the impacts of TAC management.

Table 77 shows the number of unique general category permits issued before the control date (Nov.1, 2004) corresponding to the three qualification periods as well the permits issued for the first time after the control date. The control date requirement will affect many vessels that had a general category permit before the control date depending on the qualification time period and the qualification criteria alternatives. There were over 4777 unique vessels that had a general category permit in one or more years during the 11 years from 1994 to the 2004 fishing year up to the control date. The number of potential general category permits that may qualify for limited access will vary with the qualification time period, however. For example, the number of general category permit holders that had a permit before the control date would decline to 3562 vessels for the 5 year qualification period (from 2003 fishing year to 2004 up to the control date) was implemented and to 2876 permits for the 2 year qualification period (from 2003 fishing year to 2004 up to the control date).

The control date requirement will also impact those vessels that had a general category permit for the first time after the control date. There were 699 permit holders that obtained a general category permit for the first time on or after the control date (Nov.1, 2004) as of September 2006. This number could increase if more new general category permits are obtained in 2006 and 2007 application years. None of these vessels will qualify for limited access according to the control date criteria. Since the majority of these general category permit holders, i.e., 580 vessels, never participated in the general category fishery, the control date requirement will not have any impact on the current income of these vessels, as will be discussed further below in Section 5.4.6. All of these vessels will incur a loss in future potential income, however, since they will not be able to participate in general category fishery in the future unless they buy access general category permit from a vessel that qualify for limited access. The control date criteria will have negative economic impacts, however, on the119 vessels that participated in the general category fishery during the recent years as will be discussed in the next section.

Table 77. Unique number of general category permits and active vessels by various periods of qualification

Period	Unique number of general category permits	Number of active general category vessels (landed 1lb. or more scallops)	Number of vessels that did not land any scallops
General category permits obtained before the control date			
11 year qualification period: 1999 - 2004 (1)	4777	924	3853
5 year qualification period: 2000 - 2004 (1)	3562	677	2885
2 year qualification period: 2003 - 2004 (1)	2876	482	2394
General category permits issued for the first time on or after the control date			
Total of 2004-06	699	119	580
New permits in 2004 AP year (2)	210	NA	
New permits in 2005 AP year (3)	373 (109 VMS and 264 No-VMS permits)	81	
New permits in 2006 AP year (4)	116 (39 VMS and 77 No-VMS)	88	

NOTES:
(1) Includes 2484 general category permits obtained during 2004 application year before the control date.
(2) 28 of the 210 vessels did not renew their permits in the subsequent years.
(3) This number shows the new additional permits issued in 2005, i.e., the number of general category permits that were issued for the first time in 2005. 555 out of the 2873 vessels that obtained a general category permit in 2005 application year did not have a permit before the control date. 182 of these obtained their permits, however, for the first time in 2004 after the control date, and 373 vessels obtained general category permit for the first time in 2005 application year. Only 81 vessels that had obtained a permit after the control date landed scallops in 2005 fishing year.
(4) This number shows the new additional permits issued in 2006, i.e., the number of general category permits that were issued for the first time in 2006. Although there were 499 of the general category permits issued in 2006 application year were obtained by vessels that did not have a general category permit before the control date, 383 of these permits were obtained in 2004 and 2005 application years after the control date, and 116 new general category permits were issued for the first time in 2006. Only 88 vessels that had obtained a permit after the control date, including those obtained their permit in 2004 and 2005 application years, landed scallops in 2006 fishing year (up to Jan.2007).

The qualification criteria alternatives will have significant impacts on the number of general category vessels that may qualify for limited access. These alternatives require that a vessel have a record of a specific amount of scallop landings either from a trip (100-lb. criteria) or annually (1000 lb. or 5000 lb. criteria) in any fishing year during the qualification time period in order to qualify for limited access. It is evident from Table 77 (the last column) that the number of general category vessels that landed some amount of scallops constituted a small subset of vessels that had a general category permit. For example, even if every vessel that landed one pound of scallops qualified for limited access, the number of qualifiers will decline from 4777 (2876) permit holders to 924 (482) vessels under the 11 years (2 years) qualification period. The actual number of vessels that would qualify for limited access will be smaller than these since even the least restrictive qualification criteria, 100 lb. alternative, requires vessels to have landed at least 100 lb. of scallops from one trip during the qualification time period.

The impacts of the qualification alternatives on the number of vessels that may qualify for limited access are examined in Table 78. This table includes only those vessels which had a permit before the control date and landed some amount of scallops during the qualification time period. As expected, the number of vessels that will qualify for limited access increase if smaller poundage criteria are applied or a longer qualification time period is implemented. The 100 lb. criteria combined with 11 year qualification period will result in the maximum number of participants, 705 vessels, qualifying for limited access. On the other hand, 5000 lb. criteria

combined with a two year qualification period will qualify the least number of vessels, only 143, for limited access. Total scallop landings for the qualifiers, based on their best year of landings, do not increase very significantly, however, for the extended qualification period (11 year) due to the lower level of scallop landings by general category vessels prior to the 2000 fishing year.

Table 78 shows that the poundage criteria have a larger affect on the number of qualifiers compared to the qualification time period. For example, reducing time period for qualification from 11 years to 2 years the number of qualified vessels decreases from 459 vessels to 277 vessels with the 1000 lb. criteria. On the other hand, holding the qualification time period constant at 11 years, but increasing the poundage criteria to 5000 lb. would reduce the number of qualified vessels even more, to 203 general category permit holders. This number declines to only 188 vessels with the 5000 lb. criteria if qualification time period is reduced to 5 years, and to 143 if it is reduced to 2 years.

Table 78. Number of qualifying vessels and estimated landings based on an individual allocation system and best year of landings during the specified time period.

Time period/ Number of general category permits	Qualification Criteria	Qualified for limited access	Number of active vessels	Total scallop landings (lb., Best year)	Avg. Scallop landings per vessel (lb., best year)*	Min. Scallop landings per vessel (lb. best year)	Max. Scallop landings per vessel (lb. best year)
1994-04 (11 fishing years up to the control date)							
Total unique general category permits= 4777 Number of vessels that did not land any scallops=3853 Active vessels = 924 Total scallop landings (best year)= 4.3 million lb.	100 lb. Criteria	NO	219	27,618	126	1	>1800
		YES	705	4,289,112	6,084	100	>50,000
	1000 lb Criteria	NO	465	130,428	280	1	>900
		YES	459	4,187,989	9,124	1000	>50,000
	5000 lb. Criteria	NO	721	713,786	990	1	>4,800
		YES	203	3,604,631	17,757	5000	>50,000
2000-04 (5 fishing years up to the control date)							
Total unique general category permits= 3562 Number of vessels that did not land any scallops=2885 Active vessels=677 Total scallop landings (best year)= 3.9 million lb.	100 lb. Criteria	NO	129	12,397	96	1	>1800
		YES	548	3,963,266	7,232	100	>50,000
	1000 lb. Criteria	NO	308	93,091	302	1	>900
		YES	369	3,883,173	10,524	1000	>50,000
	5000 lb. Criteria	NO	489	502,964	1,029	1	>4,800
		YES	188	3,473,300	18,475	5000	>50,000
2003-04 (2 fishing years up to the control date)							
Total unique general category permits= 2876 Number of vessels that did not land any scallops=2394 Active vessels=482 Total scallop landings (best year)= 2.9 million lb.	100 lb. Criteria	NO	83	7,888	95	1	>1800
		YES	399	2,969,856	7,443	100	>50,000
	1000 lb. Criteria	NO	205	64,204	313	1	>900
		YES	277	2,913,614	10,518	1000	>50,000
	5000 lb. Criteria	NO	339	368,799	1,088	1	>4,800
		YES	143	2,609,019	18,245	5000	>50,000

Note: Averages and sums are calculated without assuming a 50,000 lb. upper limit. This is just the historical data.

5.4.4 Analysis of qualification criteria and period alternatives by primary state of landing, primary gear and scallop pounds per trip

The impacts of various qualification criteria and time-period for qualification on participants from various states (determined by their primary state of landing) are not expected to be uniform (Table 81). Table 85 through Table 88 show the number of qualifiers by primary state of landing for various alternatives. These numbers are considerably less than the total number of general category permits shown in Table 79 (by each application year) and in Table 80 (by the last general category permit during a specific period of time) because only a subset of vessels landed any scallops during the qualification periods.

It seems that a shorter period of qualification will impact the vessels which primarily land in Maine than vessels which land in other states. For example, if a 1000 lb. criteria and 5 year period is used for qualification criteria, about 70 vessels from Maine, 148 vessels from MA and NH, 11 vessels from RI and CT, 81 vessels from NY and NJ and 59 vessels from other states in Mid Atlantic would qualify for limited access general category permit. Increasing the time period to 11 years (1994-2004 control date) from 5 years could qualify, however, about an additional 60 vessels from Maine with the 1000 lb. criteria, or a total of 130 vessels. If instead 100 lb. criteria were selected for 11 year qualification period, a total of 186 vessels with a primary state of landing from Maine will qualify. For vessels that land in MA and NH , however, the impacts are smaller in terms of the number of vessels qualify for limited access. If 11 year period and 1000 lb. qualification criteria were selected 168 vessels will qualify from these states. If instead 5 year period was selected, the number of qualifiers will decline slightly to 148 vessels. The impacts of a longer time period on the number of qualifiers from other states are also smaller, especially for the Mid-Atlantic states given that many participants from these states entered the fishery during the recent years. Because some vessels' primary state of landing has changed throughout the years (resulting in multiple states associated with one vessel), adding the number of qualifiers from each state (as shown in Table 85 to Table 88) would slightly overestimate actual number of qualifying vessels. For these reasons, the information given in these tables should be used in assessing the relative impacts of various qualification criteria and time period for vessels from each state. The differential impacts of these alternatives on ports and communities are discussed in detail in Section 5.5, Social Impact Assessment.

The number of qualifying vessels and scallop landings by primary gear are shown in Table 89 to Table 91 for vessels that have a logbook record of gear. The majority of qualifier use scallop dredges as expected. The majority of the qualifying vessels landed more than 200 lb. of scallops from their trips (Table 92) and incidental catch comprised an insignificant part of landings of general category vessels (Table 93).

Table 79. General Category Permits by the Primary State of Landing and by application year (May 1st to the end of April)

AP_YEAR	CT and RI	MA and NH	ME	NY and NJ	Other Mid Atlantic	Unknown	Grand Total
1994	173	900	510	303	105		1991
1995	189	928	561	309	87	1	2075
1996	177	898	558	283	87		2003
1997	175	936	494	296	100		2001
1998	180	904	461	291	102		1938
1999	194	927	502	346	121	5	2095
2000	207	982	542	387	141	2	2261
2001	217	1039	546	406	166	2	2376
2002	225	1124	540	431	191	1	2512
2003	223	1109	551	471	218	1	2573
2004	208	1039	524	488	224	1	2484

Table 80. Number of unique general category permits according to the last-application date for the permit for the specified period

Primary State	1994-2004 (up to the control date)*	2000-2004 (up to the control date)*	2003-2004 (up to the control date)*
CT and RI	336	271	238
MA and NH	2011	1483	1210
ME	1272	860	630
NY and NJ	773	629	535
Oth.Mid.At.	381	318	262
Unknown	4	1	1
Grand Total	4777	3562	2876

*The primary state of landing corresponds to the primary state associated with the last permit application by the vessel-owner during the specified time period.

Table 81. Impacts of qualification criteria alternatives for 11 year qualification period by state of landing

Time period	Qualification Criteria	State of landing	Number of vessels	Avg. scallop landings (lb., Best year)	Total Scallop landings per vessel (lb., best year)
100 lb. Criteria	NO	Maine	37	318	11,782
		MA+NH	100	87	8,740
		CT+RI	31	45	1,397
		NJ+NY	45	81	3,653
		Oth.MidAt	6	341	2,047
	YES	Maine	186	3,822	710,968
		MA+NH	261	4,933	1,287,561
		CT+RI	52	1,736	90,278
		NJ+NY	122	11,564	1,410,829
		Oth.MidAt	84	9,399	789,475
1000 lb. Criteria	NO	Maine	93	349	32,453
		MA+NH	193	277	53,524
		CT+RI	71	229	16,260
		NJ+NY	79	200	15,798
		Oth.MidAt	29	427	12,394
	YES	Maine	130	5,318	691,298
		MA+NH	168	7,401	1,243,444
		CT+RI	12	6,286	75,429
		NJ+NY	88	15,894	1,398,690
		Oth.MidAt	61	12,773	779,128
5000 lb. Criteria	NO	Maine	180	1,335	240,328
		MA+NH	296	934	276,361
		CT+RI	78	412	32,167
		NJ+NY	116	854	99,065
		Oth.MidAt	51	1,291	65,865
	YES	Maine	43	11,242	483,422
		MA+NH	65	15,702	1,020,606
		CT+RI	5	11,904	59,522
		NJ+NY	51	25,793	1,315,423
		Oth.MidAt	39	18,607	725,657

Table 82. Impacts of qualification criteria alternatives for 5 year qualification period by state of landing

Time period	Qualification Criteria	State of landing	Number of vessels	Avg. scallop landings (lb., Best year)	Total Scallop landings per vessel (lb., best year)
100 lb. Criteria	NO	Maine	18	146	2,632
		MA+NH	58	85	4,944
		CT+RI	24	49	1,179
		NJ+NY	25	65	1,637
		Oth.MidAt	4	501	2,005
	YES	Maine	95	5,435	516,367
		MA+NH	213	5,603	1,193,406
		CT+RI	45	1,891	85,105
		NJ+NY	116	11,970	1,388,464
		Oth.MidAt	79	9,872	779,924
1000 lb. Criteria	NO	Maine	43	311	13,394
		MA+NH	123	325	39,967
		CT+RI	58	253	14,686
		NJ+NY	60	235	14,076
		Oth.MidAt	24	457	10,969
	YES	Maine	70	7,231	506,200
		MA+NH	148	7,827	1,158,389
		CT+RI	11	6,509	71,599
		NJ+NY	81	16,988	1,376,025
		Oth.MidAt	59	13,067	770,960
5000 lb. Criteria	NO	Maine	79	1,388	109,659
		MA+NH	210	1,054	221,443
		CT+RI	64	418	26,763
		NJ+NY	91	915	83,255
		Oth.MidAt	45	1,374	61,845
	YES	Maine	34	12,057	409,935
		MA+NH	61	16,015	976,913
		CT+RI	5	11,904	59,522
		NJ+NY	50	26,137	1,306,846
		Oth.MidAt	38	18,950	720,084

Table 83. Impacts of qualification criteria alternatives for 2 year qualification period by state of landing

Time period	Qualification Criteria	State of landing	Number of vessels	Avg. scallop landings (lb., Best year)	Total Scallop landings per vessel (lb., best year)
100 lb. Criteria	NO	Maine	8	89	709
		MA+NH	35	83	2,902
		CT+RI	18	61	1,102
		NJ+NY	18	65	1,171
		Oth.MidAt	4	501	2,005
	YES	Maine	52	6,542	340,178
		MA+NH	168	4,393	738,036
		CT+RI	28	2,299	64,371
		NJ+NY	83	13,071	1,084,869
		Oth.MidAt	68	10,918	742,402
1000 lb. Criteria	NO	Maine	19	290	5,511
		MA+NH	86	342	29,380
		CT+RI	39	272	10,596
		NJ+NY	41	230	9,441
		Oth.MidAt	20	464	9,276
	YES	Maine	41	8,180	335,376
		MA+NH	117	6,082	711,632
		CT+RI	7	7,840	54,877
		NJ+NY	60	17,943	1,076,599
		Oth.MidAt	52	14,137	735,131
5000 lb. Criteria	NO	Maine	37	1,560	57,712
		MA+NH	162	1,215	196,766
		CT+RI	42	389	16,319
		NJ+NY	61	845	51,523
		Oth.MidAt	37	1,256	46,479
	YES	Maine	23	12,312	283,176
		MA+NH	41	13,274	544,245
		CT+RI	4	12,288	49,153
		NJ+NY	40	25,863	1,034,517
		Oth.MidAt	38	18,950	720,084

Table 84. Vessels with a primary port from Maine: Number of qualifying vessels and estimated landings based on an individual allocation system and best year of landings during the specified time period

Time period	Qualification Criteria	Qualified	Number of vessels	Total scallop landings (lb., Best year)	Avg. Scallop landings per vessel (lb., best year)	Avg.GRT per vessel
1994-04 (Up to the control date) Total: 223 active vessels	100 lb. Criteria	NO	37	11,782	318	28
		YES	186	710,968	3,822	29
	1000 lb. Criteria	NO	93	32,453	349	42
		YES	130	691,298	5,318	23
	5000 lb. Criteria	NO	180	240,328	1,335	32
		YES	43	483,422	11,242	20
2000-04 (Up to the control date) Total: 113 active vessels	100 lb. Criteria	NO	18	2,632	146	41
		YES	95	516,367	5,435	26
	1000 lb. Criteria	NO	43	13,394	311	44
		YES	70	506,200	7,231	19
	5000 lb. Criteria	NO	79	109,659	1,388	33
		YES	34	409,935	12,057	18
2003-04 (Up to the control date) Total: 60 active vessels	100 lb. Criteria	NO	8	709	89	27
		YES	52	340,178	6,542	24
	1000 lb. Criteria	NO	19	5,511	290	36
		YES	41	335,376	8,180	20
	5000 lb. Criteria	NO	37	57,712	1,560	29
		YES	23	283,176	12,312	19

Table 85. Vessels with a primary port from MA and NH: Number of qualifying vessels and estimated landings based on an individual allocation system and best year of landings during the specified time period

Time period	Qualification Criteria	Qualified	Number of vessels	Total scallop landings (lb., Best year)	Avg. Scallop landings per vessel (lb., best year)	Avg.GRT per vessel
1994-04 (Up to the control date) Total: 361 active vessels	100 lb. Criteria	NO	100	8,740	87	50
		YES	261	1,287,561	4,933	69
	1000 lb. Criteria	NO	193	53,524	277	64
		YES	168	1,243,444	7,401	65
	5000 lb. Criteria	NO	296	276,361	934	72
		YES	65	1,020,606	15,702	36
2000-04 (Up to the control date) Total: 271 active vessels	100 lb. Criteria	NO	58	4,944	85	53
		YES	213	1,193,406	5,603	72
	1000 lb. Criteria	NO	123	39,967	325	67
		YES	148	1,158,389	7,827	68
	5000 lb. Criteria	NO	210	221,443	1,054	77
		YES	61	976,913	16,015	37
2003-04 (Up to the control date) Total: 203 active vessels	100 lb. Criteria	NO	35	2,902	83	43
		YES	168	738,036	4,393	81
	1000 lb. Criteria	NO	86	29,380	342	67
		YES	117	711,632	6,082	79
	5000 lb. Criteria	NO	162	196,766	1,215	82
		YES	41	544,245	13,274	44

Table 86. Vessels with a primary port from RI and CT: Number of qualifying vessels and estimated landings based on an individual allocation system and best year of landings during the specified time period

Time period	Qualification Criteria	Qualified	Number of vessels	Total scallop landings (lb., Best year)	Avg. Scallop landings per vessel (lb., best year)	Avg.GRT per vessel
1994-04 (Up to the control date) Total: 83 active vessels	100 lb. Criteria	NO	31	1,397	45	83
		YES	52	90,278	1,736	112
	1000 lb. Criteria	NO	71	16,260	229	106
		YES	12	75,429	6,286	68
	5000 lb. Criteria	NO	78	32,167	412	104
		YES	5	59,522	11,904	68
2000-04 (Up to the control date) Total: 69 active vessels	100 lb. Criteria	NO	24	1,179	49	86
		YES	45	85,105	1,891	114
	1000 lb. Criteria	NO	58	14,686	253	110
		YES	11	71,599	6,509	68
	5000 lb. Criteria	NO	64	26,763	418	107
		YES	5	59,522	11,904	68
2003-04 (Up to the control date) Total: 46 active vessels	100 lb. Criteria	NO	18	1,102	61	99
		YES	28	64,371	2,299	102
	1000 lb. Criteria	NO	39	10,596	272	105
		YES	7	54,877	7,840	66
	5000 lb. Criteria	NO	42	16,319	389	101
		YES	4	49,153	12,288	85

Table 87. Vessels with a primary port from NY and NJ: Number of qualifying vessels and estimated landings based on an individual allocation system and best year of landings during the specified time period

Time period	Qualification Criteria	Qualified	Number of vessels	Total scallop landings (lb., Best year)	Avg. Scallop landings per vessel (lb., best year)	Avg.GRT per vessel
1994-04 (Up to the control date) Total: 99 active vessels	100 lb. Criteria	NO	45	3,653	81	81
		YES	122	1,410,829	11,564	75
	1000 lb. Criteria	NO	79	15,798	200	89
		YES	88	1,398,690	15,894	65
	5000 lb. Criteria	NO	116	99,065	854	85
		YES	51	1,315,423	25,793	57
2000-04 (Up to the control date) Total: 81 active vessels	100 lb. Criteria	NO	25	1,637	65	64
		YES	116	1,388,464	11,970	74
	1000 lb. Criteria	NO	60	14,076	235	82
		YES	81	1,376,025	16,988	65
	5000 lb. Criteria	NO	91	83,255	915	80
		YES	50	1,306,846	26,137	57
2003-04 (Up to the control date) Total: 66 active vessels	100 lb. Criteria	NO	18	1,171	65	65
		YES	83	1,084,869	13,071	73
	1000 lb. Criteria	NO	41	9,441	230	79
		YES	60	1,076,599	17,943	66
	5000 lb. Criteria	NO	61	51,523	845	82
		YES	40	1,034,517	25,863	55

Table 88. **Vessels with a primary port from Mid-Atlantic states other than NY and NJ: Number of qualifying vessels and estimated landings based on an individual allocation system and best year of landings during the specified time period**

Time period	Qualification Criteria	Qualified	Number of vessels	Total scallop landings (lb., Best year)	Avg. Scallop landings per vessel (lb., best year)	Avg.GRT per vessel
1994-04 (Up to the control date) Total: 90 active vessels	100 lb. Criteria	NO	6	2,047	341	62
		YES	84	789,475	9,399	85
	1000 lb. Criteria	NO	29	12,394	427	88
		YES	61	779,128	12,773	82
	5000 lb. Criteria	NO	51	65,865	1,291	86
		YES	39	725,657	18,607	82
2000-04 (Up to the control date) Total: 83 active vessels	100 lb. Criteria	NO	4	2,005	501	70
		YES	79	779,924	9,872	85
	1000 lb. Criteria	NO	24	10,969	457	91
		YES	59	770,960	13,067	82
	5000 lb. Criteria	NO	45	61,845	1,374	87
		YES	38	720,084	18,950	82
2003-04 (Up to the control date) Total: 72 active vessels	100 lb. Criteria	NO	4	2,005	501	70
		YES	68	742,402	10,918	89
	1000 lb. Criteria	NO	20	9,276	464	97
		YES	52	735,131	14,137	84
	5000 lb. Criteria	NO	37	46,479	1,256	92
		YES	35	697,928	19,941	84

Table 89. Number of qualifiers by primary gear

Period	Qualification Criteria	Scallop dredge	Scallop trawl	Other trawl	Misc. gear	Not known	Grand Total
11 Years	100 lb. Criteria	294	36	189	8	178	705
	1000 lb. Criteria	242	33	99	5	80	459
	5000 lb. Criteria	131	25	22	3	22	203
5 Year	100 lb. Criteria	228	34	174	5	107	548
	1000 lb. Criteria	190	31	96	4	48	369
	5000 lb. Criteria	120	23	22	3	20	188
2 Year	100 lb. Criteria	165	28	136	4	66	399
	1000 lb. Criteria	135	25	83	3	31	277
	5000 lb. Criteria	89	22	15	3	14	143

Table 90. Scallop pounds per vessel by primary gear

Period	Qualification Criteria	Scallop dredge	Scallop trawl	Other trawl	Misc. gear	Unknown	Grand Total
11 Years	100 lb. Criteria	9,012	14,510	3,719	6,140	2,052	6,084
	1000 lb. Criteria	10,851	15,792	6,687	9,392	4,148	9,124
	5000 lb. Criteria	17,874	19,970	23,567	14,233	9,214	17,757
5 Year	100 lb. Criteria	10,721	14,947	3,975	8,971	2,563	7,232
	1000 lb. Criteria	12,761	16,355	6,824	10,999	5,261	10,524
	5000 lb. Criteria	18,668	21,092	23,567	14,233	9,341	18,475
2 Year	100 lb. Criteria	11,089	16,989	3,227	10,889	2,760	7,443
	1000 lb. Criteria	13,444	18,979	4,956	14,233	5,486	10,518
	5000 lb. Criteria	18,866	21,291	19,300	14,233	9,239	18,245

Table 91. Scallop landings as a % of total by primary gear

Period	Qualification Criteria	Scallop dredge	Scallop trawl	Other trawl	Misc. gear	Unknown	Grand Total
11 Years	100 lb. Criteria	61.77%	12.18%	16.39%	1.15%	8.52%	100.00%
	1000 lb. Criteria	62.70%	12.44%	15.81%	1.12%	7.92%	100.00%
	5000 lb. Criteria	64.96%	13.85%	14.38%	1.18%	5.62%	100.00%
5 Year	100 lb. Criteria	61.68%	12.82%	17.45%	1.13%	6.92%	100.00%
	1000 lb. Criteria	62.44%	13.06%	16.87%	1.13%	6.50%	100.00%
	5000 lb. Criteria	64.50%	13.97%	14.93%	1.23%	5.38%	100.00%
2 Year	100 lb. Criteria	61.61%	16.02%	14.78%	1.47%	6.13%	100.00%
	1000 lb. Criteria	62.29%	16.29%	14.12%	1.47%	5.84%	100.00%
	5000 lb. Criteria	64.36%	17.95%	11.10%	1.64%	4.96%	100.00%

Table 92. Number vessels by maximum scallop landings from a trip

Period	Qualification Criteria	Qualify	Maximum scallop landings from any one trip			Grand Total
			<=40 lb.	41- 200 lb.	>200 lb.	
11 Years	100 lb. Criteria	NO	130	89		219
		YES		144	561	705
	1000 lb. Criteria	NO	130	202	133	465
		YES	NA	31	428	459
	5000 lb. Criteria	NO	130	231	360	721
		YES	NA	NA	201	203
5 Year	100 lb. Criteria	NO	73	56	NA	129
		YES	NA	93	455	548
	1000 lb. Criteria	NO	73	135	100	308
		YES	NA	14	355	369
	5000 lb. Criteria	NO	73	148	268	489
		YES	NA	NA	187	188
2 Year	100 lb. Criteria	NO	50	33	NA	83
		YES	NA	48	351	399
	1000 lb. Criteria	NO	50	75	80	205
		YES	NA	NA	271	277
	5000 lb. Criteria	NO	50	81	208	339
		YES	NA	NA	143	143

Table 93. Sum of best year scallop landings (lb.) by maximum scallop landings from a trip

Period	Qualification Criteria	Qualify	Maximum scallop landings from any one trip			Grand Total
			<=40 lb.	41- 200 lb.	>200 lb.	
11 Years	100 lb. Criteria	NO	4,911	22,707		27,618
		YES		94,464	4,194,648	4,289,112
	1000 lb. Criteria	NO	4,911	53,331	72,187	130,428
		YES		65,528	4,122,461	4,187,989
	5000 lb. Criteria	NO	4,911	104,611	604,265	713,786
		YES		14,247	3,590,383	3,604,631
5 Year	100 lb. Criteria	NO	2,560	9,837		12,397
		YES		57,063	3,906,204	3,963,266
	1000 lb. Criteria	NO	2,560	35,891	54,641	93,091
		YES		31,610	3,851,563	3,883,173
	5000 lb. Criteria	NO	2,560	59,260	441,144	502,964
		YES		8,240	3,465,059	3,473,300
2 Year	100 lb. Criteria	NO	1,120	6,768		7,888
		YES		23,578	2,946,278	2,969,856
	1000 lb. Criteria	NO	1,120	18,558	44,526	64,204
		YES		11,862	2,901,752	2,913,614
	5000 lb. Criteria	NO	1,120	30,420	337,259	368,799
		YES			2,609,019	2,609,019

Table 94. Average scallop landings per vessel (lb.) by maximum scallop landings from a trip

Period	Qualification Criteria	Qualify	Maximum scallop landings from any one trip			Grand Total
			<=40 lb.	41- 200 lb.	>200 lb.	
11 Years	100 lb. Criteria	NO	38	255	NA	126
		YES		656	7,477	6,084
	1000 lb. Criteria	NO	38	264	543	280
		YES		2,114	9,632	9,124
	5000 lb. Criteria	NO	38	453	1,679	990
		YES		NA	17,863	17,757
5 Year	100 lb. Criteria	NO	35	176	NA	96
		YES		614	8,585	7,232
	1000 lb. Criteria	NO	35	266	546	302
		YES		2,258	10,849	10,524
	5000 lb. Criteria	NO	35	400	1,646	1,029
		YES		NA	18,530	18,475
2 Year	100 lb. Criteria	NO	22	205	NA	95
		YES		491	8,394	7,443
	1000 lb. Criteria	NO	22	247	557	313
		YES		1,977	10,708	10,518
	5000 lb. Criteria	NO	22	376	1,621	1,088
		YES		NA	18,245	18,245

5.4.5 Combined Economic impacts the qualification criteria, period alternatives and general category TAC on vessels that qualify for limited access

5.4.5.1 Introduction

The economic impacts of the qualification criteria and period alternatives on the general category vessels will vary according to the level of TAC that will be allocated to the general category fishery. According to the individual allocation system (3.1.2.4.1), each vessel's share will be determined from their historical activity during a qualification time period. Then the qualified vessels will be allocated a percent of the total general category TAC based on their contribution to historical landings. The level of TAC could have significant economic impacts on general category vessels to the extent that it is different from the historical levels and/or from the level of scallop landings in recent years.

According to alternative proposed by this amendment (3.1.7.2), the amount of TAC that will be allocated to general category fishery will be based on a certain percentage of total available scallop harvest from the fishery ranging from 2.5 to 11%. If this alternative was not selected, the TAC could be based on historical landings of general category fishery or some other amount determined by the Council in the future actions.

In order to estimate a range of potential TAC for the general category fishery, the total expected yield from the scallop resource for the next 11 years is calculated in Table 18 using the recent biological simulations corresponding to the status quo scenario (including the impacts of the recent Emergency Action that reduced the number of the trips in ETA). For example, total landings is estimated to be around 56 million pounds in 2008, roughly equal to landings in 2005 fishing year, and range between 61 lb. to 68 million lb. afterwards. With this scenario, the potential allocation to general category fishery could range from 1.4 million lb. if lower bound of 2.5% is applied and to 7.4 million lb. if the upper bound of 11% is used to determine general category TAC during the next 11 years. If the overall total available scallop harvest is overestimated, general category allocation could fall below these amounts. For example, if the maximum sustainable yield over the long-term is 40 million lb. instead of 67 million lb., than even with an 11% share, general category allocation could not exceed 4.4 million lbs.

Table 95. Estimated Scallop Landings, Prices and Revenues (in 2006 prices, based on projections used in EA for ETA)

Fishing year	MC	Total landings	LPUE	DAS	Price	Total Revenue
2007	16	61	1,810	33,653	6.76	429
2008	15	56	2,279	24,496	7.66	428
2009	14	61	2,366	25,736	6.90	419
2010	13	64	2,449	26,361	6.41	411
2011	13	66	2,437	27,392	6.09	405
2012	14	67	2,394	28,143	5.94	400
2013	14	66	2,353	27,922	6.16	405
2014	14	67	2,341	28,685	5.92	399
2015	14	68	2,327	28,911	5.90	398
2016	14	64	2,301	27,835	6.38	410
2017	14	67	2,315	28,672	6.04	402

Table 96. Estimated scallop landings and revenue for general category vessels with TAC (in 2006 prices, based on projections used in EA for ETA)

Fishing year	General category TAC=2.5%		General category TAC=11%	
	Scallop Landings (Million lb.)	Scallop Revenue (Million $)	Scallop Landings (Million lb.)	Scallop Revenue (Million $)
2007	1.5	10.7	6.70	47.1
2008	1.4	10.7	6.14	47.0
2009	1.5	10.5	6.67	46.1
2010	1.6	10.3	7.06	45.3
2011	1.7	10.1	7.31	44.5
2012	1.7	10.0	7.41	44.0
2013	1.6	10.1	7.24	44.6
2014	1.7	10.0	7.41	43.9
2015	1.7	10.0	7.43	43.8
2016	1.6	10.2	7.07	45.1
2017	1.7	10.1	7.32	44.2

This section analyzes economic impacts at three different levels of TAC which fall between the range of biological estimates in Table 18 and Table 96:

- 2 million lb. which is close to the levels of general category scallop landings before 2004, previous to the surge in general category landings.
- 4 million lb. which is close to scallop landings in the best year before the control date, that is in 2004 fishing year.
- 7 million lb., which is the highest level of general category landings achieved so far (2005) and corresponding to the most optimistic scenarios shown in Table 96.

The impacts of the various TAC levels combined with qualification criteria and period alternatives are analyzed using the "best year landings" in order to determine total impacts on qualifiers and on average impacts per vessel. This is because the alternative method, i.e., best-indexed, do not change the total and average impacts, but will have distributional impacts between the qualifiers according to the years they were active in the fishery.

The general category TAC will be distributed among the vessels qualified for access according to each qualification criteria and period. Although, the impacts are analyzed here for a general category TAC of 2 million lb. , 4 million lb. and 7 million lb., the range of impacts with other TAC levels could easily be derived from the Tables included in this section.

5.4.5.2 The impacts on average allocation (scallop pounds or trips) per qualified vessel

The number of qualifiers and average scallop pounds during the best year and average allocation per vessel corresponding to different TAC levels are shown in Table 97. It must be emphasized that allocation for each vessel will be different than these amount if an individual allocation method is used. Average pounds per vessel are shown here to analyze the comparative impacts of qualification criteria and period and TAC alternatives. For example, using a 11 year period and 100 lb. qualification criteria and a general category TAC of 4 million lb., the 705 qualifying vessels would, on the average, receive 5,674 lb. of scallop allocations, which is slightly less than the average best year landings, 6,084 lb., for this group. If a 5000 lb. criterion is used, however, for the same period, only 203 vessels will qualify receiving on the average 19,704 lb. of scallop

allocation if general category TAC was set at 4 million lb. This amount of allocation exceeds the average best year scallop pounds (17,757 lb.) for these 203 vessels during the 11 year qualification period. If the general category TAC was 2 million lb. instead of 4 million lb., the average allocation per qualified vessel would be less than average best year landings even with 5000 lb. criterion. The table also shows average pounds per vessel for 5 year and 2 year qualification periods at these three TAC levels. For the stand alone ITQ alternative (3.1.2.4.4), there would be 3562 vessels that would qualify for limited access, and 677 of these with landings history would receive an average allocation of 5,908 lb. per vessel with 4 million TAC, slightly exceeding the average of best year landings. Under this alternative, the remaining 2885 vessels would be allowed to buy and lease quota from others.

The allocation for each vessel will be different than the averages shown in Table 97 depending on the allocation method used. With individual quota allocation alternative (3.1.2.4.1), each vessel's allocation will vary according to their contribution factor determined either using best year or best-indexed year alternatives. As a result, some vessels will receive less than the average pounds if their best year landings were below the fleet average (column 4) and some vessels will receive a larger allocation if they landed a higher percentage of scallops during the qualification period compared to the other vessels. Table 98 and Table 99 provide a range for allocated pounds (Option A, fishing quota in pounds) showing the maximum and minimum pounds respectively for the vessels that qualify for limited access. For maximum allocations, a vessels contribution factor is assumed not to exceed 50,000 lb. in accordance with the Alternative 3.1.2.3.3.

Table 97. Number of qualifying vessels and estimated landings based on an individual allocation system and best year of landings during the specified time period.

Time period	Qualification Criteria	Number of qualified vessels	Average Best year landings per vessel (lb.)	Average Allocation per vessel (lb.) TAC=2 million lb.	Average Allocation per vessel (lb.) TAC=4 million lb	Average Allocation per vessel (lb.) TAC=7 million lb
1994-04 (Up to the control date)	100 lb. Criteria	705	6,084	2,837	5,674	9,929
	1000 lb. Criteria	459	9,124	4,357	8,715	15,251
	5000 lb. Criteria	203	17,757	9,852	19,704	34,483
2000-04 (Up to the control date)	Stand-alone ITQ	677	5,872	2,954	5,908	10,340
	100 lb. Criteria	548	7,232	3,650	7,299	12,774
	1000 lb. Criteria	369	10,524	5,420	10,840	18,970
	5000 lb. Criteria	188	18,475	10,638	21,276	37,234
2003-04 (Up to the control date)	100 lb. Criteria	399	7,443	5,012	10,025	17,544
	1000 lb. Criteria	277	10,518	7,220	14,440	25,271
	5000 lb. Criteria	143	18,245	13,986	27,972	48,951

Table 98. Number of qualifying vessels and estimated maximum landings per vessel based on an individual allocation system and best year of landings during the specified time period.

Time period	Qualification Criteria	Number of vessels	MAX. Best year landings per vessel (lb.) (1)	MAX. Allocation per vessel (lb.) TAC=2 million lb.	MAX. Allocation per vessel (lb.) TAC=4 million lb	MAX. Allocation per vessel (lb.) TAC=7 million lb
1994-04 (Up to the control date)	100 lb. Criteria	705	50,000	23,522	47,044	82,327
	1000 lb. Criteria	459	50,000	24,096	48,192	84,336
	5000 lb. Criteria	203	50,000	28,036	56,072	98,126
2000-04 (Up to the control date)	Stand alone ITQ	677	50,000	25,220	50,441	88,271
	100 lb. Criteria	548	50,000	25,476	50,952	89,166
	1000 lb. Criteria	369	50,000	26,006	52,012	91,021
	5000 lb. Criteria	188	50,000	29,108	58,216	101,878
2003-04 (Up to the control date)	100 lb. Criteria	399	50,000	33,684	67,368	117,894
	1000 lb. Criteria	277	50,000	34,334	68,668	120,169
	5000 lb. Criteria	143	50,000	38,344	76,688	134,204

(1) MAX landings are capped at 50,000 lb. to protect confidentiality, which also corresponds to the maximum contribution pounds proposed by 3.1.2.3.3.

Table 99. Number of qualifying vessels and estimated minimum pounds per vessel based on an individual allocation system and best year of landings during the specified time period.

Time period	Qualification Criteria	Number of vessels	Min. Best year landings per vessel (lb.)	Min. Allocation per vessel (lb.) TAC=2 million lb.	Min. Allocation per vessel (lb.) TAC=4 million lb	Min. Allocation per vessel (lb.) TAC=7 million lb
1994-04 (Up to the control date)	100 lb. Criteria	705	100	48	96	168
	1000 lb. Criteria	459	1,000	482	964	1,687
	5000 lb. Criteria	203	5,009	2,808	5,616	9,828
2000-04 (Up to the control date)	Stand alone ITQ	677	1	1.0	0.5	1.0
	100 lb. Criteria	548	100	50	100	175
	1000 lb. Criteria	369	1,000	520	1,040	1,820
	5000 lb. Criteria	188	5,000	2,916	5,832	10,206
2003-04 (Up to the control date)	100 lb. Criteria	399	100	68	136	238
	1000 lb. Criteria	277	1,000	686	1,372	2,401
	5000 lb. Criteria	143	5,000	3,842	7,684	13,447

Option B of the individual allocation option proposes to allocate each qualifying vessels a certain number of trips rather than pounds of scallops. Assuming that vessels will land the 400 lb. from each trip, the average number of trips per vessel was calculated in Table 100. There are some important differences between option A and option B, however. If some vessels that receive trip allocations land less than 400 lb. of scallops from their trips, total general category scallop landings could be less than the general category TAC, resulting in reduced revenue for the general category fleet. On the other hand, these vessels could spend more time at sea to increase their trip landings to the possession limit in order to maximize annual landings from their trip allocations. Such change in fishing behavior would increase trip costs and could also have some safety impacts if the trip is extended, for example, during difficult weather conditions. On the other hand, trip allocation has an advantage over quota allocation in terms of monitoring and enforcement since with VMS it is easier to determine the number of trips per vessel than to

monitor landings per trip.

Table 100. Number of qualifying vessels and estimated trips per vessel based on an individual allocation system and best year of landings during the specified time period.

Time period	Qualification Criteria	Number of vessels	Best year trips per vessel (1)	Best year trips per vessel (2)	Trips per vessel TAC=2 million lb. (2)	Trips per vessel TAC=4 million lb (2)	Trips per vessel TAC=7 million lb (2)
1994-04 (Up to the control date)	100 lb. Criteria	705	21	15	7	14	25
	1000 lb. Criteria	459	31	23	11	22	38
	5000 lb. Criteria	203	54	44	25	49	86
2000-04 (Up to the control date)	Stand alone ITQ	677	20	15	7	15	26
	100 lb. Criteria	548	24	18	9	18	32
	1000 lb. Criteria	369	34	26	14	27	47
	5000 lb. Criteria	188	55	46	27	53	93
2003-04 (Up to the control date)	100 lb. Criteria	399	24	19	13	25	44
	1000 lb. Criteria	277	34	26	18	36	63
	5000 lb. Criteria	143	55	46	35	70	122

(1) These are historical averages and include the trips that landed a pound or more scallops. For some vessels, this could underestimate actual number of trips because in the past several trips were landed at the same date. Trip allocations would be determined by assuming that each scallop landings from each trip will equal to 400 lb.

(2) Assuming a 400 lb. trip limit.

5.4.5.3 The impacts on average scallop revenue per qualified vessel

The impacts of the qualification alternatives at different TAC levels for general category on the potential revenues of qualifiers vessels are analyzed based on the following assumptions about prices and costs.

- Scallop revenues are estimated using two price estimates, a price of $6.00 per pound at the lower end and $7.60 per pound of scallops at the higher end. These values are within the range of estimated prices for 2007-2017 corresponding to the biological simulations shown in Table 18. For example, the estimates based on the biological simulations (Emergency Action for ETA) and the price model show that scallop prices could reach $6.70 per pound in 2007 and $7.66 per pound in 2008, the first year Amendment 11 could be implemented. Scallop prices are estimated to decline to approximately $6.00 per pound in the later years as estimated scallop prices increase over 65 million lb.
- They are also within the range of prices that was observed in 2005 (an average of $7.60 per lb.) and 2006 fishing years (about $6.25 per pound so far). Although, the scallop prices declined in 2006 relative to the 2005 levels, they were on the rise recently and could increase further in 2007 fishing year. For example, the prices of U-12 scallops averaged above $10 and those of 20-30 count above $7.50 during the first couple of days of February 2007.
- The accuracy of these price estimates depend on, however, whether the biological estimates for annual landings and size distribution of scallops will be realized in the future years. If the scallop landings turn out to be lower than these estimates, the prices could exceed the levels shown in Table 18. Actual prices in the future could also differ

from these estimated values depending on changes in consumers' income and preferences, import prices and exports.

- The revenues will be higher (lower) than estimated if scallop prices increase (decrease) above (below) the levels estimated in this section. The relative impacts of qualification criteria and period alternatives on revenues compared to another but will not change, however, if actual prices differ than the estimates.
- Average best year revenue was estimated applying the same price that is used in calculation of revenue corresponding to the allocation pounds (i.e., $7.60 and $6.0 per pound). For a vessel to obtain the same level revenue corresponding to its best year activity, general category TAC should be set above 4 million lb. if 11 year is selected for qualification period with either 100 lb. or 1000 lb. criteria. With other qualification period alternatives, the qualifiers will receive larger revenue with a TAC of 4 million lb. compared to their best year revenue. With 2 year period the revenue with the same TAC level will exceed best year landings by a significant amount.

Table 101. Number of qualifying vessels and estimated revenue based on an individual allocation system and best year of landings during the specified time period and using a scallop price of $7.60 per pound

Time period	Qualification Criteria	Number of qualified vessels	Average Best year revenue per vessel (lb.)	Average Revenue per vessel (lb.) TAC=2 million lb.	Average Revenue per vessel (lb.) TAC=4 million lb	Average Revenue per vessel (lb.) TAC=7 million lb
1994-04 (Up to the control date)	100 lb. Criteria	705	46,238	21,561	43,122	75,460
	1000 lb. Criteria	459	69,342	33,113	66,234	115,908
	5000 lb. Criteria	203	134,953	74,875	149,750	262,071
2000-04 (Up to the control date)	Stand alone ITQ	677	44,631	22,452	44,904	78,582
	100 lb. Criteria	548	54,963	27,740	55,472	97,082
	1000 lb. Criteria	369	79,982	41,192	82,384	144,172
	5000 lb. Criteria	188	140,410	80,849	161,698	282,978
2003-04 (Up to the control date)	100 lb. Criteria	399	56,567	38,091	76,190	133,334
	1000 lb. Criteria	277	79,937	54,872	109,744	192,060
	5000 lb. Criteria	143	138,662	106,294	212,587	372,028

Table 102. Number of qualifying vessels and estimated revenue based on an individual allocation system and best year of landings during the specified time period and using a scallop price of $6.00 per pound

Time period	Qualification Criteria	Number of qualified vessels	Average Best year revenue per vessel (lb.)	Average Revenue per vessel (lb.) TAC=2 million lb.	Average Revenue per vessel (lb.) TAC=4 million lb	Average Revenue per vessel (lb.) TAC=7 million lb
1994-04 (Up to the control date)	100 lb. Criteria	705	36,504	17,022	34,044	59,574
	1000 lb. Criteria	459	54,744	26,142	52,290	91,506
	5000 lb. Criteria	203	106,542	59,112	118,224	206,898
2000-04 (Up to the control date)	Stand alone ITQ	677	35,235	17,725	35,451	62,038
	100 lb. Criteria	548	43,392	21,900	43,794	76,644
	1000 lb. Criteria	369	63,144	32,520	65,040	113,820
	5000 lb. Criteria	188	110,850	63,828	127,656	223,404
2003-04 (Up to the control date)	100 lb. Criteria	399	44,658	30,072	60,150	105,264
	1000 lb. Criteria	277	63,108	43,320	86,640	151,626
	5000 lb. Criteria	143	109,470	83,916	167,832	293,706

5.4.5.4 The impacts on fishing costs

The economic impacts of the qualification criteria and period alternatives will also vary with the costs of fishing. For example, a lower allocation of scallop pounds will not only reduce revenues but also lower the trip costs, thus will lessen the impacts on net revenues. The annual trip costs per vessel are estimated in Table 104 as follows:

- The trip costs per day-at-sea were estimated in Section 4.4.6 . Table 103 shows average trip costs per day-at-sea and the factors that affect costs, such as vessel gross tonnage, horse power and crew size for the group of qualified vessels corresponding to each alternative.
- Annual average allocation in scallop pounds for each alternative and TAC level is converted into number of trips by assuming that 400 lb. of scallops will be landed from each trip. The trip costs per day-at-sea were multiplied by the average number of trips for each alternative and TAC level.
- It is assumed that all the trip costs from trips are attributed to scallop fishing, even though a vessel may land other species. In other words, these costs show the values corresponding to the trips solely targeting the scallops, thus they will overestimate the costs for vessels that land scallops as a bycatch while primarily fishing for other species.
- For vessels that land less than 400 lb., the number of trips will be higher than estimated in Table 100. But these vessels generally land other species besides scallops, thus, not all trip costs are attributable to scallop fishing. For this reason, the actual trip costs due to the scallop fishing for these vessels are probably lower than estimated in Table 104.

Table 103. Vessel characteristics and costs

Time period	Qualification Criteria	Number of qualified vessels	Average trip costs per DAS (2006 prices, $)	Average GRT	Average HP	Average crew
1994-04 (Up to the control date)	100 lb. Criteria	705	342	68	428	3.5
	1000 lb. Criteria	459	328	58	398	3.3
	5000 lb. Criteria	203	324	49	399	3.2
2000-04 (Up to the control date)	Stand alone ITQ	677	345	70	433	3.6
	100 lb. Criteria	548	349	72	442	3.6
	1000 lb. Criteria	369	335	62	409	3.4
	5000 lb. Criteria	188	326	50	403	3.2
2003-04 (Up to the control date)	100 lb. Criteria	399	356	76	454	3.6
	1000 lb. Criteria	277	346	69	430	3.6
	5000 lb. Criteria	143	330	55	415	3.2

Table 104. Number of qualifying vessels and estimated trip costs per vessel based on best year of landings during the specified time period (using a fuel price of $2.23 per gal.)

Time period	Qualification Criteria	Number of qualified vessels	Average Best year trip costs per vessel (lb.)	Average trip costs per vessel (lb.) TAC=2 million lb.	Average trip costs per vessel (lb.) TAC=4 million lb	Average trip costs per vessel (lb.) TAC=7 million lb
1994-04 (Up to the control date)	100 lb. Criteria	705	5,201	2,425	4,850	8,488
	1000 lb. Criteria	459	7,480	3,572	7,145	12,503
	5000 lb. Criteria	203	14,383	7,980	15,960	27,930
2000-04 (Up to the control date)	Stand alone ITQ	677	5,065	2,548	5,096	8,918
	100 lb. Criteria	548	6,318	3,189	6,377	11,160
	1000 lb. Criteria	369	8,820	4,542	9,085	15,898
	5000 lb. Criteria	188	15,047	8,664	17,329	30,326
2003-04 (Up to the control date)	100 lb. Criteria	399	6,626	4,462	8,925	15,619
	1000 lb. Criteria	277	9,103	6,249	12,498	21,872
	5000 lb. Criteria	143	15,055	11,540	23,081	40,391

5.4.5.5 The impacts on average net revenues for the vessels that qualify for limited access

The impacts on the net revenues of the qualified vessels are estimated for each qualification criteria and period at three different levels of TAC, using two values for prices, $7.60 and $6.00 per pound (Table 105 and Table 106). These impacts could be summarized as follows:

- Average revenue per qualified vessel will be higher as the number of qualifiers is lower. For example, 2 year period combined with 5000 lb. criteria results in largest net revenue per vessel at any level of TAC. 11 year period with 100 lb. criteria and the Stand alone ITQ alternatives would result in smallest revenues per vessel by respectively including 705 and 677 vessels in the limited access program.
- The actual net revenues of each vessel will differ according to their share in total general category allocation under the individual allocation methods (either in trips or pounds). The vessels that had a historical participation in the general category fishery at rates higher than an average vessel will receive higher allocation, thus larger net revenue from scallop fishery.

- These Tables also show estimated net revenue a vessel could have obtained if it continued to fish for scallops at the best year levels. As mentioned above, best year revenue was estimated applying the same price that is used in calculation of revenue corresponding to the allocation pounds (i.e., $7.60 in Table 105 and $6.0 in Table 106). Comparison of net revenue with at each TAC level with the best year revenue shows that if TAC is set below 4 million lb., each qualifier will be earn less net revenue than their best year amount if 11 year period is implemented with either 100 lb. and 1000 lb. criteria. For 5 year and 2 year qualification period alternatives, however, a TAC of 4 million and higher will provide a net revenue for the qualifiers larger than corresponding to their best year landings for all qualification criteria alternatives (i.e., 100 lb., 1000 lb., and 5000 lb. criteria).

