

Framework 19 to the Atlantic Sea Scallop FMP

Including an Environmental Assessment, an Initial Regulatory Flexibility Analysis and Stock Assessment and Fishery Evaluation (SAFE) Report

(This draft includes preferred alternatives recommended by the Scallop Committee on October 11 – and several modifications made at the September Council meeting)

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

Initial Council Meeting: December 2006

Final Council Meeting: October 25, 2007

Final Submission to NMFS: November 2007

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1.0 BACKGROUND AND PURPOSE

1.1 BACKGROUND

In 2004 Amendment 10 introduced rotational area management and changed the way that the Scallop FMP allocates fishing effort for limited access scallop vessels. Instead of allocating an annual pool of DAS for limited access vessels to fish in any area, vessels now have to use a portion of their total DAS allocation in controlled access areas defined by the plan, or exchange them with another vessel to fish in a different controlled access area. Vessels can fish their open area DAS in any area that is not designated a controlled access area. Amendment 10 set up this program with a biennial framework process, which means an action is required every two years to allocate fishing effort in both open and access areas. This framework action will set specifications for the next two fishing years, 2008 and 2009. The scallop fishing year begins on March 1. The Scallop Plan Development Team (PDT) reviews available scallop abundance data and recommends which areas and what level of fishing effort is appropriate to allocate in order to achieve optimum yield.

In addition, the Council recently approved Amendment 11 to the Scallop FMP, which recommends a limited entry program for the general category fishery as well as other measures. This is the first biennial action since that amendment, thus it will also have to include specific measures to address new requirements of the FMP if Amendment 11, if approved by NMFS and the Secretary of Commerce. Specifically, this framework will consider a temporary hard-TAC by quarter for the general category fishery for the transition period to limited entry. For the second fishing year, this action will consider the specifics of the individual fishing quota program recommended by the Council in Amendment 11, including the specifics of a required cost recovery program. In addition, specific allocations for the general category fishery for the access areas will be considered as well. A separate hard-TAC and limited entry program for the Northern Gulf of Maine is also considered. Lastly, a consideration of mortality from incidental catch will be included as well, as recommended by Amendment 11.

There are also several other issues that have been included for consideration in this framework that are not directly related to fishery specifications for the next two fishing years or new requirements under the FMP pending approval of Amendment 11, but are relatively small adjustments. For example, this framework is also considering measure to improve the industry funded observer set-aside program in terms of compensation for vessels carrying an observer as well as small administrative adjustments to the program. In addition, a measures to include a 30-day VMS power down provision for scallop vessels to reduce cost and burden of running a VMS unit when a vessel is not scheduled to fish for an extended period of time.

In summary, this framework adjustment will address several primary management issues:

1. Fishery specifications for FY2008 and 2009
2. Area rotation adjustments (if necessary)
3. New requirements for the general category fishery as a result of Amendment 11
4. Other measures including adjustments to the observer set-aside program (compensation rates and administrative adjustments) and a 30-day VMS power down provision

1.2 PURPOSE AND NEED

The purpose of this action is to achieve the objectives of the Atlantic Sea Scallop Fishery Management Plan (FMP) to prevent overfishing and improve yield-per-recruit from the fishery. The primary need for this action is to set specifications to adjust the day-at-sea (DAS) allocations and area rotation schedule for the 2008 and 2009 fishing years.

1.3 SCALLOP MANAGEMENT BACKGROUND

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). While fishing for sea scallops within state waters is not subject to regulation under the FMP except for vessels that hold a federal permit when fishing in state waters, the scallops in state waters are included in the overall management unit. 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 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. Amendment 4 also created the general category scallop permit for vessels that did not qualify for a limited access permit. Although originally created for an incidental catch of scallops in other fisheries, and for small-scale directed fisheries, the general category fishery and fleet has evolved since its creation in 1994. The changes in the general category fishery are demonstrated in Section 4.4.

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. See Section 1.4 for a more detailed description of the rotational area management program implemented by Amendment 10.

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).

The Council recently approved Amendment 11 to the Scallop FMP (June 2007) and it is expected to be implemented in late 2007 or early 2008. The main objective of the action was to control capacity and mortality in the general category scallop fishery. 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 is likely a contributing factor to why the FMP has been exceeding the fishing mortality targets. Without additional controls on the general category fishery, there is a great deal of uncertainty

with respect to potential fishing mortality from this component of the scallop fishery, thus the potential for overfishing is increased.

If approved by NMFS, the proposed action includes a limited entry program for the general category fishery. Each qualifying vessel would receive an individual allocation in pounds of scallop meat with a possession limit of 400 pounds. Qualifying vessels would receive a total allocation of 5% of the total projected scallop catch. The proposed action also includes a separate limited entry program for general category fishing in the Northern Gulf of Maine. In addition, Amendment 11 includes adjustments to limited access scallop fishing under general category rules. Another separate limited entry program for that activity is proposed with the same qualification criteria as the limited entry general category permit. Qualifying vessels will also receive an individual allocation in pounds, and the entire category will receive 0.5% of the total projected scallop catch. In addition, a separate limited entry incidental catch permit is proposed as well that will permit vessels to land and sell up to 40 pounds of scallop meat per trip while fishing for other species. Other measures are recommended as well.

The Council also recently approved Amendment 12 to the Scallop FMP (June 2007). 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 measures were selected in June 2007. The proposed rule was published on August 21, 2007 (72 FR 46588) and public comments on the DSEIS are due on September 20, 2007. NMFS is expected to implement this action later this fall. See Section 2.7 for a summary of what the SBRM Amendment proposes.

Scallop Amendment 13 was also approved by both the Council and NMFS in 2007 and it re-activated 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 interim 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 was implemented on June 12, 2007. Amendment 13 also includes a provision to make changes to the observer set-aside program by framework action, and the Council decided to address some issues raised with the current program in this framework action (See Section 2.8).

The Council initiated Phase 1 of the Essential Fish Habitat Omnibus Amendment in 2004. The primary purpose of Phase 1 is to review EFH designations, consider HAPC alternatives, describe prey species, and evaluate non-fishing impacts. This action is an amendment to all FMPs in this region, and is Amendment 14 to the Scallop FMP. The Council approved the DSEIS for Phase 1 at the February 2007 Council meeting and the document was submitted to NMFS in March 2007. The Council made final decisions on Phase 1 topics at their June 2007 meeting. Phase 2 of the EFH Amendment will begin in September 2007 and will consider the effects of fishing gear on EFH and move to minimize, mitigate or avoid those impacts that are more than minimal and temporary in nature. The entire Amendment (Phase 1 and Phase 2) will be completed, combined and submitted in 2008 with implementation scheduled for some time in 2009. Phase 2 will reconsider measures in place to protect EFH in the Northeast region.

Lastly, the Council approved Framework 20 to the Scallop FMP at the June 2007 Council meeting as well, and NMFS is expected to implement that action in the near term. Framework 20 considered measures to reduce overfishing for FY2007 through measures that were implemented by interim action earlier this year. At the November 2007 Council meeting the Scallop PDT informed the Council that overfishing was 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 interim action.¹ This interim action became effective on December 22, 2006 and will remain effective until June 20, 2007 (180 days). This interim action was extended for an additional 180 days, but will expire on December 26, 2007. Therefore, for the last two months of the 2007 fishing year (January-February 2008) management would revert back to status quo measures under FW18. Specifically higher trips allocations would be granted in the Elephant Trunk Area for both limited access and general category fisheries. Therefore, the Council approved Framework 20 to extend the reduced fishing effort measures implemented by interim action through the end of the 2007 fishing year. If approved, the action would expire on March 1, 2008, when Framework 19 is scheduled to be in place.

¹ The interim rule published by NMFS on December 22, 2006 (**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.

1.4 DETAILED BACKGROUND ON ROTATIONAL AREA MANAGEMENT

Amendment 10 introduced area rotation; areas that contain beds of small scallops close before the scallops experience fishing mortality then the areas re-open when scallops are larger producing more yield-per-recruit. The details of which areas should close, for how long and at what level they should be fished were described and analyzed in Amendment 10. Except for the access areas within the groundfish closed areas on Georges Bank, all other scallop rotational areas should have flexible boundaries. Amendment 10 included a detailed set of criteria or guidelines that would be applied for closing and re-opening areas. Framework adjustments would then be used to actually implement the closures and allocate access in re-opened areas. The general management structure for area rotation management is described in Table 1. An area would close when the expected increase in exploitable biomass in the absence of fishing mortality exceeds 30% per year, and re-open to fishing when the annual increase in the absence of fishing mortality is less than 15% per year. Area rotation allows for differences in fishing mortality targets to catch scallops at higher than normal rates; by using a time averaged fishing mortality so the average for an area since the beginning of the last closure is equal to the resource-wide fishing mortality target (80% of F_{max} , estimated to be $F=0.20$).

Table 1- General management structure for area rotation management as implemented by Amendment 10

Area type	Criteria for rotation area management consideration	General management rules	Who may fish
Closed rotation	Rate of biomass growth exceeds 30% per year if closed.	<ul style="list-style-type: none"> • No scallop fishing allowed • Scallop limited access and general category vessels may transit closed rotation areas provided fishing gear is properly stowed. • Scallop bycatch must be returned intact to the water in the general location of capture. 	<ul style="list-style-type: none"> • Any vessel may fish with gear other than a scallop dredge or scallop trawl • Zero scallop possession limit
Re-opened controlled access	<p>A previously closed rotation area where the rate of biomass growth is less than 15% per year if closure continues.</p> <p>Status expires when time averaged mortality increases to average the resource-wide target, i.e. as defined by the Council by setting the annual mortality targets for a re-opened area.</p>	<ul style="list-style-type: none"> • Fishing mortality target set by framework adjustment subject to guidelines determined by time averaging since the beginning of the most recent closure. • Maximum number of limited access trips will be determined from permit activity, scallop possession limits, and TACs associated with the time-average annual fishing mortality target. • Transfers of scallops at sea would be prohibited 	<ul style="list-style-type: none"> • Limited access vessels may fish for scallops only on authorized trips. • Vessels with general category permits will be allowed to target scallops or retain scallop incidental catch, with a 400 lb. scallop possession limit in accordance with general category rules.
Open	Scallop resource does not meet criteria to be classified as a closed rotation or re-opened controlled access area	<ul style="list-style-type: none"> • Limited access vessels may target scallops on an open area day-at-sea • General category vessels may target sea scallops with dredges or trawls under existing rules. • Transfers of scallops at sea would be prohibited 	All vessels may fish for scallops and other species under applicable rules.

2.0 MANAGEMENT ALTERNATIVES UNDER CONSIDERATION

2.1 SUMMARY OF THE PROPOSED ACTION

[To be completed after Council selects final measures]

[After final measures are selected include a flowchart of allocations per fishery and area]

[Include table with FT, PT and occasional DAS, trips and possession limits for proposed action]

Example:

Table 2 – Summary of open area DAS allocations for the various scenarios (5% general category TAC in access areas in 2008)

	Full-time		Part-time		Occasional	
	2008	2009	2008	2009	2008	2009
No Action	51	51	20	20	4	4
Pref	36	42	14	17	3	3
DMV 3	33	60	13	24	3	5
DMV2	33	48	13	19	3	4
HC-sm	31	47	12	19	3	4
HC-lar	32	47	13	19	3	4
Sch	52	69	21	28	4	6
Sch and HC	45	54	18	22	4	4

Note: Open area allocations by permit type are based on policy decision that a part-time permit receive an allocation equal to 40% of a full-time permit, and an occasional permit receive an allocation equal to 8.33% of a full-time permit.

Table 3 – Example of access area allocations for proposed action

	2008		2009		Overall allocation in access areas per year
	# of trips	Possession limit	# of trips	Possession limit	
Full-time	5	18,000	5	18,000	90,000 (100%)
Part-time	2	18,000	2	18,000	36,000 (40%)
Occasional	1	7,500	1	7,500	7,500 (8.33%)

2.2 NO ACTION

This section describes the No Action alternative as well as several other alternatives that are dependent on implementation of Amendment 11 and measures that would be in place if this action (Framework 19 were delayed).

2.2.1 No Action

In the alternatives for area rotation management and for open area DAS allocations, “No Action” is exactly what it implies; the measures and allocations that are specified in the present regulations (CFR §648, Sub-part D). The scallop regulations state (paragraph 648.55(b)): “If the biennial framework action is not undertaken by the Council, or if a final rule resulting from a

biennial framework is not published...with an effective date on or before March 1...the measures from the most recent fishing year shall continue, beginning March 1 of each year.”

Under “No Action,” in open areas, full-time limited access scallop vessels would receive the same allocation as FY2007; an allocation of 51 open area DAS in both 2008 and 2009. Part-time and occasional vessels would receive a pro-rata share of 40% and 1/12th, respectively, which is equivalent to 20 and 4 open area DAS, respectively. The trip allocations for access areas would also roll over. Consistent with Framework 20 to the FMP as approved by the Council, full-time vessels would receive 3 Elephant Trunk Access Area trips. Part-time and occasional vessels would receive 2 access area trips, and occasional vessels would receive one access area trip. Part-time and occasional vessel owners could chose how to distribute their trips between the ETA and the Georges Bank access that are scheduled to be open in 2008 and 2009. General category vessels would be allocated 865 trips in 2008 and 2009. The Georges Bank access area allocations are dependent on the schedule of areas that are to be opened. In 2008, the Closed Area I (CAI) and Closed Area II (CAII) access areas are scheduled to open. One trip would be allocated to CAI for full-time vessels, consistent with the 2007 scallop fishery regulations. General category vessels would be allocated 216 trips to CAI in the 2008 fishing year. There would be no allocated trips in CAII because the scallop regulations for 2007 do not include a trip allocation in 2007 for CAII. In 2009, the CAII and Nantucket Lightship access areas are scheduled to open. However, no trips would be allocated because the regulations do not specify any trip allocations for 2008 (i.e., the fishing year preceding the 2009 fishing year, consistent with the regulation cited above).

The TACs for all areas would remain as estimated in Amendment 10 and Framework 18. When Georges Bank access areas close due to yellowtail flounder catches, vessels would receive compensation for each access area trip not taken due to the closure consistent with the trip-to-DAS conversion rates included in the regulations for CAI.

Finally, under “No Action”, the Hudson Canyon Access Area would become part of the open areas on March 1, 2008, and the Delmarva area would remain closed through February 28, 2010, as specified in the scallop fishery regulations.

Table 4 – Open area DAS allocations under No Action

Full-Time		Part-Time		Occasional	
<u>2007</u>	<u>2008 & 2009</u>	<u>2007</u>	<u>2008 & 2009</u>	<u>2007</u>	<u>2008 & 2009</u>
51	51	20	20	4	4

Table 5 -Sea scallop access area allocation schedule under No Action

	2007	2008	2009
CAII	Open	Open	Open
NLCA	Open	Closed	Open

CAI	Closed	Open	Closed
ETAA	Closed	Open	Open
HCAA	Open	No longer an access area	No longer an access area
Delmarva	Closed	Closed	Closed

Table 6 – Access area trip allocations under No Action

Area	<u>NLCA</u>			<u>CAI</u>			<u>CAII</u>			<u>ETAA</u>		
	<u>2007</u>	<u>2008</u>	<u>2009</u>	2007	2008	2009	2007	2008	2009	2007	2008	2009
Full-time	1	Closed	0	1	1	Closed	Closed	0	0	3	3	3
Part-time*	Up to 1	Closed	0	Up to 1	Up to 1	Closed	Closed	0	0	Up to 2	Up to 2	Up to 2
Occasional*	Up to 1	Closed	0	Up to 1	Up to 1	Closed	Closed	0	0	Up to 1	Up to 1	Up to 1
General Category	394	Closed	0	216	216	Closed	Closed	0	0	865	865	865

* Part-time and occasional scallop vessel owners could determine which areas to take their trips, up to the maximum number of trips specified in the table above

2.2.2 No Action for Amendment 11

If Amendment 11 is not implemented then the general category scallop fishery will remain an open access fishery; any individual may obtain a permit for a vessel. Vessels would be limited to the 400 pound possession limit if they have a 1B permit, and vessels with a 1A permit would be restricted to a 40 pound possession limit. Limited access vessels would be permitted to fish under general category rules when not on a DAS. General category vessels are permitted to fish in access areas up to a maximum number of trips that is assigned in biennial frameworks. General category vessels are subject to other gear, VMS requirements, and other measures under the No Action alternative. The total level of catch from this component of the fishery would not be restricted.

2.2.3 Measures that will be in effect March 1, 2008 until Framework 19 is implemented

If Framework 19 is not implemented by March 1, 2008, several measures implemented by Amendment 10 and Framework 18 will carry-over. For example, open area DAS allocations for limited access vessels would be the same as in FY2007 (51 DAS for full-time, 20 for part-time and 4 for occasional vessels), and the Elephant Trunk Area would be managed under the same

regulations in place in 2007 (three trips for full-time vessels and a total of 865 general category trips). In addition, under No Action the Georges Bank access area allocations would rollover. The Hudson Canyon area would revert to an open area and the Delmarva area would remain closed. Because final decision on Framework 19 has been moved back to October, the action may not be implemented before the start of FY2008; therefore this action will have to assess impacts of the potential delay and consider measures to compensate.

The specific measures that are included in this alternative if this action is not implemented by March 1, 2008 are:

1. Any limited access open area DAS used in 2008 above the ultimate value allocated for 2008 will be reduced the following fishing year (2009).
2. Any general category Elephant Trunk area trips taken in 2008 above the ultimate allocation for 2008 will be deducted from the following fishing year. And if the Council ultimately selects to allocate more than 2% of access in ET – then those additional trips could be allocated whenever FW19 is implemented (i.e. 5%)
3. If the general category quarterly hard TAC for Quarter 1 (March 1-May 31) is exceeded, then those pounds will be removed from Quarter 3 and/or 4.
4. Hudson Canyon would re-open as an open area.
5. Any landings from within the Northern Gulf of Maine (NGOM) area caught in fishing year 2008 above the ultimate TAC for 2008 will be reduced the following year.

2.3 MEASURES FOR LIMITED ACCESS VESSELS

Under current regulations (CFR §648.60), limited access vessels are authorized to take a certain amount of trips to each controlled access area during a fishing year. Each full-time vessel has been authorized to land 18,000 pounds of scallop meat per trip (40% of that for part-time vessels, and 8.33% for occasional vessels). Fishing in controlled access areas may be subject to other limits such as seasons or potential closures due to TACs for yellowtail flounder. The maximum number of trips per area will be considered in this action for FY2008 and FY2009 to prevent overfishing and optimize yield. Access areas include areas within the Multispecies closed areas (Closed Area I, Closed Area II and Nantucket Lightship) as well as areas specifically closed as scallop rotational closed areas (Hudson Canyon, Elephant Trunk and Delmarva) (See Figure 1 and Figure 2).

Limited access vessels are also allocated a specific number of open area DAS in biennial frameworks to achieve optimum yield at the target fishing mortality of $F=0.2$ for the total scallop resource. The open area DAS allocations depend on what controlled access areas are available and the number of trips the Council recommends to allocate per area, as well as allocations made to the general category fishery. The open area allocations are also based on the assumption that a part-time vessel receives 40% of a full-time allocation, and an occasional vessel receives 8.33% of a full-time vessel.

Figure 1 – Boundaries of scallop access areas within Multispecies closed areas on Georges Bank

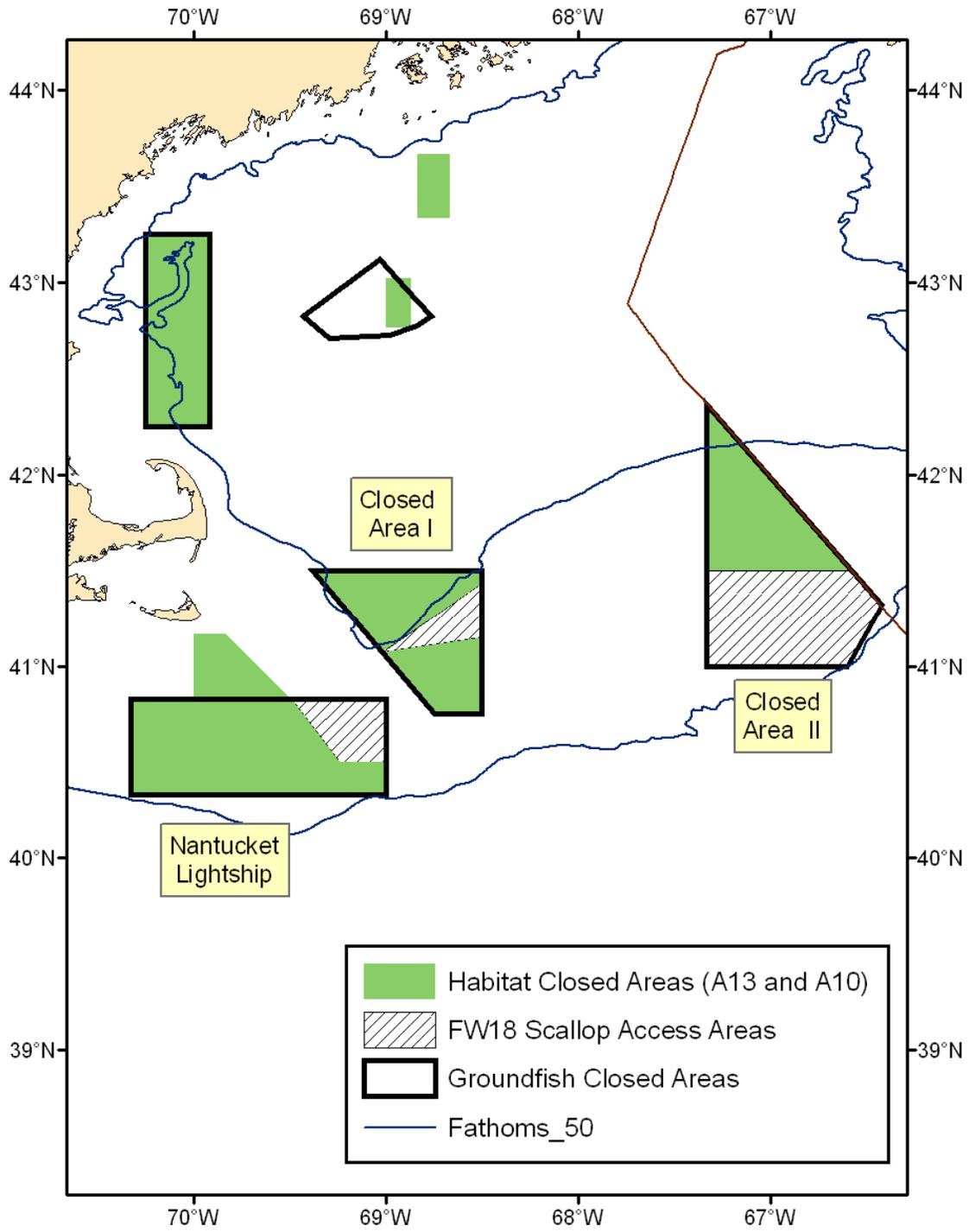
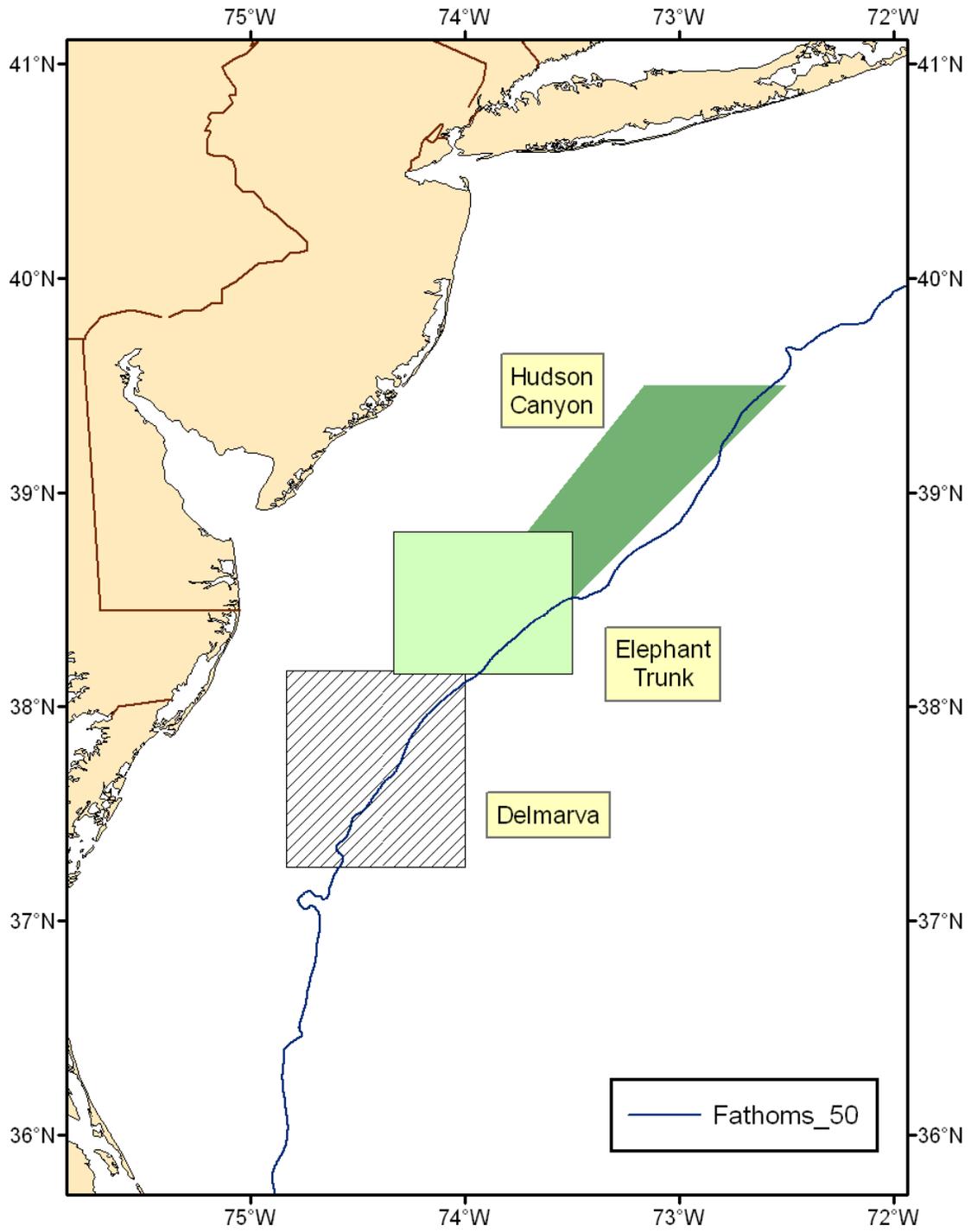


Figure 2 – Boundaries of scallop access areas in the Mid-Atlantic



Summary of scenarios

The alternatives described in this section are separated out by area, (i.e. Georges Bank access areas, Elephant Trunk, Delmarva etc.) but due to the interrelated nature of area rotation and how the model projects impacts for the entire resource overall, it is difficult to pull out specific impacts by area. Therefore, the various alternatives under consideration have been combined into a number of scenarios. The **No Action** alternative assesses the impacts of essentially rolling over current specifications. There are two alternatives that consider revising the order of the Georges Bank access area schedule (**DMV3** and **DMV2**). The only difference between these two alternatives is that one keeps the Delmarva area closed for both 2008 and 2009, and one alternative considers access in 2009. The rest of the scenarios include various alternatives related to new rotational areas to protect small scallops: **HCL** would close a 5X5 ten-minute-square area near the current Hudson Canyon closed area; **HCS** would close a 4X4 ten-minute square area near the current Hudson Canyon area; **SCH** would close an area in the South Channel northeast of Nantucket Lightship; and **SCHHC** would close both areas – the smaller HC area and the SCH area. See Table 7 for a summary of what each scenario has analyzed.

All four of these scenarios include the same assumptions for allocations as scenario “DMV2” (one trip in NL in 2008, one trip in CAII in 2009, one trip in Delmarva in 2009, and 4 trips in ET in 2008 and 3 trips in ET in 2009). All scenarios then identify a certain level of open area DAS based on which areas are accessible to reach an overall fishing mortality target of F=0.20. **After the Committee meeting, an additional alternative was added that is similar to HC-sm, but it proposes to close the existing HC area (not the 4X4 ten-minute square area) and it allocated more DAS in open areas in 2008 and fewer DAS in 2009 for an average F=0.20 for both years combined; this alternative is called “Pref”, for the preferred alternative.**

Table 7 – Summary of scenarios considered in the biological projections for Framework 19

2008		CL1	CL2	NLS	ET	Dmv	HC	Sch	IndvDAS*
No Action		1 trip	0 trip	Cl	3 trips	Cl	Op	Op	51
Preferred		Cl	Cl	1 trip	4 trips	Cl	Cl	Op	35
Dmv 3		Cl	Cl	1 trip	4 trips	Cl	Op	Op	32
Dmv 2		Cl	Cl	1 trip	4 trips	Cl	Op	Op	32
HC-sm		Cl	Cl	1 trip	4 trips	Cl	Cl	Op	30
HC-lar		Cl	Cl	1 trip	4 trips	Cl	Cl	Op	29
Sch		Cl	Cl	1 trip	4 trips	Cl	Op	Cl	50
Sch+HC		Cl	Cl	1 trip	4 trips	Cl	Cl	Cl	42
2009		CL1	CL2	NLS	ET	Dmv	HC	Sch	IndvDAS
No Action		Cl	0 trip	0 trip	3 trips	Cl	Op	Op	51
Preferred		Cl	1 trip	Cl	3 trips	1 trip	Cl	Op	42
Dmv 3		Cl	1 trip	Cl	3 trips	Cl	Op	Op	60
Dmv 2		Cl	1 trip	Cl	3 trips	1 trip	Op	Op	48
HC-sm		Cl	1 trip	Cl	3 trips	1 trip	Cl	Op	47
HC-lar		Cl	1 trip	Cl	3 trips	1 trip	Cl	Op	47
Sch		Cl	1 trip	Cl	3 trips	1 trip	Op	Cl	69
Sch+HC		Cl	1 trip	Cl	3 trips	1 trip	Cl	Cl	54

* The full-time individual DAS value is based on an estimate of 326 active full-time equivalent limited access vessels out of 350 limited access permits in 2007. These values have removed TAC for general category allocations and set-asides.

2.3.1 Access area management measures on Georges Bank

The following alternatives are related to management measures for the Georges Bank Access Areas. These access areas are within the boundaries of the Multispecies closed areas, which have been closed since 1994 to all fishing gear capable of catching groundfish. Under special circumstances, certain fisheries are authorized to operate in portions of the closed areas on species whose stocks are in relatively healthy conditions, in ways that reduce or minimize impacts on other regulated species.

Access by the scallop fishery in portions of the Multispecies closed areas on Georges Bank have been approved for 1999, 2000, 2004, 2005, 2006, and 2007. The boundaries have been relatively the same since the first access area program in 1999. Since then the boundaries in Closed Area I have been adjusted to be consistent with habitat closed areas in both the Scallop and Multispecies FMPs. As a result of the court's decision in *Oceana v. Evans et al* (8/2/05) both habitat areas under the FMPs are closed to scallop gear only. Effort has been controlled in these access areas and overall the program has been successful with abundant scallop catches and relatively low impacts on regulated groundfish species. Furthermore, catch rates have been relatively high in access areas with reduced bottom contact time, which helps minimize overall impacts on the environment, including EFH and non-target species.

This framework includes alternatives for access area management measures on Georges Bank for fishing years 2008 and 2009. Based on the most recent data available the alternatives under consideration are described in the section below (Section 2.3.1.1)

2.3.1.1 Allocations

Three scallop surveys are available for management to use for decision making. The federal scallop dredge survey conducted by the Northeast Fisheries Science Center (NEFSC) 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 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.

There is also a dredge survey conducted by the Virginia Institute of Marine Science (VIMS) that has been funded through the Cooperative Research Program and the scallop research set-aside program. This survey has provided biomass estimates for several access areas in the past and results from the 2007 survey season have been incorporated into Framework 19 estimates. In addition, the University of Massachusetts (SMASST) has been conducting a video survey of the scallop fishing grounds through direct industry funding, the Cooperative Research Program and the scallop research set-aside program. Results from the 2007 video survey have also been included in biomass estimates used for Framework 19.

All these surveys are used by the Scallop Plan Development Team (PDT) to estimate exploitable scallop biomass. The PDT met on September 17 to review estimates and recommend final alternatives for consideration.

2.3.1.1.1 Alternative 1 – Revise order of Georges Bank Access Area openings

Preliminary results indicate that only one access area trip on Georges Bank should be allocated each year to meet overall mortality objectives and optimize yield. Compared to the No Action alternative that would allocate trips into at least two access areas per year, this alternative would only allocate trips into one access area per year. For example, one trip in Nantucket Lightship in FY2008 and one trip in Closed Area II in FY2009. The PDT does not recommend that access area trips be taken in Closed Area I for the time being. The exploitable biomass in that area is not expected to support an allocation of even one trip, especially since the boundaries have been reduced as a result of the Court order from the Oceana v. Evans lawsuit (08/02/05). All scenarios under consideration include a revision of GB access area openings (with the exception of the No Action alternative). So the preferred alternative, DMV3, DMV2, HC-sm, HC-lar, Sch, and HC-Sch all include one trip in Nantucket Lightship in 2008 and one trip in Closed Area II in 2009.

Table 8 – Comparison of estimated maximum number of trips in Georges Bank access areas for full-time limited access vessels under No Action and Alternative 1 (all other scenarios)

	No Action		Alternative 1	
	2008	2009	2008	2009
Closed Area II	0	0	0	1
Closed Area I	1	0	0	0
Nantkt Lightship	0	0	1	0
Total for GB	1	0	1	1

2.3.1.2 Adjustments when yellowtail flounder catches reach 10% TAC limit

Under current regulations, if the 10% yellowtail flounder bycatch TAC is reached and the Georges Bank access areas close, limited access vessels that have not taken trips are authorized to take up to two unused trips in open areas. This action is considering an alternative that would allocate additional open area DAS for each trip not taken before the area closes, but at a prorated value of DAS. The prorated amount is calculated to achieve an equal amount of scallop mortality per DAS. This calculation takes into account the expected average landings per DAS based on relative biomass and scallop size in the open areas, compared to the GB access areas.

In 2006, the YT TAC for the scallop fishery was 31,544 lb. for Nantucket Lightship and 447,230 lb. for CAII. In 2007, the YT TAC for Nantucket Lightship was 21.3 mt. (46,958 lb.) and 90 mt. (198,416 lb.) for CAI. Preliminary estimates for 2008 suggest that the YT TAC will be higher in both areas; 31.2 mt. (68,784 lb.) in Nantucket Lightship, and 195 mt () on Georges Bank. The values for 2009

Table 9 – Preliminary estimates of YT TAC available for scallop access area program

	2008	2009
SNE/MA YT	312 mt	272 mt **
10% for scallop access program	31.2 mt (68,784 lb.)	27.2 mt (59,966 lb.)
GB YT	1,950 mt*	1,950 mt**
10% for scallop access program	195 mt (429,901 lb.)	195 mt (429,901 lb.)

* The Council recently approved 1,950 as the US share of the total 2,500 mt as recommended by the Transboundary Management Guidance Committee (TMGC). The US would be allocated an amount within this range, which is equal to 78% of the total TAC for US and Canada. The Council made this final recommendation at the September 2007 Council meeting.

** The **GB YT** TAC is determined on an annual basis so there is no way to estimate the TAC for 2009 at this time. For the purposes of Framework 19 the same TAC from 2008 will be used as a placeholder for analysis. The YT TAC could be higher or lower than this value based on updated information that will be discussed in 2008. The **SNE/MA** TAC will also be re-estimated in 2008 so this value could be adjusted later as well.

In order to calculate the compensation that will be used for limited access trips that have not been taken if the YT bycatch TAC is reached, an estimate is made about the number of days in the open areas required to remove the same number of scallops that would have been taken in the closed areas. For example, in Nantucket Lightship, a full trip is 18,000 lbs, and according to the projections, the average meat count will be 10.6, implying that $18,000 \times 10.6 = 190,800$ scallops will be removed per trip. In the open areas, the average meat count will be about 18.5, so that 190,800 scallops corresponds to $190,800 / 18.5 = 10,314$ lbs. The LPUE in the open areas in 2008 will be about 1,336 lbs/day, so that it will take $10,314 / 1,336 = 7.7$ days to land the same number of scallops, so the compensation will be 7.7 days.

For Closed Area II in 2009, the average meat count will also be 10.6, while average open area meat count will be 17.9, so that the target open area poundage will be $190,800 / 17.9 = 10659$ lbs. With an average open area LPUE of 1,344, the compensation days will be $10,659 / 1,344 = 7.9$ days.

Table 10 – Open area DAS Compensations for unused GB access area trips

	Open Area Compensation
Nantucket Lightship (2008)	7.7 DAS
Closed Area II (2009)	7.9 DAS

While there is a mechanism for compensation if an area has to close due to the YT TAC being reached, it is not expected to be needed for this framework. The YT TACs are higher in 2008 and 2009 than in previous years, and there is only one access area trip proposed in this action compared to several trips in years past. If the bycatch rates from previous years in Nantucket Lightship and Closed Area II are used to estimate whether the YT TAC will be reached, the analysis suggests that it will not unless bycatch rates are very different than in 2006 and 2007.

Yellowtail bycatch in access areas is monitored using observer data. The observed scallop and YT bycatch is recorded from each observed trip and is then extrapolated for other trips taken in the area. Therefore, an estimated value of total YT caught is available compared to total scallop meat caught. This information is provided on the NMFS Sea Scallop Fishery Monitoring

website (<http://www.nero.noaa.gov/ro/fso/scal.htm>). Based on the bycatch values for previous years, a bycatch rate of 0.006 was estimated for both years in Nantucket Lightship and 0.034 for Closed Area II in 2006. Using the same rates to estimate if the amount of allocated scallop catch is likely to reach the available scallop TAC suggests that only 45-50% of the YT TAC will be caught for both areas.

Table 11 – Summary of scallop to YT bycatch rates from previous access area programs in Nantucket Lightship and Closed Area II

		Allocated		Caught		Ratio (e) =(d/c)	Estimate of YT needed to catch full scallop TAC (f) =(e*a)		YT TAC	Compared to what was allocated
		Scallop	YT	Scallop	YT					
		(a)	(b)	c	(d)					
2006	NL	11,540,000	31,544	8,990,170	55,458	0.006	71,187	Area closed July 20	31,544	-39,643
	CA2	17,300,000	447,230	13,545,605	462,312	0.034	590,450	Area closed Sept 6	447,230	-143,220
2007	NL	7,870,000	46,958	5,613,763	32,782	0.006	45,957		46,958	1,001
2008	NL	5,600,000	68,784			0.006	33,600		68,784	35,184
2009	CA2	5,600,000	429,901			0.034	190,400		429,901	239,501

Note - for 2006 NL scallop landings the LA fishery landed 8,744,570 and 614 GC trips taken - assumed to equal 245,600 pounds

Note - for 2007 NL scallop landings the LA fishery landed 5,456,163 and 394 GC trips taken - assumed to equal 157,600 pounds

Note - for 2006 CA2 - general category landings were not included since so few trips were made in that area

2.3.2 Hudson Canyon Access Area

The Hudson Canyon Area was first closed in 1998 to protect a strong year class of young scallops. The area re-opened as a controlled access area in 2001. Amendment 10 truncated the area because small scallops appeared in what is now known as the Elephant Trunk Area (Figure 2). Fishing effort was supposed to increase in Hudson Canyon each year until a point when scallop biomass was near the levels in surrounding open areas, or unless substantial quantities of young scallops appeared in the area again. In 2006, the area was scheduled to re-open after several years of fishing effort as a controlled access area. However, survey data from 2005 used in Framework 18 indicated that the biomass was not as high as predicted by Amendment 10 and the TACs for 2004 and 2005 were too high. As a result, the scallop biomass was fished down faster than anticipated and many vessels took sub-optimal trips, or chose to delay trips all together.

Framework 18 ultimately extended the duration of the Hudson Canyon access program implemented under Amendment 10 until February 28, 2008 to give vessels more time to take unused trips when conditions improved. For 2006 and 2007 the area remained closed to all vessels except vessels with unused 2005 trips. Vessels with un-used trips (or broken trips) were permitted to use those trips until the end of the 2007 fishing year. The area has remained open to general category vessels with a 400 lb. possession limit.

The Council is considering measures for this area because catch rates in Hudson Canyon are still sub-optimal, and some vessels have not used their 2005 trips. In addition, Section 2.9 is also considering alternatives to close this area in 2008, or a similar area to protect small scallops that have been observed in recent surveys.

The TAC in FY2005 was allocated as three trips for full-time vessels. About 6.7 million pounds were landed by the end of FY2005, about .85 million pounds in FY2006, and so far in FY2007 about 5.3 million pounds have been landed. To determine remaining TAC, each completed trip was counted as accounting for 18,000 pounds, and any remaining poundage from broken trips is added to that figure. The total was subtracted from the TAC to obtain remaining TAC. Therefore, there are 2,097,064 pounds of the original TAC remaining (as of September 10, 2007); this is the equivalent of 117 trips. It is likely that more trips will be taken before the end of FY2007 (February 28, 2008).

Table 12 – Scallop allocation and landings from Hudson Canyon Access Area

Fishing Year	Remaining Scallop TAC (Lbs.)	Landed (Lbs)
2005	14,951,936	6,733,936
2006	8,218,000	846,227
2007	7,371,773	5,274,709*

*Landings in FY2007 through September 10, 2007

2.3.2.1 No Action (*Preferred by Scallop Committee*)

Under No Action, after February 28, 2008 all unused 2005 Hudson Canyon trips would expire and the area would revert back to an open area, and the boundaries would dissolve. Starting on March 1, 2008 limited access vessels would be permitted to fish in that area with open area DAS. General category vessels would still be permitted to fish in that area as they are now.

2.3.2.2 Extend the duration of the Hudson Canyon Area program until May 31, 2008

This alternative would authorize vessels with unused 2005 Hudson Canyon trips to use those trips until May 31, 2008, three month extension to the current extension of February 28, 2008. Extending the date could allow some vessels to take advantage of these trips later in the year when yields are higher in the area and weather is better.

2.3.3 Elephant Trunk Access Area

The Elephant Trunk Access Area was closed in 2004 to protect two very strong year classes until they reach a size that will produce high yield per recruit and optimum yield. The area opened in 2007 under Framework 18 with an initial allocation of five trips for full-time limited access vessels. An interim action was implemented to reduce the number of trips in that area from five to three for full-time vessels to prevent overfishing of the scallop resource overall. This action will consider measures for this access area for both 2008 and 2009.

Based on the most recent projections available the PDT recommends that 4 trips be allocated to full-time vessels in 2008 and 3 trips be allocated to full-time vessels in 2009.

2.3.3.1 Re-opening date

The PDT and advisors did not discuss this issue specifically, but in light of the recent interim action to delay the re-opening date from January to March it is probably not necessary to consider other opening dates at this time.

2.3.3.2 Seasonal closure to potentially reduce interactions with sea turtles in the ETA

The PDT does not recommend that the Committee consider adjustments to this provision at this time. The seasonal closure has only been in place one year and it is too early to determine if adjustments are necessary. In addition, with the requirement of turtle chain gear, interactions with sea turtles are expected to be very low if at all.

The Committee recommends that this alternative be moved to the considered but rejected section.

2.3.3.3 Procedures to adjust ETA allocations by Notice Action to account for uncertainty

This alternative identifies actions to be taken by the Regional Administrator (RA), based on total exploitable biomass in the ETA estimated from surveys conducted during early to mid-2008.

When changes in allocations are necessary, the downward adjustment would be published as a final rule before March 1, 2009, the start of the fishing year.

The RA will adjust the number of ETA trips using the table below (see specifications) provided that an updated biomass projection is available to publish a final action implementing such an adjustment in the Federal Register, pursuant to the Administrative Procedure Act. Such notification in the Federal Register will be published no later than January 30, 2009. If information is not available (due to timing, no new information, or other issues) such that NMFS cannot publish a notice by that date, no adjustment will be made.

The adjustment of the 2009 ETA trip allocations will be based on all available scientific surveys of scallops within the Elephant Trunk Area. Cooperative industry survey data should be used in conjunction with the R/V Albatross survey results to estimate total exploitable biomass. Survey data must be available with sufficient time for review and incorporation in the biomass estimate. If NMFS determines that a survey is not scientifically sound and unbiased, those results will not be used to estimate biomass. If no cooperative industry surveys are available, the results from the annual R/V Albatross survey will be used alone to estimate exploitable scallop biomass for the ETA.

If the biomass is higher than projected, no upward adjustments in trip allocations will be made. If ETA biomass is *somewhat* less than projected and would not cause ETA fishing mortality to exceed 0.32 or overfishing of the resource to occur, then the initial allocations would not need adjustment. However, if the ETA biomass is *considerably* less than projected so that the initial trip allocation causes ETA fishing mortality to exceed 0.32 or overfishing of the resource overall to occur, then the regulatory action would reduce the ETA trip allocations to a level consistent with achieving the area rotation fishing mortality target ($F=0.32$).

Specification: The table below shows the thresholds and adjustments to be made in 2009 with available survey data. These results are for the preferred alternative for which the initial ETA allocation is 4 trips per vessel (TAC=??? mt), and the new Delmarva rotation area is open 2009, and the open area allocation is ???. These factors are important considerations to determine whether a decrease in ETA biomass, to levels below those currently projected, would cause overfishing.

These estimates are derived from applying a bootstrap procedure to the biological projections which vary the 2007 ETA scallop abundance. Under the above set of management options, no ETA trip adjustments are needed to prevent overfishing, because the overall fishing mortality target is $F=0.172$???. This target provides a buffer for increases in resource-wide mortality enough to account for the additional Elephant Trunk Area mortality at lower biomass, when the ETA fishing mortality is less than 0.32.

Table 13. Estimated 2008 ETA exploitable biomass associated with the initial TAC and trip allocations in Framework 19 used for Notice Action triggers.

Biomass triggers in 2008 represent cut points at which the allocation at the next higher trip allocation would cause ETA fishing mortality to exceed $F=0.32$.