Table 105. Number of qualifying vessels and estimated net revenue per vessel based on best year of landings during the specified time period (using a fuel price of $2.23 per gal. and scallop price of $7.60)

Time period	Qualification Criteria	Number of qualified vessels	Average Best year net revenue per vessel (lb.)	Average net revenue per vessel (lb.) TAC=2 million lb.	Average net revenue per vessel (lb.) TAC=4 million lb	Average net revenue per vessel (lb.) TAC=7 million lb
1994-04 (Up to the control date)	100 lb. Criteria	705	41,038	19,136	38,272	66,973
	1000 lb. Criteria	459	61,862	29,541	59,089	103,404
	5000 lb. Criteria	203	120,571	66,895	133,791	234,141
2000-04 (Up to the control date)	Stand alone ITQ	677	39,566	19,904	39,808	69,664
	100 lb. Criteria	548	48,645	24,551	49,096	85,923
	1000 lb. Criteria	369	71,162	36,650	73,299	128,274
	5000 lb. Criteria	188	125,363	72,185	144,369	252,653
2003-04 (Up to the control date)	100 lb. Criteria	399	49,941	33,629	67,265	117,716
	1000 lb. Criteria	277	70,834	48,623	97,246	170,188
	5000 lb. Criteria	143	123,607	94,753	189,506	331,636

Table 106. Number of qualifying vessels and estimated net revenue per vessel based on best year of landings during the specified time period (using a fuel price of $2.23 per gal. and scallop price of $6)

Time period	Qualification Criteria	Number of qualified vessels	Average Best year net revenue per vessel (lb.)	Average net revenue per vessel (lb.) TAC=2 million lb.	Average net revenue per vessel (lb.) TAC=4 million lb	Average net revenue per vessel (lb.) TAC=7 million lb
1994-04 (Up to the control date)	100 lb. Criteria	705	31,303	14,597	29,194	51,086
	1000 lb. Criteria	459	47,264	22,570	45,145	79,003
	5000 lb. Criteria	203	92,159	51,132	102,264	178,968
2000-04 (Up to the control date)	Stand alone ITQ	677	30,170	15,177	30,355	53,120
	100 lb. Criteria	548	37,074	18,711	37,417	65,484
	1000 lb. Criteria	369	54,324	27,978	55,955	97,922
	5000 lb. Criteria	188	95,803	55,164	110,327	193,078
2003-04 (Up to the control date)	100 lb. Criteria	399	38,032	25,610	51,225	89,645
	1000 lb. Criteria	277	54,005	37,071	74,142	129,754
	5000 lb. Criteria	143	94,415	72,376	144,751	253,315

5.4.5.6 The impacts of the allocation amounts on crew and vessel shares on groups of general category vessels

The analyses provided in Section 5.4.5.2 to Section 5.4.5.5 above discussed the impacts of the qualification criteria and qualification period alternatives on average allocation pounds, gross and net revenue for the vessels that would qualify for limited access under each of these alternatives. With the individual quota option, however, each vessel will receive an allocation either in pounds or in trips based on its share in the fishery during the qualification time period and level of general category TAC. This allocation amount could be quite different from the historical amount of scallops a vessel depended on for income in the past and/or the pounds of scallops. As a result, the limited access program could have significant economic impacts (either positive or negative) on the qualifiers. When the allocation amounts are less than the recent and/or historical landings of vessels, the scallop revenue will decline for all vessels. Since most vessels in the general category fishery have income from other fisheries, the relative impacts will vary according to the proportion of income derived from scallop fishing (Table 108 and Table 109). The vessels that depend heavily on scallop fishing for their revenue will be affected more if the pounds allocated fall below the levels necessary for an economically viable operation. This level, is not uniform or constant, however, and will depend on many factors including the price of scallops, the fishing costs (which change with vessel size) and the revenue from other fisheries.

Since the general category fleet exhibit considerable variability in terms of the vessel size, fishing costs and activity in other fisheries, the amount of scallops that is necessary to cover costs, pay for crew and generate income for the vessel owner will vary from one vessel to another. For these reasons, the impacts on the revenues, costs, crew income and vessels shares are analyzed in this section for a range of allocation pounds for vessels with different gross tonnage and costs and for a range of scallop prices. Table 111 to Table 115 show estimated revenues, costs, crew and boat shares associated with each level of allocation pounds. Thus, in order to examine the possible impacts of a qualification criteria and period alternative on

qualifiers, one could match the allocation pounds for each alternative and for different vessels and read the corresponding level of revenues, cost, crew and boat shares from these tables.

The trip costs and fixed expenses are estimated from observer data for 2002-2005, which indicated that that costs vary with the vessel size (Table 107). The trip costs are defined as those expenses that increase or decrease with the level of fishing activity excluding the cost of crew. These costs include food, ice, water, oil and fuel, and are usually paid by crew in the scallop fishery out of their shares from the gross stock. The fixed costs include those expenses that are not usually related to the level of fishing activity or output. These are expenses on insurance, maintenance, repairs and replacement of engine, electrical and processing equipment, gear and other equipment and are obtained from the observer data for the same period. There are other fixed costs a vessel owner pays, such as for office expenses, interest, accounting, utilities and dock fees. They are not included in fixed costs estimates because the data on these items are not collected by the observer program. Therefore, fixed costs per vessel shown in Table 107 and others underestimate actual fixed costs and should be used only for the comparative analyses of the alternatives.

Since it is not possible to show revenues and costs for each general category vessel, estimates were made for four vessel groups according to their gross tonnage for the sample of vessels that were active during the 2005 fishing year and would qualify for limited access with some alternatives. These estimates show group averages only since costs and revenues could vary from vessel to vessel even within the each group (Table 107 to Table 109). The revenues and costs were estimated for four vessel groups in terms of their gross tonnage and based on the following assumptions:

- Although, there is uncertainty regarding future scallop prices, it is estimated that prices could range from $6.00 to $7.60 for the period 2007 - 2017 based on biological projections and the price model Appendix 5.4.21. Most of the scenario analyses used a price of $7.60 per pound of scallops although examples with $6.00 per pound are also provided.
- Allocation pounds were converted into number of trips by assuming that 400 lb. (possession limit) will be landed from each trip. This assumption is valid for vessels that target scallops, rather than for vessels that land scallops as a bycatch while fishing for other species. In order to land the same amount of pounds, these vessels would have to take more trips. For example, for a vessel that lands only 200 lb. of scallops from each trip, the number of trips shown in these tables will double. In that situation, since not all the trip costs could be attributed to scallop fishing, the part of trip costs due to scallops will be lower than shown in these tables. Table 110 shows that most of the general category vessels have maximum trip landings of more than 200 lb. These vessels tend to have a greater dependence on scallop fishing as a source of income compared to vessels with maximum trip landings of less than 200 lb.
- Total trip costs are estimated by multiplying trip cost per day-at-sea for each gross tonnage group with the number of trips (Table 107). Net revenue shows the difference between gross revenue and total trip costs. All cost estimates were updated using 2006 price indexes.

- The crew incomes are determined from a lay system according to which crew gets 55% of the gross stock and pays for trip costs including food, fuel, oil, water, and ice (Georgianna et al, 2005)[3].
- Boat share is what the boat owner receives after crew incomes and trip costs (crew pays) are deducted.
- The part of fixed costs attributable to scallop fishing is estimated by multiplying total fixed costs for each vessel group with the percentage of revenue from scallop fishing. The percentages shown in Table 111 to Table 115, although based on the average values given in Table 109, are used only for the purposes of scenario analyses. They show a range of relative impacts. The dependence on scallop revenue and fixed costs vary from one vessel to another even within the each gross tonnage group and impacts on individual vessels could be different than the range of impacts shown in Table 111 to Table 115.
- The last column in these tables is estimated by deducting the fixed expenses attributable to scallop fishing from the boat share. Boat share net of fixed costs is considered as an (imperfect) proxy for profit levels associated with various allocation pounds, although actual profits will be lower than these numbers depending on other expenses not included in the fixed costs estimates in Table 107 above. As discussed above, not all fixed cost items associated with fishing operations are collected by the observer program, thus could not be taken into account in these analyses.
- It must be emphasized that boat share net of fixed costs include revenues only from scallop fishing, thus it is an imperfect proxy for profits from scallop fishing only. The majority of the vessels in the scallop fishery derive some amount of income from species other than scallops as well. As a result, for most vessels, the boat share net of fixed costs will underestimate actual amount of total profits. Both crew and vessels shares will be higher than shown in those tables if revenues from other species are added to the gross revenue. Estimating a vessel's total revenue is beyond the scope of this analysis, however, since Amendment 11 will mainly affect scallop landings and revenues.

Table 107. Estimated costs for sample of general category vessels that were active during the 2005 fishing year.

Gross Tonnage	Number of vessels	Trip costs per day-at-sea ($)	Average GRT	Fixed costs per vessel ($)
Less than 50 GRT	143	291	25	37,974
51 GRT -100 GRT	62	343	75	68,225
101 GRT-150 GRT	81	416	125	100,919
Greater than 150 GRT	29	489	182	134,561
Grand Total	318	351	75	68,905

[3] According to the recent study by Georgianna et al., "Employment, Income and Working Conditions in New Bedford's Offshore Fisheries", Crew shares dropped from 59% in 1993 to 55% in 2002. The report indicates that the lay system could also vary by vessel.

Table 108. Revenue from scallop and other fisheries by vessel size (2005 fishing year)

Gross Tonnage	Number of vessels	Average Scallop landings best year	Scallop landings in 2005 fishing year	% of Scallop revenue in total revenue	Average scallop revenue per vessel ($)	Average revenue from other species($)	Average total revenue from per vessel ($)
Less than 50 GRT	157	10,179	12,825	68%	97,263	45,452	142,715
51 GRT -100 GRT	80	8,593	12,493	30%	95,177	226,818	321,995
101 GRT-150 GRT	91	5,694	9,148	15%	69,533	379,324	448,857
> 150 GRT	33	3,815	6,516	7%	49,708	671,880	721,588
Grand Total	361	8,115	11,248	27%	85,463	227,069	312,532

Table 109. Composition of revenue by annual landings and GRT (2005 fishing year)

GRT	Data	Scallop landings (lb.) per vessel (2005 fishing year)					
		<1000lb.	1000 lb.-4999 lb.	5,000 lb.-9,999 lb.	10,000 lb. -19,999 lb.	>=20,000 lb.	Grand Total
< 50	% of scallop revenue in total	2%	33%	60%	78%	93%	68%
	Number of vessels	36	17	28	41	35	157
	Scallop landings (avg. per vessel)	228	2,466	7,593	14,277	33,299	12,825
	Revenue from other species (avg. per vessel)	98,049	37,572	39,293	30,372	17,770	45,452
	Scallop revenue (avg. per vessel)	1,830	18,770	59,338	108,213	251,060	97,263
	Total revenue (avg. per vessel)	99,879	56,342	98,630	138,585	268,831	142,715
50-100 GRT	% of scallop revenue in total	1%	5%	35%	47%	79%	30%
	Number of vessels	23	17	9	12	19	80
	Scallop landings (avg. per vessel)	291	2,777	7,424	15,518	36,448	12,493
	Revenue from other species (avg. per vessel)	316,650	402,368	109,595	136,438	73,614	226,818
	Scallop revenue (avg. per vessel)	2,393	19,985	59,306	120,263	275,918	95,177
	Total revenue (avg. per vessel)	319,043	422,353	168,900	256,700	349,532	321,995
101-150 GRT	% of scallop revenue in total	1%	4%	17%	51%	78%	15%
	Number of vessels	29	35	6	6	15	91
	Scallop landings (avg. per vessel)	415	2,094	7,909	17,252	39,741	9,148
	Revenue from other species (avg. per vessel)	495,799	463,745	312,449	128,974	84,048	379,324
	Scallop revenue (avg. per vessel)	3,343	17,038	63,834	132,153	297,220	69,533
	Total revenue (avg. per vessel)	499,143	480,783	376,283	261,127	381,267	448,857
>150 GRT	% of scallop revenue in total	1%	3%	6%	12%	72%	7%
	Number of vessels	12	8	5	5	3	33
	Scallop landings (avg. per vessel)	416	2,360	7,274	13,075	29,805	6,516
	Revenue from other species (avg. per vessel)	676,712	691,731	906,118	745,558	86,424	671,880
	Scallop revenue (avg. per vessel)	3,609	19,752	56,708	99,454	219,410	49,708
	Total revenue (avg. per vessel)	680,321	711,483	962,827	845,012	305,834	721,588
All	% of scallop revenue in total	1%	5%	25%	49%	84%	27%
	Number of vessels	100	77	48	64	72	361
	Scallop landings (avg. per vessel)	319	2,355	7,568	14,695	35,327	11,248
	Revenue from other species (avg. per vessel)	333,114	379,791	176,913	115,377	49,175	227,069
	Scallop revenue (avg. per vessel)	2,612	18,353	59,620	112,033	265,918	85,463
	Total revenue (avg. per vessel)	335,726	398,144	236,533	227,410	315,093	312,532

Table 110. Landings and revenue by average trip landings

Fish year	Average Scallop landing per trip>200 lb.			Average Scallop landing per trip<200 lb.		
	Number of vessels	Scallop revenue as a % of total revenue	GRT	Number of vessels	Scallop revenue as a % of total revenue	GRT
1994	27	39%	42	116	10%	88
1995	39	29%	59	125	15%	82
1996	29	49%	43	181	23%	65
1997	28	38%	53	203	25%	59
1998	18	37%	71	185	22%	63
1999	23	32%	72	168	17%	69
2000	16	68%	53	185	14%	75
2001	49	81%	33	225	21%	79
2002	49	83%	36	248	21%	84
2003	66	94%	40	259	21%	73
2004	109	87%	52	264	21%	81

The results of the analyses:

The estimates for revenues, costs, crew income and boat shares are shown in Table 111 to Table 116. The results of these analyses could be summarized as follows:

- The estimates show at a scallop price of $7.60 per pound, an allocation amount of 7500lb. (or about 12.5 trips) for a vessel with less than 50 GRT and with 60% income from scallops could generate a small net boat share of $3,000 from scallop fishing only. Net income from scallop fishing will increase considerably for allocation amounts 15,000 lb. more (Table 111). If the prices were to decline to $6.00 per pound, the allocation amount should be close to 20,000 lb. for the same vessel to make profits at the comparable levels if the price was $7.60 (Table 112).
- For larger vessels with higher trip and fixed costs and a high dependence on scallops as a source of revenue, the allocations (either in pounds or trips) should be higher in order for these vessels to derive a net income from scallops fishing (relative to allocations for smaller vessels). For vessels with fishing income from other species, that is for the majority of the general category fleet, profitability could be maintained at smaller amounts of allocation. The reason is that part of variable and fixed costs will be paid by the revenue obtained from other fisheries. In addition, larger vessels have a higher percentage of their income from other fisheries relative to smaller boats, thus, could maintain profitability from scallop fishing at lower allocation amounts.
- The general category vessels that land smaller amounts of scallops per year generally have less dependence on scallop revenue than vessels that target scallops and land large volumes (Table 109). For these vessels, an allocation amount for scallops smaller than what they were landing in the past would result in a decrease in revenue, but probably would not have significant negative impacts on their economic viability. Therefore, Table 111 to Table 116 would underestimate the actual level of profits for these vessels since the revenue they earn from other fisheries would pay for most of the fixed costs. For example, average revenue per vessel from other fisheries exceeded $330,000 for vessels that landed less than 1000 lb. of scallops, and $379,000 for vessels that landed 1000 lb. to 4,999 lb. of scallops in 2005 fishing year (Table 109). Obviously, this amount of revenue would cover both the trip costs and fixed costs and generate profits for these vessels. Therefore, for this group of vessels it is best to consider the net revenue, crew share and

boat shares as representing income and profits from scallop fishing only and disregard the last column -- given that total profits for these vessels would be higher than shown in these Tables.

- The crew and boat shares from scallop fishing are estimated separately for vessels which have a trip landing of 200 lb. of scallops since they will have to take more trips to land a specific allocation amount (Table 116). These vessels also have a smaller dependence on scallops as a source of income (Table 110) and landed only small amounts of scallops in the past (Table 94). Although, crew and boat shares from scallop fishing are estimated at various levels of qualification amounts, any amount greater than 5000 lb. is not relevant for most of these vessels.

Table 111. Estimated revenues and costs for an average vessel with less than 50 gross tonnage. Price=$7.60 per pound, Average trip costs per DA=$291, average fixed costs per vessel=$37,974, average revenue from other fisheries=$ 45,452 (2005)

Allocation pounds	Number of trips	Annual Scallop Revenue	Total trip costs	Net Revenue (net of trip costs)	Crew income (net of trip costs)	Boat Share (Annual)	% of scallop revenue (1)	Fixed costs from scallop fishing	Boat share net of fixed costs (2)
2500	6.3	19,000	1,819	17,181	8,631	8,550	33%	12,532	(3,900)
7500	19	57,000	5,456	51,544	25,894	25,650	60%	22,785	3,109
10000	25	76,000	7,275	68,725	34,525	34,200	78%	29,620	4,905
15000	38	114,000	10,913	103,087	51,787	51,300	78%	29,620	22,167
20000	50	152,000	14,550	137,450	69,050	68,400	93%	35,316	33,734
25000	63	190,000	18,188	171,812	86,312	85,500	93%	35,316	50,996
30000	75	228,000	21,825	206,175	103,575	102,600	93%	35,316	68,258
40000	100	304,000	29,100	274,900	138,100	136,800	93%	35,316	102,783
50000	125	380,000	36,376	343,624	172,624	171,000	93%	35,316	137,308
60000	150	456,000	43,651	412,349	207,149	205,200	93%	35,316	171,833
70000	175	532,000	50,926	481,074	241,674	239,400	93%	35,316	206,358

(1) Percentage share of scallop revenue are estimated from Table 109 and used here merely for the purposes of scenario analyses.
(2) Revenue from other species is not included.
Note: The number in parentheses shows that there is loss to the vessel.

Table 112. Estimated revenues and costs for an average vessel with less than 50 gross tonnage. Price=$6.0 per pound, Average trip costs per DA=$291, average fixed costs per vessel=$37,974, average revenue from other fisheries=$ 45,452 (2005)

Allocation pounds	Number of trips	Annual Scallop Revenue	Total trip costs	Net Revenue (net of trip costs)	Crew income (net of trip costs)	Boat Share (Annual)	% of scallop revenue	Fixed costs from scallop fishing	Boat share net of fixed costs
2500	6.3	15,000	1,819	13,181	6,431	6,750	33%	12,532	(6,100)
7500	19	45,000	5,456	39,544	19,294	20,250	60%	22,785	(3,491)
10000	25	60,000	7,275	52,725	25,725	27,000	78%	29,620	(3,895)
15000	38	90,000	10,913	79,087	38,587	40,500	78%	29,620	8,967
20000	50	120,000	14,550	105,450	51,450	54,000	93%	35,316	16,134
25000	63	150,000	18,188	131,812	64,312	67,500	93%	35,316	28,996
30000	75	180,000	21,825	158,175	77,175	81,000	93%	35,316	41,858
40000	100	240,000	29,100	210,900	102,900	108,000	93%	35,316	67,583
50000	125	300,000	36,376	263,624	128,624	135,000	93%	35,316	93,308
60000	150	360,000	43,651	316,349	154,349	162,000	93%	35,316	119,033
70000	175	420,000	50,926	369,074	180,074	189,000	93%	35,316	144,758

(1) Percentage share of scallop revenue are estimated from Table 109 and used here merely for the purposes of scenario analyses.
(2) Revenue from other species is not included.
Note: The number in parentheses shows that there is loss to the vessel.

Table 113. Estimated revenues and costs for an average vessel with 51 to 100 gross tonnage. Price=$7.60 per pound, Average trip costs per DA=$343, average fixed costs per vessel=$68,225, average revenue from other fisheries=$226,818 (2005)

Allocation pounds	Number of trips	Annual Scallop Revenue	Total trip costs	Net Revenue (net of trip costs)	Crew income (net of trip costs)	Boat Share (Annual)	% of scallop revenue (1)	Fixed costs from scallop fishing	Boat share net of fixed costs (2)
2500	6	19,000	2,144	16,856	8,306	8,550	5%	3,411	5,139
7500	19	57,000	6,431	50,569	24,919	25,650	35%	23,879	1,771
10000	25	76,000	8,575	67,425	33,225	34,200	47%	32,066	2,134
15000	38	114,000	12,863	101,138	49,838	51,300	47%	32,066	19,234
20000	50	152,000	17,150	134,850	66,450	68,400	79%	53,897	14,503
25000	63	190,000	21,438	168,563	83,063	85,500	79%	53,897	31,603
30000	75	228,000	25,725	202,275	99,675	102,600	79%	53,897	48,703
40000	100	304,000	34,300	269,700	132,900	136,800	79%	53,897	82,903
50000	125	380,000	42,875	337,125	166,125	171,000	79%	53,897	117,103
60000	150	456,000	51,450	404,550	199,350	205,200	79%	53,897	151,303
70000	175	532,000	60,025	471,975	232,575	239,400	79%	53,897	185,503

(1) Percentage share of scallop revenue are estimated from Table 109 and used here merely for the purposes of scenario analyses.
(2) Revenue from other species is not included.
Note: The number in parentheses shows that there is loss to the vessel.

Table 114. Estimated revenues and costs for an average vessel with 101 to 150 gross tonnage. Price=$7.60 per pound, Average trip costs per DA=$416, average fixed costs per vessel=$100,919, average revenue from other fisheries=$379,324 (2005)

Allocation pounds	Number of trips	Annual Scallop Revenue	Total trip costs	Net Revenue (net of trip costs)	Crew income (net of trip costs)	Boat Share (Annual)	% of scallop revenue (1)	Fixed costs from scallop fishing	Boat share net of fixed costs (2)
2500	6	19,000	2,600	16,400	7,850	8,550	4%	4,037	4,513
7500	19	57,000	7,800	49,200	23,550	25,650	17%	17,156	8,494
10000	25	76,000	10,400	65,600	31,400	34,200	51%	51,469	(17,269)
15000	38	114,000	15,600	98,400	47,100	51,300	78%	78,717	(27,417)
20000	50	152,000	20,800	131,200	62,800	68,400	78%	78,717	(10,317)
25000	63	190,000	26,000	164,000	78,500	85,500	78%	78,717	6,783
30000	75	228,000	31,200	196,800	94,200	102,600	78%	78,717	23,883
40000	100	304,000	41,600	262,400	125,600	136,800	78%	78,717	58,083
50000	125	380,000	52,000	328,000	157,000	171,000	78%	78,717	92,283
60000	150	456,000	62,400	393,600	188,400	205,200	78%	78,717	126,483
70000	175	532,000	72,800	459,200	219,800	239,400	78%	78,717	160,683

(1) Percentage share of scallop revenue are estimated from Table 109 and used here merely for the purposes of scenario analyses.
(2) Revenue from other species is not included.
Note: The number in parentheses shows that there is loss to the vessel.

Table 115. Estimated revenues and costs for an average vessel with gross tonnage of greater than 150 GRT Price=$7.60 per pound, Average trip costs per DA=$489, average fixed costs per vessel=$134,561, average revenue from other fisheries=$671,880 (2005)

Allocation pounds	Number of trips	Annual Scallop Revenue	Total trip costs	Net Revenue (net of trip costs)	Crew income (net of trip costs)	Boat Share (Annual)	% of scallop revenue (1)	Fixed costs from scallop fishing	Boat share net of fixed costs (2)
2500	6	19,000	2,600	16,400	7,850	8,550	4%	4,037	4,513
7500	19	57,000	7,800	49,200	23,550	25,650	17%	17,156	8,494
10000	25	76,000	10,400	65,600	31,400	34,200	51%	51,469	(17,269)
15000	38	114,000	15,600	98,400	47,100	51,300	78%	78,717	(27,417)
20000	50	152,000	20,800	131,200	62,800	68,400	78%	78,717	(10,317)
25000	63	190,000	26,000	164,000	78,500	85,500	78%	78,717	6,783
30000	75	228,000	31,200	196,800	94,200	102,600	78%	78,717	23,883
40000	100	304,000	41,600	262,400	125,600	136,800	78%	78,717	58,083
50000	125	380,000	52,000	328,000	157,000	171,000	78%	78,717	92,283
60000	150	456,000	62,400	393,600	188,400	205,200	78%	78,717	126,483
70000	175	532,000	72,800	459,200	219,800	239,400	78%	78,717	160,683

(1) Percentage share of scallop revenue are estimated from Table 109 and used here merely for the purposes of scenario analyses.
(2) Revenue from other species is not included.
Note: The number in parentheses shows that there is loss to the vessel.

Table 116. Estimated revenues and costs for an average vessel with 51 to 100 gross tonnage and average trip landings of 200 lb. Price=$7.60 per pound. Average trip costs per DA=$343

Allocation pounds	Number of trips	Annual Scallop Revenue	Total trip costs	Net Revenue (net of trip costs)	Crew income (net of trip costs)	Boat Share (Annual)
1000	5	7,600	437	7,163	3,743	3,420
5000	25	38,000	2,184	35,816	18,716	17,100
10000	50	76,000	4,368	71,632	37,432	34,200
20000	100	152,000	8,736	143,264	74,864	68,400
30000	150	228,000	13,104	214,896	112,296	102,600
40000	200	304,000	17,472	286,528	149,728	136,800
50000	250	380,000	21,840	358,160	187,160	171,000

5.4.6 The impacts of qualification criteria and time period alternatives on recent participants

This section provides an analysis of the potential economic impacts of qualification alternatives on the general category vessels combined with the impacts of qualification time period. Although, the economic impacts of poundage criteria and time period are interrelated, the impacts of the three qualification criteria alternatives, i.e., 100 lb., 1000 lb. and 5000 lb., will also be examined separately by comparing the impacts within the same qualification time period; for example, for 5 year period. Similarly, the impacts of the qualification time period alternatives will be analyzed independently from the impacts of poundage criteria, by comparing the impacts for the same poundage alternative (for example, 1000 lb. criteria) across the three time periods, for 2 year, 5 year and 11 year.

The economic impacts of a limited access program on the recent participants of the general category fishery will vary according to whether a vessel had a general category permit before the control date and had landed a specific amount of scallops as required by qualification alternatives during a specific qualification time period. The magnitude of the economic impacts will be determined, however, not only by the historical activity but also by the recent participation in scallop fishery. This section provides an analysis of the economic impacts by comparing the potential impacts of a limited access program relative to the scallop fishing activity of the general category vessels during 2005 and 2006 fishing years.

Table 117 summarizes scallop landings and revenue for the general category vessels according to whether they had a permit before the control date. The majority of the recent participants, 516 vessels in 2005 fishing year, and 455 vessels in 2006 fishing year had general category permits before the control date. Not all of these vessels will qualify for limited access, however, either because they did not land any scallops before the control date during a qualification period, or that their scallop landings do not meet the poundage criteria specified by the qualification criteria alternatives. In addition to those vessels, the vessels that obtained their general category permit for the first time after the control date will not qualify for limited access. These include 81 vessels that were active in 2005 and 88 vessels that were active in 2006 (up to Jan.2006) fishing years. Table 118 shows the number and revenues of the vessels by their primary region of landing and permit date. Majority of vessels that received their permits after the control date are

from Mid-Atlantic area, with 16 from North Carolina, 14 from New Jersey, 12 from Delaware, and the rest from the other states. Most of these vessels have a high dependence on scallops for their fishing income.

Table 117. Scallop Landing and revenues by general category vessels according to the permit date

Permit Before the control date	Data	2005 Fish year	2006 Fish year up to Jan.06*
NO	Number of active vessels	81	88
	Scallop Landings(lb)	1,442,777	1,064,389
	Scallop Revenue ($)	11,264,313	6,740,284
	Scallop lb. per vessel	17,812	12,095
	Scallop revenue per vessel	139,066	76,594
YES	Number of active vessels	516	455
	Scallop Landings(lb)	5,808,695	4,452,781
	Scallop Revenue ($)	43,996,020	27,734,725
	Scallop lb. per vessel	11,257	9,786
	Scallop revenue per vessel	85,264	58,443
Total number of active vessels		597	543
Total Scallop Landings(lb)		7,251,472	5,517,170
Total Scallop Revenue ($)		55,260,333	34,475,009
Average scallop lb. per vessel		12,147	10,161
Average scallop revenue per vessel		92,563	61,390

* Preliminary data

Table 118. Landings and Revenues by general category vessels by permit date and primary region of landing

Permit Before the control date	REGION	Data	2005 Fish year	2006 Fish year [1]
NO	New England	Number of active vessels	20	21
		Scallop lb. per vessel ($)	5,080	6,322
		Scallop revenue per vessel ($)	40,103	43,716
		Total revenue per vessel ($)	49,330	58,268
		Total scallop landings	101,598	132,772
		% of revenue from scallops	84.80%	77.88%
		Total scallop revenue ($)	802,061	918,041
		Total revenue ($)	986,604	1,223,635
	Mid Atlantic	Number of active vessels	61	67
		Scallop lb. per vessel ($)	21,987	13,905
		Scallop revenue per vessel ($)	171,512	86,899
		Total revenue per vessel ($)	186,774	93,324
		Total scallop landings	1,341,179	931,617
		% of revenue from scallops	88.06%	95.10%
		Total scallop revenue ($)	10,462,252	5,822,243
		Total revenue ($)	11,393,234	6,252,721
YES	New England	Number of active vessels	266	249
		Scallop lb. per vessel ($)	6,094	7,825
		Scallop revenue per vessel ($)	48,739	51,702
		Total revenue per vessel ($)	257,071	180,653
		Total scallop landings	1,620,977	1,948,380
		% of revenue from scallops	41.82%	47.90%
		Total scallop revenue ($)	12,964,619	12,873,773
		Total revenue ($)	68,380,810	44,982,641
	Mid Atlantic	Number of active vessels	250	195
		Scallop lb. per vessel ($)	16,751	11,907
		Scallop revenue per vessel ($)	124,320	70,359
		Total revenue per vessel ($)	312,063	133,002
		Total scallop landings	4,187,718	2,321,836
		% of revenue from scallops	61.69%	70.06%
		Total scallop revenue ($)	31,080,079	13,719,921
		Total revenue ($)	78,015,805	25,935,420
		Total Number of vessels	597	532 [2]

(1) The data for 2006 fish year is preliminary and includes data up to Jan.18, 2007. This data may not yet include all the revenues from other species, thus could underestimate total revenue and/or overestimate percentage of scallop revenue in total revenue.

(2) There 543 vessels that landed scallops in 2006, but some of these vessels did not have complete revenue information, thus not included in the Table.

The economic impacts of the qualification criteria alternatives for both qualifying and the non-qualifying vessels will vary with the assumptions made about the potential landings and revenues by the general category vessels under the status quo conditions of unlimited access. This section discusses the economic impacts relative to the recent levels of scallop landings by general category vessels. Such a scenario could realistically assess impacts only if the future yield from the scallop resource stayed at the recent levels, thus allowed the same general category vessels to participate in the scallop fishery at the same rate as observed in 2005-2006 fishing years. The recent biological simulations (see Table 18 below) show that scallop landings could range

somewhere between 56 million lb. to 68 million lb. in the future years, which are close to the levels observed for 2005 (53 million lb.) and 2006 fishing years (46 million lb. as of Jan.2006). If indeed these projections materialize and scallop prices do not differ significantly from these levels, the analyses shown in this section could approximate the economic impacts of qualification criteria and time period alternatives, separately from the impacts of a general category TAC. If on the other hand, if scallop biomass turns out be much lower than estimated because of the overfishing observed in the recent years, future scallop landings of both general category and limited access vessels could be lower than the 2005-2006 levels. In that case, the analyses in this section would overestimate the absolute impacts of the alternatives compared to the status quo management of unlimited access by general category vessels (in terms of gross and net revenues). The relative impacts of the three qualification criteria and three qualification period alternatives will not change, however, if the future scallop landings and/or prices were significantly lower (higher) from their levels in 2005 and 2006, since the estimated landings and revenues for status quo will be lower (higher) under all alternatives.

The economic impacts of the qualification criteria and period alternatives will also depend on the level of general category TAC. The magnitude of economic impacts with the TAC management could be similar to the results presented in this section only if general category TAC is set at either the 2005 or 2006 level. The relative impacts of qualification criteria and period alternatives vis-à-vis each other will not change, however, with the level of TAC. On the other hand, the absolute impacts, that is, whether certain alternatives will have negative or positive impacts on the qualifiers, will vary with the level of general category TAC for each qualification alternative. These impacts including the distributional impacts of the alternative criteria and time period combined with a TAC management were analyzed separately in Section 5.4.5.

Table 117 summarizes best year scallop landings for each qualification time period and scallop landings in 2005 and 2006 fishing years (up to Jan. 2006 for 2006) for the general category vessels for each qualification criteria alternative. The first part of the Table shows the impacts on general category vessels that had a permit before the control date, and the second part (last row) of the Table shows the impacts on the vessels that had a general category permit for the first time after the control date.

Table 119. Historical and recent activity by general category vessels that qualify and do not qualify for limited access according to the qualification criteria and time period alternatives.

Time Period	Qualification lb. Criteria	Qualify	Qualification Period Activity		2005 fish year: March 2005 to February 2006			2006 fish year: March 2006 to January 2006		
			Number of active vessels	Total best year scallop landings (lb)	Number of active vessels	Scallop Landings (lb.)	Scallop Revenue ($)	Number of active vessels	Scallop Landings (lb.)	Scallop Revenue ($)
General category vessels that had a permit before the control date										
11 Years	Not active	NO	0	0	152	1,731,381	13,082,434	128	1,236,330	7,677,402
	100	NO	219	27,618	46	242,077	1,767,825	38	197,173	1,232,973
		YES	705	4,289,112	318	3,835,237	29,194,439	289	3,019,278	18,824,350
	1000	NO	465	130,428	130	700,305	5,393,692	124	871,820	5,549,105
		YES	459	4,187,989	234	3,377,009	25,568,572	203	2,344,631	14,508,218
	5000	NO	721	713,786	233	1,268,207	9,821,372	208	1,612,748	10,190,219
		YES	203	3,604,631	131	2,809,107	21,140,892	119	1,603,703	9,867,104
5 years	Not active	NO	0	0	172	1,843,638	13,935,636	144	1,312,725	8,198,255
	100	NO	129	12,397	43	210,624	1,592,874	37	240,229	1,510,414
		YES	548	3,963,266	301	3,754,433	28,516,188	274	2,899,827	18,026,056
	1000	NO	308	93,091	120	613,086	4,713,964	112	817,239	5,157,371
		YES	369	3,883,173	224	3,351,971	25,395,098	199	2,322,817	14,379,099
	5000	NO	489	502,964	214	1,174,636	9,112,295	193	1,551,273	9,757,442
		YES	188	3,473,300	130	2,790,421	20,996,767	118	1,588,783	9,779,028
2 Years	Not active	NO	0	0	210	2,132,697	16,202,289	180	1,626,242	10,216,710
	100	NO	83	7,888	36	161,584	1,237,369	31	116,649	741,199
		YES	399	2,969,856	270	3,514,414	26,605,040	244	2,709,890	16,776,816
	1000	NO	205	64,204	105	597,846	4,510,888	100	668,155	4,234,159
		YES	277	2,913,614	201	3,078,152	23,331,521	175	2,158,384	13,283,856
	5000	NO	339	368,799	192	1,133,011	8,614,703	173	1,369,552	8,601,101
		YES	143	2,609,019	114	2,542,987	19,227,706	102	1,456,987	8,916,914
General category vessels that had a permit only <u>after</u> the control date										
From March 2005 to Jan.2006		NO	0	0	81	1,442,777	11,264,313	88	1,064,389	6,740,284

Table 120. Composition of total revenue by qualification criteria and time period alternatives in 2005 fishing year.

Time Period	Qualification lb. Criteria	Qualify	Number of active vessels	Scallop Revenue as a % of Total Revenue	Average scallop revenue per vessel ($)	Average Revenue from other species per vessel	Average scallop revenue per vessel ($)	Total scallop revenue ($)	Total revenue ($)
General category vessels that had a permit before the control date									
11 Years	Not active	NO	152	62%	86,069	133,974	220,043	13,082,434	33,446,503
	100	NO	46	22%	38,431	336,142	374,573	1,767,825	17,230,372
		YES	318	50%	91,806	209,199	301,005	29,194,439	95,719,740
	1000	NO	130	24%	41,490	347,717	389,207	5,393,692	50,596,884
		YES	234	60%	109,267	157,199	266,467	25,568,572	62,353,228
	5000	NO	233	28%	42,152	312,814	354,966	9,821,372	82,707,035
		YES	131	80%	161,381	69,482	230,863	21,140,892	30,243,077
5 years	Not active	NO	172	58%	81,021	148,091	229,112	13,935,636	39,407,306
	100	NO	43	24%	37,044	288,418	325,462	1,592,874	13,994,860
		YES	301	51%	94,738	214,213	308,952	28,516,188	92,994,449
	1000	NO	120	23%	39,283	345,405	384,688	4,713,964	46,162,614
		YES	224	61%	113,371	158,177	271,548	25,395,098	60,826,695
	5000	NO	214	29%	42,581	316,778	359,359	9,112,295	76,902,805
		YES	130	80%	161,514	69,921	231,435	20,996,767	30,086,504
2 Years	Not active	NO	210	54%	77,154	177,612	254,766	16,202,289	53,500,875
	100	NO	36	24%	34,371	244,157	278,528	1,237,369	10,027,021
		YES	270	53%	98,537	208,384	306,921	26,605,040	82,868,719
	1000	NO	105	26%	42,961	312,458	355,419	4,510,888	37,318,958
		YES	201	62%	116,077	160,424	276,501	23,331,521	55,576,782
	5000	NO	192	31%	44,868	297,568	342,436	8,614,703	65,747,782
		YES	114	81%	168,664	69,476	238,140	19,227,706	27,147,958
General category vessels that had a permit only <u>after</u> the control date									
From March 2005 to Jan.2006		NO	81	87%	139,066	13,772	152,838	11,264,313	12,379,838

Summary of impacts

- 11 year qualification criteria will have the smallest impacts on recent participants of the fishery for each poundage alternative compared to the 5 years and 2 years qualification periods (Table 119).
- Increase in the poundage criteria will significantly increase, however, the loss in revenue of the recent participants that do not qualify for limited access. For example, with 1000 lb. criteria and five year period, 112 vessels that earned over $5 million in 2006 will not qualify. With 5000 lb. criteria, however, 193 vessels that earned over $9.7 scallop revenue in 2006 will not qualify for limited access. Future landings and revenues of these vessels could be less; however, than the levels observed in 2005-06 fishing years even with the status quo management. Nevertheless, by disqualifying a larger number of vessels, the higher poundage alternatives will have larger negative economic impacts on the recent participants regardless of the future amount of landings or TAC. The same conclusions are valid if the qualification period was reduced to 5 or 2 years. For each of

these periods, 5000 lb. criteria will result in a larger negative impact on the recent participants of the general category fishery compared to 100 lb. and 1000 lb. criteria.
- The reverse will be true for the vessels that will qualify for these alternatives. Since general category TAC would be divided between fewer participants, 5000 lb. qualification alternative will result in largest gains for the qualified vessels depending on the level of TAC.
- Although, the absolute economic impacts will vary, the relative economic impacts of one alternative versus another on the general category vessels will not change, with the level of TAC or the level of future landings.

5.4.6.1 Relative Impacts on groups of general category vessels

The impacts of the Amendment 11 alternatives are analyzed in detail the following sections for four groups of general category vessels according to whether they qualify for limited access and according to whether they participated in the scallop fishery before and after the control date:

Group 1. Vessels that had a permit and were active before the control date and qualify for limited access.
Group 2 Vessels that had a permit and were active before the control date but do not qualify for limited access due to the poundage criteria.
Group 3 Vessels that had a permit before the control date but were not active until after the control date, thus do not qualify for limited access.
Group 4. Vessels that did not have a permit before the control date, thus do not qualify for limited access, but were active during the recent years.

5.4.6.1.1 The impacts on vessels that had a permit and were active before the control date and qualify for limited access (Group 1).

The impacts of the qualification criteria alternatives on the number of vessels that will qualify were discussed in Section 5.4.3 (Table 78). This section examines the economic impacts on the qualifiers relative to their recent activity in the general category scallop fishery, since the economic impacts of the qualification criteria alternatives on these vessels will depend on whether they will able to land similar amounts with the limited access program and TAC management.

The impacts on the qualified vessels will vary according to whether they participated in the general category fishery in the recent years and derived revenue from scallops. Not all the vessels that qualify for limited access according to their historical participation landed any scallops during the last two fishing years. Table 117 shows the scallop landings of the vessels before the control date for each qualification period and compares these with scallop landings and revenue after the control date. Using 5 year period as an example, it could be seen out of 548 vessels would qualify for limited access with 100 lb. criteria, only 301 participated in the scallop fishery in 2005 and 274 in 2006 fishing years. These same vessels landed 3.7 million lb. of scallops and earned $28.5 million revenue in 2005. For 2006, 274 qualifiers landed 2.8 million lb. and earned $18.0 million revenue from scallops. The economic impacts of the qualification criteria alternatives on these vessels will depend on the level of general category TAC and on the amount of pounds to be allocated to other vessels. Since these vessels will have to share total

general category allocation with the qualifiers that were not active in the scallop fishery in recent years, if TAC is lower than their landings plus the share of the vessels that were not active during the recent years, they will incur a loss from limited access. Out of these 548 qualifiers, 247 vessels that did not fish in 2005 and 274 vessels that did not fish in 2006 will gain from a limited access program since they will be allocated scallop pounds (or trips) that they can land in the future, or even lease or sell under some alternatives.

The analysis based on the recent activity of the qualifiers show, however, that a higher poundage criteria will reduce the number of qualifiers that were not active in the recent years. For example, 1000 lb. criteria will include 369 qualifiers, out of which 224 vessels landed scallops in 2005 whereas 145 vessels did not fish for scallops. As the qualification criteria is increased to 5000 lb., 130 vessels out of 188 qualifiers that were active in 2005 would have to share the TAC with only 58 additional qualifiers that did not fish in 2005. As a result, any loss in revenue for recent participants will be minimized since TAC will be shared with a smaller pool of vessels. Similarly, if the TAC was set larger than the sum of pounds the active could land under status quo management, these vessels could gain from the limited access program since the share per qualified vessel will be higher. Overall, the same conclusions will be valid for the 11 year and 2 year qualification periods, that is, higher poundage criteria will benefit those qualifiers that were active in the recent years relatively more compared to lower poundage criteria within each time period. An analysis of the distributional impacts of qualification criteria and period alternatives on vessels that were active in the fishery versus those vessels with historical participation only is provided in Section 5.4.6.2.

5.4.6.1.2 The impacts on vessels that had a permit and were active before the control date but do not qualify for limited access (Group 2).

The qualification criteria and time period alternatives will differential economic impacts on this group of vessels depending on their recent participation of in the general category fishery. For example, for 5 year qualification period and 1000 lb. criteria , 308 vessels that had a permit before the control date will not qualify for limited access because their annual scallop landings from their best year was below 1000 lb. during 2000-2004 fishing years (Table 119). Majority of these vessels, 188 vessels in 2005 and 196 vessels in 2006, did not participate in the scallop fishery during the recent years, however, and will not be impacted from the proposed alternatives in terms of any loss in current revenue from scallops.

The qualification criteria and time period alternatives will have negative impacts on those no qualifiers that were active in the general category scallop fishery during the recent years. Again using 5 year period as an example combined with the 1,000 lb. criteria, Table 119 shows that 120 vessels out of 308 no qualifiers landed scallops in 2005 and 112 vessels landed scallops in 2006. These vessels that will not be allowed to fish in the future if a limited access program were instituted using these criteria. Assuming that the future conditions with status quo resemble to the conditions observed in 2005 -2006 fishing years, these vessels will loose their revenues from scallops ranging from $4.7 million (2005) to at least $5.1 million (2006). Comparing the scallop revenue for the groups of vessels for each qualification criteria within the same time period, it is evident that by disqualifying a greater number of vessels, a higher poundage criteria will have larger negative economic impacts on those vessels. For example, a 5000 lb. criteria would almost

double the revenue loss by excluding 214 vessels in 2005 that were active and 193 vessels that were active in 2006 from limited access.

The negative impacts on group two vessels do not seem to change significantly across qualification time alternatives, however. Again using the same example with 1000 lb. criteria, 130 vessels that were active in 2005 and 124 vessels that were active in 2006 will disqualify for limited access with the 11 year qualification period. These loss in scallop revenue for these vessels would range between $5.4 million to $5.5 million for these vessels if it is assumed that they could land similar amounts and receive similar prices in the future with the status quo management. If instead, a two year period was implemented with the 1000 lb. criteria, 105 vessels that were active in 2005 and 100 vessels that were active in 2006 will be impacted by these measures, with a future potential loss in revenue ranging from $4.3 million (2006) to $4.5 million (2005). In other words, it seems that a 2 year qualification period will have less negative impacts for this group of vessels compared to 11 year period, but this is only because 2 year period eliminated many vessels that were active during the longer period but did not participated in the general category fishery during the last 2 years. For example, the number of vessels that had a permit before the control date and were active in 2005 but were not active during the qualification period increase from 152 vessels for the 11 year qualification period to 210 vessels for 2 year qualification period. Some of these additional 68 vessels are already included among vessels that do not qualify with 1000 lb. criteria and 11 year qualification period. In other words, it is not because 2 year qualification period had less negative impacts in terms of total number of participants and their loss in scallop revenue, but because some of these impacts were grouped under Group 1 vessels.

For these reasons, overall impacts of the qualification time period alternatives could be better assessed in Table 121, which sums the total landings and revenue of the recent participants that had a permit before the control date but do not qualify for limited access under various alternatives (Sum of Group 1 and Group 2 vessels). Comparing the total revenue in 2005 of no qualifiers for 11 year period with 2 year period, again using 1000 lb. criteria as an example, indicates that the negative impacts on the vessels that disqualify will be larger with the 2 year period (315 vessels and $20.6 million scallop revenue) than with the 11 year period (282 vessels and $18.4 million scallop revenue).

5.4.6.1.3 The impacts on vessels that had a permit before the control date but were not active until after the control date (Group 3)

The impacts on those vessels that had a permit before the control date but were not active in general category fishery until after the control date are shown in the first row (Not active) of each qualification time period. For example, for 11 years qualification time period, the first row shows that 152 vessels that that a permit before the control date and landed scallop during 2005 will not qualify for limited access because they had no landings of scallops prior to the control date. For 2006 fishing year, 128 such vessels that landed scallops would not qualify for limited access. These vessels landed 1.7 million lb. of scallops in 2005 and 1.1 million lb. of scallops in 2006 fishing year. If conditions for the productivity of the scallop resource and prices and costs remained at the similar levels that were observed during 2005-06 scallop resource allowing these vessels to participate in the general category fishery at the same rate in the future with status quo management, these vessels could derive an income from the scallop fishery ranging from $6.9

million (2006 level) to $13.0 million (2005 level) in a year. These amounts would equal to the loss in future revenue for these vessels since they will not qualify for limited access with any of the qualification criteria alternatives. Reducing the qualification time period from 11 years to the last five or two years up to the control date, will result in more vessels (172 for 5 years, 210 for 2 years in 2005) being disqualified for limited access because of no activity and/or permit during these periods. As a consequence, future loss in revenue will increase with the 2 years qualification period resulting in largest loss in revenue ranging from $10.2 million (2006 level) to $16.1 million (2005 level) for these vessels. As discussed above, future landings and revenues could be less (more) than these levels under status quo management depending on the conditions affecting scallop resource and prices. In such a scenario, the absolute impacts of all the qualification time period alternatives will be lower (higher) than estimated. But the relative impacts would not change. By disqualifying a larger number of vessels, the shorter qualification periods would still have larger negative economic impacts on the recent participants. The three qualification criteria alternatives will have the same impacts on these group of vessels since require all vessels have some level of scallop landings during the qualification time period to qualify for limited access.

5.4.6.1.4 The impacts on vessels that did not have a permit before the control date (Group 4)

Under all qualification period alternatives, 81 vessels that participated in the general category fishery in 2005 and 88 vessels that landed scallops in 2006 will be disqualified from limited access because they did not have a general category permit before the control date (Table 117 to Table 121). There were 119 such unique vessels for 2005-06 fishing years. The revenue loss for these vessels would range between $6.7 million (2006 level) to $11.2 million (2005 level) as a result of the proposed limited access program if future level of landings and prices with status quo were approximately similar to what has been observed during 2005-06. This loss could be lower than these levels, however, if the scallop biomass and productivity decline in the future years, and/or the general category landings were managed by TAC lower than the present level of general category landings.

Table 121. Combined Impacts (total include vessels which had a permit before control date but did not land scallops during the qualification time period).

Time Period	Qual lb. Criteria	Qualify	Qualification Period Activity		2005 fish year: March 2005 to February 2006			2006 fish year: March 2006 to January 2006		
			Number of active vessels	Total best year scallop landings (lb)	Number of active vessels	Scallop Landings (lb.)	Scallop Revenue ($)	Number of active vessels	Scallop Landings (lb.)	Scallop Revenue ($)
General category vessels that had a permit before the control date										
11 Years	GTE 100	NO	219	27,618	198	1,973,458	14,801,581	166	1,433,503	8,910,375
		YES	705	4,289,112	318	3,835,237	29,194,439	289	3,019,278	18,824,350
	GTE 1000	NO	465	130,428	282	2,431,686	18,427,448	252	2,108,150	13,226,507
		YES	459	4,187,989	234	3,377,009	25,568,572	203	2,344,631	14,508,218
	GTE 5000	NO	721	713,786	385	2,999,588	22,855,128	336	2,849,078	17,867,621
		YES	203	3,604,631	131	2,809,107	21,140,892	119	1,603,703	9,867,104
5 Years	GTE 100	NO	129	12,397	215	2,054,262	15,479,832	181	1,552,954	9,708,669
		YES	548	3,963,266	301	3,754,433	28,516,188	274	2,899,827	18,026,056
	GTE 1000	NO	308	93,091	292	2,456,724	18,600,922	256	2,129,964	13,355,626
		YES	369	3,883,173	223	3,351,971	25,395,098	199	2,322,817	14,379,099
	GTE 5000	NO	489	502,964	386	3,018,274	22,999,253	337	2,863,998	17,955,697
		YES	188	3,473,300	130	2,790,421	20,996,767	118	1,588,783	9,779,028
2 Years	GTE 100	NO	83	7,888	246	2,294,281	17,390,980	211	1,742,891	10,957,909
		YES	399	2,969,856	270	3,514,414	26,605,040	244	2,709,890	16,776,816
	GTE 1000	NO	205	64,204	315	2,730,543	20,664,499	280	2,294,397	14,450,869
		YES	277	2,913,614	201	3,078,152	23,331,521	175	2,158,384	13,283,856
	GTE 5000	NO	339	368,799	402	3,265,708	24,768,314	353	2,995,794	18,817,811
		YES	143	2,609,019	114	2,542,987	19,227,706	102	1,456,987	8,916,914
General category vessels that had a permit only <u>after</u> the control date										
From March 2005 to Jan.2006		NO	-	-	81	1,442,777	11,264,313	88	1,064,389	6,740,284
General category fleet totals for 2005-06 fishing years					597	7,251,472	55,260,333	543	5,517,170	34,475,009

Table 122. Composition of scallop landings and revenues in 2005 and 2006 fishing years by qualification and time period

Time Period	Qualification lb. Criteria	Qualify	2005 fish year: March 2005 to February 2006			2006 fish year: March 2006 to January 2006		
			Number of active vessels	Scallop Landings (lb.)	Scallop Revenue ($)	Number of active vessels	Scallop Landings (lb.)	Scallop Revenue ($)
General category vessels that had a permit before the control date								
11 Years	100	NO	33%	27%	27%	31%	26%	26%
		YES	53%	53%	53%	53%	55%	55%
	1000	NO	47%	34%	33%	46%	38%	38%
		YES	39%	47%	46%	37%	42%	42%
	5000	NO	64%	41%	41%	62%	52%	52%
		YES	22%	39%	38%	22%	29%	29%
5 Year	100	NO	36%	28%	28%	33%	28%	28%
		YES	50%	52%	52%	50%	53%	52%
	1000	NO	49%	34%	34%	47%	39%	39%
		YES	37%	46%	46%	37%	42%	42%
	5000	NO	65%	42%	42%	62%	52%	52%
		YES	22%	38%	38%	22%	29%	28%
2 Year	100	NO	41%	32%	31%	39%	32%	32%
		YES	45%	48%	48%	45%	49%	49%
	1000	NO	53%	38%	37%	52%	42%	42%
		YES	34%	42%	42%	32%	39%	39%
	5000	NO	67%	45%	45%	65%	54%	55%
		YES	19%	35%	35%	19%	26%	26%
General category vessels that had a permit only after the control date								
From March 2005 to Jan.2006		NO	14%	20%	20%	16%	19%	20%
General category fleet totals for 2005-06 fishing			100%	100%	100%	100%	100%	100%

5.4.6.2 Distributional impacts of alternatives between qualified vessels according to their recent activity in the general category fishery

The distributional impacts of the qualification alternatives on the qualifiers that were active and not active in the general category fishery during the recent years are examined in Table 124 and Table 125. For the purposes of demonstration, general category TAC is assumed to be 4 million lb.

The economic impacts on the qualified vessels will vary according to whether they participated in the general category fishery in the recent years and derived revenue from scallops. Not all the vessels that qualify for limited access according to their historical participation landed any scallops during the last two fishing years. For example, with the 5 year qualification period and 1000 lb. pound criteria, 369 vessels would qualify for limited access, which includes 241 vessels that participated in the general category scallop fishery in 2005 and 2006. These vessels landed 3.3 million lb. of scallops in 2005 and 2.3 million lb. of scallops in 2006 fishing year so far. If the general category TAC was set to 2 million lb., for example, and then divided among the 369 qualified vessels, the vessels that were not active in recent years will gain and the vessels that

were active during the recent years will loose. The magnitude of the gains and losses will change with the TAC.

Table 123. The impacts of qualification alternatives on allocation pounds for vessels that qualify for limited access according to their recent participation in the fishery using an example of 4 million lb. of TAC

Period	Qualification	2005-06 total activity	Number of vessels	Total scallop landings (best year)	Scallop landings (2005)	Scallop landings (2006)
11 Years	100	Active one or both	352	3,162,809	3,835,237	3,019,278
		Not active	353	1,126,303		
		100 lb.Total	705	4,289,112	3,835,237	3,019,278
	1000	Active one or both	252	3,113,822	3,377,009	2,344,631
		Not active	207	1,074,166		
		1000 Total	459	4,187,989	3,377,009	2,344,631
	5000	Active one or both	141	2,870,070	2,809,107	1,603,703
		Not active	62	734,560		
		5000 Total	203	3,604,631	2,809,107	1,603,703
5 Year	100	Active one or both	333	3,121,417	3,754,433	2,899,827
		Not active	215	841,849		
		100 LB.Total	548	3,963,266	3,754,433	2,899,827
	1000	Active one or both	241	3,076,071	3,351,971	2,322,817
		Not active	128	807,102		
		1000 Total	369	3,883,173	3,351,971	2,322,817
	5000	Active one or both	140	2,859,879	2,790,421	1,588,783
		Not active	48	613,421		
		5000 Total	188	3,473,300	2,790,421	1,588,783
2 Year	100	Active one or both	292	2,561,188	3,514,414	2,709,890
		Not active	107	408,668		
	100 LB.Total		399	2,969,856	3,514,414	2,709,890
	1000	Active one or both	211	2,521,249	3,078,152	2,158,384
		Not active	66	392,365		
		1000 Total	277	2,913,614	3,078,152	2,158,384
	5000	Active one or both	118	2,312,486	2,542,987	1,456,987
		Not active	25	296,533		
		5000 Total	143	2,609,019	2,542,987	1,456,987
Grand Total			4,215	36,210,688	33,131,045	23,320,751

Table 124. The impacts of qualification alternatives on allocation pounds for vessels that qualify for limited access according to their recent participation in the fishery using an example of 4 million lb. of TAC

Period	Qualification criteria	2005-2006 active	Number of vessels	Average best year lb. per vessel	Average of ALLO TAC with all	Avg.lb. 2005 fish year	Avg.lb. 20056 fish year
11 years	100	Active both years	255	9,935	9,287	13,615	10,152
		Active 2005 only	63	6,660	6,226	5,768	
		Active 2006 only	34	6,171	5,768		12,664
		Not active	353	3,191	2,983		
		100 LB.Total	705	6,084	5,687	12,060	10,447
	1000	Active both years	185	13,495	12,616	16,474	11,328
		2005 only	49	8,437	7,887	6,721	
		Active 2006 only	18	11,323	10,585		13,826
		Not active	207	5,189	4,851		
		1000 Total	459	9,124	8,529	14,432	11,550
	5000	Active both years	109	21,403	20,008	23,926	14,447
		2005 only	22	15,783	14,754	9,146	
		Active 2006 only	10	18,995	17,757		2,897
		Not active	62	11,848	11,076		
		5000 Total	203	17,757	16,600	21,444	13,476
5 Year	100	Active both years	242	10,376	13,981	14,048	10,229
		2005 only	59	6,806	9,170	6,016	
		Active 2006 only	32	6,524	8,790		13,265
		Not active	215	3,916	5,276		
		100 LB.Total	548	7,232	9,744	12,473	10,583
	1000	Active both years	182	13,618	18,348	16,668	11,396
		2005 only	42	9,399	12,664	7,583	
		Active 2006 only	17	11,930	16,074		14,630
		Not active	128	6,305	8,496		
		1000 Total	369	10,524	14,179	14,964	11,672
	5000	Active both years	108	21,507	28,977	23,974	14,443
		2005 only	22	15,783	21,265	9,146	
		Active 2006 only	10	18,995	25,593		2,897
		Not active	48	12,780	17,219		
		5000 Total	188	18,475	24,892	21,465	13,464
2 Year	100	Active both years	222	9,882	13,314	14,639	10,389
		2005 only	48	5,699	7,679	5,511	
		Active 2006 only	22	4,266	5,748		18,345
		Not active	107	3,819	5,146		
		100 LB.Total	399	7,443	10,029	13,016	11,106
	1000	Active both years	165	13,112	17,667	17,164	11,727
		2005 only	36	7,487	10,087	6,838	
		Active 2006 only	10	8,820	11,884		22,350
		Not active	66	5,945	8,010		
		1000 Total	277	10,518	14,172	15,314	12,334
	5000	Active both years	98	20,574	27,720	24,604	14,787
		2005 only	16	13,665	18,412	8,239	
		Active 2006 only	4	19,406	26,147		1,974
		Not active	25	11,861	15,981		
		5000 Total	143	18,245	24,582	22,307	14,284

Table 125. The impacts of qualification alternatives on revenues for vessels that qualify for limited access according to their recent participation in the fishery using an example of 4 million lb. of TAC

Period	Qual. Criteria	2005-2006 activity	Number of vessels	Scallop revenue per vessel (Best Year)	Scallop revenue per vessel (allocation)	Scallop Revenue per vessel (2005 fy)	Scallop Revenue per vessel (2006 fy)
11 Years	100	Not active	353	24,249	22,669		
		Active both years	255	75,506	70,585	103,811	63,334
		2005 only	63	50,617	47,318	43,217	
		Active 2006 only	34	46,897	43,840		78,651
		100 LB.Total	705	46,237	43,224	91,806	65,136
	1000	Not active	207	39,438	36,868		
		Active both years	185	102,562	95,878	125,117	69,979
		2005 only	49	64,122	59,943	49,427	
		Active 2006 only	18	86,056	80,448		86,784
		1000 Total	459	69,344	64,824	109,267	71,469
	5000	Not active	62	90,043	84,174		
		Active both years	109	162,661	152,060	180,741	88,741
		2005 only	22	119,947	112,130	65,462	
		Active 2006 only	10	144,360	134,952		19,435
		5000 Total	203	134,952	126,156	161,381	82,917
5 Year	100	Not active	215	29,758	40,095		
		Active both years	242	78,861	106,253	106,881	63,587
		2005 only	59	51,727	69,694	44,931	
		Active 2006 only	32	49,580	66,802		82,435
		100 LB.Total	548	54,965	74,057	94,738	65,789
	1000	Not active	128	47,922	64,567		
		Active both years	182	103,498	139,448	126,710	70,431
		2005 only	42	71,432	96,244	55,570	
		Active 2006 only	17	90,668	122,161		91,801
		1000 Total	369	79,979	107,759	113,371	72,257
	5000	Not active	48	97,125	130,861		
		Active both years	108	163,450	220,225	181,080	88,747
		2005 only	22	119,947	161,611	65,462	
		Active 2006 only	10	144,360	194,504		19,435
		5000 Total	188	140,410	189,182	161,514	82,873
2 Year	100	Not active	107	29,027	39,109		
		Active both years	222	75,101	101,188	111,192	64,328
		2005 only	48	43,316	58,362	40,007	
		Active 2006 only	22	32,425	43,687		113,459
		100 LB.Total	399	56,569	76,218	98,537	68,757
	1000	Not active	66	45,181	60,875		
		Active both years	165	99,653	134,268	130,752	72,109
		2005 only	36	56,899	76,662	48,820	
		Active 2006 only	10	67,035	90,319		138,591
		1000 Total	277	79,940	107,708	116,077	75,908
	5000	Not active	25	90,146	121,458		
		Active both years	98	156,360	210,671	186,749	90,478
		2005 only	16	103,857	139,932	57,895	
		Active 2006 only	4	147,486	198,715		12,508
		5000 Total	143	138,661	186,825	168,664	87,421

5.4.7 Economic impacts of the contribution factor alternatives combined with qualification criteria, period and general category TAC

5.4.7.1 Overall impacts on qualifying vessels according to the level of annual scallop landings

There are two alternatives that determine a vessel's contribution factor, best year and best year indexed with options A and B. With the best year alternative high volume participants of the general category fishery would get the larger share (contribution factor). Best year indexed alternatives would take into account historical activity, assign weights to the number of years a vessel was active and multiply a vessel's best year landings by these weights. For example, best year indexed option A was derived using following weights: One year activity=0.9, 2 years activity=0.95, 3 years activity=1.0, 4 years activity=1.05, 5 years activity=1.10. Option B assigns a higher weight to years of activity, 1.25 for five or more years of activity. The advantage of these methods is that although they take into account the years of activity, they make sure that no vessel is allocated more than a specific percentage of its best year landings, 10% in the first case and 25% in the second case.

The alternatives will not impact the number of qualifiers and the total landings and revenues for the general category fishery since these amounts will be determined by general category TAC under all alternatives. They will impact the allocation amounts for different participants, thus will have distributional impacts. These impacts will not be uniform for general category vessels that qualify for limited access fishery; however, and will vary according to the contribution factor, qualification criteria and period alternatives. Because the 'Best year indexed' alternatives with either option A or option B criteria take into account the number of years a vessel was active in the general category fishery, they will increase the share and allocation pounds for those vessels that were active in the fishery for a longer period of time and reduce the share of those that were active in the fishery for a very short period. The number of qualifying vessels by number of years-active and qualification criteria is shown in Table 126. For example, the reduction in the number of qualifiers with only one year of activity from 203 vessels (with the 100 criteria) to 42 vessels (with the 5000 lb. criteria) indicates that most of these vessels landed less than 5000 lb. during the best year of their activity.

Table 126. The number of qualified vessels by years active and qualification criteria

	Years Active	Qualification Criteria		
		100 lb.	1000 lb.	5000 lb.
11 years	1	213	108	34
	2	163	106	51
	3	97	77	43
	4	73	49	26
	5 or more	159	119	49
	Total	705	459	203
5 years	1	203	116	42
	2	136	93	51
	3	94	70	45
	4	56	43	26
	5	59	47	24
	Total	548	369	188
2 years	1	202	126	50
	2	197	151	93
	Total	399	277	143

The distribution of allocations are examined in Table 127 to Table 132 for three qualification criteria, periods and contribution factor alternatives applied to determine the number of qualifiers. The allocations are scaled by assuming a general category TAC of 4 million and 2 million respectively. Table 127 shows that the majority of the qualifiers with 100 lb. criteria will receive less than 5000 lb. of allocation with 11 year period and 4 million TAC since this qualification criterion includes all the vessels with landings of 100 lb. from any one trip. None of the qualifiers will receive 50,000 lb. or more with this option under any of the contribution factor alternatives. There are only minor differences between the average allocations per vessel for each contribution factor criteria. The number of vessels that will receive a specific amount of allocation changes from one alternative to another. For example, with 5000 lb. criteria, 23 vessels would receive an allocation of 30,000 to 39,999 lb. if best year is used as the contribution factor. If instead best-indexed option B (25%) was used, then only 17 vessels will receive the same allocation amount since some vessels in the former group were not active long enough in the general category fishery. The following tables show the distribution of allocations using 5 year and 2 year periods respectively for the three contribution factor alternatives.

Again, the average allocations per vessel change more with the qualification period and criteria than with the contribution factor. As the length of qualification period shortens or the qualification criteria pounds increase, more vessels will receive larger allocation pounds. With 5 year period and 5000 lb. criteria, almost no vessel will receive less than 5000 lb. and 22 vessels will receive more than 40000 lb. with best year criteria, and slightly more, 27 vessels, with best indexed-option B. If a 100 lb. criteria was used, however, for the same qualification period, 178 vessels would receive 2,310 lb. on the average, and 16 vessels would receive more than 40,000 lb. with the best year criteria.

The distribution of allocations could also change with the TAC that will be allocated to the general category fleet. To illustrate the impact of various TAC levels and allocation decisions for the general category fleet (2.5% to 11%), the figures below compare the number of vessels that

would be allocated various amounts of quota under a 2.0 million pounds scenario versus a 4.0 million pound scenario. The same vessels qualify for a permit, but individual allocations vary based on how much quota is available. The impacts of a 2 million lb. TAC on the distribution of allocations are analyzed in Table 130 to Table 132. The results show that average allocation per vessel will not exceed 30,000 lb. if the qualification period was 11 or five years, and more vessels will receive smaller allocations with a lower TAC.

Table 127. Allocations by qualification and allocation criteria assuming a 4 million lb. TAC and 11-year qualification period.

Scallop Pounds per vessel (scaled at TAC = 4 million lb.)	Qualification Criteria	Best year		Best indexed-10%		Best indexed-25%	
		# of vessels	Allocation (lb.) per vessel	# of vessels	Allocation (lb.) per vessel	# of vessels	Allocation (lb.) per vessel
Less than 1000 lb.	100	261	433	261	422	275	428
	1000	4	977	8	942	26	891
1000 lb. to 4999 lb.	100	246	2,257	248	2,259	235	2,317
	1000	255	2,247	251	2,244	235	2,328
	5000					2	4,592
5000 lb. to 9999 lb.	100	73	6,900	76	7,101	76	7,026
	1000	73	6,929	78	7,086	78	7,069
	5000	64	7,445	64	7,381	66	7,424
10,000 lb. to 19,999 lb.	100	64	13,722	59	13,962	59	13,934
	1000	65	13,840	59	13,948	57	13,864
	5000	67	14,391	68	14,253	64	14,272
20,000 lb. to 29,999 lb.	100	28	24,515	28	24,573	24	23,926
	1000	27	24,559	27	24,208	26	23,776
	5000	27	24,605	27	24,861	27	24,531
30,000 lb. to 39,999 lb.	100	17	33,257	18	34,098	21	34,858
	1000	19	33,661	21	34,270	19	34,586
	5000	23	35,101	20	35,465	17	34,981
40,000 lb. to 49,999 lb.	100	16	43,633	15	44,295	15	45,034
	1000	16	44,697	15	45,348	18	45,151
	5000	11	45,283	12	44,598	15	44,925
50,000 lb. or more	100						
	1000						
	5000	11	53,596	12	53,556	12	54,715

Table 128. Allocations by qualification and allocation criteria assuming a 4 million lb. TAC and 5-year qualification period.

Scallop Pounds per vessel (scaled at TAC = 4 million lb.)	Qualification Criteria	Best year		Best indexed-10%		Best indexed-25%	
		# of vessels	Allocation (lb.) per vessel	# of vessels	Allocation (lb.) per vessel	# of vessels	Allocation (lb.) per vessel
Less than 1000 lb.	100	179	462	181	453	181	457
	1000			1	976	1	947
1000 lb. to 4999 lb.	100	180	2,286	178	2,242	178	2,263
	1000	178	2,310	179	2,284	179	2,289
	5000						4,496
5000 lb. to 9999 lb.	100	63	7,122	63	6,990	63	6,966
	1000	63	7,111	61	7,035	61	7,023
	5000	51	7,625	53	7,517	53	7,383
10,000 lb. to 19,999 lb.	100	63	14,340	58	13,690	58	13,990
	1000	63	14,315	60	13,837	60	14,189
	5000	63	14,495	61	14,321	61	14,049
20,000 lb. to 29,999 lb.	100	26	25,388	29	24,179	29	24,859
	1000	26	25,166	28	24,465	28	25,156
	5000	27	24,778	27	24,818	27	24,448
30,000 lb. to 39,999 lb.	100	20	34,773	20	34,761	20	35,234
	1000	21	34,753	20	34,965	20	35,592
	5000	20	34,865	19	34,918	19	34,622
40,000 lb. to 49,999 lb.	100	13	45,782	14	45,123	14	45,334
	1000	12	45,598	15	45,650	15	46,210
	5000	14	44,059	14	44,213	14	44,013
50,000 lb. or more	100	4	50,724	5	51,301	5	52,506
	1000	6	51,309	5	52,338	5	53,520
	5000	13	54,984	14	55,394	14	55,885

Table 129. Allocations by qualification and allocation criteria assuming a 4 million lb. TAC and 2-year qualification period.

Scallop Pounds per vessel (scaled at TAC = 4 million lb.)	Qualification Criteria	Best year		Best indexed-10%		Best indexed-25%	
		# of vessels	Allocation (lb.) per vessel	# of vessels	Allocation (lb.) per vessel	# of vessels	Allocation (lb.) per vessel
Less than 1000 lb.	100	98	507	99	505	104	513
	1000						
1000 lb. to 4999 lb.	100	138	2,335	139	2,348	137	2,388
	1000	114	2,648	116	2,650	119	2,635
	5000						
5000 lb. to 9999 lb.	100	48	7,079	47	7,205	45	7,377
	1000	47	7,153	47	7,342	44	7,455
	5000	21	8,687	22	8,739	22	8,654
10,000 lb. to 19,999 lb.	100	51	15,354	52	15,538	47	15,040
	1000	52	15,545	48	15,466	46	14,996
	5000	41	14,765	42	14,930	43	14,668
20,000 lb. to 29,999 lb.	100	21	23,497	18	23,648	25	24,001
	1000	20	23,637	22	23,398	26	23,882
	5000	36	23,827	33	23,883	31	23,956
30,000 lb. to 39,999 lb.	100	15	34,634	17	34,752	12	35,324
	1000	16	34,984	15	34,763	13	35,546
	5000	10	35,985	11	35,454	11	34,363
40,000 lb. to 49,999 lb.	100	13	45,320	12	46,084	13	45,182
	1000	12	45,876	12	45,215	13	46,017
	5000	12	44,951	9	43,537	11	43,928
50,000 lb. or more	100	15	60,209	15	60,507	16	60,588
	1000	16	60,662	17	60,374	16	61,709
	5000	23	63,267	26	61,952	25	63,002

Table 130. Allocations by qualification and allocation criteria assuming a 2 million lb. TAC and 11-year qualification period.

Scallop Pounds per vessel (scaled at TAC = 4 million lb.)	Qualification Criteria	Best year		Best indexed-10%		Best indexed-25%	
		Number of vessels	Allocation (lb.) per vessel	Number of vessels	Allocation (lb.) per vessel	Number of vessels	Allocation (lb.) per vessel
Less than 1000 lb.	100	385	377	388	375	390	364
	1000	132	703	137	704	138	675
1000 lb. to 4999 lb.	100	195	2,261	197	2,332	196	2,326
	1000	200	2,243	200	2,327	201	2,327
	5000	64	3,722	64	3,691	68	3,670
5000 lb. to 9999 lb.	100	64	6,861	59	6,981	59	6,967
	1000	65	6,920	59	6,974	57	6,932
	5000	67	7,195	68	7,127	64	7,136
10,000 lb. to 19,999 lb.	100	45	13,909	46	14,150	45	14,514
	1000	46	14,159	48	14,305	45	14,170
	5000	50	14,716	47	14,687	44	14,284
20,000 lb. or more	100	16	21,817	15	22,147	15	22,517
	1000	16	22,348	15	22,674	18	22,575
	5000	22	24,720	24	24,539	27	24,638

Table 131. Allocations by qualification and allocation criteria assuming a 2 million lb. TAC and 5-year qualification period.

Scallop Pounds per vessel (scaled at TAC = 4 million lb.)	Qualification Criteria	Best year		Best indexed-10%		Best indexed-25%	
		Number of vessels	Allocation (lb.) per vessel	Number of vessels	Allocation (lb.) per vessel	Number of vessels	Allocation (lb.) per vessel
Less than 1000 lb.	100	269	395	272	391	276	378
	1000	84	724	90	723	97	699
1000 lb. to 4999 lb.	100	153	2,387	150	2,362	150	2,380
	1000	157	2,349	151	2,347	149	2,409
	5000	51	3,812	53	3,759	57	3,666
5000 lb. to 9999 lb.	100	63	7,170	58	6,845	57	6,995
	1000	63	7,157	60	6,918	58	7,094
	5000	63	7,247	61	7,161	56	7,024
10,000 lb. to 19,999 lb.	100	46	14,734	49	14,249	44	14,434
	1000	47	14,725	48	14,420	44	14,713
	5000	47	14,535	46	14,495	45	14,146
20,000 lb. or more	100	17	23,472	19	23,374	21	24,033
	1000	18	23,751	20	23,661	21	24,497
	5000	27	24,660	28	24,902	30	25,370

Table 132. Allocations by qualification and allocation criteria assuming a 2 million lb. TAC and 2-year qualification period.

Scallop Pounds per vessel (scaled at TAC = 4 million lb.)	Qualification Criteria	Best year		Best indexed-10%		Best indexed-25%	
		Number of vessels	Allocation (lb.) per vessel	Number of vessels	Allocation (lb.) per vessel	Number of vessels	Allocation (lb.) per vessel
Less than 1000 lb.	100	160	432	163	437	170	446
	1000	37	828	37	817	45	825
1000 lb. to 4999 lb.	100	124	2,312	122	2,347	116	2,417
	1000	124	2,326	126	2,349	118	2,404
	5000	21	4,344	22	4,369	22	4,327
5000 lb. to 9999 lb.	100	51	7,677	52	7,769	47	7,520
	1000	52	7,772	48	7,733	46	7,498
	5000	41	7,383	42	7,465	43	7,334
10,000 lb. to 19,999 lb.	100	36	14,069	35	14,521	37	13,837
	1000	36	14,340	37	14,003	39	13,885
	5000	46	13,235	44	13,388	42	13,341
20,000 to 29,999 lb	100	19	24,311	18	24,609	20	24,234
	1000	17	24,134	19	24,297	19	24,386
	5000	22	24,626	22	24,703	22	24,464
30,000 lb. or more	100	9	31,580	9	31,927	9	32,634
	1000	11	31,843	10	32,282	10	32,945
	5000	13	35,039	13	35,217	14	35,067

5.4.7.2 Distributional impacts of contribution factor alternatives according to the years of activity in the general category fishery

Although average allocation per qualified vessel changes in a relatively small amount with each contribution factor alternative, the impacts of best year indexed alternatives could be significant for some vessels. These impacts are described in Table 133 for some hypothetical vessels, with activity levels resembling many participants in the general category fleet, using 5 year qualification period for 100 lb. criteria as an example. For example, Vessel A and Vessel B represent some high volume participants in the general category fishery both having landed 48,000 lb. in their best year, followed by vessels C and D with 20000 lb. of landings in their best year. Vessels E, F, G, on the other hand, provide examples for lower volume participants in the general category scallop fishery.

Another way of taking into historical activity would be to assign weights to the number of years a vessel was active rather than to each year and then multiplying a vessel's best year landings by these weights. For example, years-active indexed best year (1) was derived using following weights: One year activity=0.9, 2 years activity=0.95, 3 years activity=1.0, 4 years activity=1.05, 5 years activity=1.10. In other words, this system makes sure that no vessel is allocated more than a specific percentage its best year landings, 10% in the first case and 25% in the second case. If the first set of weights were used, vessel B would receive 5% more than its best year pounds, 53,300 lb., of allocation at a TAC of 4 million lb., more than its best year landings (48,000 lb.), but less than vessel A (55,900 lb.) since it has only 4 four years of activity whereas vessel A has 5 years. If years of activity was placed a larger weight, vessel B would receive

57,800 lb. (12.5% higher than its best year) whereas vessel A would get 64,200 lb. (25% higher than its best year).

With the best year criteria, both vessel A and vessel B would have the same contribution factor, 48,000 lb., corresponding to their best year of landings during the 2000-2004 (up to the control date). Because vessel A was active in each of these 5 years, however, its share will be multiplied by 1.10 according to option A, and with 1.25 according to option B with the best year indexed alternatives. As a result, vessel A's contribution factor will increase to 52,800 lb. for option A and to 60,000 lb for option B. Vessel B's contribution factor stays at 48,000 lb. since it fished only 3 out 5 years during this period, its share is multiplied by "1". The contribution factors for the other vessels are calculated in the same way.

In the second step, percentage share of the qualifiers are calculated for each alternative using their contribution factor and total scallop pounds for all the qualifiers, which is simply the sum of contribution factors for all qualifiers. These amounts are shown in Table 134 corresponding to each qualification criteria and period. For example, with 5 year period and 100 criteria, the sum of contribution factors equals to 3,925,408 lb. for best year, to 3,875,398 lb. for best indexed option A, and to 3,787,294 lb. for best indexed option B. The percentage share of each vessel in Table 133 is calculated by dividing each vessel's contribution factor with these total pounds corresponding to each alternative. It is clear that the vessels that were active in the fishery for longer periods of time and landed a large amount of scallops will have a bigger share of the general category fishery.

In order to estimate the allocation pounds for each vessel, their percentage share for each of the contribution factor alternatives is multiplied by the general category TAC. Again for illustrative purposes only, TAC is set to 4 million lbs. in Table 133. The numbers in these tables are rounded, thus, represent approximate values. If share of each participant in the general category TAC was calculated according to their best year landings, vessels A and B would have the same allocation, so would vessels C and D, and vessels E and F. Best year indexed alternatives would allocate different amounts to these vessels in each pair because some vessels were active for longer periods of time than others. Because option B with best indexed alternative rewards longer years of activity relatively more than option A, the vessels that were active 4 or 5 years, such as Vessel A , C and E and G will gain more allocation pounds with this option as compared to best year alternative and option A. The gain in pounds is greater, however, for vessels with a large best year scallop landings. For example, vessel A would gain an additional 14,458 lb. (63370 lb.-48912 lb.) allocation with option B and 5,585 lb. with option A compared to its best year pounds. Clearly, these amounts will translate into significant amount of revenue fro vessel A, to over $86,000 for option B, and over $33,000 for option A even if the price of scallops were as low as $6.00 per pound. The gain for vessel C would be around 6000 lb. with option B because its best year landings were about 20000 lb., and lower for vessel G (an increase of 300 lb.) with option B. In the same way, having less years of activity reduces the share and allocation of vessels with the best indexed options. For example, vessel D would receive only 15,842 lb. of allocation with option B because it participated in the general category for only one year.

Table 133. Comparisons of vessel allocations with 100 lb. criteria for five year qualification period (2000-04 fishing years) and for a TAC of 4 million lb.

Data	Vessel A	Vessel B	Vessel C	Vessel D	Vessel E	Vessel F	Vessel G
Years active	5	3	5	1	4	2	5
Contribution factors							
Best year scallop lb.	48,000	48,000	20,000	20,000	5,000	5,000	1,000
Best year indexed: Option A (10%)	52,800	48,000	22,000	18,000	5,250	4,750	1,100
Best year indexed: Option B (25%)	60,000	48,000	25,000	15,000	5,625	4,375	1,250
Percentage shares							
Best year	1.223%	1.223%	0.510%	0.510%	0.127%	0.127%	0.025%
Best year indexed: Option A (10%)	1.362%	1.239%	0.568%	0.464%	0.135%	0.123%	0.028%
Best year indexed: Option B (25%)	1.584%	1.267%	0.660%	0.396%	0.149%	0.116%	0.033%
Scaled allocation for 4 million TAC							
Best year	48,912	48,912	20,380	20,380	5,095	5,095	1,019
Best year indexed: Option A (10%)	54,498	49,543	22,707	18,579	5,419	4,903	1,135
Best year indexed: Option B (25%)	63,370	50,696	26,404	15,842	5,941	4,621	1,320

Option A: One year activity=0.9, 2 years activity=0.95, 3 years activity=1.0, 4 years activity=1.05, 5 years activity=1.10.
Option B: One year activity=0.75, 2 years activity=0.875, 3 years activity=1.0, 4 years activity=1.125, 5 years activity=1.25.

Table 134. Total contribution pounds

Qualification Period	Qualification Criteria	Best year	Best year indexed: Option A (10%)	Best year indexed: Option B (25%)
11 Years	100	4,251,254	4,253,968	4,243,203
	1000	4,150,131	4,155,172	4,147,896
	5000	3,566,773	3,576,642	3,576,607
5 Year	100	3,925,408	3,875,398	3,787,294
	1000	3,845,315	3,798,637	3,715,533
	5000	3,435,442	3,403,616	3,342,788
2 Year	100	2,968,789	2,771,826	2,474,782
	1000	2,912,547	2,720,110	2,429,854
	5000	2,607,952	2,439,173	2,184,404

Table 135 to Table 137 provides a detailed analysis for the same hypothetical vessels shown in Table 133 for all 3 qualification criteria (100 lb. 1000 lb., 5000 lb.) and time period. The allocations are scaled by assuming a general category TAC 4 million lb. as an example. A higher (or lower) TAC will increase (decrease) allocations for each vessel proportionately. For example, Table 135 shows that with 11 year qualification period and 1000 lb. criteria, vessel A would be allocated 46,264 lb. with best year criteria, 50828 lb, with the best indexed option A and 57,861 lb. with the best indexed option B. If TAC was set to 2 million lb., its allocation would be exactly half of what it is with 4 million TAC, 23,132 lb. with the best year and 28,931 with the best indexed option B. Both of these amounts would be considerably less than the level during its best year (48,000 lb. scallops). Similarly, a TAC of 8 million will double the allocation pounds shown in these Tables for all vessels.

It is evident from these Tables that with a TAC of 4 million lb., all vessels will receive an allocation exceeding their best year landings, with the exception for 100 lb. criteria with 11 year qualification period. The shorter the qualification period, the larger the allocation pounds with

all qualification criteria because the same TAC will be divided among a smaller number of qualifiers. For the same reasons, a larger qualification criteria will result in increased allocation for all qualifiers. Two year qualification period combined with the 5000 lb. criteria will qualify the smallest number of vessels and will result in maximum allocations per vessel qualified for limited access. On the other hand, these alternatives exclude a large number of vessels from the general category fishery and will have negative economic impacts on these vessels and the communities associated with them (See Section 5.5, Social Impact Assessment).

Table 135. 11 Year and 4 million TAC.

Qualification Criteria	Data	Vessel A	Vessel B	Vessel C	Vessel D	Vessel E	Vessel F	Vessel G
	Years active	**5**	**3**	**5**	**1**	**4**	**2**	**5**
	Best year scallop lb.	48,000	48,000	20,000	20,000	5,000	5,000	1,000
100 lb.	Best year allocation (scaled)	45,163	45,163	18,818	18,818	4,704	4,704	941
705 vessels	Best indexed option A (scaled)	49,648	45,134	20,687	16,925	4,937	4,466	1,034
	Best indexed option B (scaled)	56,561	45,249	23,567	14,140	5,303	4,124	1,178
1000 lb.	Best year allocation (scaled)	46,264	46,264	19,277	19,277	4,819	4,819	964
459 vessels	Best indexed option A (scaled)	50,828	46,207	21,178	17,328	5,054	4,573	1,059
	Best indexed option B (scaled)	57,861	46,289	24,109	14,465	5,424	4,219	1,205
5000 lb.	Best year allocation (scaled)	53,830	53,830	22,429	22,429	5,607	5,607	0
203 vessels	Best indexed option A (scaled)	59,050	53,682	24,604	20,131	5,871	5,312	0
	Best indexed option B (scaled)	67,103	53,682	27,959	16,776	6,291	4,893	0

Note: All the allocations will be halved if TAC=2 million lb. and will double if TAC= 8 million lb.

Table 136. 5 Year and 4 million TAC.

Qualification Criteria	Data	Vessel A	Vessel B	Vessel C	Vessel D	Vessel E	Vessel F	Vessel G
	Years active	**5**	**3**	**5**	**1**	**4**	**2**	**5**
	Best year scallop lb.	48,000	48,000	20,000	20,000	5,000	5,000	1,000
100 lb.	Best year allocation (scaled)	48,912	48,912	20,380	20,380	5,095	5,095	1,019
548 vessels	Best indexed option A (scaled)	54,498	49,543	22,707	18,579	5,419	4,903	1,135
	Best indexed option B (scaled)	63,370	50,696	26,404	15,842	5,941	4,621	1,320
1000 lb.	Best year allocation (scaled)	49,931	49,931	20,805	20,805	5,201	5,201	1,040
369 vessels	Best indexed option A (scaled)	55,599	50,544	23,166	18,954	5,528	5,002	1,158
	Best indexed option B (scaled)	64,594	51,675	26,914	16,148	6,056	4,710	1,346
5000 lb.	Best year allocation (scaled)	55,888	55,888	23,287	23,287	5,822	5,822	0
188 vessels	Best indexed option A (scaled)	62,052	56,411	25,855	21,154	6,170	5,582	0
	Best indexed option B (scaled)	71,796	57,437	29,915	17,949	6,731	5,235	0

Note: All the allocations will be halved if TAC=2 million lb. and will double if TAC= 8 million lb.

Table 137. 2 Years and 4 million TAC

Qualification Criteria	Data	Vessel A	Vessel B	Vessel C	Vessel D	Vessel E	Vessel F	Vessel G
	Years active	2	1	2	1	1	2	2
	Best year scallop lb.	48,000	48,000	20,000	20,000	5,000	5,000	1,000
100 lb.	Best year allocation (scaled)	64,673	64,673	26,947	26,947	6,737	6,737	1,347
399 vessels	Best indexed option A (scaled)	65,805	62,342	27,419	25,976	6,494	6,855	1,371
	Best indexed option B (scaled)	67,885	58,187	28,285	24,245	6,061	7,071	1,414
1000 lb.	Best year allocation (scaled)	65,922	65,922	27,467	27,467	6,867	6,867	1,373
277 vessels	Best indexed option A (scaled)	67,056	63,527	27,940	26,470	6,617	6,985	1,397
	Best indexed option B (scaled)	69,140	59,263	28,808	24,693	6,173	7,202	1,440
5000 lb.	Best year allocation (scaled)	73,621	73,621	30,675	30,675	7,669	7,669	1,534
143 vessels	Best indexed option A (scaled)	74,779	70,844	31,158	29,518	7,380	7,790	1,558
	Best indexed option B (scaled)	76,909	65,922	32,045	27,467	6,867	8,011	1,602

Note: All the allocations will be halved if TAC=2 million lb. and will double if TAC= 8 million lb.

5.4.7.3 Capping the contribution pounds: alternatives in determining the share of each individual vessel (Alternative 3.1.2.3.6)

General category scallop landings per vessel is widely distributed according to the fishing effort and pounds landed. Figure 47 shows that scallop pounds landed during the best year by general category vessels ranged from 300 lb. to over 50,000 lb. if all the 550 vessels that landed 100 lb. or more scallops from any one trip are included in the sample. The cumulative distribution of landings also show that the majority (about two thirds) of these 550 vessels, landed less than 5,000 lb., whereas 186 vessels, or one third landed 5000 lb. or more in their best year during 2000-2004 fishing years.

Figure 47. Cumulative distribution of the best year scallop lb. per vessel during 2000-2004 (up to the control date)

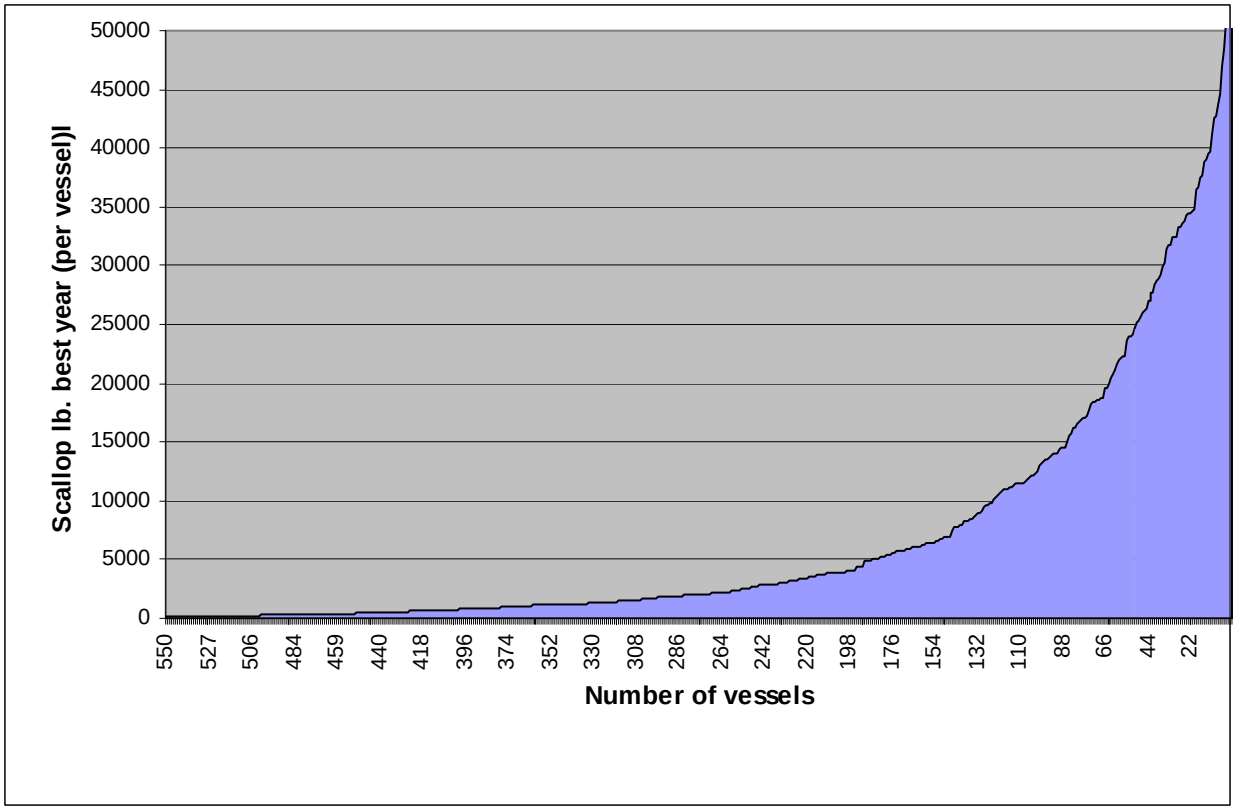


Table 138 shows percentile distribution of pounds landed by individual vessels with the top percentile (90% or more) shown in more detail. For example, the third column shows that 90% of the 550 general category vessels landed less than 22,000 lb., 60% of the vessels less than 3,300 lb. and 40% of the vessels less than 1,200 lb. of scallops in their best year. Column 2, however, shows the number of vessels that landed equal to or more of the amounts shown in column 1 corresponding to each percentile. As an example, column 2 indicates that only 56 vessels landed 22,000 lb. or more in their best year, which corresponds approximately to the 10% of the 550 vessels.

It is evident from Table 138 that only 1% of the vessels, or 6 vessels landed 47,000 lb. or more during their best year. This includes some vessel records much above this level due to scallop landings from some trips far exceeding 400 lb. possession limit. Even though these records are examined by NMFS, in some cases it is not certain if they are due to data entry mistakes or recording pounds in shell weight or arise from recording multiple trip landings on a single date. For this reason, in cases where the cause is not determined or cannot be proven that some trips were not legal (i.e., exceeded the possession limit), it is possible for a vessel to receive a large allocation, whereas for another vessel that have correct records, i.e., scallop pounds reflecting a single trip and corresponding to meat weight not exceeding 400 lb., to get a smaller allocation. In addition, the allocation for the first vessel (with trips exceeding 400 lb.) will be magnified if it had more than one year of activity and years active were taken into account in determining the

final allocations. Putting a cap on a vessel's contribution factor could prevent some of these data problems and could diminish the extent of an outlier vessel's landings affecting the allocations for all other vessels with accurate trip entries. As examined in Section 5.4.5.6, 50,000 lb. allocation would provide sufficient revenue from scallops for the majority of general category vessels to pay for crew, trip expenses, and fixed costs and derive positive profits. Under this alternative it is still possible for a vessel to receive more than 50000 lb. of scallop allocation, however, depending on the level of general category TAC and also the number of years a vessel was active in the fishery.

Table 138. Percentile distribution of best year scallop pounds by 550 general category vessels that landed 100 lb. or more from any one trip during 2000-04.

Scallop landings per vessel (best year (lb))	Number of vessels that landed this amount or more in their best year	Number of vessels that landed less
47,000	6	99%
40,000	11	98%
33,000	28	95%
22,000	56	90%
11,500	111	80%
5,800	166	70%
3,300	221	60%
2,000	275	50%
1,200	330	40%
800	385	30%
500	440	20%
300	495	10%

5.4.8 Allocation of access for general category limited access qualifiers

5.4.8.1 Individual fishing quota for all qualifiers

Under this alternative (3.1.2.4.1) each vessel that qualifies for limited access will be allocated an individual amount in pounds or total number of trips. The economic impacts of individual fishing quota combined with general category TAC is analyzed in Section 5.4.5 to Section 5.4.7 for each qualification criteria, period and qualification amount alternative. This section provides a discussion of the pros and cons of the IQ management in general and as it applies to the general category scallop fishery[4].

One of the positive aspects of individual fishing quotas (IQ) is the elimination of the race-to-fish that occurs with a TAC management only fishery. Since an individual quota assures that each qualifier can land a given quantity anytime during the fishing season, the vessels will have the flexibility to select the time and the area to fish in order to minimize their costs and/or maximize their revenues. As a result, the vessel profits will increase under individual quota.

[4] The discussion of the pros and cons of individual quota management in this section follow closely the analyses provided in OECD(1997), Towards Sustainable Fisheries, Economic Aspects of the Management of Living marine Resources", pp.77-83.

The elimination of the derby-style fishing will provide more time to fishermen to handle and process scallops, and select the size of combination that will maximize revenues. As a result, product quality will improve. Safety is also expected to improve as the vessels could wait to land their quota until the weather conditions are better. Since the fishing effort will be spread over a longer period of time, the price of scallops will be more stable throughout the season. This, combined with the availability of a fresh and/or higher quality scallops over a longer season, will benefit consumers as well as producers. Because IQ's provide flexibility to the fishermen about when and where to fish, they will be able to respond better to the resource and market conditions and avoid costly and dangerous fishing's conditions, there will be greater economic stability. This will reduce the risk from investing and provide more incentive to invest in maintenance, better gear and equipment. Individual allocation system, combined with the 400 lb. possession limit, will reduce, however, the need to invest in more capacity, if a vessel's quota more or less matches the amount it traditionally fishes.

The combined impacts of TAC and IQ management may not be positive for all vessels that will qualify for limited access, however. Some vessels could receive less quota than desired for a profitable full-time operation depending on the level of general category TAC and the number of qualifiers. As a result, they may not be cover their variable costs and may be induced to leave the fishery (See Section 5.4.5.6 for an analysis of the economic impacts associated with different allocation amounts). Consequently, the actual number participants in the fishery could decline especially if the TAC is set to significantly below the pre-TAC level, and the composition of the general category fleet could change to include relatively more part-time vessels. This in turn, would reduce the employment and crew incomes in the general category fishery.

Option B of the individual allocation option proposes to allocate each qualifying vessels a certain number of trips rather than pounds of scallop (See Table 100). There are some important differences between option A (in pounds) and option B, however. If some vessels land less than 400 lb. of scallops from their trips, total general category scallop landings could be less than the general category TAC, resulting in reduced revenue for the general category fleet. On the other hand, these vessels could spend more time at sea to increase their trip landings to the possession limit in order to maximize annual landings from their trip allocations. Such change in fishing behavior would increase trip costs and could also have some safety impacts if the trip is extended, for example, during difficult weather conditions. On the other hand, trip allocation has an advantage over quota allocation in terms of monitoring and enforcement since with VMS it is easier to determine the number of trips per vessel than to monitor landings per trip.

One problematic side of the IQ management is the initial allocation of individual quotas (in pounds or trips) among the participants, which could be quite time consuming, costly and controversial. The alternatives proposed by Amendment 11 determine the quota shares of participants from their historical landings during a qualification period. In this respect, the accuracy of the historical data for general category landings is an important factor for a fair distribution of the initial allocations. Unfortunately, dealer records for the general category trips are far from perfect, and include trip landing records in pounds exceeding the 400 lb. general category trip limit potentially due to errors in permit numbers (selecting a limited access trip as general category trip), reporting in units other than pounds, recording incorrect species code, sale of multiple trips to the dealer on the same day. For this reason, last year NMFS reviewed the

dealer database and corrected some entries. There are other trip records that were not officially corrected in the database, but identified as incorrect and will be taken into account if the individual allocation system is implemented. There are however, still many other entries which are in excess of 400 lb. possession limit (up to 5000 lb. in this final set) that were either not reviewed by NMFS (some of the earlier data for 1994-99) or that the source and nature of error could not be determined. Comparison with the VTR also showed that there were some general category trips with no corresponding record in the dealer database. These data imperfections will probably not affect the number of qualifiers in any significant way. There is no question, however, these inaccuracies will have some impact on the individual quota for each vessel when combined with a general category TAC to distribute the individual shares. For example, if some boats have inflated landings because of shell stocking, this will reduce the shares of all the rest of the vessels. This is because IQ management combined with a TAC is like a zero-sum game, in the sense that everybody's share should add up to '1'. A vessel-owner who thinks the dealer records underestimate vessel's landings could appeal to NMFS for a review of records. But there is not much opportunity for a vessel-owner to determine why his/her share is lower than it should be because another vessel's landings are overestimated due to the data errors. This could pose a serious challenge for NMFS in determining the initial allocations of qualifiers accurately and fairly. Determining the a vessel's contribution from it best year landings and capping the total contribution amount at 50,000 lb. will reduce the impacts of these inaccuracies but will not eliminate them completely. In addition, a prequalification procedure that will set maximum landing from a trip at 400 lb. would reduce the negative impacts of data inaccuracies.

5.4.8.1.1 Impacts of 2000 lb. trip limit

The impacts of this alternative will depend on how the individual quota is allocated. If vessels are allocated individual trips (option B) and if the number of trips were determined from the historical data, then increasing the trip limit from 400 lb. to 2000 lb. will increase the scallop pounds a vessel can land from each trip and on an annual basis. As a result, the landings of a larger vessel with more capacity to take longer trips and access remote areas, will increase, resulting in overall increase in general category landings, possibly exceeding the TAC. If a hard TAC was implemented the fishery will close sooner with negative impacts on smaller boats that cannot land large amounts of scallops. If however, number of trips was reduced in proportion of the pounds landed from each trip, such that a 2000 lb. trip counting as 5 trips, then this alternative will reduce the trip costs for vessels that could land large amounts of scallops. Similarly, if IQ is allocated in pounds and combined with an increase in trip limit to 2000 lb., the number of trips and the fishing costs will decline for these vessels that could land more than 400 lb. per trip.

5.4.8.2 Individual fishing quota for two permit types (part-time and full-time, Section 3.1.2.4.2).

Another alternative (Section 3.1.2.4.2) proposes to group the qualifiers into two groups, as part-time and full-time vessels. Any vessel that had landings of 5,000 lb. or more scallops in any one fishing year during the qualification period would qualify for the full-time permit with a possession limit of 400 pounds. Those vessels that qualify for limited access according to qualification criteria and period alternatives, but did not have landings of 5000 lb. will receive part-time permit and individual allocation based on their historical activity, but would be restricted to a 200 pound possession limit.

The number of vessels, average scallop landings and trips per vessel during their best year, and average scallop pounds per trip are shown in Table 139. Pounds per vessel show the average of scallop pounds per vessel in each group and allocated amounts could diverge from these values. Since the vessels in the full-time category will receive individual fishing quota, the impacts of this alternative on these vessels will be the same as the individual fishing quota alternative with 5000 lb. criteria. As discussed in Section 5.4.5 above, the economic impacts on the qualifiers are expected to vary with the level of TAC, price of scallops and fishing costs.

The economic impacts of this alternative will be negative, however, for the majority of the part-time vessels compared to the impacts of individual quota alternatives with 400 possession limit. Although Table 139 indicates that the vessels in the part-time category had lower scallop landings per trip compared to the full-time group, average scallop pounds per trip was still larger than 200lb. In fact, a significant proportion of these vessels had average scallop landings per trip exceeding 300 lb. (Table 140). Table 185 (Social Impact Assessment) also showed that the vessels that would qualify for part-time permit landed the majority of their scallops on trips where scallops were in excess of 200 lbs. Therefore, reducing trip limit will either increase the number of trips and the trip costs for these vessels, or it will reduce the incentive for taking scallop trips due to the reduced profitability with 200 lb. of possession limit. The vessels with average trip landings of 200 lb. or less of scallops, however, will not be affected from the reduced possession limit.

The economic impacts of reducing the possession limit is examined in Table 141 using a scenario analysis with scallop prices ranging from $6.00 to $7.60 and trips costs from $350 to $500 per day-at-sea. The results show that even if a vessel doubles its trips to land the same amount of scallops with 200 lb. limit, the net revenue could still decline due to the increase in trip costs. In addition, not all vessels could increase the number of trips they take due to constraints on the vessel size, weather conditions or fishing activity in other fisheries. As a result, these vessels could incur larger losses than shown in Table 141.

Table 139. Qualifying vessels by tier category and best year landings, trips and average pounds per trip.

Period	Qualification Criteria	TIERS	Number of vessels	Scallop landings per vessel (lb., best year)	Average scallop trips per vessel	Average scallop landings per trip (lb.)
11 Years	100 lb.	Full-time	203	17,757	54	353
		Part-time	502	1,364	8	253
		100 lb. Total	705	6,084	21	282
	1000 lb.	Full-time	203	17,757	54	353
		Part-time	256	2,279	13	315
		1000 lb. Total	459	9,124	31	332
	5000 lb.	Full-time	203	17,757	54	353
		5000 lb. Total	203	17,757	54	353
5 Year	100 lb.	Full-time	188	18,475	55	355
		Part-time	360	1,361	7	238
		100 lb. Total	548	7,232	24	278
	1000 lb.	Full-time	188	18,475	55	355
		Part-time	181	2,264	11	286
		1000 lb. Total	369	10,524	34	321
	5000 lb.	Full-time	188	18,475	55	355
	5000 lb. Total		188	18,475	55	355
2 Year	100 lb.	Full-time	143	18,245	55	346
		Part-time	256	1,410	7	237
		100 lb. Total	399	7,443	24	276
	1000 lb.	Full-time	143	18,245	55	346
		Part-time	134	2,273	11	270
		1000 lb. Total	277	10,518	34	309
	5000 lb.	Full-time	143	18,245	55	346
		5000 lb. Total	143	18,245	55	346

Table 140. Part-time vessels by average scallop pounds per trip (Best year)

Period	Qualification Criteria	Average scallop lb. per trip	Number of vessels	Scallop landings per vessel (lb., best year)	Average scallop trips per vessel	Average scallop landings per trip (lb.)
11 Years	100 lb.	>= 200lb.	246	1,692	6	399
		< 200lb.	256	1,048	11	113
		100 lb. Total	502	1,364	8	253
	1000 lb.	>= 200lb.	159	2,331	8	434
		< 200lb.	97	2,193	22	119
		1000 lb. Total	256	2,279	13	315
5 Year	100 lb.	>= 200lb.	195	1,684	6	340
		< 200lb.	165	979	9	117
		100 lb. Total	360	1,361	7	238
	1000 lb.	>= 200lb.	129	2,274	8	349
		< 200lb.	52	2,240	20	130
		1000 lb. Total	182	2,264	11	286
2 Year	100 lb.	>= 200lb.	154	1,640	6	313
		< 200lb.	102	1,061	9	123
		100 lb. Total	256	1,410	7	237
	1000 lb.	>= 200lb.	102	2,195	8	310
		< 200lb.	32	2,522	20	143
		1000 lb. Total	134	2,273	11	270

Table 141. Impacts of possession limit on net revenue from scallops.