2008 ETA exploitable biomass (mt)	2009 TAC (mt) @ $F=0.16$	2009 TAC (million lbs.) @ $F=0.16$	Number of Elephant Trunk Area trips
			4
ETA exploitable biomass triggers (mt)	Adjusted 2009 TAC (mt)	Adjusted 2009 TAC (million lbs.)	Adjusted number of Elephant Trunk Area trips
			No upward adjustment
			3
			2
			1
Overall fishing mortality rate			
If F is greater than $F=0.29$ for the entire scallop resource			3

Rationale: This procedure would make use of a more rapid, event-triggered rulemaking to correct the ETA allocations, ensuring that optimum yield is achievable even if there is insufficient time to develop a framework adjustment when new ETA biomass data becomes available. There is uncertainty in the projected scallop biomass in the ETA, despite all the various research being conducted, it is not always available. In addition, this area contains about one-third of total scallop biomass; therefore, managing this access area with caution is necessary to preserve the long-term health of the scallop resource and fishery. Overharvest of the resource in this area could undermine the goals and objectives of area rotation – the cornerstone of the Scallop FMP.

The procedure would rely on the analyses in this document to set specifications based on total exploitable scallop biomass in the ETA and would also rely on public comment on these measures during development of Framework Adjustment 19. Since these corrections have been analyzed in this Environmental Assessment, further analysis and public comment would be unnecessary when the adjustment is made.

A framework adjustment cannot be developed in time to implement the adjusted specifications at the start of the 2009 fishing year on March 1, if survey and biological data become available too late to be of practical use. Many of the surveys are conducted during the late spring and summer, which are usually too late to prepare the necessary analyses in a framework adjustment that would be implemented before the start of the next fishing year. Therefore, this option sets up a rulemaking procedure that would authorize NMFS to adjust the ETA allocations if necessary based on available survey data.

2.3.4 Delmarva Access Area

This area was closed under Framework 18 on January 1, 2007 to protect a high number of young scallops from the strong 2003 year class. The area was expected to remain closed until 2010

under the area rotation schedule established under Amendment 10. However, based on new survey data and new information about growth rates in the Mid-Atlantic the area could open in 2009 at a reduced level.

2.3.4.1 No Action

The Delmarva Access Area closed in 2007 and will remain closed for both fishing years under this framework. Framework 18 projected that the area would be scheduled to reopen in 2010.

2.3.4.2 Early Delmarva Reopening (*Preferred alternative by Committee*)

Based on new survey data and new information about growth rates in the Mid-Atlantic this alternative would consider opening the Delmarva area in 2009 at a reduced level. The PDT recommends one trip be allocated in Delmarva in 2009.

2.3.4.2.1 Re-opening date

The recommendation is to re-open the Delmarva area on March 1, 2009. Based on the same reasons the Elephant Trunk Area opened on March 1 in 2007, the area should also open on that time of year, primarily to increase yield per recruit compared to opening the area earlier in the year.

2.3.4.2.2 Seasonal closure to potentially reduce interactions with sea turtles in the Delmarva area

Similar to the ETA, the Council recommends that during FY2009 the Delmarva area would be closed to scallop fishing for several months (August 1 - October 31) to potentially reduce interactions during a period when takes of loggerhead turtles were observed in recent years.

As with other areas in the Mid-Atlantic, the seasonal distribution of sea turtles overlaps with the scallop fishery in the Delmarva area. Although the Council is recommending a very limited level of effort in that area in 2009 (1 trip), this alternative would include a seasonal closure as a precautionary measure to potentially reduce interactions with sea turtles in the context of rotational area management. See Section ??? for a summary of the observed turtle takes in the Delmarva area in recent years.

The Committee recommends that this alternative be moved to the considered but rejected section.

2.3.4.2.3 Procedures to adjust Delmarva allocations by Notice Action to account for uncertainty

This alternative identifies actions to be taken by the Regional Administrator (RA), based on total exploitable biomass in the Delmarva Area estimated from surveys conducted during early to mid-2008. When changes in allocations are necessary, the downward adjustment would be published as a final rule before March 1, 2009, the start of the fishing year. This procedure is modeled after the Notice Action procedure used in Framework 18 for the Elephant Trunk Area.

The RA will adjust the number of Delmarva trips using the table below (see specifications) provided that an updated biomass projection is available to publish a final action implementing such an adjustment in the Federal Register, pursuant to the Administrative Procedure Act. Such notification in the Federal Register will be published no later than January 30, 2009. If information is not available (due to timing, no new information available or other issues) such that NMFS cannot publish a notice by that date, no adjustment will be made.

The adjustment of the 2009 Delmarva trip allocations will be based on all available scientific surveys of scallops within the area. Cooperative industry survey data should be used in conjunction with the R/V Albatross survey results to estimate total exploitable biomass. Survey data must be available with sufficient time for review and incorporation in the biomass estimate. If NMFS determines that a survey is not scientifically sound and unbiased, those results will not be used to estimate biomass. If no cooperative industry surveys are available, the results from the annual R/V Albatross survey will be used alone to estimate exploitable scallop biomass for the Delmarva area.

If the biomass is higher than projected, no upward adjustments in trip allocations will be made. If Delmarva biomass is *somewhat* less than projected and would not cause Delmarva fishing mortality to exceed 0.32 or overfishing of the resource to occur, then the initial allocations would not need adjustment. However, if the Delmarva biomass is *considerably* less than projected so that the initial trip allocation causes Delmarva fishing mortality to exceed 0.32 (?) then the regulatory action would reduce the Delmarva trip allocations to a level consistent with achieving the area rotation fishing mortality target ($F=0.32$).

Specification: The table below shows the thresholds and adjustments to be made in 2009 with available survey data. These results are for the preferred alternative for which the initial ETA allocation is ??? trips per vessel (TAC=??? mt), the Hudson Canyon Area is ???, the new Delmarva rotation area is open???, and the open area allocation is ???. These factors are important considerations to determine whether a decrease in Delmarva biomass, to levels below those currently projected, would cause overfishing.

These estimates are derived from applying a bootstrap procedure to the biological projections which vary the 2007 Delmarva scallop abundance. Under the above set of management options, no Delmarva trip adjustments are needed to prevent overfishing, because the overall fishing mortality target is $F=0.172$???. This target provides a buffer for increases in resource-wide mortality enough to account for the additional Delmarva mortality at lower biomass, when the Delmarva fishing mortality is less than 0.32.

Table 14. Estimated 2008 Delmarva exploitable biomass associated with the initial TAC and trip allocations in Framework 19 for Notice Action triggers.

Biomass triggers in 2008 represent cut points at which the allocation at the next higher trip allocation would cause Delmarva fishing mortality to exceed $F=0.32$.

2008 Delmarva exploitable biomass (mt)	2009 TAC (mt) @ $F=0.16$	2009 TAC (million lbs.) @ $F=0.16$	Number of Delmarva Area trips
			1
Delmarva exploitable biomass triggers (mt)	Adjusted 2009 TAC (mt)	Adjusted 2009 TAC (million lbs.)	Adjusted number of Delmarva Area trips
			No upward adjustment
			0

Rationale: This procedure would make use of a more rapid, event-triggered rulemaking to correct the Delmarva allocations, ensuring that optimum yield is achievable even if there is insufficient time to develop a framework adjustment when new Delmarva biomass data becomes available. There is uncertainty in the projected scallop biomass in the Delmarva area, because a substantial majority of it is currently young scallops, whose true abundance is difficult to estimate with a high degree of precision. In addition, this area was originally not projected to open until 2010, but recent survey results from 2007 suggest that the biomass in that area should be able to support limited effort in 2009. If surveys in 2008 suggest that growth rates have slowed down and new recruitment has settled in the area then this procedure would authorize the RA to reduce or prevent effort in that area in 2009.

The procedure would rely on the analyses in this document to set specifications based on total exploitable scallop biomass in the Delmarva area and would also rely on public comment on these measures during development of Framework Adjustment 19. Since these corrections have been analyzed in this Environmental Assessment, further analysis and public comment would be unnecessary when the adjustment is made.

A framework adjustment cannot be developed in time to implement the adjusted specifications at the start of the 2009 fishing year on March 1, if survey and biological data become available too late to be of practical use. Many of the surveys are conducted during the late spring and summer, which are usually too late to prepare the necessary analyses in a framework adjustment that would be implemented before the start of the next fishing year. Therefore, this option sets up a rulemaking procedure that would authorize NMFS to adjust the Delmarva allocations if necessary based on available survey data.

2.3.5 Other restrictions for limited access vessels in access areas

This framework is considering several other measures that are intended to improve the effectiveness of the overall area rotation program.

2.3.5.1 Restriction on the number of crew on limited access vessels on access area trips

2.3.5.1.1 No Action (*Preferred Alternative by Committee*)

Vessels with limited access permits may carry no more than 7 persons on a DAS trip in open areas. This measure was implemented to control fishing power of a vessel on a DAS. Under Framework 18, the Council recommended that the maximum crew restriction be lifted for access area trips since there is a possession limit. NMFS implemented Framework 18 with no maximum crew limit for access area trips. This alternative would not restrict the number of crew a vessel could take on an access area trip – elimination of maximum crew size restriction.

Rationale: Allowing a vessel to carry more crew on an access area trip may reduce fishing costs by potentially reducing the time a vessel is at sea. No crew limit would give vessels the most flexibility, potentially reducing total fishing costs, increasing total benefits for crew and vessel owners, but reducing income per crew member. Increasing crew limits could improve safety and provide more opportunity for training new crew members.

2.3.5.1.2 Reduce maximum crew size on limited access vessels on access area trips

This alternative would include a maximum crew size restriction for limited access vessels in access areas to either: **Option A** with a maximum of eight crew members, or nine crew members under **Option B**. See Section ??? for a summary of the analysis related to eliminating the crew size restriction in access areas under FW18.

Rationale: Framework 18 acknowledges that as long as the size of scallops in the access areas remains constant, the number of crew will have no effects on the weight of scallops that are cut and landed. However, vessels with no crew limit could target smaller scallops in access areas as catches of larger scallops decline. Larger crews also have an effect on cull size, which may cause the number of shucked scallops to increase. This alternative would provide some opportunity for vessels to take additional crew for safety and training purposes, but would have reduced risks of vessels targeting smaller scallops and increasing mortality.

2.3.5.2 Prohibition on deckloading

A prohibition on deckloading in this case refers to a vessel being prohibited from leaving an access area with more than 50 bushels of in-shell scallops. The Council decided to consider this topic in Framework 19 in light of a recent interim action for the Elephant Trunk Access Area that included a prohibition on deckloading to reduce non-harvest scallop mortality. In November 2006 the Council recommended that interim action be taken to reduce the potential for overfishing in FY2007. Interim measures included a reduction of fishing effort in the Elephant Trunk Access Area as well as a prohibition on deckloading from that area. At the time the industry requested that NMFS prohibit deckloading in all access areas, but the interim action was limited to the ETA.

2.3.5.2.1 No Action

A vessel would not be restricted on the amount of in-shell scallop it has onboard when leaving an access area, except for the Elephant Trunk Area. That area is already restricted to a 50 bu. restriction of in-shell scallop on deck when leaving that area based on Framework 20.

Rationale: No Action would allow a vessel to leave an access area with a deckload of scallops (except for the Elephant Trunk Area). This would enable a vessel to shuck scallop meat on their return to port, potentially reducing fishing costs by reducing the time the vessel is at sea. If bad weather is a factor, a vessel can leave an access area with a full deckload of scallops and shuck the scallop meat on their return to port.

2.3.5.2.2 Prohibit all vessels from leaving any access area with more than 50 bushels of in-shell scallops (prohibition on deckloading) (Preferred alternative by Committee)

This alternative would prohibit a vessel from leaving any access area with more than 50 bushels of in-shell scallop. The Committee recommends two options for this alternative.

Option A: no exceptions, all vessels restricted to 50 bu. limit under all circumstances
(Preferred by Committee)

Option B: A vessel would be permitted to leave an access area with more than 50 bu. of in-shell scallop on deck if one of the two exceptions listed below apply;

1. A general category vessel is carrying an observer; or
2. A vessel has to break a trip due to a safety concern that can be documented as in other regulations

Rationale: If a vessel leaves an access area and plans to shuck the remainder of their trip on the way home, the vessel may have an excess of scallops above the possession limit and will discard them in an area that may not be suitable for scallops, or the scallops may be dead before they are discarded. This alternative is intended to reduce non-harvest mortality by restricting the amount of in-shell scallop a vessel is permitted to leave an access area with (up to 50 bu.).

2.3.5.3 TAC set-asides for observers (1%) and research (2%)

One-percent of the estimated TAC for each access area would be set-aside to help fund observers. In addition, 2% of the estimated TAC for each access area would be set-aside to fund scallop-related research in the access areas. The percent of TAC for observers and research would be removed before allocations are set for limited access and general category fisheries.

In terms of the Georges Banks Access Areas, see Table ??? for a breakdown of the expected TAC that would be assigned for observers and research under both status quo and Alternative 1. as well as TAC available for Elephant Trunk and Delmarva in 2009 if that area re-opens.

Table 15. Set-asides by area (in million lb.)

FYEAR	AREATYPE	Data	NOACT	PREF	DMV3	DMV2	HCL	HCS	SCH	SCHHC
2008	ACCESS	Sum of 1PCT SA	0.19	0.27	0.27	0.27	0.27	0.27	0.27	0.27
		Sum of 2PCT SA	0.38	0.55	0.54	0.54	0.55	0.54	0.54	0.55
	OPEN	Sum of 1PCT SA	0.25	0.16	0.19	0.19	0.16	0.17	0.24	0.17
		Sum of 2PCT SA	0.49	0.32	0.38	0.38	0.31	0.33	0.48	0.33
2008 Sum of 1PCT SA			0.44	0.44	0.46	0.46	0.43	0.44	0.51	0.44
2008 Sum of 2PCT SA			0.88	0.87	0.93	0.93	0.86	0.88	1.02	0.88
2009	ACCESS	Sum of 1PCT SA	0.17	0.28	0.21	0.27	0.28	0.27	0.27	0.28
		Sum of 2PCT SA	0.35	0.56	0.43	0.54	0.56	0.55	0.54	0.56
	OPEN	Sum of 1PCT SA	0.24	0.18	0.30	0.25	0.21	0.22	0.28	0.18
		Sum of 2PCT SA	0.48	0.36	0.60	0.51	0.41	0.44	0.55	0.36
2009 Sum of 1PCT SA			0.41	0.46	0.52	0.53	0.49	0.49	0.55	0.46
2009 Sum of 2PCT SA			0.83	0.92	1.03	1.05	0.97	0.98	1.10	0.93
Total Sum of 1PCT SA			0.85	0.90	0.98	0.99	0.92	0.93	1.06	0.90
Total Sum of 2PCT SA			1.70	1.80	1.96	1.98	1.84	1.86	2.12	1.81

2.3.5.4 Research priorities for 2008 and 2009

The PDT recommended the following list of priorities be included for research set-aside (RSA) funds for both access area set-asides and open area set-asides. The Scallop Committee approved this list as well. The PDT also recommends that the notice for RSA be published as soon as possible so the process can begin. In addition, the application deadline should be relatively short because some research is time critical; i.e. some projects should occur before access areas open in June 2008, or to assess the Delmarva area before the summer in 2008 to see if the number of trips should be reduced.

2008/2009 Scallop Research Set-Aside Program Needs and Priorities:

HIGHEST PRIORITY: An intensive industry-based survey of each of the access areas (access areas in Georges Bank including Closed Area I, Closed Area II, and Nantucket Lightship, as well as Elephant Trunk and Delmarva areas). These surveys can then be used to estimate total allowable catches (TACs) under the rotational area management program if the data from these surveys are available by August 2008 for the 2008 RSA program, or August 2009 for the 2009 RSA program.

OTHER PRIORITIES (not listed in order of importance):

1. Other surveys, including areas not surveyed by the annual NMFS survey (i.e., offshore Gulf of Maine and Southern New England).
2. Scallop biology, including studies aimed at understanding recruitment processes (reproduction, larval and early post-settlement stages), growth, natural mortality (including predation and disease), incidental gear mortality, and discard mortality.
3. Identification and evaluation of methods to reduce groundfish bycatch (i.e., gear research).
4. Identification and evaluation of methods to reduce habitat impacts, including, but not limited to: broader investigation of variability in dredging efficiency across habitats, times, areas, and gear designs; and research on habitat effects from scallop fishing and development of practicable methods to minimize or mitigate those impacts.
5. Habitat characterization research including, but not limited to: video and/or photo transects of the bottom within scallop access areas and within closed scallop areas and in comparable fished areas

that are both subject and not subject to scallop fishing, before and after scallop commences; development of high resolution sediment mapping of scallop fishing areas using Canadian sea scallop industry mapping efforts as an example process; identification of nursery and over-wintering habitats of species that are vulnerable to habitat alteration by scallop fishing; and other research that related to habitats affected by scallop fishing, including, but not limited to, long-term or chronic effects of scallop fishing on marine resource productivity, other ecosystem effects, habitat recovery potential, and fine scale fishing effort in related to fine scale habitat distribution. In particular, projects that directly support evaluation of present and candidate EFH closures and HAPCs to assess whether these areas are accomplishing their stated purposes and to assist better definition of the complex ecosystem processes that occur in these areas.

6. Identification of sources of sea turtle interactions and/or identification of ways to minimize interactions with sea turtles. Two priority topics identified include evaluation and analysis of factors affecting bycatch rates of sea turtles and development of scallop dredge and trawl operations that would reduce or eliminate the threat or harm of sea turtle interactions. Other issues related to sea turtle research include, but are not limited to: gear modifications, or fishing techniques that may be used to reduce or eliminate the threat of sea turtle interactions without unacceptable reduction in scallop retention, comparison and analysis of turtle capture rates of similar gear in other fisheries, and turtle behavior.
7. Improved information concerning scallop abundance and evaluation of the distribution, size composition, and density of scallops, including but not limited to: efforts to develop a cooperative industry-based resource survey, high resolution surveys that include distribution, biomass of exploitable size scallops, recruitment, mortality, and growth rate information, research that provides more detailed scallop life history information (especially on age and area specific natural mortality and growth) and to identify stock-recruitment relationships, intensive sampling on both sides of access boundaries for fishing year 2007 and in subsequent years to gauge the short-and long-terms effects of fishing on the resource.
8. Scallop and area management research, including but not limited to: evaluation of ways to control predation on scallops; research to actively manage spat collection and seeding of sea scallops; social and economic impacts and consequences of closing areas to enhance productivity and improve yield of sea scallops and other species; and estimation of factors affecting fishing power for each limited access vessel.
9. Research projects that would help calibrate the transition of the federal dredge survey, or projects that compare various survey techniques and methods would assist with the current transition period of the federal scallop dredge survey.

Funded 2007 Research Set-Aside Projects

Of the fourteen proposals that were received for the 2007 Research Set-aside Program, six were approved for funding.

Table 16 – Summary of research proposals funded with 2007 RSA funds

Title
Characterization of Benthic Habitat and Scallop Abundance Using Optical Imaging Technology: Phase II
Developing an Improved Dredge for Standardized Surveys of the Sea Scallop Resource
Field Testing of a New Dredge for the Sea Scallop Fishery
An assessment of Sea Scallop Abundance and Distribution in Selected Closed Areas: Georges Bank Area I and II, Nantucket Lightship and Elephant Trunk
Calibrating Industry Scallops Surveys with NOAA Vessel Platforms
High-Resolution Video Survey of the Habitat and Sea Scallop Resource in the Elephant Trunk and Nantucket Lightship Closed Areas

2.3.6 Open area allocations

After controlled access area allocations are determined, as well as allocations for the general category fishery, the open area DAS are set at a level that equals a value such that the resource-wide average fishing mortality is expected to be 80% of F_{max} , estimated to be a fishing mortality of $F=0.2$. In special circumstances overall F may be reduced to achieve optimum yield; for example, if a large fraction of the scallop biomass is in closed areas it will take more DAS in open areas to achieve an overall $F=0.2$.

2.3.6.1 Allocations

Pursuant to CFR §648.55, the Scallop PDT has made a recommendation below concerning the number of open area DAS that should be allocated in 2008 and 2009 to achieve optimum yield.

(d) In order to assure that OY is achieved and overfishing is prevented, on a continuing basis, the PDT shall recommend management measures necessary to achieve optimum yield-per-recruit from the exploitable components of the resource (e.g., those components available for harvest in the upcoming fishing years), taking into account at least the following factors:

- (1) Differential fishing mortality rates for the various spatial components of the resource;
- (2) Overall yields from the portions of the scallop resource available to the fishery;
- (3) Outlook for phasing in and out closed or controlled access areas under the Area Rotation Program; and
- (4) Potential adverse impacts on EFH.

Open Area DAS will depend on what is decided about HC, how many trips in ET, what happens with Delmarva in 2009, and how many GB trips are allocated. Based on range of options under consideration the range of open area DAS for 2008 is from 29 to 51 and 42 to 69 for FY2009. is a summary of the potential open area DAS allocations by limited access permit category.

Table 17 – Summary of open area DAS allocations for the various scenarios

	Full-time		Part-time		Occasional	
	2008	2009	2008	2009	2008	2009
No Action	51	51	20	20	4	4
Pref	35	42	14	17	3	3
DMV 3	32	60	13	24	3	5
DMV2	32	48	13	19	3	4
HC-sm	30	47	12	19	2	4
HC-lar	29	47	12	19	2	4
Sch	50	69	20	28	4	6
Sch and HC	42	54	17	22	3	4

2.3.6.2 DAS set asides for observers (1%) and research (2%)

This action continues the set-aside program that deducts one-percent of the allocated DAS to help fund observers on limited access scallop vessels in open areas and two-percent to fund scallop related research with compensation trips taken in open scallop fishing areas. This

allocation would be removed after the general category allocation is removed from open areas. See **Table 15** for a summary of estimated set asides for open areas.

2.4 MEASURES FOR GENERAL CATEGORY VESSELS

2.4.1 No Action

The No Action for this fishery would assume that Amendment 11 is approved as the Council recommended it. Specifically, a quarterly hard-TAC would be implemented for general category qualifiers (and vessels under appeal) while the fishery is in a transition to limited entry (12-18 months). Ten percent of the total projected scallop catch would be allocated to the general category fishery (open and access area fishing) and would be divided into quarters based on historical trends in landings.

Qualifying vessels would then be allocated an individual fishing quota after the transition period expires. This framework assumes that the transition period will expire at the end of the 2008 fishing year (February 28, 2009), but it is possible it may expire sooner. In which case, vessels could receive an individual allocation of fishing quota for part of the 2008 fishing year and all of FY2009. For the details of the limited entry and individual fishing quota program recommended by the Council under Amendment 11 see Appendix I, the Executive Summary of Amendment 11 FSEIS.

Amendment 11 also includes a separate limited entry program for general category vessels to fish in the Northern Gulf of Maine (NGOM). If a vessel had a permit before the control date and does not qualify for the limited entry general category permit, it would be permitted to fish for scallops at a reduced level in the NGOM. Vessels would be permitted to land up to 200 pounds of scallops until an overall TAC is reached for the scallop resource in federal waters. If this measure is approved, Framework 19 could potentially include a hard-TAC for both 2008 and 2009.

2.4.1.1 Quarterly hard-TAC for transition period to limited entry (FY2008)

Overall general category landings are highest during the second quarter (about 44% landed from June-August). Based on landings data from the last few years about 20% of landings were in Quarter 1 and another 20% in Quarter 3. The PDT recommends that the historical averages be modified to account for access area openings in 2008. For example, since the Elephant Trunk Area is expected to open in March in 2008 with potentially 1,050 trips then a higher percent of the total TAC should be considered for Quarter 1. Second, less effort is going to be allocated in access areas on GB (June 15 opening) so less TAC may need to be available during Quarter 2. In addition, the PDT recommends that higher TACs be considered in Quarter 1 and Quarter 2 in general, so that if the fishery does not harvest the quarterly TAC, any unused TAC can roll-over to future quarters. Amendment 11 specified that any unused TAC from Quarter 1 would roll-over to Quarter 3, and any unused TAC in Quarter 2 would roll-over to Quarter 4. **Therefore, the PDT recommends that the advisors and Committee consider two options for hard TAC**

percentages for 2008. The percentages per quarter are described in the table below. The Committee supports Option A as preferred.

Table 18 – Summary of quarterly TAC allocations for the general category fishery for the interim period to limited entry (FY2008)

	Q1 (Mar-May)	Q2 (June-Aug)	Q3 (Sept-Nov)	Q4 (Dec-Feb)
Option A*	35%	40%	15%	10%
Option B	40%	45%	10%	5%

* Preferred by Scallop Committee

Table 19. Percentage distribution of general category scallop landings by quarter by general category vessels that had a permit before the control date

Quarter	FISHYEAR			
	2004	2005	2006	Average of 2004 - 2006
Q1: Mar-May	19%	19%	33%	24%
Q2:Jun-Aug	45%	45%	43%	44%
Q3:Sep-Nov	24%	24%	17%	22%
Q4:Dec-Feb	13%	11%	7%	10%
Grand Total	100%	100%	100%	100%

Table 20. Percentage distribution of general category scallop landings by quarter by all general category vessels

Quarter	FISHYEAR			
	2004	2005	2006	Average of 2004 - 2006
Q1: Mar-May	19%	17%	32%	23%
Q2:Jun-Aug	45%	44%	42%	44%
Q3:Sep-Nov	24%	26%	18%	22%
Q4:Dec-Feb	12%	12%	8%	11%
Grand Total	100%	100%	100%	100%

Table 21. Scallop landings, revenue and ex-vessel price by quarter by all general category vessels

Fishyear	Data	Q1: Mar-May	Q2:Jun-Aug	Q3:Sep-Nov	Q4:Dec-Feb	Grand Total
2004	Scallop landings (lb.)	542,912	1,264,395	670,236	353,487	2,831,030
	Scallop revenue (\$)	2,658,538	6,012,814	3,771,936	2,263,423	14,706,711
	Ex-vessel price (\$)	5.3	5.0	6.2	6.5	5.6
2005	Scallop landings (lb.)	1,232,749	3,147,830	1,868,298	865,029	7,113,906
	Scallop revenue (\$)	8,415,436	22,968,523	16,150,899	6,980,818	54,515,676
	Ex-vessel price (\$)	6.9	7.2	8.7	8.2	7.7
2006	Scallop landings (lb.)	2,090,113	2,764,452	1,139,716	512,255	6,506,536
	Scallop revenue (\$)	14,593,517	17,420,983	7,342,103	3,585,838	42,942,441
	Ex-vessel price (\$)	7.1	6.4	6.5	7.3	6.7
2007*	Scallop landings (lb.)	1,618,605	1,417,420			3,036,025
	Scallop revenue (\$)	9,653,737	8,218,362			17,872,099
	Ex-vessel price (\$)	6.2	5.9			6.0

* Preliminary: March to July

Table 22. The recent activity by general category vessels according to date of the permit

Data	Permit after the control date	Permit before the control date	Grand Total
2004 fish year			
Number of vessels	28	404	432
Average scallop landings per vessel (lb.)	2,780	6,815	6,553
Total scallop landings (lb.)	77,832	2,753,198	2,831,030
Percentage of general category scallop landings	3%	97%	100%
Percentage of total scallop landings	0.1%	4.5%	4.6%
2005 fish year			
Number of vessels	103	516	619
Average scallop landings per vessel (lb.)	12,992	11,193	11,493
Total scallop landings (lb.)	1,338,151	5,775,755	7,113,906
Percentage of scallop landings	19%	81%	100%
Percentage of total scallop landings	2.5%	10.8%	13.3%
2006 fish year			
Number of vessels	153	490	643
Average scallop landings per vessel (lb.)	12,502	9,375	10,119
Total scallop landings (lb.)	1,912,731	4,593,805	6,506,536
Percentage of scallop landings	29%	71%	100%
Percentage of total scallop landings	3.4%	8.3%	11.6%
2007 fish year (preliminary March-July)			
Number of vessels	99	321	420
Average scallop landings per vessel (lb.)	10,286	6,286	7,229
Total scallop landings (lb.)	1,018,316	2,017,709	3,036,025
Percentage of scallop landings	34%	66%	100%
Percentage of total scallop landings	2.7%	5.2%	7.9%

2.4.1.1.1 Measures to reduce derby fishing during the transition period to limited entry (FY2008) (*Preferred Alternative by Scallop Committee*)

The Committee recommends that the general category fishery be allocated 2% of each access area, rather than the recommended 5% for FY2009 to reduce derby fishing in those areas during the transition period to limited entry. More vessels are expected to fish during the interim period then will ultimately qualify for the limited entry general category program. If a lower allocation is given to areas with higher scallop catch, the derby effects are expected to be reduced compared to allocating 5% of the access areas to the general category fishery during the transition period. The remainder of the overall 10% TAC will be allocated to the general category fishery for open areas and the limited access fishery would be allocated more scallops from the access areas during this period.

Insert number of trips for gen cat comparing 2% and 5%

2.4.1.2 IFQ program for general category fishery

If Amendment 11 is approved as recommended, an IFQ program will be implemented for general category vessels that qualify for a limited access permit. Vessels will be allocated an individual amount of scallop meat in pounds per fishing year. Their individual allocation will be based on their catch history from their best fishing year between March 1, 2000 and November 1, 2004. Their best year's landings would determine their "contribution factor". The sum of all qualifying vessels best year landings will be added together and each vessel will receive a contribution factor – or percent of the total best year landings. That percentage will be multiplied by the total available catch for general category vessels (5% of the total catch). Therefore, a vessels individual allocation will vary by year based on available catch, but their contribution factor will remain the same.

Vessels will be permitted to catch that quota from any area that is open each fishing year (open areas and specific access areas until the fleetwide number of general category trips is harvested). Vessels would be permitted to trade and or buy/sell quota on a limited basis. The full IFQ program is expected to be implemented for FY2009, or sooner if possible. One aspect of the IFQ program that was not specified in Amendment 11 is the required cost recovery program for an IFQ program. Therefore, Framework 19 includes an alternative for a cost recovery program with estimated costs for enforcement and management of an IFQ program.

2.4.1.2.1 Cost recovery program

NMFS is required under the MSFCMA to collect fees to recover the costs directly related to management, data collection and analysis, and enforcement of IFQ programs. Under section 304(d)(2)(A) of the Act, the Secretary is authorized to collect a fee to recover these costs. The fee shall not exceed 3-percent of the ex-vessel value of fish harvested. Separate accounts would be created within the Limited Access System Administrative Fund (LASAF) to ensure that the funds from the IFQ cost recovery are used only to pay for the actual costs directly related to management, data collection and analysis, and enforcement costs of the NMFS Northeast Region Scallop IFQ Program. Since Amendment 11 proposes to include an allocation of individual quota (based on a percent of total general category catch), the Secretary is authorized and shall collect a fee to recover the actual costs directly related to the management and enforcement of

any individual fishing quota program. The fee shall not exceed 3% of the ex-vessel value of fish harvested under such program. During development of Amendment 11 the Council learned that the preliminary estimates of the cost recovery program for the surf clam quota program, which is also subject to this requirement, were about \$50,000 to monitor and manage that quota program.

The amendment did not have to specify the details of the cost recovery program, but it was discussed that a future framework or other appropriate vehicle would specify how the Secretary will collect a cost recovery fee for this individual fishing quota program. This action will consider the specific cost recovery program that should be developed, and NMFS will provide the cost estimates.

2.4.1.2.1.1 No Action (fees and cost recovery would not be collected if an IFQ program is implemented)

Under the No Action alternative, fees and cost recovery would not be implemented if an IFQ program is put in place for the general category scallop fishery. This alternative would be contrary to the Congressional mandate to collect fees for IFQ programs as specified in the Magnuson-Stevens Act and therefore is not consistent with the MSA.

2.4.1.2.1.2 IFQ shareholder directly pays (Committee Recommendation)

A limited access general category IFQ vessel would incur a cost recovery fee liability for every landing of scallops from that vessel. The IFQ permit holder would be responsible for self-collecting his or her own fee liability for all his or her scallop landings. The IFQ permit holder would be responsible for submitting this payment to NMFS once per year, on or before the due date of March 1. The dollar amount of the fee due would be determined by multiplying the IFQ fee percentage (using a default rate of 3-percent) by the actual ex-vessel value of each IFQ landing by a vessel issued an IFQ scallop permit.

Fee Determination and Responsibilities

Three percent of the ex-vessel value of fish harvested under an IFQ program is the maximum fee amount allowed by section 304(d)(2)(B) of the Magnuson-Stevens Act. This alternative would allow the Regional Administrator to reduce the fee percentage if actual management, enforcement, and data collection costs could be recovered through a lesser percentage. In the first year of the IFQ program, NMFS will determine costs for the period March 1 through November 30. This will enable NMFS to prepare bills for scallop IFQ permit holders and mail those bills on January 1. The costs for the period December 1 through November 30 would be used for all years after the initial scallop fishing year under the IFQ program to account for 12 full months of costs. Based on the determination of actual costs each year, the Regional Administrator could reduce the fee percentage for that year, or the estimate for subsequent years, to reflect more closely the actual IFQ-related management and enforcement costs for the past year.

In order to budget, fishermen need to know at the time of sale the maximum fee percentage that could apply to their IFQ landings made from March 1 through November 30 in the initial year of

the IFQ program and from December 1 through November 30 of each year thereafter. This alternative would set the applicable fee percentage at 3 percent at the start of each year but would allow the Regional Administrator to reduce the fee percentage if management and enforcement costs could be recovered for a lesser percentage. Because fees are not due until March 1 of the following fishing year, NMFS believes that for budget purposes it is preferable to establish a 3-percent fee that could be adjusted downward, based upon certain types of information to reflect the actual costs incurred during the previous fishing year. NMFS would encourage IFQ permit holders to set aside the amount of the fees throughout the fishing year in order to facilitate a lump sum payment by the payment due date. Early payments would be allowed but would not relieve a permit holder of associated reporting requirements.

Actual Ex-vessel Value

Throughout this discussion, “value” refers to the worth, in U.S. dollars, of any amount of landed IFQ scallops as determined by the sale, or potential economic return for the sale, of those scallops. “Price” is the worth in U.S. dollars, for 1 lb (0.45 kg) of shucked scallops, or the landed unit of in-shell scallops (e.g., one U.S. bushel). Therefore, in this context, value and price only mean the same thing when describing the worth IFQ scallops when sold. For purposes of calculating IFQ cost recovery fees, NMFS would utilize actual ex-vessel value. Actual ex-vessel value would be the amount of money an IFQ permit holder received as payment for his or her IFQ scallops sold as reported by a federally permitted dealer.

In determining value, NMFS would take into account any additional payments that are associated with landed scallops but that are paid at a later date for previously landed scallops. These “retro-payments” could include bonuses, delayed partial payments, post-season payments that are made to the IFQ permit holder for previously landed scallops. Retro-payments would be part of the ex-vessel value and as such have a fee liability. If retro-payments were received after the initial payment, but during the same fishing year, the cost recovery fee for those retro-payments also would be due by the payment due date. If retro-payments were received by IFQ permit holders during the year following the fishing season when those scallops were landed, then cost recovery fees associated with those post-season retro-payments would be due the next payment due date.

Fees Based on Actual Ex-vessel Value

Owners of IFQ vessels would be responsible for paying the fee liability for their IFQ vessel(s) by March 1 under two options described below.

Option 1: Under this option, the actual value of landed IFQ scallops would be determined when scallops are actually sold and would be reported by the scallop dealer. The IFQ permit holder would be responsible for calculating his or her fee liability for landed scallops based on the actual monetary value received and reported to NMFS by the dealer. The fee amount would be the product (in U.S. Dollars) of multiplying that actual ex-vessel value by the fee percentage (i.e., 0.03). The IFQ permit holder’s fee liability would be based only on the actual price paid by the dealer for either shucked or in-shell scallops. Unless specifically identified on dealer reports, landings of scallops are considered to be shucked scallop meats. No conversions of in-shell to shucked scallops would be applied to landings for the purpose of calculating the fee liability. The conversion from in-shell to shucked weight scallops by NMFS is only for the purposes of monitoring IFQ landings, not fees.

Option 2 (Committee Recommendation): The ex-vessel value of scallops would be determined as an average of the ex-vessel value of all general category scallops landed between March 1 and November 30 of the initial year of the IFQ program, and December 1 through November 30 of each year thereafter. The average ex-vessel value would be expressed in dollars per pound of scallops (e.g., \$5.00 per pound of scallop meats). The ex-vessel value would then be multiplied by the amount of scallops landed by the IFQ vessel between March 1 and November 30 of the initial year of the IFQ program, and December 1 through November 30 of each year thereafter to determine the fee liability for that IFQ vessel. NMFS would take into account the price paid for in-shell scallops and any landings of in-shell scallops identified by dealer records.

Fee Payment Procedure

By January 1 of each year NMFS will mail a bill for the IFQ fee from the previous fishing year to each IFQ permit holder. Bills may also be made available electronically via the internet. Payment of the IFQ fee must be made by the payment due date of March 1 of each year. Payments of the IFQ fee must be made electronically via the Federal web portal, www.pay.gov, or other internet sites as designated by the Regional Administrator. The reason for the 100-percent electronic fee collection system is to minimize paper transactions, and is due to the fact that at the present time the NMFS Northeast Regional Office is not equipped to process paper fee collections. Instructions for electronic payment will be made available on both the payment website and the paper bill. Payment options will include payment via a plastic card (e.g. Visa, MasterCard, Discover, etc.), or direct ACH (automated clearing house) withdrawal from a designated checking account. Payment by check may be authorized by the RA if the RA has determined that electronic payment is not possible (for example if the geographical area or an individual(s) is affected by catastrophic conditions).

Payment Compliance

An IFQ permit holder who has incurred a fee liability would be required to pay the fee to NMFS by March 1 of the fishing year following the fishing year in which the landing was made. If an IFQ permit holder has made a timely payment to NMFS of an amount less than the fee liability NMFS has determined, including non-payments, the IFQ permit holder has the burden of demonstrating that the fee amount submitted is correct. If, upon preliminary review of the accuracy and completeness of a fee payment, NMFS determines the IFQ permit holder has not paid a sufficient amount, NMFS would notify the IFQ permit holder by letter. NMFS would explain the discrepancy and the IFQ permit holder would have 30 days to either pay the amount that NMFS has determined should be paid or provide evidence that the amount paid is correct. If the IFQ permit holder submits evidence in support of his or her payment, NMFS will evaluate it and, if there is any remaining disagreement as to the appropriate IFQ fee, prepare a Final Administrative Determination (FAD). The FAD would set out the facts, discuss those facts within the context of the relevant agency policies and regulations, and make a determination as to the appropriate disposition of the matter. An FAD would become a final agency action. If the FAD has determined that the IFQ permit holder is out of compliance, the following conditions would exist: The IFQ scallop permit would be canceled and invalid; the IFQ permit holder could not transfer any IFQ; and the IFQ permit holder could not receive IFQ by transfer; and would not be able to participate in the scallop fishery until payment is made. For vessels issued both a

limited access scallop permit and an IFQ permit, only the IFQ permit would be invalid. An IFQ permit holder could pay, under protest, the disputed fee difference in order to avoid permit restrictions associated with permit cancellation. If the final agency action determines that the IFQ permit holder owes additional fees and if the IFQ permit holder has not paid such fees, all IFQ permit(s) held by the IFQ permit holder will be invalid until the required payment is received by NMFS. If NMFS does not receive such payment within 30 days of the issuance of the final agency action, NMFS would refer the matter to the appropriate authorities within the U.S. Treasury for purposes of collection and the vessels permit would remain invalid. If NMFS does not receive such payment prior to the end of the fishing year (i.e., within 365 days from payment due date), the IFQ permit would be considered voluntarily abandoned and could not be issued again to that vessel except under new ownership as a replacement vessel for another IFQ vessel.

Annual IFQ Report

An annual IFQ report for each IFQ shareholder would be generated by NMFS. The report would include quarterly and annual information regarding the amount and value of IFQ scallops landed during the fishing year, the associated cost recovery fees, and the status of those fees. This report would also detail the costs incurred by NMFS, including the calculation of the recoverable costs for the management, enforcement, and data collection, incurred by NMFS during the fishing year.

2.4.1.2.1.3 IFQ shareholder pays via a federally permitted dealer

Alternative 3 would implement an IFQ fee collection system based upon the South Atlantic Red Snapper Fishery Management Plan. Although the ultimate IFQ payment responsibility lies with the IFQ shareholder, this system would require the federally permitted dealer to collect the fee from the IFQ shareholder at the point of purchase for later submission to NMFS. Initially, the fee would be 3 percent of the actual ex-vessel value of scallops landed under the IFQ program, as documented in each landings report submitted by the federally permitted dealer. The RA would review the cost recovery fee annually to determine if adjustment is warranted. Factors considered in the review include the catch subject to the IFQ cost recovery, projected ex-vessel value of the catch, costs directly related to the management, enforcement, and data collection of the IFQ program, the projected IFQ balance in the LASAF, and expected nonpayment of fee liabilities. If the RA determines that a fee adjustment is warranted, the RA would publish a notification of the fee adjustment in the Federal Register.

Fee Determination and Responsibilities

The IFQ allocation holder specified in the documented scallop dealer landing report is responsible for payment of the applicable cost recovery fees. A dealer who receives scallops subject to the IFQ program is responsible for collecting the applicable cost recovery fee for each IFQ landing from the IFQ allocation holder specified in the IFQ landing transaction report. Such dealer is responsible for submitting all applicable cost recovery fees to NMFS on a quarterly basis. The fees are due and must be submitted, using the Federal web portal, www.pay.gov, or other internet sites as designated by the Regional Administrator, no later than 30 days after the end of each calendar-year quarter; however, fees may be submitted at any time before that deadline. Fees not received by the deadline are delinquent.

Calculating Ex-vessel Value

The ex-vessel value of an IFQ landing would equal the sum of all payments of monetary worth made to fishermen for the sale of the scallops. This would include any retro-payments (e.g., bonuses, delayed partial payments, post-season payments) made to the IFQ permit holder for previously landed scallops. Retro-payments would be part of the ex-vessel value and as such have a fee liability. If they were received after the initial payment, but during the same fishing year, the cost recovery fee for those retro-payments also would be due in the quarter in which they were paid.

Actual Ex-vessel Value

Same as outlined in alternative above.

Fees Based on Actual Ex-vessel Value

Same as outlined in alternative above.

Example of Actual Ex-vessel Value Determination

Same as outlined in alternative above.

Fee Payment Procedure

For each IFQ dealer, NMFS would make available, an end-of-quarter statement of cost recovery fees that are due. The dealer is responsible for submitting the cost recovery fee payments using the Federal web portal, www.pay.gov, or other internet sites as designated by the Regional Administrator. Authorized payments methods are credit card, debit card, or automated clearing house (ACH). Payment by check would be authorized only if the RA has determined that the geographical area or an individual(s) is affected by catastrophic conditions.

Payment Compliance

The following procedures would apply to an IFQ dealer whose cost recovery fees are delinquent.

(A) On or about the 31st day after the end of each calendar-year quarter, the RA will notify the dealer indicating the applicable fees are delinquent; the dealer's permit has been suspended pending payment of the applicable fees; and notice of intent to cancel the dealer's Federal permit.

(B) On or about the 61st day after the end of each calendar-year quarter, the RA will mail to a dealer whose cost recovery fee payment remains delinquent, official notice documenting the dealer's Federal permit has been cancelled.

(C) On or about the 91st day after the end of each calendar-year quarter, the RA will refer any delinquent IFQ dealer cost recovery fees to the appropriate authorities for collection of payment.

Annual IFQ Report

An annual IFQ report for each IFQ shareholder and participating dealer would be generated by NMFS. The report would include quarterly and annual information regarding the amount and value of IFQ scallops received by the dealer, the associated cost recovery fees, and the status of

those fees. This report would also detail the costs incurred by NMFS, including the calculation of the recoverable costs for the management, enforcement, and data collection, incurred by NMFS during the fishing year. The dealer's acceptance of this report constitutes compliance with the annual dealer IFQ reporting requirement.

2.4.1.3 Northern Gulf of Maine (NGOM) Hard-TAC

The Council approved a separate limited entry program for the NGOM with a hard-TAC. If this provision is approved by NMFS Framework 19 will need to consider a separate hard TAC for this area for both 2008 and 2009. Individuals would qualify for a permit if their vessel had a general category permit when the control date was implemented (November 1, 2004). There is no landings qualification for this permit. Vessels would be restricted to fish in this area under a 200 pound possession limit until the overall hard-TAC was reached.

Amendment 11 specifies that the Scallop PDT will recommend a hard-TAC for the federal portion of the scallop resource in the NGOM. The amendment recommends that the hard-TAC be determined using historical landings until funding is secured to undertake a NGOM stock assessment. **The PDT reviewed landings data from the VTR database and recommend that the hard-TAC for this area be 64,000 pounds for both FY2008 and FY2009 (Option A). The Scallop Committee requested that the PDT review another method for estimating the TAC (Option B). Option B also uses VTR data but includes landings from limited access vessels as well as landings from within state waters from federally permitted vessels. See separate document that explains the methods used in Option B in more detail. See Section ??? for the PDT analysis of the proposed TAC for the NGOM.**

2.4.2 Georges Bank access area management

2.4.2.1 Allocations

It is understood that what ever areas are deemed available for 2008 and 2009 based on decisions made in Section 2.3.1.1, the same areas would be available to the general category fishery. This section is considering the percent of each access area that should be allocated to the general category fishery. In the past two-percent has been allocated to the general category in a fleetwide allocation of trips. Once the maximum number of trips has been taken the area closes to all general category vessels.

2.4.2.1.1 Five-percent for all areas

The general category fishery would be allocated a fleetwide allocation of trips equal to 5% of each area open in FY2008 and FY2009.

2.4.2.1.2 Five-percent for all access areas but zero-percent for Closed Area II (*Preferred Alternative by Scallop Committee*)

The general category fishery would be allocated a fleetwide allocation of trips equal to 5% of each area open in FY2008 and FY2009, but zero allocation for Closed Area II. However,

because the Committee also supports the measure to reduce derby fishing during the transition period to limited entry (2% allocation in access areas) then this alternative only applies to FY2009 (or until the IFQ program is implemented from Amendment 11).

2.4.2.1.3 Five-percent for all areas except Closed Area II would have a smaller allocation to account for SAP programs and some general category effort

The general category fishery would be allocated a fleetwide allocation of trips equal to 5% of each area open in FY2008 and FY2009, but a smaller allocation would be given for Closed Area II to account for some scallop landings on multispecies vessels participating in SAP programs.

According to the multispecies regulations a SAP is not even considered unless the GB YTF TAC is at least 4,000 mt, and the guidance the Council provided NMFS is to not authorize a SAP unless the TAC is at least 5,000 mt. Based on the current status of GB YT the stock is not expected to reach these biomass levels in the short term. The GB YT TAC for 2008 is 1,950 mt. According to the regulations the number of trips is calculated as $(TAC-4,000)/10,000$; and the maximum number of trips that can be allocated to the area is 320. Regardless of the TAC, it is unlikely a SAP will be authorized until the stock is rebuilt, and the stock is not expected to be rebuilt until 2014.

This alternative could consider an allocation percentage for the general category fishery that would accommodate all 320 trips in the event that every potential SAP trip could also use a general category trip, but since it is very unlikely that there will be a SAP program in 2009, this portion of the scallop catch would most likely not be harvested. Therefore, a much smaller percentage could be considered just in case there is a SAP program, say enough allocation to accommodate 100 trips or 0.5 to 1% of the scallop catch for Closed Area I, but even that is not expected to be caught based on the assumption that there will not be a YT SAP program in the southern portion of Closed Area II in 2009. **The Committee never identified an allocation value, since they do not support this alternative.**

2.4.2.2 Yellowtail flounder bycatch TAC

Under current regulations, if the 10% yellowtail flounder bycatch TAC is reached and the Georges Bank access areas close general category vessels are not permitted to fish in the area. Furthermore, since it is a fleetwide allocation there is no compensation for vessels on an individual basis if the area closes before the total number of general category trips have been taken. The yellowtail flounder bycatch TAC is shared between the two fisheries; therefore, once the TAC is reached the area closes for both fleets. See Section 2.3.1.2.

2.4.3 Hudson Canyon

The Committee supports that whatever is done in Framework 19 for the Hudson Canyon area should also apply to the general category fishery. So if the area (or one with similar boundaries) is closed under this action, then it would close to general category vessels as well. (See Section 2.9).

2.4.4 Elephant Trunk

The general category fishery will be allocated a maximum fleetwide allocation of trips in this area for both 2008 and 2009, or an individual allocation in pounds if Alternative 3.1.5 is selected. The total amount of access in the area will vary per year based on decisions in Section 2.4.1.1.1 (2% or 5% of the available TAC for the area). The same seasonal closure to reduce potential interactions with sea turtles would apply (Section 2.3.3.2) as well as the procedures to adjust ETA allocations (Section 2.3.3.3).

2.4.5 Other restrictions for general category vessels in access areas

2.4.5.1 Prohibition on deckloading

See Section 2.3.5.2 – same measures would apply to the general category fishery.

2.5 ESTIMATE OF MORTALITY FROM INCIDENTAL CATCH

Amendment 11 includes a provision that the Scallop FMP should consider the level of mortality from incidental catch and remove that from the projected total catch before allocations are made. If approved, the amendment requires the PDT to develop an estimate of mortality from incidental catch and remove that from the total. This section includes a summary of the PDT estimate and the value that was removed from the total projected catch before allocations to the limited access and general category fisheries were made. *If this provision is not approved in Amendment 11 then this amount of scallop would not (?) be allocated back to the scallop fishery. It is a source of non-harvest mortality.*

The PDT reviewed incidental landings from previous years (<40 pounds per trip) to estimate what level of projected catch should be removed in future years. According to the dealer database approximately 10,000 to 27,000 pounds of scallops have been landed on trips with less than 40 pounds (Table 23). According to the VTR database closer to 30,000 pounds have been caught in previous years in increments less than 40 pounds (Table 24). The PDT discussed that it is more appropriate to use the VTR data as a starting point for this estimate since incidental catch is not always sold to a dealer (i.e. it is consumed for personal use). The PDT also recommended that the average landings from the VTR data base should be increase to some degree to account for an expected increase in scallop landings by incidental catch. Since many vessels are not going to qualify for a limited entry general category permit under Amendment 11, landings scallop sunder incidental catch may be the only other alternative for some vessels (assuming the vessels had a general category permit before the control date). **Therefore, the PDT recommends taking recent VTR landings as a starting point for an estimate of mortality from incidental catch and increasing that to 50,000 pounds to account for an expected increase due to measures implemented by Amendment 11.**

Table 23. Dealer data: Scallop landings by permit category and trip landings

Scallop landing per trip	Data	FISH YEAR			
		2004	2005	2006	2007*
Limited access vessels					
<=40 lb.	Scallop landings (lb.)	720	1,095	587	170
	Number of trips	27	42	20	5
>40 lb.	Scallop landings (lb.)	58,915,586	46,412,858	49,383,847	35,495,337
	Number of trips	4,707	6,085	5,845	3,231
Total Scallop landings (lb.)		58,916,306	46,413,953	49,384,434	35,495,507
Total Number of trips		4,734	6,127	5,865	3,236
General category vessels					
<=40 lb.	Scallop landings (lb.)	9,937	26,443	16,675	9,361
	Number of trips	468	1,014	629	367
>40 lb.	Scallop landings (lb.)	2,634,769	6,718,615	6,830,797	3,299,451
	Number of trips	8,018	19,810	19,958	9,641
Total Scallop landings (lb.)		2,644,706	6,745,058	6,847,472	3,308,812
Total Number of trips		8,486	20,824	20,587	10,008
All vessels					
<=40 lb.	Scallop landings (lb.)	10,657	27,538	17,262	9,531
	Number of trips	495	1,056	649	372
	% of total scallop landings	0.02%	0.05%	0.03%	0.02%
>40 lb.	Scallop landings (lb.)	61,550,355	53,131,473	56,214,644	38,794,788
	Number of trips	12,725	25,895	25,803	12,872
Total Scallop landings (lb.)		61,561,012	53,159,011	56,231,906	38,804,319
Total Number of trips		13,220	26,951	26,452	13,244

Source: Dealer data

* Incomplete fishing year

Table 24. VTR data: Scallop landings by permit category and trip landings

Trip landings category	Data	FISH YEAR			
		2004	2005	2006	2007*
<=40 lb.	Scallop landings (lb.)	26,856	33,641	36,313	12,846
	Number of trips	1,252	1,644	1,564	574
	% of total scallop landings	0.04%	0.06%	0.06%	0.04%
>40 lb.	Scallop landings (lb.)	63,634,969	53,220,637	56,539,633	35,296,544
	Number of trips	15,714	26,658	24,501	11,817
Total Scallop landings (lb.)		63,661,825	53,254,278	56,575,946	35,309,390
Total Number of trips		16,966	28,302	26,065	12,391

* Incomplete fishing year

Consider including incidental catch info from SARC report

2.6 OVERFISHING DEFINITION

SARC 45 reviewed and updated the stock assessment of the sea scallop resource. The assessment summary report is now available and during 2006 scallops were not overfished and overfishing was not occurring. The assessment process used two assessment models; a size-structured forward projecting assessment model (CASA) and the rescaled F approach that has been used in previous assessments. Overall results from the two models were similar, but the analysis indicated that the CASA model results were generally more accurate and the review panel recommended that these results be used for assessing the scallop resource. In general, the results were more precise and less bias.

The CASA model incorporates more sources of data including the NEFSC dredge survey, the winter bottom trawl and SMAST small camera video surveys, commercial landings, shell height measurements for landed scallops from port and sea sampling, commercial landings per unit of effort, and growth increment data from growth rings on scallop shells. In addition, this assessment used new growth data for the first time, which indicate that Mid-Atlantic sea scallops do not grow as large but reach their maximum size faster than previously assumed. Lastly, new shell height/meat weight relationships for survey and commercial catches were used. The shell height-meat weight relationships for catches were adjusted to account for shucking practices, water absorption and transport, as well as seasonal patterns in meat weights during each year.

The CASA model produces biomass reference points in a different unit – metric tons of scallop meat compared to the current reference point that is a weight per tow value from the NEFSC dredge survey (5.6 kg/tow). The recent assessment evaluated results from both models, but if this framework is going to incorporate the results from the preferred CASA model then this framework will have to consider adjusting the overfishing definition to incorporate different parameters. Table 25 summarizes the biomass and fishing mortality reference points for 2006 using both models (rescaled F and CASA results). Note that the results from these models cannot be compared because the CASA model is for fully recruited scallops (>100 mm). The rescaled F model represents an average fishing mortality for scallops greater than 80-90 mm. Since fishing mortality is lower on 80-100 mm scallops, the rescaled F estimate would be somewhat less than the CASA estimate.

Table 25 – Summary of biomass and fishing mortality reference points from recent scallop stock assessment using both rescaled F and CASA models (results not comparable)

	Target	Threshold	2005	2006
BIOMASS				
Survey Index (kg/tow, adjusted) (No Action)	5.6	2.8	7.8	7.3
CASA (Proposed)	108,600 mt (239 million lb.)	54,300 mt (120 million lb.)	N/A	166,000 mt (366 million lb.)
FISHING MORTALITY				
Rescaled F (No Action)	0.20	0.24	0.22	0.20
CASA (Proposed)	<i>Council must decide</i> (See Alt. 2.6.3)	0.29	N/A	0.23

2.6.1 No Action

The current overfishing definition would remain in effect and the units for the biomass reference points would remain as a relative index of biomass from the NEFSC survey in weight per tow. The biomass reference point for 2006 would be in kg/tow (7.3) and the fishing mortality reference point for 2006 would be 0.20, based on the rescaled F approach. For 2006, the stock is not overfished and overfishing is not occurring (Table 25).

The status quo overfishing definition, as revised by Amendment 10 reads:

“If stock biomass is equal or greater than B_{max} as measured by the resource survey weight per tow index (currently estimated at 5.60 kg/tow for scallops in the Georges Bank and Mid-Atlantic resource areas), overfishing occurs when fishing mortality exceeds F_{max} , currently estimated as 0.24. If the total stock biomass is below B_{max} , overfishing occurs when fishing mortality exceeds the level that has a 50 percent probability to rebuild stock biomass to B_{max} in 10 years. A scallop stock is in an overfished condition when stock biomass is below $\frac{1}{2}B_{max}$ and in that case overfishing occurs when fishing mortality is above a level expected to rebuild in five years, or above zero when the stock is below $\frac{1}{4}B_{max}$ ”

2.6.2 Adjust the unit used for the biomass reference point in the overfishing definition

The Council may adjust the values of the biomass and fishing mortality targets and thresholds by framework or amendment, based on updated analysis or upon recommendation of the Stock Assessment Workshop. Based on the final report from SAW 45 the Council agrees that the biomass and fishing mortality targets should be adjusted based on the results using the CASA model. These results are more accurate based on the reasons explained in Section 2.6. If this alternative is selected then the biomass and fishing mortality targets will adjust based on the recent stock assessment and the value used for the biomass reference point will change from a weight per tow unit to an absolute value of scallop meats in metric tons. For 2006 the biomass reference point would be 166,000 mt. and the fishing mortality target would be 0.23, so the stock is not overfished and overfishing is not occurring (Table 25).

The overfishing definition, would be revised to read:

*“If stock biomass is equal or greater than B_{max} as measured by **an absolute value of scallop meat (mt)** (currently estimated at 108,600 mt. for scallops in the Georges Bank and Mid-Atlantic resource areas), overfishing occurs when fishing mortality exceeds F_{max} , currently estimated as **0.29**. If the total stock biomass is below B_{max} , overfishing occurs when fishing mortality exceeds the level that has a 50 percent probability to rebuild stock biomass to B_{max} in 10 years. A scallop stock is in an overfished condition when stock biomass is below $\frac{1}{2}B_{max}$ and in that case overfishing occurs when fishing mortality is above a level expected to rebuild in five years, or above zero when the stock is below $\frac{1}{4}B_{max}$ ”*

2.6.3 Target overfishing value

The Council may adjust the values of the biomass and fishing mortality targets and thresholds by framework or amendment, based on updated analysis or upon recommendation of the Stock Assessment Workshop. SAW 45 recommends that the reference points be adjusted based on results from the CASA model (Alternative 2.6.2). But the Council can decide to leave the target fishing mortality at 0.20 to be more precautionary.

A fishing mortality target is not a scientifically driven estimate, it is a policy decision. National Standard 1 requires the target to be below the threshold for precautionary purposes, but does not specify how much below. The Committee briefly discussed adjusting the fishing mortality target for overfishing in light of the new assessment. In terms of a recommendation, the Committee decided to wait until the new stock assessment report could be summarized in more detail and the issues could be more fully described by the PDT.

The overfishing threshold of 0.29 is based on an assumption that fishing mortality is spatially uniform. In the scallop fishery, this assumption is not even close to being met due in part to closed areas. In the case of highly non-uniform fishing effort, the fishing mortality that maximizes yield per recruit will be less than the spatially uniform target (0.29). For this reason, the PDT recommends keeping the target at 0.20, thus preventing the possibility of severe localized overfishing that can occur at higher targets. The Council should clarify in this action if the fishing mortality target is going to remain at 0.20 or if the value is going to be adjusted.

2.7 STANDARDIZED BYCATCH REPORTING METHODOLOGY

The Council recently approved Amendment 12 to the Scallop FMP (June 2007). 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.” 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 measures were selected in June 2007. NMFS is expected to implement the action in Fall 2007.

The proposed measures include: 1) bycatch reporting and monitoring mechanisms; 2) analytical techniques and allocation of at-sea fisheries observers; 3) an SBRM performance standard; 4) a review and reporting process; 5) framework adjustment and annual specifications provisions; 6) a prioritization process; and 7) provisions for industry funded observers and observer set-aside programs. In terms of the first element, the status quo would remain for the methods by which data and information on discards would be collected and obtained. The Northeast Fisheries Observer Program would remain the primary mechanism to obtain data on discards in the Northeast Region and vessels would continue to be required to carry an at-sea observer upon request. In the case of the scallop fishery, data would also be collected by approved observer service providers through the industry funded observer set-aside program. Currently, one-

percent of the total projected scallop catch is set-aside to compensate vessels that are requested to carry an observer.

The second element of the SBRM Amendment is the analytical techniques and allocation of at-sea fisheries observers. The proposed action is an expanded version of the status quo, which would fully incorporate all managed species and relevant gear types. At-sea observers would be allocated and assigned to vessels based on various fishing modes and filters. For example, for the scallop fishery the SBRM Amendment includes ten fishing modes (out of a total of 39). The modes are defined by area (Georges Bank or Mid-Atlantic), gear type (dredge or trawl), permit type (limited access or general category), and whether a vessel is fishing in a controlled access area or an open area. For each of the ten modes importance filters are applied to remove events that are very unlikely, and for the scallop dredge fishery interactions with sea turtles are removed since implementation of turtle chain gear, which prevents sea turtles from being caught as bycatch. Table 26 summarizes the at-sea observer days needed for the scallop fishery for each mode after applying the proposed importance filters using 2004 observer data. These values are likely to change based on incorporation of new observer data.

Table 26 – Summary of at-sea observer days needed in the scallop fishery after applying the proposed importance filters (based on observer data from 2004)

Fishing mode	# observer sea days (95% of discards and 98% of mortality)
NE scallop dredge – LA – open	320
MA scallop dredge – LA – open	114
NE scallop dredge – LA – access area	145
MA scallop dredge – LA – access area	108
NE scallop dredge – GC – open	92
MA scallop dredge – GC – open	17
NE scallop dredge – GC – access area	24
MA scallop dredge – GC – access area	21
MA scallop trawl – LA – open	95
MA scallop trawl – GC – open	51
TOTAL	987

The third element of the SBRM Amendment is a performance standard, to ensure that the data collected are sufficient to produce a coefficient of variation (CV) of the discard estimate of no more than 30 percent. CV is a measure of variation in data; if the variance is high the precision is reduced. The 30% value is a generally accepted value worldwide for these types of programs and analyses. There is ample literature to support the use of a 30% CV for a sampling program of this nature. The estimated number of sea days needed per mode for the scallop fishery is based on the highest projected number of sea days needed to achieve a 30% CV for each species after the application of the importance filter. If approved, NMFS will allocate at-sea observer coverage levels on an annual basis for each fishing mode after consultation with the Council. Table 44 in the SBRM Amendment includes the CVs for each fishing mode for all species based on 2004 observer data. Approximately 280 scallop trips were observed in 2004 (2,226 sea days). Even with this relatively high coverage level, a 30% CV was not attained for every species for the scallop fishery. For background, Table 27 below summarizes the observer coverage level by fishing mode for the last several fishing years.

Table 27 – Summary of observed trips and number of at-sea observer days in the scallop fishery by mode and year

Fishing mode	2004	2005	2006	2007 (to date)
NE scallop dredge – LA – open	26 (344 days)			
MA scallop dredge – LA – open	69 (591 days)			
NE scallop dredge – LA – access area	9 (11 days)			
MA scallop dredge – LA – access area	22 (33 days)			
NE scallop dredge – GC – open	86 (805 days)			
MA scallop dredge – GC – open	35 (373 days)			
NE scallop dredge – GC – access area	0 (0 days)			
MA scallop dredge – GC – access area	1 (2 days)			
MA scallop trawl – LA – open	1 (11 days)			
MA scallop trawl – GC – open	31 (56 days)			
TOTAL	280 (2,226 days)			

The fourth element of the SBRM Amendment is a review and reporting process. The amendment proposes to require an annual report on discards as well as a report every three years that evaluates the effectiveness of the Northeast SBRM. The fifth element is to enable the Councils to make changes to certain elements of the SBRM through framework adjustments and/or annual specification packages. The sixth element is a process to provide Councils and the public with an opportunity to provide input on the prioritization of at-sea observer coverage allocations. NMFS will provide the at-sea observer coverage levels required to attain the SBRM performance standard (30% CV) in each fishery, the coverage levels that would be available if there is a budget/resource shortfall, the coverage levels that incorporate the recommended prioritization, and the rationale for the recommended prioritization. If the SBRM Amendment is approved, the Council expects NMFS to provide the first annual prioritization report at the ??? Council meeting, which will include the prioritized observer coverage levels for 2008. Lastly, the seventh element is to allow any FMP in this region to consider industry funded observers and/or an observer set-aside program in a framework action rather than an amendment.

The scallop fishery is the only fishery in the Northeast that already has an industry funded observer program in place. Since 1999 the majority of observer coverage in the scallop fishery has been funded through the scallop set-aside program. A percentage of the total allowable catch (TAC) in access areas has been deducted before allocations are made to generate funding for vessels required to carry an observer. Amendment 10 extended that requirement to open areas as well, so a percent of potential allocated effort in DAS from open areas is set-aside to help fund the program as well. Observer coverage is necessary in the scallop fishery to monitor bycatch of

finfish and to monitor interactions with endangered and threatened species. 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.

This framework includes the 1% set-aside for observer coverage. So if the total projected catch for 2008 is 55 million pounds, approximately 550,000 pounds (1%) would be set-aside to defray the cost of carrying an observer. Based on an estimated value of \$6.00 a pound this set-aside is expected to generate approximately 3.3 million dollars. At that rate, approximately 4,230 sea-days could be covered under the current set-aside program, assuming a \$780 per day cost to carry an observer. This value far exceeds the number of sea days needed to achieve a 30% CV based on 2004 data for the scallop fishery (980 sea days). Therefore, if the needed observer coverage levels for 2008 and 2009 are similar to the values generated with the 2004 data, the 1% set-aside is expected to provide adequate funding to attain a 30% CV for each fishing mode. If additional days are needed beyond the 1% set-aside, they would have to be funded directly by the industry from vessels that are required to carry an observer after the set-aside has been exhausted, or funded by the federal government under the regular observer program budget.

2.8 IMPROVEMENTS TO THE OBSERVER SET-ASIDE PROGRAM

The Council recently approved an action to implement a mechanism to re-activate the industry-funded observer program for the scallop fishery. During the process several issues were identified with the observer set-aside program, but due to timing constraints the Council did not develop alternatives to address those issues. Instead the Council approved an alternative that would allow adjustments to the observer set-aside program to be considered in a framework action. This is the first action since implementation of Amendment 13 that could include consideration of these issues.

Overall, five main problems were identified during development of Amendment 13: 1) vessels with lower fishing power are at a disadvantage in terms of the compensation given for carrying an observer (i.e. small dredge vessels); 2) the program does not work well in areas with lower catch rates (i.e. Hudson Canyon and some open areas); 3) small adjustments are needed to improve overall administration of program (i.e. standard operating procedures the Observer Program is using already but not regulation like a vessel can't call in more than ten days in advance, require providers to get back to vessels in a timely way, data quality controls, the timeliness of Obscon reporting etc.); 4) there is no mechanism for funding open area trips on general category vessels; and 5) observer coverage is too expensive. The PDT, advisors and Committee have discussed these issues and recommend the following alternatives be considered to address some of these issues. The others are either too complex to consider in this action or are not as necessary to address at this time.

2.8.1 Assign a higher compensation rate for vessels fishing in open areas compared to access area trips

Currently a vessel that is required to carry an observer in an access area receives a 400 pound per day compensation, and ??? additional DAS for a future trip per day carrying an observer. This alternative would still give a vessel a specific compensation rate based on whether the trip was in

an access area or not, but the rate would be higher for open area trips than access area trips. NMFS would still ultimately assign the rates after consideration of available data, but this alternative would recommend that a higher rate be used for open area trips. For example, using the rates this year as an example, rather than ?? DAS per day with an observer, a vessel may receive ?? per day. In order to prevent the total observer set-aside from being used faster as a result, the compensation rate for access area trips should decline (i.e. 350 pounds per day). This adjustment would respond to public comment that the program does not work in areas with lower catch rates; a higher compensation rate for open area trips may address this problem to some degree.

Include more detailed example with costs etc. as used in final rule for A13.

2.8.2 Consider small adjustments to the current program to improve overall administration

The Scallop Committee reviewed a list of potential adjustments that could be considered in this action to improve the administration of the observer set-aside program for scallops. In general, the Committee believes most if not all are administrative changes; therefore only addressed specific ones in Section ?. The other section includes adjustments that are more administrative.

2.8.2.1 Issues addressed specifically by the Scallop Committee

Under Observer deployment logistics, add that providers must respond to the fishermen's request for observers within 18 hours of their call to let them know if they have an observer available or not (page 32557).

Under Responsibilities of observer service providers, change "within 72 hours" to "within 18 hours" of receiving a request for an observer (page 32556).

Under Observer availability report, add two additional reports that are needed by NEFOP: 1) an updated list of contact information for all observers that includes the observer identification number, observer's name, mailing address, email address, phone numbers, homeports or fisheries/trip types assigned; and 2) a listing of whether or not the observer is "in service", indicating when the observer has requested for leave and/or is not currently working for the Industry Funded program.

The following additional details call-in requirements:

- Right now fishermen **MUST** provide 72 hours notice when calling to procure an observer and 24 hours prior to that notice, they need to call NMFS with their trip information. Propose that the fishermen should provide NMFS with a minimum of 72 hours notice and then if selected, provide the provider with a minimum of 48 hours notice.
- Add that trip notification calls can not be made more than 10 days in advance of the trip, and not more than 10 trips could be called in at a time.
- It would be better for the General Category trips to call in with the same notice described above, but make them weekly calls rather than daily calls. For example, a vessel would call in on Thursday for all the trips they plan on doing from Monday through Sunday of the following week. They either get a waiver for that week, or get selected for observer coverage. Once selected, up to two of their trips during that week would be covered by

an observer if one was available. Committee/Council discussion/decision required. There must be consideration of the implications of this kind of requirement.

Observer provider contracts. Observer providers must submit to NMFS/NEFOP, if requested, a copy of each type of signed and valid contract (including all attachments, appendices, addendums, and exhibits incorporated into the contract) between the observer provider and those entities requiring observer services. Observer providers must submit to NMFS/NEFOP, if requested, a copy of each type of signed and valid contract (including all attachments, appendices, addendums, and exhibits incorporated into the contract) between the observer provider and specific observers. Not for each trip, but the basic “contract” example and any other information handed out to vessels. This also includes the contracts between observer and observer provider.

Other reports. Observer providers must submit to NMFS/NEFOP, if requested, copies of any information developed and used by the observer providers distributed to vessels, such as informational pamphlets, payment notification, description of observer duties, etc.

“Day” should be defined so that the daily rate set by an observer provider could be more comparable to the “day” defined for observer compensation allowances. The regulations should define that the providers much charge in a way that is consistent with the compensation, which is based on the vessel’s time at sea as measures by VMS (demarc to demarc line). Methods that result in an additional day’s charge because it is based on a calendar day are not consistent.

2.8.2.2 Issues considered by the Committee and determined to be appropriate changes to regulations and/or administration:

Overall, for observer-related issues that state, must report to “NMFS”, should be clarified, as must report to “NMFS/NEFOP”.

Delete the statement “The NEFOP training has a minimum class size of eight individuals; which may be split among multiple vendors requesting training. Requests for training classes with fewer than eight individuals will not be processed until further requests make up the full training class size.” (page 32556).

Under Responsibilities of observer service providers, delete “must maintain in its employ a minimum of eight NMFS/NEFOP certified observers in order to remain approved. Should a service provider’s employed NMFS/NEFOP certified observers drop below eight, the provider must supply the appropriate number of candidates to the next available training class. Failure to do so shall be cause for suspension of the provider’s approved status, until rectified.” (page 32556).

Under Observer deployment limitations, change “A certified observer’s first deployment and the resulting data shall be immediately edited, and approved, by NMFS prior to any further deployments of that observer.” to “An observer’s first 3 deployments and the resulting data shall be immediately edited, and approved after each trip, by NMFS/NEFOP prior to any further deployments by that observer. If data quality is considered acceptable the observer would become certified.” (page 32557).

Under Observer deployment limitations, the current rule has that “an observer provider must not deploy any observer on the same vessel for two or more consecutive deployments, and not more than twice in any given month”. Should be “an observer provider must not deploy any observer on the same vessel for more than two consecutive multi-day deployments” (page 32557).

Under Observer training requirements, change “at least 30 days prior to the beginning of the proposed training class”, to “at least 7 days prior to the beginning of the proposed training class”; delete “with a minimum of eight individuals” (page 32557).

Under Observer training requirements, change “prior to the beginning of a” to “prior to the end of a” (page 32557).

Under Observer training requirements, change “NMFS National Minimum Eligibility Standards” to “NMFS/NEFOP National Minimum Eligibility Standards” (page 32557). Will include a website link for NEFOP standards.

Under Reports, the current rule has that Observer Contract (OBCON) data...must be received within 12 hours of landing – that should be 24 hours of landing (page 32557).

Under Reports, the rule has that raw data collected by the observer must be to NMFS/NEFOP within 72 hours of the trip landing – that should be four business days of the trip landing (page 32557).

Under Observer certification, remove the last sentence referencing the “NMFS National Minimum Eligibility Standards are available at the National Observer Program web site...”. In the prior sentence, instead of “must meet NMFS National Minimum Eligibility Standards for observers”, should state “must meet NEFOP Minimum Eligibility Standards for observers” (page 32558).

Additional details are needed for fishermen call-in requirements:

- Add that for each call made for a trip, a confirmation number will be issued and that would be valid for 48 hours from the intended sail date.
- Add that if changes are made to the trip plans, that NMFS must be notified of the change (i.e. trip cancellations, area fished changes).
- It should be prohibited from sailing into an area with a confirmation number that does not match what was called in to NMFS.

2.9 AREA CLOSURE TO PROTECT YOUNG SCALLOPS

Amendment 10 defines the criteria for closing an area to protect young scallops. Under adaptive area rotation, an area would close when the expected increase in exploitable biomass in the absence of fishing mortality exceeds 30% per year, and re-open to fishing when the annual increase in the absence of fishing mortality is less than 15% per year. Identification of areas would be based on a combination of the NEFSC dredge survey and available industry-based surveys. The boundaries are to be based on the distribution and abundance of scallops at size

and ten-minute squares are the basis for evaluating continuous blocks that may be closed. The guidelines are intended to keep the size of the areas large enough and regular in shape to be effective, while allow a degree of flexibility. The Council and NMFS are not bound to closing an area that meets the criteria, and the Council and NMFS may deviate from the guidelines to achieve optimum yield.

If any areas qualify the area would close to all scallop vessels, and vessels would not be permitted in that area until a later date when biomass estimates project higher yields. The Council is not required to implement these rotational closed areas just because they meet the criteria recommended in Amendment 10 for new closures, but they should be considered.

Preliminary results from the 2007 survey suggest that small scallops have settled in parts of the Hudson Canyon Access Area as well as areas to the north and east of the current access area. The advisors are supportive of managing the Hudson Canyon area as a special access area indefinitely since it has historically been an important area for the scallop resource in the Mid-Atlantic. In addition, scallop recruitment has shown up in parts of the Great South Channel, and recruitment has been poor on Georges Bank for several years.

2.9.1 New rotational area in Hudson Canyon vicinity

The PDT recommended two areas for consideration in the Hudson Canyon (a 4X4 ten-minute square bounded between 38 50' and 39 30' N and 73 00' and 73 40' W and a 5X5 ten-minute square bounded between 38 50' and 39 40' N and 72 50' and 73 40' W)(See Figure 3). High numbers of small scallops (<70 mm) were caught on 2007 survey tows in this area. The advisors reviewed these potential areas and argued that the current Hudson Canyon boundaries should be considered.

2.9.1.1 No Action

No new rotational area would close in this action in the Hudson Canyon vicinity.

2.9.1.2 Smaller Hudson Canyon area as new rotational area

A 4X4 ten-minute square bounded between 38 50' and 39 30' N and 73 00' and 73 40' W would close to all scallop vessels for at least FY2008 and 2009 (See Figure 3).

2.9.1.3 Larger Hudson Canyon area as new rotational area

A 5X5 ten-minute square bounded between 38 50' and 39 40' N and 72 50' and 73 40' W would close to all scallop vessels for at least FY2008 and 2009 (See Figure 3).

2.9.1.4 Current Hudson Canyon boundaries as new rotational area (excluding area that overlaps with ETA) (*Preferred alternative by Scallop Committee*)

Another area was proposed in the Channel to the north of the Nantucket Lightship closed area and west of Closed Area I; the top left coordinate of the polygon is 41 20' N and 69 30' W and the bottom left coordinate is 40 50' N and 68 50' W (See Figure 3).

Figure 3 – 2007 Scallop recruitment (scallops less than 70mm) with potential boundaries for scallop rotational areas within the Hudson Canyon area

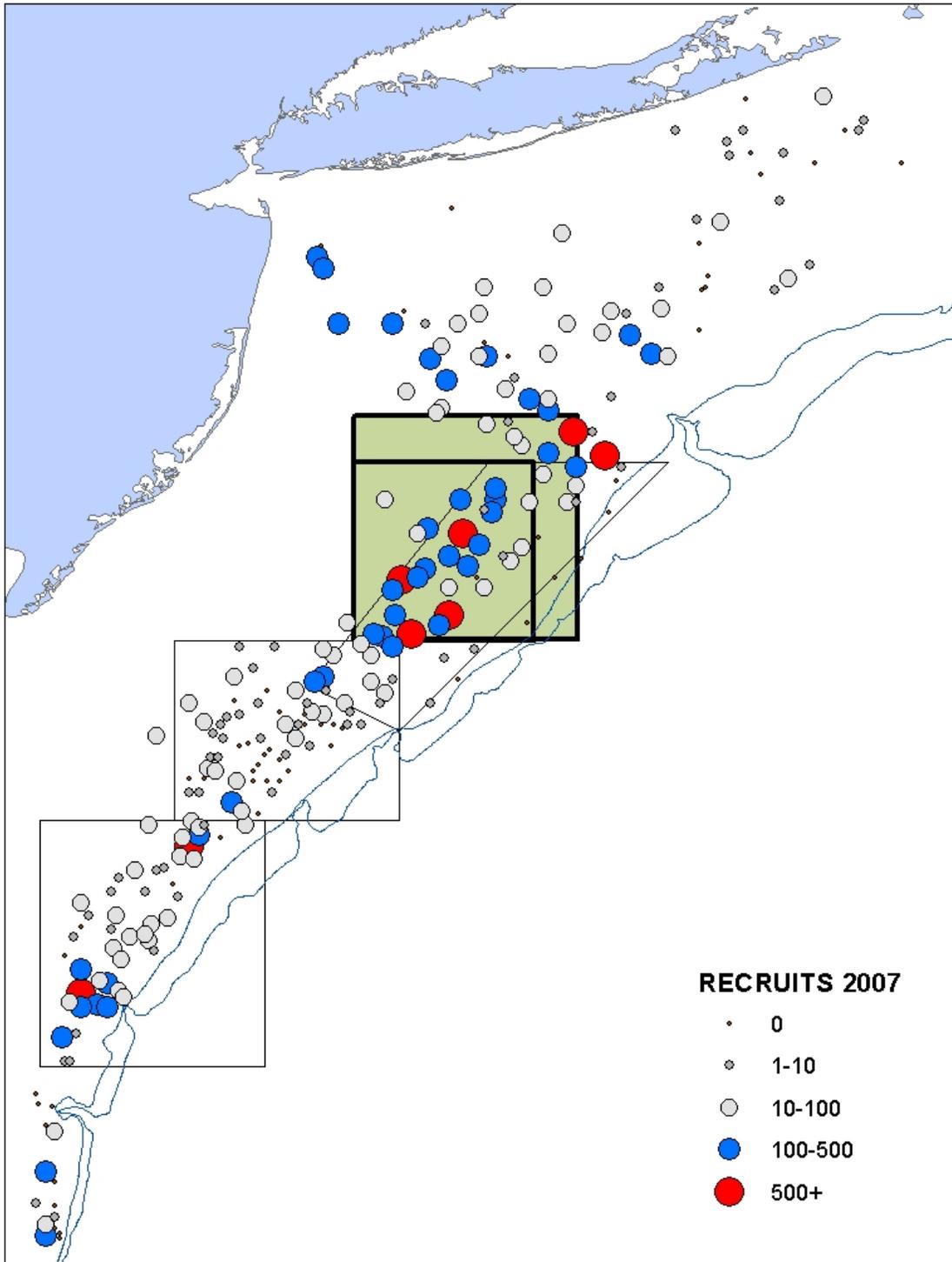
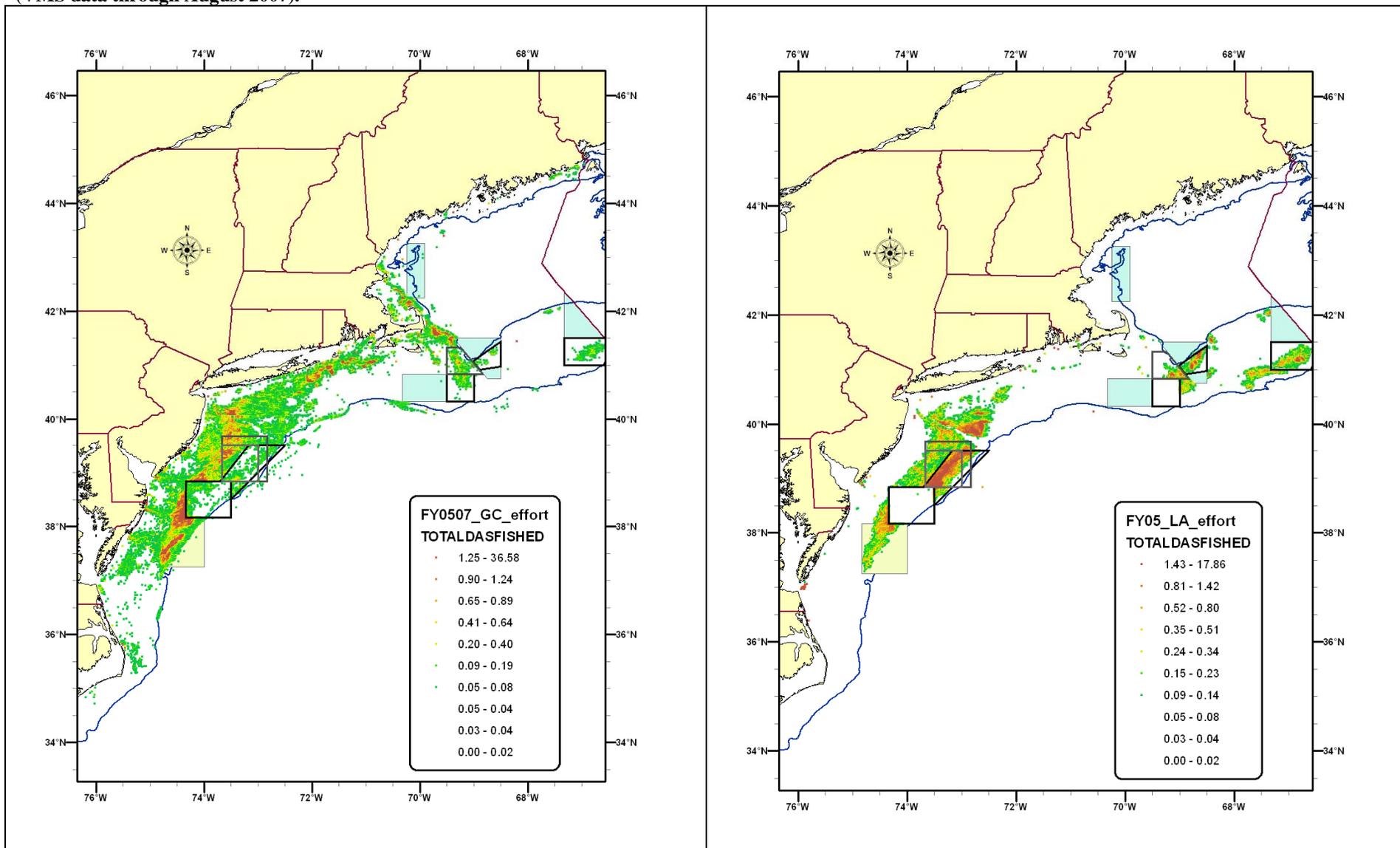
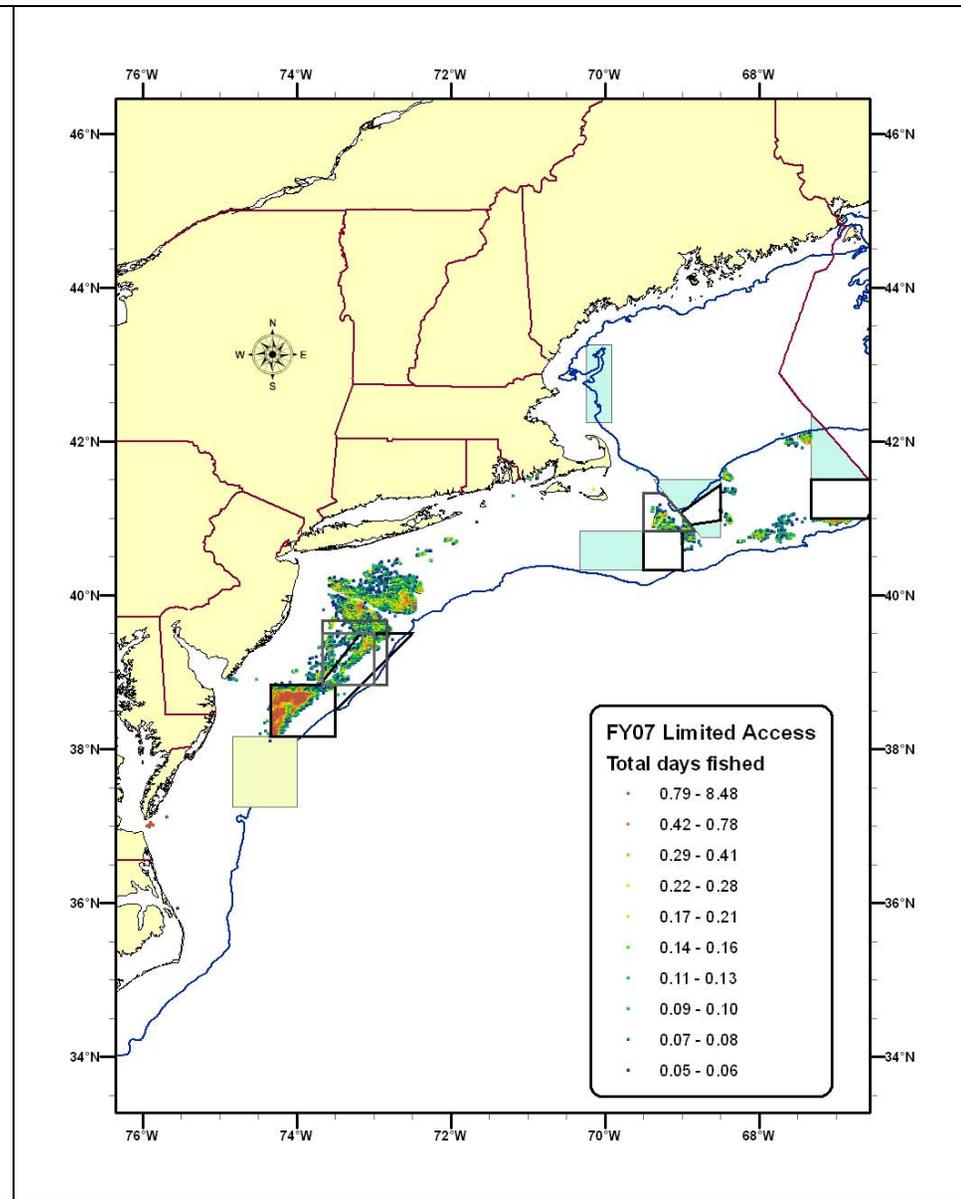
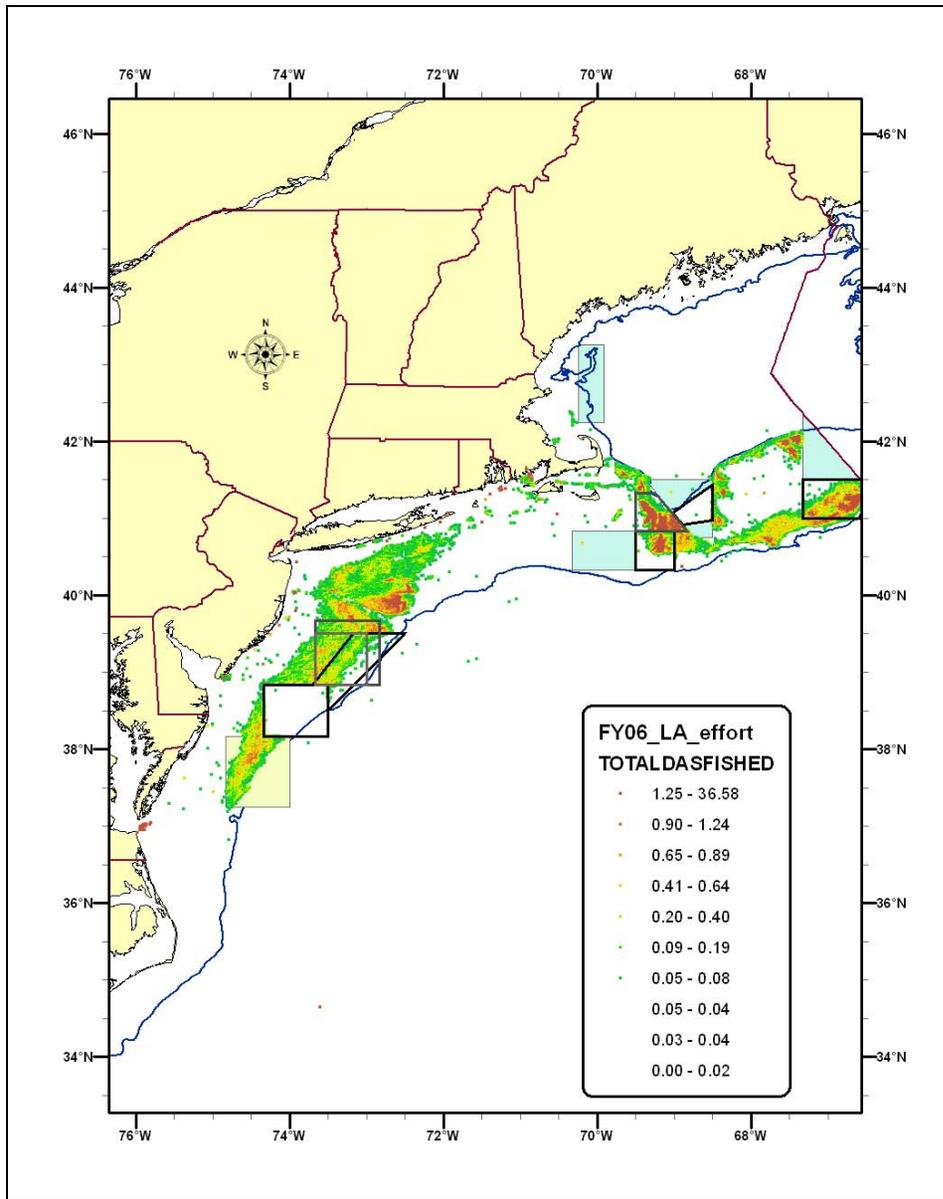


Figure 4 – Cumulative days fished in each block for general category vessels (2005-2007 combined) and limited access vessels for 2005, 2006, and 2007 (VMS data through August 2007).





2.9.2 New rotational area in the Great South Channel

The PDT recommended consideration of an area to the north of the Nantucket Lightship closed area and west of Closed Area I; the top left coordinate of the polygon is 41 20' N and 69 30' W and the bottom left coordinate is 40 50'N and 68 50'W (Figure 5). This is the first year with decent recruitment on Georges Bank since 2001. High numbers of small scallops (<70 mm) were caught on 2007 survey tows in this area.