Data	Scallop Price per lb.			
	$6.00	$7.60	$6.00	$7.60
Scenario 1: Possession limit=400 lb. Number of trips = 10				
Trip costs per DAS ($)	350	350	500	500
Trip revenue from scallops ($)	2400	3040	2400	3040
Net scallop revenue from trip ($)	2050	2690	1900	2540
Net scallop revenue from all trips ($)	20500	26900	19000	25400
Scenario 2: Possession limit=200 lb. Number of trips = 20				
Trip costs per DAS	350	350	500	500
Trip revenue from scallops	1200	1520	1200	1520
Net scallop revenue from trip	850	1170	700	1020
Net scallop revenue from all trips	17000	23400	14000	20400
Change in net scallop revenue	-3500	-3500	-5000	-5000
% Change in net scallop revenue	-17%	-13%	-26%	-20%

5.4.8.3 Individual fishing quota – equal allocation for three tiered permits (Section 3.1.2.4.3).

This alternative proposes a three tiered permit system based on annual landings from the qualification time period as follows:

Tier 1: 20,000 pounds;
Tier 2: 5,000 – 19,999 pounds;
Tier 3: 100 – 4,999 pounds

In order to qualify for a certain tier a vessel would have to show landings within that tier for one year only during the qualification time period. One of the major difference of this alternative from others is that all vessels that qualify for each tier would receive an equal allocation in pounds or in total number of trips. The possession limit will stay at 400 pounds of scallops.

Table 142 summarizes the number of vessels, average pounds (best year) per vessel for each qualification period and criteria. The 100 pound trip alterative would qualify about twice as many Tier 3 vessels as compared to the 1,000 annual pound alternative, while the number of vessel qualify for tiers 1 and 2 will not change with the qualification criteria. The 2 year period alternative will result in only 44 vessels qualifying for the top tier, and 99 vessels qualifying for the second tier. The impacts of this alternative combined with the qualification criteria and period could be analyzed by comparing the scaled allocations per vessel. Table 142 shows allocation pounds (option A) and trips (option B) per vessel assuming a 4 million lb. TAC as an example. Estimated scallop pounds allocated per vessel for tier 3 would be half for the 100 pound trip alternative compared to the 1,000 pound alternative (1,387 versus 2,356 pounds with 5 year criteria) because twice as many vessels would qualify with 100 lb. criteria. These amounts are close to the average landings per vessel from best year, slightly lower for 11 year period, and slightly higher for the 5 year and 2 year periods. Allocations per Tier 2 and Tier 1 vessel do not change significantly with 100 lb. or 1000 lb criteria for 5 year and 11 year periods. Because 5000 lb. criteria qualify the least number of vessels and no vessels will qualify for Tier 3, allocations for the top tier vessels will increase significantly. For example, for 2 year period, the top tier vessels would receive 52,815 lb. and tier 2 vessels 16,930 lb. per vessel even though their average scallop landings from best year did not exceed 34,459 lb. and 11,038 lb. respectively. A larger (smaller) TAC would increase (decrease) the allocations beyond the levels shown in Table 142. For example, a allocations per vessels would be half (double) of the amounts shown in this Table if TAC was 2 million lb. (8 million lb.). The comparative impacts of the qualification criteria and period alternatives for each tier will not change, however.

If instead of allocating equal pounds, an equal number of trips were allocated to each vessel within a tier, the economic impacts would be the same for vessels that normally land 400 lb. of scallops from each trip. On the other hand, the economic impacts for vessels that land scallops as a bycatch from some trips, or usually land less than 400 lb. of scallops per trip could be negative since they will receive less trips than they took previously to land the same amount of scallops.

The economic impacts of this alternative on vessels in terms of scallop revenue and costs will be similar to the impacts examined in Section 5.4.5 above. A limitation of a tiered allocation system, however, is the uneven distribution of pounds gained or reduced by the vessels within a group from their best year landings. For example in Table 142 , a vessel that landed 20,000 lb. would be placed in the same group as a vessel that landed 50,000 lb. If every vessel in this group received approximately 30,000 lb., a vessel that landed 20,000 lb. would receive 10,000 lb. more, or 50% more pounds than its best year landings. On the other hand, a vessel that landed 50,000 lb. would get 20,000 lb. less, or 40% less than its best year landings. The percentage increase or reduction from the best year level is different for Tier 2. For example, for the 5 year criteria, if 126 vessels that are placed in this group were allocated the group average of 10,000 lb., a vessel that landed 5,000 lb. would get double (100% more), whereas a vessel landed close to 20,000 lb. would receive 50% less of its best year landings. Such as system would maximize economic

losses for some vessels and maximize gains for others. One advantage of this system would be to reduce the inequities in allocations due to data errors, however. The dealer data for general category scallop landings include many errors some of which could be impossible to correct especially for the earlier years of the qualification periods. Under individual allocation, it could be possible for a vessel to receive a large share of general category TAC due to inaccurate record of trip landings in excess of 400 lb. possession limit, thus reduce the share for other vessels that have correct records. With this alternative, those inaccuracies will affect average pounds per vessel and distribute the impacts among the vessels in each tier. Therefore, allocating equal pounds (or trips) to each vessel in each tier could diminish the extent of an outlier vessel's landings affecting the allocations for all other vessels with accurate trip entries.

Table 142. Allocation for vessels with a three tiered permit system (Based on best-year of landing)

Period	Qualification Criteria	TIERS	Number of vessels	Scallop lb. per vessel (Best year)	Scaled allocation per vessel (Option A) (TAC: 4 million lb.)	Number of trips per vessel (Option B) (TAC: 4 million lb.)	% share of general category TAC
11 Years	100 lb.	TIER 1: >=20000	62	34,377	32,059	80	50%
		TIER 2: 5K-19.9K	141	10,448	9,743	24	34%
		TIER 3: < 5000 lb.	502	1,364	1,272	3	16%
	100 lb. Total		705	6,084	5,674	14	100%
	1000 lb.	TIER 1: >=20000	62	34,377	32,834	82	51%
		TIER 2: 5K-19.9K	141	10,448	9,979	25	35%
		TIER 3: < 5000 lb.	256	2,279	2,177	5	14%
	1000 lb. Total		459	9,124	8,715	22	100%
	5000 lb.	TIER 1: >=20000	62	34,377	38,147	95	59%
		TIER 2: 5K-19.9K	141	10,448	11,594	29	41%
	5000 lb. Total		203	17,757	19,704	49	100%
5 Years	100 lb.	TIER 1: >=20000	62	34,377	34,697	87	54%
		TIER 2: 5K-19.9K	126	10,650	10,749	27	34%
		TIER 3: < 5000 lb.	360	1,361	1,374	3	12%
	100 lb. Total		548	7,232	7,299	18	100%
	1000 lb.	TIER 1: >=20000	62	34,377	35,410	89	55%
		TIER 2: 5K-19.9K	126	10,650	10,970	27	35%
		TIER 3: < 5000 lb.	181	2,264	2,332	6	11%
	1000 lb. Total		369	10,524	10,840	27	100%
	5000 lb.	TIER 1: >=20000	62	34,377	39,590	99	61%
		TIER 2: 5K-19.9K	126	10,650	12,265	31	39%
	5000 lb. Total		188	18,475	21,276	53	100%
2 Years	100 lb.	TIER 1: >=20000	44	34,459	46,413	116	51%
		TIER 2: 5K-19.9K	99	11,038	14,867	37	37%
		TIER 3: < 5000 lb.	256	1,410	1,899	5	12%
	100 lb. Total		399	7,443	10,025	25	100%
	1000 lb.	TIER 1: >=20000	44	34,459	47,310	118	52%
		TIER 2: 5K-19.9K	99	11,038	15,154	38	38%
		TIER 3: < 5000 lb.	134	2,273	3,121	8	10%
	1000 lb. Total		277	10,518	14,440	36	100%
	5000 lb.	TIER 1: >=20000	44	34,459	52,830	132	58%
		TIER 2: 5K-19.9K	99	11,038	16,923	42	42%
	5000 lb. Total		143	18,245	27,972	70	100%

* Number of trips=Allocation per vessel/400 lb.

5.4.8.4 Stand alone individual transferable fishing quota alternative (3.1.2.4.4)

According to this alternative all vessels that had a permit before the control date would be given a permit, not just vessels that had landings. Each vessel would be allocated their share in historical landings for the 5 year period, however. Therefore, a permit that did not have landings history would not be allocated specific access to the fishery, but would be permitted to lease or buy quota from another vessel (individual transferable fishing quota system). There were 3562 unique vessels that obtained general category permits during 5 year period, but only 677 of these

vessels landed scallops of one pound or more, thus will receive an allocation. This alternative will also have positive impacts on the limited access qualifiers that do not receive an initial allocation because they haven't been active in the general category fishery during the 5-year qualification time period. These fishermen will not have to buy a new vessel with limited access permit to enter the fishery. Instead, they could buy or lease quota from others and fish for scallops with the vessel they already have. Therefore, this alternative will reduce the cost of entry to general category fishery for many vessels that had general category permits during the 5-year qualification period. The economic impacts of this alternative on active general category vessels were analyzed in Section 5.4.5, Table 97 to Table 106.

This alternative will qualify more vessels for limited access compared to the alternatives which require a certain amount of scallop landings for qualification. According to the estimates, 677 general category vessels landed some amount of scallops since the 2000 fishing year up to the control date and will qualify for an allocation (Table 143). The impacts of this alternative on allocations are compared with 100 lb., 1000 lb. and 5000 lb. qualification criteria in Table 143. Allocation per vessel will decline only marginally for 100 lb. and 1000 lb. criteria if all 677 vessels were included in limited access assuming a 4 million lb. TAC. Compared to 5000 lb. alternative, however, the impacts individual allocations could be higher. For example, if all of the 677 vessels received allocation, those 188 vessels that qualify with the 5000 lb. criteria would receive on the average, 21,276 lb. of scallops (some more some less depending on the individual share). If, however, a 4 million lb. TAC were distributed among 677 qualifiers (last column of Table 143), the average allocation for these188 vessels will decline to 18,585 lb. But the impacts on the 489 vessels will be positive since they will receive 1035 lb. of individual allocation as an average (again some vessels will receive more than this some less than this amount depending on the individual shares). Many of these vessels that receive a small quota of scallops may opt to sell their share to other general category vessels that target scallops on a full-time basis. As a result, this alternative will distribute the gains from limited access among more vessels, while reducing the potential share of participants that would have qualified under other individual quota alternatives (100 lb., 1000lb. or 5000 lb. criteria).

Table 143. Impacts of stand-alone alternative on number of qualifiers and individual allocation

Qualification Criteria	Qualify	Number of vessels	Scallop landings (Total lb., best year)	Scallop allocation per vessel (lb., best year)	Scallop landings per vessel if all 677 qualify (lb., best year)
100 lb.	NO	129	12,397	-	97
	YES	548	3,963,266	7,299	7,275
100 lb. Total		677	3,975,663	5,908	5,908
1000 lb.	NO	308	93,091	-	304
	YES	369	3,883,173	10,840	10,586
1000 lb. Total		677	3,976,264	5,908	5,908
5000 lb.	NO	489	502,964	-	1,035
	YES	188	3,473,300	21,276	18,585
5000 lb. Total		677	3,976,264	5,908	5,908

The caps on the percent of quota that could be owned per vessel will prevent a few general category vessels dominating the fishery and will again help to redistribute gains from the limited

access more equitably (1% to 5% of the quota). If the scallop prices and the level of general category TAC are too low, however, some vessels may not be able to generate enough revenue from scallop fishing alone to pay for trip expenses, fixed costs and the crew, or to carry scallop fishing as a full-time operation. This alternative provides opportunity for vessels to buy quota from other vessels in order to land scallops in amounts necessary for economic viability. The analyses in Section 5.4.5.6 (Table 111 to Table 116) can help to evaluate possible impacts of a general category TAC and percent quota combinations on the economic viability for these vessels. For example, according to the estimates provided in Table 112 a small general category vessel that has no income from species other than scallops could cover its costs, have income for crew and vessel owner if it receives an allocation of 20,000 lb., which is 1% of a 2 million TAC, even if the scallop price were $6.00 per lb. However, for a larger vessel with higher fishing costs, 20,000 lb. might be just sufficient to cover for these expenses without providing much return for the vessel owner after fixed costs are deducted even at a higher price (Table 113). The vessels that also participate on other fisheries, a smaller allocation could be sufficient to pay for expenses, the crew and derive some profits from scallop fishing. In general, maximum quota shares should be set at levels in order to provide flexibility to vessels to adjust their operations according to the level of TAC, scallop resource conditions, prices and costs.

5.4.8.5 Fleet wide hard-TAC under limited entry (3.1.2.4.6, 3.1.2.4.7)

These alternatives combine limited access with a hard TAC and instead of allocating individual quota (or trips), they provide equal access to all qualifiers. Alternative 3.1.2.4.6 will set an annual hard TAC, whereas alternative 3.1.2.4.7 will spread out the TAC into either quarters (option A) or trimesters (option B). When the Regional Administrator projects that TAC is going to be reached, the fishery would close. Only those vessels that qualify for a general category permit will be able to participate in the scallop fishery before it closes and fish for scallops up to 400 pounds per trip. The number of vessels qualifying for limited access will be the same as shown in Table 78 in Section 5.4.3 corresponding to each qualification criteria and period alternative.

The economic impacts of hard TAC alternatives will be quite different from the individual allocation or tiered allocation alternatives since every qualifier will have equal access to the resource. If the TAC were set above the initial capacity of the fleet (comprised of the qualifying vessels), the change in the length of the fishing season may not be significant. Usually, however, TAC's are set below this level which, in turn, causes changes in the fishing season and intensifies competition among the fishermen. The fishing season will shorten as the difference between the pre-TAC landings and the TAC increase creating a race to fish among vessels before the fishery is closed. This will have negative impacts especially on smaller vessels that fish seasonally and in more favorable weather, or cannot access all areas due to the constraints on their capacity. As a result, some vessels may leave the general category scallop fishery or others may not participate as much as before due to the shorter season with TAC implementation. For some other vessels, shorter season could have some negative implications on safety if they rush to fish in unsafe weather conditions. TAC management could also have some negative impacts on the scallop resource if the vessels try to maximize their catch in a short-time without giving too much attention to the individual size of scallops they land. Given that general category fishery constitute a small proportion of the sea scallop fishery, these impacts may not be significant in terms of the overall scallop resource, but could be significant for some local areas.

On the other hand, those vessels with a higher fishing power could benefit from TAC implementation if some vessels leave the fishery and if the prices increase with the initial reduction in total effort due to the TAC and shorter season. Increase in profit margins for the remaining participants could lead, however, to increased investment in fishing power and overcapacity. For example, a higher horsepower could reduce the time steaming to fishing grounds, increase the fishing time per trip and could make it easier for a vessel to access areas further from the port. This increased investment in the fishing power will increase the costs and lower the profits for the participants over the long-term[5]. On the other hand, 400 lb. trip limit could reduce the incentive to invest in capacity to some extent since there will be no gains from a longer trip made possible, for example, investing in a larger vessel.

If the race to fish and investment in fishing capacity continues, the fishing season could become shorter and shorter [6]. This could have negative impacts on scallop prices since more will be caught in a shorter time and the markets will become glutted. On the other hand, because landings will be concentrated at the beginning of the fishing season, the uneven supply of scallops could result in an increase scallop prices after the fishery close, and could lower the benefits for the consumers. The extent of these impacts will depend, however, on the overall scallop landings since the scallop fishery will remain open to the limited access vessels which land the main bulk of scallops for the market. In short, TAC management is expected, in general, to create volatility in prices and to worsen the product quality due to uneven distribution of supply throughout the year. Depending on the proportion of the market supplied by general category fishery, which in turn will be determined by the hard TAC, these impacts could be slight during some seasons, but significant during others.

Fleet-wide hard TAC by trimester (3.1.2.4.7, Option B) or by quarter (3.1.2.4.7, Option A) will spread out the fishing season and reduce negative impacts from derby fishing and market gluts to some extent. Scallop landings, prices and percentage distribution of landings by quarter and by trimester are shown in Table 144 to Table 149 for fishing years 2004 to 2006 for all vessels with general category permit. As expected, fishing activity by the general category vessels were concentrated in the second quarter, from June to August during the 2001-2006 fishing years, whereas the least activity occurred in the winter months (fourth quarter), from December to the end of February. An annual TAC could push the main season for general category fishing to the earlier months, to March to June, Trimester 1 or quarter 1. This could lower the scallop prices and reduce the revenue for the participants. Hard TAC by quarter or trimester is expected to reduce these negative impacts to the extent these levels are not too different that the level of landings that would take place without the imposition of TAC.

[5] According to an OECD study (1997), the evidence from fisheries with TAC management indicated reduced profitability and increased costs and capital stuffing in many OECD countries. See "Towards Sustainable Fisheries, Economic Aspects of the Management of Living marine Resources", pp.72-77.

[6] According to the same OECD study, shortened fishing seasons were reported for 23 fisheries and spreading out the seasons over the year had limited effectiveness in reducing excess capacity.

Table 144. Scallop landings(lb.) by quarter

FISHYEAR	Q1.Mar-May	Q2.June-Aug.	Q3.Sept.Nov.	Q4.Dec. to Feb.
2001	409,550	1,047,006	279,893	288,844
2002	397,968	428,714	173,043	123,934
2003	499,446	767,034	390,460	110,720
2004	567,693	1,464,334	773,519	446,398
2005	1,219,608	3,086,640	1,816,375	916,279
2006	2,050,699	2,617,240	651,516	1,202*

*ec.2006 only.

Table 145. Percentage distribution of landings by quarter

FISHYEAR	Q1.Mar-May	Q2.June-Aug.	Q3.Sept.Nov.	Q4.Dec. to Feb.
2001	20%	52%	14%	14%
2002	35%	38%	15%	11%
2003	28%	43%	22%	6%
2004	17%	45%	24%	14%
2005	17%	44%	26%	13%
2006	34%	43%	11%	13%*
All years	25%	44%	19%	12%

*Estimated using dealer data for March 2006- Dec.2006.

Table 146. Scallop prices by quarter (nominal)

FISHYEAR	Q1.Mar-May	Q2.June-Aug.	Q3.Sept.Nov.	Q4.Dec. to Feb.
2001	4.31	3.90	3.62	4.22
2002	4.29	4.29	4.93	5.53
2003	4.75	4.29	4.73	5.58
2004	4.88	4.80	5.66	6.36
2005	6.82	7.32	8.67	7.86
2006	6.52	5.81	5.63	6.65*

* Dec.2006 only.

Table 147. Scallop landings (lb.) by trimester

FISHYEAR	T1. Mar-Jun	T2.Jul-Oct.	T3.Nov to Feb
2001	947,808	748,903	328,582
2002	562,343	402,654	158,662
2003	714,052	857,407	196,201
2004	1,025,306	1,589,452	637,186
2005	2,104,490	3,588,256	1,346,156
2006	3,111,914	2,201,209	7,534*

*Up to Dec.2006.

Table 148. Percentage distribution of landings by trimester

FISHYEAR	T1. Mar-Jun	T2.Jul-Oct.	T3.Nov to Feb
2001	46.8%	37.0%	16.2%
2002	50.0%	35.8%	14.1%
2003	40.4%	48.5%	11.1%
2004	31.5%	48.9%	19.6%
2005	29.9%	51.0%	19.1%
2006	48.0%	33.9%	18.1%*
All years	41.1%	42.5%	16.4%

*Estimated using dealer data for March 2006 - Dec.2006.

Table 149. Scallop prices by trimester (nominal)

FISHYEAR	T1. Mar-Jun	T2.Jul-Oct.	T3.Nov to Feb
2001	4.19	3.68	4.11
2002	4.23	4.54	5.54
2003	4.54	4.53	5.12
2004	4.80	5.13	6.19
2005	6.80	7.98	8.09
2006	6.35	5.65	5.95

5.4.8.6 Hard TAC without limited access

In addition to the hard TAC alternatives with limited access, alternative 3.1.3 proposes to control mortality in the general category fishery with a hard TAC providing equal access to all participants. This alternative will magnify the negative impacts of TAC management discussed in Section 5.4.8.5. Since general category fishery will remain open access, the race to fish will intensify if there are new entrants to the fishery, fishing season will shorten, and the negative impacts on prices and revenues will increase. The economic impacts on the general category vessels that traditionally participate in the scallop fishery would incur more losses with this alternative compared to the hard TAC management with limited access.

5.4.9 Impacts of Northern Gulf of Maine (NGOM) Scallop Management Area alternatives (Section 3.1.4)

5.4.9.1 No Action

Since no specific measures would be considered for the Northern Gulf of Maine, the impacts on the number of qualifiers, allocations, revenues and costs would be the same as the impacts analyzed in Section 5.4.3 to Section 5.4.8.4 above. Many vessels with a primary port of landing in Maine will qualify for limited access because they have landed scallops during the alternative qualification periods (Table 85 through Table 88). However, this alternative does not provide access opportunity for general category vessels that could not establish a scallop landings history especially in the recent years due to the poor scallop resource conditions in NGOM. Therefore, Amendment 11 could potentially have negative economic impacts on these vessels by disqualifying them from access to the scallop fishery in the future.

5.4.9.2 Amendment 11 would not apply to the Northern Gulf of Maine

If this alternative is selected by the Council then an open access permit to fish for scallops under general category would remain for this area, and a vessel could land up to 400 pounds of scallops per trip if the have VMS (IB permit). Any vessel from any area would be permitted to apply for

and fish under an open access NGOM general category permit. A hard TAC would be established for this area and if reached vessels would be limited to possession of up to 40 pounds of scallops after the TAC was reached.

This alternative will retain the opportunity for those general category vessels that do not qualify for limited access with the Amendment 11 alternatives to fish for scallops in NGOM when there is an improvement in the scallop resource in this area. As a result, the economic impacts on these vessels will be positive. As examined in Section 5.5.3 of Social Impact Assessment, these positive impacts could be significant for some ports and communities where these vessels are located. On the other had, this alternative will let any general category fishermen regardless of their homeport to land scallops in this area. Therefore, the positive impacts on the general category fishermen that traditionally fished in this area could be reduced if there is an influx of vessels from other areas to participate in the open access fishery of NGOM.

A hard TAC for this area will help prevent overfishing of the scallop resource that could happen with open access; therefore, will minimize negative economic impacts from a reduced yield in the future. There could be some negative impacts from derby fishing with a hard TAC, however, especially if there are new vessels from other ports that want to participate in the open access fishery. There may also be some negative impacts on the portions of the scallop resource related to the boundary options, however. For example, with Option A, an additional area (compared to Option B) to the south will be added for open access, which could result in some vessels fishing with limited access and some vessels fishing with open access permits. This would complicate the estimation of TAC and could result in overfishing of this area, which in turn, could have negative economic impacts for both limited access and open access general category vessels.

5.4.9.3 Establish a Northern Gulf of Maine Management Area Limited Entry Program

This alternative would develop a separate limited entry general category program in the GOM exemption area north of 42°20N **(Option A)** or– waters in the EEZ north of 43N **(Option B)**. To qualify for a NGOM scallop permit, a vessel one must have had a General Category scallop permit in any fishing year between 1994 and Nov. 1, 2004 and must have landed at least one 100 pound trip in the same fishing year in any area. In order words, the same 705 vessels that qualify for 11 year period with the 100 lb. qualification criteria will also qualify for NGOM scallop permit. All the information and analyses relevant for these vessels were provided in Section 5.4.3 and Section 5.4.5 (Table 77, Table 78 and Table 97 to Table 106), thus will not be repeated here. Table 151 provides information, however, about scallop landings per vessel, years active, gross tonnage of these vessels by the primary state of landing. This alternative will qualify 186 vessels from Maine, 17 from NH and 244 from MA for NGOM permit, as well as many vessels from Rhode Island, Connecticut and from Mid-Atlantic states. If a separate management area for NGOM is not implemented, the same vessels, including 186 vessels from Maine would still qualify for limited access with 11 year qualification period and 100 lb. criteria, although they wouldn't be allocated a separate TAC for fishing in the NGOM area. If, however, a more restrictive qualification criteria or a shorter qualification period was selected for qualification, the number of vessels from Maine qualify for limited access will decline. For example, a 5 year qualification period will reduce the number qualifiers to 95 vessels, and a 5000 lb. qualification criteria, to 34 vessels with a primary state of landing in Maine (Table 150).

Table 150. Vessels with a primary port from Maine: Number of qualifying vessels and estimated landings based on an individual allocation system and best year of landings during the specified time period

Time period	Qualification Criteria	Qualified	Number of vessels	Total scallop landings (lb., Best year)	Avg. Scallop landings per vessel (lb., best year)	Avg.GRT per vessel
1994-04 (Up to the control date) Total: 223 active vessels	100 lb. Criteria	NO	37	11,782	318	28
		YES	186	710,968	3,822	29
	1000 lb. Criteria	NO	93	32,453	349	42
		YES	130	691,298	5,318	23
	5000 lb. Criteria	NO	180	240,328	1,335	32
		YES	43	483,422	11,242	20
2000-04 (Up to the control date) Total: 113 active vessels	100 lb. Criteria	NO	18	2,632	146	41
		YES	95	516,367	5,435	26
	1000 lb. Criteria	NO	43	13,394	311	44
		YES	70	506,200	7,231	19
	5000 lb. Criteria	NO	79	109,659	1,388	33
		YES	34	409,935	12,057	18
2003-04 (Up to the control date) Total: 60 active vessels	100 lb. Criteria	NO	8	709	89	27
		YES	52	340,178	6,542	24
	1000 lb. Criteria	NO	19	5,511	290	36
		YES	41	335,376	8,180	20
	5000 lb. Criteria	NO	37	57,712	1,560	29
		YES	23	283,176	12,312	19

Establishing a separate management area and TAC for NGOM, will have positive economic impacts on those vessels that are not qualified for limited access but qualify for an NGOM permit that will provide them opportunity to land scallops in this area when the resource conditions are favorable. On the other hand, some of these non-qualifiers fish in other areas as well, but will not be able to do so with their NGOM permit.

Since a separate TAC will be set for this area, the risks from overfishing the scallop resource will be minimized. Although there will be some negative impacts from a potential derby fishing due to the hard TAC, a lower trip limit of 200 lb. and a maximum one trip per day could reduce these negative impacts to some extent. For the vessels that qualify for a regular general category limited access permit, the trip limit will stay at 400 lb., but their landings from NGOM area will be deducted from their allocations. Therefore, establishing NGOM as a separate area is not likely to provide an incentive to fish in this area for those vessels that are not located in close proximity

to the area. Restricting the dredge size for fishing in NGOM will also reduce the incentive to fish in that area by some vessels that normally employ a larger dredge size.

Table 151. General category vessels qualify for NGOM permit by primary state of landing.

Primary State of landing	Number of vessels	Average scallop lb. per vessel (Best year, 11 years period)	Total scallop landings (Best year, 11 years period)	Average number of years active	Average GRT
CT+RI	52	1,736	90,278	2.7	112
MA	244	5,121	1,249,564	4.2	72
ME	186	3,822	710,968	2.3	29
NH	17	2,235	37,996	3.9	20
NC	44	10,384	456,894	2.7	87
NJ	75	14,257	1,069,304	2.5	80
NY	47	7,266	341,525	3.4	65
Oth.MidAt	40	8,315	332,581	2.3	83
Grand Total	705	6,084	4,289,112	3.1	68

5.4.10 Impacts of limited access for limited access vessels fishing under general category rules (Alternatives in Section 3.1.6 of DSEIS)

5.4.10.1 Qualification for limited access general category fishery

Currently limited access scallop vessels are permitted to fish for scallops under general category rules while not fishing on a scallop DAS. They are restricted to 400 pounds per trip. Amendment 11 is considering several alternatives related to limited access fishing under general category rules. One alternative would prevent it entirely (Alternative 3.1.6.1.4), one would permit it, but only for limited access vessels that qualify under the same criteria as general category vessel (Alternative 3.1.6.1.2), and one alternative would only permit part-time and occasional vessels to qualify and prevent full-time vessels from fishing under general category rules (Alternative 3.2.6.1.3).

The numbers of limited access vessels that qualify general category limited access with 100 lb., 1000 lb. and 5000 lb. criteria, scallops pounds and number of general category trips are shown in Table 152 to Table 154. For example, of the 231 unique limited access vessels that fished under general category rules during 2000-2004, only about 57 of them would potentially qualify under the 1000 pound qualification criteria (Table 153). Of these, 38 are full-time vessels, and about 19 of them have a part-time or occasional permit. The number of qualifiers would increase to 126 vessels, 96 full-time and 30 part-time and occasional, if the 11 year period is selected as the period of qualification. This significant increase in the number of qualifiers for the 11 year period could be due to several factors:

- Any trip landing record in dealer data of less than or equal to 400 lb. of scallops for limited access vessels are assumed to be general category trips, that is trips not taken when the vessel is under day-at-sea. This assumption would indeed provide an accurate estimation of general category trips after 1998 when landings per day-at-sea (LPUE) exceeded 400 lb. significantly (Table 17 in Section 4.4). But for earlier years from 1994 to1998, because average LPUE was below 500 lb., some of the trips with

less than 400 lb. of scallops could have been limited access trips rather than general category trips. As a result, the number of limited access vessels taking general category trips may have been overestimated. Thus, the number of actual qualifiers could be less than shown in the table for 11 year period depending on how NMFS will determine which trips by limited access vessels belong to the general category trip category.

- Since 11 year period include those early years from 1994 to 1998, during when the scallop productivity and average LPUE was low, some limited access vessels may have taken more general category trips to compensate for the decline in scallop landings when they fished under day-at-sea.

Table 152. The limited access vessels qualify and do not qualify for general category limited access permit with 100 lb. criteria and qualification period

Period	Qualify	Permit category	Number of vessels	Best year scallop pounds per vessel	Total scallop pounds (best year)	Number of trips per vessel (best year)
11 year	NO	Full-time	13	63	815	1.4
		Part-time+Occasional	9	85	763	1.3
	NO Total		22	72	1,578	1.4
	YES	Full-time	267	1730	461,889	6.1
		Part-time+Occasional	78	3123	243,630	11.6
	YES Total		345	2045	705,519	7.3
11 year Total			367	1927	707,097	7.0
5 years	NO	Full-time	30	55	1,642	1.2
		Part-time+Occasional	8	85	682	2.1
	NO Total		38	61	2,324	1.4
	YES	Full-time	144	1704	245,380	5.4
		Part-time+Occasional	49	4241	207,824	13.7
	YES Total		193	2348	453,204	7.5
5 years Total			231	1972	455,528	6.5
2 years	NO	Full-time	15	57	851	1.2
		Part-time+Occasional	5	64	320	1.4
	NO Total		20	59	1,171	1.3
	YES	Full-time	88	1711	150,609	5.4
		Part-time+Occasional	23	6737	154,952	20.3
	YES Total		111	2753	305,561	8.5
2 years Total			131	2341	306,732	7.4

Table 153. The limited access vessels qualify and do not qualify for general category limited access permit with 1000 lb. criteria and qualification period

Period	Qualify	Permit category	Number of vessels	Best year scallop pounds per vessel	Total scallop pounds (best year)	Number of trips per vessel (best year)
11 year	NO	Full-time	184	445	81,790	2.3
		Part-time+Occasional	57	413	23,562	2.8
	NO Total		241	437	105,352	2.4
	YES	Full-time	96	3968	380,914	12.6
		Part-time+Occasional	30	7361	220,831	25.2
	YES Total		126	4776	601,745	15.6
11 year Total			367	1927	707,097	7.0
5 years	NO	Full-time	136	339	46,155	1.6
		Part-time+Occasional	38	423	16,087	3.0
	NO Total		174	358	62,242	1.9
	YES	Full-time	38	5286	200,867	15.5
		Part-time+Occasional	19	10127	192,419	30.2
	YES Total		57	6900	393,286	20.4
5 years Total			231	1972	455,528	6.5
2 years	NO	Full-time	77	367	28,222	1.7
		Part-time+Occasional	19	462	8,785	3.8
	NO Total		96	385	37,007	2.1
	YES	Full-time	26	4740	123,238	13.7
		Part-time+Occasional	9	16276	146,487	44.6
	YES Total		35	7706	269,725	21.7
2 years Total			131	2341	306,732	7.4

Table 154. The limited access vessels qualify and do not qualify for general category limited access permit with 5000 lb. criteria and qualification period

Period	Qualify	Permit category	Number of vessels	Best year scallop pounds per vessel	Total scallop pounds (best year)	Number of trips per vessel (best year)
11 year	NO	Full-time	258	910	234,779	3.7
		Part-time+Occasional	80	986	78,860	5.7
	NO Total		338	928	313,639	4.2
	YES	Full-time	22	10360	227,925	30.4
		Part-time+Occasional	7	23648	165,533	65.4
	YES Total		29	13568	393,458	38.9
11 year Total			367	1927	707,097	7.0
5 years	NO	Full-time	162	630	102,113	2.6
		Part-time+Occasional	50	859	42,973	4.8
	NO Total		212	684	145,086	3.1
	YES	Full-time	12	12076	144,909	32.6
		Part-time+Occasional	7	23648	165,533	63.9
	YES Total		19	16339	310,442	44.1
5 years Total			231	1972	455,528	6.5
2 years	NO	Full-time	96	746	71,629	2.8
		Part-time+Occasional	23	821	18,889	5.1
	NO Total		119	761	90,518	3.3
	YES	Full-time	7	11404	79,831	31.1
		Part-time+Occasional	5	27277	136,383	71.2
	YES Total		12	18018	216,214	47.8
2 years Total			131	2341	306,732	7.4

The full-time vessels taking general category trips has a lower dependence on general category trips as a revenue source compared to part-time and occasional vessels (Table 155 to Table 157). Again using 1000 lb. criteria and five year qualification period as an example, Table 156 shows that full-time vessels derived only 3.3% of their revenue from general category trips whereas part-time and occasional vessels derived 11% of their revenue fishing under the general category rules. Therefore, the alternative (3.1.6.1.4) that prevents all vessels with limited access permits from having access to general category fishery in the future would have more negative impacts on occasional and part-time vessels compared to the full-time vessels. The primary part of landings and average gross tonnage of the limited access vessels that could qualify for limited access under various qualification criteria are shown in Table 158 to Table 160. In general, part-time and occasional vessels are smaller than their full-time counterparts. Majority of the limited access vessels that may qualify for limited access under some alternatives are from Mid-Atlantic area.

Table 155. Dependence on general category scallop landings as a % of total revenue in 2005 fishing year for a sample of limited access vessels that qualify for general category limited access permit with 100 lb. criteria

Period	Permit category	Number of active vessels with general category trips	Total revenue per vessel	Scallop revenue per vessel	Scallop revenue as a % of total revenue	General category scallop lb. as a % of total scallop lb.	General category revenue as a % of total revenue
11 year	Full-time	70	$1,177,515	$1,066,362	91.4%	3.2%	2.9%
	Part-time+Occasional	26	$710,539	$591,089	80.9%	15.8%	12.8%
5 years	Full-time	56	$1,116,633	$1,007,825	91.0%	3.6%	3.3%
	Part-time+Occasional	22	$697,740	$575,447	83.6%	13.2%	11.0%
2 years	Full-time	41	$1,106,033	$996,684	91.0%	4.1%	3.7%
	Part-time+Occasional	11	$638,572	$497,409	78.7%	22.6%	17.8%

Table 156. Dependence on general category scallop landings as a % of total revenue in 2005 fishing year for a sample of limited access vessels that qualify for general category limited access permit with 1000 lb. criteria

Period	Permit category	Number of active vessels with general category trips	Total revenue per vessel	Scallop revenue per vessel	Scallop revenue as a % of total revenue	General category scallop lb. as a % of total scallop lb.	General category revenue as a % of total revenue
11 year	Full-time	33	$1,154,186	$1,047,152	91.6%	3.7%	3.4%
	Part-time+Occasional	12	$665,252	$525,169	72.6%	27.5%	20.0%
5 years	Full-time	20	$1,066,814	$952,118	90.3%	5.8%	5.2%
	Part-time+Occasional	9	$737,365	$563,104	74.6%	22.6%	16.9%
2 years	Full-time	17	$1,043,530	$950,843	92.0%	6.5%	6.0%
	Part-time+Occasional	7	$785,781	$584,948	70.5%	28.0%	19.7%

Table 157. Dependence on general category scallop landings as a % of total revenue in 2005 fishing year for a sample of limited access vessels that qualify for general category limited access permit with 5000 lb. criteria

Period	Permit category	Number of active vessels with general category trips	Total revenue per vessel	Scallop revenue per vessel	Scallop revenue as a % of total revenue	General category scallop lb. as a % of total scallop lb.	General category revenue as a % of total revenue
11 year	Full-time	11	$1,028,917	$915,834	90.4%	8.3%	7.5%
	Part-time+Occasional	4	$952,874	$735,584	76.3%	28.6%	21.8%
5 years	Full-time	9	$1,046,850	$923,103	89.9%	10.0%	9.0%
	Part-time+Occasional	4	$952,874	$735,584	76.3%	28.6%	21.8%
2 years	Full-time	7	$1,014,154	$879,267	88.7%	11.4%	10.1%
	Part-time+Occasional	4	$952,874	$735,584	76.3%	28.6%	21.8%

Table 158. Primary port of landing in 2005 fishing year for a sample of limited access vessels that qualify for general category limited access permit with 100 lb. criteria

Period	State of landing	Full-time		Part-time and occasional	
		Number of vessels	GRT (Average)	Number of vessels	GRT (Average)
11 year	MA+NH	15	118	5	90
	NY+NJ	27	131	14	111
	Oth.Mid.At.	28	142	7	108
11 year Total		70	133	26	106
5 years	MA+NH	10	99	4	83
	NY+NJ	23	123	13	114
	Oth.Mid.At.	23	145	5	111
5 years Total		56	128	22	108
2 years	MA+NH	7	82	3	70
	NY+NJ	18	114	4	116
	Oth.Mid.At.	16	140	4	107
2 years Total		41	119	11	100

Table 159. Primary port of landing in 2005 fishing year for a sample of limited access vessels that qualify for general category limited access permit with 1000 lb. criteria

Period	State of landing	Full-time		Part-time and occasional	
		Number of vessels	GRT (Average)	Number of vessels	GRT (Average)
11 year	MA+NH	6	101	NA	88
	NY+NJ	15	130	8	113
	Oth.Mid.At.	12	131	NA	107
11 year Total		33	125	12	110
5 years	MA+NH	4	76		
	NY+NJ	11	118	6	124
	Oth.Mid.At.	5	118	3	107
5 years Total		20	110	9	118
2 years	MA+NH	4	76		
	NY+NJ	10	116	4	116
	Oth.Mid.At.	3	108	3	107
2 years Total		17	105	7	112

Table 160. Primary port of landing in 2005 fishing year for a sample of limited access vessels that qualify for general category limited access permit with 1000 lb. criteria

Period	State of landing	Full-time		Part-time and occasional	
		Number of vessels	GRT (Average)	Number of vessels	GRT (Average)
11 year	MA+NH	3	64		
	NY+NJ	6	113	NA	122
	Oth.Mid.At.	2	155	NA	138
11 year Total		11	107	4	126
5 years	MA+NH	3	64		
	NY+NJ	6	113	NA	122
	Oth.Mid.At.			NA	138
5 years Total		9	97	4	126
2 years	MA+NH	3	64		
	NY+NJ	4	113	NA	122
	Oth.Mid.At.			NA	138
2 years Total		7	92	4	126

5.4.10.2 Allocation of quota to limited access vessels under general category (Alternatives in Section 3.1.6 of DSEIS)

If limited access vessels are permitted to land under general category rules and a hard TAC is implemented for the general category fishery under this action then scallops landed by limited access vessels under general category rules will have to be deducted from either the TAC awarded to the general category fleet (Alternative 3.1.6.2.1), or a separate TAC, 0.5% of total scallop harvest, awarded to the limited access fishery for scallops caught under general category rules (Alternative 3.1.6.2.2).

Table 161 provides an analysis of alternative 3.1.6.2.1 assuming that limited access quota will be deducted from total general category % TAC according to the share of limited access qualifiers in total allocation amount. The last columns of this table show how a 5% and a 10% TAC will be distributed among the general category and limited access vessels. For example, with 11 year period and 1000 lb. qualification criteria, 87.4% of the scallop pounds from general category fishery was landed by general category vessels and 12.6% was landed by limited access vessels. Share of each category in total general category TAC will be proportional to these percentages. For example, if total general category TAC was set at 5% (10%), than only 4.4% (8.7%) of this amount will be allocated to the general category vessels and 0.6% (1.3%) of this amount will be allocated to limited access vessels qualifying for general category fishery (with 11 year and 1000 lb. criteria). Therefore, alternative 3.1.6.2.1 will reduce the amount of TAC allocated to general category vessels and will increase the quota for limited access vessels, with negative economic impacts on the first and positive economic impacts on the second group of vessels.

A separate allocation of 0.5% of the total catch for limited access vessels that qualify to fish under general category rules (Alternative 3.1.6.2.2) will result in limited access vessels receiving different allocations compared to the general category vessels depending on the % TAC and qualification alternatives. Using the same example above with 11 year period and 1000 lb. alternative and 5% (10%) TAC for general category vessels, limited access vessels would receive slightly less, 0.5%, with this alternative (3.1.6.2.2) compared to 0.6% (1.3%) with alternative

3.1.6.2.1. On the other hand, a five year qualification period combined with a 5% alternative would provide exactly the same share, 0.5% of TAC, for limited access under both alternatives. With a 2% combined TAC, however, limited access vessels with alternative 3.1.6.2.2 would receive slightly higher % share of TAC, 0.5%, instead of 0.3% they would have received with alternative 3.1.6.2.1. The impacts of a 0.5% separate TAC for limited access qualifiers corresponding to various levels of scallop harvest are shown in Table 162.

Table 161. Allocation of general category TAC among general category and limited access vessels qualifying for limited access

Period	Qualification	Permit category	Number of vessels	Average scallop lb. per vessel (Best year)	Total scallop lb. (Best year)	% share in total scallop lb.	Total general category TAC		
							2%	5%	10%
							% share in TAC	% share in TAC	% share in TAC
11 year	100	General category	705	6,084	4,289,220	85.9%	1.7%	4.3%	8.6%
		Limited access	345	2,427	705,519	14.1%	0.3%	0.7%	1.4%
		100 Total	1,050	4,255	4,994,739	100.0%	2.0%	5.0%	10.0%
	1000	General category	459	9,124	4,187,916	87.4%	1.7%	4.4%	8.7%
		Limited access	126	5,665	601,745	12.6%	0.3%	0.6%	1.3%
		1000 Total	585	7,394	4,789,661	100.0%	2.0%	5.0%	10.0%
	5000	General category	203	17,757	3,604,671	90.2%	1.8%	4.5%	9.0%
		Limited access	29	17,004	393,458	9.8%	0.2%	0.5%	1.0%
		5000 Total	232	17,381	3,998,129	100.0%	2.0%	5.0%	10.0%
5 year	Stand-alone ITQ alternative*	General category	677	5,872	3,975,344	89.7%	1.8%	4.5%	9.0%
		Limited access	231	9,303	455,528	10.3%	0.2%	0.5%	1.0%
		Stand-alone ITQ alternative* Total	908	7,588	4,430,872	100.0%	2.0%	5.0%	10.0%
	100	General category	548	7,232	3,963,136	89.7%	1.8%	4.5%	9.0%
		Limited access	193	2,973	453,204	10.3%	0.2%	0.5%	1.0%
		100 Total	741	5,102	4,416,340	100.0%	2.0%	5.0%	10.0%
	1000	General category	369	10,524	3,883,356	90.8%	1.8%	4.5%	9.1%
		Limited access	57	7,707	393,286	9.2%	0.2%	0.5%	0.9%
		1000 Total	426	9,115	4,276,642	100.0%	2.0%	5.0%	10.0%
	5000	General category	188	18,475	3,473,300	91.8%	1.8%	4.6%	9.2%
		Limited access	19	17,862	310,442	8.2%	0.2%	0.4%	0.8%
		5000 Total	207	18,169	3,783,742	100.0%	2.0%	5.0%	10.0%
2 year	100	General category	399	7,443	2,969,757	90.7%	1.8%	4.5%	9.1%
		Limited access	111	4,224	305,561	9.3%	0.2%	0.5%	0.9%
		100 Total	510	5,834	3,275,318	100.0%	2.0%	5.0%	10.0%
	1000	General category	277	10,518	2,913,486	91.5%	1.8%	4.6%	9.2%
		Limited access	35	10,508	269,725	8.5%	0.2%	0.4%	0.8%
		1000 Total	312	10,513	3,183,211	100.0%	2.0%	5.0%	10.0%
	5000	General category	143	18,245	2,609,035	92.3%	1.8%	4.6%	9.2%
		Limited access	12	19,341	216,214	7.7%	0.2%	0.4%	0.8%
		5000 Total	155	18,793	2,825,249	100.0%	2.0%	5.0%	10.0%

Table 162. Impacts of 0.5% TAC on average allocation per vessel

Qualification period			11 year period			5 year period				2 year period		
Qualification Criteria (lb.)			100	1000	5000	Stand-alone ITQ	100	1000	5000	100	1000	5000
Number of qualified vessels			345	126	29	231	193	57	19	111	35	12
Scallop lb. per vessel (Best year)			2,427	5,665	17,004	9,303	2,973	7,707	17,862	4,224	10,508	19,341
Total scallop landings (mill. lb., Best year)			0.71	0.60	0.39	0.46	0.45	0.39	0.31	0.31	0.27	0.22
Scallop Harvest (mil.lb.)	% TAC	Limited access TAC (mill. lb.)	**Average allocation per vessel (pounds)**									
40	0.5%	0.20	580	1,587	6,897	866	1,036	3,509	10,526	1,802	5,714	16,667
50	0.5%	0.25	725	1,984	8,621	1,082	1,295	4,386	13,158	2,252	7,143	20,833
60	0.5%	0.30	870	2,381	10,345	1,299	1,554	5,263	15,789	2,703	8,571	25,000
70	0.5%	0.35	1,014	2,778	12,069	1,515	1,813	6,140	18,421	3,153	10,000	29,167

5.4.11 Impacts of Allocation between limited access and general category fisheries (section 3.1.7.2)

5.4.11.1 Overall economic impacts on the general category and limited access fleets

According to the alternative described in Section 3.1.7.2, a proportion of the total available scallop harvest would be allocated to the general category fishery ranging from 2.5% to11%. Then the TAC for general category fishery will be determined by applying the percent share to the overall expected scallop yield. The allocations for the limited access fishery will be determined by subtracting general category's share (or TAC) from the overall scallop yield. Therefore, this alternative will have opposite economic impacts on general category and the limited access vessels, since the higher the share of general category fishery, the lower will be the share of the limited access vessels in total scallop landings. This section examines the overall economic impacts of allocation on general category and limited access fleets. The next section will examine the economic impacts on individual vessels in these fisheries.

The economic impacts are examined for scallop harvest levels ranging from 40 million lb. to 70 million lb. of scallops. The biological simulations for the next 11 years indicated that sustainable scallop yield could vary between 56 million lb. (for 2008 fishing year) to 68 million lb. (for 2015 fishing year, Table 18), but levels less than these amounts (40 to 50 million lb.) were also included in this analysis to evaluate impacts in less favorable scallop resource conditions. Prices, revenues, trip costs and producer surplus corresponding to each TAC level are estimated as follows:

- The prices are estimated using the price model presented in Appendix 5.4.21, which takes into account the impacts of changes in meat count, domestic landings, exports, income of consumers, and composition of landings by market category (i.e., size of scallops) including a price premium on under count 10 scallops. There has been significant variability in the scallop prices during the recent years due to changes in the import prices (related also to changes in the value of dollar), in composition of landings toward larger scallops, and in the volume of exports among many other factors. For example, the scallop prices increased to $7.60 during the 2005 fishing year from $4.85 per pound in 2004 due to many factors including the increase in size of scallops landed, a surge in

exports from 16.8 million lb. to 25 million lb. and an increase in import prices from about $3.30 per lb. to $5.10 per lb.. This increase in scallop prices did not continue in 2006, however, as the prices dropped to about $6.25 per pound as both landings and scallop import prices declined ($4.15 per lb. in 2006). Thus, there is a lot of uncertainty regarding future scallop prices due to the unpredictability of the factors that have an impact on price.

- Since it is beyond the scope of this analysis to predict the future import prices, exports, composition of scallops by market category, or changes in the consumer preferences and income, ex-vessel prices are calculated for two different scenarios to provide a range of estimates with various values for these variables. Scenario A assumes that both the import prices and the exports will remain at the recent levels, of $4.15 per lb., and 25 million lb. annually. This scenario also assumes that the size composition of scallops will be similar to the levels predicted for 2008 fishing year from the biological model. Scenario B provides a less optimistic scenario by assuming that import prices and exports will revert back to the previous levels of $3.50 per pound, and 10 million lb. per year. It furthermore assumes that the size distribution of scallops will be similar for what is predicted for 2007 fishing year, with smaller scallops landed compared to Scenario A,. Both scenarios assume that there will be no changes in the consumer preferences for scallops compared to the recent levels. Scenario A results in higher prices for scallops compared to Scenario B in all cases.
- Day-at-sea used per full-time vessel corresponding to each level of TAC is estimated by dividing average landings per vessel with landings per-day-sea (LPUE) estimates from the biological model. Scenario A assumes that LPUE will be 2,300 lb. per day-at-sea, which is about the average LPUE from to biological projections for fishing 2008 to 2009 (Table 176). If overfishing of the scallop resource is prevented, LPUE could vary between 2,300 lb. to 2,450 lb. over the long-term (2009-2017, Table 18). Scenario B assumes, however, that LPUE will be less, at 1,800 lb. per day-at-sea, corresponding to what is projected for the 2007 fishing year (Table 177).
- Average trip costs per day-at-sea were $1094 for limited access vessels in 2005 according to the observer cost data for scallop vessels. These costs include food, ice, water, oil and fuel, and are usually paid by crew in the scallop fishery out of their shares from the gross stock. The cost estimates are adjusted for the increase in prices in 2006 using the change in the producer price index relative to 2005 (increased by 6.7%). With this adjustment, average trip costs per day-at-sea are estimated to be $1,170 for limited access vessels. For general category vessels, average trip costs are estimated to be $350 per day-at-sea. Actual trip costs will vary from these averages for each vessel according to the vessel's gross tonnage, horsepower, number of crew, and the fuel costs, length of trip, area and season fished. Annual trip costs per vessel are estimated by multiplying trip costs per day-at-sea with the day-at-sea used.

Table 163 to Table 166 shows the distributional impacts of various percentages of TAC allocations for general category on both general category and limited access fisheries. Landings and revenues for each percent of general category TAC are compared to the upper bound of 11%, which is close to the status quo level. According to Framework 18, the allocations for limited access vessels were determined by assuming that general category landings will constitute 11% of total scallop landings in 2006, and about 10% of total scallop landings in the

2007 fishing year. If general category is allocated at 2.5% of total scallop harvest, scallop landings and revenues for this fishery as whole and also for an average vessel could decline by 77% , whereas that of the limited access fishery could increase by 10% compared to an 11% TAC allocation for the general category fishery. In order words, a lower TAC for general category will have larger negative proportional impacts on general category vessels due to the lower volume of scallop landings by general category compared to landings by limited access fishery. Although, general category vessels have lower catch rates compared to limited access vessels, allocating a smaller percentage of scallop harvest to these vessels does not result in an increase in total producer surplus, that is gross revenue net of variable costs, from the fishery. This is because general category vessels tend to be smaller vessels with lower trip costs per day-at-sea.

Table 163. Impacts of allocation on landings and revenues of the general category and limited access fleets (Scenario A)

Total Scallop TAC (Million lb.)	GC TAC as a % of Total TAC	General category TAC (lb.)	Limited access TAC (landings, lb.)	Ex-vessel Price	Total scallop revenue		% Change in landings and revenue compared to 11% for GC TAC	
					General category	Limited access	General category	Limited access
40	2.50%	1.0	39.0	9.45	9.45	368.55	-77%	10%
40	5%	2.0	38.0	9.45	18.90	359.10	-55%	7%
40	7%	2.8	37.2	9.45	26.46	351.54	-36%	4%
40	10%	4.0	36.0	9.45	37.80	340.20	-9%	1%
40	11%	4.4	35.6	9.45	41.58	336.42	0%	0%
50	2.50%	1.3	48.8	8.30	10.38	404.63	-77%	10%
50	5%	2.5	47.5	8.30	20.75	394.25	-55%	7%
50	7%	3.5	46.5	8.30	29.05	385.95	-36%	4%
50	10%	5.0	45.0	8.30	41.50	373.50	-9%	1%
50	11%	5.5	44.5	8.30	45.65	369.35	0%	0%
60	2.50%	1.5	58.5	6.90	10.35	403.65	-77%	10%
60	5%	3.0	57.0	6.90	20.70	393.30	-55%	7%
60	7%	4.2	55.8	6.90	28.98	385.02	-36%	4%
60	10%	6.0	54.0	6.90	41.40	372.60	-9%	1%
60	11%	6.6	53.4	6.90	45.54	368.46	0%	0%
70	2.50%	1.8	68.3	5.50	9.63	375.38	-77%	10%
70	5%	3.5	66.5	5.50	19.25	365.75	-55%	7%
70	7%	4.9	65.1	5.50	26.95	358.05	-36%	4%
70	10%	7.0	63.0	5.50	38.50	346.50	-9%	1%
70	11%	7.7	62.3	5.50	42.35	342.65	0%	0%

Table 164. Impacts of allocation on costs and producer surplus by permit category (Scenario A, higher prices, LPUE=2300 lb.)