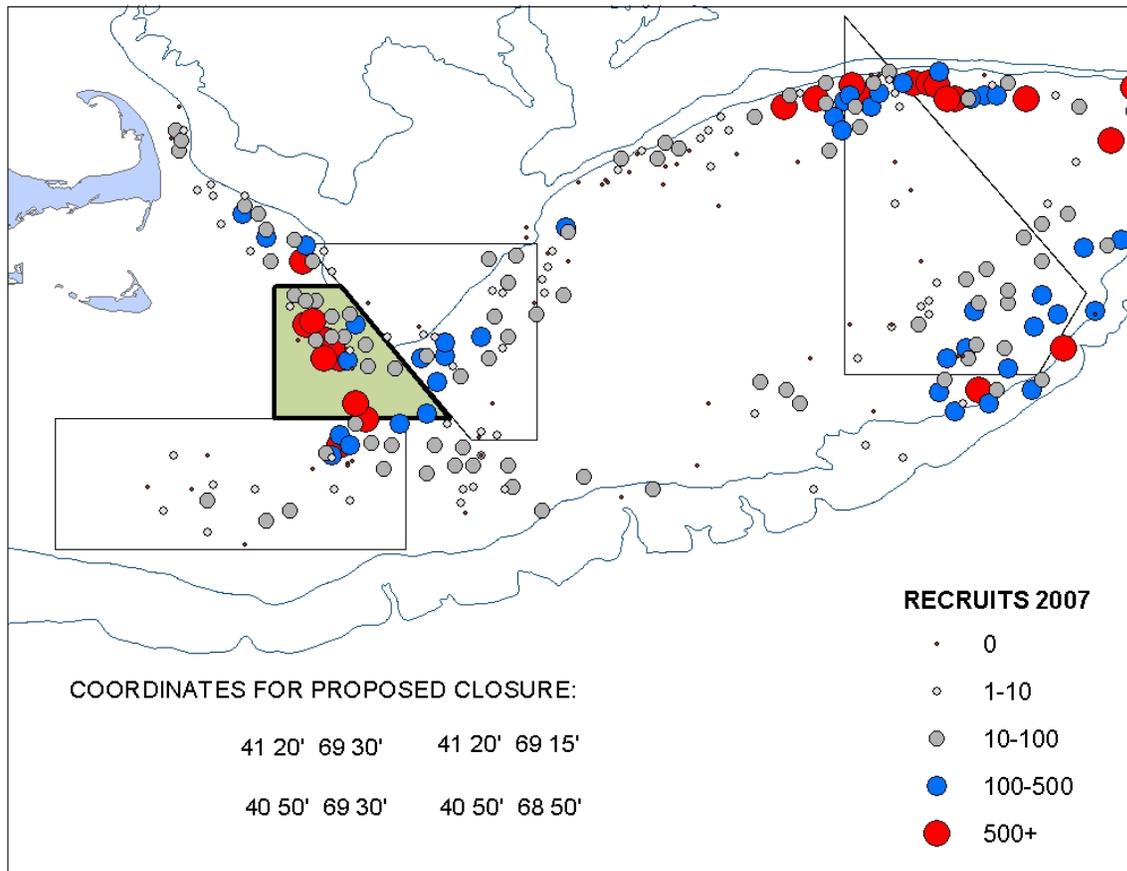
2.9.2.1 No Action (*Preferred alternative by the Scallop Committee*)

No new rotational area would close in this action in the Hudson Canyon vicinity.

2.9.2.2 New rotational area in the Channel north of Nantucket Lightship and west of Closed Area I

An area to the north of the Nantucket Lightship closed area and west of Closed Area I would close to scallop fishing for at least FY2008 and 2009; the top left coordinate of the polygon is 41 20' N and 69 30' W and the bottom left coordinate is 40 50'N and 68 50'W (Figure 5).

Figure 5 - 2007 Scallop recruitment (scallops less than 70mm) with potential boundaries for a scallop rotational area within the Great South Channel



2.10 OTHER MEASURES

2.10.1 Allow a 30-day VMS power down provision

This alternative would allow a vessel to power down their VMS unit for a minimum of 30 days similar to the provision for multispecies permits. CFR §648.9 VMS requirements, includes a provision for multispecies limited access vessels that allows a vessel to power down their VMS unit so long as the vessel does not engage in any fisheries until the unit is turned back on.

(C)(2)(i)(B) For vessels fishing with a valid NE multispecies limited access permit, the vessel owner signs out of the VMS program for a minimum period of 30 consecutive days by obtaining a valid letter of exemption pursuant to paragraph (c)(2)(ii) of this section, the vessel does not engage in any fisheries until the VMS unit is turned back on, and the vessel complies with all conditions and requirements of said letter.

2.10.2 Clarification on when a vessel can leave for an access area trip (No Action)

This alternative would clarify when a vessel can leave for an access area trip. Currently there is confusion about when a vessel can leave port on an access area trip. A scallop vessel can leave for an access area trip before the area opens. The Committee supports that this ability should continue (No Action). Since scallop vessels are not allowed to fish until they are in an access area and there is a possession limit, prohibiting a vessel from leaving port before the area opens would only disadvantage vessels that are homeported farther away.

3.0 CONSIDERED AND REJECTED ALTERNATIVES

3.1.1 Measures to reduce derby fishing in access areas for the general category fishery

In recent years the general category fishery has fished the maximum number of general category trips in access areas relatively quickly. All trips have been fished in a matter of weeks for the last few access area openings. While the number of potential participants may be lower in the future as a result of Amendment 11, if the overall allocation in access areas increases from 2% to 5% in this action, then the need to consider measures to reduce derby fishing may be more evident.

This alternative would restrict a general category vessel to take a maximum number of trips per month in an access area. This alternative is intended to slow fishing effort in access areas by general category vessels to reduce negative consequences of derby fishing. The area would still close to all general category vessels when the maximum number of trips allocated were expected to be taken.

Rationale for rejection: The Committee decided to move this alternative to the considered but rejected section because it is expected to have negative impacts on the most dependent general category vessels. These negative impacts are expected to outweigh the benefits of slowing a

derby fishery in access areas. Furthermore, there are many different fishing practices among general category vessels in terms of access areas, and this restriction would reduce flexibility. In addition, derby effects are expected to be reduced under a limited entry program compared to recent years with open access.

3.1.2 Adjust the observer set-aside program by assigning a higher compensation rate for vessels with lower fishing power

This alternative would determine a vessels fishing power and the compensation rate for carrying an observer would be determined by that vessels fishing power. Vessels with lower fishing power would receive a higher compensation to cover the cost of carrying an observer.

Rationale for rejection: The PDT recommended this alternative be rejected because it is very time consuming and complex to calculate individual fishing power. The Committee agreed.

3.1.3 Eliminate the single dredge restriction in access areas for vessels that were part-time and upgraded to full-time single dredge permits

The Committee added this issue to the list of items to consider in Framework 19 as a result of a request from the public to promote efficiency on access area trips that are managed by an output control (possession limit). This alternative would eliminate the single dredge restriction in access areas for vessels that were part-time and upgraded to a full-time single dredge permit. Currently these vessels are restricted to use a single dredge in access areas to catch their possession limit.

Amendment 4 to the Scallop FMP implemented a limited access program for the scallop fishery 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).

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 has increased from 291 in 1999 to 359 in 2005 (Table 28). The number of part-time vessels has declined over time, while the number of full-time small dredge has increased. In addition, the number of occasional permits has declined, while the number of part-time small dredge permits has increased.

Table 28 - 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

Updated in Oct.2006.

Rationale for rejection: The Scallop PDT is not supportive of including this alternative in Framework 19. They argue that the ability for a part-time vessel to upgrade to a full-time single dredge status was intended to be a tradeoff. These vessels were given the ability to land more scallops under a full-time permit, but were restricted to one dredge. Eliminating this restriction would not be conservation neutral. The advisors discussed this topic as well and some felt it was appropriate to consider in Framework 19, and some did not. In addition, there are many more permits in this category than in the past (Table 28). One advisor commented that the elimination of the single dredge restriction would only be necessary in access areas like Hudson Canyon that are sub-optimal. He argued that it would not be a problem for these permits to fish in an access area with a single dredge if the access area was managed correctly and catch rates were high enough for a vessel to fish with a single dredge. Another argued that while some of the regulations are inefficient, the combination of rules in place helps the fishery stay in balance with the resource; it would not be appropriate to change the playing field now. Based on this input, the Committee recommended that the alternative be moved to the considered but rejected section of Framework 19 based on input from the PDT and advisors.

3.1.4 Unused 2005 Hudson Canyon trips could be used at a reduced level in another area

After February 28, 2008 any unused 2005 Hudson Canyon trips could be used at a reduced level in another area. Two options are being considered: the open areas (Option A) or the Elephant Trunk Area (Option B). The PDT will determine a conversion rate for unused trips in either area. Vessels would be permitted to fish their unused Hudson Canyon trips in a different area at a reduced level.

Rationale for rejection: The Council rejected this alternative at the September Council meeting. After discussing this alternative at the Council level there was support for eliminating the option to further carry unused trips past 2007. It was argued that Framework 18 already provided a two-year extension to vessels that did not use their Hudson Canyon trips allocated in 2005. One Council member pointed out that continuously allowing vessels to carry over trips in the future gives the industry a false impression that access area trips are guaranteed and do not have to be taken during a specific time period. The PDT has voiced concern that extending trips too far into

the future can compromise the effectiveness of area rotation, since very specific levels of effort are expected for specific time periods and when that effort is shifted to later times or different areas it can potentially lead to overfishing.

3.1.5 Allocate an individual poundage per area to individual general category vessels equal to their individual contribution factor

This alternative would allocate an individual poundage amount to each general category vessel per area equal to their individual contribution factor. For example, if a general category vessel qualified for 1% of the general category allocation that vessel would be allocated 1% of general category pounds available from open areas and 1% from each access area open that year. That vessel would be permitted to potentially trade, buy or lease that area specific allocation with another general category vessel.

Table 29 and Table 30 are examples of potential allocations for qualifying vessels if the total projected scallop catch is 50 million pounds. The average general category qualifier can expect an allocation of about 6,550 under this scenario, with a minimum allocation of 500 pounds and a maximum closer to 32,500 pounds. If these allocations are then broken down by area amounts similar to the values in the following tables can be expected. These will change based on final biomass estimates for the various areas and the final number of qualifiers will not be known until sometime in 2008. If this alternative applies to the limited access vessels that qualify for a limited entry general category permit expected allocations for this component of the fishery is described in Table 30.

Table 29 – Example of potential allocations for general category limited access qualifiers in 2009 under a total scallop catch of 50 million pounds

GENERAL CATEGORY EXAMPLES			(general category limited access permits only)		
	Allocation	% Share	Open Area	NL	ET
MAX.	32500	1.34%	16,758	5,126	10,616
MIN.	500	0.02%	258	79	163
AVG.	6550	0.27%	3,377	1,033	2,140
MEDIAN	3197	0.13%	1,648	504	1,044

Table 30 – Example of potential allocations for limited access vessels that will also qualify for a limited access general category permit in 2009 under a total scallop catch of 50 million pounds

LIMITED ACCESS with general category permits					
	Allocation	% Share	Open Area	NL	ET
MAX	20,000	8.26%	10,313	3,154	6,533
MIN	500	0.21%	258	79	163

Rationale for rejection: The Council rejected this alternative at the September Council meeting. It was discussed that this approach may have merit to explore in the future, but many details of this program were still undeveloped and there was not enough time to clarify the outstanding issues before final action in October. In addition, one member voiced that this framework is only going to include one fishing year under the IFQ program since the first year (2008) would be under a quarterly hard-TAC for the interim period. Therefore, taking time to further develop this alternative in this action is not justified. Some of the specific unresolved issues identified were: 1) Amendment 11 specifies that a vessel is restricted to buy/sell their allocation as a unit (not in

parts), so it would have to be determined if this can be revised in a framework; 2) not clear if the quota would be limited to an annual lease or purchase; 3) are there any new monitoring issues with this alternative; 4) should the framework include compensation for vessels if an area on Georges Bank closes early due to the YT bycatch TAC being reached. Furthermore, this approach would add a burden for general category vessels that do not participate in access areas to find another vessel to buy or lease their area specific quota.

4.0 DESCRIPTION OF AFFECTED ENVIRONMENT – SAFE REPORT

The environment affected by the sea scallop fishery as a whole is described in section 4 of Amendment 11 to the Sea Scallop FMP (NEFMC, 2007). That description is incorporated herein by reference. This section serves as the 2007 SAFE Report, which updates the data and analysis of the fishery through the 2006 fishing year, including an updated assessment of the scallop resource, new analyses of limited access and general category scallop effort distribution, and new estimates of finfish bycatch in both the controlled access and open areas. The 2007 SAFE Report also includes several relevant appendices (*Appendix I: Summary of updated scallop stock assessment (SARC 45)* and *Appendix II: Methods Used for Sea Scallop Biological Projections*).

4.1 THE ATLANTIC SEA SCALLOP RESOURCE

The Atlantic sea scallop, *Placopecten magellanicus* (Gmelin), is a bivalve mollusk ranging from North Carolina to the Gulf of St. Lawrence (Hart and Chute, 2004). Although all sea scallops in the US EEZ are managed as a single stock per Amendment 10, 4 regional components and 6 resource areas are recognized. Major aggregations occur in the Mid-Atlantic from Virginia to Long Island (Mid-Atlantic component), Georges Bank, the Great South Channel (South Channel component), and the Gulf of Maine (Hart and Rago, 2006; NEFSC, 2007). These 4 regional components are further divided into 6 resource areas: Delmarva (Mid-Atlantic), New York Bight (Mid-Atlantic), South Channel, southeast part of Georges Bank, northeast peak and northern part of Georges Bank, and the Gulf of Maine (NEFMC, 2007). Assessments focus on two main parts of the stock and fishery that contain the largest concentrations of sea scallops: Georges Bank and the Mid-Atlantic, which are combined to evaluate the status of the whole stock (NEFMC, 2007).

Sea scallops are generally found in waters less than 20°C and depths that range from 30-110m on Georges Bank, 20-80m in the Mid-Atlantic, and less than 40m in the near-shore waters of the Gulf of Maine. They feed by filtering zoo- and phytoplankton and detritus particles. Sea scallops have separate sexes, reach sexual maturity at age 2, and use external fertilization. Scallops greater than 40mm are considered mature individuals. Spawning generally occurs in late summer and early autumn, although there is evidence of spring spawning as well in the Mid-Atlantic Bight (DuPaul et al., 1989) and limited winter-early spring spawning on Georges Bank (Almeida et al., 1994; Dibacco et al., 1995). Annual fecundity increases rapidly with shell height; individuals younger than 4 years may contribute little to total egg production (MacDonald and Thompson, 1985; NEFMC, 1993; NEFSC, 2007). The pelagic larval stage lasts 4-7 weeks with settlement usually on firm sand, gravel, shells, etc. (Hart and Chute, 2004; NEFMC, 2007; NEFSC, 2007). Recruitment to the NEFSC survey occurs at 40mm shell height (SH) and to the commercial fishery at 90-105mm SH, which corresponds to an age of 4-5 years old (NEFSC, 2007; NEFMC, 2007).

Meat weight can quadruple between the ages of 3 to 5 (NEFSC, 2004; NEFMC, 2007). Meat weight is dependent on shell size, which increases with age, and depth. Meat weight decreases with depth, possibly due to a reduced food supply (NEFSC, 2007). Both the Mid-Atlantic and Georges Bank showed a drop in meat weights between August and October, coinciding with the September-October spawning period (Haynes, 1966; Serchuk and Smolowitz, 1989; NEFSC, 2007). Meat weight of landed scallops may differ from those predicted based on research survey

data because: 1) the shell height/meat weight relationship varies seasonally in part because of the reproductive cycle, causing meats collected during the NEFSC survey in July to differ from the rest of the year; 2) commercial fishers concentrate on speed while shucking, leaving some meat on the shell (Naidu, 1987; Kirkley and DuPaul, 1989); and 3) fishers may target areas with relatively large meat weight at shell height, thus increasing commercial weights compared to those on the research vessel (NEFSC, 2007).

4.1.1 Assessment

The primary source of data used in the biological component of the scallop assessment currently comes from the federal scallop survey. The scallop dredge survey has been conducted in a consistent manner since 1979. An 8-foot modified scallop dredge is used with 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. A Scallop Survey Advisory Panel (SSAP) is reviewing the scallop survey and making recommendations about how future surveys should be conducted because 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 (NEFMC, 2007).

Other primary components of the assessment include defining parameters for scallop growth, maturity and fecundity, shell height/meat weight relationships, recruitment, and estimates of natural mortality, which are all combined with fishery data (landing and discards) to estimate fishing mortality rates and biological reference points. 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 is not well defined. The Catch-At-Size-Analysis (CASA) model, which was recently developed, utilizes additional information including commercial catch, LPUE, commercial shell height compositions, data from the NMFS sea scallop and winter trawl surveys, data from the University of Massachusetts Dartmouth School of Marine Science and Technology (SMAST) small camera video surveys, data from dredge surveys conducted by VIMS, growth increment data from scallop shells, and shell height/meat weight data adjusted to take commercial practices and seasonality into account (NEFSC, 2007).

Biological reference points were set for the entire US sea scallop stock. The threshold fishing mortality rate for fully-recruited scallops that generates the maximum yield-per-recruit, F_{max} , was estimated at 0.24. The biomass per recruit at $F = F_{max}$ and the median number of recruits, B_{max} , was estimated at 5.6 kg/tow.

Future estimates, however, may be adjusted based on the proceedings at SAW45 for a few reasons. First, there is increasing evidence that growth in the Mid-Atlantic in general and in the Elephant Trunk Area (ETA) specifically, is slower than what is assumed in the projection model. Second, the data used for the shell height/meat weight relationship are from scallops caught in July when scallops have a better yield in terms of meat weight at a given shell size, thus producing a more robust estimate of biomass. Lastly, the model assumed a 20% discard mortality rate, which may be reasonable overall; however, in areas like the ETA, a higher mortality rate may be justified, especially during periods of higher air and water temperatures

(NEFMC, 2007). Section ??? of this action is considering a revision of the current overfishing definition to incorporate results from the recent assessment.

The CASA model was developed to replace the current model to allow the incorporation of information listed above, including a shift toward larger scallops in landings. With this model, the proposed fishing mortality threshold would shift from 0.24 to 0.29. These fishing mortality values are not directly comparable because the CASA model that produced 0.29 is for fully recruited scallops (>100 mm). The rescaled F model represents an average fishing mortality for scallops greater than 80-90 mm. Since fishing mortality is lower on 80-100 mm scallops, the rescaled F estimate would be somewhat less than the CASA estimate. The biomass threshold and target measurement units will change from kg/tow to thousand mt meats. The current biomass threshold is 2.8 kg/tow with a biomass target of 5.6 kg/tow. The proposed biomass threshold is 54.3 thousand mt meats with a biomass target of 108.6 thousand mt meats.

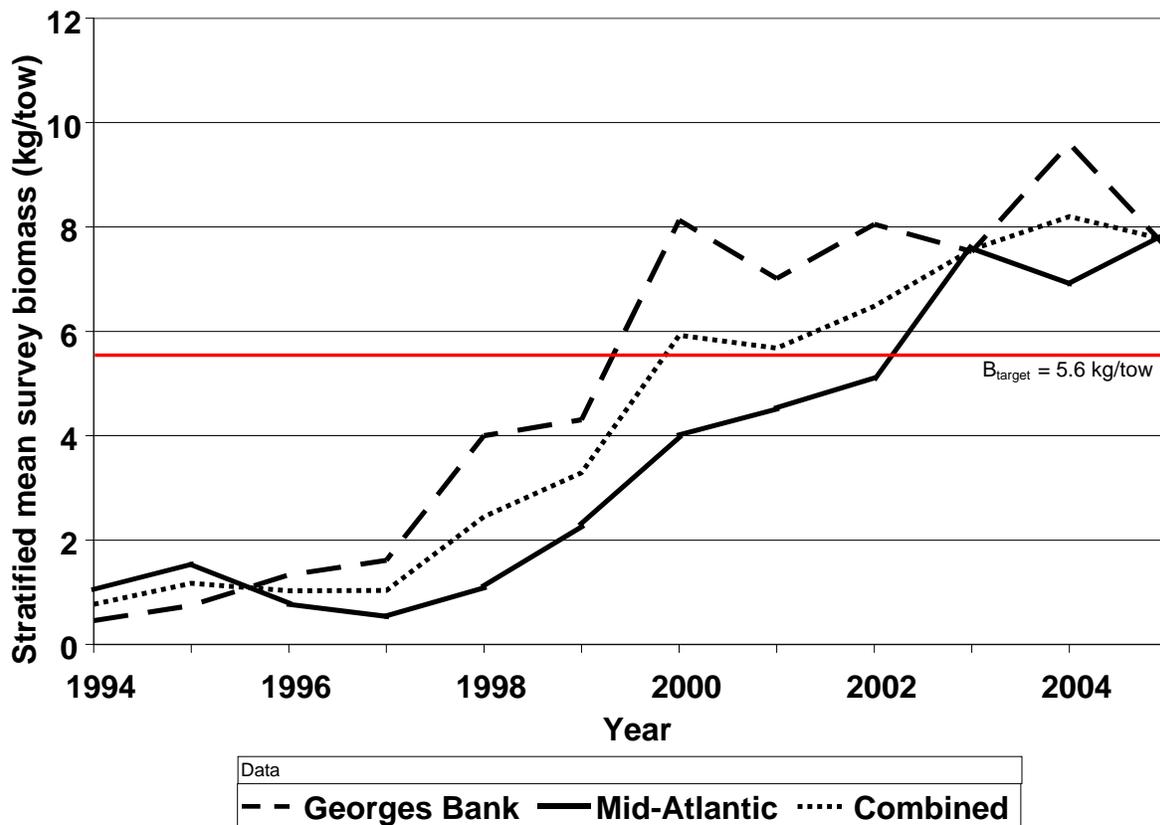


Figure 6. Trend in R/V Albatross stratified mean weight per tow, 1994-2005 (preliminary), by region. B_{target} is identified by the FMP as B_{MSY} and is calculated as the biomass that would result from average scallop recruitment and fishing at F_{max} (still need to update with 2006 data)

4.1.2 Stock Status

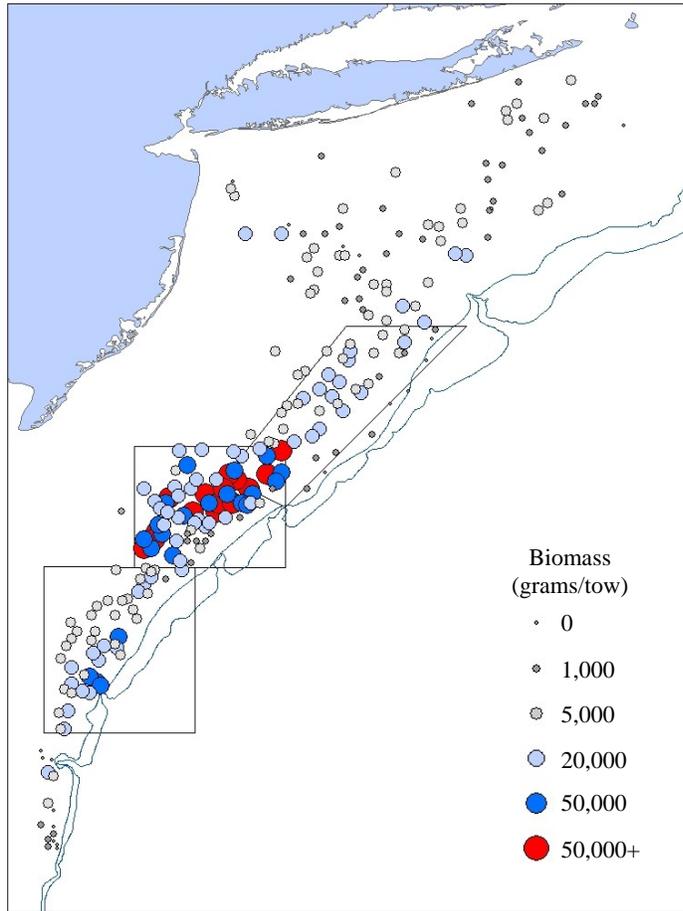
The current status of the stock for 2006 based on the rescaled F approach has an estimate for fishing mortality of 0.20 and biomass of 7.3 kg/tow, thus overfishing is not occurring and the stock is not overfished. Stock status has been fluctuating in recent years. Overall biomass increased almost without interruption since 1997, peaking at 8.2 kg/tow in 2004. Although it has declined to 7.3 kg/tow in 2006, it is not overfished because it is well above the target of 5.6 kg/tow and threshold of 2.8 kg/tow. Fishing mortality was above the threshold of 0.24 and target of 0.20 for both 2003 and 2004 with both years at or above 0.30. For 2005 and 2006, though, fishing mortality was reduced to 0.22 and 0.20, respectively, coming in below the threshold value. Thus, overfishing is no longer occurring. Using the proposed reference points of the CASA model, the 2006 F_{\max} is 0.23 and stock biomass is 166 thousand mt meats (See Section ???).

4.1.2.1 Biomass

Despite a decline in biomass in the past few years, the overall trend shows a considerable increase since 1994, especially in the Georges Bank closed areas and the ETA (part of the Mid-Atlantic component)(NEFSC, 2007). 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), which is likely due to very strong recruitment in the Mid-Atlantic and improved management in both the Mid-Atlantic and Georges Bank (NEFMC, 2007). The resource remains in relatively good condition even though mortality was above target for 2003-2004, with a greater share of the landings coming from older and larger scallops. Whole-stock estimates indicate that annual abundance, annual egg production, and biomass were relatively high during 2006, although recruitment was relatively low (NEFSC, 2007).

Biomass increased rapidly in the Mid-Atlantic Bight from 1998-2003 due to area closures, reduced fishing mortality, changes in fishery selectivity, and strong recruitment. While the Hudson Canyon area was closed from 1998-2001, biomass increased; likewise, biomass has increased steadily in the ETA since its closure in 2004. Biomass has been relatively stable from 2003-2006. Two very strong year classes have been protected by the ETA closure, which contains over one-quarter of the total scallop biomass (Figure 7). Realization of the benefits from the ETA closure is forecasted to result in a higher sustainable yield (NEFMC, 2007). However, short term yields are expected to be lower in the Mid-Atlantic because growth rates are likely to be less than estimated.

Figure 7. Biomass chart for the Mid-Atlantic from the 2007 NMFS sea scallop survey



The scallop abundance and biomass on Georges Bank increased from 1995-2000 after implementation of closures and effort reduction measures. However, biomass and abundance have been declining in recent years because of poor recruitment and the reopening of portions of groundfish closed areas. The highest concentrations of biomass on Georges Bank are currently on the northern edge of Georges Bank, within Closed Area I, and within Nantucket Lightship closed areas (Figure 8) (NEFMC, 2007).

Figure 8. Biomass chart for Georges Bank from the 2007 NMFS sea scallop survey

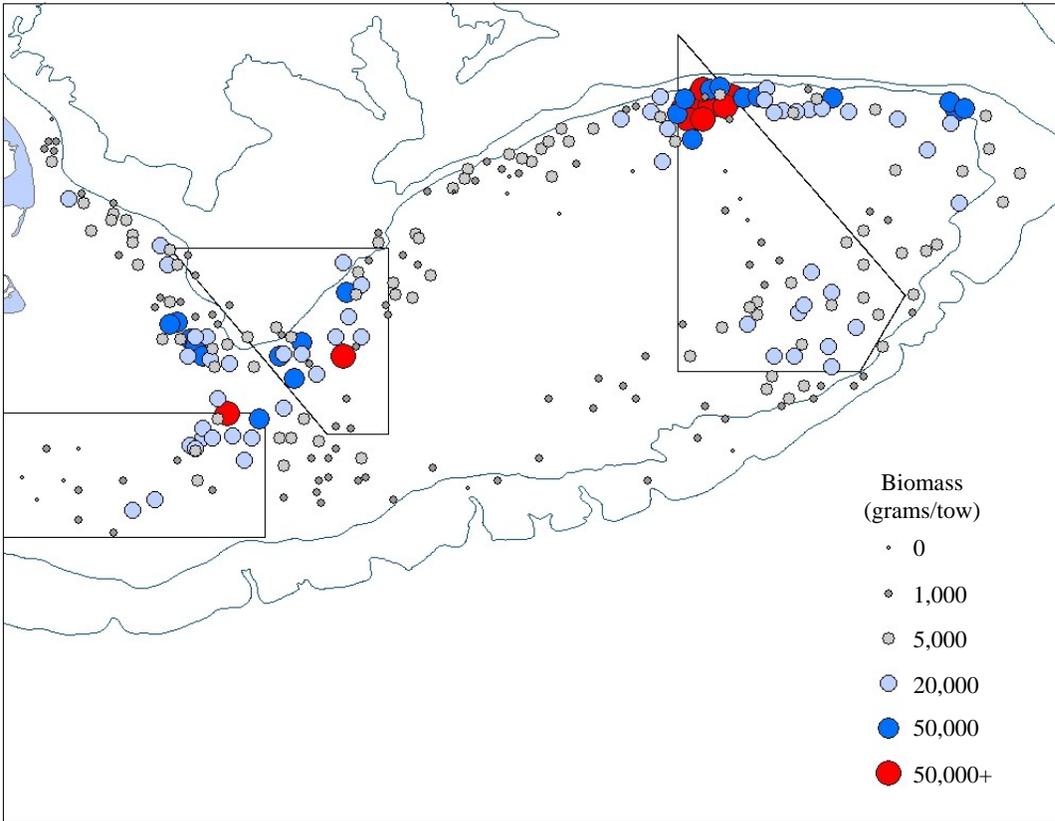


Figure 9 displays the distribution of scallop biomass by area based on 2007 survey data. The ETA contains 32% of the overall biomass and the GB EFH closures contain 21%. However, only 17% of the scallop biomass is in the Mid-Atlantic and GB open areas combined.

Recruitment is the highest it has been since 2001 on GB (Figure 10). From 2002-2006, recruitment was relatively low. The increased recruitment is being seen in the Channel and the northern edge of GB. Recruitment in the Mid-Atlantic is decent as well (Figure 11), mostly in the Hudson Canyon vicinity.

Figure 9. Distribution of scallop biomass by area

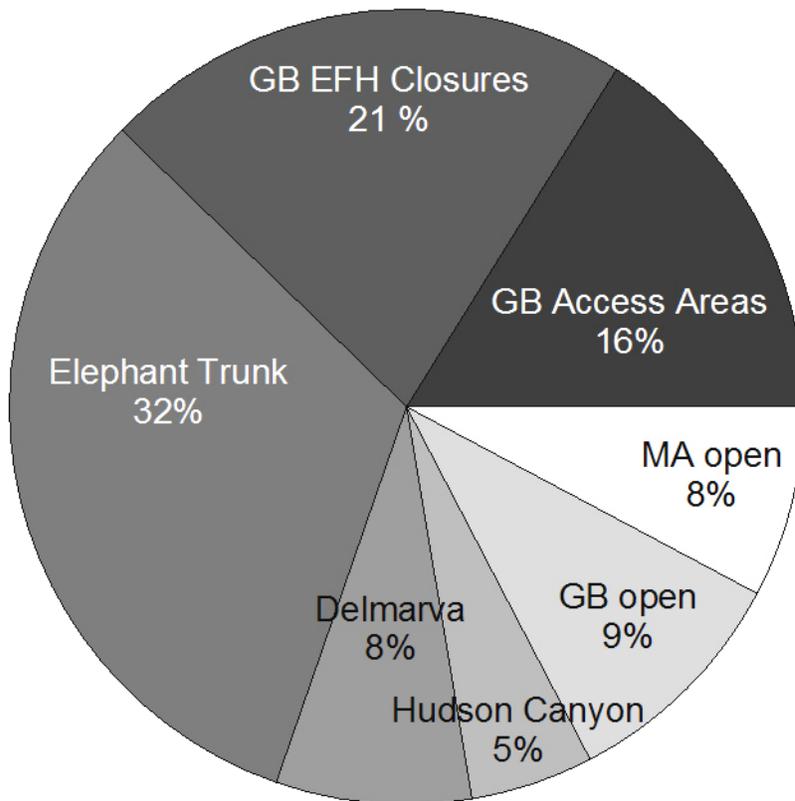


Figure 10. Recruitment on Georges Bank from 2007 NMFS sea scallop survey

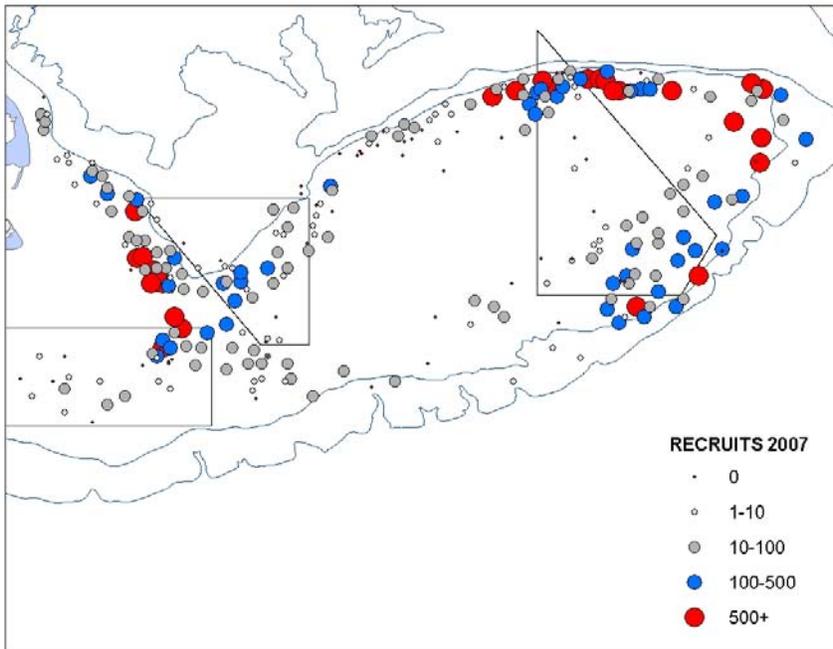
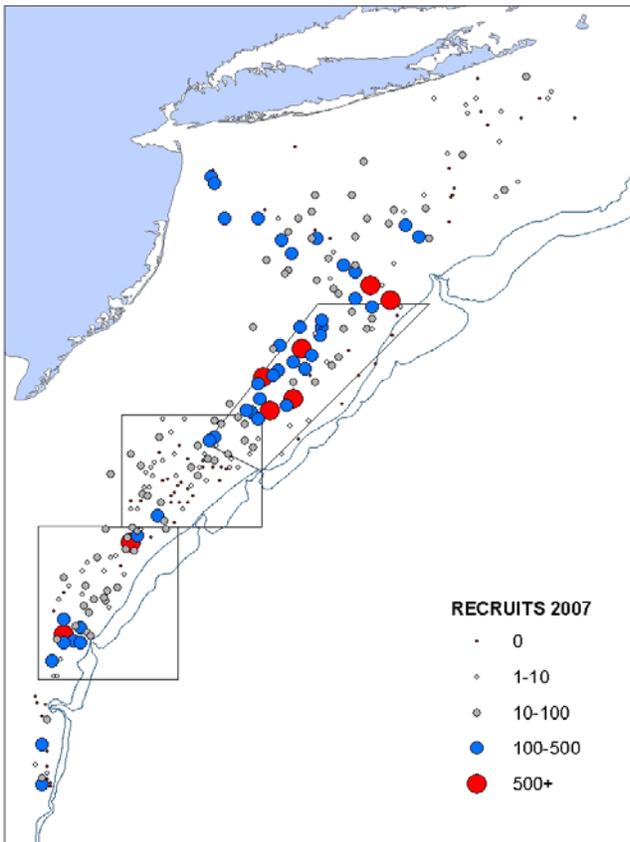


Figure 11. Recruitment in the Mid-Atlantic from the 2007 NMFS sea scallop survey



4.1.2.2 Fishing mortality

Four types of mortality are accounted for in the assessment: natural, discard, incidental, and fishing. The natural mortality rate was assumed to be $M=0.1y^{-1}$ for scallops with shell heights greater than 40mm based on estimates of M based on ratios of clappers (still-intact shells from dead scallops) versus live scallops (Merrill and Posgay, 1964). Natural mortality may increase at larger shell heights (MacDonald and Thompson, 1986; NEFSC, 2007).

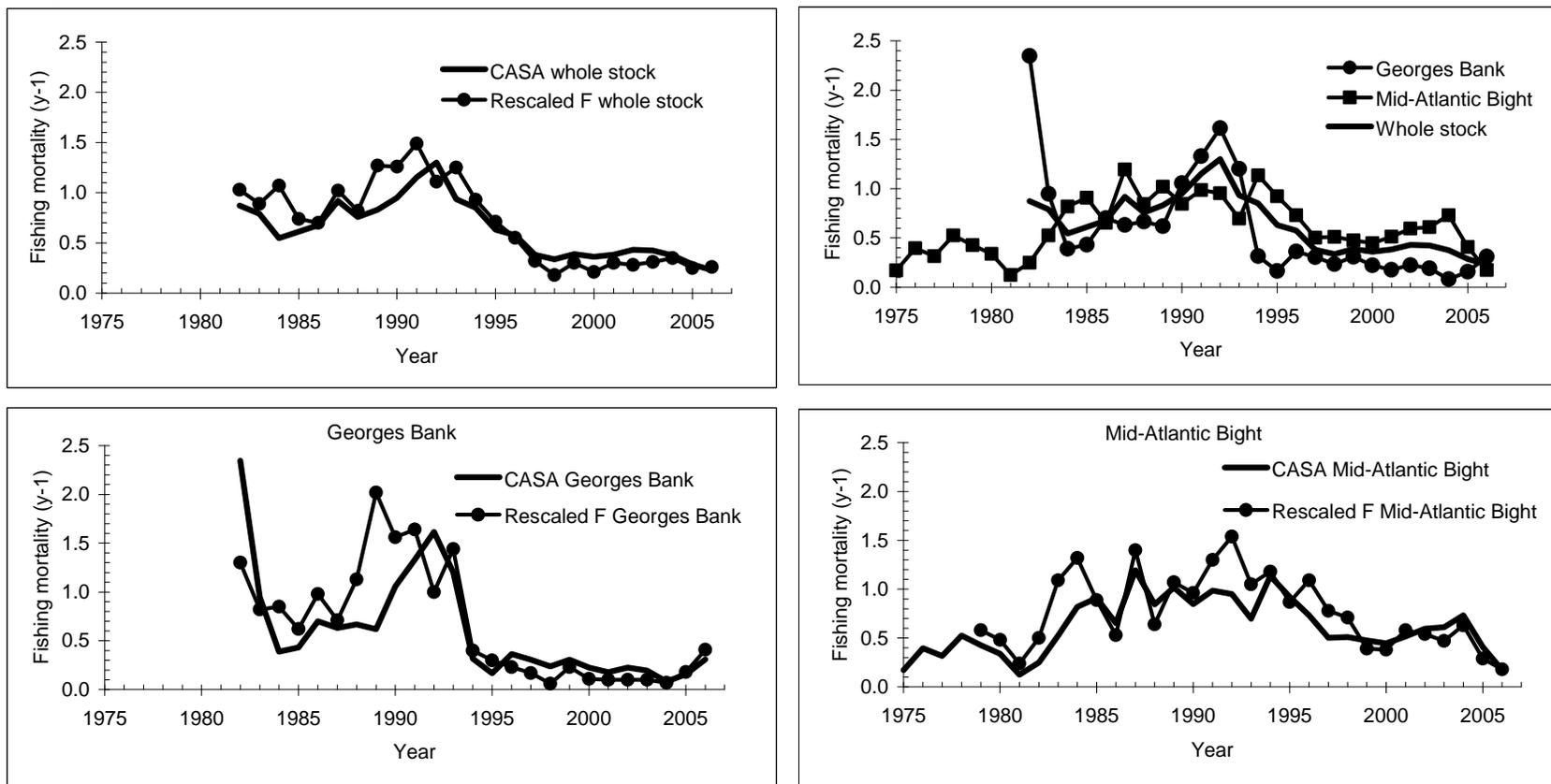
Discard mortality occurs when scallops are discarded on directed scallop trips because they are too small to be economically profitable to shuck or due to high-grading during access area trips to previously-closed areas. Discard ratios were low during the 2005-2006 season, probably because of new gear regulations (4" rings). Scallops can also be caught as bycatch and either landed or discarded in other fisheries. Trawl fisheries with the largest scallop bycatch for 1994-2006 were longfin squid, summer flounder, yellowtail, haddock, cod, and monkfish. From 1994-2006, an estimated mean of 94 mt meats of scallops were landed and 68 mt meats were discarded per year as bycatch in other fisheries. Total discard mortality is estimated at 20% (NEFSC, 2007).

Incidental mortality is non-landed mortality associated with scallop dredges that likely kill and injure some scallops that are contacted but not caught by crushing their shells. Caddy (1973) estimated 15-20% of the scallops remaining in the dredge track were killed, while Murawski and Serchuk (1989) estimated that <5% were killed. The difference is possibly due to differences in substrate; the first study was done in a hard bottom area, while the subsequent study was in an area with a sandy bottom. Incidental mortality for this assessment was assumed to be $0.15 F_L$ in Georges Bank and $0.04 F_L$ in the Mid-Atlantic (NEFSC, 2007).

Fishing mortality, the mortality associated with scallop landings on directed scallop trips, was calculated separately for Georges Bank and the Mid-Atlantic because of differences in growth rates. However, for comparison to biological reference points used to identify overfishing and overfished stock conditions, a whole-stock estimate of fishing mortality is necessary. Survey-based and rescaled F estimates show increasing mortality until the early 1990s and reductions from 1994-2006 (NEFSC, 2007). The current F_{max} estimate for 2006 is 0.20; the CASA F_{max} estimate is 0.23, both of which are below the current and proposed thresholds (0.24 and 0.29, respectively).

Fishing mortality peaked in the early 1990s, but has decreased substantially since then and, in general, has remained stable since 1999 (Figure 12). IN recent years, fishing mortality has been higher for the Mid-Atlantic than for Georges Bank. Georges Bank saw a significant decrease in fishing mortality from 1993-1995 and has remained very stable since 1995. However, the Mid-Atlantic fishing mortality, although in decline, is not as stable as GB. Results from the two models, the current model (rescaled F) and the proposed model (CASA), are generally similar. CASA, though, is more precise and less biased according to the SAW review panel.

Figure 12. Fishing mortality estimates (y^{-1}) from the CASA model for sea scallops on Georges Bank, in the Mid-Atlantic Bight and for the whole stock during 1975-2006.



4.2 PHYSICAL ENVIRONMENT AND ESSENTIAL FISH HABITAT

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. Several recent reports have been published which add to our understanding of the physical and biological environment of this region, including Amendment 11 (NEFMC, 2007). This section deals with the *affected* environment and does not present the effects of the proposed management program.

4.2.1 4.2.1 Physical Environment

This section contains a brief 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. Further detailed descriptions of the physical environment can be found in section 4.2 of Amendment 11.

The Northeast shelf ecosystem (Figure 9) extends from the Gulf of Maine south to the state of North Carolina, and encompasses the area 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: the Gulf of Maine (GOM), Georges Bank, the Mid-Atlantic Bight, the continental slope, and some New England Seamounts. Occasionally Southern New England, an additional subsystem, is described; however, we incorporated the distinctive features of this region into the descriptions of Georges Bank and the Mid-Atlantic Bight.

The GOM 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.

4.2.1.1 Inshore

The GOM includes more than 59,570 km² (23,000 mi²) of estuarine drainage areas, with the majority in Maine, including 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. In southwestern GOM, major estuaries are Massachusetts Bay and Great Bay in New Hampshire. Estuaries are important for nutrient recycling and primary production, and function as important breeding and feeding grounds for many fish and shellfish populations, shorebirds, migratory waterfowl, and mammals. Estuarine features such as salt marshes, mud flats, and submerged aquatic vegetation are critical to inshore and offshore fishery resources of the GOM. Coastal rocky intertidal zones and sand beaches are important habitats for fishery resources and are also important for nutrient recycling and primary production.

Human activities in the surrounding watersheds impact the chemical loading of nutrients (especially nitrogen and phosphorus) and contaminants (heavy metals and organic) that enter estuarine systems, as do various biophysical processes such as hydrology, sediment type, metabolism of imported non-living dissolved organic carbon (DOC) and particulate organic carbon (POC), burial of DOC and POC, geochemical processes, biological processes that convert POC to DOC, and export of living and non-living total organic matter to the coastal ocean. These physical, chemical, geological and biological processes provide the context for the water column and benthic sedimentary habitat characteristics and biophysical structure.

Seasonal and interannual changes in temperature and salinity, influenced by the North Atlantic Oscillation (NOA), are another important set of estuarine characteristics. The NAO is based on atmospheric pressure differences between the North Atlantic Ocean and Mid-Atlantic regions that influence the strength of the westerly winds. A positive NAO index can be associated with warmer water temperatures, higher salinity values, a decline of winter-spring diatom bloom and higher early spring zooplankton abundance, decrease in demersal fish biomass (including winter flounder, windowpane flounder, red hake), increase in demersal decapods (crabs and lobsters), and immigration of smaller, southern pelagic fish species (anchovy, butterfish, long finned squid) (Oviatt, 2004). A negative NAO index is associated with colder, less saline water masses with lower nutrient values and a well developed winterspring diatom bloom and strong recruitment of benthic fauna (polychaetes). Thus, large scale meteorological events affect the interannual temperature and salinity seasonal patterns in East Coast estuaries.

4.2.1.2 Gulf of Maine/Georges Bank/Mid-Atlantic

Gulf of Maine

The Gulf of Maine is actually an enclosed coastal sea of 90,700 km², bounded by Browns Bank, the Nova Scotian (Scotian) Shelf, New England states, and Cape Cod and Georges Bank (GB). The 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 GOM is topographically unlike any other part of the continental border along the east coast of the U.S. It contains 21 distinct basins separated by ridges, banks, and swells with depths exceeding 250 m. 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 and lower flat-topped banks and gentle swells. Some of these rises are remnants of the sedimentary shelf not removed by glaciers. Others are glacial moraines or out-croppings of bedrock. Substrate types include thick mud deposits that form topographically smooth terrains (primarily in coastal valleys and basins), bedrock (to depths of 60m), sand in some high areas, and gravel, sometimes with boulders, in other areas (depths 20-40m).

An intense seasonal cycle of winter cooling and turnover, springtime freshwater runoff, and summer warming influences oceanographic and biologic processes in the GOM. The Gulf has a general counterclockwise surface current that flows around its coastal margin that is primarily driven by fresh, cold Scotian Shelf water and freshwater river runoff, but is also influenced by dense, relatively warm and saline slope water entering through the northeast Channel. Water exits the GOM primarily through the 75 m deep Great South Channel and over the eastern portion of Georges Bank.

Stratification of GOM surface waters during spring and summer creates the “Maine intermediate water” (MIW), which is sandwiched between more saline Maine bottom water and 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. These circulation and water properties can vary significantly from year to year.

Georges Bank

Georges Bank is a shallow (3-150 m depth), elongate (161 km wide by 322 km long) extension of the continental shelf 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 such that overall coarsening of the bottom sediments is anticipated (Valentine et al., 1993).

Georges Bank bottom topography 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. Sediments range 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 with strong currents (average tidal currents >4 km/hr). Shoals and troughs characterize the bottom, with superimposed sand dunes. Dunes migrate at variable rates; the ridges may also move. Currents 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 the water masses of the Gulf of Maine, Georges Bank, and the Atlantic Ocean, which differ in temperature, salinity, nutrient concentration, and planktonic communities that influence productivity and may influence fish abundance and distribution. Georges Bank waters are vertically well-mixed. 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.

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. Sediments are generally finer-grained sand than those found on Georges Bank. The Mid-Atlantic Bight was shaped largely by sea level fluctuations caused by past ice ages.

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. Storm events can cause much more energetic variations in flow. Tidal currents on the inner shelf have a higher flow rate than that of the general southwestward flow.

Slope water tends to be warmer and more saline than shelf water. The abrupt gradient where these two water masses meet is the shelf-slope front, which is usually located at the edge of the shelf and touches bottom at about 75-100 m depth of water. The position of the front is highly variable and can be influenced by many physical factors.

A permanent thermocline exists in slope waters from 200-600 m. A warm, mixed layer approximately 40 m thick resides above the permanent thermocline. In shallower near-shore waters, stratification is usually established by early June; the waters are homogenous by October (in most years) due to fall mixing.

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 angles 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. Numerous canyons incise the slope. Primary morphological features include shallow shelf valleys and channels, shoal massifs, scarps, and low sand ridges and swales (Figure 11). For a more detailed description of these morphological features, refer to Amendment 11, section 4.2.1.2.

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. Sand and gravel cover most of the shelf. Sediment transport is episodic, storm-related, and in the same southwesterly direction as the current. Mud is rare over most of the shelf, but is common in the Hudson Shelf Valley.

The northern portion of the Mid-Atlantic Bight is sometimes referred to as the southern New England Shelf. A formation of this region that deserves note is the “mud patch,” 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 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):

Otter Trawls

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

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

Scallop Dredge (New Bedford style)

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

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

Gear types other than otter trawls and scallop dredges, in the context of the Atlantic Sea Scallop fishery, were not found to have adverse effects the Essential Fish Habitat as currently designated in this region. See Table 9 in Amendment 11 for a description of the species and life stages that were determined to be adversely impacted in a manner that is more than minimal and less than temporary in nature in Amendment 10.

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. 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.

The availability of food for planktivores is highly influenced by oceanographic properties. Changes in primary production from upwelling and other oceanographic processes affect the amount of organic matter available for other organisms higher up the food chain, and thus influence their abundance and distribution. Organic matter produced in the photic zone sinks to the bottom and provides food 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, such as bottom-dwelling sand lance, provide an important food source for many managed piscivorous species. 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.

The following sections provide a brief overview of the biological environment. Amendment 11 contains a more in-depth discussion.

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, which form an underwater canopy at high tide. When the tide is low, the algae lie on the rocks, protecting snails, mussels, barnacles, and crabs from exposure to sun, wind, rain, and bird predators. The abundance and primary productivity of brown seaweeds contributes to the high productivity of the rocky intertidal shores (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 tidal heights.

Boulders in the Gulf of Maine intertidal zone serve as substrate for similar species as rocky outcrops, including algae, mollusks, and other sessile organisms, because they are not frequently overturned by waves due to their large size (Tyrrell, 2005). Boulders provide shelter from wind, sun, rain, and predators for small organisms that 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 and a mosaic of vegetation types in the high marsh. 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). Within freshwater or brackish water tidal portions of the relatively shallow Hudson and Connecticut River estuaries, submerged aquatic vegetation can be extensive (Roman et al. 2000).

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. Detritus is

provided to the food web via salt marshes, submerged aquatic vegetation, phytoplankton production, and riverine input from the larger watershed. The importance of the detritus food web to the grazing food chain is determined by the estuary geomorphology and hydrology. POC is converted to DOC in estuaries by microbes and exported to the coastal ocean. Some POC (detritus) supports the grazing food chain, including fish and shellfish. Spring and fall phytoplankton blooms transport carbon to zooplankton, supporting the higher trophic levels of the food chain (pelagic and demersal fish).

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 $\text{kJ m}^{-2} \text{yr}^{-1}$ (260-505 $\text{gCm}^{-2} \text{yr}^{-1}$) with the annual average of 350 $\text{gCm}^{-2} \text{yr}^{-1}$. The areas of highest estimated production on the shelf occur on the central, shallow portion of Georges Bank [18,960 $\text{kJ m}^{-2} \text{yr}^{-1}$ (445 $\text{gCm}^{-2} \text{yr}^{-1}$)] and along the coast between the States of New Jersey and North Carolina [21,043 $\text{kJ m}^{-2} \text{yr}^{-1}$ (505 $\text{gCm}^{-2} \text{yr}^{-1}$)], 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.

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 $\text{cc}/100 \text{ m}^3$) and remains high through the summer (36-39 $\text{cc}/100 \text{ m}^3$). 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 $\text{cc}/100 \text{ m}^3$). The waters of Southern New England maintain a relatively high biomass from May through August (55-60 $\text{cc}/100 \text{ m}^3$). 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 $\text{cc}/100 \text{ m}^3$) followed by a decline from November until the annual minimum in February (19 $\text{cc}/100 \text{ m}^3$) (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, which comprise the second-most greatest weight (Theroux and Wigley 1998).

Various fish species comprise assemblages in five areas of Georges Bank and the Gulf of Maine: slope and canyon (deepwater), intermediate water, shallow water, Gulf of Maine (deep), and the Northeast Peak. Although more species are present than listed in Table 31, Table 31 provides an overview of fish (that studies by Overholtz and Tyler (1985) (Georges Bank only) and Gabriel (1992) agreed) in the five areas.

Table 31 – Comparison of demersal fish assemblages of GB and GOM identified by Overholtz and Tyler (1985)

Assemblage	Species
Slope and Canyon	Offshore hake Blackbelly rosefish Gulf stream Flounder
Intermediate	Whiting Red hake Monkfish
Shallow	Atlantic cod Haddock Pollock Yellowtail flounder Windowpane Winter flounder Winter skate Little skate Longhorn sculpin
Gulf of ME – deep	White hake American plaice Witch flounder Thorny skate
Northeast Peak	Atlantic cod Haddock pollock

Auster et al. (2001) 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 12.

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 13. Theroux and Grosslein (1987) identified four (4) macrobenthic invertebrate assemblages. Their assemblages are associated with those identified by Valentine et al. (1993) in Table 13. Sea scallops occur in the Northeast Peak assemblage, which varies in depth and current strength and includes coarse sediments, such as gravel and coarse sand with interspersed boulders, cobbles, and pebbles.

Along with high levels of primary productivity, Georges Bank has been historically characterized by high levels of fish production. Depth and salinity were identified as major physical influences explaining assemblage structure. 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. Trends in spatial overlap over time generally reflect changes in species abundance, such that as a species' abundance increases, their range expands as does their spatial overlap with other species. The opposite is also true – as their abundance decreases, so does their spatial overlap with other species.

Seasonal trends in spatial overlap are also apparent. Spiny dogfish, for example, have a far stronger association and a far broader range of species' associations in the winter than they do in the summer. Similarly, winter skate is a more prevalent co-correspondent in winter than other times of the year.

Mid-Atlantic Bight

Three broad faunal zones related to water depth and sediment type were identified for the Mid-Atlantic by Pratt (1973): sand fauna, silty sand fauna, and 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 14, Figure 17): inner shelf, central shelf, central and inner shelf swales, outer shelf, outer shelf swales, shelf break, and continental slope. Sediments in the region studied (Hudson Shelf Valley south to Chesapeake Bay) were dominated by sand with little finer material. Sea scallops appear to be distributed primarily in the central and outer shelf subdivisions.

4.3 PROTECTED RESOURCES

(to be handed out at Council meeting)

4.4 FISHERY-RELATED BUSINESSES AND COMMUNITIES

4.4.1 The trends in scallop landings, revenue, and prices

The scallop fishery is one of the most valuable U.S. fisheries (NMFS 2003) and generates a significant economic benefit for the nation. The landings from the northeast sea scallop fishery increased dramatically to over 50 million since 2002, surpassing the levels observed historically (Figure 13). Additionally, the scallop landings were above 55 million pounds during 2005 and 2006. As a result, revenue from scallops has increased, exceeding \$230 million in 2003, \$300 million in 2004, and \$400 million in 2005. In 2006, scallop revenue reached \$384 million pounds despite a decline in scallop prices from \$7.90 in 2007 to about \$6.50 in 2006 (Figure 14).

The landings exceeded 61 million pounds in 2004, generating \$315 million revenue from scallops. The value of scallop revenues peaked to \$414 million in the 2005 fishing year due to an increase in the scallop prices to over \$7.70 per pound. U.S. scallop landings exceeded 55.8 million pounds in 2006 fishing year with revenues exceeding \$361 million.

Figure 13. Scallop landings, exports and imports

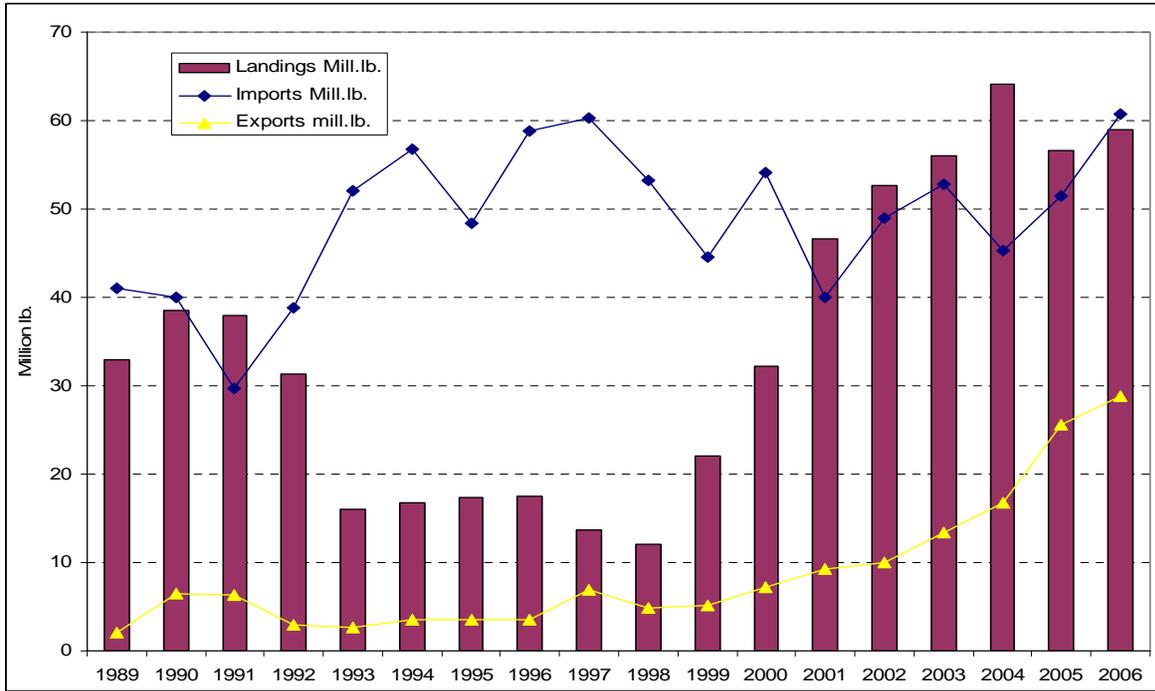
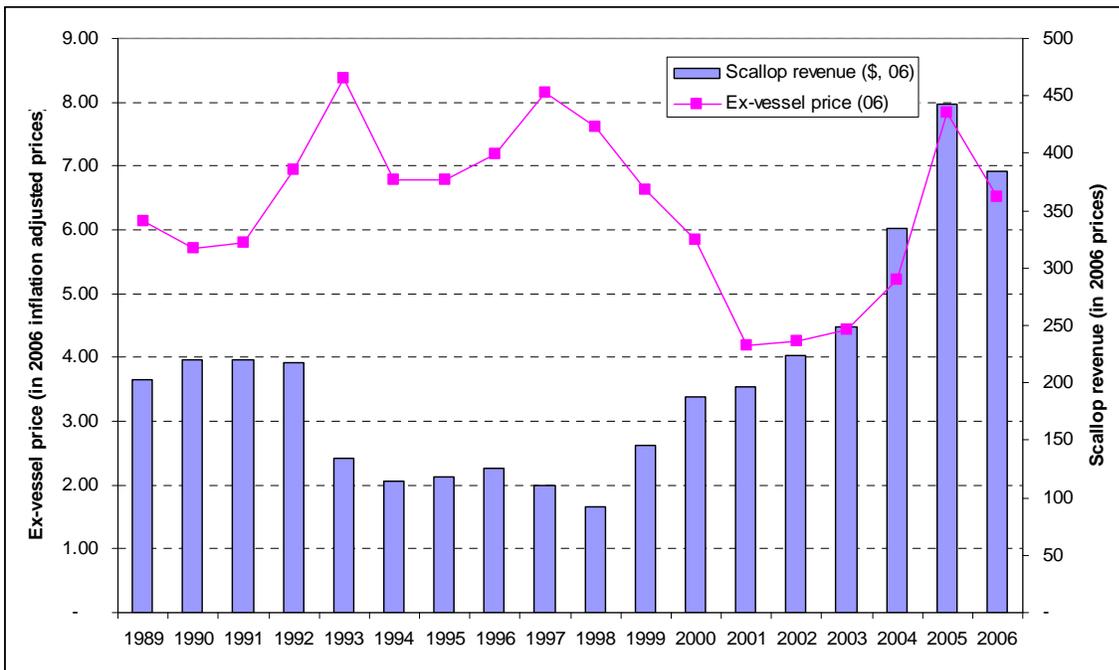


Figure 14. Scallop prices and revenue



compares historical trends in the sea scallop fishery for three time periods. The first period, from 1989 to 1992, summarizes the scallop fishery during a period when landings averaged above 30 million. During the period from 1993 to 1998, overfishing in the previous years 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, to an average of 15.6 million pounds per year. Finally, the period from 1999 to 2006 corresponds to the rebuilding of the sea scallop biomass and the consequent increase in scallop landings, revenues, and exports far above the historical levels. The average revenue per year for this period, over \$270 million, was more than double the average revenue of \$116 per year for the previous period from 1993-1998.

Table 32- Summary of economic trends in the scallop fishery and in foreign trade for scallops (All dollar values are adjusted for inflation and expressed in 2006 prices)

Data - Annual averages	Period		
	1989-1992	1993-1998	1999-2006
Scallop Landings (million lb.)	35.2	15.6	48.6
Ex-vessel Price of scallops (\$ per lb.)	4.2	5.8	5.2
Scallop Revenue (\$ mill)	215.0	115.9	270.6
Average meat count	37.7	36.5	21.7
LPUE (lb. per DAS-used)	NA	433	1577
DAS used	NA	35,797	30,818
	818,114	498,183	\$888,696
Scallop imports (mill. lb.)	37.4	54.9	49.8
Scallop Exports (mill. lb.)	4.4	4.2	14.6
1. Average Export Price (\$ per lb.)	3.5	3.9	4.3
2. Average Import Price (\$ per lb.)	3.6	3.9	3.7
Value of Imports (\$ mill.)	199.6	274.0	200.2
Value of Exports (\$ mill.)	21.9	20.7	71.0
Trade deficit: Imports - Exports (\$ mill.)	177.8	253.3	129.2

Higher overall revenues for the fishery translated into larger scallop revenue per vessel despite the increase in the number of participants throughout the years. Annual scallop revenue averaged \$498,183 per full-time dredge vessel during 1994-1998, but increased by 78% to \$888,696 per vessel during 1999-2004. Scallop industry also benefited from lower fishing costs made possible by the increase in landings per DAS (LPUE) from an average of 433 pounds per day in 1994-1998 to 1,577 pounds per day in 1999-2004. During the same periods, total fishing effort declined from an average of 35,797 DAS-used to 30,818 DAS-used despite the increase in the number of vessels participated in recent years. An increase in scallop landings led to a dramatic increase in U.S. exports of scallops from 5 million pounds in 1998 to almost 30 million pounds in 2006; revenue from exports increased from \$21 million in 1998 to about \$160 million in 2006. The level of exports alone surpassed the total domestic supply of scallops in 1998, when landings had declined to their lowest historical level of 12 million pounds (Figure 13).

Scallop ex-vessel prices peaked to over \$8.15 per pound in 1997 and \$7.60 per pound in 1998, corresponding to the two years with the lowest historical levels of scallop landings (Figure 13,

Figure 14)². During 1993-1998, the average ex-vessel price was \$5.80 per pound. These relatively high prices, however, were insufficient to offset the reduction in landings during those years. As a result, average scallop revenue per year declined to \$116 million from an average of \$215 million during 1989-1992 (Table 32).

The increase in landings and competition from scallop imports led to a decline in scallop ex-vessel prices during the 1999-2006 period, averaging \$5.20 per pound. Even at these lower prices, average annual scallop revenue per year was \$270 million, more than double the average revenue during the 1993-1998 period. As Table 32 shows, however, both landings and the ex-vessel price of scallops increased after 2001. One factor behind this trend was the change in the composition of landings towards larger scallops that command a higher price. In addition, availability of a larger supply of domestic scallops at relatively low prices compared with the historical standards encouraged many restaurants to include scallops on their menu, eventually helping to increase demand. Another factor was the increase in the imported prices of scallops from Canada and Japan due to the lowered landings in the Canadian fishery and the outbreak of an infectious disease in Japanese aquaculture. The cutbacks in scallop landings in these countries also reduced competition for the domestic scallops that are almost identical in quality to imported scallops from Canada and similar to those imported from Japan. The increase in ex-vessel price combined with higher landings led to record levels of revenue from the scallop fishery, amounting to \$443 million in 2005 and \$384 million in 2006.

4.4.2 Trends in the meat count and size composition of scallops

Average scallop meat count has declined continuously since 1998 as a result of effort-reduction measures, area closures, and an increase in ring sizes implemented by the Sea Scallop FMP. Average meat count during the 1989-1992 period, when the meat count standard was still in effect, was 37.7 meats per pound. Overall, estimated meat count for scallops declined to 21.7 meats per pound during the 1999-2006 period from 36.5 meats per pound during the 1993-1998 period (Table 32). The share of larger scallops has continuously increased since 1999, and the share of 11-20 count scallops increased from 11.7% in 1999 to 51.7% in 2006 (Table 33). On the other hand, the share of 30 count or more scallops declined from 20% in 1999 to 1% in 2006. Larger scallops priced higher than the smaller scallops contributed to the increase in average scallop prices in recent years despite larger landings (Table 34).

² The prices are inflation adjusted and expressed in terms of 2006 prices.

Table 33. Composition of scallop landings by market category

YEAR	U10	11-20	21-30	30 over	Unclassified
1998	1.7%	18.1%	22.2%	33.3%	24.7%
1999	16.6%	11.7%	25.2%	34.7%	11.8%
2000	7.3%	18.4%	43.7%	20.1%	10.5%
2001	3.2%	23.7%	49.1%	11.3%	12.7%
2002	4.8%	14.7%	65.1%	4.5%	10.9%
2003	6.4%	21.3%	56.2%	2.8%	13.3%
2004	7.3%	41.3%	41.8%	1.5%	8.1%
2005	12.8%	57.3%	20.6%	2.1%	7.3%
2006	22.7%	51.7%	18.4%	0.9%	6.3%

Table 34. Ex-vessel prices by market category (in 2006 inflation adjusted prices)

YEAR	U10	11-20	21-30	Over 30 count
1998	8.63	8.10	7.73	6.56
1999	7.88	7.49	6.94	6.10
2000	8.00	6.41	5.86	5.71
2001	7.22	5.05	4.27	4.30
2002	7.87	4.67	4.23	4.35
2003	7.31	4.84	4.49	4.74
2004	6.64	5.52	5.33	5.48
2005	8.12	7.88	7.73	7.87
2006	7.33	6.94	6.91	6.81

4.4.3 Trends in scallop imports and exports

Figure 13 shows that scallop imports reached their highest levels during the 1993-1998 period, averaging about 55 million pounds per year, to compensate for the decline in domestic landings. The scallop imports declined to an average of 50 million pounds per year during 1999-2006, however, as supply of domestic scallops more than doubled compared to the previous period (Table 32).

The composition of imports by country of origin is shown in Figure 15. Imports from Canada declined from 17 million pounds in 2002 to less than 10 million pounds in 2005 and 2006. Imports from Japan fluctuated between 5 million and 10 million pounds per year but declined to below 4 million pounds in 2004 due to problems with scallop aquaculture. Imports from countries other than Canada and Japan exceeded 35 million pounds in 2000, declined below 30 million from 2001-2004, then increased to over 30 million since 2005. Being different in quality and size (including bay scallops as well), the imports from countries other than Canada are imperfect substitutes for the domestic product. The imported scallops from these countries tend to be smaller in size and lower in price as compared to imported scallops from Japan and Canada (Figure 16). Nevertheless, the increase in imports from these countries (including the imports of bay scallops) has an impact on domestic prices of sea scallops and could partially explain the decline in ex-vessel sea scallop prices in 2006.

One of most significant changes in the trend for foreign trade for scallops after 1999 was the striking increase in scallop exports. The increase in landings, especially of larger scallops, led to a tripling of U.S. exports of scallops from about 4.2 million pounds during 1993-98 to an average of 14.6 million pounds per year from 1999-2006. In 2005, exports surpassed 25.5 million pounds per year and in 2006, exports increased to 28.8 million pounds (Figure 13). Although exports include exports of bay, calico or weathervane scallops, they mainly consist of sea scallops. France and other European countries were the main importers of US scallops (Figure 17).

Figure 15. Composition of imports by country

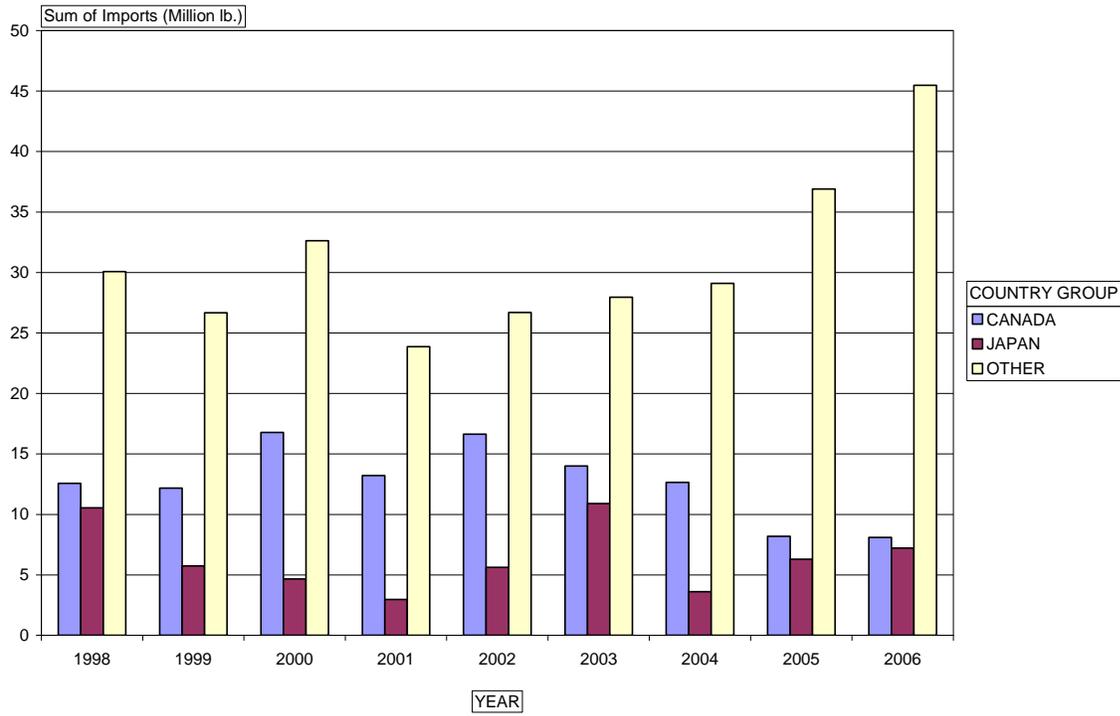


Figure 16. Import price by country of origin

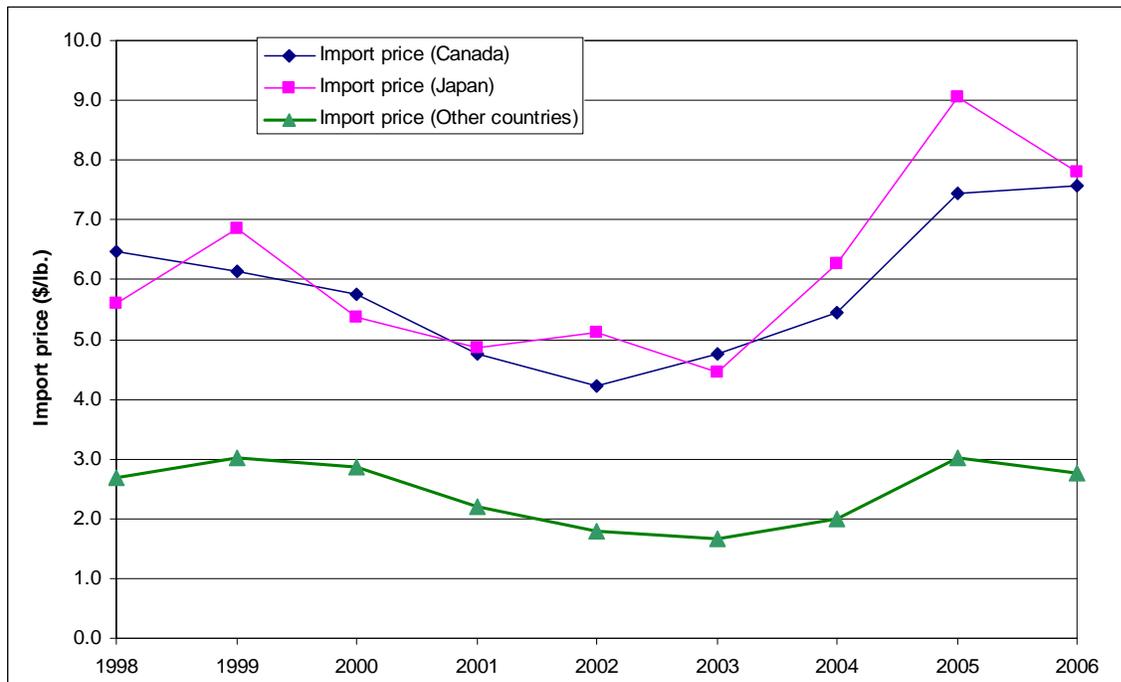
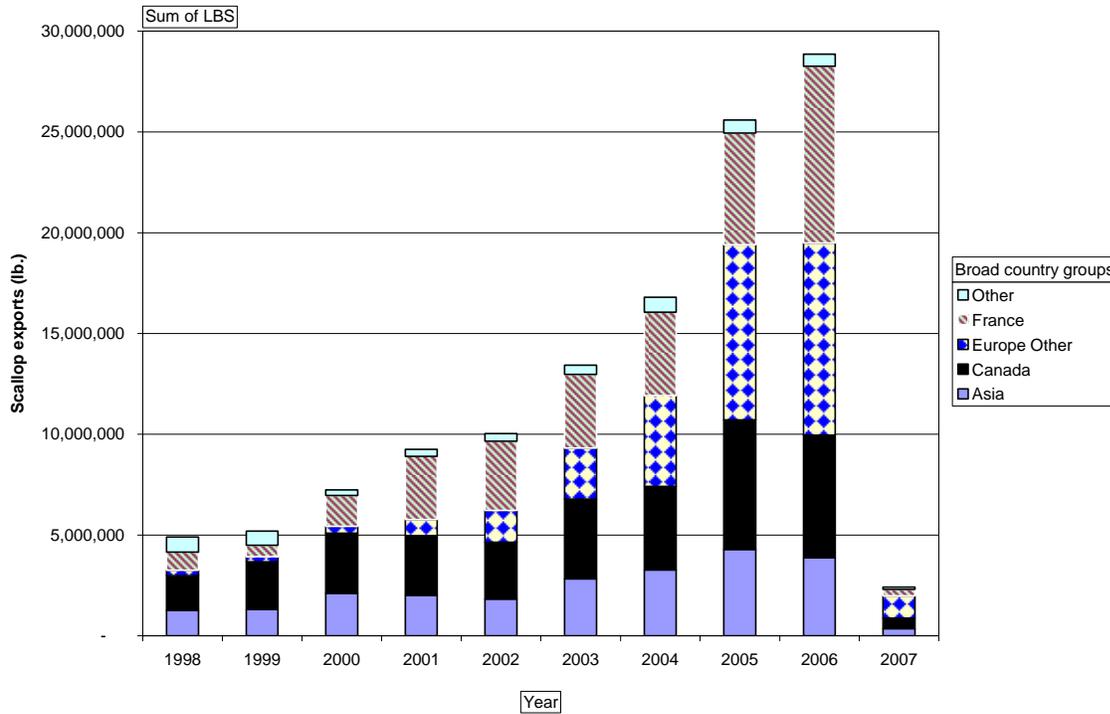


Figure 17. Scallop exports by country of destination



The trends in the ex-vessel price of scallops are compared with trends in import and export prices in Figure 18. Ex-vessel prices have almost mirrored the changes in the average price of imports from all countries. Export prices moved closely with import prices until 2000, but since 2001 they have tracked domestic prices and have exceeded the average of the import price. This is most likely due to the change in the composition of landings toward larger scallops with a higher price per pound than their smaller counterparts. Especially in recent years, the share of under-10 count and 11- 20 count scallops increased dramatically compared to the previous periods (Table 33). These changes could explain the rise in export prices if a higher proportion of larger scallops were exported in recent years³. Because exports include other species of scallops that have lower prices as well, average export price of scallops is lower than the ex-vessel scallop prices. The increase in exports after 1999 took place in the mostly higher priced scallop category, however (Figure 19 and Table 35).

³ The size composition of scallop exports and imports were not available.

Figure 18. Ex-vessel, average import and export prices (adjusted for inflation, expressed in 2006 prices)

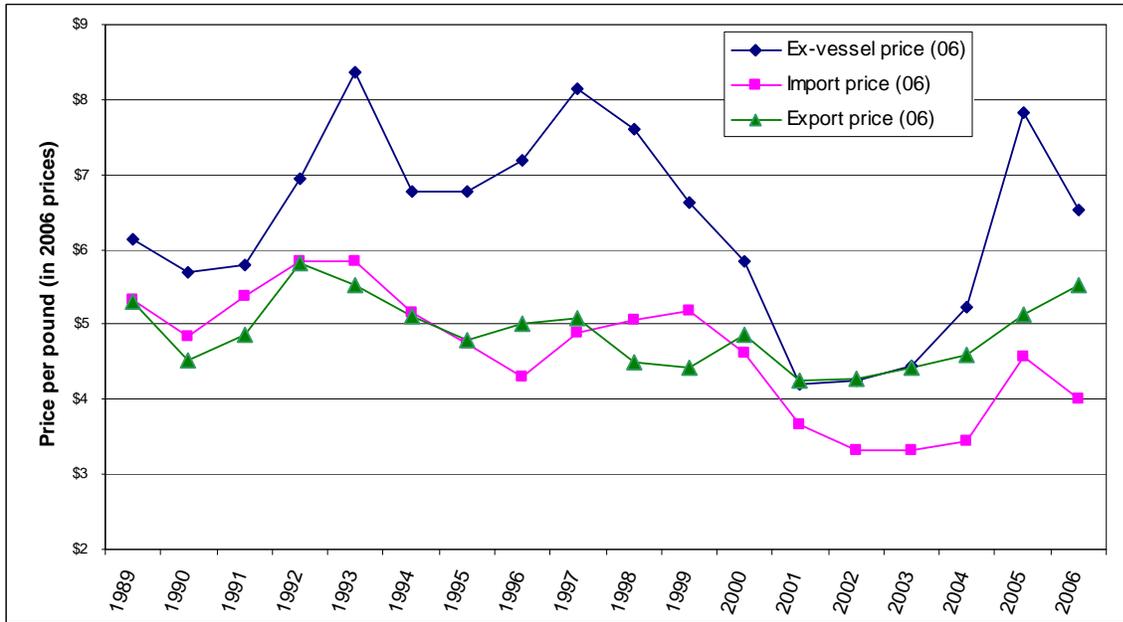


Figure 19. Scallop exports by price category

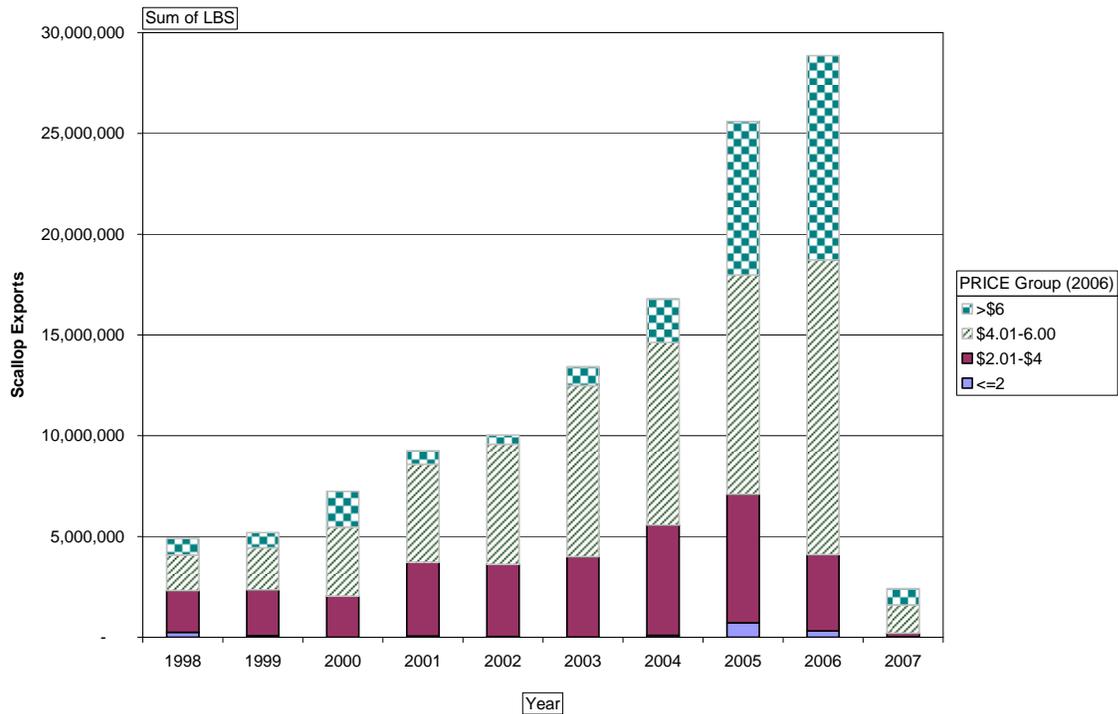
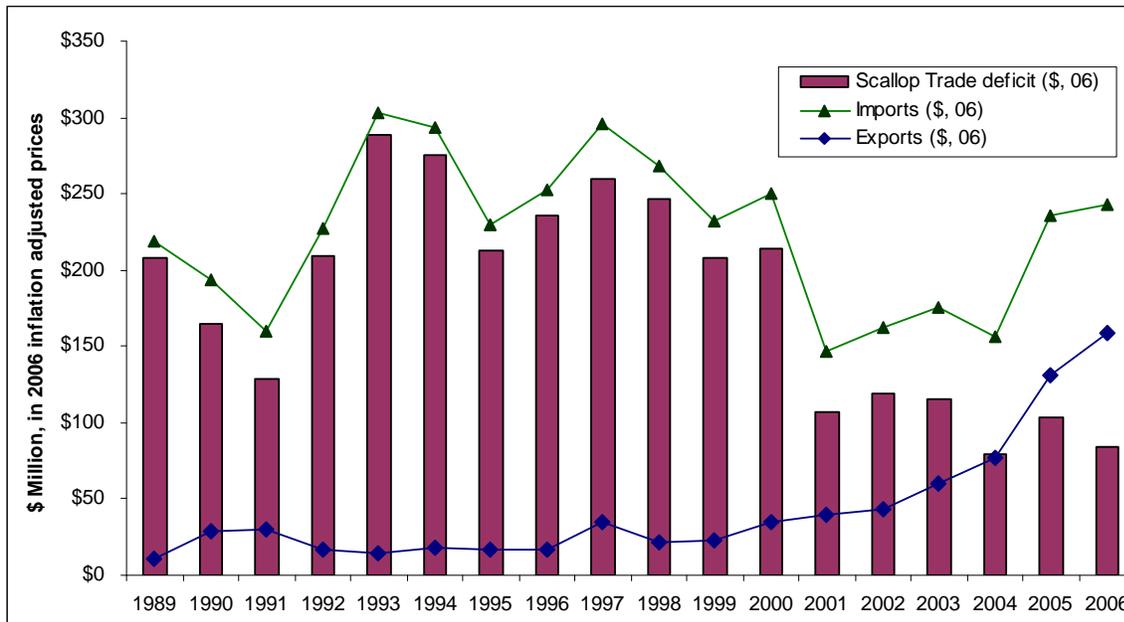


Table 35. Composition of scallop exports (lbs) by price category

Year	Export price of scallops (\$ per lb.)				Grand Total
	<=2	\$2.01-\$4	\$4.01-6.00	>\$6	
1998	5.13%	42.08%	36.08%	16.71%	100.00%
1999	1.53%	43.88%	40.12%	14.46%	100.00%
2000	0.04%	28.10%	47.47%	24.40%	100.00%
2001	0.76%	39.48%	52.69%	7.07%	100.00%
2002	0.37%	35.71%	59.30%	4.62%	100.00%
2003	0.06%	29.73%	63.19%	7.02%	100.00%
2004	0.62%	32.52%	53.91%	12.95%	100.00%
2005	2.82%	24.89%	42.51%	29.78%	100.00%
2006	1.09%	13.11%	50.68%	35.12%	100.00%
2007	0.70%	7.46%	58.19%	33.66%	100.00%

A higher unit price for exports and an increase in the quantity of exports more than tripled the export revenue to an average of \$71 million per year during the 1998-2006 period from about \$21 million per year during the previous periods (Table 32). Scallop exports increased at an even faster rate during after 2004, with an increase in export revenues to \$159 million. As Figure 20 shows, an increase in scallop exports combined with a decline in imports lowered the trade deficit for scallops to \$84 million in 2006, which is less than half of what it was (about \$250 million) in 1997 and 1998.

Figure 20. Scallop exports and imports



4.4.4 Trends in Fishing Costs

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. Restrictions on the number of days-at-sea that vessels can fish in a given year, the number of trips they can take to certain areas, and/or 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.

Variable Costs

Variable and fixed costs for the general category and limited access scallop vessels were updated using the observer cost data for the 2002-2007 period. 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 and expenses on gear and supplies. All the costs were adjusted for inflation and expressed in 2006 prices.

There were a total of 458 observations included in the data for 197 unique vessels with a general category permit. Most of the data were collected in 2005 (247 observations) as shown in **Error! Reference source not found.** 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 that averaged 94 gross tons. However, there has been an increasing trend in the fuel costs and total trip costs per DAS following the increase in fuel prices. For example, average trip costs increased from \$268 per day-at-sea in 2004 to \$487 per day-at-sea in 2006 as fuel prices increased from \$1.50 per gallon in 2004 to \$2.30 per gallon in 2006.

Table 36 - Trip characteristics per general category vessel during 2002-2007 (in 2006 inflation adjusted prices)

Data	Year					
	2002	2003	2004	2005	2006	2007
Number of observed trips	5	6	96	247	96	8
Number of unique vessels	4	4	42	87	54	6
GRT	15	59	59	94	75	78
Horsepower	310	431	424	483	424	525
Crew	3.0	2.5	3.0	3.4	3.0	2.7
DAS per trip	1.3	1.4	1.5	1.7	2.0	2.0
Scallop lb. per trip	317	358	424	376	369	370
Scallop lb. per DA	283	274	247	240	206	209
Average fuel costs per DAS (\$)	58	171	227	317	374	323
Fuel costs as a % of total trip costs	64%	79%	86%	84%	77%	94%
Average of food costs per DAS (\$)	22	31	20	27	31	14
Other trip costs (Ice, water, supply, oil)	13	15	21	33	83	7
Average trip costs per DAS (\$)	93	217	268	376	487	343
Average fuel price (nominal)	1.0	1.0	1.5	2.1	2.3	2.1

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

Table 37 summarizes fishing costs for limited access vessels during 2002-07. 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. Again, there has been an increasing trend in the fuel costs and total trip costs per DAS for limited access vessels as well following the increase in fuel prices. For example, average trip costs increased from \$846 per day-at-sea in 2002 to \$1,350 per day-at-sea in 2006 as fuel prices more than doubled from \$1.00 per gallon in 2002 to \$2.30 per gallon in 2006.

Fishing costs also vary with the vessel gross tonnage, horsepower, and crew size, as shown in Table 38. It seems that there are slight differences in average trip costs for groups of vessels that are in the less than 50 GRT and 50 to 99 GRT groups. The trips costs are significantly higher, however, for limited access vessels that have a 100 GRT or more compared to smaller vessels, mainly because these vessels have almost double the horse power of the smaller vessels. On the other hand, there is only a slight increase for the trips costs of general category vessels with gross

tonnage of 100 or more because the average horsepower for these vessels is only slightly higher than the horsepower of smaller vessels.

Table 37. Trip costs per limited access vessels during 2002-2007 (in 2006 inflation adjusted prices)

Data	Year					
	2002	2003	2004	2005	2006	2007
Number of observed trips	37	74	151	101	106	9
Number of unique vessels	26	49	103	82	86	7
GRT	156	161	151	143	139	151
HP	815	827	792	775	748	798
Crew	7	7	7	6	6	6
DAS per trip	9	12	9	8	7	9
Scallop lb. per trip	12,097	17,239	17,521	15,007	7,714	14,399
Scallop lb. per DA	1,150	1,473	1,925	1,396	819	1,223
Average fuel costs per DAS (\$)	496	601	632	828	922	895
Fuel costs as a % of total trip costs	59%	64%	63%	72%	68%	84%
Average of food costs per DAS (\$)	197	172	177	172	161	86
Other trip costs (Ice, water, supply, oil)	153	165	199	153	267	82
Average total trip costs per DAS (\$)	846	939	1,008	1154	1350	1064
Average fuel price (nominal)	1.0	1.1	1.4	2.1	2.3	2.1

Table 38. Landings and trip costs by gross tonnage during 2005-07 (in 2006 inflation adjusted prices)

Permit category	Data	<50 GRT	50-99 GRT	>=100 GRT	All vessels (2005-07 average)
General category	Number of trips*	28	16	43	87
	Average DA per trip	1.7	1.9	1.9	1.8
	Average gross tonnage	28	74	122	83
	Average horse power	393	442	477	444
	Average crew	2.6	3.4	3.5	3.2
	Average scallop lbs per trip	352	391	378	372
	Average scallop lbs per DA	239	242	234	237
	Average fuel costs per DA	236	331	353	311
	Average total trip costs per DA	435	449	453	446
Limited access	Number of trips*	5	18	79	102
	Average DA per trip	4	6	10	9
	Average gross tonnage	36	80	161	140
	Average horse power	381	446	874	775
	Average crew	5	5	6	6
	Average scallop lbs per trip	2,121	5,178	16,056	13,704
	Average scallop lbs per DA	494	589	1,428	1,254
	Average fuel costs per DA	594	542	1,099	976
	Average total trip costs per DA	894	877	1,553	1,402

* Includes only those trips for which cost data was available. Note that the number of trips will be less than provided in **Error! Reference source not found.** and Table 37.

4.4.4.1.1 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, utilities, interest, and dock expenses. The expenses on insurance, maintenance, repairs and replacement of engine, electrical, and processing equipment, gear, and other equipment have been collected by observer data since 2001 and provided by Economic Analysis Division of Northeast Fisheries Science Center, Woods Hole. The data for these vessels are shown in Table 39 to Table 43.

Average fixed costs were about \$87,864 for general category vessels and \$177,216 for limited access vessels (both in 2006 prices). It must be cautioned that these costs do not include interest payments on mortgages 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. Because of the different sample size and different size of vessels included each year in the cost data, it is not possible to reach a conclusion regarding the trend in these costs based on the averages provided in these Tables. Table 40, Table 42, and Table 43 indicate, however, that the fixed costs are larger for vessels that have a 100 gross tonnage or more compared to smaller vessels.

Table 39. Annual fixed costs for general category scallop vessels by year (In 2006 inflation-adjusted 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 (\$)	18,195	22,704	23,908	25,739	24,512
Maintenance (\$)	32,321	27,204	33,311	30,343	31,377
Repairs and replacement (\$)	36,691	33,573	34,951	28,209	31,975
Total fixed cost (\$)	87,206	83,481	92,170	84,293	87,864

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

Table 40. Annual fixed costs of active general category vessels by ton class (in 2006 inflation-adjusted 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 (\$)	9,442	24,811	38,946	42,042	24,512
Repairs (\$)	15,773	35,542	47,703	38,573	31,377
Insurance (\$)	24,840	25,946	47,528	33,724	31,975
Total fixed cost (\$)	50,055	86,297	134,178	114,339	87,864

Table 41. Annual fixed costs for limited access scallop vessels by year (in 2006 inflation-adjusted 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 (\$)	35,006	53,684	55,577	56,290	52,978
Maintenance (\$)	62,776	74,665	43,116	62,031	58,092
Repairs and replacement (\$)	72,916	96,815	65,435	40,306	66,146
Total fixed cost (\$)	170,699	225,162	164,129	158,627	177,216

Table 42. Annual fixed costs of limited access scallop vessels by ton class (2002-05 average, in 2006 inflation-adjusted 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 (\$)	25,691	48,140	59,960	52,978
Repairs (\$)	30,817	57,307	62,242	58,092
Insurance (\$)	115,453	55,726	66,909	66,146
Total fixed cost (\$)	171,960	161,174	189,110	177,216

Table 43. Annual fixed costs of full-time limited access scallop vessels by ton class (2002-05 average, 2006 inflation adjusted prices)

Data	101-150 GRT	>150	Grand Total
Number of vessels	28	50	78
GRT	130	175	159
HP	715	889	827
Maintenance (\$)	52,962	59,988	57,466
Repairs (\$)	56,855	58,855	58,136
Insurance (\$)	64,907	60,301	61,955
Total fixed cost (\$)	174,723	179,144	177,557

4.4.5 The trends in the scallop permits, landings and revenue by permit category

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 pound 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) not have more than one dredge on board or in use; and (3) have no more than five people, including the operator, on board (NEFMC 2003).

The number of limited access vessels increased from 317 in 1997 to 375 in 2006 (Table 17); the number of general category vessels increased from 2002 in 1997 to 2711 in 2006.