Total Scallop TAC (Million lb.)	GC TAC as a % of Total TAC	General category TAC (lb.)	Limited access TAC (landings, lb.)	Trip costs		Producer Surplus		
				General category	Limited access	General category	Limited access	Total
40	2.50%	1.0	39.0	0.88	19.8	8.6	348.7	357.3
40	5%	2.0	38.0	1.75	19.3	17.2	339.8	356.9
40	7%	2.8	37.2	2.45	18.9	24.0	332.6	356.6
40	10%	4.0	36.0	3.50	18.3	34.3	321.9	356.2
40	11%	4.4	35.6	3.85	18.1	37.7	318.3	356.0
50	2.50%	1.3	48.8	1.09	24.8	9.3	379.8	389.1
50	5%	2.5	47.5	2.19	24.2	18.6	370.1	388.6
50	7%	3.5	46.5	3.06	23.7	26.0	362.3	388.3
50	10%	5.0	45.0	4.38	22.9	37.1	350.6	387.7
50	11%	5.5	44.5	4.81	22.6	40.8	346.7	387.6
60	2.50%	1.5	58.5	1.31	29.8	9.0	373.9	382.9
60	5%	3.0	57.0	2.63	29.0	18.1	364.3	382.4
60	7%	4.2	55.8	3.68	28.4	25.3	356.6	381.9
60	10%	6.0	54.0	5.25	27.5	36.2	345.1	381.3
60	11%	6.6	53.4	5.78	27.2	39.8	341.3	381.1
70	2.50%	1.8	68.3	1.53	34.7	8.1	340.7	348.8
70	5%	3.5	66.5	3.06	33.8	16.2	331.9	348.1
70	7%	4.9	65.1	4.29	33.1	22.7	324.9	347.6
70	10%	7.0	63.0	6.13	32.0	32.4	314.5	346.8
70	11%	7.7	62.3	6.74	31.7	35.6	311.0	346.6

Table 165. Impacts of allocation on landings and revenues of the general category and limited access fleets (Scenario B: lower prices)

Total Scallop TAC (Million lb.)	GC TAC as a % of Total TAC	General category TAC (lb.)	Limited access TAC (landings, lb.)	Ex-vessel Price	Total scallop revenue		% Change in revenue compared to 11% for GC TAC	
					General category	Limited access	General category	Limited access
40	2.50%	1.0	39.0	7.70	7.70	300.30	-77%	10%
40	5%	2.0	38.0	7.70	15.40	292.60	-55%	7%
40	7%	2.8	37.2	7.70	21.56	286.44	-36%	4%
40	10%	4.0	36.0	7.70	30.80	277.20	-9%	1%
40	11%	4.4	35.6	7.70	33.88	274.12	0%	0%
50	2.50%	1.3	48.8	6.00	7.50	292.50	-77%	10%
50	5%	2.5	47.5	6.00	15.00	285.00	-55%	7%
50	7%	3.5	46.5	6.00	21.00	279.00	-36%	4%
50	10%	5.0	45.0	6.00	30.00	270.00	-9%	1%
50	11%	5.5	44.5	6.00	33.00	267.00	0%	0%
60	2.50%	1.5	58.5	4.80	7.20	280.80	-77%	10%
60	5%	3.0	57.0	4.80	14.40	273.60	-55%	7%
60	7%	4.2	55.8	4.80	20.16	267.84	-36%	4%
60	10%	6.0	54.0	4.80	28.80	259.20	-9%	1%
60	11%	6.6	53.4	4.80	31.68	256.32	0%	0%
70	2.50%	1.8	68.3	3.80	6.65	259.35	-77%	10%
70	5%	3.5	66.5	3.80	13.30	252.70	-55%	7%
70	7%	4.9	65.1	3.80	18.62	247.38	-36%	4%
70	10%	7.0	63.0	3.80	26.60	239.40	-9%	1%
70	11%	7.7	62.3	3.80	29.26	236.74	0%	0%

Table 166. Impacts of allocation on landings and revenues of the general category and limited access fleets (Scenario B, Lower prices, LPUE=1800 lb.)

Total Scallop TAC (Million lb.)	GC TAC as a % of Total TAC	General category TAC (lb.)	Limited access TAC (landings, lb.)	Trip costs		Producer Surplus		
				General category	Limited access	General category	Limited access	Total
40	2.50%	1.0	39.0	0.88	25.4	6.8	275.0	281.8
40	5%	2.0	38.0	1.75	24.7	13.7	267.9	281.6
40	7%	2.8	37.2	2.45	24.2	19.1	262.3	281.4
40	10%	4.0	36.0	3.50	23.4	27.3	253.8	281.1
40	11%	4.4	35.6	3.85	23.1	30.0	251.0	281.0
50	2.50%	1.3	48.8	1.09	31.7	6.4	260.8	267.2
50	5%	2.5	47.5	2.19	30.9	12.8	254.1	266.9
50	7%	3.5	46.5	3.06	30.2	17.9	248.8	266.7
50	10%	5.0	45.0	4.38	29.3	25.6	240.8	266.4
50	11%	5.5	44.5	4.81	28.9	28.2	238.1	266.3
60	2.50%	1.5	58.5	1.31	38.0	5.9	242.8	248.7
60	5%	3.0	57.0	2.63	37.1	11.8	236.6	248.3
60	7%	4.2	55.8	3.68	36.3	16.5	231.6	248.1
60	10%	6.0	54.0	5.25	35.1	23.6	224.1	247.7
60	11%	6.6	53.4	5.78	34.7	25.9	221.6	247.5
70	2.50%	1.8	68.3	1.53	44.4	5.1	215.0	220.1
70	5%	3.5	66.5	3.06	43.2	10.2	209.5	219.7
70	7%	4.9	65.1	4.29	42.3	14.3	205.1	219.4
70	10%	7.0	63.0	6.13	41.0	20.5	198.5	218.9
70	11%	7.7	62.3	6.74	40.5	22.5	196.2	218.8

5.4.11.2 Impacts on general category vessels

The following tables show the impacts of the range of percentage TAC on average allocation per general category vessel for each qualification criteria. TAC management could have negative economic impacts on general category vessels to the extent that it is different from the historical levels and/or from the level of scallop landings in recent years. These impacts will not be uniform among the qualifying vessels, however, and will vary according to the qualification criteria and qualification period alternatives. Clearly, the number of qualifiers will decline and average allocation per vessel will increase as qualification poundage criteria increases and length of qualification period shortens (Table 167). The impact of 5000 pound criteria on the number of qualifying vessels, and average pounds per vessel is larger as compared to impacts of a shorter period.

The allocations for individual vessels will vary from these averages as shown in Table 170 and Table 172. General category vessels are shown in 3 groups in these tables according to their best year scallops landings during the qualification period. These groups also corresponds to three tiers proposed by alternative 3.1.2.4.3, with tier-3 including vessels with 20,000 lb. or more landings and tier-1 those with scallop landings of less than 5000 lb. Similarly, tier-3 includes vessels with full-time permits and tiers 1 and 2 include vessels with part-time permits as proposed by alternative 3.1.2.4.2. Although, a lower % TAC for general category will reduce the allocations per vessel in the same proportion, the absolute impacts as measured in terms of pounds of scallops will be larger for vessels that land scallops in larger volumes and depend on

scallop fishing for main source of their revenue. For example, for 62 vessels with historical landings of 20,000 or more scallops, a 2.5% TAC will reduce their average allocation to 11,508 lb. with 1000 lb. criteria and 5 year qualification period, from 48,688 lb. with 11% TAC, a decline of more than 37,000 lb. (Table 170). The 181 vessels that landed less than 5000 lb. during the same period will have their allocations reduced by about 3,400 lb. if a 2.5 % TAC is applied (1,096 lb.) instead of an 11% TAC (4,489 lb. Table 172).

The impacts of percentage TAC alternatives on crew incomes, costs, and vessel shares will vary according to the vessel size and the dependence on scallop revenue as a source of income. The tables in Section 5.4.5.6 provide estimates of revenues, costs, and crew and boat shares corresponding to a range of individual allocation amounts and could be used in conjunction with this section to evaluate the impacts of TAC on the revenues, costs, and crew and boat shares for general category vessels. Table 173 shows crew incomes and boat shares for a typical vessel with a high dependence on general category fishery (93% of its total revenue) and a GRT of less than 50 GRT. All vessels in Tier 1 with scallop landings of more than 20,000 lb. are included in this group. These group of vessels landed an average of 35,000 lb. of scallops during 2005 fishing year (Table 108) as well as during their best year prior to the control date (Table 142). Therefore, and average of 35,000 lb. of scallop landings could be considered as a status quo level for these vessels. Assuming a scallop harvest of 50 million pounds, allocation for this group would be about 10,000 lb at a 2.5% TAC, about 20,000 lb. at 5% TAC, and about 30,000 lb. at 7% TAC (Table 170). The economic impacts of these allocation pounds on crew income and boat shares are shown in Table 173 as compared to a status quo level of 35,000 lb. of scallops. For example, depending on the prices, an allocation of 10,000 lb. could reduce net boat shares by 97% to 118%, a 20,000 lb allocation by 58% to 71% to depending on the scallop prices compared to an allocation of 35,000 lb.

Table 167. Average scallop pounds per vessel by percentage of scallop harvest allocated to general category fishery

Total scallop harvest (Million lb.)	General category TAC as a % of total harvest	GC TAC (Mil. lb.)	11 Year period			5 year period				2 year period		
			100 lb. Criteria (705 vessels	1000 lb. Criteria (459 vessels	5000 lb. Criteria (203 vessels)	Stand alone-ITQ (677 vessels)	100 lb. criteria (548 vessels)	1000 lb. Criteria (369 vessels)	5000 lb. Criteria (188 vessels)	100 lb. Criteria (399 vessels)	1000 lb. Criteria (277 vessels)	5000 lb. Criteria (143 vessels)
40	2.50%	1.0	1,418	2,179	4,926	1,477	1,825	2,710	5,319	2,506	3,610	6,993
40	5%	2.0	2,837	4,357	9,852	2,954	3,650	5,420	10,638	5,013	7,220	13,986
40	7%	2.8	3,972	6,100	13,793	4,136	5,109	7,588	14,894	7,018	10,108	19,580
40	10%	4.0	5,674	8,715	19,704	5,908	7,299	10,840	21,277	10,025	14,440	27,972
40	11%	4.4	6,241	9,586	21,675	6,499	8,029	11,924	23,404	11,028	15,884	30,769
50	2.50%	1.3	1,773	2,723	6,158	1,846	2,281	3,388	6,649	3,133	4,513	8,741
50	5%	2.5	3,546	5,447	12,315	3,693	4,562	6,775	13,298	6,266	9,025	17,483
50	7%	3.5	4,965	7,625	17,241	5,170	6,387	9,485	18,617	8,772	12,635	24,476
50	10%	5.0	7,092	10,893	24,631	7,386	9,124	13,550	26,596	12,531	18,051	34,965
50	11%	5.5	7,801	11,983	27,094	8,124	10,036	14,905	29,255	13,784	19,856	38,462
60	2.50%	1.5	2,128	3,268	7,389	2,216	2,737	4,065	7,979	3,759	5,415	10,490
60	5%	3.0	4,255	6,536	14,778	4,431	5,474	8,130	15,957	7,519	10,830	20,979
60	7%	4.2	5,957	9,150	20,690	6,204	7,664	11,382	22,340	10,526	15,162	29,371
60	10%	6.0	8,511	13,072	29,557	8,863	10,949	16,260	31,915	15,038	21,661	41,958
60	11%	6.6	9,362	14,379	32,512	9,749	12,044	17,886	35,106	16,541	23,827	46,154
70	2.50%	1.8	2,482	3,813	8,621	2,585	3,193	4,743	9,309	4,386	6,318	12,238
70	5%	3.5	4,965	7,625	17,241	5,170	6,387	9,485	18,617	8,772	12,635	24,476
70	7%	4.9	6,950	10,675	24,138	7,238	8,942	13,279	26,064	12,281	17,690	34,266
70	10%	7.0	9,929	15,251	34,483	10,340	12,774	18,970	37,234	17,544	25,271	48,951
70	11%	7.7	10,922	16,776	37,931	11,374	14,051	20,867	40,957	19,298	27,798	53,846

Table 168. Average scallop revenue per vessel by percentage of scallop harvest allocated to general category fishery (Scenario A, higher prices)

Total scallop harvest (Million lb.)	General category TAC as a % of total harvest	GC TAC (Mil. lb.)	11 Year period			5 year period				2 year period		
			100 lb. Criteria (705 vessels	1000 lb. Criteria (459 vessels	5000 lb. Criteria (203 vessels)	Stand alone-ITQ (677 vessels)	100 lb. criteria (548 vessels)	1000 lb. Criteria (369 vessels)	5000 lb. Criteria (188 vessels)	100 lb. Criteria (399 vessels)	1000 lb. Criteria (277 vessels)	5000 lb. Criteria (143 vessels)
40	2.50%	1.0	13,400	20,592	46,551	13,958	17,246	25,610	50,265	23,682	34,115	66,084
40	5%	2.0	26,810	41,174	93,101	27,915	34,493	51,219	100,529	47,373	68,229	132,168
40	7%	2.8	37,535	57,645	130,344	39,085	48,280	71,707	140,748	66,320	95,521	185,031
40	10%	4.0	53,619	82,357	186,203	55,831	68,976	102,438	201,068	94,736	136,458	264,335
40	11%	4.4	58,977	90,588	204,829	61,416	75,874	112,682	221,168	104,215	150,104	290,767
50	2.50%	1.3	14,716	22,601	51,111	15,322	18,932	28,120	55,187	26,004	37,458	72,550
50	5%	2.5	29,432	45,210	102,215	30,652	37,865	56,233	110,373	52,008	74,908	145,109
50	7%	3.5	41,210	63,288	143,100	42,911	53,012	78,726	154,521	72,808	104,871	203,151
50	10%	5.0	58,864	90,412	204,437	61,304	75,729	112,465	220,747	104,007	149,823	290,210
50	11%	5.5	64,748	99,459	224,880	67,429	83,299	123,712	242,817	114,407	164,805	319,235
60	2.50%	1.5	14,683	22,549	50,984	15,290	18,885	28,049	55,055	25,937	37,364	72,381
60	5%	3.0	29,360	45,098	101,968	30,574	37,771	56,097	110,103	51,881	74,727	144,755
60	7%	4.2	41,103	63,135	142,761	42,808	52,882	78,536	154,146	72,629	104,618	202,660
60	10%	6.0	58,726	90,197	203,943	61,155	75,548	112,194	220,214	103,762	149,461	289,510
60	11%	6.6	64,598	99,215	224,333	67,268	83,104	123,413	242,231	114,133	164,406	318,463
70	2.50%	1.8	13,651	20,972	47,416	14,218	17,562	26,087	51,200	24,123	34,749	67,309
70	5%	3.5	27,308	41,938	94,826	28,435	35,129	52,168	102,394	48,246	69,493	134,618
70	7%	4.9	38,225	58,713	132,759	39,809	49,181	73,035	143,352	67,546	97,295	188,463
70	10%	7.0	54,610	83,881	189,657	56,870	70,257	104,335	204,787	96,492	138,991	269,231
70	11%	7.7	60,071	92,268	208,621	62,557	77,281	114,769	225,264	106,139	152,889	296,153

Table 169. Average scallop revenue per vessel by percentage of scallop harvest allocated to general category fishery (Scenario B, lower prices)

Total scallop harvest (Million lb.)	General category TAC as a % of total harvest	GC TAC (Mil. lb.)	11 Year period			5 year period				2 year period		
			100 lb. Criteria (705 vessels	1000 lb. Criteria (459 vessels	5000 lb. Criteria (203 vessels)	Stand alone-ITQ (677 vessels)	100 lb. criteria (548 vessels)	1000 lb. Criteria (369 vessels)	5000 lb. Criteria (188 vessels)	100 lb. Criteria (399 vessels)	1000 lb. Criteria (277 vessels)	5000 lb. Criteria (143 vessels)
40	2.50%	1.0	10,919	16,778	37,930	11,373	14,053	20,867	40,956	19,296	27,797	53,846
40	5%	2.0	21,845	33,549	75,860	22,746	28,105	41,734	81,913	38,600	55,594	107,692
40	7%	2.8	30,584	46,970	106,206	31,847	39,339	58,428	114,684	54,039	77,832	150,766
40	10%	4.0	43,690	67,106	151,721	45,492	56,202	83,468	163,833	77,193	111,188	215,384
40	11%	4.4	48,056	73,812	166,898	50,042	61,823	91,815	180,211	84,916	122,307	236,921
50	2.50%	1.3	10,638	16,338	36,948	11,076	13,686	20,328	39,894	18,798	27,078	52,446
50	5%	2.5	21,276	32,682	73,890	22,158	27,372	40,650	79,788	37,596	54,150	104,898
50	7%	3.5	29,790	45,750	103,446	31,020	38,322	56,910	111,702	52,632	75,810	146,856
50	10%	5.0	42,552	65,358	147,786	44,316	54,744	81,300	159,576	75,186	108,306	209,790
50	11%	5.5	46,806	71,898	162,564	48,744	60,216	89,430	175,530	82,704	119,136	230,772
60	2.50%	1.5	10,214	15,686	35,467	10,637	13,138	19,512	38,299	18,043	25,992	50,352
60	5%	3.0	20,424	31,373	70,934	21,269	26,275	39,024	76,594	36,091	51,984	100,699
60	7%	4.2	28,594	43,920	99,312	29,779	36,787	54,634	107,232	50,525	72,778	140,981
60	10%	6.0	40,853	62,746	141,874	42,542	52,555	78,048	153,192	72,182	103,973	201,398
60	11%	6.6	44,938	69,019	156,058	46,795	57,811	85,853	168,509	79,397	114,370	221,539
70	2.50%	1.8	9,432	14,489	32,760	9,823	12,133	18,023	35,374	16,667	24,008	46,504
70	5%	3.5	18,867	28,975	65,516	19,646	24,271	36,043	70,745	33,334	48,013	93,009
70	7%	4.9	26,410	40,565	91,724	27,504	33,980	50,460	99,043	46,668	67,222	130,211
70	10%	7.0	37,730	57,954	131,035	39,292	48,541	72,086	141,489	66,667	96,030	186,014
70	11%	7.7	41,504	63,749	144,138	43,221	53,394	79,295	155,637	73,332	105,632	204,615

Table 170. Average scallop pounds per vessel for limited access qualifiers with 20,000 lb. or more scallop landings from best year (or Tier 1)

Total scallop harvest (Million lb.)	General category TAC as a % of total harvest	GC TAC (Mil. lb.)	11 Year period			5 year period				2 year period		
			100 lb. Criteria	1000 lb. Criteria	5000 lb. Criteria	Stand alone-ITQ	100 lb. criteria	1000 lb. Criteria	5000 lb. Criteria	100 lb. Criteria	1000 lb. Criteria	5000 lb. Criteria
			62 vessels	62 vessels	62 vessels	62 vessels	62 vessels	62 vessels	62 vessels	44 vessels	44 vessels	44 vessels
			% share= 49.7%	% share= 50.9%	% share= 59.1%	% share= 53.6%	% share= 53.8%	% share= 54.9%	% share= 61.4%	% share= 51.1%	% share= 52.0%	% share= 58.1%
40	2.50%	1.0	8,015	8,209	9,537	8,647	8,674	8,852	9,898	11,603	11,827	13,208
40	5%	2.0	16,029	16,417	19,074	17,294	17,348	17,705	19,795	23,207	23,655	26,415
40	7%	2.8	22,441	22,984	26,703	24,211	24,288	24,787	27,713	32,489	33,117	36,981
40	10%	4.0	32,059	32,834	38,147	34,588	34,697	35,410	39,590	46,413	47,310	52,830
40	11%	4.4	35,265	36,118	41,962	38,047	38,166	38,951	43,549	51,055	52,041	58,113
50	2.50%	1.3	10,419	10,671	12,398	11,241	11,276	11,508	12,867	15,084	15,376	17,170
50	5%	2.5	20,037	20,522	23,842	21,617	21,685	22,131	24,744	29,008	29,569	33,019
50	7%	3.5	28,052	28,730	33,379	30,264	30,360	30,983	34,641	40,612	41,396	46,226
50	10%	5.0	40,074	41,043	47,684	43,235	43,371	44,262	49,488	58,017	59,137	66,038
50	11%	5.5	44,081	45,147	52,452	47,558	47,708	48,688	54,436	63,818	65,051	72,642
60	2.50%	1.5	12,022	12,313	14,305	12,970	13,011	13,279	14,846	17,405	17,741	19,811
60	5%	3.0	24,044	24,626	28,610	25,941	26,023	26,557	29,693	34,810	35,482	39,623
60	7%	4.2	33,662	34,476	40,055	36,317	36,432	37,180	41,570	48,734	49,675	55,472
60	10%	6.0	48,088	49,252	57,221	51,882	52,045	53,114	59,385	69,620	70,964	79,245
60	11%	6.6	52,897	54,177	62,943	57,070	57,250	58,426	65,324	76,582	78,061	87,170
70	2.50%	1.8	14,427	14,776	17,166	15,565	15,614	15,934	17,816	20,886	21,289	23,774
70	5%	3.5	28,052	28,730	33,379	30,264	30,360	30,983	34,641	40,612	41,396	46,226
70	7%	4.9	39,272	40,222	46,730	42,370	42,504	43,377	48,498	56,856	57,954	64,717
70	10%	7.0	56,103	57,460	66,758	60,529	60,719	61,967	69,283	81,223	82,792	92,453
70	11%	7.7	61,714	63,206	73,433	66,582	66,791	68,163	76,211	89,345	91,071	101,698

Table 171. Average scallop pounds per vessel for limited access qualifiers with scallop landings of 5000 lb. to 19,999 lb. from best year (or Tier 2)

Total scallop harvest (Million lb.)	General category TAC as a % of total harvest	GC TAC (Mil. lb.)	11 Year period			5 year period				2 year period		
			100 lb. Criteria	1000 lb. Criteria	5000 lb. Criteria	Stand alone-ITQ	100 lb. criteria	1000 lb. Criteria	5000 lb. Criteria	100 lb. Criteria	1000 lb. Criteria	5000 lb. Criteria
			141 vessels	141 vessels	141 vessels	126 vessels	126 vessels	126 vessels	126 vessels	99 vessels	99 vessels	99 vessels
			% share= 34.3%	% share= 35.2%	% share= 40.9%	% share= 33.8%	% share= 33.9%	% share= 34.6%	% share= 38.6%	% share= 36.8%	% share= 37.5%	% share= 41.9%
40	2.50%	1.0	2,436	2,495	2,898	2,679	2,687	2,742	3,066	3,717	3,789	4,231
40	5%	2.0	4,872	4,990	5,797	5,358	5,375	5,485	6,132	7,434	7,577	8,461
40	7%	2.8	6,820	6,985	8,116	7,501	7,524	7,679	8,585	10,407	10,608	11,846
40	10%	4.0	9,743	9,979	11,594	10,715	10,749	10,970	12,265	14,867	15,154	16,923
40	11%	4.4	10,718	10,977	12,753	11,787	11,824	12,067	13,491	16,354	16,670	18,615
50	2.50%	1.3	3,167	3,243	3,768	3,482	3,493	3,565	3,986	4,832	4,925	5,500
50	5%	2.5	6,090	6,237	7,246	6,697	6,718	6,856	7,666	9,292	9,471	10,577
50	7%	3.5	8,526	8,732	10,145	9,376	9,405	9,599	10,732	13,009	13,260	14,807
50	10%	5.0	12,179	12,474	14,492	13,394	13,436	13,712	15,331	18,584	18,943	21,153
50	11%	5.5	13,397	13,721	15,942	14,733	14,780	15,084	16,864	20,442	20,837	23,269
60	2.50%	1.5	3,654	3,742	4,348	4,018	4,031	4,114	4,599	5,575	5,683	6,346
60	5%	3.0	7,308	7,484	8,695	8,036	8,062	8,227	9,199	11,150	11,366	12,692
60	7%	4.2	10,231	10,478	12,174	11,251	11,287	11,518	12,878	15,611	15,912	17,769
60	10%	6.0	14,615	14,969	17,391	16,073	16,124	16,455	18,397	22,301	22,732	25,384
60	11%	6.6	16,077	16,466	19,130	17,680	17,736	18,100	20,237	24,531	25,005	27,923
70	2.50%	1.8	4,385	4,491	5,217	4,822	4,837	4,936	5,519	6,690	6,819	7,615
70	5%	3.5	8,526	8,732	10,145	9,376	9,405	9,599	10,732	13,009	13,260	14,807
70	7%	4.9	11,936	12,225	14,202	13,126	13,168	13,438	15,025	18,212	18,564	20,730
70	10%	7.0	17,051	17,464	20,289	18,752	18,811	19,197	21,464	26,018	26,520	29,615
70	11%	7.7	18,756	19,210	22,318	20,627	20,692	21,117	23,610	28,619	29,172	32,576

Table 172. Average scallop pounds per vessel for limited access qualifiers with scallop landings of less than 5000 lb. from best year (or Tier 2)

Total scallop harvest (Million lb.)	General category TAC as a % of total harvest	GC TAC (Mil. lb.)	11 Year period			5 year period				2 year period		
			100 lb. Criteria	1000 lb. Criteria	5000 lb. Criteria	Stand alone-ITQ	100 lb. criteria	1000 lb. Criteria	5000 lb. Criteria	100 lb. Criteria	1000 lb. Criteria	5000 lb. Criteria
			502 vessels	256 vessels	None qualify	489 vessels	360 vessels	181 vessels	None qualify	256 vessels	134 vessels	None qualify
			% share= 16.0%	% share= 13.9%	% share= 0.0%	% share= 12.6%	% share= 12.4%	% share= 10.6%	% share= 0.0%	% share= 12.2%	% share= 10.5%	% share= 0.0%
40	2.50%	1.0	318	544	No allo.	258	343	583	No allo.	475	780	No allo.
40	5%	2.0	636	1,088	No allo.	517	687	1,166	No allo.	950	1,560	No allo.
40	7%	2.8	890	1,524	No allo.	724	962	1,632	No allo.	1,329	2,184	No allo.
40	10%	4.0	1,272	2,177	No allo.	1,034	1,374	2,332	No allo.	1,899	3,121	No allo.
40	11%	4.4	1,399	2,394	No allo.	1,137	1,511	2,565	No allo.	2,089	3,433	No allo.
50	2.50%	1.3	413	707	No allo.	336	446	758	No allo.	617	1,014	No allo.
50	5%	2.5	795	1,360	No allo.	646	859	1,458	No allo.	1,187	1,950	No allo.
50	7%	3.5	1,113	1,905	No allo.	904	1,202	2,041	No allo.	1,662	2,731	No allo.
50	10%	5.0	1,590	2,721	No allo.	1,292	1,717	2,915	No allo.	2,374	3,901	No allo.
50	11%	5.5	1,749	2,993	No allo.	1,421	1,889	3,207	No allo.	2,611	4,291	No allo.
60	2.50%	1.5	477	816	No allo.	388	515	875	No allo.	712	1,170	No allo.
60	5%	3.0	954	1,633	No allo.	775	1,030	1,749	No allo.	1,424	2,340	No allo.
60	7%	4.2	1,336	2,286	No allo.	1,085	1,442	2,449	No allo.	1,994	3,277	No allo.
60	10%	6.0	1,908	3,265	No allo.	1,550	2,060	3,498	No allo.	2,849	4,681	No allo.
60	11%	6.6	2,099	3,592	No allo.	1,705	2,267	3,848	No allo.	3,134	5,149	No allo.
70	2.50%	1.8	572	980	No allo.	465	618	1,049	No allo.	855	1,404	No allo.
70	5%	3.5	1,113	1,905	No allo.	904	1,202	2,041	No allo.	1,662	2,731	No allo.
70	7%	4.9	1,558	2,667	No allo.	1,266	1,683	2,857	No allo.	2,326	3,823	No allo.
70	10%	7.0	2,226	3,809	No allo.	1,809	2,404	4,081	No allo.	3,324	5,461	No allo.
70	11%	7.7	2,449	4,190	No allo.	1,990	2,644	4,489	No allo.	3,656	6,007	No allo.

Table 173. Estimated revenues and costs for an average vessel with less than 50 gross tonnage.

Allocation pounds	Number of trips	Annual Scallop Revenue	Total trip costs	Net Revenue (net of trip costs)	Crew income (net of trip costs)	Boat Share (Annual)	% of scallop revenue	Boat share net of fixed costs	% Change in boat share net of fixed costs
Scenario A: 50 million total scallop landings, price $8.30 per lb.									
10000	25	83,000	7,275	75,725	38,375	37,350	93%	(9,591)	-118%
20000	50	166,000	14,550	151,450	76,750	74,700	93%	16,134	-71%
30000	75	249,000	21,825	227,175	115,125	112,050	93%	41,858	-24%
35000	88	290,500	25,463	265,037	134,312	130,725	93%	54,721	0%
40000	100	332,000	29,100	302,900	153,500	149,400	93%	67,583	24%
50000	125	415,000	36,376	378,624	191,874	186,750	93%	93,308	71%
Scenario A: 50 million total scallop landings, price $6.00 per lb.									
10000	25	60,000	7,275	52,725	25,725	27,000	93%	3,059	-97%
20000	50	120,000	14,550	105,450	51,450	54,000	93%	41,434	-58%
30000	75	180,000	21,825	158,175	77,175	81,000	93%	79,808	-19%
35000	88	210,000	25,463	184,537	90,037	94,500	93%	98,996	0%
40000	100	240,000	29,100	210,900	102,900	108,000	93%	118,183	19%
50000	125	300,000	36,376	263,624	128,624	135,000	93%	156,558	58%

Notes: Average trip costs per DA=$291, average fixed costs per vessel=$37,974, average revenue from other fisheries=$ 45,452 (2005). Revenue from other species is not included. The number in parentheses shows that there is loss to the vessel.

5.4.11.3 The impacts on limited access vessels

The section discusses the impacts of general category TAC on the landings, revenues, costs, and crew and boat shares for the limited access vessels. The analysis is conducted for an average full-time vessel. These vessels depend on scallop fishing as the main source of their income, thus are most likely to be affected from the division of available scallop harvest between general category and limited access. The method and the assumptions of this analysis could be summarized as follows:

- It is assumed the number of limited access vessels that participate in the scallop fishery will equal to the number of permits obtained in 2005 fishing year. There were 321 vessels with full-time, 32 vessels with part-time and 6 vessels with occasional permits, totaling 359 vessels, the highest number limited access permits ever obtained since 1994 fishing year. According to the preliminary data, there were 351 vessels that received limited access permits in 2006 fishing year.
- In order to estimate scallop landings per full-time boat, the number of part-time and occasional boats are converted to full-time equivalents by applying their share in allocations with respect to a full-time boat, which are 40% and 8.33% respectively. With this calculation, the number of full-time equivalent boats is estimated to be 334 vessels. Total scallop landings per full-time vessels are estimated by dividing total scallop harvest available for limited access among 334 vessels.
- As explained in Section 5.4.11.1 above, ex-vessel prices are calculated for two different scenarios to provide a range of estimates with various values for these variables.
- Crew incomes are assumed to equal to 55% of the gross stock net of observer costs minus the trip costs. Vessel share is 45% of the gross stock net of observer costs. The lay system could vary from one vessel to another, however, and there could be other costs that are

paid by crew or the vessel owner not accounted for in these estimates. Therefore, the absolute values for the estimated crew and vessel incomes should be interpreted with caution and should be used in comparing the results of one scenario versus another.

- The boat shares net of fixed costs are estimated by deducting fixed costs from vessel's share as a proxy for profits. According to the observer data, fixed costs averaged at $164,151 for the 2002-05 fishing years. Adjusting this for the increase in PPI in 2006, bring this average up to about $175,150 per full-time vessel. The fixed costs include those expenses that are not usually related to the level of fishing activity or output. These are expenses on insurance, maintenance, repairs and replacement of engine, electrical and processing equipment, gear and other equipment. There are other fixed costs a vessel owner pays, such as for office expenses, interest, accounting, utilities and dock fees. They are not included in fixed costs estimates because the data on these items are not collected by the observer program. Therefore, actual fixed costs could be higher and the vessel shares net of fixed costs could be lower than the estimates shown in Table 176 and Table 177. For these reasons, these numbers should be interpreted with caution and be mainly used for the comparative analyses of the percent TAC alternatives.

Summary of results:

The estimated landings per full-time vessel, prices and revenues are shown in Table 174 for Scenario A and in Table 175 for Scenario B. Scenario A results in higher prices than Scenario B at each level of landings. For example, if overall scallop landings are 50 million lb., the scallop prices could reach $8.30 if the import prices and exports do not fall below recent levels and the productivity of the scallop resource could increase to include larger scallops. On the other hand, a change in the world scallop markets toward lower prices, a reduction in US exports due to a reduction in competitiveness or a world recession, could bring prices $6.00 per pound at the same level of domestic landings (50 million lb.). Scallop revenues per full-time vessel could vary from about $800,000 ($6.00) with lower prices to about $1,105,000 with higher prices ($8.30) if overall harvest was 50 million lb. and 89% of this was allocated to limited access fishery (11% to general category). A 2.5% TAC for general category is estimated to increase DAS-used per limited access vessel by 5 days compared to 11% TAC.

Although the level of revenue per full-time vessel varies with the level of available scallop harvest at the estimated prices as shown in these Tables, the relative impacts of percentage TAC levels on revenues stay the same. As the last column of each of these Tables show, if instead of 11%, 2.5% of the total available scallop harvest was allocated to general category and the remaining 97.5% to the limited access fishery, the estimated revenue per full-time vessel would increase by 10% regardless of the level of scallop harvest or prices.

The impacts of various TAC levels on costs, crew and vessels shares for limited access vessels are analyzed in Table 176 and Table 177 using the same scenario analyses with import, exports, prices, costs and productivity. These scenarios show scallop revenues per vessel will be sufficient to pay for trip costs, crew shares and provide a surplus for the vessel after paying for the fixed costs even with a scallop harvest of 40 million lb. and 11% TAC for general category. Boat shares net of fixed costs for Scenario A will be significantly higher than the levels estimated for the less optimistic Scenario B. Reducing general category share from a status quo of 10% to 11%, to 2.5%, however, will increase net boat shares by about 15% for Scenario A, and by as much as 20% for Scenario B depending on the level of total scallop harvest.

Table 174. Scenario A: Impacts of general category TAC on limited access vessels (assuming 334 full-time vessels, import price of $4.15, exports=25 million, LPUE=2300 lb.).

Total Scallop TAC (mill.)	% TAC for general category	General category TAC (mill.)	Limited access landings (mill.)	Scallop pounds per full-time vessel	Estimated scallop price per lb.	Scallop revenue per full-time vessel	Percent change in revenue compared to 11% TAC for GC
40	2.50%	1.0	39.0	116,766	9.45	1,103,443	10%
40	5%	2.0	38.0	113,772	9.45	1,075,150	7%
40	7%	2.8	37.2	111,377	9.45	1,052,515	4%
40	10%	4.0	36.0	107,784	9.45	1,018,563	1%
40	11%	4.4	35.6	106,587	9.45	1,007,246	0%
50	2.50%	1.3	48.8	145,958	8.30	1,211,452	10%
50	5%	2.5	47.5	142,216	8.30	1,180,389	7%
50	7%	3.5	46.5	139,222	8.30	1,155,539	4%
50	10%	5.0	45.0	134,731	8.30	1,118,263	1%
50	11%	5.5	44.5	133,234	8.30	1,105,838	0%
60	2.50%	1.5	58.5	175,150	6.90	1,208,533	10%
60	5%	3.0	57.0	170,659	6.90	1,177,545	7%
60	7%	4.2	55.8	167,066	6.90	1,152,754	4%
60	10%	6.0	54.0	161,677	6.90	1,115,569	1%
60	11%	6.6	53.4	159,880	6.90	1,103,174	0%
70	2.50%	1.8	68.3	204,341	5.50	1,123,877	10%
70	5%	3.5	66.5	199,102	5.50	1,095,060	7%
70	7%	4.9	65.1	194,910	5.50	1,072,006	4%
70	10%	7.0	63.0	188,623	5.50	1,037,425	1%
70	11%	7.7	62.3	186,527	5.50	1,025,898	0%

Table 175. Scenario B: Impacts of general category TAC on limited access vessels (assuming 334 full-time vessels, import price of $3.50, exports=10 million, LPUE=1800 lb.).

Total Scallop TAC (mill.)	% TAC for general category	General category TAC (mill.)	Limited access landings (mill.)	Scallop pounds per full-time vessel	Estimated scallop price per lb.	Scallop revenue per full-time vessel	Percent change in revenue compared to 11% TAC for GC
40	2.50%	1.0	39.0	116,766	7.70	899,102	10%
40	5%	2.0	38.0	113,772	7.70	876,048	7%
40	7%	2.8	37.2	111,377	7.70	857,605	4%
40	10%	4.0	36.0	107,784	7.70	829,940	1%
40	11%	4.4	35.6	106,587	7.70	820,719	0%
50	2.50%	1.3	48.8	145,958	6.00	875,749	10%
50	5%	2.5	47.5	142,216	6.00	853,293	7%
50	7%	3.5	46.5	139,222	6.00	835,329	4%
50	10%	5.0	45.0	134,731	6.00	808,383	1%
50	11%	5.5	44.5	133,234	6.00	799,401	0%
60	2.50%	1.5	58.5	175,150	4.80	840,719	10%
60	5%	3.0	57.0	170,659	4.80	819,162	7%
60	7%	4.2	55.8	167,066	4.80	801,916	4%
60	10%	6.0	54.0	161,677	4.80	776,048	1%
60	11%	6.6	53.4	159,880	4.80	767,425	0%
70	2.50%	1.8	68.3	204,341	3.80	776,497	10%
70	5%	3.5	66.5	199,102	3.80	756,587	7%
70	7%	4.9	65.1	194,910	3.80	740,659	4%
70	10%	7.0	63.0	188,623	3.80	716,766	1%
70	11%	7.7	62.3	186,527	3.80	708,802	0%

Table 176. Scenario A: Impacts of general category TAC on limited access vessels (assuming 334 full-time vessels, and higher prices)

Total Scallop TAC (mill.)	% TAC for general category	General category TAC (mill.)	Limited access landings (mill.)	DAS-used per vessel	Trips costs per vessel ($)	Crew income net of trip costs ($)	Boat share ($)	Boat share net of fixed costs ($)	% change in net boat share (compare with 11% GC-TAC)
40	2.50%	1.0	39.0	51	59,399	547,495	496,549	321,399	16%
40	5%	2.0	38.0	49	57,876	533,457	483,817	308,667	11%
40	7%	2.8	37.2	48	56,657	522,226	473,632	298,482	7%
40	10%	4.0	36.0	47	54,829	505,380	458,353	283,203	2%
40	11%	4.4	35.6	46	54,220	499,765	453,260	278,110	0%
50	2.50%	1.3	48.8	63	74,248	592,050	545,153	370,003	15%
50	5%	2.5	47.5	62	72,344	576,870	531,175	356,025	10%
50	7%	3.5	46.5	61	70,821	564,725	519,993	344,843	7%
50	10%	5.0	45.0	59	68,537	546,508	503,219	328,069	2%
50	11%	5.5	44.5	58	67,775	540,436	497,627	322,477	0%
60	2.50%	1.5	58.5	76	89,098	575,595	543,840	368,690	15%
60	5%	3.0	57.0	74	86,813	560,836	529,895	354,745	10%
60	7%	4.2	55.8	73	84,986	549,029	518,740	343,590	7%
60	10%	6.0	54.0	70	82,244	531,319	502,006	326,856	2%
60	11%	6.6	53.4	70	81,330	525,415	496,428	321,278	0%
70	2.50%	1.8	68.3	89	103,948	514,185	505,745	330,595	15%
70	5%	3.5	66.5	87	101,282	501,001	492,777	317,627	11%
70	7%	4.9	65.1	85	99,150	490,453	482,403	307,253	7%
70	10%	7.0	63.0	82	95,952	474,632	466,841	291,691	2%
70	11%	7.7	62.3	81	94,885	469,359	461,654	286,504	0%

Assumptions about price: import price $4.15, exports, 25 mill. or 45% of landings. LPUE=2300 assuming trip costs of $1170 per day-at-sea.

Table 177. Scenario B: general category TAC on limited access vessels (assuming 334 full-time vessels and lower prices).

Total Scallop TAC (mill.)	% TAC for general category	General category TAC (mill.)	Limited access landings (mill.)	DAS-used per vessel	Trips costs per vessel ($)	Crew income net of trip costs ($)	Boat share ($)	Boat share net of fixed costs ($)	% change in net boat share (compare with 11% GC-TAC)
40	2.50%	1.0	39.0	65	75,898	418,608	404,596	229,446	18%
40	5%	2.0	38.0	63	73,952	407,874	394,222	219,072	13%
40	7%	2.8	37.2	62	72,395	399,287	385,922	210,772	9%
40	10%	4.0	36.0	60	70,060	386,407	373,473	198,323	2%
40	11%	4.4	35.6	59	69,281	382,114	369,323	194,173	0%
50	2.50%	1.3	48.8	81	94,873	386,789	394,087	218,937	19%
50	5%	2.5	47.5	79	92,440	376,871	383,982	208,832	13%
50	7%	3.5	46.5	77	90,494	368,937	375,898	200,748	9%
50	10%	5.0	45.0	75	87,575	357,036	363,772	188,622	2%
50	11%	5.5	44.5	74	86,602	353,069	359,731	184,581	0%
60	2.50%	1.5	58.5	97	113,847	348,548	378,323	203,173	19%
60	5%	3.0	57.0	95	110,928	339,611	368,623	193,473	14%
60	7%	4.2	55.8	93	108,593	332,461	360,862	185,712	9%
60	10%	6.0	54.0	90	105,090	321,737	349,222	174,072	2%
60	11%	6.6	53.4	89	103,922	318,162	345,341	170,191	0%
70	2.50%	1.8	68.3	114	132,822	294,251	349,424	174,274	21%
70	5%	3.5	66.5	111	129,416	286,707	340,464	165,314	15%
70	7%	4.9	65.1	108	126,692	280,671	333,296	158,146	10%
70	10%	7.0	63.0	105	122,605	271,617	322,545	147,395	2%
70	11%	7.7	62.3	104	121,243	268,599	318,961	143,811	0%

Assumptions about price: import price $4.15, exports, 25 mill. or 45% of landings. LPUE=1800 assuming trip costs of $1170 per day-at-sea.

5.4.12 Impacts of limited entry permit provisions (3.1.2.5)

This amendment will consider measures to govern activities such as vessel sales, limited access permit transfers, permit splitting, changes to vessel size, and establishment of vessel baselines to evaluate changes to vessel size, etc. These measures would apply to all general category permits that qualify for limited access if limited access is adopted under Amendment 11.

Fishing History and Permit Transfers (3.1.2.5.1) are intended set the rules for determining eligibility for limited access and for appeals for all vessels to follow in case of denial of permit (based on the consistency amendment). In addition to third party verification, such as dealer receipts, VTR records could be incorporated to identify errors during the appeal process. A pre-qualification process that would cap scallop landings per trip at 400 lb. would reduce the negative economic impacts on vessels due to inaccurate entries for others in excess of 400 lb. due to data errors. If landings from a trip record were in excess of 400 lb. because several trips were reported as one in the dealer data, a vessel can appeal for a higher allocation subject to verification from VTR. These measures will indirectly benefit all participants by ensuring that only those vessels that provide verification of permit and landings history will qualify and receive allocation based on accurate records.

The qualification and retention of permits specified in the sale of vessels (3.1.2.5.1.2) would have positive economic impacts on participants that sold their vessel to another but retained the fishing history. If the buyer qualifies for limited access as well based on its own landings and subject to the determination by Regional Administrator, then the number of qualifiers will increase. If limited entry were combined with TAC management, this would reduce the percentage share of each qualifier in the general category fishery and to some extent their revenues from scallops depending on the number of additional vessels that would qualify for limited access with this provision.

The alternatives related to vessel upgrade restrictions, which allow a vessel to increase its fishing power either without restriction or subject to a 10:10:20 upgrade of length, gross tonnage and horsepower, will provide vessels the flexibility to adjust their fishing power to changing circumstances, with conceivably positive economic impacts on these vessels. For example, increasing horsepower could help a small vessel to reduce its trip length and thus minimize its trip costs. It could also increase a smaller vessel's capability to access areas further from the port. As long as Amendment 11 action limits the total harvest of limited entry qualifiers, these alternatives are unlikely to result in overfishing of the resource. The individual allocation system, combined with the 400 lb. possession limit, will also reduce the need to upgrade and invest in more capacity if a vessel's quota does not significantly exceed the amount it traditionally fishes. On the other hand, TAC management without allocation to individual vessels could increase the incentives for upgrading since the vessels with a higher fishing power would have an advantage over smaller vessels and could maximize their landings before the fishery is closed. As a result, the nature of the general category fishery could change and negatively impact the small day-boat vessels that are unable to invest in more capacity. Upgrading without any restrictions (Alternative 2) would magnify these impacts compared to the 10:10:20 upgrade provision.

Stacking of permits will allow the general category permit holders with more one than one qualifying boat to consolidate their allocation into one vessel to help reduce fishing costs, such as repairs, maintenance and insurance. This will also help the vessels to maintain an economically viable operation if the allocations for separate vessels is too low to generate revenue to cover variable and fixed expenses. In short, a stacking provision would have positive impacts especially on those vessels that target scallops and depend on this fishery as the main source of their income. In this respect, an alternative that restricts stacking pounds to 60,000 lb. at a maximum (3.1.2.5.4.3) will allow more flexibility to vessels compared to limiting stacking to two permits only. However, consolidation of permits in fewer boats could have possible negative impacts at the community level and negative impacts on cultural values emphasizing the small, day-boat character of the fishery as discussed in Section 5.5, Social Impact Assessment.

Voluntary Relinquishment of Eligibility (3.1.2.5.5) and Permit Splitting (3.1.2.5.6) provisions are expected to have positive economic impacts on the sea scallop fishery as a whole by reducing and/or preventing an increase in capacity in the general category fishery. This is because no new permits would be issued to replace permits relinquished by qualifiers that exit the fishery later on, and the limited access permits would not be allowed to split apart and distributed among other and/or replacement vessels with different fishing power. These measures are in line with the consistency amendment.

The economic impacts of permit renewals and confirmation of permit history provisions (3.1.2.5.8) are expected to be positive for the limited access qualifiers. These measures will help to determine the fishermen who have an active interest in participating in the general category fishery. This would enable vessel owners that qualify for limited access to retain their fishing history and to transfer it to a replacement vessel in the future.

The percentage ownership restriction (3.1.2.5.9) will prevent a few general category vessels from dominating the fishery and will help to redistribute gains from the limited access more equitably among more fishermen. It could also reduce the potentially negative impacts of consolidation on employment and crew incomes due to the decrease in the number of vessels, with positive economic impacts on communities that depend on small day-boat fishery. On the other hand, depending on the number of qualifiers corresponding to qualification criteria and qualification time period alternatives, these restrictions may prevent some fishermen from having a full-time economically viable operation from the general category scallop fishery alone by stacking up permits. For example, a 1% ownership restriction would be most restrictive with a 2-year period and 5000 lb. criteria. Only 143 vessels would qualify for limited access with this alternative and each owner would be allowed to receive only one permit. With the 11-year period and 100 lb. criteria, however, each owner could receive a minimum of 7 permits with a 1% restriction and as many as 35 permits with a 5% restriction. On the other hand, the general category TAC would be divided among fewer vessels when the number of qualifiers is small, with each receiving a larger allocation relative to alternatives that qualify more vessels. Therefore, the economic impacts of the percentage ownership will vary with the number of qualifiers, the level for general category TAC, and allocation amounts.

5.4.13 The impacts of trawl gear measures (3.1.2.6)

These alternatives reduce the incentive for qualifying vessels to target scallops with trawl gear. Alternative 3.1.2.6.2 was developed to prevent an expansion in general category scallop effort using trawl gear, and Alternatives 3.1.2.6.3 and 3.1.2.6.4 were developed to reduce incentive to fish for scallops with trawl gear.

Overall, prohibition of switching to trawl gear would have minimal impacts on most participants in the general category fishery, while reducing scallop mortality from an increase in fishing effort by trawl gear. Since most (¾ of all) of the general category scallops trips in 2005 involved the use of the scallop dredge (Table 155, Social Impact Assessment), prohibition of switching to trawl gear is not expected to affect negatively the majority of the vessels compared to no action (3.1.2.6.1). In addition, a gear switching prohibition will not affect those trawl vessels that qualify for limited access based on their fishing history. For example, of the 452 general category vessels whose landings are recorded in logbook records and would qualify based on at least one of the qualification criteria, over half (185) used only scallop or other dredges to land scallops, 195 vessels used trawl gear only, and 72 vessels used a combination of dredge and trawl during the 11-year qualification period to catch scallops, (Section 5.5.1.1.4, Social Impact Assessment). The last group of vessels would be prohibited from using trawl gear. Since most of these vessels do not catch the majority of their scallops with trawl gear, this alternative would reduce their scallop revenue from mixed trips only.

The lower possession limit for trawl vessels (3.1.2.6.3), or the measure to limit scallop trips to 5% of regulated species (3.1.2.6.4), could have less negative impact on trawl fishermen compared to 3.1.2.6.2, in that they could continue to use trawl on mixed trips for landing scallops. About half of the trawls vessel land 300 lb. or less of scallop pounds from their trips (Table 5, Section 3.1.2.6.3). The overall positive impacts of this measure on the scallop resource and future yield are expected to outweigh the negative impacts on some participants and to increase scallop landings and revenue compared to no action. Section 5.5.1.1.4, Social Impact Assessment, provides further discussion of the impact of these measures on vessels and ports.

5.4.14 Sectors and Harvesting Cooperatives (3.1.2.7)

This action is considering a process for the creation of fishing "sectors" and the allocation of TAC shares to the sectors within the general category fishery. The establishment of sectors will not impact overall scallop landings and revenues from the general category fishery. It will have positive impacts on the participants, however, by allowing fishermen to combine their allocations and to fish using fewer vessels in order to reduce fishing costs. This will provide an opportunity for fishermen to establish and benefit from an economically viable operation when the allocations of individual vessels are too small to make scallop fishing profitable. Under these conditions, general category scallop TAC is likely to be fully utilized by qualifiers with positive impacts on revenues and producer and consumer benefits. There could be some indirect positive impacts if sectors identify ways to fish more efficiently, reduce bycatch, and prevent interactions with the protected species. This could help prevent more stringent measures in the future such as closing areas to further scallop fishing.

There is some concern that sectors could change the nature of the general category fishery from a small day-boat fishery to a fishery dominated by a few large boats fishing like offshore boats with multiple day trips. As long as general category fishery is subject to a 400 lb. possession limit per trip, however, there will be less incentive to consolidate shares on boats with higher fishing power or to invest in larger capacity boats. On the other hand, for fishing in the access areas, it may be beneficial to put allocations on vessels with higher fishing power in order to maximize the landings before an area closes to general category fishing. In such a case the participants of a sector could gain at the expense of other vessels that fish individually or belong to a sector with smaller vessels. If the general category fishery is managed by a vessel allocation system (whether in terms of individual fishing quota, trips, or tiers.), there will be less incentive for race to fish in access areas since scallop pounds or trips would be deducted from a vessel's allocation no matter where they fish.

It remains to be seen how cooperatives will affect employment and crew incomes in the general category fishery. Although scallop fishing with fewer vessels would reduce employment to some extent, given that many general category vessels participate in other fisheries as well, these negative impacts on crew could be small. There are also potential issues related to sectors and cooperatives such as a decline in competition and price fixing, especially when a few sectors dominate the fishery. Such impacts for sectors in general category fishery could be small since the general category fleet lands a small proportion of the total scallop catch. A 20% limit on sector shares would also reduce such potentially negative impacts.