Table 44. Scallop Permits by Application Year

Permit category	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007*
Full-time	204	203	213	220	224	234	238	242	248	258	252
Full-time small dredge	3	2	1	3	13	25	39	48	57	61	57
Full-time net boat	27	23	16	17	16	16	16	15	19	15	12
Total full-time	234	228	230	240	253	275	293	305	324	334	321
Part-time	16	11	12	16	14	14	10	4	3	3	2
Part-time small dredge	9	7	3	4	6	8	19	26	30	37	32
Part-time trawl	30	27	22	20	18	10	8	3	-	-	-
Total part-time	55	45	37	40	38	32	37	33	33	40	34
Occasional	2	3	4	4	5	4	3	3	1	1	1
Occasional trawl	24	19	20	16	19	15	8	5	5	-	-
Total occasional	26	22	24	20	24	19	11	8	6	1	1
Total Limited access	315	295	291	300	315	326	342	346	363	375	356
General category	2002	1939	2096	2263	2378	2512	2574	2827	2950	2711	2336

* Updated as of Aug. 2007

Table 45. Other Fishery Management Plan permits held FY 2006, by scallop fishing category

Scallop Permit Category	Bluefish	Black Sea Bass	Dogfish	Summer Flounder	Herring	Lobster	Multi-species	Monkfish
General Category: VMS	80.1	25.3	80.5	34.9	69.1	48.8	75.8	85.5
Fulltime Dredge	88.5	31.2	94.9	84.2	73.1	65.2	94.5	98.8
Parttime or Occasional Dredge	66.7	66.7	66.7	66.7	33.3	100.0	100.0	66.7
Fulltime Small Dredge	96.3	57.4	96.3	85.2	87.0	57.4	100.0	98.1
Parttime Small Dredge	90.6	68.8	100.0	90.6	75.0	46.9	75.0	100.0
Fulltime Net	100.0	83.3	100.0	100.0	83.3	50.0	91.7	100.0
Scallop Permit Category	Ocean Quahog	Scup	Surf Clam	Red Crab	Skates	Tilefish	Squid-Mackerel-Butterfish	
General Category: VMS	57.5	28.6	59.2	54.3	78.1	67.1	78.7	
Fulltime Dredge	79.8	27.7	82.2	68.0	86.2	83.4	90.9	
Parttime or Occasional Dredge	33.3	66.7	33.3	33.3	100.0	33.3	66.7	
Fulltime Small Dredge	75.9	64.8	75.9	79.6	87.0	90.7	96.3	
Parttime Small Dredge	75.0	68.8	75.0	78.1	78.1	84.4	96.9	
Fulltime Net	58.3	75.0	58.3	83.3	83.3	91.7	100.0	

Table 46 summarize the vessel size distribution for vessels with limited access permits and Table 47 for vessels with general category permits over time (length and gross tonnage).

Table 46. Vessel size distribution for limited access vessels.

LENGTH	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Large	287	287	266	251	244	244	249	256	262	273	283	294	305
Medium	64	55	56	52	43	40	43	48	49	51	47	52	51
Small	17	10	10	9	8	7	8	11	15	17	16	17	19
GRT	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Less than or equal to 50	28	18	17	15	12	9	11	13	18	20	18	21	26
Between 50-100	49	48	50	48	41	38	35	42	41	44	44	47	49
Between 100-150	125	123	111	106	98	100	108	110	116	123	125	136	141
Between 150-175	75	74	69	62	64	64	63	66	65	69	74	73	75
Greater than 175	91	89	85	81	80	80	83	84	86	85	85	86	84

Source: vessel permit information.

Table 47. Vessel size distribution for general category vessels.

LENGTH	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Large	317	308	295	300	258	261	273	288	298	310	354	401	391
Medium	401	396	383	385	363	379	388	392	392	400	425	441	411
Small	1274	1370	1325	1317	1318	1456	1602	1698	1822	1864	2048	2031	1908
GRT	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Less than or equal to 50	1421	1515	1468	1465	1454	1597	1750	1845	1968	2013	2214	2205	2065
Between 50-100	245	238	229	226	218	223	233	241	240	249	268	270	267
Between 100-150	213	209	203	197	169	172	172	180	188	196	222	267	251
Between 150-175	65	68	62	68	57	61	61	60	59	58	61	65	59
Greater than 175	48	44	41	46	41	40	43	48	55	56	59	64	67

There were 2,711 general category permits (compared to 375 limited access permits) issued in fishing year 2006. While the limited access fleet consists mainly of large, full-time dredge vessels (on average 78 feet long and 138 GRT), the vessels with general category permits are predominantly small ones under 50 ft in length (Table 47).

Table 48 shows scallop landings and revenue by permit category for 2004 to 2007 fishing years. Although a major proportion of scallops are landed by limited access vessels, the share of general category fleet in total scallop landings increased from 4.6% in 2004 to 11.6% in the 2006 fishing year. This is both because of the increase in the number of general category vessels from 423 vessels in 2004 to 643 in 2006 and the increase in average scallop landings per vessel from over 6,500 pounds in 2004 to over 10,000 pounds in 2006.

About 361 active limited access vessels have landed scallops under limited access in 2006 as compared to 345 in 2005 and 330 in 2004 (Table 20). That number includes all three permit categories (full-time, part-time and occasional). The number of individual trips was over 4,700 in 2004 and rose to over 5,865 in the 2006 fishing year. Average revenue per vessel was about 1.0 million dollars in 2005, but declined to \$881,990 in 2006 due to the decline in ex-vessel scallop prices from about \$7.70 in 2005 to about \$6.50 in 2006.

Table 48– Scallop landings and revenues by fishing year and permit category

Permit Plan	Data	2004	2005	2006	2007*
General Category	Number of vessels	432	619	643	420
	Total number of trips	9,011	22,032	19,586	8,956
	Scallop pounds per vessel	6,553	11,493	10,119	7,229
	Average scallop revenue per vessel	35,688	90,149	66,785	43,959
	Percentage of total scallop landings	4.6%	13.3%	11.6%	7.9%
	Total scallop landings	2,831,030	7,113,906	6,506,536	3,036,025
	Total scallop revenue (in 2006 prices)	14,706,711	54,515,676	42,942,441	17,872,099
	Ex-vessel price (\$)	5.6	7.7	6.7	6.0
Limited Access**	Number of vessels	330	345	361	344
	Total number of trips	4,734	6,127	5,865	3,236
	Scallop pounds per vessel	178,534	134,533	136,799	103,185
	Average scallop revenue per vessel	954,937	1,067,809	881,990	643,295
	Percentage of total scallop landings	95.4%	86.7%	88.4%	92.1%
	Total scallop landings	58,916,306	46,413,953	49,384,434	35,495,507
	Total scallop revenue (in 2006 prices)	300,599,614	359,901,435	318,398,389	221,320,197
	Ex-vessel price (\$)	5.1	7.8	6.4	6.2
All Vessels	Total scallop landings	61,747,336	53,527,859	55,890,970	38,531,532
	Total scallop revenue	315,306,325	414,417,111	361,340,830	239,192,296
	Total Scallop revenue (in 2006 prices)	330,546,695	424,196,225	361,340,830	230,820,566
	Ex-vessel price (\$)	5.1	7.7	6.5	6.2
	Ex-vessel price (in 2006 prices)	5.4	7.9	6.5	6.0

*Preliminary estimates from March to July 2007.

** Includes general category trips by limited access vessels.

Table 49. The number of limited access vessels by permit and gross tonnage category

Fish Year	Permit category	<=50 GRT	51-100	101-150	>150	Grand Total
2004	Full-time dredge	4	12	76	146	238
	Full-time small dredge	4	17	23	6	50
	Full-time trawl		3	9		12
	Part-time dredge			2		2
	Part-time small dredge	4	12	10		26
	Occasional dredge	1				1
	Occasional trawl			1		1
2004 Total		13	44	121	152	330
2005	Full-time dredge	2	13	81	145	241
	Full-time small dredge	6	19	26	5	56
	Full-time trawl		3	12		15
	Part-time dredge			2		2
	Part-time small dredge	6	13	12		31
2005 Total		14	48	133	150	345
2006	Full-time dredge	3	13	84	147	247
	Full-time small dredge	6	22	26	5	59
	Full-time trawl		3	12	1	16
	Part-time dredge			3		3
	Part-time small dredge	6	14	15	1	36
2006 Total		15	52	140	154	361
2007	Full-time dredge	3	12	80	144	239
	Full-time small dredge	6	20	24	5	55
	Full-time trawl		3	11	1	15
	Part-time dredge			2		2
	Part-time small dredge	5	13	13	1	32
	Occasional trawl			1		1
2007 Total		14	48	131	151	344

Table 50. Scallop landings per vessel (lb) by permit and gross tonnage category

Fish Year	Permit category	<=50 GRT	51-100	101-150	>150	Grand Total
2004	Full-time dredge	103,887	143,772	211,036	212,181	206,547
	Full-time small dredge	110,317	113,280	143,805	110,020	126,693
	Full-time trawl		145,497	182,779		173,459
	Part-time dredge			NA		NA
	Part-time small dredge	14,919	57,373	38,904		43,738
2005	Full-time dredge	91,523	127,287	151,889	165,915	158,500
	Full-time small dredge	59,660	86,836	95,817	97,960	89,087
	Full-time trawl		121,600	92,823		98,578
	Part-time dredge			NA		NA
	Part-time small dredge	35,597	50,137	54,125		48,867
2006	Full-time dredge	60,123	143,069	161,591	170,547	164,714
	Full-time small dredge	90,192	67,814	111,973	127,962	94,646
	Full-time trawl		126,041	82,279	NA	NA
	Part-time dredge			NA		NA
	Part-time small dredge	43,514	42,533	36,989	39,996	40,316
2007	Full-time dredge	100,386	112,291	115,971	119,236	117,558
	Full-time small dredge	80,468	91,079	88,790	83,522	88,236
	Full-time trawl		98,430	74,859	NA	NA
	Part-time dredge			NA		NA
	Part-time small dredge	28,909	39,317	35,838	37,679	36,226

NA: The information is not shown to protect confidentiality of data.

Data for occasional vessels are not shown for the same reason.

Table 51. Composition of scallop landings (lb) by permit and gross tonnage category

Fish Year	Permit category	<=50 GRT	51-100	101-150	>150	Grand Total
2004	Full-time dredge	1%	3%	27%	53%	83%
	Full-time small dredge	1%	3%	6%	1%	11%
	Full-time trawl	NA	NA	3%	NA	4%
	Part-time small dredge	0%	1%	1%	0%	2%
2005	Full-time dredge	0%	4%	27%	52%	82%
	Full-time small dredge	1%	4%	5%	1%	11%
	Full-time trawl	NA	NA	2%	NA	3%
	Part-time small dredge	0%	1%	1%	0%	3%
2006	Full-time dredge	0%	4%	27%	51%	82%
	Full-time small dredge	1%	3%	6%	1%	11%
	Full-time trawl	NA	NA	2%	NA	3%
	Part-time small dredge	1%	1%	1%	0%	3%
2007	Full-time dredge	1%	4%	26%	48%	79%
	Full-time small dredge	1%	5%	6%	1%	14%
	Full-time trawl	NA	NA	2%	NA	3%
	Part-time small dredge	0%	1%	1%	0%	3%

NA: The information is not shown to protect confidentiality of data.

Data for occasional and part-time dredge vessels are not shown for the same reason.

Table 52. The number of limited access vessels by permit category and by primary area of landings

Fish Year	Permit category	Mid-Atlantic	New England	Grand Total
2004	Full-time dredge	109	129	238
	Full-time small dredge	30	20	50
	Full-time trawl	12		12
	Part-time dredge	2		2
	Part-time small dredge	21	5	26
	Occasional dredge		1	1
	Occasional trawl	1		1
2004 Total		175	155	330
2005	Full-time dredge	111	130	241
	Full-time small dredge	32	24	56
	Full-time trawl	15		15
	Part-time dredge	2		2
	Part-time small dredge	25	6	31
2005 Total		185	160	345
2006	Full-time dredge	117	130	247
	Full-time small dredge	32	27	59
	Full-time trawl	16		16
	Part-time dredge	3		3
	Part-time small dredge	28	8	36
2006 Total		196	165	361
2007	Full-time dredge	115	124	239
	Full-time small dredge	29	26	55
	Full-time trawl	15		15
	Part-time dredge	2		2
	Part-time small dredge	25	7	32
	Occasional trawl	1		1
2007 Total		187	157	344

Table 53. The scallop landings by permit category and by primary area of landings

Fish Year	Permit category	Mid-Atlantic	New England	Grand Total
2004	Full-time dredge	22,972,334	26,185,738	49,158,072
	Full-time small dredge	4,030,217	2,304,440	6,334,657
	Full-time trawl	2,081,502		2,081,502
	Part-time and Occasional	1,076,936	265,139	1,342,075
2004 Total		30,160,989	28,755,317	58,916,306
2005	Full-time dredge	16,756,538	21,441,948	38,198,486
	Full-time small dredge	2,985,517	2,003,365	4,988,882
	Full-time trawl	1,478,676		1,478,676
	Part-time and Occasional	1,505,979	241,930	1,747,909
2005 Total		22,726,710	23,687,243	46,413,953
2006	Full-time dredge	18,356,300	22,328,060	40,684,360
	Full-time small dredge	3,024,868	2,559,275	5,584,143
	Full-time trawl	1,491,190		1,491,190
	Part-time and Occasional	1,365,391	259,350	1,624,741
2006 Total		24,237,749	25,146,685	49,384,434
2007	Full-time dredge	13,322,454	14,773,883	28,096,337
	Full-time small dredge	2,610,523	2,242,430	4,852,953
	Full-time trawl	1,217,170		1,217,170
	Part-time and Occasional	1,091,004	238,043	1,329,047
2007 Total		18,241,151	17,254,356	35,495,507

Table 54. Average scallop revenue and vessels characteristics by permit category

Fish Year	Permit category	Number of vessels	Average GRT	Average HP	Average Scallop revenue per vessel (2006 prices)
2004	Full-time dredge	238	157	842	1,113,145
	Full-time small dredge	50	109	506	664,941
	Full-time trawl	12	116	488	855,815
	Part-time and Occasional	30	88	425	222,791
2004 Total		330	142	740	954,937
2005	Full-time dredge	241	157	837	1,256,798
	Full-time small dredge	56	104	576	717,229
	Full-time trawl	15	122	486	765,286
	Part-time and Occasional	33	90	428	420,051
2005 Total		345	140	741	1,067,809
2006	Full-time dredge	247	156	840	1,071,127
	Full-time small dredge	59	103	573	585,910
	Full-time trawl	16	122	482	584,742
	Part-time and Occasional	39	95	497	253,986
2006 Total		361	139	744	881,990
2007	Full-time dredge	239	157	845	735,363
	Full-time small dredge	55	103	584	552,082
	Full-time trawl	15	121	478	462,665
	Part-time and Occasional	35	96	507	223,001
2007 Total		344	140	753	643,295

Table 55. General category scallop landings and vessel characteristics by primary region of landings

Fish Year	Data	Mid-Atlantic	New England	Grand Total
2004	Number of vessels	209	223	432
	Average number of trips per vessel	27	15	21
	Average annual scallop landings per vessel (lb.)	9,159	4,112	6,553
	Average annual scallop revenue per vessel (lb.)	49,271	22,959	35,689
	Average gross tonnage	77	73	75
	Average horse power	485	424	454
	Average number of crew	3.6	3.8	4
	Total scallop landings (lb.)	1,914,150	916,880	2,831,030
	2005	Number of vessels	331	288	619
Average number of trips per vessel		48	21	36
Average annual scallop landings per vessel (lb.)		16,016	6,294	11,493
Average annual scallop revenue per vessel (lb.)		123,868	51,395	90,149
Average gross tonnage		71	61	67
Average horse power		480	398	442
Average number of crew		3.5	3.7	4
Total scallop landings (lb.)		5,301,365	1,812,541	7,113,906
2006		Number of vessels	337	306	643
	Average number of trips per vessel	40	20	30
	Average annual scallop landings per vessel (lb.)	13,438	6,464	10,119
	Average annual scallop revenue per vessel (lb.)	87,665	43,789	66,785
	Average gross tonnage	75	63	69
	Average horse power	495	411	455
	Average number of crew	3.6	3.7	4
	Total scallop landings (lb.)	4,528,579	1,977,957	6,506,536
	2007	Number of vessels	202	218	420
Average number of trips per vessel		29	14	21
Average annual scallop landings per vessel (lb.)		10,057	4,608	7,229
Average annual scallop revenue per vessel (lb.)		54,461	28,649	41,063
Average gross tonnage		75	67	71
Average horse power		496	423	458
Average number of crew		3.7	3.7	4
Total scallop landings (lb.)		2,031,532	1,004,493	3,036,025

Table 56. General category scallop landings and vessels characteristics by gross tonnage

Fish year	Data	<-50 GRT	51-100 GRT	101-150 GRT	>150 GRT	Grand Total
2004	Number of vessels	194	86	109	43	432
	Average number of trips per vessel	26	20	17	12	21
	Average annual scallop landings per vessel (lb.)	7,814	6,445	5,770	3,066	6,553
	Average annual scallop revenue per vessel (lb.)	43,112	34,690	31,036	15,990	35,689
	Average gross tonnage	25	77	125	172	75
	Average horse power	341	429	528	821	454
	Average number of crew	3	4	4	5	4
	Total scallop landings (lb.)	1,515,980	554,237	628,964	131,849	2,831,030
2005	Number of vessels	324	108	142	45	619
	Average number of trips per vessel	35	37	38	31	36
	Average annual scallop landings per vessel (lb.)	11,151	11,850	12,898	8,659	11,493
	Average annual scallop revenue per vessel (lb.)	87,367	93,193	101,473	67,137	90,149
	Average gross tonnage	23	76	124	173	67
	Average horse power	361	418	518	837	442
	Average number of crew	3	4	4	5	4
	Total scallop landings (lb.)	3,612,900	1,279,786	1,831,545	389,675	7,113,906
2006	Number of vessels	322	113	161	47	643
	Average number of trips per vessel	30	32	33	21	30
	Average annual scallop landings per vessel (lb.)	9,591	11,291	11,444	6,376	10,119
	Average annual scallop revenue per vessel (lb.)	63,540	74,478	75,245	41,530	66,785
	Average gross tonnage	24	78	124	171	69
	Average horse power	374	436	521	832	455
	Average number of crew	3	4	4	5	4
	Total scallop landings (lb.)	3,088,419	1,275,889	1,842,544	299,684	6,506,536
2007	Number of vessels	211	66	111	32	420
	Average number of trips per vessel	22	25	21	14	21
	Average annual scallop landings per vessel (lb.)	6,901	9,089	7,764	3,697	7,229
	Average annual scallop revenue per vessel (lb.)	38,565	49,648	46,092	22,386	41,063
	Average gross tonnage	24	78	126	172	71
	Average horse power	372	451	517	843	458
	Average number of crew	3	4	4	5	4
	Total scallop landings (lb.)	1,456,058	599,856	861,794	118,317	3,036,025

The composition of landings by annual pounds landed is shown in Figure 21 for general category vessels and in Figure 22 for limited access vessels. Figure 21 indicates the number of general category vessels landing scallops and those landing 10,000 pounds or more increased significantly after 2000. The majority of general category vessels landed less than 10,000 pounds per year, however, during 1994-2006. In contrast, the majority of the limited access vessels landed more than 100,000 pounds after 2000 (Figure 22).

Figure 21. General category vessel annual landings of scallops by vessel, 1994-2007.

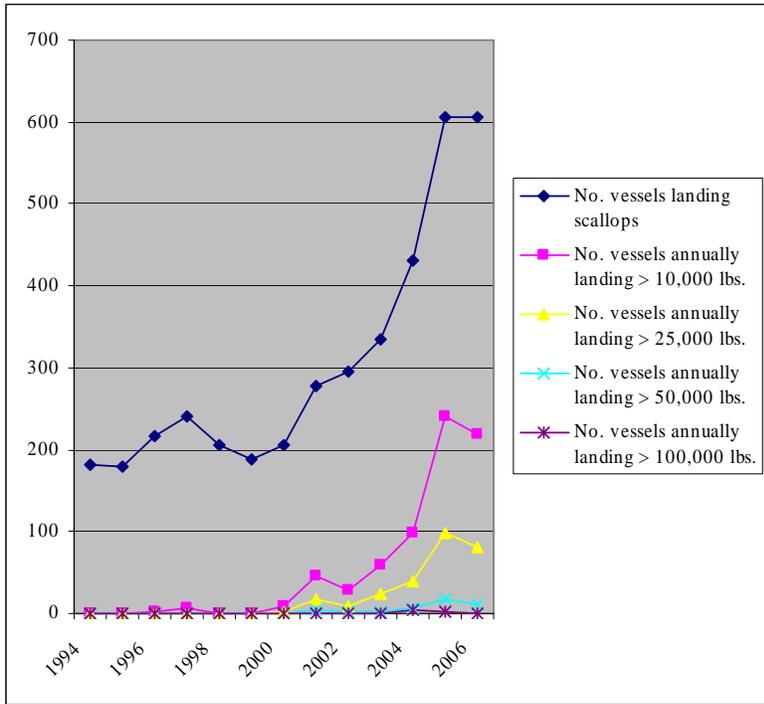
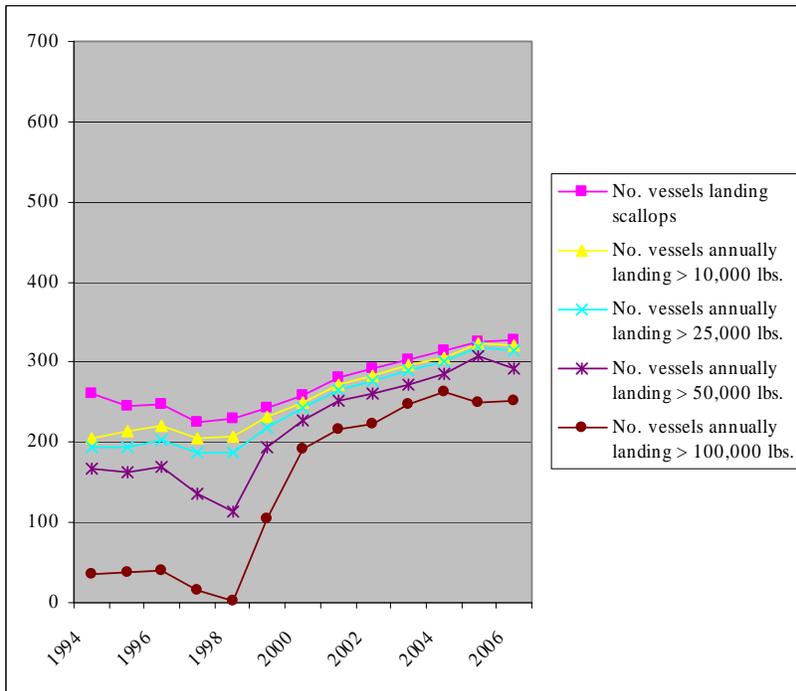


Figure 22. Limited access vessel annual landings of scallops by vessel, 1994-2007.



4.4.6 The Trends in fishing by gear type

Table 57 through Table 59 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. Most general category effort is and has been from vessels using scallop dredge and other trawl gear (Table 57). 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 58). Scallop landings with other trawl gear were 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 59 shows the percent of general category landings by primary gear per year.

Table 57. 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
2005	313	34	66	213	1	627
2006	377	31	66	168	14	656

Table 58. 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
2005	4,537,769	199,673	769,739	768,531	863	6,276,575
2006	5,617,638	206,799	599,779	421,529	9,499	6,855,244

Table 59. 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%
2005	72.30%	3.20%	12.30%	12.20%	0.00%	100.00%
2006	81.90%	3.00%	8.70%	6.10%	0.10%	100.00%

4.4.7 Trends in scallop landings by port

The landed value of scallops by port landing fluctuated from 1994 through 1998 for many ports. During this time, four ports brought in the most landed value: New Bedford, MA; Cape May, NJ; Newport News, VA; and Hampton, VA (Table 60). In addition to bringing in the most landed value, in 1994, scallop landings represented more than 30% of the total landed value for New Bedford, MA and Cape May, NJ, and more than 65% of the total landed value for Newport News and Hampton, VA (Table 61). This has increased in 2006 to 79% and 64% for New Bedford, MA and Cape May, NJ, respectively, and 96% and 82% for Newport News and Hampton, VA, respectively.

Landed value increased steadily throughout the next period from 1999-2005; however, 53% of the ports experienced a decline in the landed value in 2006 (29). Of these, though, only 34% saw a decrease in the percentage of landed scallop value to total landed value (30).

Between 2003 and 2005, 10 ports increased their landed value for scallops, many from \$0, most likely because of an increase in the general category vessels. The average landed value has increased from \$2 million in 1994 to a peak of \$12 million in 2005. In 2006, the average landed value decreased to \$10 million.

Table 60. Landed value of scallops (in thousands of dollars) by port of landing, FY 1994-2006

Port	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
New Bedford MA (Bristol county)	30981	36553	48436	45514	34687	70554	88491	80357	96011	104664	150121	206947	202511
Newport News VA (Newport News City)	9289	11917	13457	11173	11275	15207	23092	25535	30494	37361	48424	39468	22277
Cape May NJ (Cape May county)	9360	8874	8656	6945	5588	9765	14158	18626	20237	28530	46532	51432	20487
Barnegat Light/Long Beach NJ (Ocean county)	2653	2727	3007	3105	2693	3946	6733	6753	8071	10021	15641	21070	16863
Newport RI (Newport county)	23	229	101	784	534	447	700	0	3	X*	1382	8412	13022
Seaford VA (York county)	0	0	0	5553	4543	6540	11168	10465	11841	13043	18572	16364	11601
Fairhaven MA (Bristol county)	0	0	0	0	0	0	0	0	0	0	0	5280	10103
Hampton VA (Hampton City)	12425	7863	6346	3258	4557	5084	8289	9195	13803	19012	19981	14172	9064
Point Judith RI (Washington county)	1	58	4	7	X*	242	734	596	83	274	622	4645	7374
Chincoteague VA (Accomack county)	2	0	0	0	X*	7	210	803	1115	1957	4058	11884	7272
Point Pleasant NJ (Ocean county)	315	532	1401	2207	1590	1854	3784	3197	3530	3973	3523	8584	6966
Ocean City MD (Worcester county)	11	24	43	5	X*	25	118	79	99	212	527	4871	5433
Stonington CT (New London county)	0	0	232	2573	2717	3302	3459	4944	5669	7463	10363	7402	4561
Chatham MA (Barnstable county)	0	0	X*	0	0	0	X*	588	117	409	1925	2997	3083
Wildwood NJ (Cape May county)	7	X*	X*	0	X*	0	120	1246	2056	2194	3557	3943	2088
Montauk NY (Suffolk county)	X*	X*	X*	X*	0	7	6	8	0	1	435	1367	1828
Atlantic City NJ (Atlantic county)	15	1	0	0	1	0	0	X*	0	0	382	2308	1718
Avalon NJ (Cape May county)	0	0	0	0	0	0	0	0	0	0	0	X	1457
New London CT (New London county)	0	0	0	0	0	843	817	943	886	1026	1203	1736	1425
Provincetown MA (Barnstable county)	45	24	92	97	114	57	120	2130	540	648	637	1688	993
Hampton Bays NY (Suffolk county)	X*	5	5	22	6	53	426	454	94	157	535	1588	835
Gloucester MA (Essex county)	X*	X*	232	357	104	161	1014	1543	783	557	682	1217	812
Jonesport ME (Washington county)	770	247	230	184	114	113	299	392	294	29	0	0	576
Barnstable MA (Barnstable county)	0	0	0	0	0	0	0	0	0	0	31	184	565
Hyannisport MA (Barnstable county)	0	0	0	0	0	0	0	0	0	0	30	648	415
Islip NY (Suffolk county)	0	0	0	0	0	0	0	0	0	0	0	286	326
Sandwich MA (Barnstable county)	23	37	284	128	243	213	157	218	249	266	136	243	325
Engelhard NC (Hyde county)	0	0	0	0	0	X*	X*	X*	0	140	22	124	311
Oriental NC (Pamlico county)	0	0	0	0	16	5	4	87	6	29	359	306	222
Shinnecock NY (Suffolk county)	0	0	0	0	0	0	0	0	0	0	X*	317	210
Nantucket MA (Nantucket county)	5	0	8	X*	1	0	X	0	X*	2	58	282	183
Beaufort NC (Carteret county)	0	0	0	106	212	X*	51	4	217	282	302	111	167
Wanchese NC (Dare county)	0	0	0	X*	0	31	64	1350	1023	262	382	75	124
Harwich Port MA (Barnstable county)	0	0	0	0	0	0	0	592	110	318	245	770	115
Indian River DE (Sussex county)	0	0	0	0	0	0	0	0	0	0	0	X*	114
Hampton NH (Rockingham county)	0	0	0	0	0	0	0	0	0	17	0	0	X

* Includes only ports of landings with landed value of scallops in excess of \$100,000 during FY2006. X is greater than 100,000 but less than 1.25 million, X* = less than 70,000. Data run August 2, 2007, based on dealer weighout data YTD.

Table 61. Percentage of landed value of scallops to total landed value by port of landing, FY 1994-2006

Homeport	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
New Bedford MA (Bristol county)	39	41	45	44	36	53	57	53	58	58	70	75	79
Newport News VA (Newport News City)	67	71	76	73	73	79	86	84	89	92	92	94	96
Cape May NJ (Cape May county)	33	33	35	29	23	44	59	68	69	76	75	76	64
Barnegat Light/Long Beach NJ (Ocean county)	28	29	32	30	26	30	47	47	57	60	73	78	75
Newport RI (Newport county)	0	2	1	10	7	5	8	0	0	0	16	59	67
Seaford VA (York county)	0	0	0	95	94	98	99	100	100	100	100	100	100
Fairhaven MA (Bristol county)	0	0	0	0	0	0	0	0	0	0	0	65	90
Hampton VA (Hampton City)	71	66	63	47	55	61	73	75	82	83	76	74	82
Point Judith RI (Washington county)	0	0	0	0	0	0	2	2	0	1	2	12	18
Chincoteague VA (Accomack county)	0	0	0	0	0	0	10	33	39	47	54	74	75
Point Pleasant NJ (Ocean county)	2	5	10	13	10	10	21	17	18	18	19	39	36
Ocean City MD (Worcester county)	0	0	1	0	0	0	2	1	1	3	1	42	48
Stonington CT (New London county)	0	0	24	39	38	35	36	52	67	77	82	71	70
Chatham MA (Barnstable county)	0	0	0	0	0	0	1	5	1	4	17	19	19
Wildwood NJ (Cape May county)	0	0	0	0	0	0	3	21	32	32	51	82	75
Montauk NY (Suffolk county)	0	0	0	0	0	0	0	0	0	0	3	9	13
Atlantic City NJ (Atlantic county)	0	0	0	0	0	0	0	0	0	0	2	12	8
Avalon NJ (Cape May county)	0	0	0	0	0	0	0	0	0	0	0	99	99
New London CT (New London county)	0	0	0	0	0	21	32	24	21	22	21	29	36
Provincetown MA (Barnstable county)	2	1	4	4	4	2	3	38	13	19	18	35	29
Hampton Bays NY (Suffolk county)	0	0	0	0	0	1	4	5	1	2	8	23	13
Gloucester MA (Essex county)	0	0	1	1	0	1	2	4	2	1	2	2	2
Jonesport ME (Washington county)	39	16	4	3	2	2	3	3	2	0	0	0	3
Barnstable MA (Barnstable county)	0	0	0	0	0	0	0	0	0	0	2	11	29
Hyannisport MA (Barnstable county)	0	0	0	0	0	0	0	0	0	0	9	19	20
Islip NY (Suffolk county)	0	.	0	0	0	0	0	0	0	0	0	44	33
Sandwich MA (Barnstable county)	1	1	8	3	9	6	3	4	4	4	2	4	8
Engelhard NC (Hyde county)	0	0	0	0	0	0	0	2	0	5	1	5	10
Oriental NC (Pamlico county)	0	0	0	0	1	0	0	5	0	2	16	21	10
Shinnecock NY (Suffolk county)	0	0	0	0	0	0	0	0	0	0	4	45	34
Nantucket MA (Nantucket county)	8	1	3	1	1	0	15	0	0	0	9	19	12
Beaufort NC (Carteret county)	0	0	0	3	6	1	1	0	6	9	8	4	7
Wanchese NC (Dare county)	0	0	0	1	0	0	0	13	11	3	3	1	1
Harwich Port MA (Barnstable county)	0	0	0	0	0	0	0	9	2	14	11	25	6
Indian River DE (Sussex county)	0	0	0	0	0	0	0	0	0	0	0	11	23
Hampton NH (Rockingham county)	0	0	0	0	0	0	0	0	0	14	0	0	40

* Includes only ports of landings with landed value of scallops in excess of \$100,000 during FY2006. X is greater than 100,000 but less than 1.25 million, X* = less than 70,000. Data run August 2, 2007, based on dealer weighout data YTD.

Table 62. Landed Value of scallops, linked to Vessel Homeport, ranked by fishing year 2006.

Homeport	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
New Bedford MA (Bristol county)	28300	32429	39317	31568	25804	44363	59779	65543	78765	88962	126100	158056	138351
Cape May NJ (Cape May county)	6979	7453	7528	7957	5876	10546	16725	17891	23178	30267	46348	63403	56850
Newport News VA (Newport News City)	1840	2250	2547	3263	3495	9017	12438	14089	16328	16788	22516	24329	20483
Barnegat Light NJ (Ocean county)	3041	3370	3297	2821	2335	4409	6676	6978	7811	9853	15276	19068	16060
Norfolk VA (Norfolk (City) county)	14803	15818	16234	14093	10970	14765	18015	14287	16563	17464	20099	13890	11031
New Bern NC (Craven county)	X	X	X	X	837	2322	2650	3292	4235	6431	7885	7751	8084
Fairhaven MA (Bristol county)	2708	3245	4453	4318	3720	6776	11669	6628	7133	7214	9021	10669	7925
Point Pleasant NJ (Ocean county)	953	977	1179	1504	1016	1386	2232	2374	2588	2938	3900	6841	6185
Hampton VA (Hampton City)	4113	4413	4001	3014	2602	3704	4998	4103	4318	3742	6815	3573	5320
Wanchese NC (Dare county)	46	14	3	1	485	1	816	2769	3378	4401	5708	6652	5054
Oriental NC (Pamlico county)	X	X	174	X	890	1627	1776	1260	2059	3688	4399	7190	4582
Lowland NC (Pamlico county)	6	120	445	0	X	963	1466	1786	2176	2897	3834	6106	4379
New London CT (New London county)	0	0	0	0	0	0	X	0	0	X	X	2296	4131
Point Judith RI (Washington county)	4	2	X	9	3	182	2099	530	78	263	335	2951	3867
Atlantic City NJ (Atlantic county)	X	X	X	X	X	0	X	X	0	2	101	3634	3135
Atlantic NC (Carteret county)	0	X	X	930	971	1357	1731	2075	2008	2285	3071	4026	2921
Seaford VA (York county)	X	X	X	0	0	0	0	X	2399	3452	3874	4551	2672
Cape Canaveral FL (Brevard county)	X	X	X	X	X	X	X	X	XX	1673	2380	3648	2552
Barnstable MA (Barnstable county)	2227	1968	1368	650	396	384	891	939	970	798	1152	2009	2509
Aurora NC (Beaufort county)	X	X	X	X	X	X	X	X	X	XX	XX	XX	XX
Carrollton VA (Isle Of Wight county)	X	X	X	X	X	XX	XX	XX	XX	XX	XX	XX	XX
Ocean City MD (Worcester county)	X	11	1	X	0	X	7	23	27	14	726	1814	1702
Wildwood NJ (Cape May county)	4	5	149	X	X	X	805	1001	843	792	1855	2464	1529
Chatham MA (Barnstable county)	0	0	0	0	0	X	0	296	42	273	233	1285	1493
Bedford MA (Middlesex county)	X	X	X	X	X	X	X	XX	X	XX	XX	XX	XX
Bayboro NC (Pamlico county)	X	X	X	X	X	X	X	671	998	1512	2141	808	1235
Southwest Harbor ME (Hancock county)	168	405	520	482	282	763	1086	590	529	674	X	XX	XX
Gloucester MA (Essex county)	171	11	317	372	251	986	636	597	757	846	1681	2261	1209
Engelhard NC (Hyde county)	0	0	0	0	0	0	0	X	X	X	541	1588	1117
Manahawkin NJ (Ocean county)	0	0	0	0	0	0	0	0	0	0	0	XX	XX
Bass Harbor ME (Hancock county)	X	X	X	338	226	X	X	X	554	787	1051	XX	XX
Jacksonville FL (Duval county)	X	0	0	X	X	X	X	X	X	0	X	1414	XX
Swan Quarter NC (Hyde county)	0	0	X	X	X	X	827	X	X	749	1509	2772	944
Provincetown MA (Barnstable county)	15	27	72	86	36	72	96	2168	676	351	391	1492	883

county)													
Beaufort NC (Carteret county)	42	X	X	X	0	X	X	244	256	67	289	1954	881
Poquoson VA (Poquoson City)	0	0	0	0	0	X	X	X	X	XX	XX	XX	X
Tilghman MD (Talbot county)	0	0	0	0	0	0	0	0	0	0	0	590	850
Newport NC (Carteret county)	X	X	X	X	X	X	X	X	X	X	X	X	840
Boston MA (Suffolk county)	265	334	454	454	162	449	512	706	880	1021	639	XX	831
Plymouth MA (Plymouth county)	X	X	X	66	12	X	X	X	126	X	253	1568	818
Belhaven NC (Beaufort county)	X	0	X	0	0	0	X	229	320	551	457	1781	717
Sneads Ferry NC (Onslow county)	0	0	0	0	0	0	0	0	0	0	0	1102	679
Harwich MA (Barnstable county)	0	0	0	0	0	0	X	115	0	0	0	X	661
Point Pleasant Beach NJ (Ocean county)	X	0	0	0	0	X	X	X	X	X	456	1147	582
Brunswick GA (Glynn county)	0	0	0	0	0	0	0	0	X	X	139	476	578
Westport MA (Bristol county)	0	0	0	0	0	0	0	0	0	0	30	422	483
Owls Head ME (Knox county)	X	235	87	X	X	X	X	516	395	371	347	682	470
Waretown NJ (Ocean county)	0	0	0	0	0	0	0	0	0	0	0	X	X
Hampton Bays NY (Suffolk county)	0	1	0	0	0	0	42	87	0	2	80	208	408
Shinnecock NY (Suffolk county)	X	3	19	7	4	7	277	219	41	78	318	1025	351
Egg Harbor Township NJ (Atlantic county)	0	0	0	0	0	0	0	0	0	0	0	XX	X
Scranton NC (Hyde county)	0	0	0	0	0	0	0	0	0	X	X	X	X
Crisfield MD (Somerset county)	0	0	0	0	0	0	0	0	0	0	0	X	X
Lubec ME (Washington county)	0	0	0	X	15	0	X	54	X	149	375	647	293
Kittery ME (York county)	0	0	0	X	X	7	0	0	0	0	0	414	284
Nanticoke MD (Wicomico county)	0	0	0	0	0	0	0	0	0	0	0	X	X
Sandwich MA (Barnstable county)	20	21	137	71	83	114	128	349	177	323	135	287	252

Table only includes ports with either more than 1M in 2006 landed value, or more than 250K in landed value with at least 10% port total scallops. X= confidential, less than 1M; XX= confidential, more than 1M. Data run, August 9, 2007.

The largest numbers of permitted limited access scallop vessels currently are in the ports of New Bedford, MA and Cape May, NJ, which represent 37% and 19% of the total, respectively (Table 63). Of the 360 permitted limited access vessels in 2007, 199 originate from New Bedford, MA and Cape May, NJ. Although the number of permitted limited access vessels has only increased from 308 in 1994 to a peak of 380 in 2005 and New Bedford has always had the largest number of permitted limited access vessels, the port with the next greatest number of contributors has shifted from Norfolk, VA (18% in 1994 to 3% in 2007) to Cape May, NJ (9% in 1994 to 19% in 2007).

In addition to having the greatest number of permitted limited access scallop vessels, New Bedford, MA also has the greatest number of general category scallop vessels. Gloucester, MA also has a high number of general category scallop vessels. Generally, ports that had a higher number of general category scallop vessels from 1994-2004, such as New Bedford, Gloucester, and Chatham, have seen a significant decrease in these vessels. Ports that originally had no to very few permitted general category scallop vessels, such as Belhaven and Engelhard, NC, have now seen an increase of up to about 10 vessels in 2007 (Table 64). A number of ports have seen large increases in the number of general category permits since the permits began in 1994 and the number peaked between 1996 and 2001. Although the largest increases have been from many ports in NC, they have increased from 1 or no permitted general category scallop vessels to only about 6 or 7, which results in a 600-700% increase. Regardless of this increase, these ports only had a landed value for scallops of \$311,000 or less. Other ports that saw an increase of 300% in general category vessels, such as Chincoteague, VA and Barnegat Light, NJ, had a landed value of \$7.3 million and \$16.9 million, respectively (Table 60). Although some ports, such as New Bedford and Gloucester have experienced a decline in the number of general category scallop vessels, the simultaneous increase in permitted limited access boats has aided to increase the landed value of scallops in those ports to \$202.5 million and \$812,000, respectively.

Table 63. Permitted limited access scallop vessels, by homeport, 1994-2007

Homeport	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
New Bedford, MA (Bristol county)	94	91	79	75	73	78	81	96	105	110	115	130	136	132
Cape May, NJ (Cape May county)	33	31	31	33	33	34	38	39	45	53	58	72	71	67
Newport News, VA (Newport News City)	8	9	10	10	12	17	19	21	21	21	22	23	19	18
New Bern, NC (Craven county)	1	2	2	4	4	6	6	8	8	8	8	13	13	14
Oriental, NC (Pamlico county)	2	2	3	2	4	5	4	5	5	7	9	9	14	12
Barnegat Light, NJ (Ocean county)	9	9	9	9	8	8	10	10	9	11	13	12	11	11
Norfolk, VA (Norfolk City)	65	67	63	58	51	42	35	27	27	27	22	13	12	11
Fairhaven, MA (Bristol county)	12	13	10	10	13	12	15	11	9	9	8	9	8	8
Wanchese, NC (Dare county)	4	3	2	2	2	1	4	8	7	7	6	6	8	8
Hampton, VA (Hampton City)	15	15	11	11	8	7	6	6	6	6	7	5	7	7
Lowland, NC (Pamlico county)	6	6	7	6	6	8	7	7	7	8	9	8	8	7
County Total, VA (York county)	1	1	1	0	0	0	0	2	3	4	4	5	6	5
New London, CT (New London county)	0	0	0	0	0	1	1	1	1	1	1	3	5	5
Seaford, VA (York county)	1	1	1	0	0	0	0	2	3	4	4	5	6	5
Point Judith, RI (Washington county)	1	1	3	3	3	4	4	3	3	3	2	3	4	4
Point Pleasant, NJ (Ocean county)	6	6	5	5	4	4	4	4	4	4	4	4	4	4
Stonington, CT (New London county)	3	3	5	6	6	4	5	7	7	8	8	4	4	4
Atlantic, NC (Carteret county)	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Aurora, NC (Beaufort county)	2	2	2	2	2	1	1	2	2	3	2	2	2	2
Barnstable, MA (Barnstable county)	11	9	9	4	2	1	1	1	1	1	2	2	2	2
Bayboro, NC (Pamlico county)	1	1	1	3	1	2	2	2	4	3	3	2	3	2
Cape Canaveral, FL (Brevard county)	3	4	4	3	3	1	2	3	2	2	2	2	2	2

Carrollton, VA (Isle Of Wight county)	2	3	2	1	2	2	3	2	2	2	2	2	2	2
Plymouth, MA (Plymouth county)	2	0	0	0	0	0	0	0	0	0	1	2	3	2
Poquoson, VA (Poquoson City)	0	0	0	0	0	2	2	1	1	2	2	2	2	2
Wildwood, NJ (Cape May county)	5	5	4	3	3	2	2	2	2	2	2	2	4	2
Atlantic City, NJ (Atlantic county)	0	0	0	0	0	0	0	0	0	0	0	1	2	1
Bass Harbor, ME (Hancock county)	1	1	1	1	1	1	1	1	2	1	1	1	1	1
Bedford, MA (Middlesex county)	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Boston, MA (Suffolk county)	1	1	2	3	3	2	2	2	2	2	1	1	1	1
Chatham, MA (Barnstable county)	0	0	0	0	0	0	0	0	0	0	1	1	1	1
Engelhard, NC (Hyde county)	1	1	1	0	0	0	0	1	1	1	1	1	1	1
Essex, CT (Middlesex county)	0	0	0	0	0	0	0	0	0	0	0	1	1	1
Gloucester, MA (Essex county)	3	3	3	4	2	2	1	1	3	1	1	1	1	1
Jacksonville, FL (Duval county)	1	0	0	1	1	1	1	1	1	0	1	1	1	1
Key West, FL (Monroe county)	0	0	1	1	0	0	0	0	1	1	1	1	1	1
Manahawkin, NJ (Ocean county)	0	0	0	0	0	0	0	0	0	0	0	1	1	1
Newport, NC (Carteret county)	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Owls Head, ME (Knox county)	2	3	2	2	2	2	3	3	3	2	2	2	2	1
Point Pleasant Beach, NJ (Ocean county)	0	0	0	0	0	1	1	1	1	1	1	1	2	1
Scranton, NC (Hyde county)	0	0	0	2	1	1	1	1	1	1	1	1	1	1
Southwest Harbor, ME (Hancock county)	6	3	4	3	2	2	2	2	2	2	1	1	1	1
Suffolk, VA (Suffolk (City) county)	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Swan Quarter, NC (Hyde county)	1	1	1	1	1	2	2	2	3	3	3	3	1	1
Westport, MA (Bristol county)	0	1	1	1	1	1	1	1	1	1	1	1	1	1

Table 64. Permitted general category scallop vessels, by homeport, 1994-2007

Homeport	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
New Bedford, MA (Bristol county)	160	156	146	146	118	113	117	123	123	124	128	86	88	81
Gloucester, MA (Essex county)	149	152	141	155	149	159	157	172	195	190	193	37	49	51
Cape May, NJ (Cape May county)	30	28	28	29	26	36	42	43	42	48	63	30	48	45
Point Judith, RI (Washington county)	71	76	72	82	78	81	76	79	80	84	87	30	39	42
Barnegat Light, NJ (Ocean county)	9	14	10	12	11	27	35	48	51	59	63	29	30	29
Point Pleasant, NJ (Ocean county)	24	20	20	21	25	27	29	33	34	31	35	17	22	25
Chatham, MA (Barnstable county)	67	64	67	70	65	66	71	77	89	93	86	23	27	25
Montauk, NY (Suffolk county)	34	34	35	36	37	44	45	42	44	50	59	17	17	21
Portland, ME (Cumberland county)	77	76	72	67	57	70	72	67	65	75	74	24	22	20
Atlantic City, NJ (Atlantic county)	5	6	5	7	9	12	11	18	23	22	26	20	22	17
Shinnecock, NY (Suffolk county)	30	29	27	26	22	28	30	30	28	29	34	10	15	15
Provincetown, MA (Barnstable county)	27	33	30	26	25	28	25	30	29	31	36	14	16	14
Ocean City, MD (Worcester county)	3	3	5	6	7	5	7	10	8	12	17	11	16	14
Beaufort, NC (Carteret county)	3	1	4	4	5	6	12	12	13	15	17	14	14	14
Harwich, MA (Barnstable county)	15	16	22	21	19	22	22	26	27	23	25	11	14	13
Portsmouth, NH (Rockingham county)	19	19	25	29	30	33	39	38	40	38	52	12	12	12
Boston, MA (Suffolk county)	37	36	33	37	30	24	20	23	28	25	32	13	11	12
Plymouth, MA (Plymouth county)	24	28	31	30	33	30	29	33	32	36	42	8	9	11
Wanchese, NC (Dare county)	10	11	9	12	10	14	14	15	18	22	26	14	13	10
Newport, RI (Newport county)	18	21	19	18	18	17	21	26	27	26	29	10	10	9
Cundys Harbor, ME (Cumberland county)	18	17	15	17	10	12	12	14	15	14	12	4	9	9
Tilghman, MD (Talbot county)	0	0	0	0	0	0	0	0	0	0	7	7	10	8
Stonington, ME (Hancock county)	20	18	29	18	17	19	22	19	21	20	26	9	11	8
Seabrook, NH (Rockingham county)	19	17	17	22	19	17	21	24	26	20	20	2	4	8
Scituate, MA (Plymouth county)	28	34	39	39	36	41	45	37	41	41	42	8	7	8
Sandwich, MA (Barnstable county)	20	20	12	12	16	20	20	19	22	22	25	9	10	8
Rye, NH (Rockingham county)	11	12	13	13	14	12	10	12	14	15	20	3	6	8
Belhaven, NC (Beaufort county)	3	3	3	4	4	3	4	4	6	7	11	12	9	8
Belford, NJ (Monmouth county)	26	28	25	28	24	27	26	26	26	26	30	4	6	8
Westport, MA (Bristol county)	17	21	16	15	20	17	23	21	20	19	20	7	7	7

Swan Quarter, NC (Hyde county)	1	1	1	1	1	1	2	3	5	5	7	5	9	7
Stonington, CT (New London county)	10	8	8	8	8	9	9	10	11	10	12	7	8	7
South Bristol, ME (Lincoln county)	12	11	9	12	14	12	12	12	9	8	12	6	8	7
Port Norris, NJ (Cumberland county)	0	0	0	0	0	0	0	2	3	8	15	7	7	7
Oriental, NC (Pamlico county)	0	0	0	0	2	3	3	2	4	4	10	5	13	7
Harpwell, ME (Cumberland county)	7	8	10	15	12	17	18	18	16	21	28	4	5	7
Engelhard, NC (Hyde county)	0	0	0	1	2	3	4	5	4	6	10	7	8	7
Barnstable, MA (Barnstable county)	21	25	23	21	23	23	24	30	30	24	23	9	9	7
Wilmington, DE (New Castle county)	5	5	5	4	4	4	3	3	5	5	5	6	6	6
Sneads Ferry, NC (Onslow county)	0	0	0	0	1	0	0	1	1	4	6	7	10	6
Winter Harbor, ME (Hancock county)	6	10	8	6	7	7	11	11	14	13	19	3	5	5
Wildwood, NJ (Cape May county)	10	9	8	9	9	8	10	12	11	10	10	5	5	5
Port Clyde, ME (Knox county)	10	11	13	12	15	15	16	17	15	16	18	1	1	5
Owls Head, ME (Knox county)	3	3	5	2	3	3	5	9	9	13	11	3	6	5
Norfolk, VA (Norfolk (City) county)	41	35	26	30	21	20	14	18	20	18	17	7	7	5
Newburyport, MA (Essex county)	19	16	18	17	18	17	21	20	25	26	24	6	7	5
New London, CT (New London county)	3	3	5	7	9	9	8	11	10	8	11	6	8	5
Lowland, NC (Pamlico county)	7	2	2	2	2	2	2	2	2	2	5	5	5	5
Kittery, ME (York county)	7	8	5	10	11	14	14	13	12	13	12	5	6	5
Hampton Bays, NY (Suffolk county)	16	18	17	15	16	17	17	15	12	11	8	3	6	5
Cape Canaveral, FL (Brevard county)	1	0	0	0	0	0	0	0	0	2	8	7	6	5
Bucks Harbor, ME (Washington county)	13	16	13	11	11	11	11	12	14	15	16	4	4	5
Woods Hole, MA (Barnstable county)	6	8	6	6	4	3	7	8	8	9	9	3	4	4
Wellfleet, MA (Barnstable county)	13	13	11	12	10	9	6	10	11	9	13	5	4	4
Sea Isle City, NJ (Cape May county)	1	2	2	2	4	8	8	8	9	10	12	2	5	4
Rockport, MA (Essex county)	13	13	15	17	18	20	21	23	30	28	25	3	4	4
Newport News, VA (Newport News City)	0	0	1	1	4	1	1	0	1	2	2	6	5	4
New York, NY (New York county)	19	17	18	17	14	12	14	13	15	11	12	2	3	4
New Bern, NC (Craven county)	1	0	1	0	1	0	0	1	0	0	1	5	6	4
Narragansett, RI (Washington county)	8	12	11	8	10	12	15	15	15	15	14	8	5	4
Millville, NJ (Cumberland county)	0	0	0	1	0	0	0	0	0	2	1	1	3	4
Hampton, VA (Hampton City)	1	0	0	1	1	1	3	4	3	1	0	3	4	4
Green Harbor, MA (Plymouth county)	16	16	15	14	19	19	19	19	16	17	18	0	2	4
Fairhaven, MA (Bristol county)	22	19	21	27	28	22	22	23	26	30	27	6	6	4
Cutler, ME (Washington county)	9	7	4	3	2	3	3	8	7	5	6	2	3	4
Chincoteague, VA (Accomack county)	1	1	0	1	0	1	6	6	9	12	10	4	4	4
Brunswick, GA (Glynn county)	0	0	0	0	0	0	2	2	3	6	7	4	5	4
Bayboro, NC (Pamlico county)	0	0	0	0	0	0	0	3	3	3	2	4	3	4
Wakefield, RI (Washington county)	7	9	7	8	9	9	9	11	10	9	8	3	3	3
Rockland, ME (Knox county)	15	14	16	13	7	5	8	11	11	10	11	4	7	3
Marshfield, MA (Plymouth county)	9	9	6	15	16	18	22	19	17	20	20	2	3	3
Lubec, ME (Washington county)	5	5	4	5	8	6	9	7	8	12	11	9	7	3
Lewes, DE (Sussex county)	2	2	1	1	1	1	1	1	2	3	5	3	3	3
Islip, NY (Suffolk county)	3	3	2	2	2	2	2	3	3	4	7	3	3	3
Hampton, NH (Rockingham county)	18	19	16	16	15	17	16	20	21	19	23	4	3	3
Friendship, ME (Knox county)	5	5	5	4	6	4	4	7	9	9	11	2	3	3

*Years 2005-2007 only show general category vessels with a VMS license. Table only shows ports with 3 or more permitted vessels.

Table 65. Average GRT (gross registered tons), average length, and number of permitted scallop vessels by top 20 homeports, 1994-2006.

			1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Atlantic, NC	Limited access	Avg. Length	78	81	81	81	81	81	81	81	81	81	81	81	81
		Avg. GRT	168	168	168	168	168	168	168	168	168	168	168	168	168
		No. permits	3	3	3	3	3	3	3	3	3	3	3	3	3
	General Category	Avg. Length	73	70	70	68	68	68	63	63	63	63	63	54	63
		Avg. GRT	108	108	108	100	100	100	75	75	75	75	75	48	75
		No. permits	3	3	3	4	4	4	1	1	1	1	1	2	1
Atlantic City, NJ	Limited access	Avg. Length	.	.	.	.	.	.	.	.	.	.	.	75	75
		Avg. GRT	.	.	.	.	.	.	.	.	.	.	.	125	121
		No. permits	.	.	.	.	.	.	.	.	.	.	.	1	2
	General Category	Avg. Length	59	56	54	64	62	60	61	78	83	81	77	81	83
		Avg. GRT	73	62	62	99	90	84	90	124	145	139	121	119	128
		No. permits	5	6	5	7	9	12	11	18	23	22	26	35	37
Aurora, NC	Limited access	Avg. Length	75	75	75	75	75	83	68	73	73	56	73	73	73
		Avg. GRT	116	116	116	116	116	133	114	125	125	85	125	125	125
		No. permits	2	2	2	2	2	1	1	2	2	3	2	2	2
	General Category	Avg. Length													
		Avg. GRT													
		No. permits													
Barnegat Light, NJ	Limited access	Avg. Length	69	69	69	69	69	69	65	65	69	68	68	67	67
		Avg. GRT	117	117	117	117	110	110	97	97	108	107	107	102	101
		No. permits	9	9	9	9	8	8	10	10	9	11	13	12	11
	General Category	Avg. Length	63	59	50	58	60	52	51	52	52	53	52	49	50
		Avg. GRT	91	79	44	63	73	53	48	56	54	54	50	38	40
		No. permits	9	14	10	12	11	27	35	48	51	59	63	63	62
Barnstable, MA	Limited access	Avg. Length	79	82	81	68	70	70	78	78	78	78	70	70	70
		Avg. GRT	128	141	133	80	96	90	89	89	89	89	76	76	76
		No. permits	11	9	9	4	2	1	1	1	1	1	2	2	2
	General Category	Avg. Length	45	42	41	39	40	43	40	40	41	42	42	39	40
		Avg. GRT	42	36	33	29	27	31	26	25	25	26	27	21	23
		No. permits	21	25	23	20	22	22	23	29	29	23	22	19	16
Cape Canaveral, FL	Limited access	Avg. Length	73	72	72	73	73	81	83	79	76	76	76	76	76
		Avg. GRT	136	132	132	136	136	175	160	142	140	140	140	140	140
		No. permits	3	4	4	3	3	1	2	3	2	2	2	2	2
	General Category	Avg. Length	81	.	.	.	.	.	.	.	.	.	74	67	69
		Avg. GRT	175	.	.	.	.	.	.	.	.	108	93	98	92
		No. permits	1	.	.	.	.	.	.	.	.	2	8	10	9
Cape May, NJ	Limited access	Avg. Length	82	82	83	82	81	80	80	80	78	74	74	74	75
		Avg. GRT	151	152	155	149	148	146	145	146	143	132	130	128	131
		No. permits	33	31	31	33	33	34	38	39	45	53	58	72	71
	General Category	Avg. Length	77	78	78	67	72	67	63	60	61	54	56	52	55
		Avg. GRT	126	130	137	109	122	104	92	88	81	65	63	56	62
		No. permits	30	28	28	29	26	36	42	43	42	48	63	73	82
Fairhaven, MA	Limited access	Avg. Length	86	87	88	89	89	91	89	89	87	87	90	89	89
		Avg. GRT	158	158	160	166	164	171	172	166	158	158	168	162	161
		No. permits	12	13	10	10	13	12	15	11	9	9	8	9	8
	General Category	Avg. Length	43	42	45	43	42	43	46	45	45	46	46	46	45
		Avg. GRT	31	29	36	31	29	31	38	42	40	41	39	34	32
		No. permits	22	19	21	27	28	22	22	23	26	30	27	26	27
Hampton, VA	Limited access	Avg. Length	78	78	77	77	77	76	77	77	77	76	76	75	75
		Avg. GRT	152	152	152	152	154	152	162	162	162	160	158	140	124
		No. permits	15	15	11	11	8	7	6	6	6	6	7	5	7
	General Category	Avg. Length	67	.	.	42	62	62	39	46	39	62	.	73	73
		Avg. GRT	97	.	.	17	61	61	25	44	25	61	.	114	116
		No. permits	1	.	.	1	1	1	3	4	3	1	.	3	4
Lowland, NC	Limited access	Avg. Length	73	73	73	73	73	74	73	73	73	72	75	77	78
		Avg. GRT	92	92	97	92	92	107	106	106	106	102	103	112	114
		No. permits	6	6	7	6	6	8	7	7	7	8	9	8	8
	General Category	Avg. Length	68	66	66	66	66	66	66	66	66	62	73	70	69
		Avg. GRT	75	73	73	73	73	73	73	73	73	73	103	99	92
		No. permits	7	2	2	2	2	2	2	2	2	2	5	7	7
New Bedford	Limited access	Avg. Length	87	88	87	87	87	87	86	85	84	84	85	82	82
		Avg. GRT	172	173	174	174	176	175	173	169	164	163	164	153	154
	General Category	Avg. Length													
		No. permits	94	91	79	75	73	78	81	96	105	110	115	130	136

New Bern, NC	General Category	Avg. Length	66	66	67	69	68	68	66	66	66	65	64	61	61
		Avg. GRT	101	102	103	110	109	107	103	101	103	102	98	94	96
		No. permits	160	156	146	146	118	113	117	123	123	124	128	130	128
	Limited access	Avg. Length	84	73	71	73	73	75	77	75	77	79	79	83	76
		Avg. GRT	198	89	89	94	94	103	115	106	114	113	113	122	114
		No. permits	1	2	2	4	4	6	6	8	8	8	8	13	13
	General Category	Avg. Length	75	.	75	.	67	.	.	67	.	.	43	69	60
		Avg. GRT	81	.	81	.	79	.	.	97	.	.	18	98	80
		No. permits	1	.	1	.	1	.	.	1	.	.	1	5	6
Limited access	Avg. Length	.	.	.	.	.	86	86	86	86	86	86	83	81
	Avg. GRT	.	.	.	.	.	147	147	147	147	147	147	188	168
	No. permits	.	.	.	.	.	1	1	1	1	1	1	3	5
New London, CT	General Category	Avg. Length	73	73	61	53	49	50	51	54	52	56	53	54	54
		Avg. GRT	125	125	85	65	55	55	59	63	52	57	49	52	52
		No. permits	3	3	5	7	9	9	8	11	10	8	11	10	10
Limited access	Avg. Length	76	78	79	79	79	79	79	78	78	78	79	79	77	
	Avg. GRT	131	138	143	148	149	149	148	146	146	145	142	143	140	
	No. permits	8	9	10	10	12	17	19	21	21	21	22	23	19	
Newport News, VA	General Category	Avg. Length	.	.	52	50	69	64	64	.	63	63	52	56	67
		Avg. GRT	.	.	42	42	92	88	88	.	86	86	52	74	101
		No. permits	.	.	1	1	4	1	1	.	1	1	2	8	5
Limited access	Avg. Length	77	79	79	78	79	79	78	79	80	80	81	79	80	
	Avg. GRT	137	138	138	138	136	133	132	133	135	137	140	139	139	
	No. permits	65	67	63	58	51	42	35	27	27	27	22	13	12	
General Category	Avg. Length	66	63	66	69	70	63	59	60	60	57	55	52	51	
	Avg. GRT	85	75	84	92	92	77	76	74	72	62	57	48	46	
	No. permits	41	35	26	30	21	20	14	18	20	18	17	16	14	
Limited access	Avg. Length	71	71	70	73	76	75	76	75	66	68	80	67		
	Avg. GRT	101	101	108	121	127	126	127	123	100	99	115	118	94	
	No. permits	2	2	3	2	4	5	4	5	5	7	9	9	14	
General Category	Avg. Length	.	.	.	.	70	69	69	70	65	65	68	68	59
	Avg. GRT	.	.	.	.	109	105	105	109	88	88	92	88	74
	No. permits	.	.	.	.	2	3	3	2	4	4	10	9	15
Limited access	Avg. Length	85	85	76	76	76	80	80	76	76	76	82	81	79	
	Avg. GRT	175	175	149	149	149	161	161	149	149	149	166	164	157	
	No. permits	1	1	3	3	3	4	4	3	3	3	2	3	4	
General Category	Avg. Length	59	58	60	58	59	57	57	56	57	56	56	56	55	
	Avg. GRT	73	74	78	73	74	71	70	67	70	70	67	68	67	
	No. permits	71	76	72	82	78	81	76	79	80	84	87	90	93	
Limited access	Avg. Length	75	75	79	79	83	83	83	82	82	82	82	82	82	
	Avg. GRT	108	108	120	120	131	131	131	122	122	122	122	122	122	
	No. permits	6	6	5	5	4	4	4	4	4	4	4	4	4	
General Category	Avg. Length	49	52	52	55	53	50	48	49	48	51	53	56	56	
	Avg. GRT	48	53	53	60	59	47	43	45	44	48	51	56	56	
	No. permits	24	20	20	21	25	27	29	33	34	31	35	37	41	
Limited access	Avg. Length	86	86	82	.	.	.	.	83	87	84	84	86	87
	Avg. GRT	125	125	181	.	.	.	.	141	154	147	147	143	142
	No. permits	1	1	1	.	.	.	.	2	3	4	4	5	6
General Category	Avg. Length	42	42	.	.	.	.	.	88	.	.	.	50	50
	Avg. GRT	6	6	.	.	.	.	.	135	.	.	.	48	48
	No. permits	1	1	.	.	.	.	.	1	.	.	.	1	1
Limited access	Avg. Length	102	108	123	123	85	80	78	79	78	80	81	81	81	
	Avg. GRT	150	148	143	143	164	129	136	143	145	151	152	152	151	
	No. permits	4	3	2	2	2	1	4	8	7	7	6	6	8	
General Category	Avg. Length	76	76	75	70	74	68	65	63	59	57	54	54	54	
	Avg. GRT	122	122	129	107	122	99	91	87	75	67	63	63	63	
	No. permits	10	11	9	12	10	14	14	15	18	22	26	32	30	

5.0 ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES

5.1 IMPACTS ON THE SCALLOP RESOURCE

5.1.1 No Action

In 2008, the No Action alternative would allocate one trip in Closed Area I, 3 in Elephant Trunk and approximately 20,000 open area DAS (or 51 DAS for a full-time vessel). In 2009, two areas on Georges Bank would technically be open under the area rotation schedule, but no allocation would be made for those areas. The limited access fishery would be allocated the same number of open area DAS as in 2008. Under No Action the fishing mortality rate in Closed Area I is high ($F=1.15$), causing overall effort levels in the access areas to be higher than the other alternatives. Similarly, F is higher in open areas compared to the other alternatives, since open area DAS are higher. In addition, the No Action has higher total bottom swept area projections than the other alternatives, with the exception of the “SCH” and “SCH+HC” alternative - the alternatives that would close the area in the Channel. Overall F from the No Action is higher because it allocates more effort in open areas, where there is not sufficient biomass to support that level of effort in the long term. See Figures ??? through ??? to compare the long term projections of biomass, catch and bottom area of the No Action alternative compared to the other scenarios evaluated in this action. It is important to note that the No Action alternative only allocates those rollover measures for 2 years. After that time the model assumes that more reasonable measures are adopted (i.e. different access areas open in the future etc.). As a result the long-term impact of this option is more in line with the other alternatives.

No Action for Amendment 11

This alternative assumes that Amendment 11 is not approved, and the general category fishery would remain an open access fishery. Expected impacts of this alternative would be similar to the No Action alternative in terms of overall impacts by area. However, because the general category fishery would not be constrained overall in terms of total effort there is greater risk that overfishing could occur. If general category vessels that have recently started fishing in this fishery maintain on the trend from recent years, total landings from this component of the fishery could increase above levels set in Amendment 11 (10% in 2008 and 5% in 2009). If the general category fishery fishes harder than projected in these analyses, then there is risk of overfishing and that could have negative impacts on the scallop resource overall.

Measures that will be in effect March 1, 2008 until FW19 is implemented

This alternative considers several measures as backstops if FW19 is not implemented before the start of the 2008 fishing year. Specifications from Amendment 10 and Framework 18 would carry-over until FW19 is implemented. Since the measures included in this alternative will serve as a backstop, even if effort levels are higher than projected in 2008, subsequent measures will be taken to account for any overages; therefore, over the two-year period, the impacts of this alternative on the scallop resource should be neutral. For example, if a full-time limited access vessel uses more DAS in FY2008 before FW19 is implemented (up to 51 as allocated under FW18) and this action only allocated 35 then any additional DAS used in 2008 will be reduced for that vessel's 2009 allocation.

5.1.2 Summary of biological projections for management scenarios considered in this action

The biological impacts for this action are based on results from an updated version of the SAMS (Scallop Area Management Simulator) model. This model has been used to project abundances and landings to aid management decisions since 1999. This model is a size-structured model that forecasts scallop populations in a number of areas. In this version of the model, Georges Bank was divided into the three access portions of the groundfish closures, the three no access portions of these areas, a proposed closure area in the South Channel, the remainder of the South Channel, the Northern Edge and Peak, and the Southeast Part of Georges Bank. The Mid-Atlantic was subdivided into six areas: Virginia Beach, Delmarva, the Elephant Trunk Access Area, the proposed new version of the Hudson Canyon South Access Area, New York Bight South, and Long Island. See Appendix ??? for a detailed description of the methods used in the Scallop Area Management Simulator model.

It is important to note that this model is based on fishing mortality by area, and the inputs are not fishery based in terms of DAS etc. The simulation does not model individual vessels or trips, it models the fleet as a whole. The output of the model is then used to eventually compute individual DAS allocations after set asides are removed, general category landings etc.. Therefore, when the Scallop Committee made a recommendation to include an alternative that uses specific DAS allocations as an input, the model run used to estimate impacts of that allocation worked backwards to identify a fishing mortality rate that would represent those allocations, but the run is not exact since the model is not designed that way. Specifically, rather than 35 DAS in 2008, the model run is based on 33 DAS. The economic analyses have been modified to reflect expected impacts of the actual allocated effort (35 DAS for preferred alternative compared to 33), but the biological model results were run with 33. Caution should be used when making direct comparisons between the preferred alternatives and the others, because the model had to be reconfigured to do this run based on the DAS input the Committee recommended. Doing this may change landings, biomass etc by a few percent, but nothing in the model is accurate to that level, so comparing small differences may be an artifact.

The alternatives described in Section 3.0 are separated out by area, (i.e. Georges Bank access areas, Elephant Trunk, Delmarva etc.) but due to the interrelated nature of area rotation and how the model projects impacts for the entire resource overall, it is difficult to pull out specific impacts by area. Therefore, this section will summarize the multitude of parameters included in the biological projections for several scenarios. The aspects considered are projected exploitable biomass, scallop landings, fishing mortality by area, DAS-used, LPUE, bottom area, and average meat count by area. The **No Action** alternative assesses the impacts of essentially rolling over current specifications. There are two alternatives that consider revising the order of the Georges Bank access area schedule (**DMV3** and **DMV2**). The only difference between these two alternatives is that one keeps the Delmarva area closed for both 2008 and 2009, and one alternative considers access in 2009. The rest of the scenarios include various alternatives related to new rotational areas to protect small scallops: **HCL** would close a 5X5 ten-minute-square area near the current Hudson Canyon closed area; **HCS** would close a 4X4 ten-minute square area near the current Hudson Canyon area; **SCH** would close an area in the South Channel northeast of Nantucket Lightship; and **SCHHC** would close both areas – the smaller HC area and the SCH area. See for a summary of what each scenario has analyzed.

All four of these scenarios include the same assumptions for allocations as scenario “DMV2” (one trip in NL in 2008, one trip in CAII in 2009, one trip in Delmarva in 2009, and 4 trips in ET in 2008 and 3 trips in ET in 2009). All scenarios then identify a certain level of open area DAS based on which areas are accessible to reach an overall fishing mortality target of $F=0.20$. **After the Committee meeting, an additional alternative was added that is similar to HC-sm, but it proposes to close the existing HC area (not the 4X4 ten-minute square area) and it allocated more DAS in open areas in 2008 and fewer DAS in 2009 for an average $F=0.20$ for both years combined; this alternative is called “Pref”, for the preferred alternative.**

Table 66 – Summary of scenarios considered in the biological projections for Framework 19

2008		CL1	CL2	NLS	ET	Dmv	HC	Sch	IndvDAS*
No Action		1 trip	0 trip	Cl	3 trips	Cl	Op	Op	51
Preferred		Cl	Cl	1 trip	4 trips	Cl	Cl	Op	35
Dmv 3		Cl	Cl	1 trip	4 trips	Cl	Op	Op	32
Dmv 2		Cl	Cl	1 trip	4 trips	Cl	Op	Op	32
HC-sm		Cl	Cl	1 trip	4 trips	Cl	Cl	Op	30
HC-lar		Cl	Cl	1 trip	4 trips	Cl	Cl	Op	29
Sch		Cl	Cl	1 trip	4 trips	Cl	Op	Cl	50
Sch+HC		Cl	Cl	1 trip	4 trips	Cl	Cl	Cl	42
2009		CL1	CL2	NLS	ET	Dmv	HC	Sch	IndvDAS
No Action		Cl	0 trip	0 trip	3 trips	Cl	Op	Op	51
Preferred		Cl	1 trip	Cl	3 trips	1 trip	Cl	Op	42
Dmv 3		Cl	1 trip	Cl	3 trips	Cl	Op	Op	60
Dmv 2		Cl	1 trip	Cl	3 trips	1 trip	Op	Op	48
HC-sm		Cl	1 trip	Cl	3 trips	1 trip	Cl	Op	47
HC-lar		Cl	1 trip	Cl	3 trips	1 trip	Cl	Op	47
Sch		Cl	1 trip	Cl	3 trips	1 trip	Op	Cl	69
Sch+HC		Cl	1 trip	Cl	3 trips	1 trip	Cl	Cl	54

* The full-time individual DAS value is based on an estimate of 326 active full-time equivalent limited access vessels out of 350 limited access permits in 2007. These values have removed TAC for general category allocations and set-asides.

5.1.2.1 Projected exploitable biomass by area

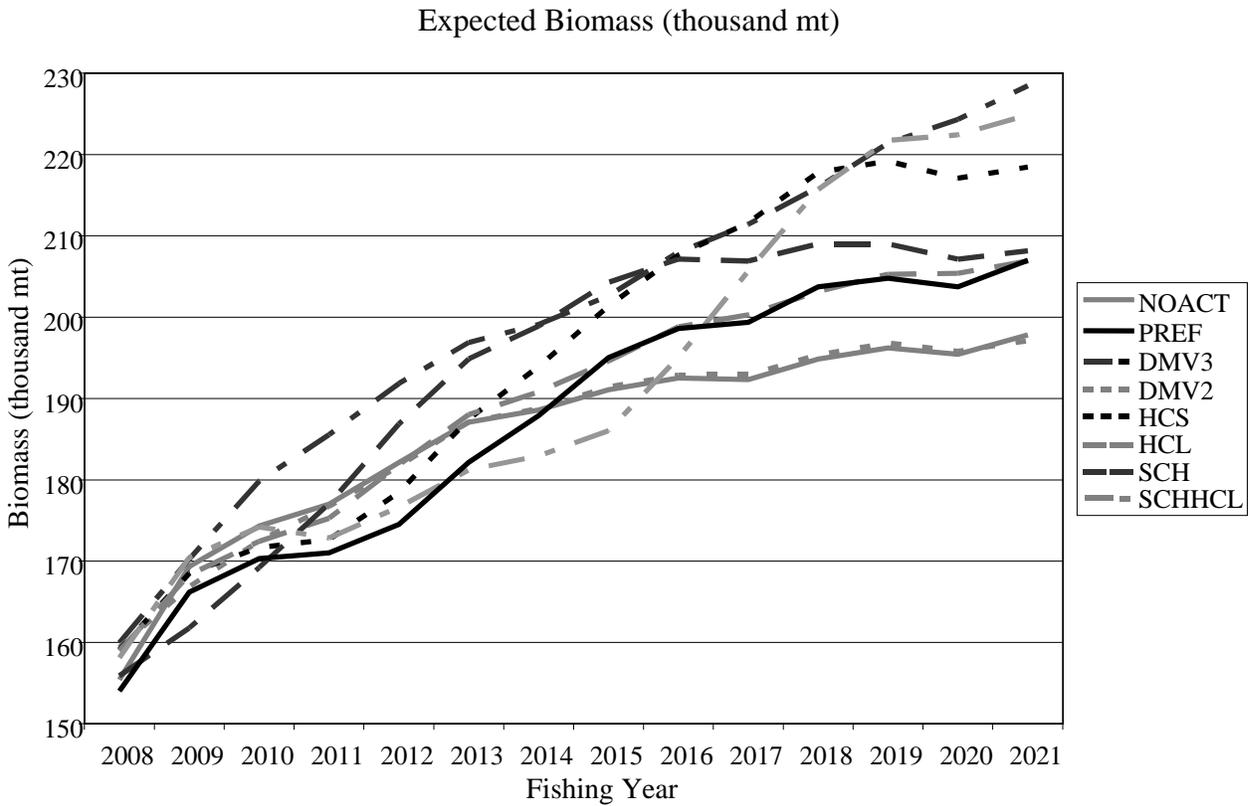
In general the projected exploitable biomass is similar overall when comparing the various scenarios but does vary by area. For example, since CAI opens under No Action the biomass in that area is depleted as a result of access in 2008. The trip in NL in 2008 still leaves a decent level of biomass in that area. Biomass in open areas is lowest under alternatives that closed the area in the Channel and the No Action. IN 2009, one trip in Delmarva does not impact biomass in that area very much (45 compared to 51 if closed). The same is true for Closed Area II, and 7 trips in ETA over 2 years compared to 6 trips under No Action does not greatly impact biomass in that area either.

Table 67 - Projected exploitable biomass (lb) by area

FISH YEAR	AREA TYPE	AREA	SCENARIOS								
			NOACT	PREF	DMV3	DMV2	HCL	HCS	SCH	SCHHC	
2008	ACCESS	CL1Acc	3.8	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1
		CL2S	40.4	40.4	40.4	40.4	40.4	40.4	40.4	40.4	40.4
		Dmv	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.7
		ET	86.8	78.1	78.6	78.6	78.1	78.6	78.6	78.6	78.1
		NLSAcc	24.5	14.8	14.9	14.6	14.7	14.7	15.0	14.9	
	ACCESS Total			197.0	185.0	185.6	185.3	184.9	185.4	185.6	185.2
	OPEN	HCS	19.4	27.0	26.5	26.5	29.0	28.2	20.3	29.1	
		LI	16.9	17.1	18.7	18.7	17.9	18.0	17.0	15.6	
		NEP	10.8	11.0	12.3	12.3	11.8	11.8	10.7	9.6	
		NYBS	11.5	11.2	14.4	14.3	15.1	15.3	11.4	11.6	
		SchCl	7.6	7.3	11.7	11.7	9.7	10.0			
		SchOp	6.3	8.0	9.3	9.3	8.8	8.8	7.7	6.6	
		SEP	6.2	6.2	6.3	6.3	6.2	6.3	6.1	6.0	
		VB	0.7	0.7	0.8	0.8	0.7	0.8	0.7	0.7	0.7
	OPEN Total			79.4	88.4	100.0	99.9	99.3	99.1	73.9	79.3
2008 Total			276.4	273.4	285.6	285.2	284.2	284.5	259.6	264.5	
2009	ACCESS	CL1Acc	4.7	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1
		CL2S	42.6	34.8	34.9	34.7	35.1	35.1	34.9	34.9	34.9
		Dmv	51.1	45.1	51.5	45.1	44.7	44.8	44.9	45.4	
		ET	72.9	65.2	66.9	66.7	65.4	67.0	66.8	65.5	
		NLSAcc	30.0	20.1	21.3	19.2	19.7	19.7	22.2	21.7	
	ACCESS Total			201.4	176.2	185.7	176.8	176.0	177.7	179.9	178.5
	OPEN	HCS	24.0	41.4	24.0	26.9	42.3	39.7	15.8	42.6	
		LI	20.9	20.8	24.8	25.5	21.2	21.8	21.7	17.7	
		NEP	13.1	12.7	14.3	15.2	13.4	13.7	11.1	9.9	
		NYBS	13.6	14.8	15.5	16.9	15.9	16.6	11.3	11.7	
		SchCl	8.9	7.2	8.6	10.4	7.5	7.9			
		SchOp	8.8	10.6	11.8	12.6	11.1	11.3	9.3	8.4	
		SEP	9.0	8.8	9.4	9.4	8.9	9.1	8.6	8.3	
		VB	1.3	1.3	1.4	1.4	1.3	1.3	1.1	1.2	
	OPEN Total			99.5	117.6	109.7	118.3	121.6	121.4	78.8	99.7
2009 Total			300.9	293.8	295.4	295.0	297.6	299.1	258.7	278.2	

Grand Total	577.3	567.2	581.0	580.2	581.7	583.7	518.3	542.7
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Figure 23 - Comparison of expected exploitable biomass (mt) projections for the scenarios under consideration (2008-2021)



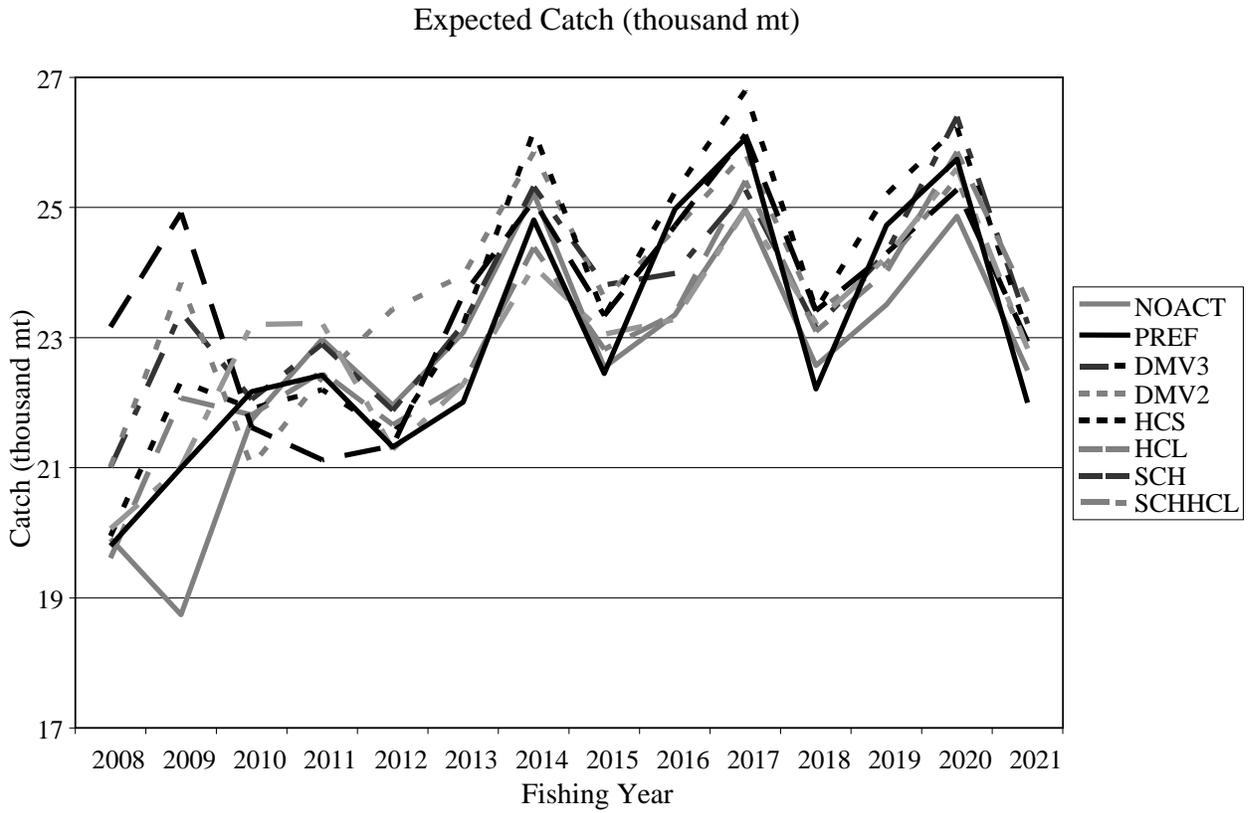
5.1.2.2 Projected scallop landings by area

In 2008 total landings for No Action and preferred are similar, but majority of landings under the preferred alternative are from access areas compared to the No Action alternative. All scenarios project higher landings than the No Action alternative for 2008. In 2009, the preferred alternative is expected to generate higher landings, about 5.0 million pounds more than the No Action alternative because no access areas are open in 2009 under No Action except for ETA. Some of the other scenarios are expected to produce higher landings in the short term. In the long term it is more difficult to see trends in catch between the various scenarios because in the out years the scenarios have similar allocations set at F=0.20. Based on catch alone, the preferred alternative does not project the highest landings compared to other scenarios. But in terms of biological impacts it is positive because overall DAS used is lower and LPUE is higher than the No Action alternative; therefore impacts on the scallop resource are expected to be positive.

Table 68. Projected scallop landings (lb.) by area

FISH YEAR	AREA TYPE	AREA	SCENARIOS							
			NOACT	PREF	DMV3	DMV2	HCL	HCS	SCH	SCHHC
2008	ACCESS	CL1Acc	2.2	-	-	-	-	-	-	-
		CL2S	-	-	-	-	-	-	-	-
		Dmv	-	-	-	-	-	-	-	-
		ET	17.0	22.0	21.7	21.7	22.0	21.7	21.7	22.0
		NLSAcc	-	5.5	5.5	5.5	5.5	5.5	5.5	5.5
	ACCESS Total	19.2	27.5	27.2	27.2	27.5	27.2	27.2	27.5	
	OPEN Total	24.4	16.9	19.1	19.1	15.8	16.8	23.8	16.8	
2008 Total		43.6	44.4	46.3	46.3	43.2	44.0	51.1	44.2	
2009	ACCESS	CL1Acc	-	-	-	-	-	-	-	-
		CL2S	-	5.8	5.8	5.8	5.8	5.9	5.8	5.8
		Dmv	-	6.0	-	6.0	5.9	6.0	6.0	6.0
		ET	17.3	16.2	15.5	15.5	16.3	15.5	15.5	16.3
		NLSAcc	-	-	-	-	-	-	-	-
	ACCESS Total	17.3	28.0	21.3	27.3	28.1	27.3	27.3	28.2	
OPEN Total	24.0	17.9	30.2	25.3	20.6	21.9	27.7	18.2		
2009 Total		41.3	45.9	51.6	52.6	48.7	49.2	54.9	46.3	
Grand Total		85.2	89.9	97.9	98.9	91.9	93.2	106.0	90.5	

Figure 24 - Comparison of expected catch projections for the scenarios under consideration (2008-2021)



5.1.2.3 Projected fishing mortality by area

Table 69 is useful for assessing expected fishing mortality rates by area. Under the preferred alternative F is expected to be 0.22 in 2008, with a higher F rate in ETA, NL and the Channel. In 2009, F is more evenly distributed across access areas and is highest in the Channel. Any alternative that includes a closure in HC is expected to shift open area effort to the Channel, and vice versa. Over the 2 year period the fishing mortality rate for both the No Action and preferred alternative averages out to F=0.20. For the preferred alternative that is because open area DAS from 2009 are shifted to 2008. Overall F is reduced for NO Action because the only access area open in 2009 is ETA.

Table 69. Projected Fishing mortality by area

FISH YEAR	AREA TYPE	AREA	SCENARIOS								
			NOACT	PREF	DMV3	DMV2	HCL	HCS	SCH	SCHHC	
2008	ACCESS	CL1Acc	1.15	-	-	-	-	-	-	-	-
		CL2S	-	-	-	-	-	-	-	-	-
		Dmv	-	-	-	-	-	-	-	-	-
		ET	0.23	0.35	0.34	0.34	0.35	0.34	0.34	0.34	0.35
		NLSAcc	-	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
		OPEN	HCS	0.48	-	0.27	0.27	-	0.05	0.68	-
	LI	0.19	0.18	0.08	0.08	0.12	0.11	0.20	0.30	0.30	
	NEP	0.33	0.30	0.13	0.13	0.20	0.19	0.35	0.53	0.53	
	NYBS	0.46	0.30	0.19	0.19	0.28	0.26	0.49	0.65	0.65	
	SchCl	1.38	1.45	0.65	0.65	0.96	0.91				
	SchOp	0.37	0.41	0.18	0.18	0.27	0.26	0.48	0.71	0.71	
	SEP	0.06	0.06	0.03	0.03	0.04	0.04	0.07	0.10	0.10	
	VB	0.11	0.10	0.04	0.04	0.07	0.06	0.12	0.18	0.18	
	2008 Overall			0.24	0.22	0.20	0.20	0.20	0.20	0.20	0.20
2009	ACCESS	CL1Acc	-	-	-	-	-	-	-	-	-
		CL2S	-	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
		Dmv	-	0.15	-	0.15	0.15	0.15	0.15	0.15	0.15
		ET	0.29	0.31	0.28	0.28	0.31	0.28	0.28	0.31	0.31
		NLSAcc	-	-	-	-	-	-	-	-	-
		OPEN	HCS	0.40	-	0.50	0.35	-	0.05	0.78	-
	LI	0.14	0.17	0.15	0.11	0.17	0.16	0.27	0.30	0.30	
	NEP	0.25	0.31	0.27	0.19	0.31	0.28	0.48	0.51	0.51	
	NYBS	0.32	0.35	0.37	0.26	0.40	0.37	0.60	0.61	0.61	
	SchCl	0.70	0.80	1.01	0.71	1.00	0.93				
	SchOp	0.25	0.38	0.35	0.25	0.39	0.36	0.58	0.60	0.60	
	SEP	0.06	0.08	0.06	0.04	0.07	0.07	0.12	0.14	0.14	
	VB	0.19	0.23	0.18	0.13	0.22	0.20	0.36	0.43	0.43	
	2009 Overall			0.16	0.18	0.20	0.20	0.20	0.20	0.20	0.20

5.1.2.4 Projected DAS-used by area

In 2008 the NO Action has the lowest DAS used estimate for access areas, but the highest for open areas. Therefore, the total DAS used for this alternative is among the highest, except for the SCH alternatives. In 2009, the same is true by area, but No Action has a lower total DAS used because there are fewer access area trips and total catch drops for the alternative compared to the other alternatives (Figure 24).

Table 70. Projected DAS-used by area

FISH YEAR	AREA TYPE	AREA	SCENARIOS							
			NOACT	PREF	DMV3	DMV2	HCL	HCS	SCH	SCHHC
2008	ACCESS	CL1Acc	1,472	-	-	-	-	-	-	-
		CL2S	-	-	-	-	-	-	-	-
		Dmv	-	-	-	-	-	-	-	-
		ET	8,291	10,806	10,679	10,676	10,807	10,679	10,678	10,808
		NLSAcc	-	2,461	2,459	2,458	2,459	2,459	2,461	2,460
	ACCESS Total		9,763	13,267	13,138	13,134	13,266	13,138	13,139	13,268
	OPEN	HCS	4,693	-	3,843	3,845	-	797	6,589	-
		LI	3,655	3,415	1,610	1,613	2,357	2,244	3,803	5,294
		NEP	2,522	2,372	1,184	1,184	1,681	1,606	2,642	3,514
		NYBS	3,190	2,101	1,830	1,831	2,694	2,599	3,264	4,348
		SchCl	2,967	3,158	2,791	2,791	3,122	3,094		
		SchOp	1,637	1,868	987	988	1,367	1,312	2,039	2,589
		SEP	1,076	997	448	447	667	630	1,152	1,692
	VB	75	70	32	32	47	45	81	115	
OPEN Total		19,815	13,980	12,723	12,731	11,933	12,326	19,568	17,551	
2008 Total		29,578	27,247	25,861	25,865	25,200	25,464	32,707	30,819	
2009	ACCESS	CL1Acc	-	-	-	-	-	-	-	-
		CL2S	-	2,545	2,548	2,541	2,561	2,567	2,550	2,551
		Dmv	-	2,816	-	2,813	2,791	2,795	2,800	2,839
		ET	8,284	7,865	7,494	7,461	7,903	7,512	7,470	7,912
		NLSAcc	-	-	-	-	-	-	-	-
	ACCESS Total		8,284	13,226	10,042	12,815	13,255	12,874	12,819	13,303
	OPEN	HCS	4,896	-	5,834	4,759	-	1,027	6,477	-
		LI	2,966	3,525	3,153	2,303	3,546	3,260	5,206	5,536
		NEP	2,274	2,678	2,493	1,873	2,752	2,567	3,652	3,748
		NYBS	2,524	2,963	3,118	2,482	3,571	3,403	3,691	4,146
		SchCl	2,457	2,200	2,885	2,667	2,617	2,610		
		SchOp	1,309	2,094	2,040	1,558	2,197	2,064	2,723	2,653
		SEP	1,165	1,387	1,125	801	1,337	1,214	2,156	2,506
	VB	166	197	165	115	182	171	262	324	
OPEN Total		17,756	15,044	20,813	16,560	16,202	16,316	24,166	18,914	
2009 Total		26,040	28,270	30,854	29,375	29,456	29,190	36,985	32,217	
Grand Total		55,618	55,517	56,715	55,240	54,656	54,654	69,692	63,036	

5.1.2.5 Projected LPUE by area

Average LPUE is highest for the DMV and HC alternatives followed by the preferred alternative. Compared to the NO Action alternative the preferred option has higher LPUE averages for both open and access areas for both years.