5.4.15 Monitoring Provisions (3.1.5)

Under no action, vessels would still be required to report scallop landings through vessel trip reports (VTR). However, alternative 3.1.5.2 would require all general category vessels to report landings through VMS, and alternative 3.1.5.3 would require weekly landings reports through Interactive Voice Reporting (IVR). These alternatives are expected to have positive indirect economic benefits for the sea scallop fishery by improving the monitoring of the fishing effort in the general category fishery and ensuring better compliance with the regulations. There will be more positive impacts associated with VMS since the information provided will be real time and will include the location of the vessel. These measures will increase compliance costs for fishermen to some extent in terms of increased time and inconvenience associated with reporting. Since general category vessels that land over 40 lb. are already required to have a VMS onboard, these costs are not expected to be significant, however.

5.4.16 Allocation of yellowtail flounder bycatch TAC in access areas (3.1.7.3)

The Council is considering allocating a specific portion of the yellowtail flounder bycatch TAC to each fishery (limited access and general category). Currently 10% of the yellowtail flounder TAC (Georges Bank and SNE) is set aside as bycatch for the scallop fishery in access areas (limited access and general category together). Only limited access vessels are permitted to land yellowtail as a bycatch. Continuing with no action (3.1.7.3.1) would negatively impact those vessels that are less likely to fish in the early winter months (which are mainly small vessels in the general category fleet), if the larger limited access fleet quickly reaches the overall 10% TAC for the scallop fishery as a whole. Therefore, allocating a percentage of the bycatch TAC to the general category fishery (3.1.7.3.2) will have positive economic impacts on these vessels since they will be able to continue to fish in access areas until general category yellowtail TAC is reached. It will also benefit limited access vessels since it is possible for yellowtail TAC to be reached due to derby fishing by general category vessels before limited access vessels take their allocated trips to the access areas.

5.4.17 Incidental Catch (3.1.8)

This measure continues the allowance of incidental bycatch of scallops up to 40 lbs (3.1.8.1.); therefore, it will have no impact on vessels with incidental scallop permits. It also would not have any negative impacts the general category and limited access scallop fleets since incidental bycatch is not expected have a significant impact on the scallop fishing mortality.

5.4.18 More Timely Integration of Data (3.2)

Changing the start of the fishing year to either May 1 (Alternative 3.2.3) or to August 1 (Alternative 3.2.4) will reduce the time lag between the fishing year and the time when the survey data becomes available. The benefits of streamlining annual adjustment to take into account the recent scallop survey are discussed thoroughly in Section 5.18 (Impacts on the Scallop Resource). A more accurate estimation of TACs for the access areas will reduce uncertainty associated with the rotational area management, and an implementation time that coincides better with the fishing year will benefit the scallop fishery and have positive economic impacts on the participants. On the other hand, there will be some business risks associated when the fishing year starts at a later date as discussed below. Under the no action alternative (3.2.1) there will be no change in the scallop fishing year and the issuance date for general category permits. Since overfishing of the scallop resource due to mis-estimation of TACs and DAS

allocations needs to be corrected by the framework, the no action alternative (3.2.1) will result in more stringent regulations and a decline in scallop landings in future years, which will have negative impacts both on the scallop fishermen and on seafood consumers.

The change in the fishing year will, however, require a change in the business plans of the scallop fishermen and create some risks if plans do not materialize due to unforeseen conditions. Presently, the fishing year begins at a time when meat-weight of scallops begins to increase and a higher yield per unit effort could be obtained from scallop fishing. As a result, the vessels start using their day-at-sea based on the current resource and market conditions and fishing costs (such as fuel prices). If the fishing year starts in May, the vessel owners may need to postpone part of their day-at-sea allocations until the following March, since 15% to 18% of scallops are usually landed during the months of March and April. If the fishing year starts in August, they will need to reserve about half-of-their day-at-sea allocations until August of the next year, since they generally land more than half of the scallops during these five months from March to August (Table 1 and Table 2). If during these months, the resource and market conditions turn out to be less favorable than they expected a year ago, for example, if scallop prices or catch per-unit effort decline due external factors, they will incur a loss from not using them in earlier months. Also unforeseen conditions, such as a vessel breakdown, illness, or unfavorable weather could affect how many of the day-at-sea allocations could be used at the end of the fishing year. Present regulations allow a vessel to carry over 10 days-at-sea to the next fishing year. Therefore, if a vessel could not use more than 10 days of its day-at-sea allocation at the end of the fishing year due to unforeseen conditions, it will face a decline in revenue unless there is a change in regulations to take into account such conditions. In other words, starting the fishing year at a later date will require longer term planning and will create some risks due to reduced predictability of the resource and market conditions over a longer horizon. Negative impacts associated this change could decline over time, however, as the vessel-owners gain experience with the new fishing year and learn to adjust their business plans more efficiently to the new conditions. Certainly, changing the fishing year to May 1, rather than to August 1, will reduce these risks, even though the later date will allow more time for recent survey results to become available to management. Even though there could be some short-term decline in producer benefits if landings do not occur under the most optimal conditions due to the reasons discussed above, there is no question that more accurate estimation of area TACs and day-at-sea allocations will improve scallop yield over the long-term, increase revenues, and reduce the business costs associated with constantly changing regulations. Therefore, the positive economic impacts of changing the fishing year are expected to outweigh the negative impacts in some circumstances when the scallop resource and market conditions turn out to be less favorable than expected.

Changing the general category permit to March 1 to be in line with the limited access fishery (3.2.1.1) would allow better estimation of the number of participants and the level of effort in the fishery, and allocation of TAC. It would create complications for the general category fleet, however, many of whom participate in other fisheries which have the May 1 start date. Changing the fishing year to May 1 (3.2.2) would create consistency without any costs to the general category fishermen.

Table 178. Distribution of scallop landing by limited access vessels by month and calendar year

MONTH	2000	2001	2002	2003	2004	2005
1	6%	4%	3%	3%	2%	5%
2	5%	5%	4%	5%	5%	4%
3	6%	6%	6%	7%	8%	7%
4	9%	10%	10%	8%	10%	11%
5	14%	13%	12%	13%	12%	14%
6	12%	11%	13%	14%	13%	13%
7	11%	13%	12%	13%	10%	13%
8	11%	9%	12%	10%	9%	10%
9	8%	8%	9%	7%	7%	8%
10	8%	8%	7%	10%	6%	5%
11	5%	6%	6%	7%	9%	5%
12	5%	6%	5%	4%	6%	4%
Grand Total	100%	100%	100%	100%	100%	100%

Table 179. Distribution of scallop landing by limited access vessels by period

Period	2000	2001	2002	2003	2004	2005
March-Apr.	15%	16%	16%	15%	18%	18%
March-July	52%	53%	53%	55%	53%	58%
Aug.-Feb.	48%	47%	47%	45%	47%	42%
Grand Total	100%	100%	100%	100%	100%	100%

5.4.19 Trawl gear restriction (3.3.1)

Clarification of trawl gear restriction for vessels fishing under a multispecies or monkfish DAS will have positive economic impacts on those general category vessels that catch scallops only incidentally compared to no action. Since vessels targeting scallops with a net are still restricted to a 144 ft. net sweep, this alternative will not have negative impacts on scallop resource or negative economic impacts on the general category fishery.

5.4.20 Possession limit of 50 bushels (3.3.2)

Setting the possession limit to 100 bushels east of the demarcation line will have positive economic impacts on the general category vessels that are able to shuck before they reach the demarcation line. Since 50 bushels is usually less than 400 pounds of scallop meat, under no action alternative the vessels will be either in violation if they have more than 50 bushels on board or will risk the risk of landings less than 400 lb. scallops per trip. While this alternative could allow a vessel to catch more than 50 bushels or 400 pounds, the vessel would have to discard any additional catch before crossing the demarcation line. This could reduce non-harvest mortality and have additional positive impacts on scallop biomass and on net economic benefits from the scallop resource.

5.4.21 APPENDIX for economic analyses: Data and methods

5.4.21.1 Estimation of ex-vessel prices

Fish prices constitute one of the important channels through which fishery management actions affect fishing revenues, vessel profits, consumer surplus, and net economic benefits for the

nation. The degree of change in ex-vessel price in response to a change in variables affected by management, i.e., scallop landings and meat count, is estimated by a price model, which also takes into account other important determinants of price, such as disposable income of consumers and price of imports. This report develops a new scallop price model that estimates price by major meat count categories in order to capture the impacts of changes in the size composition of scallops, especially since 1999. In addition, this new model takes into account the impact of scallop exports, which is on the rise in recent years, on the domestic price of scallops. Given that there could be many variables that could affect the price of scallops, it is important to identify the objectives in price model selection: These objectives are as follows:

- To develop a price model that uses inputs of the biological model and available data. For example, using an annual model based on annual landings and prices, rather than a model based on monthly landings and prices since the biological model usually does not predict monthly landings.
- To select a price model that will predict prices within a reasonable range without depending on too many assumptions about the exogenous variables. For example, the import price of scallops from Japan could impact domestic prices differently than the price of Chinese imports, but making this separation in a price model would require prediction about the future import prices from these countries. This in turn would complicate the model and increase the uncertainty regarding the future estimates of domestic scallop prices. For these reasons, it is important to minimize the number of variables that require speculations about their likely future values.

In the previous SAFE reports and Scallop Amendment and Frameworks, the average ex-vessel price for scallops was estimated from an annual price model as a function of total landings, average meat count of scallops landed, disposable income of consumers, and average import prices. In general, the price of scallops is expected to be inversely related to the landings, and to the meat count, but to vary in the same direction with the price of its substitutes, i.e., import prices in this case. An increase in disposable income, however, is expected to increase the demand, therefore the price of scallops. Historical observation presented above for the period 1982-2004 indicated that annual ex-vessel prices in fact varied in response to changes in domestic landings, import prices, and the size of scallops (meat count).

Collection of price data by market category of scallops since 1998, however, made it possible to improve the price model to better capture the changes in the size composition of scallops, especially in recent years as discussed above. It is expected that this trend will continue in the future with 10-20 count and under 10 count (U10) scallops dominating the landings. For these reasons, it is important to explore possible changes in scallop prices by size category in response to an increase in the supply of larger scallops relative to smaller ones.

In addition to the changes in size composition and landings of scallops, other determinants of ex-vessel price include level of imports, import price of scallops, disposable income of seafood consumers, and the demand for U.S. scallops by other countries. The main substitutes of sea scallops are the imports from Canada, which are almost identical to the domestic product, and imports from other countries, which are generally smaller in size and less expensive than the

domestic scallops. An exception is the Japanese imports, which have a price close to the Canadian imports and could be a close substitute for the domestic scallops as well.

The ex-vessel price model estimated below includes the price, rather than the quantity of imports as an explanatory variable, based on the assumption that the prices of imports are, in general, determined exogenously to the changes in domestic supply. This is equivalent to assuming that the U.S. market conditions have little impact on the import prices. An alternative model would include estimating the price of imports according to world supply and demand for scallops, separating the impacts of Canadian and Japanese imports from other imports since U.S. and Canadian markets for scallops, being in proximity, are highly connected and Japanese scallops tend to be larger and closer in quality to the domestic scallops. The usefulness of such a simultaneous equation model is limited for our present purposes, however, since it would be almost impossible to predict how the landings, market demand, and other factors such as fishing costs or regulations in Canada or Japan and in other exporting countries to the U.S. would change in future years.

Since the average import price is equivalent to a weighted average of import prices from all countries weighted by their respective quantities, the import price variable takes into account the change in composition of imports from Canadian scallops to less expensive smaller scallops imported from other countries. This specification also prevents the problem of multi-colinearity among the explanatory variables, i.e., prices of imports from individual countries and domestic landings. In terms of prediction of future ex-vessel prices, this model only requires assignment of a value for the average price of imports, without assuming anything about the composition of imports, or the prices and the level of imports from individual countries. The economic impact analyses of the fishery management actions usually evaluate the impact on ex-vessel prices by holding the average price of imports constant. The sensitivity of the results affected by declining or increasing import prices could also be examined, however, using the price model presented in this section.

The price model presented below estimates annual average scallop ex-vessel price by market category (PEXMRKT) as a function of:

- Meat count (MCOUNT)
- Average price of all scallop imports (PIMPORT)
- Per capita personal disposable income (PCDPI)
- Total annual landings of scallop minus exports (SCLAND-SCEXP)
- Percent share of landings by market category in total landings (PCTLAND)
- A dummy variable as a proxy for price premium for Under 10 count scallops (DU10).
- A dummy variable for 2004 to reflect the exogenous changes, such as the changes in the supply of Japanese and Canadian imports due to unexpected factors.

Because the data on scallop landings and revenue by meat count categories were mainly collected since 1998 through the dealers' database, this analysis includes the 1998-2004 period and five meat categories. All the price variables are corrected for inflation and expressed in 2004 prices by deflating current levels by the consumer price index (CPI) for food. Personal disposable income is adjusted for inflation by deflating the nominal values with implicit price

deflate for consumer expenditures. The ex-vessel prices are estimated in semi-log form to restrict the estimated price to positive values only as follows:

Log (PEXMRKT) = f(MCOUNT, PIMPORT, PCDPI, SCLAND-SCEXP, PCTLAND, DU10)

The coefficients of this model are shown in Table 181. The estimated model provides a good fit to the actual data for annual ex-vessel prices as
Table 180 indicates. The F-test shows that the overall relation is statistically significant (P<0.0001), meaning that the explanatory variables as a whole have a significant influence on ex-vessel price. Adjusted R^2 indicates that changes in meat count, composition of landings by size of scallops, domestic landings net of exports, average price of all imports, disposable income, and price premium on under 10 count scallops explain 87 percent of the variation in ex-vessel prices by market category. Figure 48 and Table 182 also verify that the estimated values of ex-vessel prices closely track the actual values.

Table 180. Regression results for price model

Regression Statistics			
Multiple R	0.94		
R Square	0.89		
Adjusted R Square	0.86		
Standard Error	0.08		
Observations	35.00		
ANOVA			
	Degrees of Freedom	**Sum of Squares**	**Significance F**
Regression	7	1.54	P<0.0001
Residual	27	0.19	
Total	34	1.73	

Table 181. Coefficients of the Price Model

Variables	Coefficients	Standard Error	t Stat
INTERCEPT	-1.534	1.847	-0.831
MCOUNT	-0.005	0.001	-3.369
PIMPORT	0.017	0.071	0.241
PCDPI	0.043	0.020	2.093
SCLAND-SCEXP	-0.024	0.006	-3.943
DU10	0.061	0.054	1.127
PCTLAND	-0.311	0.086	-3.627
D2004	0.140	0.070	2.010

All of coefficients of the explanatory variables have the expected sign, and they are statistically significant at least at the 5% level of significance, except for price of imports, and dummy variable for under-10 count scallops, which were kept in the model for theoretical reasons. There has been little change in import prices during the period of analysis (1998-2005) compared to other variables explaining price, which explains the low t-statistics for this variable. When the scallop price model included a longer time-series (1982 on) as presented in SAFE 2000 report and later in Amendment 10, FEIS, the coefficient for the import price was statistically significant. The dummy variable reflecting the price premium on under 10 count scallops is statistically significant at the 22% level, however.

In summary, these empirical results verify that the ex-vessel price of scallops is related inversely to the domestic supply, net of exports, and increase as landings decrease or decrease as landings increase. The price per pound of scallops is expected to increase as the meats per pound decrease. Negative sign for the meat count variable (MCOUNT), indicates that when other factors held constant, the price in fact increased with the size of scallops. On the other hand, scallop price by market category is affected by the relative abundance or supply of that size category relative to total scallop landings. The negative sign for PCTLAND indicates that it is possible for smaller scallops to command a similar or even higher price in some circumstances if their supply declines to the scarcity levels in domestic markets. Positive sign and relatively high t-statistics for per capita income imply that an increase in the income of consumers will have a positive impact on the price of scallops for all market categories.

Overall, the model is successful in estimating average prices by market category during the 1998-2004 period, with a 3% difference at most from the actual price (Table 182). Similarly, predicted scallop price as an average of all market categories track very closely the actual annual price for scallops, with negligible differences from actual values in any single year. These numerical results should be interpreted with caution, however, since the analysis covers only 7 years of annual data from a period during which the scallop fishery underwent major changes in management policy including area closures, controlled access, and rotational area management.

Figure 48. Actual and predicted annual ex-vessel price

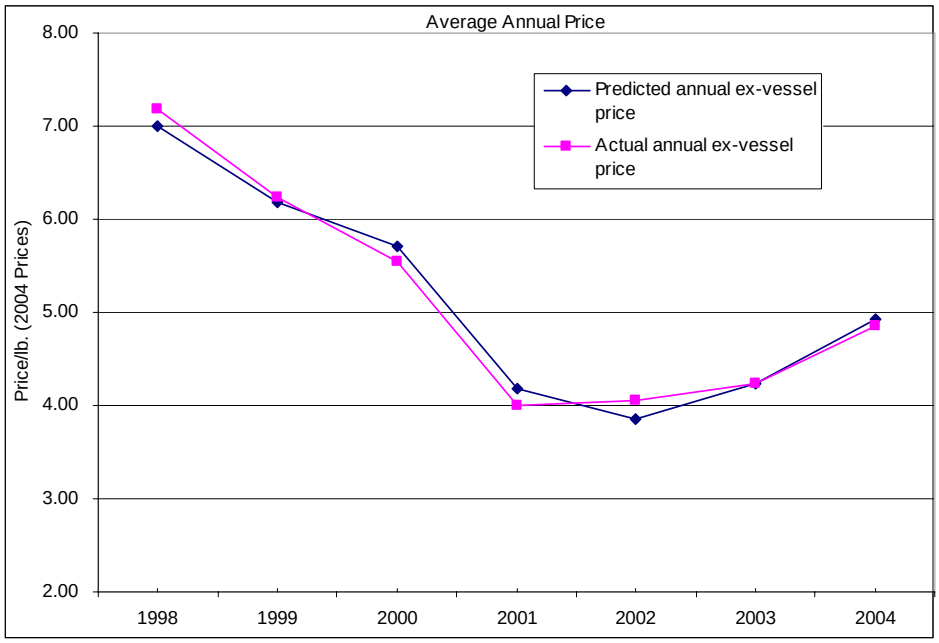


Table 182. Average predicted and actual ex-vessel price during 1998-2004

Market Size Category	Actual Price	Predicted Price	Percent Difference
Under 10 count	6.47	6.37	-1.6%
11-20 count	5.40	5.55	2.9%
21-30 count	5.08	4.93	-3.0%
31-40 count	5.17	5.21	0.8%
41 plus count	5.05	5.04	-0.3%

5.5 SOCIAL IMPACTS

Social impacts consider changes made to how people—as individuals and as members of households and communities—live and work, and impacts on their values and norms. This can include their overall quality of life, safety, community sustainability, and distribution of and access to resources. The following analyses concentrate on an identified 41 ports or communities that could be most affected by Amendment 11, given the level of landings at port and county levels, but also speak to social impacts more broadly as they affect all participants in the fishery. A fishery management plan that proposes limited access system as an option, moreover, must consider not only the cultural and social framework relevant to the fishery and any affected fishing communities, but also present and historic participation in and dependence on the fishery, and the economics of the fishery [MSA Section 303(b)(6)]. This is complicated for general category scallop fishery, given that it is a heterogeneous fishery that has seen marked changes since the category was first created in 1994 by Amendment 4. As the social impact section in Amendment 4 noted then, many of the smaller-scale fishing operations that did not qualify for limited access were concerned about the lack of accurate records for small or seasonal vessels. This document also noted the tendency to include scallop fishing in the annual rounds of many small-scale fishing operations, particularly in Maine and New England (NEFMC, 1994: pages 162-63). Thus the fishery is part of fishermen's harvesting flexibility, or what could be called cyclical rounds of fishermen, with switching between fisheries depending on the cyclicality of resources. In other words, many different kinds of fishing operations depend on the scallop resource, in different ways.

5.5.1 Limited Entry (3.1.1 and 3.1.2)

The open access nature of the general category fishery has been discussed at length at the Council level, with many limited access and/or established fishermen concerned about an influx of new effort into scalloping; if such unlimited access does negatively impact the biomass then negative social and community impacts in the long-term would ensue on both fleets. Yet an open access fishery also represents the opportunity for established captains or crew from the limited access fishery to branch out into their own operations. That is to say, new boats may represent new capital but not necessarily new labor into the fishery; an open access fishery may be the only avenue for such new entrants into fishing and thus the sustainability of fishing communities, all else being the same. The cultural and social framework of the fishery is marked by concerns about equity, and community and generational stability, which are integral to the understandings and motivations of many fishermen in the affected regions (see for example Clay 1996, Olson 2006). Additionally, many other participants are concerned to preserve the historical characteristics of the fishery as composed primarily of small, owner-operated day boats. Thus limited access can challenge the cultural values of many fishermen, if it is seen as inequitably based, or if it is seen as threatening the sustainability of fishing families and communities.

5.5.1.1 Qualifications (3.1.2.1, 3.1.2.2, and 3.1.2.3)

The different qualification criteria and time periods will be discussed together and weighted by the different potential qualification amounts, in the discussion of allocation access (3.1.2.4) below. This section discusses the methodology used to understand potential impacts at the port level. The initial list of potential vessel qualifiers was assigned to different homeports according

to the homeport listed on the vessel's most recent permit application in order to approximate where the impacts from the different qualification scenarios might be concentrated. This should be considered an approximation at best, for vessels can and do change their homeport locations; moreover, over ¼ of qualifying vessels did not have an active permit for any fishery during 2006 so their actual homeport location may be likely to change, should they be sold or transferred. To gauge impacts at the homeport level, it was not possible to look just at potential allocations in absolute terms, since these would be scaled according to resource conditions, TAC, and total share to the general category fishery. Instead, the analysis considers a homeport's share of allocation to the total allocation to the entire fishery (i.e. the total allocation to vessels in the same homeport, divided by the total allocation), relative to its share of homeport revenue (i.e. landed value accruing to the vessels who homeport there, divided by all general category landed value in 2005). So a homeport that received the same share of allocation as its share of landed value would have a score of 0, meaning that the regulation had no impact on its relative share, all else being equal. This is then further weighted by the homeport's dependency on the general category scallop fishery, so that a port that has little dependence on this fishery would receive a low score, regardless of the change in relative share from the regulation. In sum, the weighted scores should show possible relative change from the regulations, weighted by dependency (Table 183 and Table 184).

5.5.1.2 Allocation (3.1.2.4)

An individual allocation (3.1.2.4.1) could positively impact flexibility for fishermen to fish when they wanted without fear of derby fishing, particularly for those fishermen who concentrate or more consistently rely on scallop fishery. It could negatively impact those fishermen who use scallop fishing as part of annual rounds, where landings from the fishery may vary considerably from year to year. An individual allocation also negatively impacts the cultural values placed on individual fishing success to the extent that it caps landings, and to the extent that it lays the groundwork for transferability, as such a measure goes against the grain for many fishermen in the Northeast (see introduction to Social Impacts Section). Additionally, allocation of quota in trips rather than in pounds further favors those fishermen who focus on scallop fishing and who tend to land the maximum trip limit, but negatively affects those who catch scallops as bycatch or do not typically land the maximum pounds per directed trip. The modification of the trip limit to 2000 lbs (3.1.2.4.1.1) would enable qualifying general category vessels to minimize the number of trips and hence trip expenses such as fuel, but it would be biased towards larger hulled vessels and larger crews and it could alter the day-boat and small-scale nature of the fishery.

Table 183 looks at changes in the relative share of scallops landed by general category vessels, comparing the homeports share of total allocated scallop pounds (by the 'best year, capped' contribution factor) to the homeports share of general category scallop revenues in 2005. Ports are in order of general category scallop landings, first by county and then by port. A positive number then implies that homeport would see a relative increase in allocated scallop pounds, compared to the most recent fishing year and weighted by the port's dependency on general category scallop landings. Again, this is an approximation at best, for the pounds allocated are not guaranteed and the vessels assigned to a given homeport may no longer actively fish in that port any longer. At best it may give an indication of the directionality and proportionality of possible changes.

Eleven ports see only relatively small (positive or negative) proportional changes. This includes ports with high landed value in absolute terms but low relative port dependency on general category scallop landings, like New Bedford and Cape May; or ports such as Point Pleasant with a fairly high dependency on general category scallop landings, but with current fishermen who have generally been active during the different qualification periods. Eight homeports could see possible positive impacts, in terms of proportionally higher allocations than their share of landings in 2005. For example, Barnegat Light would fare better with the two-year qualification period, implying more of its current fishing vessels have been fishing in only the past two years, and it also fares better with the annual 5000lb qualification, possibly implying that its general scallop fishermen are more dependent on or concentrate more on scallops. For ports such as Barnegat Light, they would see slightly reduced but still positive changes overall if the allocations are weighted by years in the fishery. It is important to keep in mind that these relative impacts are based on a fishing year that was not typical for general category landings, and impacts by port will vary depending on what years are used in this type of analyses.

Fourteen ports show negative proportional changes; of these, those homeports most significant in terms of absolute and relative general category scallop landings, are Atlantic City NJ, Beaufort NC, Ocean City MD, Sneads Ferry NC, New Bern NC, Swan Quarter NC, Tilghman MD. In all cases, general category vessels homeported in these ports either saw zero or very low scallop landings before the control date, hence their proportionally negative impact. Most of these show further negative changes if the allocations are also weighted by years in the fishery (see Table 2). Finally, eight homeports show varied impacts depending on the qualification time period and amount chosen. Some (such as Sandwich MA, Shinnecock NY, Gloucester MA, and Jonesport ME) would be positively impacted by the 11 and 5-yr qualification periods but negatively impacted by the 2-yr qualification period, implying that fishermen homeported in these ports have not fished as much during the past two years as they have in the past. They are more positively impacted when allocations are weighted by years in the fishery. Ports like South Bristol ME would be negatively impacted only by the 5000lb option, implying that their general category fishermen have been active more as seasonal scallop fishermen. Others, like Belhaven and Bayboro NC would be positively impacted by the 2-year period but negatively impacted by the 11 and 5-yr period, implying their fishermen are overall fairly recent, as also shown in Table 184 showing allocations weighted by years in the fishery.

These results would be generally similar for the allocation contribution factor based on best year but not capped to 50,000 (Alternative 3.1.2.3.3). The cap affects only three vessels from three different ports, and only one vessel is significantly affected (for the 11 and 5-yr periods but not the 2-yr period). Removing the cap could result in slightly more positive impacts on Shinnecock, NY if the 11 or 5-yr qualification periods are chosen, but otherwise would have little impact. This alternative is intended to reduce negative impacts on individual vessels due to inaccuracies in the landings data.

Table 183 - Relative changes in general category scallop landings weighted by homeport dependency, for individual fishing quota (3.1.2.4.1)

County, ST (GC scallop landings)	Home Port	Relative and Proportional Impact at Home Port Level									Depend-ency*	General category scallop landings, 2005
		11-year qualification			5-year qualification			2-year qualification				
		100	1000	5000	100	1000	5000	100	1000	5000		
Ocean NJ (9,763,422)	Barnegat Light	5	6	12	8	9	14	21	23	29	36	6,651,129
	Point Pleasant	-1	-1	2	0	0	2	6	6	10	23	2,532,974
	Pt. Pleasant Beach	-1	-1	-1	-4	-4	-8	-5	-5	-8	8	149,251
Barnstable MA (4,161,766)	Provincetown	62	65	79	72	75	84	42	43	41	58	1,485,382
	Chatham	25	27	34	31	32	37	7	7	13	38	813,673
	Wellfleet	31	33	43	36	39	44	42	45	47	90	564,263
	Barnstable	5	6	8	7	7	9	-1	-1	-3	18	500,550
	Sandwich	71	71	55	70	72	60	-41	-49	-46	79	259,839
Cape May NJ (3,930,850)	Cape May	-3	-3	-3	-3	-3	-3	-2	-2	-2	5	3,089,329
	Wildwood	-2	-2	-1	-1	-1	0	6	6	7	21	678,469
Atlantic NJ (3,594,082)	Atlantic City	-12	-12	-12	-12	-12	-12	-12	-12	-12	12	2,525,543
Bristol MA (3,057,259)	New Bedford	1	1	1	1	1	1	1	1	1	1	2,731,576
	Westport	-31	-31	-48	-30	-29	-48	-36	-35	-48	48	287,339
Suffolk NY (2,783,760)	Shinnecock	20	21	20	22	22	22	-14	-15	-22	34	980,187
	Montauk	4	4	5	5	5	5	5	4	5	7	507,524
	Greenport	-7	-9	-12	-7	-8	-12	-11	-12	-12	12	115,353
Carteret NC (2,782,220)	Beaufort	-36	-36	-33	-34	-34	-32	-28	-28	-26	63	1,903,030
Hyde NC (1,871,928)	Swan Quarter	-14	-14	-12	-13	-13	-11	-8	-8	-6	28	866,632
Worcester MD (1,790,261)	Ocean City	-41	-40	-39	-39	-39	-38	-42	-42	-43	59	1,790,261
Beaufort NC (1,745,278)	Belhaven	-9	-8	-2	-5	-4	0	10	11	16	59	1,661,893
Essex MA (1,552,064)	Gloucester	14	12	8	4	2	1	-1	-3	-10	39	1,282,849
	Rockport	60	63	36	69	71	38	94	97	64	41	127,604
Newport News VA (1,505,236)	Newport News	-6	-6	-6	-6	-6	-6	-6	-6	-6	6	1,505,236
Washington ME (1,501,709)	Lubec	53	57	59	66	69	65	72	76	70	96	646,565
	Jonesport	66	77	44	43	46	48	-54	-54	-54	54	282,964
Brevard FL (1,452,124)	Cape Canaveral	-11	-11	-7	-10	-9	-5	0	1	6	41	1,452,124
Pamlico NC (1,383,571)	Bayboro	-3	-2	4	0	1	6	12	13	19	38	372,854
	Oriental	-4	-5	-5	-4	-5	-5	-3	-4	-3	9	275,863
Hancock ME (1,192,508)	Stonington	20	21	27	-14	-14	-15	5	5	12	99	791,381
Onslow NC (1,101,916)	Sneads Ferry	-46	-45	-36	-41	-40	-33	-23	-21	-12	100	1,101,916
Craven NC (960,993)	New Bern	-12	-12	-12	-12	-12	-12	-12	-12	-12	12	960,993
Norfolk (City) VA (668,751)	Norfolk	2	2	3	3	3	3	5	5	6	4	668,751
Dare NC (605,119)	Wanchese	0	-1	-1	0	0	-1	2	2	1	6	595,562
Talbot MD (590,418)	Tilghman	-100	-100	-100	-100	-100	-100	-100	-100	-100	100	590,418
York ME (530,157)	Kittery	-93	-92	-98	-98	-98	-98	-98	-98	-98	98	414,110
Rockingham NH (491,455)	Portsmouth	-10	-9	-12	-9	-8	-12	-15	-15	-18	25	437,550
Glynn GA (476,036)	Brunswick	60	63	89	73	76	96	129	132	159	100	476,036
Monmouth NJ	Belmar	121	126	160	138	143	169	208	213	247	78	187,471

(439,728)												
Lincoln ME (411,719)	South Bristol	1	3	-19	-2	0	-18	19	21	-2	66	313,464
Washington RI (313,041)	Point Judith	3	3	1	3	2	2	1	0	0	2	254,479
Newport RI (260,648)	Newport	-8	-11	-13	-11	-13	-13	-11	-13	-13	13	209,946

Years are fishing years. Only includes homeport counties that in 2005 had at least 250,000 in general category scallop landings, and homeports with at least 100,000 in general category scallop landings and at least three general category vessels. Dependency means % of general category scallop landings to total homeport, 2005 (i.e. the landed value of those vessels who homeport in that community).

Table 184 - Best Years Indexed by years active, additional impact on 11-yr period.

	q11_100		q11_1000		q11_5000	
Home Port (County, ST)	chgindexa	chgindexb	chgindexa	chgindexb	chgindexa	chgindexb
Atlantic City (Atlantic NJ)	-0.08	-0.21	-0.08	-0.21	*	*
Barnegat Light (Ocean NJ)	-0.01	-0.02	-0.01	-0.02	-0.01	-0.01
Barnstable (Barnstable MA)	0.07	0.18	0.07	0.19	0.08	0.20
Bayboro (Pamlico NC)	-0.03	-0.08	-0.03	-0.08	-0.03	-0.08
Beaufort (Carteret NC)	-0.01	-0.03	-0.01	-0.03	-0.01	-0.02
Belhaven (Beaufort NC)	-0.08	-0.19	-0.08	-0.19	-0.08	-0.20
Belmar (Monmouth NJ)	0.00	0.00	0.00	0.00	0.00	0.00
Brunswick (Glynn GA)	-0.02	-0.06	-0.02	-0.05	-0.02	-0.05
Cape Canaveral (Brevard FL)	-0.07	-0.18	-0.07	-0.18	-0.07	-0.17
Cape May (Cape May NJ)	-0.01	-0.03	-0.01	-0.03	-0.01	-0.03
Chatham (Barnstable MA)	-0.01	-0.03	-0.01	-0.03	-0.01	-0.02
Gloucester (Essex MA)	0.03	0.07	0.03	0.08	0.04	0.10
Greenport (Suffolk NY)	-0.07	-0.17	-0.10	-0.25	*	*
Jonesport (Washington ME)	0.02	0.05	0.03	0.07	0.05	0.13
Kittery (York ME)	0.05	0.12	0.05	0.12	*	*
Lubec (Washington ME)	-0.06	-0.16	-0.06	-0.16	-0.06	-0.15
Montauk (Suffolk NY)	0.01	0.04	0.02	0.04	0.03	0.06
New Bedford (Bristol MA)	0.04	0.09	0.04	0.09	0.04	0.09
New Bern (Craven NC)	0.00	0.00	0.00	0.00	*	*
Newport News (VA)	-0.03	-0.08	-0.05	-0.12	-0.05	-0.12
Newport (Newport RI)	0.06	0.15	0.10	0.25	*	*
Norfolk (VA)	0.00	0.01	0.00	0.01	0.00	0.01
Ocean City (Worcester MD)	-0.06	-0.14	-0.06	-0.15	-0.07	-0.18
Oriental (Pamlico NC)	-0.02	-0.05	-0.05	-0.13	-0.05	-0.13
Point Judith (Washington RI)	0.03	0.07	0.04	0.10	0.06	0.15
Point Pleasant Beach (Ocean NJ)	0.08	0.19	0.08	0.19	0.10	0.25
Point Pleasant (Ocean NJ)	0.02	0.05	0.02	0.05	0.02	0.06
Portsmouth (Rockingham NH)	0.04	0.10	0.04	0.10	0.06	0.14
Provincetown (Barnstable MA)	0.08	0.19	0.08	0.19	0.08	0.20
Rockport (Essex MA)	0.01	0.01	0.01	0.01	0.04	0.09
Sandwich (Barnstable MA)	0.10	0.25	0.10	0.25	0.10	0.25
Shinnecock (Suffolk NY)	0.07	0.17	0.07	0.18	0.07	0.18
Sneads Ferry (Onslow NC)	0.01	0.03	0.01	0.03	0.01	0.03
South Bristol (Lincoln ME)	-0.05	-0.13	-0.05	-0.13	-0.05	-0.13
Stonington (Hancock ME)	0.01	0.04	0.02	0.04	0.02	0.06
Swan Quarter (Hyde NC)	-0.04	-0.09	-0.04	-0.09	-0.04	-0.09
Tilghman (Talbot MD)	*	*	*	*	*	*
Wanchese (Dare NC)	-0.03	-0.08	-0.03	-0.08	-0.05	-0.12
Wellfleet (Barnstable MA)	0.05	0.13	0.05	0.13	0.06	0.14
Westport (Bristol MA)	0.00	-0.01	0.00	-0.01	*	*
Wildwood (Cape May NJ)	0.00	-0.01	0.00	-0.01	0.00	-0.01

Scaling this individual allocation into two tiers (3.1.2.4.2) would not impact the vessels that qualify for full-time status, since their trip limit would remain the same (and if the 5000 lb qualification option is chosen, then there will only be full-time vessels). It could however negatively impact those vessels that qualify only for part-time status, since they would be limited to 200 lb trips. As Table 185 shows for vessels qualifying with the 11-yr qualification period, such part-time vessels land the majority of their scallops on trips where scallops are in excess of

200 lbs. Moreover, the distribution of part-time and full-time permits is uneven. With the allocation of pounds being approximately 84-86% for full-time vessels, (depending on whether the 100 or 1000 lb option is chosen), the following ports have more vessels that would qualify for the part-time permit than on average for the east coast. The ports include: Atlantic City NJ, Gloucester MA, Greenport NY, Jonesport ME, Kittery ME, New Bedford MA, New Bern NC, Newport RI, Point Judith RI, Point Pleasant Beach NJ, Portsmouth NH, Rockport MA, Sandwich MA, Shinnecock NY, South Bristol ME, Wanchese NC, and Westport MA (see Table 186). If the vessels from these ports were limited to 200 pounds there could be negative impacts associated with that restriction. For the 100 lb option, Oriental NC also has higher than the norm of part-time allocated lbs (though not for the 1000 lb option). Scaling the individual allocation alternative into three tiers would be roughly similar at the port level as well, but some ports do see some differences (see Table 187). For example, Barnegat Light would see positive impacts, but not as positive as the individual allocation alternative (Alternative 3.1.2.4.1) without tiering, implying that the fishermen homeported there tend to land at the higher end of the tier, but would see their allocation reduced by the average allocation/tier.

Table 185 - Percentage of scallop trips with greater than 200 lbs of scallops landed, fishing years 1995-2004 (for vessels qualifying under the 11-yr qualification period).

	Number of vessels	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Full-time tier vessels	203	88	78	67	67	67	92	91	89	91	95
Part-time tier (with 100lb criteria chosen)	502	90	59	63	42	67	76	65	63	72	86
Part-time tier (with 1000lb criteria chosen)	256	92	62	62	42	67	78	70	65	68	89

Table 186 - Homeports with percentage of allocated lbs to full-time permit tier (Alternative 3.1.2.4.2) (11-yr qualification period, 100 and 1000 lb options respectively)

Atlantic City, NJ	0	0	Chatham, MA	95	96	Newport, RI	0	0	Sandwich, MA	75	77
Barnegat Light, NJ	99	99	Gloucester, MA	75	80	Norfolk, VA	98	98	Shinnecock, NY	84	84
Barnstable, MA	93	94	Greenport, NY	0	0	Ocean City, MD	91	93	Sneads Ferry, NC	100	100
Bayboro, NC	100	100	Jonesport, ME	64	65	Oriental, NC	72	100	South Bristol, ME	58	58
Beaufort, NC	94	95	Kittery, ME	0	0	Point Judith, RI	53	65	Stonington, ME	88	90
Belhaven, NC	95	96	Lubec, ME	87	87	Point Pleasant Beach, NJ	84	84	Swan Quarter, NC	98	100
Belmar, NJ	100	100	Montauk, NY	87	91	Point Pleasant, NJ	95	96	Wanchese, NC	77	81
Brunswick, GA	99	100	New Bedford, MA	73	77	Portsmouth, NH	71	71	Wellfleet, MA	92	93
Cape Canaveral, FL	97	97	New Bern, NC	0	0	Provincetown, MA	95	95	Westport, MA	0	0
Cape May, NJ	87	87	Newport News, VA	85	100	Rockport, MA	63	63	Wildwood, NJ	91	93

Table 187 - Relative changes in general category scallop landings weighted by homeport dependency, for individual allocation alternative with three permit types (3.1.2.4.3)

County, ST (GC scallop landings)	Home Port	Relative and Proportional Impact at Home Port Level									Depend-ency*	General category scallop landings, 2005
		11-year qualification			5-year qualification			2-year qualification				
		100	1000	5000	100	1000	5000	100	1000	5000		
Ocean NJ (9,763,422)	Barnegat Light	-1	0	5	2	3	7	15	16	21	36	6,651,129
	Point Pleasant	-3	-3	-1	-3	-3	-1	4	3	6	23	2,532,974
	Pt. Pleasant Beach	0	1	1	-6	-5	-8	-7	-6	-8	8	149,251
Barnstable MA (4,161,766)	Provincetown	48	52	64	57	61	69	31	33	36	58	1,485,382
	Chatham	11	11	17	16	16	20	3	3	8	38	813,673
	Wellfleet	31	33	47	39	43	53	51	56	66	90	564,263
	Barnstable	5	6	7	7	8	8	-8	-7	-9	18	500,550
	Sandwich	85	89	84	92	102	90	9	-14	-7	79	259,839
Cape May NJ (3,930,850)	Cape May	-3	-3	-3	-3	-3	-3	-2	-2	-2	5	3,089,329
	Wildwood	2	3	6	5	5	7	13	14	16	21	678,469
Atlantic NJ (3,594,082)	Atlantic City	-12	-12	-12	-12	-12	-12	-12	-12	-12	12	2,525,543
Bristol MA (3,057,259)	New Bedford	1	1	1	1	1	1	1	1	1	1	2,731,576
	Westport	-42	-38	-48	-41	-37	-48	-43	-40	-48	48	287,339
Suffolk NY (2,783,760)	Shinnecock	13	16	14	16	17	16	-18	-17	-26	34	980,187
	Montauk	7	6	7	8	7	7	6	5	6	7	507,524
	Greenport	-5	-9	-12	-4	-9	-12	-9	-12	-12	12	115,353
Carteret NC (2,782,220)	Beaufort	-43	-42	-41	-41	-40	-40	-39	-39	-39	63	1,903,030
Hyde NC (1,871,928)	Swan Quarter	-13	-13	-11	-12	-12	-10	-6	-7	-4	28	866,632
Worcester MD (1,790,261)	Ocean City	-40	-39	-37	-38	-38	-36	-43	-42	-43	59	1,790,261
Beaufort NC (1,745,278)	Belhaven	-4	-3	4	1	2	6	21	22	28	59	1,661,893
Essex MA (1,552,064)	Gloucester	15	12	7	8	5	4	-10	-12	-18	39	1,282,849
	Rockport	58	68	63	68	79	69	110	123	111	41	127,604
Newport News VA (1,505,236)	Newport News	-5	-6	-5	-6	-6	-6	-6	-6	-6	6	1,505,236
Washington ME (1,501,709)	Lubec	83	94	104	99	111	114	105	116	119	96	646,565
	Jonesport	93	120	80	75	83	85	-49	-54	-54	54	282,964
Brevard FL (1,452,124)	Cape Canaveral	-15	-14	-11	-13	-13	-10	-4	-4	1	41	1,452,124
Pamlico NC (1,383,571)	Bayboro	-8	-9	-5	-5	-7	-3	4	5	10	38	372,854
	Oriental	-2	-4	-4	-2	-4	-3	0	-2	-1	9	275,863
Hancock ME (1,192,508)	Stonington	36	35	43	2	5	9	38	39	49	99	791,381
Onslow NC (1,101,916)	Sneads Ferry	-47	-45	-37	-42	-41	-34	-22	-20	-11	100	1,101,916
Craven NC (960,993)	New Bern	-12	-12	-12	-12	-12	-12	-12	-12	-12	12	960,993
Norfolk (City) VA (668,751)	Norfolk	3	3	4	3	3	4	6	6	7	4	668,751
Dare NC (605,119)	Wanchese	-2	-2	-3	-1	-2	-3	0	0	-1	6	595,562
Talbot MD (590,418)	Tilghman	-100	-100	-100	-100	-100	-100	-100	-100	-100	100	590,418
York ME (530,157)	Kittery	-94	-91	-98	-98	-98	-98	-98	-98	-98	98	414,110
Rockingham NH (491,455)	Portsmouth	-7	-6	-6	-6	-4	-5	-9	-10	-11	25	437,550
Glynn GA (476,036)	Brunswick	92	93	124	108	108	132	178	178	210	100	476,036
Monmouth NJ (439,728)	Belmar	109	114	145	125	129	154	194	199	231	78	187,471
Lincoln ME	South Bristol	-26	-17	-32	-26	-20	-30	-11	-3	-16	66	313,464

(411,719)												
Washington RI (313,041)	Point Judith	4	2	0	4	1	1	3	0	0	2	254,479
Newport RI (260,648)	Newport	-2	-11	-13	-6	-13	-13	-8	-13	-13	13	209,946

Years are fishing years. Only includes homeport counties that in 2005 had at least 250,000 in general category scallop landings, and homeports with at least 100,000 in general category scallop landings and at least three general category vessels. Dependency means % of general category scallop landings to total homeport, 2005 (i.e. the landed value of those vessels who homeport in that community).

The stand alone alternative for the individual transferable quota (3.1.2.4.4), which would allow purchasing and trading of quotas from vessels that have historical landings, would create flexibility for those fishermen not receiving any or too little quota. However, a tradable quota system also could result in negative social impacts that have been identified with traditional ITQs, such as industry consolidation (despite the cap) with its potentially negative impacts on community sustainability and values.

The stand alone alternative with a quarterly hard TAC (3.1.2.4.5) could lessen the impacts on those fishermen that have moved cyclically in and out of the scallop fishery, albeit the two permit system would have the same impacts as noted above for 3.1.2.4.2. Additionally, the hard TAC could create conditions for derby fishing, though the quarterly accounting could lessen that tendency. However, while the fleet wide TAC (3.1.2.4.6) would not impact full and part time scallop fishermen differently, it has none of the controls of the previous measures and could result in derby fishing that has long-term negative consequences for the fishery as a whole, and additional negative impacts on small or less mobile vessels who do not fish in all bottoms or in all weather. The TAC with quarterly accounting (3.1.2.4.7), again, could lessen that tendency towards derby fishing somewhat.

5.5.1.3 Permit Provisions (3.1.2.5)

Fishing History and Permit Transfers (3.1.2.5.1) are designed to follow the Consistency Amendment. Given however that the general category fishery has been dominated by many small vessels, the initial qualification based on dealer reports may be more difficult for these smaller vessels unless VTR reports are given some consideration, given dealer records are not always specified at the vessel level for smaller vessels. The qualification and retention of permits specified in the sale of vessels (3.1.2.5.1.2) would enable flexibility for fishing participants in line with already negotiated sales, but without creating conditions of overcapacity, while under No Action (3.1.2.5.1.1), the history of a vessel is presumed to stay with the vessel regardless of pre-sale retention agreements, which would negatively affect the participants in these agreements.

Vessel Upgrades (3.1.2.5.2) and Vessel Replacements (3.1.2.5.3) have the potential to help sustain the small, day-boat, owner-operated character of the fishery and the communities that participate in it. The no-upgrade restriction (3.1.2.5.2.1), while positively impacting participants at the vessel level in the short-term, could have negative social consequences if it leads to overfishing or if it changes the small, day-boat character that is still preferred by participants overall, although if trip limits of 400 lbs continue this may be unlikely. The 10:10:20 upgrade restriction (3.1.2.5.2.2) would allow some restricted upgrading, which again could positively impact fishermen, especially given many general category fishermen participate in other fisheries as well throughout the year, while still preserving the day-boat fishery.

Provisions concerning the Stacking of Permits (3.1.2.5.4) address questions of vessel and fishery sustainability. Given the lack of data concerning the prevalence of owner-operations or fleet boats in the fishery, it is difficult to predict impacts with any precisions. If many vessels qualify and allocations are therefore low, it may be difficult for vessels that depend on the fishery to make a living from it, or sustain their business. Particularly if leasing is allowed, stacking of permits would help the viability of participants, in particular those who depend primarily on the fishery (3.1.2.5.4.3). However, stacking could lead to pressures for consolidation with possible negative impacts at the community level and negative impacts on cultural values emphasizing the small, day-boat character of the fishery, which No Action (3.1.2.5.4.1) would address. Both Voluntary Relinquishment of Eligibility (3.1.2.5.5) and Permit Splitting (3.1.2.5.6) measures would be in line with the Consistency Amendment, and would not have any foreseeable major social impacts, albeit any positive ones associated with reducing capacity, and negative ones associated with the difficulties for young community members to gain access to the fishery, and ensuing issues for community sustainability. Likewise, Permit Renewals and Confirmation of Permit History (3.1.2.5.7) would enable fishermen to retain fishing history privileges, positively impacting their fishing businesses and the communities that depend on them. The Percentage Ownership Restriction (3.1.2.5.8) would stem some of the pressures towards consolidation, with positive implications for community sustainability and for those who value the small day-boat nature of the fishery; again, it is difficult to ascertain that with precision, given the lack of data concerning the prevalence of owner-operations or fleet boats in the fishery.

5.5.1.4 Measures to reduce incentive to use trawl gear (3.1.2.6)

Almost ¾ of all general category scallops trips in 2005 involved the use of the scallop dredge (Table 188). Using the longest time period for qualification (11 years) and the most inclusive qualification criteria (one trip of 100 lbs or more), most vessels would not be negatively affected by the option to prohibit a vessel from switching to trawl if it qualified using dredge gear (3.1.2.6.2), compared to the No Action measure (3.1.2.6.1). Moreover, if trawl gear does in fact favor small scallops with negative consequences for biomass and the health of the fishery, then ensuring that the trawl fishery does not increase in the future, could have positive social impacts in the long-term. Of the 452 general category vessels whose landings are recorded in logbook records and appear to qualify via at least one of the qualification criteria, over half (185) used only scallop or other dredge to land scallops, and 195 vessels used trawl gear only. This leaves 72 vessels that used a combination of dredge and trawl during the 11-year qualification period to catch scallops. Of these vessels, most do not catch the majority of their scallops with trawl gear, so the rule would result in some loss of income and some inconvenience to fishermen on mixed trips. Five vessels saw the majority of their landings with trawl but also did use dredge during the qualification period as well. These vessels would be required to use dredge only so would be negatively affected by the ruling. However, in 2006 one of these vessels was using only dredge so may have already made the adjustments to this rule, and only one was fishing still with trawl (the other 3 showed no logbook landings of scallops in 2006). Impacts at the port level therefore would presumably be minimal, but some impacts are expected on an individual basis.

Table 188 - 2005 General category scallop trips by gear used (for all vessels)

Gear type	No. of Trips	Scallop lbs, total	Percent of scallop lbs
Dredge, Scallop	13,928	4,537,769	72.3
Dredge, Other	950	199,673	3.2
Scallop Trawl	2,153	769,739	12.3
Other Trawl	2,571	768,531	12.2
Misc. gear	1	863	0.0
		6,276,575	100.0

The lower possession limit for trawl vessels (3.1.2.6.3), or the measure to limit scallop trips to 5% of regulated species (3.1.2.6.4), could have less negative impact on trawl fishermen compared to 3.1.2.6.2, in that they could continue to use trawl on mixed trips without having to throw out all scallops, or haul out for new gear. At the port level, impacts are minimal (using the most inclusive, 11 year, 100lb qualification criteria), based on logbook records for fishing year 2005. Table 189 below shows the percentage loss for these different measures (3.1.2.6.3.1, a 250lb possession limit, 3.1.2.6.3.2, a 300lb possession limit, and the 5% regulation) compared to the value of general category in fishing year 2005. No measure had an impact of 10%, and only the 5% rule had a greater than 5% impact, yet on a port that had only 9% dependency on general category scallop landings. (Not all vessels that would qualify for a limited access general category permit showed landings during fishing year 2005, so it is unknown the degree to which this might over or understate port level impacts.)

Table 189 - Homeport level impacts from trawl measures

Homeport	General category scallop landings, 2005	Dependency	% impact from 3.1.2.6.3.1	% impact from 3.1.2.6.3.2	% impact from 3.1.2.6.4
Bayboro, NC	372,854	37.8	0	0	1
Beaufort, NC	1,903,030	62.8	3	2	1
Belhaven, NC	1,661,893	59.2	3	2	1
Cape Canaveral, FL	1,452,124	40.7	2	1	0
Montauk, NY	507,524	6.6	3	3	3
New Bedford, MA	2,731,576	1.4	1	0	0
Norfolk, VA	668,751	4.4	2	2	1
Oriental, NC	275,863	8.9	4	2	7
Point Pleasant Beach, NJ	149,251	8.1	3	2	0
Swan Quarter, NC	866,632	28.0	2	1	4
Wanchese, NC	595,562	5.9	1	1	0

2005 fishing year only; based on raw uncorrected data. Only includes homeport counties that in 2005 had at least 250,000 in general category scallop landings, and homeports with at least 100,000 in general category scallop landings and at least three general category vessels. Dependency means % of general category scallop landings to total homeport, 2005 (i.e. the landed value of those vessels who homeport in that community).

5.5.1.5 Sectors and Harvesting Cooperatives (3.1.2.7)

Cooperatives and sectors have the potential to provide flexible opportunities for participants to remain in the fishery under various biomass conditions, to create more participatory governance that can address such questions as capacity and other social issues in culturally appropriate ways. Thus there is the potential for positive social, economic, and ecological impacts to the degree that sectors/cooperatives are successfully run. As many scoping comments noted though, the fishery will be in some flux if a limited access measure is implemented, so the measure may be somewhat premature, but does allow the flexibility to pursue alternative management regimes in the future. However, as one scoping comment noted, depending on the amount and internal allocations within a sector, the historic characteristic of a day-boat fleet could be changed if the sectors members are able to fish like offshore boats on multiple day trips.

5.5.2 Hard Total Allowable Catch (3.1.3)

Although scooping comments revealed general support for different kinds of hard TAC, a fleet-wide TAC has the potential to create derby-fishing conditions, with all the negative social impacts that can ensue from unsafe fishing practices, oversupply of product and consequences for shore-side industries and consumers, and overcapitalization in the fishery. Moreover, a fleet-wide TAC that leads to derby fishing tends to favor large boats over small ones, with negative consequences for the historical character of the general category fishery.

5.5.3 Northern Gulf of Maine Scallop Management Area (3.1.4)

The application of Amendment 11 measures without special provisions for geographical differences (3.1.4.1) could unevenly affect those participants, namely in Northern Maine, who may have pursued the fishery differently than other participants, i.e. a longer history of involvement but not in recent years due to resource conditions, use of scallop fishery in flexible annual rounds that may vary seasonally and annually, and so on. The creation of a Northern Gulf of Maine scallop area (NGOM) in which Amendment 11 does not apply (3.1.4.2) could positively impact these general category fishermen who have traditionally fished only in the NGOM as part of flexible annual rounds, but who may not qualify under Amendment 11 measures that, depending on which measures are chosen, may not incorporate such fishing into qualification criteria. Although the total amount of scallops caught in the NGOM over the 11-year period of 1994 – 2004 (using option A) by general category scallop fishermen who would not qualify (under the 11-yr, 100lb criteria) is only 13%, such impact is not evenly distributed. Over half of these landings (54%) come from just five ports, most of which are in Downeast Maine and whose landings come from closely surrounding waters: Bucks Harbor ME, Jonesport ME, Gloucester MA, Brooklin ME, and Sorrento ME. Of these, while only about 4% of Gloucester's general category scallop landings came from the NGOM (option A) by vessels who would not qualify (under the 11-yr, 100lb criteria), over 57% of Bucks Harbor's and Jonesport's came from such fishermen, and all of Brooklin's and Sorrento's landings came from these non-qualifiers. Hence, the impact of a NGOM management area (3.1.4.2) could potentially impact only a small number of ports, but ports where the positive impacts are substantial, in that they are places often heavily dependent on fishing.

It should be noted that vessel fishing location data is based on logbook data, and not all vessels who appear to have landings in logbooks have qualified for a limited access general category permit on dealer data alone. If these vessels then do qualify for such a permit in an appeals process, then this analysis might be overstating the positive impacts of this measure. On the other hand, because this measure is open to any vessel with a VMS-1B general category permit, access to the area would not be restricted to those who may have traditionally fished there and the measure would not reap the social and ecological benefits associated with locally-controlled or community-based management, and could—if resource conditions improve—create an influx of effort and potentially derby fishing conditions with a hard TAC.

A NGOM limited entry program (3.1.4.3) would share a number of the possibly negative impacts from 3.1.4.2: a hard TAC could potentially lead to derby fishing; and the non-exclusivity of the area (a vessel that qualifies for a limited entry general category permit could fish there, whether or not they have a NGOM-only permit) would not enhance locally-controlled or community-based management or participatory governance. As well, the NGOM limited entry measure

would be available only to those vessels who qualify under the 11-yr, 100lb criteria, potentially excluding those participants who have fished traditionally as part of a regional flexible annual round (unless logbook records qualify these vessels who do not appear in the dealer records). The restriction of the NGOM permit to fish only in the NGOM would further impact vessels negatively, for while some vessels do fish exclusively in the NGOM (particularly non-qualifiers), they do not always, and many Maine fishermen have relied on other areas such as Cape Cod waters, when the resource conditions in Maine are poor. The restriction of vessels to a particular area has more merit in social and ecological terms when it is coupled with the ability to restrict access (i.e. locally-based or community-based management), which this measure does not institute.

5.5.4 Monitoring Provisions (3.1.5)

Requiring some form of monitoring in addition to VTR's would enable NMFS to better monitor either quotas or TACs, which would provide long-term benefits to the industry by ensuring overall compliance and helping to stabilize resource conditions compared to No Action (3.1.5.1). Additional monitoring does incur negative burdens on fishing participants in terms of increased time and general hassle, but given that active vessels already have in place VMS, measure 3.1.5.2 would presumably not create major negative impacts. Alternative 3.1.5.3 that requires reporting through IVR is not expected to have social impacts either.

5.5.5 Limited access fishing under general category rules (3.1.6)

Continuing to allow limited access vessels to fish under general category rules (3.1.6.1.1) or continuing to allow only those who would qualify under the same criteria proposed for general category vessels (3.1.6.1.2), could negatively impact general category vessels (particularly if these limited access landings are deducted from the general category TAC as in 3.1.6.2.1), and contribute to a sense of unfair treatment between the two sectors (though to a lesser extent if limited access vessels are separated by their own TAC as in 3.1.6.2.2). Such measures would of course be a positive impact for those limited access vessels that fish off their DAS, who would be negatively affected by the complete prohibition of this practice (3.1.6.1.4). However, to what extent this occurs is difficult to parse from the data, given difficulties merging call-in data with weighout data by date. An initial list of potential limited access vessels who may be fishing off DAS as general category vessels (which would include trips that should merge with call in data but which do not because dates are not consistent) appears to show that up to 87vessels in 2004 might be engaging in the general category fishery, most of which are full-time vessels, with over half of these landings by part-time limited access vessels. Thus restricting general category fishing by limited access to only part-time or occasional (3.1.6.1.3) would have less negative impact on general category fishermen, but a positive impact centered on those fishermen who have less allocation to begin with.

5.5.6 Allocation between limited access and general category fisheries (3.1.7)

Continuing to set a non-binding TAC (No Action, 3.1.7.1) would avoid the negative social impacts associated with a hard TAC and derby fishing; however the possibility of exceeding soft TAC limits has long-term social and ecological impacts from the health of the fishery. Setting a fixed allocation of the total available scallop harvest to the general category sector (3.1.7.2) would preclude such problems, though depending on how the fishery is regulated when the TAC is reached, negative social impacts could ensue from, for example, derby fishing.

For the yellowtail flounder bycatch TAC in access areas, continuing with No Action (3.1.7.3.1) would negatively impact those vessels that are less likely to fish in the early winter months (i.e. small vessels, so predominantly the general category fleet) if the larger limited access fleet quickly reaches the overall 10% TAC for the scallop fishery as a whole. Allocating a percentage of the bycatch TAC to the general category fishery (3.1.7.3.2) would mitigate that issue, for inter-sector differences (though not for intra-sector differences in capability). However, the measure does continue to allow only the limited access vessels to land yellowtail, while the general category fleet cannot, which undoubtedly will cause the persistence of general displeasure from throwing catch overboard.

5.5.7 Incidental Catch (3.1.8)

This measure continues the allowance of incidental bycatch of scallops up to 40 lbs (3.1.8.1.). Given that only low mortality from incidental catch is expected, the impacts to the scallop fleet should be low.

5.5.8 More Timely Integration of Data (3.2)

Keeping the scallop fishing year at March 1 (No Action, 3.2.1) would create no negative impacts in the short-term on the fleet associated with changes in business or fishing practices. It would however, continue problems resulting from mis-estimation of TACs and the need for compensatory regulatory action, and the fact that actions are not implemented at the start of the fishing year. These problems indirectly cause problems for fishermen from the constant barrage of regulatory action, which itself can unsettle business and fishing practices. Changing the general category permit to March 1 to be in line with the limited access fishery (3.2.1.1) would create consistency in the fishery, but would not address the problems above. Moreover, it would create complications for the general category fleet, many of whom do participate in other fisheries which have the more common May 1 start date. If the start of the fishing year is changed to May 1 (3.2.2), then consistency would be created across most fisheries and regulatory action might be more consistently applied depending on timing of research surveys, with positive benefits for the fishery, though there would be the cost associated if fishermen had to change their fishing practices in any way. This would also be the case if the fishing year were changed to August 1 (3.2.3), and though this would more likely insure timely integration of data given the current survey schedule, it would not have any of the possible benefits associated with creating consistency across all fisheries, which might be positive for those fishermen who participate in more than one fishery.

5.5.9 Other measures

5.5.9.1 Trawl gear restrictions (3.3.1)

Clarification of trawl gear restriction for vessels fishing under a multispecies or monkfish DAS (3.3.1.2) would positively impact those general category vessels that have been restricted by the trawl net sweep regulation, even when catching scallops only incidentally, as in No Action (3.3.1.1). Given its application to a fishery with only incidental catch, it is not expected to have negative impacts on the scallop fishery overall.

5.5.9.2 Possession limit of 50 bushels (3.3.2)

Setting the possession limit of 50 bushels to apply only shoreward of VMS demarcation line (3.3.2.2) would more fairly allow general category fishermen who retain unshucked scallops to reach the 400lb limit of scallop meat, compared to No Action (3.3.2.1) which would limit possession to 50 bushels at all times. This new measure would only be of positive benefit to those fishermen who are able to shuck before they reach the demarcation line though, and given the lack of data on how many fishermen land in shell, it is difficult to predict the magnitude of impact.

5.6 OTHER IMPACTS

5.6.1 Other fisheries

5.6.1.1 Measures to control capacity and mortality in the general category scallop fishery

5.6.1.1.1 No Action

Based on recent trends in the general category fishery, this alternative makes it difficult for the Scallop FMP to prevent overfishing (Section 5.1.1.1). The general category fishery is open access and if conditions are right in terms of scallop price and availability of resource relatively close to shore, the only limit on general category effort is a possession limit. The No Action alternative could have positive impacts on other fisheries by relieving pressure on other fisheries if vessels continue to fish under general category. However, the true impact of the No Action alternative on other fisheries is difficult to predict because the overall nature of the general category fishery is opportunistic. While some vessels have historically participated in the general category fishery consistently, it is not usually a year round directed fishery. In recent years some vessels have become more dependent on scallops (See Table 192) but many vessels still fish in other fisheries and fish for scallops under general category. Furthermore, if conditions decline in the general category fishery, these vessels could return to other fisheries they have permits for, so the overall impacts on other fisheries is uncertain.

5.6.1.1.2 Limited Entry

In order to fish under general category rules a vessel would have to qualify for a limited access general category permit. Limited entry in and of itself could have negative impacts on other fisheries because vessels that do not qualify may increase effort in other fisheries to make up for revenue losses. However, many of the vessels that may not qualify have not had a large dependence on scallops, so their fishing activity in other fisheries may not change much. However, there are some vessels particularly those that got a permit after the control date that have developed a high dependence on scallops in recent years. Table 190 shows that about 20 vessels from New England that got their permit after the control date have landed scallops in 2005 and 2006. The percent of total revenue from scallops for these vessels was about 85% in 2005 and 78% in 2006. And for the Mid Atlantic region, over 60 vessels have become active in the general category fishery with permits after the control date and their landings and percent revenue from scallops is about 88% and 95% for 2005 and 2006. It is likely that the other fisheries these vessels were involved in before 2005 may be subject to more fishing pressure compared to recent years if these vessels plan to maintain the same total revenue as they did in 2005 and 2006.

As for vessels with a permit before the control date, their dependence on scallops in recent years is lower overall. The average scallop pounds and revenue per vessel is similar to vessels with a permit after the control date by region, but the percent of total revenue from scallops is much lower for the qualifying vessels. In general, vessels in the Mid-Atlantic seem more dependent on scallop revenue in recent years, compared to vessels from New England.

Table 190. Landings and Revenues by general category vessels by permit date and primary region of landing

Permit Before the control date	REGION	Data	2005 Fishyear	2006 Fishyear [1]
NO	New England	Number of active vessels	20	21
		Scallop lb. per vessel ($)	5,080	6,322
		Scallop revenue per vessel ($)	40,103	43,716
		Total revenue per vessel ($)	49,330	58,268
		Total scallop landings	101,598	132,772
		% of revenue from scallops	84.80%	77.88%
		Total scallop revenue ($)	802,061	918,041
		Total revenue ($)	986,604	1,223,635
	Mid Atlantic	Number of active vessels	61	67
		Scallop lb. per vessel ($)	21,987	13,905
		Scallop revenue per vessel ($)	171,512	86,899
		Total revenue per vessel ($)	186,774	93,324
		Total scallop landings	1,341,179	931,617
		% of revenue from scallops	88.06%	95.10%
		Total scallop revenue ($)	10,462,252	5,822,243
		Total revenue ($)	11,393,234	6,252,721
YES	New England	Number of active vessels	266	249
		Scallop lb. per vessel ($)	6,094	7,825
		Scallop revenue per vessel ($)	48,739	51,702
		Total revenue per vessel ($)	257,071	180,653
		Total scallop landings	1,620,977	1,948,380
		% of revenue from scallops	41.82%	47.90%
		Total scallop revenue ($)	12,964,619	12,873,773
		Total revenue ($)	68,380,810	44,982,641
	Mid Atlantic	Number of active vessels	250	195
		Scallop lb. per vessel ($)	16,751	11,907
		Scallop revenue per vessel ($)	124,320	70,359
		Total revenue per vessel ($)	312,063	133,002
		Total scallop landings	4,187,718	2,321,836
		% of revenue from scallops	61.69%	70.06%
		Total scallop revenue ($)	31,080,079	13,719,921
		Total revenue ($)	78,015,805	25,935,420
		Total Number of vessels	597	532 [2]

(3) The data for 2006 fishyear is preliminary and includes data up to Jan.18, 2007. This data may not yet include all the revenues from other species, thus could underestimate total revenue and/or overestimate percentage of scallop revenue in total revenue.

(4) There 543 vessels that landed scallops in 2006, but some of these vessels did not have complete revenue information, thus not included in the Table.

Table 191 is the composition of total revenue by qualification landing and time period alternatives based on landing criteria from the 2005 fishing year. The number of vessels per alternative, and their average scallop revenue for 2005 compared to revenue from other fisheries is described. Fishing year 2005 is the most recent fishing year with complete landings information to compare scallop and other fishery revenues. General category scallop landings and revenues were high for this particular fishing year compared to other years so these dependence percentages are probably an overestimate compared to earlier years. Overall, the

percent of total revenue from scallops is higher for vessels that had a permit before the control date and are going to qualify under the different qualification alternatives, as compared to vessels that had a permit before the control date and will not qualify. For example, for the 11 year period alternative and 100 pound landings criteria 318 vessels that fished in 2005 will qualify and these vessels had an average of 50% dependence scallop revenue, compared to the 46 vessels that fished that year and will not qualify. These vessels had an average of 22% of total revenue from scallops. Note that for this same alternative there are 152 vessels that had a permit before the control date and fished in 2005 but will not qualify for the 100 pound criteria. These vessels on average had 62% of total revenue from scallops for 2005. The vessels that are not going to qualify will likely participate in other fisheries to gain revenue lost, but effort in those fisheries may not increase because many of the other fisheries in this region have individual or total limits on effort. For example, if a vessel with a multispecies permit does not qualify for a limited access general category permit, overall fishing pressure in the multispecies fishery may not increase as a result of limited entry in the general category fishery because that vessel is only permitted to fish up to a certain amount under the Multispecies FMP as it is.

Table 191. Composition of total revenue by qualification criteria and time period alternatives in 2005 fishing year.

Time Period	Qualification lb. Criteria	Qualify	Number of active vessels	Scallop Revenue as a % of Total Revenue	Average scallop revenue per vessel ($)	Average Revenue from other species per vessel	Average scallop revenue per vessel ($)	Total scallop revenue ($)	Total revenue ($)
General category vessels that had a permit before the control date									
11 Years	Not active	NO	152	62%	86,069	133,974	220,043	13,082,434	33,446,503
	100	NO	46	22%	38,431	336,142	374,573	1,767,825	17,230,372
		YES	318	50%	91,806	209,199	301,005	29,194,439	95,719,740
	1000	NO	130	24%	41,490	347,717	389,207	5,393,692	50,596,884
		YES	234	60%	109,267	157,199	266,467	25,568,572	62,353,228
	5000	NO	233	28%	42,152	312,814	354,966	9,821,372	82,707,035
		YES	131	80%	161,381	69,482	230,863	21,140,892	30,243,077
5 years	Not active	NO	172	58%	81,021	148,091	229,112	13,935,636	39,407,306
	100	NO	43	24%	37,044	288,418	325,462	1,592,874	13,994,860
		YES	301	51%	94,738	214,213	308,952	28,516,188	92,994,449
	1000	NO	120	23%	39,283	345,405	384,688	4,713,964	46,162,614
		YES	224	61%	113,371	158,177	271,548	25,395,098	60,826,695
	5000	NO	214	29%	42,581	316,778	359,359	9,112,295	76,902,805
		YES	130	80%	161,514	69,921	231,435	20,996,767	30,086,504
2 Years	Not active	NO	210	54%	77,154	177,612	254,766	16,202,289	53,500,875
	100	NO	36	24%	34,371	244,157	278,528	1,237,369	10,027,021
		YES	270	53%	98,537	208,384	306,921	26,605,040	82,868,719
	1000	NO	105	26%	42,961	312,458	355,419	4,510,888	37,318,958
		YES	201	62%	116,077	160,424	276,501	23,331,521	55,576,782
	5000	NO	192	31%	44,868	297,568	342,436	8,614,703	65,747,782
		YES	114	81%	168,664	69,476	238,140	19,227,706	27,147,958
General category vessels that had a permit after the control date									
From March 2005 to Jan.2006		NO	81	87%	139,066	13,772	152,838	11,264,313	12,379,838

Table 192 includes landings and revenue information for other fisheries compared to scallop for several years, 2002-2005. Note that the revenue information for 2005 is preliminary so probably underestimates revenue in other fisheries, particularly the clam fishery. This table describes the composition of revenue for general category vessels by category of dependence on scallop revenue (less than 10%, 10-29%, 30-59%, 60-89% and over 90%). The average number of trips per year has remained similar for each dependence category. In terms of revenue from other fisheries, vessels that depend less on scallops (<10%) seem to depend more on groundfish, clam, squid, fluke and monkfish. Over the last few years the total revenue from these fisheries have fluctuated, while average revenue from scallops has increased. Total revenue for these vessels from clams has reduced while revenue from monkfish and lobster have increased. Revenue from groundfish, fluke and squid have remained similar from 2002 to 2005. Vessels that have been somewhat dependent on scallops (10-29% of total revenue) have seen an increase in revenue from scallops on average. Dependence on other fisheries for this group seems to vary year to year. In some years fluke was an important source of income, some years lobster and other years groundfish. The number of vessels that have become more dependent on scallop revenue has increased with time (30-59% and 60-89%). The primary other sources of revenue for these vessels (for these years) are groundfish, monkfish and fluke. Lastly, the number of vessels that depend on scallop revenue for over 90% of total revenue has increased in recent years. These vessels are landings hardly anything else as compared to scallops.

Table 192. Composition of revenue for general category vessels by % revenue from scallops

	All vessels that had a permit before control date					
		FISHYEAR				
DEPENDCAT	Data	2002	2003	2004	2005	Grand Total
LT 10%	Number of vessels	170	174	208	152	704
	Number of trips per vessel	5.4	5.0	5.6	4.7	5.2
	Avg. scal.landings per vess.	784	768	1,251	1,261	1,021
	Scallop revenue per vessel	$ 3,046	$ 3,264	$ 5,685	$ 6,990	$ 4,731
	SHRIMPREV per vessel	$ 5,494	$ 3,844	$ 2,750	$ 256	$ 3,145
	SURFCLAMREV per vessel	$ 20,529	$ 36,685	$ 19,295	$ 842	$ 19,907
	OTHCLAMREV per vessel	$ 28,292	$ 43,460	$ 48,768	$ 2	$ 31,982
	MONKREV per vessel	$ 15,105	$ 14,322	$ 26,816	$ 39,963	$ 23,739
	FLUKEREV per vessel	$ 26,016	$ 37,865	$ 31,130	$ 34,208	$ 32,224
	LOLISQUREV per vessel	$ 40,539	$ 32,218	$ 23,753	$ 35,529	$ 32,441
	SILHAKEREV per vessel	$ 9,659	$ 10,611	$ 4,077	$ 10,914	$ 8,516
	LOBREV per vessel	$ 4,854	$ 5,799	$ 11,739	$ 16,564	$ 9,650
	GRDREV per vessel	$ 133,215	$ 116,998	$ 147,903	$ 166,329	$ 140,696
	HERREV per vessel	$ 346	$ 47	$ 138	$ 1,429	$ 445
	OTHREV per vessel	$ 37,274	$ 36,454	$ 46,729	$ 51,884	$ 43,019
	Total revenue per vessel	$ 338,494	$ 351,165	$ 368,264	$ 417,539	$ 367,488
10%-29%	Number of vessels	28	31	33	32	124
	Number of trips per vessel	16	21	22	19	20
	Avg. scal.landings per vess.	4120	6267	6433	5177	5545
	Scallop revenue per vessel	$ 17,005	$ 28,237	$ 32,345	$ 37,185	$ 29,103
	SHRIMPREV per vessel	$ 3,564	$ 4,523	$ 2,727	$ 12	$ 2,664
	SURFCLAMREV per vessel	$ -	$ -	$ 8,830	$ 1,550	$ 2,750
	OTHCLAMREV per vessel	$ -	$ -	$ 29,325	$ -	$ 7,804
	MONKREV per vessel	$ 8,850	$ 7,535	$ 14,666	$ 11,667	$ 10,796
	FLUKEREV per vessel	$ 12,354	$ 19,277	$ 31,710	$ 23,431	$ 22,095
	LOLISQUREV per vessel	$ 2,580	$ 3,644	$ 20,160	$ 20,401	$ 12,123
	SILHAKEREV per vessel	$ 3,460	$ 1,356	$ 648	$ 3,311	$ 2,147
	LOBREV per vessel	$ 261	$ 12,667	$ 411	$ 13,952	$ 6,936
	GRDREV per vessel	$ 43,459	$ 54,098	$ 22,076	$ 29,219	$ 36,753
	HERREV per vessel	$ -	$ 553	$ 5	$ 10	$ 142
	OTHREV per vessel	$ 14,959	$ 15,994	$ 31,663	$ 35,120	$ 24,866
	Total revenue per vessel	$ 100,557	$ 145,291	$ 195,113	$ 199,303	$ 162,388
30%-59%	Number of vessels	14	23	33	45	115
	Number of trips per vessel	30	40	36	37	36
	Avg. scal.landings per vessel	10219	13871	13230	9877	11679
	Scallop revenue per vessel	$ 47,980	$ 1,741	$ 60,715	$ 6,094	$ 69,301
	SHRIMPREV per vessel	$ 2,475	$,028	$ 122	$ 397	$ 697
	SURFCLAMREV per vessel	$ -	$ -	$ -	$ 4,971	$ 1,945
	OTHCLAMREV per vessel	$ -	$ -	$ -	$ 647	$ 253
	MONKREV per vessel	$ 24,926	$ 17,674	$ 4,127	$ 7,927	$ 10,855
	FLUKEREV per vessel	$ 4,788	$ 29,008	$ 49,048	$ 28,284	$ 31,527
	LOLISQUREV per vessel	$ 10	$ 355	$ 3,065	$ 4,156	$ 2,578
	SILHAKEREV per vessel	$ 5,617	$ 212	$ 160	$ 883	$ 1,117
	LOBREV per vessel	$ 832	$ 149	$ 3,743	$ 3,051	$ 2,399
	GRDREV per vessel	$ 36,019	$ 11,188	$ 14,810	$ 15,764	$ 17,041
	HERREV per vessel	$ -	$ -	$ 8	$ 2	$ 3

	OTHREV per vessel	$ 11,314	$ 13,782	$ 15,237	$ 27,284	$ 19,182
	Total revenue per vessel	$ 125,358	$ 136,086	$ 153,239	$ 197,119	$ 163,584
60%-89%	Number of vessels	11	15	33	65	124
	Number of trips per vessel	27	42	46	62	52
	Avg. scal.landings per vessel	21034	13232	16355	21124	18892
	Scallop revenue per vessel	$ 88,740	$ 61,425	$ 76,710	$ 161,731	$ 120,495
	SHRIMPREV per vessel	$ 242	$ 715	$ -	$ 26	$ 121
	SURFCLAMREV per vessel	$ -	$ -	$ -	$ 929	$ 487
	OTHCLAMREV per vessel	$ -	$ 23	$ -	$ 10	$ 8
	MONKREV per vessel	$ 11,897	$ 11,736	$ 5,376	$ 3,311	$ 5,641
	FLUKEREV per vessel	$ 15,994	$ 4,992	$ 4,508	$ 22,036	$ 14,774
	LOLISQUREV per vessel	$ 27	$ 104	$ 304	$ 745	$ 486
	SILHAKEREV per vessel	$ 14	$ 11	$ -	$ 30	$ 18
	LOBREV per vessel	$ 66	$ 150	$ 280	$ 2,021	$ 1,158
	GRDREV per vessel	$ 6,209	$ 2,783	$ 2,388	$ 4,454	$ 3,858
	HERREV per vessel	$ -	$ -	$ -	$ 2	$ 1
	OTHREV per vessel	$ 1,972	$ 7,173	$ 12,253	$ 14,084	$ 11,687
	Total revenue per vessel	$ 124,647	$ 87,778	$ 101,695	$ 224,698	$ 166,525
90% or more	Number of vessels	76	83	118	206	483
	Number of trips per vessel	24	33	36	51	40
	Avg. scal.landings per vess.	6074	9057	16524	16310	13505
	Scallop revenue per vessel	$ 29,605	$ 43,672	$ 87,267	$ 132,360	$ 89,935
	SHRIMPREV per vessel	$ -	$ -	$ 5	$ 27	$ 13
	SURFCLAMREV per vessel	$ -	$ -	$ -	$ 18	$ 8
	OTHCLAMREV per vessel	$ 1	$ 0	$ -	$ 10	$ 5
	MONKREV per vessel	$ 123	$ 122	$ 122	$ 531	$ 297
	FLUKEREV per vessel	$ 1	$ 23	$ 33	$ 137	$ 71
	LOLISQUREV per vessel	$ -	$ -	$ 1	$ 25	$ 11
	SILHAKEREV per vessel	$ -	$ -	$ -	$ 9	$ 4
	LOBREV per vessel	$ -	$ -	$ 54	$ 27	$ 25
	GRDREV per vessel	$ 51	$ 101	$ 191	$ 272	$ 188
	HERREV per vessel	$ -	$ -	$ -	$ 14	$ 6
	OTHREV per vessel	$ 106	$ 3	$ 141	$ 765	$ 378
	Total revenue per vessel	$ 31,491	$ 43,902	$ 89,229	$ 134,768	$ 91,777

5.6.1.1.2.1 Allocation of access for general category limited access qualifiers

The DSEIS includes several alternatives for allocation combined with limited entry. Most of these alternatives include an individual allocation program. In general, the impacts on other fisheries from all the individual allocation alternatives are expected to be similar because there is a total amount of effort per vessel that will be permitted under each alternative. The option to allocate in pounds versus trips may change fishing behavior which could have impacts on other fisheries, but the direction of that impact is uncertain. For example, if qualifying vessels are awarded access in trips it could increase incentive for vessels to change behavior and land up to the maximum 400 pound limit, since the total number of trips would be limited. If some general category vessels usually land a more incidental level of scallops now, the allocation in trip alternative may cause these vessels to fish for scallops independent of other species to maximize revenue from the number of trips they are allocated. If these vessels then fish in other fisheries on different trips, total effort for these vessels may increase; however effort in other fisheries

would remain the same. It cannot be determined if overall effort in other fisheries would increase or decrease as a result, since other vessels may choose to land up to 400 pounds of scallops on a trip that they otherwise would not land that many scallops and may focus on other species.

Hard TACs can have negative impacts of derby fisheries, which could have negative impacts on other fisheries. Vessels may have a greater incentive to fish for scallops as soon as the TAC is available and then switch to other fisheries the rest of the year, compared to fishing for both fisheries at once. If this alternative does change behavior it could increase impacts on other fisheries if some vessels that used to land groundfish and scallops on the same trip for example, decide to take more "directed" scallop trips up to 400 pounds under the hard TAC alternative and then focus on groundfish after the scallop TAC is fished. Total effort on groundfish should not increase as a result, but the vessel may be less efficient by fishing separately for scallops and groundfish.

5.6.1.1.2.2 Limited entry permit provisions

The alternatives under consideration for limited entry permit provisions are not expected to have any direct impacts on other fisheries. Provided that a qualified vessel would be permitted to have more than one limited access permit, then overall effort in other fisheries should not be affected.

5.6.1.1.2.3 Measures to reduce incentive for limited entry qualifiers to fish for scallops with trawl gear

These alternatives reduce incentive for qualifying vessels to target scallops with trawl gear. The Scallop PDT analyzed VTR data from 2005 for trips landing scallops with trawl gear. Most trips where scallops were landed using trawl gear were targeting other species; however there are a number of vessels that target scallops using trawl gear. In summary, when general category vessels with trawl gear were targeting other species like groundfish, monkfish, skate, squid and scup, about 50% of the trips landed less than 300 pounds per trip. In fact, for many of the other species, average scallop landings were lower. Table 3 summarizes the average scallop landings per trip by target species for general category vessels using trawl gear.

Table 193 - Percentiles of scallop landings per trip by target species for general category vessels using finfish trawls.

			Percentile						
Target species or group	**Trips**	**Vessels**	**5%**	**10%**	**25%**	**50%**	**75%**	**90%**	**95%**
Yellowtail flounder	152	68	50	60	114	231	369	400	400
Groundfish	163	69	45	50	65	100	150	380	400
Summer flounder	178	59	50	63	111	300	340	394	400
Skate	37	18	68	80	100	273	396	400	400
Monkfish	91	54	50	50	100	206	347	400	400
Scallops	2778	84	50	220	300	300	398	400	400
Scup	14	6	26	31	79	275	324	400	400
Loligo	9	7	59	73	150	300	300	314	342
Lobster	1	1	*	*	*	*	*	*	*
All	3423	203	50	97	286	300	395	400	400
All but scallops	645	160	50	50	90	180	340	400	400

Alternative 3.1.2.6.2 was developed to prevent an expansion in general category scallop effort using trawl gear and Alternatives 3.1.2.6.3 and 3.1.2.6.4 were developed to reduce incentive to fish for scallops with trawl gear. Since most effort using trawl gear is on vessels targeting other species, the impacts of these alternatives are not expected to affect other fisheries. Specifically the level of effort in other fisheries is expected to be similar, but potential landings of scallops may be reduced with lower possession limits.

5.6.1.1.2.4 Sectors and Harvesting Cooperatives

This action is considering a process for the creation of fishing "sectors" and the allocation of TAC shares to the sectors within the general category fishery. None of the options related to establishing a sector are expected to have impacts on other species since vessels in the sector would not be permitted to "pool" their access in other fisheries; the sector would be limited to general category scallop access privileges only. Sectors may have an indirect benefit on other fisheries if the sector is able to reduce bycatch in other fisheries, thus reducing non-harvest mortality of those species.

5.6.1.1.3 Hard Total Allowable Catch (Hard TAC)

Since most general category vessels have other permits, once the general category scallop TAC is caught many of those vessels will likely prosecute other fisheries, so the impact on other fisheries is uncertain since it is unknown if effort in other fisheries would reduce, stay the same or increase as a result of a hard TAC.

5.6.1.2 Establish a Northern Gulf of Maine Scallop Management Area (NGOM)

Under Alternative 3.1.4.2, an open access permit to fish for scallops under general category would remain for the NGOM, and a vessel could land up to 400 pounds of scallops per trip if the vessel has VMS (IB permit). This alternative could have negative impacts on other fisheries in this region due to potential increases in impacts from fishing gear from an open access fishery. Since this alternative includes a hard TAC the potential negative impacts of open access on non-target species in this area would be reduced.

Alternative 3.1.4.3 would develop a separate limited entry general category program in the NGOM. If this alternative changes behavior of vessels in this area in terms of catch composition to take advantage of the scallop TAC before it is caught, then there could be impacts on other fisheries. But the overall impact on other fisheries is uncertain since it is unknown if effort in other fisheries would reduce, stay the same or increase as a result of this permit.

5.6.1.3 Monitoring Provisions

5.6.1.3.1 Require landings and declaration of scallop trip through VMS

Both Alternative 3.1.5.2 and 3.1.5.3 have indirect benefits on other fisheries that general category vessels participate in as compared to the No Action alternative because reporting through VMS or IVR improves monitoring of fishing effort.

5.6.1.4 Limited access fishing under general category rules

Since most limited access scallop vessels do not have permits in other fisheries, these alternatives are not expected to have impacts on other fisheries. If access to the general category

fishery is taken away or reduced for these vessels, most do not have the ability to make up lost revenue in other fisheries because they do not have permits to land those species.

5.6.1.5 Allocation between limited access and general category fisheries (Objective #1)

These alternatives are not expected to have impacts on other fisheries since they are related to how scallop TAC is allocated. It could be argued that on average general category vessels tend to have permits in more fisheries, and a percentage of their overall revenue comes from other fisheries, so if a smaller TAC was awarded to the general category fishery, those vessels may be able to make up some revenue lost in other fisheries. This could cause some increased impacts on other fisheries if effort is shifted out of the scallop fishery.

5.6.1.5.1 Allocation of yellowtail flounder bycatch TAC in access areas

Alternative 3.1.7.3.2 would actually divide the yellowtail bycatch TAC between the limited access and general category fisheries. Whatever overall allocation of the projected scallop catch is allocated to the general category fishery (2.5%-11%), that same percentage of the yellowtail flounder bycatch cap would also be allocate to the general category fleet for access areas. This alternative is not expected to have direct impacts on other fisheries since it is limited to scallop trips in access areas.

5.6.1.6 Incidental Catch (Objective #4)

There are no impacts on other species from this alternative. Vessels fishing for other species could land up to 40 pounds of scallops which should increase revenue for that trip for vessels targeting other species. Forty pounds per trip is not expected to be an incentive for a vessel to go out and target scallops, so there should not be additional effort associated with maintaining the incidental catch provision. The primary purpose of this alternative is to reduce bycatch of scallops caught incidentally on trips targeting other species.

5.6.2 Measures to allow better and more timely integration of recent data (Goal #2, Objective #5)

In general these alternatives will not impact other fisheries. The alternatives that change the start of the fishing year could have impacts on other fisheries depending on when the fishery begins and what allocation access alternative is adopted (i.e. IFQ versus hard-TAC without limited entry). If the general category fishery is managed under a fleetwide hard-TAC as a result of this action then it is possible that there will be derby effects causing an increase in effort at the start of the fishing year. If the fishing years changes to a time of year when a) bycatch rates are higher for non-target species, or b) vessels that normally fish for scallops and other species on the same trip decide instead to "direct" on scallops before the TAC is reached, then this effort could result in negative impacts on other fisheries.

5.6.3 Other measures not directly related to goals and objectives of amendment 11

5.6.3.1 Trawl sweep restriction

Alternative 3.3.1.2 would clarify that the 144 ft. net sweep restriction is intended for all vessels authorized to be in possession in excess of 40 pounds of scallops, except for vessels with a general category 1B permit and fishing under a multispecies or monkfish DAS. While the net restriction on trawl sweep size may have beneficial impacts on non-target species by restricting

the maximum size of trawl gear, the Council intended this restriction for vessels targeting scallops, not vessels that catch scallop incidentally. If this is clarified then vessels fishing for other species and landing scallops on the same trip should benefit. Effort in other fisheries is not expected to increase as a result of this alternative.

5.6.3.2 Modification to the 50 bushel possession limit east of the demarcation line

This alternative would allow a vessel to shuck scallops up to 400 pounds of meat and not run the risk of being in possession of more than the possession limit. This alternative is not expected to have impacts on other fisheries.

5.6.4 Impacts on non-target species

5.6.4.1 Measures to control capacity and mortality in the general category scallop fishery

5.6.4.1.1 No Action

Based on recent trends in the general category fishery, this alternative makes it difficult for the Scallop FMP to prevent overfishing (Section 5.1.1.1). The general category fishery is open access and if conditions are right in terms of scallop price and availability of resource relatively close to shore, the only limit on general category effort is a possession limit. The No Action alternative could have negative impacts on non-target species if effort in the general category fishery continues to increase. Interaction of fishing gear from these vessels could have impacts on non-target species.

5.6.4.1.2 Limited Entry

In order to fish under general category rules a vessel would have to qualify for a limited access general category permit. Limited entry in and of itself would have positive impacts on non-target species as compared to the No Action alternative by reducing the number of potential participants. The participants that qualify may increase effort above levels they have historically fished, but reducing capacity decreases the number of vessels that could fish under this permit, having benefits on non-target species. In terms of the qualification alternatives under consideration, there is not a big difference in impacts on non-target species, because the amount of total effort allocated to this component of the fishery is the same no matter which qualification alternatives are selected. For example, if the most restrictive alternative is selected, the number of vessels would be fewer, but each individual vessel would be allocated more access, so overall effort would be the same. However, impacts on non-target species would vary depending on which vessels qualify.

For example, if more vessels qualify from Mid-Atlantic ports, the impacts on non-target species in that region would be greater. Under the least restrictive alternative (100 pounds and 11-year time period) of the 705 potential qualifiers, about 499 of them are from New England and 206 are from mid-Atlantic ports (Table 80 through Table 83). Therefore, impacts on non-target species in New England could be impacted by more potential qualifiers than in the Mid-Atlantic, but the total level of effort will not be greater than status quo levels. Furthermore, while more vessels may qualify from New England, their level of access may be lower than the vessels from

the Mid-Atlantic, which on average have fished more directly on scallops than vessels from New England.

The alternatives that determine the allocation amount for each qualifier will not have direct impacts on non-target species.

5.6.4.1.2.1 Allocation of access for general category limited access qualifiers

The DSEIS includes several alternatives for allocation combined with limited entry. Most of these alternatives include an individual allocation program. In general, the impacts on non-target species from all the individual allocation alternatives are expected to be similar because there is a total amount of effort that will be permitted under each alternative. However, there are potential differential impacts on non-target species from a system that allocates in pounds versus trips. If qualifying vessels are awarded access in trips it could increase incentive for vessels to change behavior and land up to the maximum 400 pound limit, since the total number of trips would be limited. If some general category vessels only land a more "incidental" level of scallops now while fishing for other species, the allocation in trip alternatives (Option B) may increase effort if these vessels change behavior to land more scallops per trip. There could be potential negative impacts on non-target species from increased effort. This potential increase in effort is limited however because there is a maximum TAC for the entire fleet under both the individual pound and trip alternatives.

Hard TACs can have negative impacts of derby fisheries, which could have negative impacts on non-target species because a vessel may have less incentive to move from higher bycatch areas. If the fleetwide hard TAC is divided up by quarter or trimester (Alternative 3.1.2.4.7) that will improve negative impacts of a derby fishery, but depending on when the quarters/trimesters are defined could impact non-target species if the beginning of a quarter/trimester coincides with higher discard rates of non-target species.

5.6.4.1.2.2 Limited entry permit provisions

The alternatives under consideration for limited entry permit provisions are not expected to have any direct impacts on non-target species. If there are no controls on upgrade restrictions (Alternative 3.1.2.5.2.1) then impacts on non-target species could increase as a result of increased effort potential.

5.6.4.1.2.3 Measures to reduce incentive for limited entry qualifiers to fish for scallops with trawl gear

These alternatives reduce incentive for qualifying vessels to target scallops with trawl gear. If these alternatives actually reduce effort by general category qualifiers to use trawl gear, then impacts on non-target species from that gear type will be reduced. Table 33 describes the distribution of general category vessels by gear type. Well over half of all general category landings have been from vessels using dredge hear (Table 34). Figure 36 and Figure 37 depict where scallop effort with trawl gear is in general, so if for example, Alternative 3.1.2.6.3 is selected (a reduction in possession limit) impacts on non-target species in this region from trawl gear could benefit.

5.6.4.1.2.4 Sectors and Harvesting Cooperatives

This action is considering a process for the creation of fishing "sectors" and the allocation of TAC shares to the sectors within the general category fishery. None of the options related to establishing a sector are expected to have impacts on non-target species. In fact, if any the indirect impacts may be beneficial since voluntary sectors may be able to identify ways to fish more efficiently, potentially reducing bottom contact time and impacts on scallops and other species. It is presumed that a self-selecting sector will have a plan to manage their allocation in a way that mutually benefits the sector members and avoids wasteful fishing practices.

5.6.4.1.3 Hard Total Allowable Catch (Hard TAC)

A fleetwide hard-TAC may have behavioral effects that could increase impacts on non-target species. For example, a hard TAC would increase the incentive to race for fish. If the entire general category hard TAC was available to all vessels with an open access permit it is likely that the TAC would be caught relatively quickly, and if this opening was during a time period of higher bycatch of non-target species that would have negative impacts compared to spacing effort out. On the other hand if the opening is during a season with lower impacts that could reduce impacts on non-target species. Since most general category vessels have other permits, once the general category scallop TAC is caught many of those vessels will likely prosecute other fisheries, still interacting with non-target species.

5.6.4.2 Establish a Northern Gulf of Maine Scallop Management Area (NGOM)

Under Alternative 3.1.4.2, an open access permit to fish for scallops under general category would remain for the NGOM, and a vessel could land up to 400 pounds of scallops per trip if the vessel has VMS (IB permit). Since this alternative includes a hard TAC the potential negative impacts of open access on non-target species in this area are reduced.

Alternative 3.1.4.3 would develop a separate limited entry general category program in the NGOM. Since this alternative includes a hard TAC the potential negative impacts of open access on non-target species in this area are reduced. The number of vessels that are expected to qualify under this alternative is 705.

5.6.4.3 Monitoring Provisions

5.6.4.3.1 Require landings and declaration of scallop trip through VMS

Both Alternative 3.1.5.2 and 3.1.5.3 have indirect benefits on non-target species caught in the general category scallop fishery as compared to the No Action alternative because reporting through VMS or IVR improves monitoring of fishing effort.

5.6.4.4 Limited access fishing under general category rules

Section 4.4.5 describes the level of limited access effort under general category. The No Action alternative for this section (to permit all limited access vessels to fish under general category rules outside a DAS) it is not expected to have substantial impacts on non-target species. This type of effort has been permitted since limited access was adopted in 1994, and the level of effort in this capacity has been limited. Alternative 3.1.6.1.2 and 3.1.6.1.3 would only allow limited access vessels that qualify under the same criteria selected for the limited access general category permit to fish under general category rules. The impacts on non-target species from this

alternative are positive compared to the no action because less vessels have the opportunity to fish, but the overall impacts of this activity are minimal. Alternative 3.1.6.1.4 would prohibit all limited access permits (full-time, part-time and occasional) from fishing under general category rules while not on a scallop DAS. This alternative would reduce impacts on non-target species compared to the no action by preventing fishing under this category, but again impacts from this activity are minimal.

Whether the catch is reduced from the limited access portion of the total TAC (Alternative3.1.6.2.2) or the general category portion (Alternative 3.1.6.2.1) these alternatives are not expected to have impacts on non-target species since they are related to how scallop catch is allocated and monitored.

5.6.4.5 Allocation between limited access and general category fisheries (Objective #1)

These alternatives are not expected to have impacts on non-target species since they are related to how scallop TAC is allocated. In general, general category vessels are less efficient because they use smaller gear and fewer crew. However, total bottom contact time is not necessarily higher per pound of scallop meat caught. For example, if a general category vessel uses one ten-foot dredge, and a limited access vessel uses two 15-foot dredges, the limited access vessel has three times as much gear in contact with the bottom. The potential impacts on non-target species is proportional to the length of dredge being used, not whether it is being pulled by a limited access or general category vessel. Because the economic incentives for the two fleets are different, there may be impacts on non-target species as a result. In general, vessels will fish to reduce time at sea and maximize profits. Limited access vessels in particular are under DAS, so these vessels need to maximize all their time spent at sea. These vessels are also more mobile, so if there are areas offshore that are more abundant, the limited access vessels are more likely to fish in areas with high abundance to reduce time spent at sea.

General category vessels cannot fish everywhere because they are more limited by vessel size etc. and they are not managed by DAS so do not have the same incentives to maximize time at sea; therefore, these vessels may spend more time fishing in sub-optimal areas to harvest the daily possession limit which could have higher impacts on non-target species that may live in these areas. On the other hand, there are some non-target species that may be able to escape from smaller gear used by general category vessels compared to larger gear used by the limited access fleet. For example, haddock have an escape response to swim up in the water column when fishing gear is approaching. There is not sufficient data to compare the bycatch rates of general category and limited access vessels.

5.6.4.5.1 Allocation of yellowtail flounder bycatch TAC in access areas

Alternative 3.1.7.3.2 would actually divide the yellowtail bycatch TAC between the limited access and general category fisheries. Whatever overall allocation of the projected scallop catch is allocated to the general category fishery (2.5%-11%), that same percentage of the yellowtail flounder bycatch cap would also be allocate to the general category fleet for access areas. This alternative is not expected to have direct impacts on non-target species. The estimated fishing mortality from an access area assumes all trips are taken, so if dividing that TAC enables one component of the fishery to fish longer, the impacts of those trips have already been accounted for.

There is not sufficient data in the observer database to ascertain whether there are significant differences between bycatch rates on general category and limited access vessels. Some finfish have an escape response when a dredge is approaching, so it could be argued that it would be easier for a finfish to escape a smaller dredge (used on general category vessels as compared to larger dredges on limited access vessels). However, yellowtail flounder do not have a behavioral escape response, rather these fish tend to remain on the bottom or further burrow in the sediment, so it is uncertain if dredge size would affect yellowtail flounder bycatch. Both fleets are required to use 10-inch twine top to reduce finfish bycatch in all areas. There is an experimental fishing permit that is currently researching bycatch on general category vessels east of Cape Cod. It is possible that this study will show that general category vessels may have different bycatch rates than limited access vessels.

5.6.4.6 Incidental Catch (Objective #4)

Impacts on non-target species from incidental catch is minimal. Vessels are targeting other species and scallop is actually the non-target species in this instance.

5.6.5 Measures to allow better and more timely integration of recent data (Goal #2, Objective #5)

In general these alternatives will not impact non-target species. If the general category fishery is managed under a fleetwide hard TAC as a result of this action then it is possible that there will be derby effects causing an increase in effort at the start of the fishing year. If the fishing years changes to a time of year when bycatch rates are higher these alternatives could increase impacts on non-target species. Other alternatives that allocate access on an individual basis would more likely spread effort out and impacts on non-target species would be more distributed throughout the year.

5.6.6 Other measures not directly related to goals and objectives of amendment 11

5.6.6.1 Trawl sweep restriction

Alternative 3.3.1.2 would clarify that the 144 ft. net sweep restriction is intended for all vessels authorized to be in possession in excess of 40 pounds of scallops, except for vessels with a general category 1B permit and fishing under a multispecies or monkfish DAS. While the net restriction on trawl sweep size may have beneficial impacts on non-target species by restricting the maximum size of trawl gear, the Council intended this restriction for vessels targeting scallops, not vessels that catch scallop incidentally. The impacts of this gear type on scallop and other non-target species were analyzed in Amendment ?.

5.6.6.2 Modification to the 50 bushel possession limit east of the demarcation line

Limiting the amount of in-shell scallops a vessel can be in possession of reduces its incentive to highgrade, and if a vessel wants to shuck its catch and needs more than 50 bushels to reach the 400 pound possession limit, that vessel will have to shuck some of its catch before possessing over 50 bushels. The no action alternative potentially reduces fishing time if the shucked product from 50 bushels ends up being 400 pounds (i.e. the vessel may not have to make another tow if the in-shell product on deck ends up equaling 400 pounds of shucked scallop meat). However, in practice it is common that over 50 bushels are needed to shuck 400 pounds of

scallop meat. Alternative 3.3.2.2 would allow a vessel to be in possession of up to 100 bushels east of the demarcation line. This alternative would allow a vessel to shuck scallops up to 400 pounds of meat and not run the risk of being in possession of more than the trip limit. This alternative does not necessarily increase time on the bottom, because a vessel planning to land 400 pounds of meat would continue to fish until it caught the sufficient amount of in-shell product to cut out 400 pounds of meat. This alternative would simply allow the vessel to be in possession of up to 100 bushels before it had to start shucking meats.

5.6.7 Enforcement and Safety

[See separate document prepared by NMFS Office of Law and Enforcement – will be handed out at Council meeting]

5.7 CUMULATIVE EFFECTS

[Will be handed out as a separate document at Council meeting]

6.0 CONSISTENCY WITH THE MAGNUSON-STEVENS CONSERVATION AND MANAGEMETN ACT

After final decision update this section with the new MS-Act provisions – minor changes to both

6.1 NATIONAL STANDARDS

Section 301 of the Magnuson-Stevens Fishery Conservation and Management Act requires that fishery management plans (FMPs) contain conservation and management measures that are consistent with the ten National Standards:

> *In General. – Any fishery management plan prepared, and any regulation promulgated to implement any such plan, pursuant to this title shall be consistent with the…national standards for fishery conservation and management.*

[*To be completed for final submission document*]

(1) 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.

(2) Conservation and management measures shall be based upon the best scientific information available.

(3) 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.

(4) 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.

(5) 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.

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

(7) Conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication.

(8) 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.

(9) 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.

(10) Conservation and management measures shall, to the extent practicable, promote the safety of human life at sea.

6.2 OTHER REQUIRED PROVISIONS OF THE M-S ACT

Section 303 of the Magnuson-Stevens Fishery Conservation and Management Act contains 14 additional required provisions for FMPs, which are discussed below. Any FMP prepared by any Council, or by the Secretary, with respect to any fishery, shall:

[*To be completed for final submission document*]

(1) contain the conservation and management measures, applicable to foreign fishing and fishing by vessels of the United States, which are-- (A) necessary and appropriate for the conservation and management of the fishery to prevent overfishing and rebuild overfished stocks, and to protect, restore, and promote the long-term health and stability of the fishery; (B) described in this subsection or subsection (b), or both; and (C) consistent with the National Standards, the other provisions of this Act, regulations implementing recommendations by international organizations in which the United States participates (including but not limited to closed areas, quotas, and size limits), and any other applicable law;

(2) contain a description of the fishery, including, but not limited to, the number of vessels involved, the type and quantity of fishing gear used, the species of fish involved and their location, the cost likely to be incurred in management, actual and potential revenues from the fishery, any recreational interest in the fishery, and the nature and extent of foreign fishing and Indian treaty fishing rights, if any;

(3) assess and specify the present and probable future condition of, and the maximum sustainable yield and optimum yield from, the fishery, and include a summary of the information utilized in making such specification;

(4) assess and specify-- (A) the capacity and the extent to which fishing vessels of the United States, on an annual basis, will harvest the optimum yield specified under paragraph (3); (B) the portion of such optimum yield which, on an annual basis, will not be harvested by fishing vessels of the United States and can be made available for foreign fishing; and (C) the capacity and extent to which United States fish processors, on an annual basis, will process that portion of such optimum yield that will be harvested by fishing vessels of the United States;

(5) specify the pertinent data which shall be submitted to the Secretary with respect to commercial, recreational, and charter fishing in the fishery, including, but not limited to, information regarding the type and quantity of fishing gear used, catch by species in numbers of fish or weight thereof, areas in which fishing was engaged in, time of fishing, number of hauls, and the

estimated processing capacity of, and the actual processing capacity utilized by, United States fish processors;

(6) consider and provide for temporary adjustments, after consultation with the Coast Guard and persons utilizing the fishery, regarding access to the fishery for vessels otherwise prevented from harvesting because of weather or other ocean conditions affecting the safe conduct of the fishery; except that the adjustment shall not adversely affect conservation efforts in other fisheries or discriminate among participants in the affected fishery;

(7) describe and identify essential fish habitat for the fishery based on the guidelines established by the Secretary under section 305(b)(1)(A), minimize to the extent practicable adverse effects on such habitat caused by fishing, and identify other actions to encourage the conservation and enhancement of such habitat;

(8) in the case of a fishery management plan that, after January 1, 1991, is submitted to the Secretary for review under section 304(a) (including any plan for which an amendment is submitted to the Secretary for such review) or is prepared by the Secretary, assess and specify the nature and extent of scientific data which is needed for effective implementation of the plan;

(9) include a fishery impact statement for the plan or amendment (in the case of a plan or amendment thereto submitted to or prepared by the Secretary after October 1, 1990) which shall assess, specify, and describe the likely effects, if any, of the conservation and management measures on-- (A) participants in the fisheries and fishing communities affected by the plan or amendment; and (B) participants in the fisheries conducted in adjacent areas under the authority of another Council, after consultation with such Council and representatives of those participants;

(10) specify objective and measurable criteria for identifying when the fishery to which the plan applies is overfished (with an analysis of how the criteria were determined and the relationship of the criteria to the reproductive potential of stocks of fish in that fishery) and, in the case of a fishery which the Council or the Secretary has determined is approaching an overfished condition or is overfished, contain conservation and management measures to prevent overfishing or end overfishing and rebuild the fishery;

(11) establish a standardized reporting methodology to assess the amount and type of bycatch occurring in the fishery, and include conservation and management measures that, to the extent practicable and in the following priority-- (A) minimize bycatch; and (B) minimize the mortality of bycatch which cannot be avoided;

(12) assess the type and amount of fish caught and released alive during recreational fishing under catch and release fishery management programs and the mortality of such fish, and include conservation and management measures that, to the extent practicable, minimize mortality and ensure the extended survival of such fish;

(13) include a description of the commercial, recreational, and charter fishing sectors which participate in the fishery and, to the extent practicable, quantify trends in landings of the managed fishery resource by the commercial, recreational, and charter fishing sectors;

(14) to the extent that rebuilding plans or other conservation and management measures which reduce the overall harvest in a fishery are necessary, allocate any harvest restrictions or recovery benefits fairly and equitably among the commercial, recreational, and charter fishing sectors in the fishery.

6.3 DISCRETIONARY PROVISIONS RELATED TO LIMITED ACCESS

Section 303 of the Magnuson-Stevens Fishery Conservation and Management Act also includes discretionary provisions for FMPs, one of which relates to the development of a limited access program for a fishery and is discussed below.

[*To be completed for final submission document*]

Any FMP prepared by any Council, or by the Secretary, with respect to any fishery, may:

(6) establish a limited access system for the fishery in order to achieve optimum yield if, in developing such system, the Council and the Secretary take into account --

(A) present participation in the fishery,

(B) historical fishing practices in, and dependence on the fishery,

(C) the economics of the fishery,

(D) the capability of fishing vessels used in the fishery to engage in other fisheries,

(E) the cultural and social framework relevant to the fishery and any affected fishing communities, and

(F) any other relevant considerations.

7.0 RELATIONSHIP TO OTHER APPLICABLE LAW

7.1 NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

7.1.1 Introduction and FSEIS Table of Contents

NEPA requires preparation of an Environmental Impact Statement (EIS) for major Federal actions that significantly affect the quality of the environment. The Council published a Notice of Intent (NOI) to prepare this Amendment and the EIS in the *Federal Register* on February 6, 2006, which was followed by three scoping meetings in Cape May, NJ, Portsmouth, NH, and Hyannis, MA. The Council prepared a scoping document that outlined some of the major issues and types of management measures that the Council might consider during the development of Amendment 11. The Council invited discussion on the scoping document and any other issues of concern at the scoping meetings as well as suggestions for appropriate management measures to consider during the development of this amendment.

To prepare the DSEIS, the Council held numerous meetings of its Scallop Oversight Committee, Scallop Advisory Panel, and Scallop Plan Development Team. The Council assembled a specific advisory panel with general category participants within the region while Amendment

11 was developed and discussed. The two advisory panels often met simultaneously, and sometimes they met separately. All of these meetings, as well as several related Council meetings, were open to the public. A list of public meetings held during the development of Amendment 11 is provided in Section 8.0 of this document.

The preferred alternatives, as well as the other management measures in this document were the subject of public hearings in May 2007. Public hearings were held in ???. The Council took public comment until the end of the public comment period (June ?, 2007). The Council is scheduled to approve the final management action and vote to submit Amendment 11 to NMFS at its June 2007 meeting in Portland ME.

7.1.2 Scoping Process

During the scoping period for Amendment 11, three scoping meetings were conducted, and numerous written comments were received. This section summarizes the issues raised during the scoping period for Amendment 11, through both the scoping meetings and written comments. The Scallop Committee, Advisory Panel, and Plan Development Team considered all of the scoping comments during the development of the range of alternatives for consideration in Amendment 11.

7.1.2.1 Scoping Comments

The scoping period was from February 6 – March 6, 2006. Over 50 written comments were received during that time period and two comments were received after the scoping period deadline. In general, the scoping comments identified numerous issues for consideration in this amendment, and perspectives on each of the issues varied widely. The summary below identifies specific measures that were suggested regarding the seven scoping issues, and summarizes a sample of other comments received about scallop management in general. This summary is not intended to reflect every scoping comment that was received. The letters and scoping meeting summaries should be referenced to gain a better perspective on individual comments, ideas, and suggestions. The actual scoping comments are included in Appendix I.

- **Limited Entry**

Most commenters felt that limited entry is necessary. However, one voiced that it should only be considered if it can be proven that limited entry in the general category sector is necessary to prevent overfishing. In addition, one suggested that what we are seeing is just the cyclical nature of the scallop fishery; if we wait the price will drop and effort will leave. Many commented that when the Council considers who should qualify it needs to remember that a certain poundage or number of trips is necessary to sustain an active day boat vessel. A handful suggested that the permit could be reserved for owner operators. One suggestion was made that consolidation of permits and trips/pounds should be considered in this action. Another voiced that there may be historic participants fishing in state waters that do not fall under Amendment 11 and these vessels should be identified and kept separate. Several suggested some sort of tiered permit system; with vessels that have a significant level of dependence, then vessels that do not qualify but have history, and then a bycatch fishery that reflects actual bycatch numbers. It was suggested that the bycatch permit could be different for various fisheries and areas. Or there could be "full-time" and "part-time" general category permits. There was concern expressed that we are shutting people out who have not had an impact on the fishery or caused overfishing. For

example, when the resource returns in the GOM, the state of Maine needs to preserve the right to catch scallops. So Maine recommends an open access fishery for waters north of 43° 00 with a maximum of 200 pounds and the same input controls as required in the small dredge exemption area (max dredge of 10.5, 4-inch ring, 10-inch twine top and 5 person max crew). New requirement would be that the vessel must be owner operated. Another suggestion was made that the Council should consider a very small open access fishery with a lower possession limit, a hard TAC by region or season.

Control Date:
There were commenters in favor of using it, as well as against it. Some additional suggestions were going back to 1994 to identify the original historic participants, on the other hand there were suggestions to use the VMS data instead (Dec 2005), April 2005, or even the end of 2006. One recommended that for comparison the document should consider the full range (Nov 1, 2004 through end of 2006). One commenter voiced that if the goal of the action is to halt expansion than the control date should be the only criteria used. Another idea was to use the control date as well as any vessels that have purchased VMS that did not have a permit before the control date. To get the smallest number of vessels, some suggested using the control date as the first "cutoff", then the requirement to have VMS, and then a certain poundage/trip requirement. A few commenters voiced that history should not be included and a limited access permit should be given to all vessels that had a permit before the control date, "The use it or lose it approach is unfair." While others said that history needs to be considered so permits are not given to people that have never landed scallops. A few voiced concern that if history is not considered an open access permit would all the sudden have value, and people who never scalloped would then just turn around and sell those permits for the profit. He estimated that a limited entry general category permit could go for as much as 40,000 to 100,000 dollars. However, one person stated that the general category was supposed to be relatively small and using a high poundage for qualification criteria would only reward those who have abused the original purpose and punish the occasional users. Another stated, the purpose of the general category permit has been lost; most of the boats are now full-time scallop boats that fish more than half the year, it used to be more like 70 to 100 trips a year.

Potential Qualification Criteria:
Numerous qualification criteria were suggested: 1) identify a certain number of pounds for 1998-2003 and give an incidental permit to the vessels that do not qualify; 2) vessels need to show 50 trips or 20,000 pounds (2,500 bushels) in one year; 3) vessels need to show 250 days fishing during a qualification period; 4) use the control date, and VMS and then average landings from five previous years; 5) 20,000 pounds prior to the control date; 6) use VMS date and 30 trips or 5,000 pounds in one year during a qualification period; 7) allocated days to individuals based on best year from 2000-2004; 8) only give a permit to vessels with scallop landings - vessels that are obviously direct in other fisheries such as clam or quahog should not get a permit; 9) based on the number of trips or pounds from 1994-1999 because that range of dates is before higher abundance and the number of participants was less; 10) allocate days based on highest year from 1994-2004 and if no landings from 1999-2004 then you get an incidental permit; 11) average landings from 1999-2004 because during this time frame the scallop and other fisheries have fluctuated; 12) days allocated based on total pounds from highest year from 2000-2005; 13) identify tiers of permits that would be based on percent of income from scallops landed after the

control date; 14) control date plus 3-5 years of prior or consecutive landings; 15) 20-25 trips a year and/or 8-10,000 pounds and those permits should only be permitted to fish in inshore areas only; 16) days or pounds allocated in tiers based on history and/or other criteria – 30 days, 30-60 days, 60-90 days etc.

Several stated that if the control date is used, then landing history should not be used post the control date. Several commenters said that if and when the Council considers history, it needs to address the inability to transfer general category permit history because it is an open access fishery. One person said that the qualification issue is going to be very difficult for vessels that diversify specifically small boats from the Cape. He described that fleet as "ever-changing to remain the same," and it would not be right to keep them out of this fishery because they did not have a high level of landings. Several suggested that an appeals process needs to be identified upfront. For vessels that do not qualify, it was suggested that a small number of days could be set aside for those vessels. Another commenter said that the Council needs to identify what the level for "incidental catch" is compared to the "directed" day-boat fishery and those vessels should be treated separately. There is no need to limit truly incidental scallop catch in this action. One commenter suggested that the VMS date is enough to be used as a mechanism to reduce the number of permits (2,800 to 800); "if that is not a reduction I do not know what is." Many commenters suggested that a re-rigging clause needs to be included, however several warned that too many vessels have been given permits in other limited entry programs because of re-rigging, equipment and retrofitting clauses (i.e. monkfish plan).

- **Allocation**

A range of allocations were suggested for the general category sector: 3%, 1-5%, 5-7.5%, 5.8%, 15%, 20%, 25%, and 35%. Several commenters suggested that the percentage should be based on the historical average from 1994-2004 (about 3%). One added that since Amendment 4 stated that if general category landings increased the Council should reduce landings, which he argues implies that total allocation should not be higher than the historical average. Furthermore, it was stated that Amendment 11 should not fundamentally revisit the decisions made under Amendment 4 (related to implied allocation for the general category sector). One commenter added that since the Council managed the limited access fleet out of other fisheries, they have become very dependent on scallops and that needs to be considered during allocation discussions. On the other hand, another commenter said that resource recovery and market price have created a scenario of success few could have imagined when Amendment 4 was implemented, and since conditions are different now we should not have to stick with Amendment 4. Therefore, he argued a higher percentage is needed to sustain an economically viable day boat fleet. Another suggested that the percent of landings would be higher for the general category fleet if the scallop resource was not fished out in inshore areas, so the percentage should be higher for when it returns. Furthermore, it was stated that while there may be reason to limit continued expansion of the general category sector, it has not be proven that increased general category landings have contributed to overfishing, so there is no justification to reduce the present catch. Another suggested that this fishery should help cuts in other fisheries and be used as a way to spread the wealth along the coast, thus a higher allocation is justified.

There were many commenters that had additional suggestions about how the allocation could be further broken down within the general category sector. Some suggested that allocations should

be in pounds and others suggested days. One suggested half of the general category allocation should be divided between the north and the south. A handful suggested that allocation on an individual basis may be the best way to allocate this resource. Some suggested equal allocations that could be transferable in 1,000 pounds increments. Another suggested 150-200 days for "full-time" general category users with history and 50-75 days for "part-time" vessels without history. Another suggestion was to just allocate 80,000 pounds per boat. One idea was presented that individual allocations should be based on the percent of revenue generated from scallops. Another suggested that general category allocations should be limited to a season from April 1 – October 31. Several recommended that leasing and consolidation should be allowed.

- **Dual permits for limited access fleet**

The comments were pretty divided on this issue, some in favor of allowing limited access vessels to target scallops under general category rules, and others opposed to it. Several suggested that if a limited access vessel with history of fishing under general category rules can qualify for a general category permit based on the same criteria, then those limited access vessels should also be eligible for a general category permit. It was also suggested that a percent of the total TAC could be allocated to the limited access fleet to fish for under general category rules; the historical average (less than 1% of the total) was recommended for consideration.

Arguments in favor included that fishing under general category rules is important for limited access vessels because it provides an opportunity to train captains and help pay for fuel. Another commenter pointed out that not all limited access vessels are the same, specifically fishing under general category rules is an important component of part-time and occasional permit owners especially because they are not given many scallop DAS. One limited access vessel owner pointed out that if this right was taken away it would diminish the value of a limited access permit. The right to land 400 pounds while not on a DAS is currently folded into the limited access permit; they are not separate, so it is not appropriate to take that right away.
Several commenters voiced that limited access vessels should not be allowed to land under general category rules because they already have been given a significant portion of the resource. Furthermore, in a fishery where overfishing is occurring it does not make sense to allow the biggest, most effective harvesting platforms to fish outside regulations. It was suggested that if limited access vessels are fishing for other species, maybe a 200 pounds incidental catch limit would be more appropriate. One the other hand another individual recommended that "bycatch" is alive and should be thrown back- no incidental catch allowance. Lastly, one commenter pointed out that this is not an issue that will solve overfishing, the number of vessels that participate in this component of the fishery is very small and this is only an issue because there is a perception of fairness of access.

- **Hand-TACs**

Overall, there was consensus that a TAC program should not be developed that has the potential to lead to a derby fishery. Commenters across the board said that derbies are dangerous and uneconomical. Many commented that a hard TAC for the general category sector would only make sense if the limited access sector was under a hard TAC as well; one suggested a hard TAC of 80% for limited access, 19 % for general category and 1% for bycatch. One commenter said that the limited entry general category fleet should be monitored for one year and then

implement a hard TAC if it is still necessary. If a hard TAC is still not enough then consider a max dredge width of 10 feet. Some suggested that an individual TAC would have the highest probability of preventing a derby fishery and would be the easiest to enforce. But several recommend that ITQs would be a mistake. One recommended that individual TACs could be implemented on a trial basis for one year. Another suggested that the document should consider stacking, but another recommended no stacking – should be the same for both sectors of the industry.
Lastly, some noted that allocating a share to each general category vessel will require new enforcement and monitoring capabilities.

Many had comments related to area TACs. It was suggested that area TACs would be effective because each area could develop rules that work for them. One person suggested a division for an area TAC could be the 73° 00 line. A few commenters suggested implementing a line that would identify an inshore area, and general category vessels could fish in that area and limited access vessels would have to fish to the east of that area (i.e. 50 miles offshore). One recommended that the Council should not allocate by area based on recent data because that would be unfair to reward areas and participants that are primarily new entrants. Lastly, one commenter suggested that TACs are not necessary because as scallop and multispecies fisheries improve the DAS boats will return to those fisheries and less pressure will be on the general category fishery.

- **Sectors and harvesting cooperatives**

Many commenters were not sure what sectors really were so did not comment. A handful expressed concern that allocations should not be stacked on one large general category vessels so that it becomes like an offshore boat. Several felt that this should be considered in a future amendment after the participants in the general category are identified. Others believe that sectors are important to consider now. "Individual allocation may be the most simple, but community quotas are the next best thing." Sectors are useful because they police themselves. On the other hand one responded that the general category fleet is very diverse and the Council would be hard pressed to find even two fishermen who agree, "So forcing us into formal groups would be a disaster."

- **Incidental scallop catch**

Majority of commenters said that a relatively small level of scallop incidental catch should be permitted. Some felt that is should remain at 40 pounds so it is a truly incidental catch. Others suggested that 100 pounds should be considered to minimize impacts for vessels that do not qualify for a limited entry general category permit. In addition, it was recommended that the Council could consider developing a bycatch cap for each fishery. Another suggested that a range of incidental catch limits from 40-400 pounds should be analyzed for vessels that do not have more that 10% of revenues from scallops. Several commenters said that the incidental permit should remain open access. On the other hand, there were a handful of commenters that felt there should be no incidental catch limit; the scallops are alive so they should be thrown back.

- **Change the scallop fishing year**

All individuals that commented on this issue opposed considering a change for the scallop fishing year in this action except one. One individual suggested that August 1 could work, otherwise all others that concentrated on this issue suggested that the Council wait to consider this in a future amendment. This decision should not be done "casually or repeatedly." Most explained that it would cause disruptions to the established practices and scallop markets, and since the scallop survey is currently being changed, the Council should wait until the new scallop survey is designed and then see if it is still necessary to change the scallop fishing year.

- **Other issues related to Amendment 11**

- We need to recognize that as a result of management as the rich get richer, the little guy is not protected.
- Request that the science center survey the Gulf of Maine. Assessing the biomass in the GOM should be a research set-aside priority because it is a wildcard?
- New entrants into the general category fishery should have to use dredges.
- Council may want to identify discrete, historic day boat fisheries in state waters outside of assessment area (north of 42° 00).
- To address overfishing not fair to only look at general category sector – not clear where and why overfishing is occurring?
- In order to reduce effort could consider increasing ring size to 4.5-inches.
- When management addresses scallop overfishing it should be by resource area (Delmarva, NY Bight, South Channel and southeast part of GB, NE peak and northern part of GB, and the GOM).
- Before major changes are made it would be better to monitor general category fleet under VMS for several years.
- Consider allowance of new entrants into the general category fishery like the lobster apprentice program.
- Council should consider allowing vessels that land roe on scallops to have a higher possession limit.
- Council should revisit scallop overfishing definition.
- New measures should attempt to preserve the newly developed fishery at 2004 levels.
- Allocate a maximum of 200 trips and max dredge width of 16 feet to reduce effort.
- Not fair to have people invest in Skymate to keep an existing permit and then take it away.
- Many disenfranchised groundfish vessels need this permit as a matter of survival.
- Several suggestions were made to minimize impacts on habitat, to name a few, limit the time gear can be used by seasons and regulating horsepower inshore.
- Several suggestions were made for ways to use the scallop resource as a way to restore fleetwide historic balance and help communities.
- Allow "buyboats" to purchase scallops at sea for general category vessels. It would save fuel, reduce dock space needed, and an enforcement agent could be put on every vessel. Buyboats could be put in areas that are farther from shore than general category vessels would normally go but not in areas where limited access vessels work, that way resource could be harvested in areas that are underutilized (i.e. Virginia Beach).
- Do not reduce possession limit.
- No nets should be allowed, and another suggested prohibiting shell stocking.

- In 1994 some vessels took the general category permit because VMS was $8,000 and they did not want to pay for it. The price has come down so those vessels that originally qualified should be considered for a limited access permit again.
- Max dredge of 8 feet, another suggested 15 ft.
- In the Mid-atlantic should require a 6.5-inch square codend and 6-inch twine top.
- Dealers should not be allowed to buy more than 400 pounds of scallops from a vessel at one time.
- One effective way to reduce effort is to take permits away from people who cheat.
- Several suggested that the Council should combine Amendment 11 and Amendment 12 and address overfishing in one major amendment.
- Requests a printout of VMS tow tracks to identify where the limited access fleet fished, then a line can be drawn along the coast and limited access fisheries can fish to the east of the line and general category vessels will have to stay to the west.
- Document should try to show where overfishing is occurring and by who.
- All states should have a minimum number of participants to assure all states represented based on port of landings.
- Implement a vessel size limit for general category vessels to reduce effort.
- In ten years all limited access vessels will be ashore with hired skippers – is this what we had in mind? Permits should expire when an owner dies.
- The general category sector has not been integrated in rotational area management or research and they need to be.
- Consider a harvest period for general category and keep in mind that more bushels are needed in the winter to get 400 pounds.

- **Other issues not related to Amendment 11**
- The general category fleet needs to be able to get back into the Great South Channel.
- Require drug testing for scallop captains and crew.
- Why weren't the shrimpers that were landings over 1,000 pounds of scallops a day off New Jersey not busted?
- Too many scallops die from wasteful deckloading, up to 10% of total scallop landings.
- Support for increase in enforcement to reduce illegal fishing.
- Recommend that a research set-aside program be developed for the general category fishery.
- Not likely that the 2% set-aside for general category vessels in CA II is going to be harvested, can that be traded for a different area?
- When an application is sent to a permit holder NMFS should include some background information. For example, when I applied for my general category permit this year it would have been nice to know that the Council was developing Amendment 11.

7.1.2.2 Scoping Meetings

Three scoping meetings were held in February 2006. A summary of each meeting is described below. Actual audio transcripts of these meetings are available by contacting the NEFMC Office at 50 Water Street, Newburyport, MA 01950 (phone: 978-465-0492).

Cape May, NJ – February 21, 2006

About 120 individuals signed in for the scoping meeting in Cape May Court House, NJ, and probably closer to 150 people were there. Michelle Peabody, a Mid-Atlantic Council member and Scallop Committee member welcomed the large crowd and Council staff (Deirdre Boelke) reviewed recent trends in the general category fishery and summarized the scoping document the Council approved for Amendment 11. About 25 individuals gave oral comments during the meeting and two written comments were submitted. The meeting began at approximately 7:15 PM and adjourned around 9:30 PM. The majority of comments were very focused to the seven issues summarized in the scoping document. This meeting summary will first describe a few overall statements about the meeting and then summarize the comments by issue. See the scoping document for a detailed description of each of the scoping issues.

Overall, very thoughtful comments were made from all sectors of the scallop industry that were present at the scoping hearing. Limited access owners and captains were present, as well as general category permit owners from Georgia to Massachusetts. Some of the individuals present have been involved in the general category scallop fishery for many years, while others are more recent entrants that have been fishing for scallops under general category rules since implementation of the control date (November 1, 2004). There was general consensus that the Council needs to control effort in the general category fishery and limited entry is probably the way to go. Most speakers supported the use of the control date within reason, meaning some exceptions may need to be considered. Some individuals supported the need for additional qualification criteria such as minimum landings during a specified time period. In terms of allocation between the limited access and general category fleet, most commenters supported the use of an historical average of landings.

- **Limited Entry**

Many individuals voiced support of the control date with additional qualifications identified that would identify a group of vessels that could remain in the general category fishery and actually stay in business. There was concern that too many permits would be allocated, and the general category vessels that have always made a living fishing for scallops would not receive enough allocation to make a living. However, there were a handful of individuals who strongly opposed the use of the control date. "NMFS gave me a permit, I invested a lot of money to go scallop fishing and now they are going to take it away?" "Why should 300 people get all the scallops, it's not right." A few individuals suggested that the Council should consider allowing vessels an opportunity to fish for scallops when conditions are good like they are now. It was said that the intent of this permit was to provide opportunity for vessels, and this permit helps new fishermen get into the business, "fishing is a family tradition and a general category scallop permit helps to maintain a way for guys to save money and start fishing."

Several individuals in the audience explained that they had a boat and applied for a general category permit before the control date, but due to paperwork delays, they did not receive their permit until after the control date; it was suggested that a clause should be considered for those types of vessels and a very specific appeals process should be defined during the development of this action. Furthermore, it was suggested that a re-rigging clause should be included, similar to what was used in the monkfish plan. In addition, one individual suggested that rather than the control date, a more suitable date to use is the date vessels were required to use VMS in the general category fishery; in his opinion that would qualify a smaller, more appropriate number of

vessels that intend to fish for scallops (around 800). Lastly, one commenter suggested that it may be appropriate to use a ten year time period for qualification criteria (1994-2004); a long time period is the fairest way to do it.

- **Allocation**

Several commenters suggested that Amendment 4 already allocated the resource between the limited access and general category fleet. It never specified a number, but one speaker commented that there is language in Amendment 4 that says all directed effort should be for the limited access fleet and general category landings are small enough that they are insignificant to fishing mortality. Furthermore, the amendment states that if the general category fishery grows, the possession limit should be reduced, rather than "allocating" more resource to the general category sector. Therefore, he stated that it was not appropriate to allocate more than the historical average to the general category fleet (average from 1994-2004 is 3.5% based on data in scoping document). One general category fisherman honestly commented that he would like the Council to allocate a high percent to the general category fishery, but it is probably fair to consider the historical average. Another commenter suggested that if the control date is used, it makes sense to base the allocation on a historical average before the control date, since that date landings have gotten out of control and effort is not consistent with past activity. One commenter suggested that the Council specify the allocation in pounds rather than as a percentage of total landings, because the condition of the resource has changed over time and 5% today is very different in actual pounds landed compared to 5% in 1994. The Council must consider the pounds needed to sustain the general category sector, not the percentage of the total because that fluctuates.

Several commenters warned that they believe this resource is on the decline and there is not going to be fishing like this again for sometime. "This fishery is not sustainable at 60 million pounds so we should not base allocations on that number, I do not expect to see this level of landings for long." Another commenter voiced that this action is pushing small boats against big boats, and that was unfortunate, he added, "It is supposed to be us against the government." On that note, several commenters did voice that it was critical for the general category boats to work together to devise a limited entry program that worked for their fishery, and they needed to keep in mind that the big boats do not have the ability to diversify; "they are the directed scallop fishery and they do not have other options."

- **Limited access under general category**

Many commenters were against preventing the limited access fleet from landing under general category rules when not fishing on a DAS. It was further suggested that limited access vessels with a history of landings under general category rules should definitely not be prevented from continuing that activity. Furthermore, it was pointed out that not all limited access permits are part of a huge, fully integrated corporation. There are a number of full-time limited access boats that are owner-operated, and there are part-time and occasional limited access vessels that are not given many scallop DAS that should be able to fish under general category rules. One commenter suggested that it would be appropriate to allocate the percent of total landings caught by the limited access fleet while fishing under general category rules to the limited access fleet. For example, an average of 0.5% of the total was landed by these vessels from 1994 to 2004; therefore, that allocation could be reserved for limited access vessels fishing under general

category rules. Several people suggested that gear requirements for the limited access and general category fleets should be consistent, especially if limited access vessels are permitted to fish under general category rules.

- **Hard-TACs**

Overall there was support for the idea of a hard TAC to control effort in the general category fishery, but it was pointed out by many individuals that it would have to be designed very carefully to prevent negative, unintended consequences. There was general consensus that a hard TAC alone was not the answer, and we need to be careful to design a plan that does not promote a derby fishery. Furthermore, some speakers were in favor of TACs by area, TACs by community, individual TACs and seasonal TACs; the pros and cons of each approach were briefly discussed. For example, one speaker suggested that a community TAC could work better than an area TAC because an area TAC would just make vessels move to different areas once a TAC was reached. He pointed out that not all vessels can move to different areas, so that would be unfair, and potentially unsafe. It was suggested that a hard TAC used over time might work. Another individual suggested that an individual TAC would prevent derby fishing and unsafe situations. "If a hard TAC is used, we need to pick the right number of vessels because if the pie is cut between us too small this will be a big waste of time because none of us will be able to stay in business." It was suggested that the Council needs to identify the number of general category boats that can make a living or create a few different permit categories potentially with different possession limits, so that this action protects the vessels that directly fish for scallops under general category. One individual suggested that there could be different rules for different areas; for example, trawls could be prevented in areas east of 73° 30.

- **Sectors and harvesting cooperatives**

Not many commenters focused on this issue. One person suggested that if an individual owns several general category boats, stacking should not be allowed, similar to the current restrictions on the limited access fleet. It would not be fair to allow general category boats to stack permits or quota on one vessel if the limited access fleet is not allowed to do the same.

- **Incidental scallop catch**

Most individuals that commented on this issue agreed that scallop bycatch should not be zero. If a limited entry program is established, or if a hard TAC is reached during the fishing year, vessels should be allowed to land an incidental level of scallops. "We do not want to support any measures that increase scallop bycatch." One commenter suggested that the current incidental catch limit of 40 pounds is still appropriate and should not be changed up or down.

- **Change of scallop fishing year**

None of the individuals that commented on this issue supported changing the fishing year. "Industry has said time and time again that this should not be considered, how does this issue keep coming up?" Most suggested that the Council remove this issue from consideration in this amendment. They stated that the scallop survey program is currently being reconsidered, so it would make more sense to see what comes of that process and then adjust the scallop fishing year if necessary. Several went on to explain that the range last considered in Amendment 10 was inappropriate anyway. One individual said that the range of July through September is too

late because restaurants need the product sooner, and another suggested that January 1 is the only other date that might make sense.

- **Other**

There were a variety of comments about other measures that could be considered in this action to control effort in the general category fishery. For example, it was suggested that some requirements for the limited access fishery could be applied to the general category fishery and that would help reduce fishing mortality like restrictions on trawl nets and a prohibition on shell stocking. However, several general category fishermen replied to these ideas negatively, and explained that they would not work for their businesses. For example, one individual lands scallops under his general category permit when fishing on a multispecies DAS and he uses a net, and another individual supplies a small market that demands live scallops so he needs to land his product in the shell.

Overall there was confusion about why an increase in general category landings is a bad thing. It was voiced that the small day-boat fishery is not the main culprit in scallop mortality and if the Council is serious about addressing overfishing in the scallop fishery they should focus on the real problem, the limited access fishery that lands the vast majority of scallops. It was said that the new effort in the general category fishery has helped some boats operating on the margin to stay in business. Because of major restrictions implemented in other fisheries, this opportunity has allowed more fishermen to keep fishing, and it was stated that the Council should be supportive of maintaining opportunities for fishermen to remain in business. One individual suggested that this "problem" will fix itself; once the price of scallop drops; "you will see a lot of this effort disappear when the price drops as we expect it to do relatively soon." As mentioned earlier, there were several comments about the future health of this resource, and it was stated that the Council never should have let 60 million pounds get caught, that is too high for this resource. On a different note, one commenter voiced that this is a serious issue and the timeline for this action is still too long even though it is relatively short compared to other amendments recently developed by the Council.

Portsmouth, NH – February 22, 2006

About 18 individuals signed in for the scoping meeting in Portsmouth, NH, and 15 individuals gave oral comments and two written comments were submitted. Thomas Hill, the Chair of the Scallop Committee welcomed the audience and gave an overview of the process and purpose of the meeting. Deirdre Boelke reviewed recent trends in the general category fishery and summarized the scoping document the Council approved for Amendment 11. One additional Council member, David Goethal from New Hampshire, was present to listen to public comments. The meeting was held from 7-9 PM. Due to the small size of this scoping hearing, there was time to answer more questions and an opportunity for more informal feedback from the public. This meeting summary will first describe a few overall statements about the meeting and then summarize the comments by issue. See the scoping document for a detailed description of each of the scoping issues.

Overall, the public stressed that it is important for the Council to clearly identify what the primary goal of this action is; is Amendment 11 trying to protect small directed dayboat vessels,

or is the main intent to provide diversity for small boats to participate in a variety of fisheries. It was suggested that before the Council identifies how many vessels should get this permit, the goal should be defined. Furthermore, it was suggested that the Council needs to define what the target mortality for the general category fleet is and what percentage of the long term optimum yield should be harvested by the general category fishery. It was agreed by all commenters that limited entry is needed, and one individual commented that "we are a victim of our own success." The general category fishery has evolved into an overcapitalized fishery; there has been an explosion of effort and the general category sector was never supposed to be this large.

- **Limited Entry**

Many people supported the control date with additional qualifications intended to protect the directed general category fleet. One individual stated that new entrants after the control date were warned that their permit was given under speculation, and "the Council should not extend the control date for cry babies." It was also suggested that rather than the control date, the Council should use the date VMS was required, that is when the serious boats decided to bite the bullet and invest. Another individual voiced that Amendment 4 wanted to protect the inshore directed dayboat scallop fleet, so this action should focus on the same thing. Another person suggested that similar criteria could be considered as was in the Amendment 4 limited entry program in terms of landing categories and number of years fishing. One commenter said that the general category fleet is the best group to identify what qualifications should be, "They should identify how many boats they want in their fishery." Another suggestion was that the Council could consider only giving general category permits to vessels that are owner operated, similar to the lobster apprentice program. On a different note, one individual suggested that this action should preserve options for small boats to stay in business, and since there are few opportunities left for fishermen, this permit could, and was intended to help vessels diversify.

- **Allocation**

A number of individuals suggested that an allocation should be based on the intent of Amendment 4, a small amount of effort that will not impact the overall mortality of the scallop resource. Several voiced that the allocation should be based on a historical average before the control date was implemented. One speaker suggested that the percent of total landings attributed to the general category fleet may only seem higher than other years because the limited access landings were lower because of poor fishing conditions in the Hudson Canyon area. The Scallop PDT can review this, but the Committee Chair replied that he did not completely agree with that statement.

- **Limited access under general category**

Several individuals were against preventing the limited access fleet from landing under general category rules when not fishing on a DAS. On the other hand, one member of the public suggested that this situation should be treated the same way as the Council handled it in groundfish, each vessel gets one type of permit; you can't have both.

- **Hard TACs**

Overall there was support for the idea of a hard TAC to control effort in the general category fishery, but one TAC for the entire fleet was dangerous. Several individuals discussed the possibility of an individual TAC or quota, and while there was some support for this concept,

they pointed out that if the individual poundage comes out to be something like 5-7,000 pounds, that would put every directed dayboat scalloper out of business. One speaker opposed the Council considering individual quotas, and supported the use of additional input controls instead.

- **Sectors and harvesting cooperatives**

The several speakers who spoke about this issue raised concern that the formation of sectors for this fleet may be premature at this point. Another individual suggested that the Council has to be cautious when approving sectors because they could change the nature of the dayboat fleet. For example, if many small boats get together and pool their allocations, one dayboat may end up fishing more like an offshore boat, and that would change the historic characteristics of the dayboat fleet.

- **Incidental scallop catch**

Most individuals that commented on this issue agreed that scallop bycatch should not be zero. One individual suggested that it may be possible to increase the incidental catch, especially if a relatively small number of vessels receive a limited entry general category permit. Furthermore, he suggested that the Scallop PDT should run several projections to see what the impacts on mortality would be if the incidental catch remained at 40 pounds, or if it was increased up to 200 pounds.

- **Change of scallop fishing year**

None of the individuals who commented on this issue supported changing the fishing year. One person suggested that the Council should wait until the new scallop survey program is defined, and then consider whether the fishing year still needs to be changed. Another commented that August would be far too late for small boats in the north to start their fishing year; bad weather could prevent them from fishing earlier in the season than under the status quo fishing year of March 1.

- **Other**

There was a substantial amount of discussion about the term 'overfishing', and what this action (amendment 11) proposes to do in terms of addressing overfishing in the scallop fishery. It was stated that the overfishing definition is too complex and confusing, and it is hard to fathom that overfishing is currently occurring when both the fishery and resource seem to be healthier than ever. This action will set itself up for failure if it tries to address overfishing. If the goal of this amendment is to address capacity in the general category fishery, that should be the stated goal. Limiting effort only in the general category fishery is not going to fix the current overfishing problem, so the Council should not identify that as a primary goal of the amendment. One individual pointed out that it was always awkward in the past that even when the resource was in trouble and the limited access fleet was being cut back, additional open access permits were being given out; that never should have happened.

There were a variety of comments about other measures that could be considered in this action to control effort in the general category fishery. For example, it was suggested that nets should be prohibited. Also, if effort needs to be reduced by the general category fleet, maybe just the possession limit should be lowered. Another speaker suggested that if individual TACs or allocations are considered in this action, permit owners should not be allowed to stack

allocations, and the possession limit should not increase. Another speaker suggested that gear regulations should be the same for both the limited access and general category fleets.

Lastly, several people commented that there is a major problem with vessel history and the open access nature of general category permits. If the Council s going to consider limited access it needs to address the problem that in the past when a vessel was sold or upgraded, the history associated with that vessel's general category permit was lost because a new permit number was issued. Measures should be considered for individuals who lost history due to the open access nature of the general category permit.

Hyannis, MA – February 23, 2006

About 50 individuals signed in for the scoping meeting in Hyannis, MA, but more people were probably in attendance. Close to 30 gave oral comments and one written comment was submitted. Thomas Hill, the Chair of the Scallop Committee welcomed the audience and gave an overview of the process and purpose of the meeting. Deirdre Boelke reviewed recent trends in the general category fishery and summarized the scoping document the Council approved for Amendment 11. John Pappalardo and Sally McGee, both members of the Scallop Oversight Committee were present at the hearing to listen to public comments. The meeting was held from about 7-9:30 PM. Unfortunately the meeting space was smaller than expected, but the audience was patient and there was opportunity for everyone to speak that wanted to. This meeting summary will first describe a few overall statements about the meeting and then summarize the comments by issue. See the scoping document for a detailed description of each of the scoping issues.

There were a significant number of limited access permit owners, captains and representatives at this public hearing. They had many comments about the specific scoping issues as well as overall advice to the general category fleet in terms of establishing a limited entry program. One limited access permit owner suggested that this action should not try to do too much, and the general category fleet can learn from the limited entry programs established under Amendment 4 for scallop as well as Amendment 5 for groundfish. Specifically, "Too many groundfish permits were given out based on a qualification that was set too low; do not make the same mistake." Another commented that the limited access scallop fleet worked with the Council to develop a limited entry program that worked for them, and he suggested that the general category fleet do the same. Lastly, a limited access representative explained that he has seen this resource come and go and he thinks even though the last few years have been great fishing; he thinks scallops are on their way out again.

There were also many individuals with general category interests present at the meeting. Some explained that they did not want to get regulated out of the fishery. Another commenter expressed concern about how quickly the Council was planning on developing this important action. Can anything be done to slow the process down? He suggested that the Council and industry need time to do this right and the Council should not rush into anything. A different commenter later said that if this decision is dragged out the decision will just become harder and more people will invest and potentially suffer negative consequences. Others explained that it was obvious to them that all the small boats in the region were not going to be able to make it. "Why die a slow death," one said, "if we don't do something now the problem could get worse."

Why would we want to let more people in this fishery, it is clear that there are too many already, so why have more people invest to only later be put out of business? One speaker gave an emotional statement that he loves fishing, "I want to save it; we need rules to preserve it. I do not understand why other general category boats would want to see more boats in this fishery, so many guys are just coming into this fishery to make money; they do not care about scallops. But I get it, limits work, organizations work; I am not a member of one but I see that they make fisheries better and boats safer."

- **Limited Entry**

There was general consensus that this action should address the "explosion" of effort in the general category fishery and this fishery can't be open access anymore. One commenter said that Amendment 4 clearly states that if the effort in general category fishery gets too large, it is going to be cut. There was a lot of support for developing a limited entry program for the historic, directed day-boat scallop fishery. One individual stated that this local, traditional fishery has been in New England for a long time and it needs to be preserved. Day-boat fishing is a quality of life issue, "I do not want to fish way offshore and be away from my family for two weeks at a time." One person commented that this action could implement limited entry for historical participants only, and then leave the rest of the general category fishery as an incidental fishery with a lower possession limit. There was concern that overcapacity should not be built into the program from the beginning; if a limited entry program is implemented a relatively small number of directed boats need to be identified. One individual suggested that 200 pounds per trip would work for his vessel, and if that would allow more vessels to get permits that may be an option. Another suggestion that several people supported was that a limited entry program should be limited to owner operators; "This amendment should support owner operators." Another commenter said that since the explosion of effort has been in the south, New England boats should not pay the price. He further suggested that each area could be managed differently; if the current system is not broken in the north than we should leave it how it is.

In terms of the control date, many commenters were in favor of using it, but others were not in favor of using any cut off dates. For example, one individual has had a permit, but he has not used it; but he would like the ability to use it in the future when the conditions are right for him to do so.

- **Allocation**

It was clear from this hearing that the Council should make the allocation decision first before determining how many vessels should qualify in a limited entry general category fishery. Depending on the allocation the fleet is given, that will identify how many people can make a living. How many people can make a living will depend on the amount of the allocation the fleet is given. One commenter suggested that when the Council is considering allocation between the two fleets it is important to recall that the limited access fleet gave up other permits when they became limited access vessels; therefore, their options are limited and they have more to lose. "The Council has a special obligation to these vessels because management but them in a box." Another individual stated that this action should be consistent with the de facto allocation made in Amendment 4 (relatively small amount of the total) because the limited access fleet has made significant investments based on that decision, "Don't throw away all the work that was done in

Amendment 4." Another individual commented that allocation should not be based on history because if this biomass is managed carefully it can produce more harvest than it has in the past. It was suggested that while Amendment 4 specified that the general category would be cut if effort got too high; it also stated that if conditions improved and the resource became healthy; general category effort could increase. It was recommended that the Council allocate the highest percentage possible to the general category fleet that does not impact the economic stability of the limited access fleet. There was one suggestion that the Council could consider allocating the resource by sector, but it would be hard to identify a way to treat all the sectors of the general category fishery fairly.

- **Limited access effort under general category**

Many commenters stated that the general category permit was made for boats that did not qualify for a limited access permit, so it does not make sense that limited access vessels should still be able to land under general category rules once limited entry is implemented for the general category fishery as well. One person suggested that the level of landings by the limited access fleet under general category rules will decline when the price drops. More limited access vessels may be fishing now because the price is so high, but it is not economically feasible for most of these vessels to go out for 400 pounds of scallops when the price is lower.

- **Hard TACs**

There were some comments related to different hard TAC options. One individual suggested that individual TACs would be more successful that a fleet wide allocation. It was noted that a fleetwide allocation could cause price and safety problems. Another individual suggested that the Council could consider giving a certain number of DAS to the general category vessels with a 400 pound possession limit rather than a TAC.

- **Sectors and harvesting cooperatives**

Not many people commented on this issue. One individual that did voiced support for the concept, and suggested that the Council consider sectors as a pilot program first. It may be premature to approve a sector program at this stage for the general category portion of the scallop fishery.

- **Incidental scallop catch**

Two opinions on this issue were voiced. One, if incidental scallop catch substantially impacts the available resource for the directed general category fishery, then bycatch should be zero. Two, incidental bycatch should be permitted. It was suggested that the incidental category could potentially remain open access for vessels that did not qualify for a limited entry general category permit. And if the number of limited entry permits is small and there is resource available, the incidental limit might even be raised. Increasing the possession limit to 100 pounds may accommodate vessels that are in between and do not qualify for a limited entry general category permit, but generally land more than 40 pounds per trip.

- **Change of scallop fishing year**

All speakers who commented on this issue recommended removing it from consideration in this amendment. Several stated that March 1 works for the fishery, markets have been developed around that date, and changing it will affect the price. A handful of commenters expressed that

they did not understand the benefits of changing the fishing year, and how those benefits would outweigh the cost and inconvenience to the industry. One commenter added that NMFS takes too long with the data anyway, so changing the fishing year will not solve that problem; the data should be processed faster. Several commenters from the general category sector said that this issue seemed out of place in this amendment and suggested considering it in a future action.

- **Other**

There were many comments made about other issues concerning the public as well as specific suggestions for the Council to consider when developing this action. In terms of general scallop issues, several people voiced that the scallop resource is on the decline. The industry is not confident that the Elephant Trunk will produce as much yield as projected. In addition a portion of the general category fishery takes place in areas in the Mid-Atlantic that inshore of the areas surveyed by NMFS; therefore, abundance is unknown in these areas. As for how this action affects what the Council considers in a future action for the limited access fishery, one commenter voiced concern that this action should not dictate what is considered in the next scallop action. For example, if the general category fleet decides to implement ITQs, it should not be assumed that is a good idea for the limited access fleet. On a different note related to scallop fishing, one commenter explained that the percent of general category landings for 2006 are going to be low because NMFS closed the Great South Channel to day-boats. In terms of fishing in this region in general, one commenter said that the Council forgets that fisheries management is like a balloon. When one area is closed offshore, vessels move inshore, bottom conditions decline and resources are affected in all areas. The Council needs to recognize their responsibility to help fishermen; because of strict regulations in one fishery it is natural for fishermen to expand into other fisheries, especially when the price is good. Displaced boats need to be remembered in this process. One commenter added that 4-inch rings have really helped the health of the resource. Another commenter suggested that the PDT needs to look into whether nets really catch more scallops. If it is found that they do, maybe this action should consider eliminating the use of nets for the general category sector.

As mentioned earlier there was some discussion of only restricting the "new" general category effort in the south because that is where the major problem is. One person suggested that if landings are too high in one area than that is where restrictions should be. But another speaker warned the group that if restrictions are only put in the south, than that effort is going to eventually move up here (north).

In terms of suggestions for the development of this action, one individual suggested that the Council needs to remember impacts on land based businesses. General category effort is important to many land- based businesses, particularly in remote areas. Also, the Council should remember that overfishing is an issue of scale; the day-boat fishery is not affecting mortality on the same degree as limited access effort. There is still a large incentive to cheat in the general category fishery and this action should address that. As discussed at other hearings, the issue of losing general category history when a boat is sold or upgraded needs to be addressed in this action. The Council should consider a way to incorporate that history if a limited entry program is developed.

One person came to this meeting because he heard the Council was considering allocating 25% of the total scallop resource to the general category fishery. The general category fleet is allowed to fish 365 days a year if they want to and in his opinion, 25% would have a large impact on the limited access fleet. There was some confusion that the estimates for landings by the general category fishery for 2006 and 2007 were actually allocation decisions made by the Council. That is not the case, they are estimates based on projected effort by the general category fishery and resource conditions.

7.1.3 Determination of Significance

[to be completed for FSEIS]

7.1.4 List of Preparers

This document was prepared by members of the New England Fishery Management Council staff and Scallop Plan Development Team, with input from both the Scallop and General Category Scallop Advisory Panel

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The following agencies were consulted during the development of this amendment, either through direct communication/correspondence and/or participation on the Scallop Committee or PDT:

- NOAA Fisheries, National Marine Fisheries Service, Northeast Regional Office, Gloucester MA
- Northeast Fisheries Science Center, Woods Hole MA
- Mid-Atlantic Fishery Management Council

7.1.5 DSEIS Circulation List

Initially, the Council distributes the Draft Amendment 11 document and DSEIS to individuals who contributed to the development of this document, including Scallop PDT and AP members. These individuals are listed in the previous section of this document.

As part of the review process for consistency with applicable laws such as the CZMA and the ESA, the Council distributes the Draft FMP/EIS to the following individuals: are these names still current?

Ms. Kathleen Leydon, Maine Coastal Program
Mr. David Hartman, New Hampshire Coastal Program
Mr. Tom Skinner, Massachusetts Coastal Zone Management
Mr. Grover Fugate, Rhode Island Coastal Resources Council
Mr. Tom Oullette, Connecticut Office of Long Island Sound Programs
Mr. George Stafford, New York Division of Coastal Resources
Mr. Lawrence Torok, New Jersey Division of Coastal Resources
Mr. Nicholas Di Pasquale, Delaware DNREC
Ms. Gwynne Schultz, Maryland Coastal Zone Management Division
Ms. Laura McKay, Virginia Coastal Resources Management Program
Ms. Donna Moffitt, North Carolina Division of Coastal Management
Mr. E. James Tabor, Pennsylvania Department of Environmental Protection
Mr. Chris Brooks, South Carolina Ocean and Coastal Resources Management

Mr. Daniel Furlong, Mid-Atlantic Fishery Management Council
Captain Vincent O'Shea, Atlantic States Marine Fisheries Commission

In addition, the Council prepares a notice to its "Interested Party" list for Atlantic sea scallop that announces the availability of the DSEIS and public hearing document and announces the schedule for public hearings. A Notice of Availability of the DSEIS is also published in the *Federal Register*. At that time, anyone on the "Interested Party" list or any other member of the public may call the Council office and request a copy of the DSEIS for their review. There are approximately ??? individuals on the "Interested Party" mailing list for Atlantic sea scallop. The Council also made the Amendment 11 DSEIS available for downloading through its website.

A similar process will be used by the Council for distribution and circulation of the final Amendment 11 and FSEIS document.

7.1.6 DSEIS Public Comments and Response

Public comments on the Amendment 11 document and its Draft Supplemental Environmental Impact Statement (DSEIS) were accepted by the Council during a formal comment period, ??? to ???. Oral comments were also accepted at any of the Amendment 11 public hearings, which occurred during May 2007 in ???. Written comments were accepted during this time at the Council office through mail, email, and/or facsimile. The Scallop Committee held a meeting on ???, and the Council held a meeting on ??? to review the public comments and select final management measures for inclusion in Amendment 11 to the Scallop FMP.

Appendix ??? of Amendment 11 provides all of the public comment received on the preferred management alternatives and the Draft EIS for this amendment. This section summarizes the public comments and provides the Council's general response to these comments.

7.1.6.1 Summary of public hearings

[to be completed after public hearings before final selection of measures in June]

7.1.6.2 Summary of written comments on the DSEIS

[to be completed after public hearings before final selection of measures in June]

7.2 MARINE MAMMAL PROTECTION ACT (MMPA)

7.3 ENDANGERED SPECIES ACT (ESA)

7.4 ADMINISTRATIVE PROCEDURE ACT (APA)

7.5 PAPERWORK REDUCTION ACT (PRA)

7.6 COASTAL ZONE MANAGEMENT ACT (CZMA)

7.7 DATA QUALITY ACT

7.8 E.O. 12866 AND REGULATORY FLEXIBILITY ACT (RFA)

7.9 E.O. 13132 (FEDERALISM)

7.10 E.O. 12898 (ENVIRONMENTAL JUSTICE)

7.11 E.O. 13158 (MARINE PROTECTED AREAS)

8.0 LIST OF PUBLIC MEETINGS

The Council has had public opportunity for comment on development of Amendment 11 at over 30 public meetings since February 2006. These meetings have been held in various locations in the Northeast and have included Council meeting, Scallop Committee meeting, advisory panel meetings and Scallop Plan Development Team meetings. Meeting summaries and relevant motions for Amendment 11 for most of these meetings are accessible from the New England Fishery Management Council website at www.nefmc.org.

Table 194 – List of public meetings the Council held related to development of Amendment 11

DATE	MEETING	LOCATION
February 2, 2006	Council Meeting	Portland, ME
February 21, 2006	Scoping Meeting	Cape May, NJ
February 22, 2006	Scoping Meeting	Portsmouth, NH
February 23, 2006	Scoping Meeting	Hyannis, MA
March 16, 2006	Scallop Plan Development Team	Gloucester, MA
March 21, 2006	Scallop Advisory Panel	Boston, MA
March 22, 2006	General Category Scallop Advisory Panel	Boston, MA
March 31, 2006	Scallop Committee	Warwick, RI
April 5, 2006	Council Meeting	Mystic, CT
May 2, 2006	General Category Scallop Advisory Panel	Warwick, RI
May 3, 2006	Joint Scallop and General Category Scallop Advisory Panels	Warwick, RI
May 8, 2006	Scallop Plan Development Team	Falmouth, MA
May 16, 2006	Scallop Committee	Plymouth, MA
June 14, 2006	Council Meeting	Newport, RI
July 13, 2006	Scallop Plan Development Team	Marlborough, MA
July 31, 2006	Scallop Committee	Revere, MA
September 6, 2006	Scallop Plan Development Team	Falmouth, MA
September 13, 2006	Scallop Committee	Taunton, MA
September 27, 2006	Council Meeting	Peabody, MA
October 25, 2006	Scallop Plan Development Team	Falmouth, MA
January 4, 2007	Scallop Plan Development Team	Falmouth, MA
January 19, 2007	Scallop Committee	Providence, RI
February 7, 2007	Council Meeting	Portsmouth, NH
March 1, 2007	Scallop Plan Development Team	Gloucester, MA
March 19, 2007	Joint Scallop and General Category Scallop Advisory Panels	Warwick, RI
March 20, 2007	Scallop Committee	Warwick, RI
April 11, 2007	Council Meeting	Mystic, CT

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