Table 71. Projected LPUE by area

FISH YEAR	AREA TYPE	SCENARIOS								
		AREA	NOACT	PREF	DMV3	DMV2	HCL	HCS	SCH	SCHHC
2008	ACCESS	CL1Acc	1,479	2,202	2,203	2,202	2,202	2,203	2,203	2,202
		CL2S	2,340	2,339	2,339	2,339	2,339	2,339	2,339	2,339
		Dmv	2,012	2,012	2,012	2,012	2,012	2,012	2,012	2,011
		ET	2,026	2,013	2,013	2,014	2,012	2,013	2,014	2,012
		NLSAcc	2,516	2,220	2,221	2,222	2,221	2,222	2,220	2,220
	ACCESS Average		2,075	2,157	2,158	2,158	2,157	2,158	2,157	2,157
	OPEN	HCS	1,487	1,658	1,651	1,651	1,706	1,693	1,514	1,706
		LI	758	766	823	821	792	795	766	713
		NEP	1,038	1,050	1,128	1,128	1,097	1,102	1,027	953
		NYBS	1,288	1,259	1,389	1,388	1,355	1,361	1,279	1,214
		SchCl	1,649	1,644	1,819	1,819	1,758	1,768		
		SchOp	997	1,186	1,300	1,299	1,255	1,261	1,154	1,047
		SEP	303	303	311	311	306	308	302	296
	VB	959	959	975	973	967	970	952	943	
	OPEN Average		1,060	1,103	1,174	1,174	1,155	1,157	999	982
2008 Total			18,851	19,610	20,184	20,181	20,024	20,048	17,781	17,657
2009	ACCESS	CL1Acc	1,656	2,251	2,252	2,250	2,252	2,254	2,254	2,252
		CL2S	2,360	2,265	2,264	2,265	2,262	2,262	2,262	2,264
		Dmv	2,140	2,113	2,137	2,114	2,116	2,116	2,115	2,111
		ET	2,062	2,039	2,045	2,048	2,038	2,045	2,046	2,037
		NLSAcc	2,524	2,296	2,296	2,298	2,297	2,297	2,297	2,300
	ACCESS Average		2,148	2,193	2,199	2,195	2,193	2,195	2,195	2,193
	OPEN	HCS	1,624	1,878	1,652	1,717	1,908	1,886	1,369	1,908
		LI	896	893	1,017	1,033	903	921	922	786
		NEP	1,171	1,150	1,234	1,279	1,186	1,206	1,046	972
		NYBS	1,449	1,470	1,522	1,566	1,467	1,490	1,330	1,267
		SchCl	1,724	1,639	1,739	1,826	1,673	1,706		
		SchOp	1,220	1,358	1,448	1,496	1,399	1,414	1,255	1,183
		SEP	429	424	444	448	426	437	415	402
	VB	1,337	1,317	1,347	1,363	1,324	1,332	1,249	1,232	
	OPEN Average		1,231	1,266	1,300	1,341	1,286	1,299	1,084	1,107
2009 Total			20,591	21,093	21,398	21,704	21,252	21,365	18,560	18,713
Grand Total			39,442	40,703	41,582	41,885	41,276	41,413	36,340	36,370

5.1.2.6 Projected bottom area swept by area

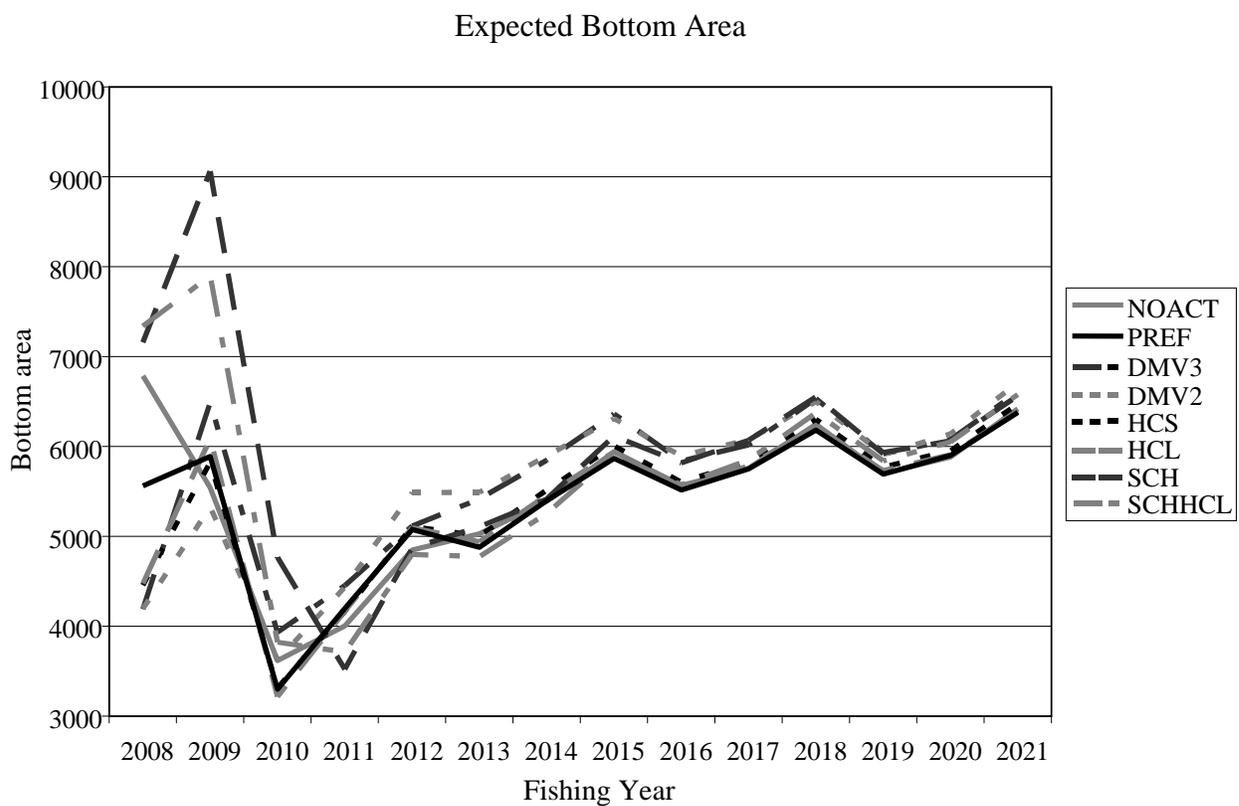
Table 72 is useful for comparing potential impacts on non-target species and EFH because it relates to the estimated area swept under each alternative. The average bottom area swept is higher for the preferred alternative and other scenarios compared to No Action, but these alternatives allocate 4 trips in ETA compared to 3. In terms of open areas, the No Action and SCH alternatives are higher due to lower catch rates in open areas and higher open area allocations for these alternatives. In 2009, the average bottom area swept calculations are similar for all scenarios, except SCH which is significantly higher. Again, there is very little bottom contact in access areas under No Action since the only area open is ETA; most time is spent in open areas under No Action.

Table 72. Projected bottom area

FISH YEAR	AREA TYPE	SCENARIOS								
		AREA	NOACT	PREF	DMV3	DMV2	HCL	HCS	SCH	SCHHC
2008	ACCESS	CL1Acc	380	-	-	-	-	-	-	-
		CL2S	-	-	-	-	-	-	-	-
		Dmv	-	-	-	-	-	-	-	-
		ET	529	762	749	749	762	749	1,406	762
		NLSAcc	-	397	394	398	397	396	743	397
	ACCESS Average		182	232	229	229	232	229	430	232
	OPEN	HCS	1,162	-	761	762	-	144	3,019	-
		LI	1,350	1,257	579	580	856	814	2,648	2,000
		NEP	897	838	401	401	579	552	1,778	1,304
		NYBS	827	591	398	399	626	598	1,612	1,229
		SchCl	603	671	407	407	533	516		
		SchOp	563	604	299	300	426	407	1,265	900
		SEP	446	413	185	185	276	261	897	704
	VB	26	24	11	11	16	15	53	40	
OPEN Average		734	550	380	381	414	414	1,610	882	
2008 Total		6,783	5,558	4,185	4,192	4,472	4,454	13,420	7,335	
2009	ACCESS	CL1Acc	-	-	-	-	-	-	-	
		CL2S	-	359	358	359	358	358	671	359
		Dmv	-	253	-	253	254	254	475	253
		ET	643	676	629	629	676	629	1,180	676
		NLSAcc	-	-	-	-	-	-	-	-
	ACCESS Average		129	258	197	248	258	248	465	258
	OPEN	HCS	1,087	-	1,314	988	-	146	3,486	-
		LI	1,048	1,248	1,066	769	1,244	1,137	3,458	2,047
		NEP	756	899	799	586	907	837	2,419	1,368
		NYBS	641	765	718	536	886	822	1,966	1,237
		SchCl	448	477	556	442	555	532		
SchOp		402	595	551	407	612	569	1,547	843	
SEP	470	561	452	322	539	489	1,642	1,021		
VB	45	53	43	31	51	46	148	91		

	OPEN Average	612	575	688	510	599	572	2,095	944
2009									
Total		5,539	5,886	6,487	5,321	6,082	5,820	16,992	7,896
Grand									
Total		12,322	11,444	10,672	9,513	10,554	10,273	30,412	15,230

Figure 25 – Comparison of expected bottom area projections for the scenarios under consideration (2008-2021)



5.1.2.7 Projected meat count by area

Overall, projected meat count by area is similar for all scenarios for both years.

Table 73. Projected average meat count by area

FISH YEAR	AREA TYPE	AREA	SCENARIOS							
			NOACT	PREF	DMV3	DMV2	HCL	HCS	SCH	SCHHC
2008	ACCESS	CL1Acc	12.1	10.9	10.9	10.9	10.9	10.9	10.9	10.9
		CL2S	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4
		Dmv	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9
		ET	16.1	16.2	16.2	16.2	16.2	16.2	16.2	16.2
		NLSAcc	9.4	10.1	10.2	10.1	10.1	10.1	10.1	10.1
	ACCESS Average		12.8	12.7	12.7	12.7	12.7	12.7	12.7	12.7
	OPEN	HCS	18.7	18.8	17.5	17.5	18.3	18.3	17.9	18.3
		LI	17.7	17.7	17.7	17.7	17.5	17.5	17.9	17.8
		NEP	19.0	19.0	18.7	18.7	18.8	18.8	19.0	19.3
		NYBS	18.6	18.8	18.3	18.3	18.4	18.4	18.7	18.9
		SchCI	19.7	19.2	18.3	18.3	18.7	18.6		
		SchOp	16.4	17.0	16.6	16.6	16.8	16.7	17.1	17.5
		SEP	18.7	18.7	18.7	18.7	18.7	18.7	18.8	18.8
		VB	21.2	21.2	21.2	21.1	21.2	21.2	21.2	21.3
	OPEN Average		18.8	18.8	18.4	18.4	18.5	18.5	18.7	18.8
2008 Total			214.0	213.9	210.5	210.4	211.7	211.7	194.1	195.4
2009	ACCESS	CL1Acc	12.4	10.9	10.9	10.9	10.9	10.9	10.9	10.9
		CL2S	10.5	10.6	10.6	10.6	10.6	10.6	10.6	10.6
		Dmv	14.3	14.4	14.3	14.4	14.3	14.3	14.4	14.4
		ET	15.3	15.5	15.4	15.4	15.5	15.5	15.4	15.5
		NLSAcc	9.8	10.7	10.8	10.7	10.7	10.8	10.7	10.6
	ACCESS Average		12.5	12.4	12.4	12.4	12.4	12.4	12.4	12.4
	OPEN	HCS	17.5	16.7	15.9	15.7	16.2	16.3	16.5	16.2
		LI	17.0	17.1	17.6	17.5	16.9	16.9	18.1	17.4
		NEP	18.3	18.3	18.0	17.9	18.1	18.1	18.6	18.8
		NYBS	17.2	17.9	17.1	16.9	17.0	17.0	17.7	17.8
		SchCI	18.8	18.2	17.5	17.2	17.8	17.7		
		SchOp	16.9	17.4	17.0	16.8	17.2	17.1	17.8	18.2
		SEP	18.2	18.2	18.2	18.2	18.2	18.2	18.3	18.4
		VB	18.7	18.7	18.6	18.5	18.6	18.6	18.8	19.0
	OPEN Average		17.8	17.8	17.5	17.4	17.5	17.5	18.0	18.0
2009 Total			204.8	204.6	201.9	200.8	202.1	202.0	187.8	187.9
Grand Total			418.8	418.4	412.4	411.2	413.8	413.7	381.9	383.4

5.1.3 Georges Bank Access Areas

This framework is considering two different options for access areas on Georges Bank: the No Action alternative and Alternative 1- revision of GB openings. The main difference between these alternatives is that only one access area would open annually under Alternative 1– Nantucket Lightship in 2008 and Closed Area II in 2009. All scenarios under consideration include a revision of the GB access areas (Alternative 1) except the No Action alternative. The scenario that considers just revising the order of access on GB is DMV3 – Delmarva would not reopen in 2009 and no new areas would close to protect small scallops. Compared to the No Action alternative, this alternative has lower projected fishing mortality in most areas in 2008. In 2009, open area DAS are higher under DMV3 and SCH than the No Action alternative. Overall LPUE averaged for both years for this alternative is higher than the No Action Alternative except for the two scenarios that include a closure in the Channel. In general the biological impacts of the proffered alternative are expected to be positive because access is allocated in areas with more biomass (ET and NL) compared to areas with lower biomass such as open areas and Closed Area I.

If the YT flounder bycatch TAC is reached limited access vessels are permitted to use access area trips at a compensation rate in open areas. Analyses suggest that the compensation for Nantucket Lightship in 2008 would be 7.7 DAS, and 7.9 DAS for Closed Area II trips in 2009. Since the compensation rates are determined by estimating an equivalent level of mortality the overall impacts of this alternative on the scallop resource are expected to be neutral. For example, the number of scallops harvested in 7.7 DAS in open areas in 2008 is expected to be equal to the number of scallops harvested on one 18,000 pound access area trip in Nantucket Lightship.

5.1.4 Hudson Canyon Access Area

No Action for this alternative would mean that all un-used 2005 limited access trips would expire on February 29, 2008. There is one alternative that would extend the duration of the program for three additional months until May 1, 2008. In general, if un-used 2005 trips are not taken the impacts on the scallop resource would be positive; more scallops on the bottom that could potentially add to recruitment etc. However, if vessels that have not used their trips decide to use their trips between now and the end of the 2007 fishing year rather than lose that opportunity, then mortality could be high on scallops in that area as a result. The alternative that allows an extension until May 1, 2008 may reduce mortality in the short term compared to No Action, if vessels decide to wait until after scallops have grown in the spring (i.e. April and May).

If vessels are permitted to use unused 2005 trips until May 31, 2008 the mortality in that area will be slightly higher than current 2008 estimates. For example if 1.0 million pounds are left for that area based on the number of trips not used by February 29, 2007 then overall catch for 2008 will increase by 1.0 million, or about 2%. Overall fishing mortality would increase by the same amount; so for the preferred alternative overall F is equal to $F=0.22$, so F would increase by 0.005. Therefore, overall F in 2008 would be higher than estimates because some effort

expected to occur in 2007 would be shifted to 2008. This is not a huge amount that will impact the scallop resource in the short term. However over the long term if 1.0 million pounds are removed now, compared to several years from now, those scallops would grow 30-40%, so there would be resource lost from the growth potential of those scallops compared to No Action.

The impact of this additional F in 2008 is not expected to cause overfishing, but if this extension were permitted and the Council still wanted the overall F to equal $F=0.22$ for 2008 under the preferred alternative compared to $F=0.225$, then open area DAS would have to be reduced to compensate. For example, if the LPUE for open areas is about 1,360 pounds per day. If the 1.0 million pounds were harvested at that rate that would come out to about 735 DAS. When that value is applied over the 326 full-time limited access equivalent vessels then each vessel could expect a reduction of approximately 2 open area DAS to bring overall F back to $F=0.22$ for FY2008.

5.1.5 Elephant Trunk Access Area

Updated estimates recommend four trips in ETAA in 2008 and three trips in 2009. The area will open on March 1 with a 2-month seasonal closure from September 1-October 31 to reduce potential interactions with sea turtles. A notice action procedure has been included to reduce the number of trips in this area if updated biomass estimates suggest it is necessary to do so. The resource in the ETA is greater than any other area. Even with four trips (DMV3) compared to three trips under the No Action alternative, the exploitable biomass is still very high (78.6 compared to 86.8). The change in fishing mortality for this area is 0.34 compared to 0.23 under No Action for 2008, and 0.28 and 0.29 respectively for 2009. Area rotation allows for fishing mortalities somewhat above the overall target in recently reopened access areas. Allocating 4 trips in 2008 and 3 trips in 2009 is not expected to have negative impacts on the scallop resource.

The seasonal closure is expected to have indirect positive impacts on the scallop resource by reducing effort in that area when scallop shell height to meat weight ratios are lower. In the Mid-Atlantic, the southern range of the scallop resource, there is a seasonal cycle in meat yield that increases from March to July and then declines until October-November (Schmitzer, 1988). Therefore reducing effort in that area during September and October will reduce mortality. Framework 18 assessed the seasonal differences in meat count for this time period in the Mid-Atlantic (See Section 5.1.1.2.7 of Framework 18; NEFMC, 2005). In addition, the Notice Action procedure is expected to have positive impacts on the scallop resource by providing a mechanism that can reduce effort in that area if updated information suggests the allocated level of effort is too high. This measure will help prevent overfishing and has positive impacts on the scallop resource.

5.1.6 Delmarva Access Area

Updated estimates recommend that the Delmarva area may support one access area trip in 2009. The area will open on March 1, and there is an alternative to consider a seasonal closure from August 1-October 31 to reduce potential interactions with sea turtles. A notice action procedure has been included to reduce the number of trips in this area if updated biomass estimates suggest it is necessary to do so. The impacts of this alternative can be considered comparing DMV3(Delmarva does not open) and DVM2 (Delmarva opens in 2009). By allocating some

effort from the Delmarva area in 2009 the open area DAS for that year are reduced by 12 DAS for a full-time vessel. Therefore, DAS used are lower overall if the area opens, LPUE is slightly higher if the area opens, and bottom contact time is lower overall since catch rates are expected to be much higher in the Delmarva area compared to open areas.

5.1.7 Other restrictions related to access areas

5.1.7.1 Restriction on the number of crew on limited access scallop vessels

This action is considering a restriction on crew size of 8 or 9 persons. Since FW18 eliminated the crew size restriction on access area trips, observed trips do not seem to be impacting the size of scallops harvested. The average size of scallops kept on observed trips were analyzed compared to the number of crew on an access area trips. The results from these data do not suggest that crew size is impacting average size of scallop kept. However, the potential is there and if mean size of scallops in a future access area are lower then expected then mortality could increase if vessels carry larger crews to shuck more scallops per day. This measure in conjunction with possession limits and gear restrictions help reduce scallop mortality and control effort, thus has positive impacts on the scallop resource overall.

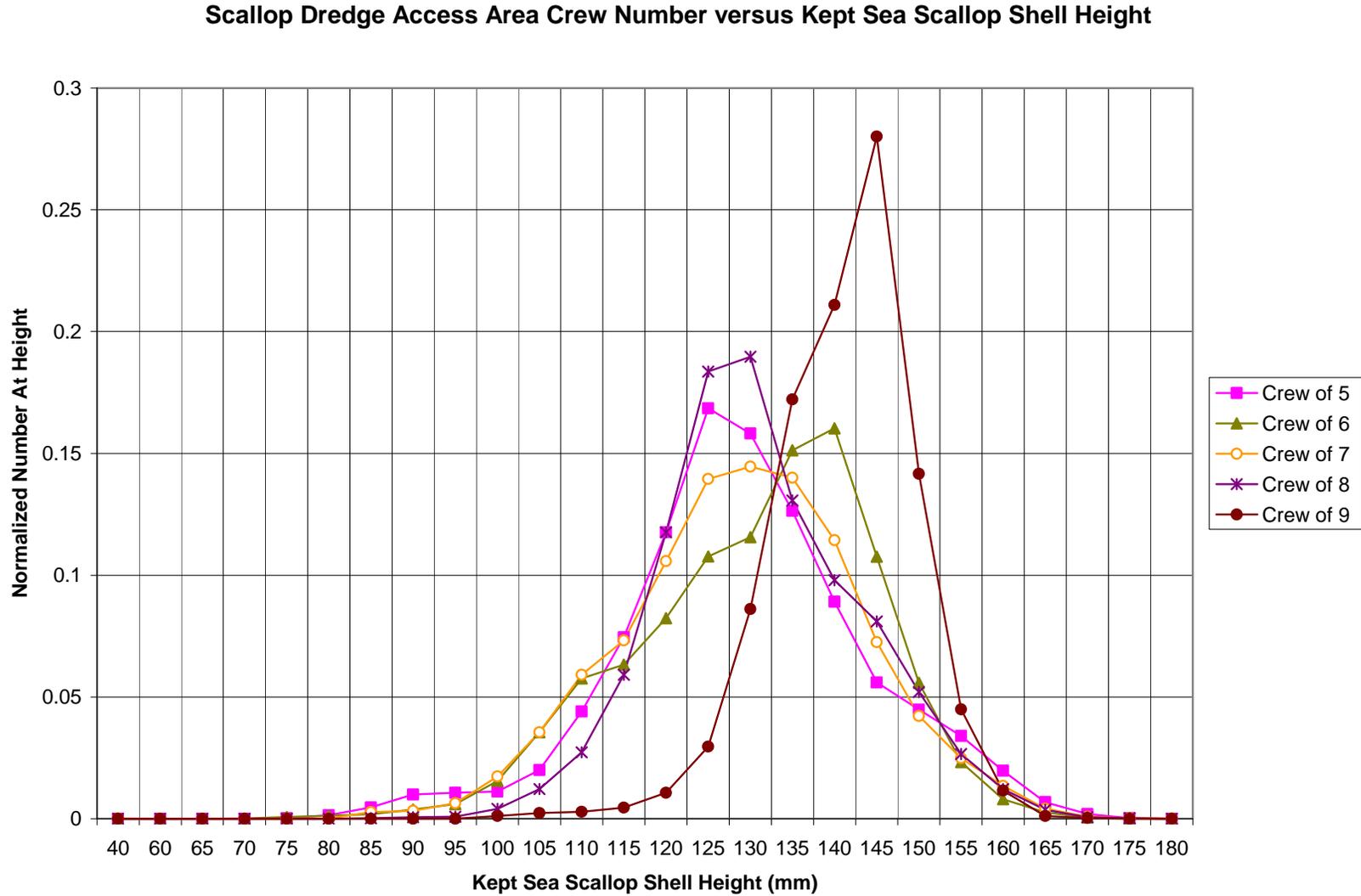
Background analysis of eliminating the crew size restriction in access areas under FW18

The PDT examined observer data in access areas since FW18 was implemented and eliminated the crew size restriction for those trips. Overall, only 14 out of 85 trips had more than seven crew members (16%). A breakdown of the observed trips is summarized in Table 74. Figure 26 depicts the number of crew size on an access area trip compared to the size of scallops kept on that trip. These data have been normalized, or expressed as a fraction so that the data for various crew sizes can be compared. Based on the information available it does not appear that trips with more crew members are targeting smaller scallops. The following should be noted: (1) the number of crew includes the captain; (2) the shell heights are for kept scallops only; (3) data is from observed Limited Access Scallop Dredge trips into the Access Areas that landed after the implementation of Framework 18 (effective June 15, 2006) through April 30, 2007 (date when data loaded to master observer tables); and (4) 14 out of 85 trips carried a crew greater than 7.

Table 74 – Summary of crew size on observed trips in scallop access areas from June 15, 2006 through April 30, 2007

	Nantucket Lightship	Closed Area II	Closed Area I	Elephant Trunk
5 person crew	5	3	2	0
6 person crew	3	3	3	2
7 person crew	13	25	2	12
8 person crew	5	8	0	0
9 person crew	0	1	0	0
Total # of trips observed	24	40	7	14

Figure 26 – Summary of normalized number at height by area for trips with various number of crew size



5.1.7.2 Prohibition on deckloading when leaving an access area (>50 bu.)

This action is considering an alternative that would prohibit any scallop vessel from leaving an access area with more than 50 bu. of in-shell scallop on deck. This measure is expected to reduce non-harvest scallop mortality, thus having positive impacts on the scallop resource.

5.1.8 TAC set-asides for observers and research

This action maintains the current policy of setting aside 2% of available TAC in access areas for research, and 1% to provide funding for observers. This alternative is expected to have indirect beneficial impacts on the scallop resource from research and observer program results that can be used in the scallop management process.

5.1.9 Open Area allocations for limited access vessels

After the Council decides which access areas will be available for the next two fishing years, the open area DAS are estimated to reach an overall target F rate of 0.20. The range of open area DAS under consideration is about 12,000-20,000 total DAS for 2008, or about 29 to 51 individual open area DAS for full-time vessels. The total (16-24,000) and individual open area DAS are higher for 2009 (42-69 for full-time vessels). In general, alternatives with higher open area DAS have higher estimates for DAS used and bottom contact time. In addition, LPUE in open areas is lower for these alternatives compared to the scenarios that allocate fewer DAS. Overall F is estimated to be the same for all scenarios over time, but since there is currently not much biomass in open areas, higher F rates in these areas is not beneficial for the scallop resource in open areas.

5.1.9.1 TAC set-asides for observers and research

This action maintains the current policy of setting aside 2% of available limited access DAS in open areas for research, and 1% to provide funding for observers. This alternative is expected to have indirect beneficial impacts on the scallop resource from research and observer program results that can be used in the scallop management process.

5.1.10 Measures for general category vessels

5.1.10.1 No Action

5.1.10.1.1 Quarterly hard-TAC for transition period to limited entry (FY2008)

If Amendment 11 is approved, there will be a quarterly hard-TAC implemented for the transition period to limited entry (most likely for all of FY2008). The total general category allocation (open and access areas) will be divided into four quarters. Since there is an overall TAC this alternative is not expected to have impacts on the scallop resource. The proposed allocations are higher during the spring and summer (Quarters 1 and 2) when meat weights are larger.

Alternative to reduce derby fishing in access areas

This action is considering allocating 2% of the total catch to general category vessels in access areas in 2008 only to reduce derby fishing in those areas while vessels are under appeal for the IFQ program. There are no discernable differences between the impacts on the scallop resource between the 2% and 5% access area allocation alternative because the remaining amount will be allocated to the limited access fishery – so the difference will still be harvested in open areas – either by a general category vessel or a limited access vessel.

5.1.10.1.2 IFQ program for general category fishery (FY2009)

If Amendment 11 is approved then general category qualifiers will receive an individual fishing quota based on their contribution to historical landings. IFQs will not be area specific; a vessel can choose to participate in an access area program and landings will be removed from their individual allocation. Vessels will be permitted to catch that quota in any area available (open areas or access areas until the fleetwide allocation is harvested). In general, this alternative is not expected to have impacts on the scallop resource. The impacts of the overall IFQ program were assessed in Amendment 11, and in general this alternative is expected to have positive impacts on the scallop resource compared to the No Action alternative for Amendment 11 (no limited entry program).

Cost Recovery Program

This action includes an alternative for a cost recovery program for the general category IFQ vessels. It includes a program that could collect up to 3% of ex-vessel value of scallop product landed. This program is administrative in nature and is not expected to have direct impacts on the scallop resource.

5.1.10.1.3 Northern Gulf of Maine (NGOM) hard-TAC

If this program is approved under Amendment 11, this framework includes the hard-TAC allocation for vessels with a limited entry NGOM permit. The PDT recommendation is 64,000 pounds for both years. Once the TAC is reached, no scallop vessels are permitted to fish in the NGOM area. Because all scallop fishing is prohibited once the TAC is reached, this alternative is not expected to have negative impacts on the scallop resource, provided the TAC is set at the appropriate level and is effectively monitored. In the long run, when an assessment of this area is available, the hard TAC should help prevent overfishing of the scallop resource in this area.

Background on the recommended NGOM hard-TAC

The proposed area is the GOM exemption area north of 42 20. The Council directed the PDT to develop an estimate for the hard-TAC based on the federal portion of the resource within this area. VTR landings information is not very reliable for specific location information, but can provide a general idea of fishing location over a longer period of time and for a large number of vessels. Below is a table with the total landings from VTR data for 2000-2006 (through October 2006) within in the NGOM, as well as landings from the federal portion only. All trips over 1,200 pounds per trip were eliminated from the database. Most trips were below that amount, but a significant number of trips in 2001 and 2002 were above that amount. The average landings from within the NGOM for this time period were about 123,000 pounds. After landings

from state waters and areas now closed to fishing are removed, the average landings are reduced to about 64 thousand pounds, or 52% of landings in the NGOM area (Table 75). This information is also displayed in Figure 27 by calendar year.

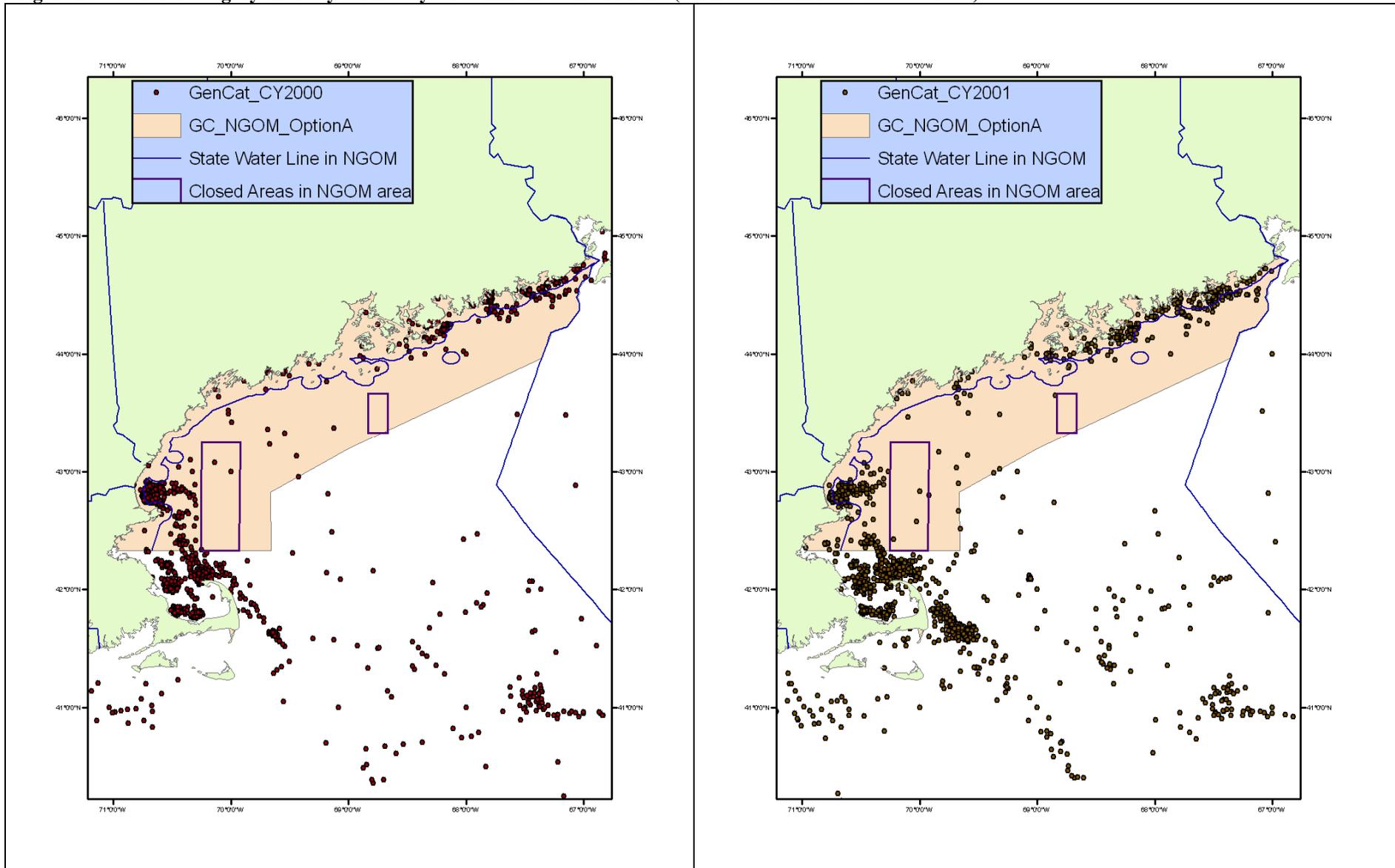
Table 75 – Summary of landings from within the NGOM area (VTR data from 2000-October 2006)

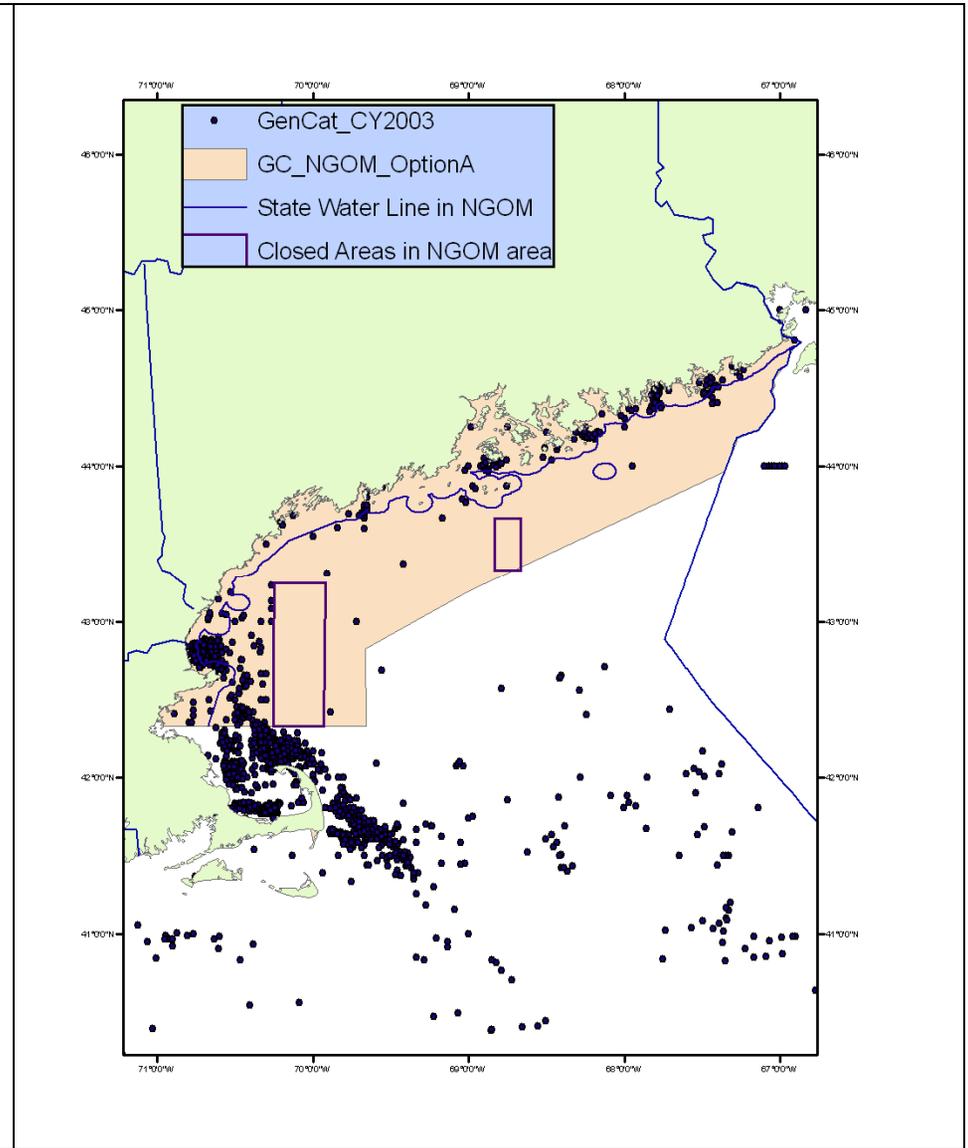
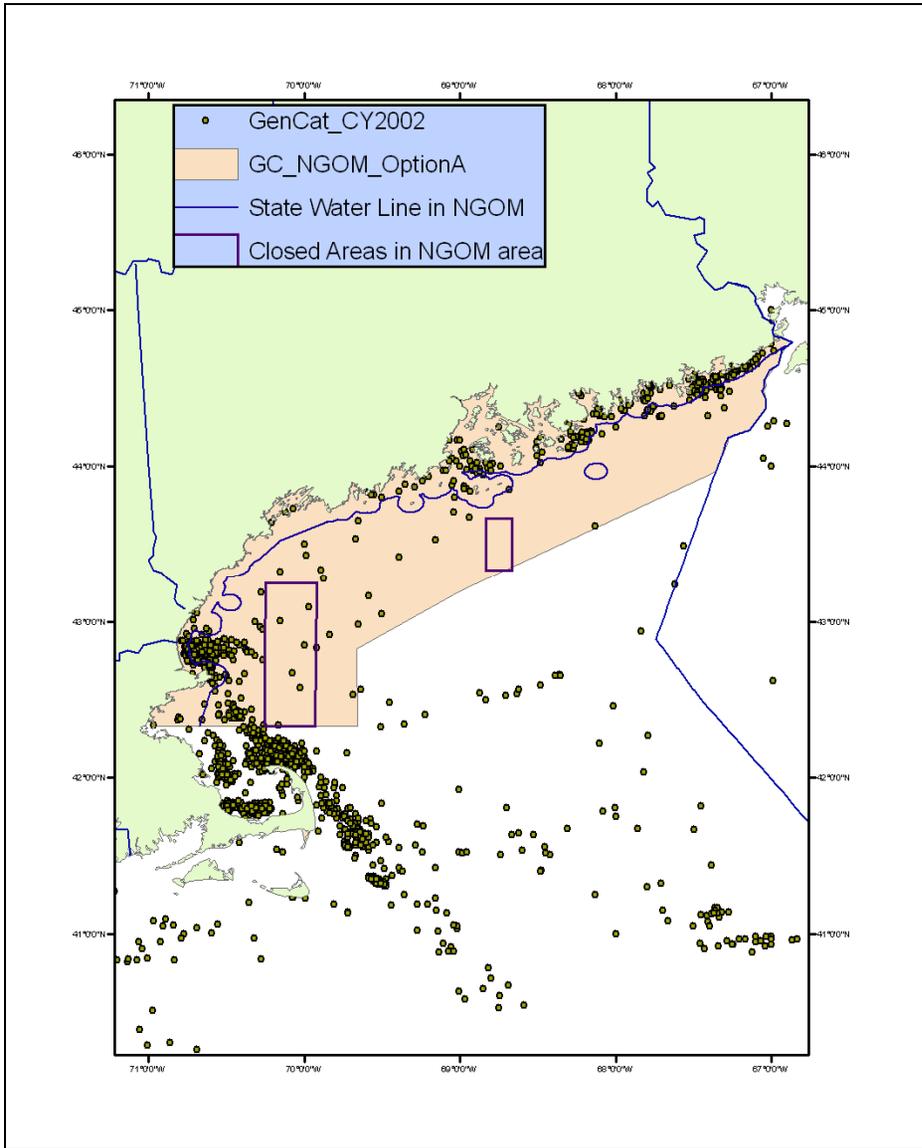
Calendar Year	VTR landings from within the NGOM area	VTR landings from within state waters in the NGOM	VTR landings from within the GF and EFH closed areas in NGOM	VTR landings from within federal waters only in the NGOM area
2000	66,649	33,444	822	32,383 (49%)
2001	141,825	78,089	2,432	61,304 (43%)
2002	264,175	117,862	799	145,514 (55%)
2003	171,622	100,942	0	70,680 (41%)
2004	46,718	23,434	1,332	21,952 (47%)
2005	75,608	24,541	2,160	48,907 (65%)
2006*	91,771	21,842	3,316	66,613 (73%)
AVG	122,624	57,165	1,552	63,908 (52%)

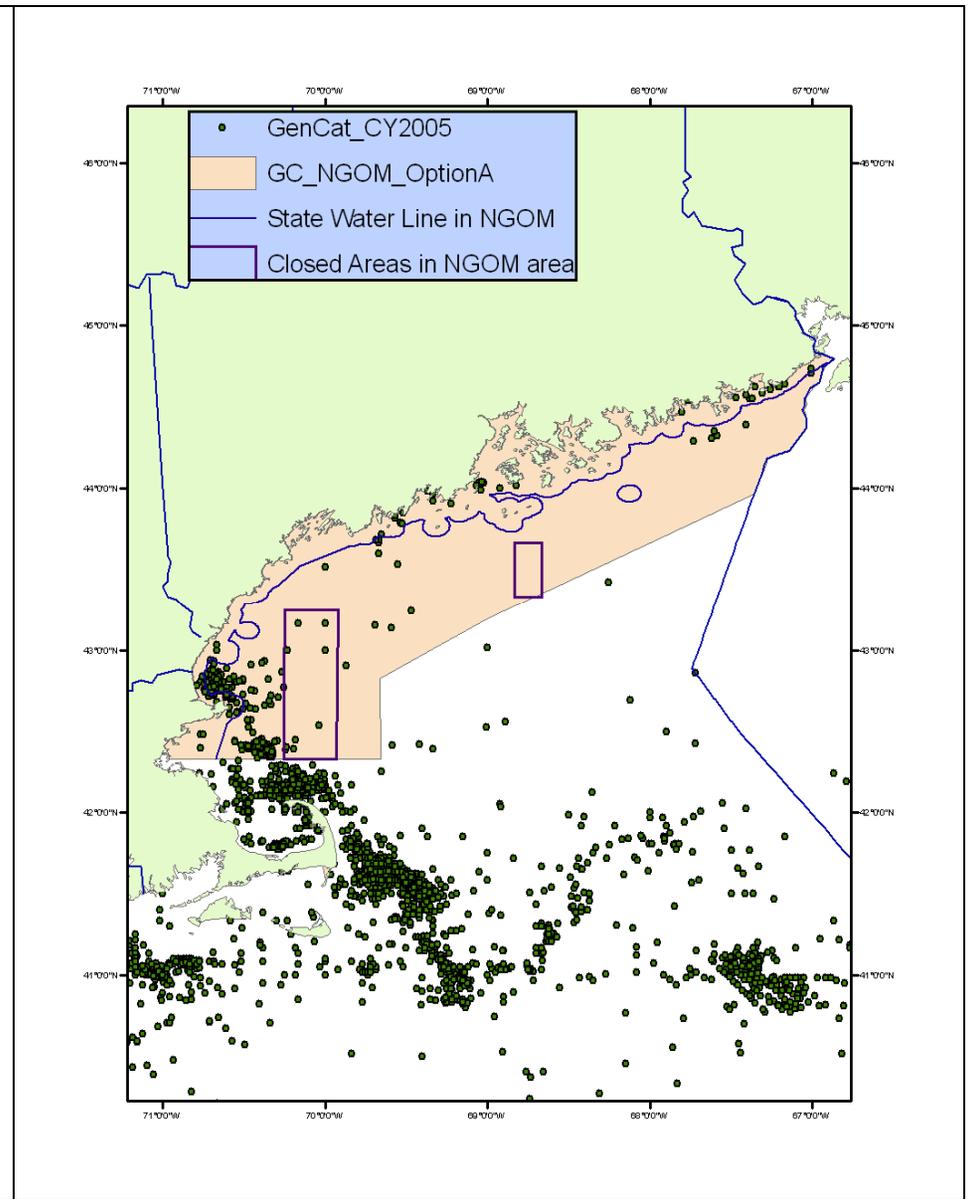
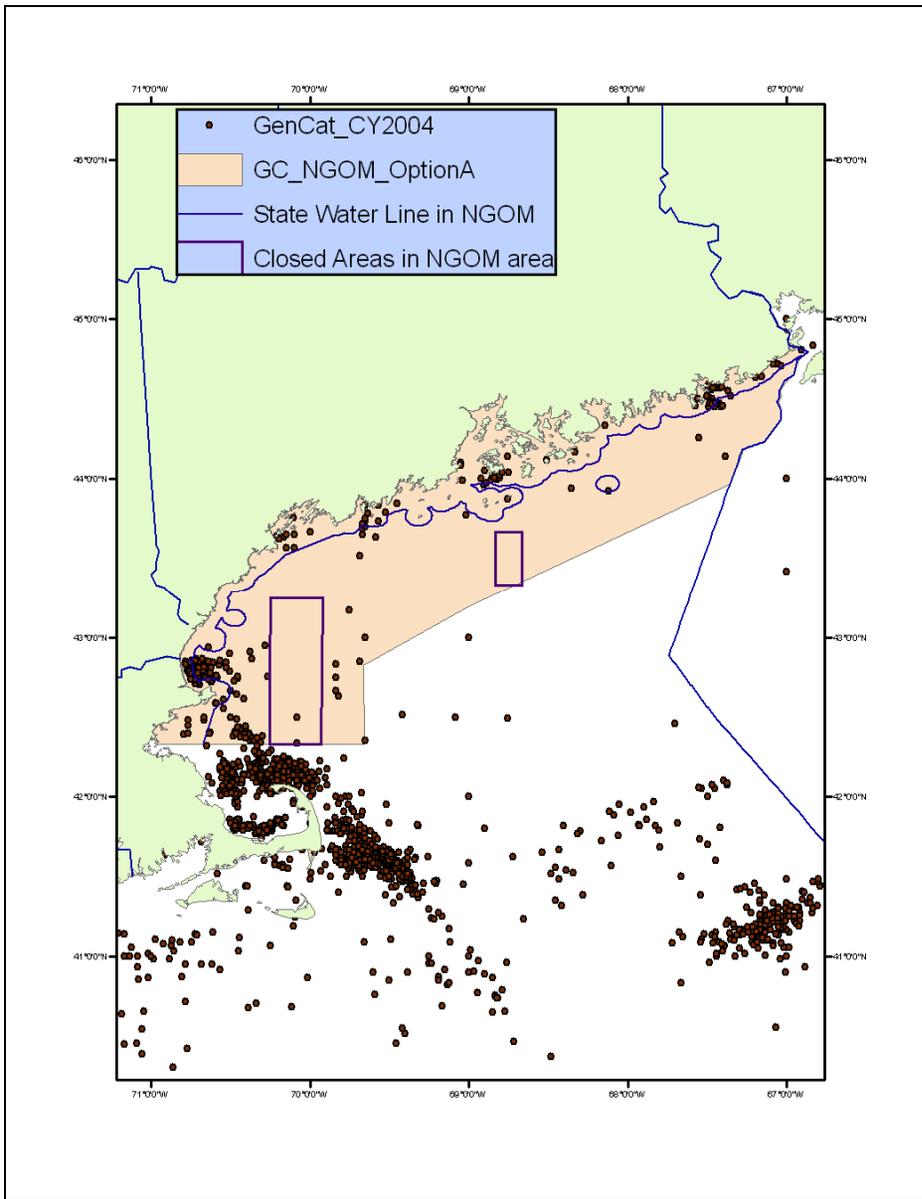
* Through October 11, 2006

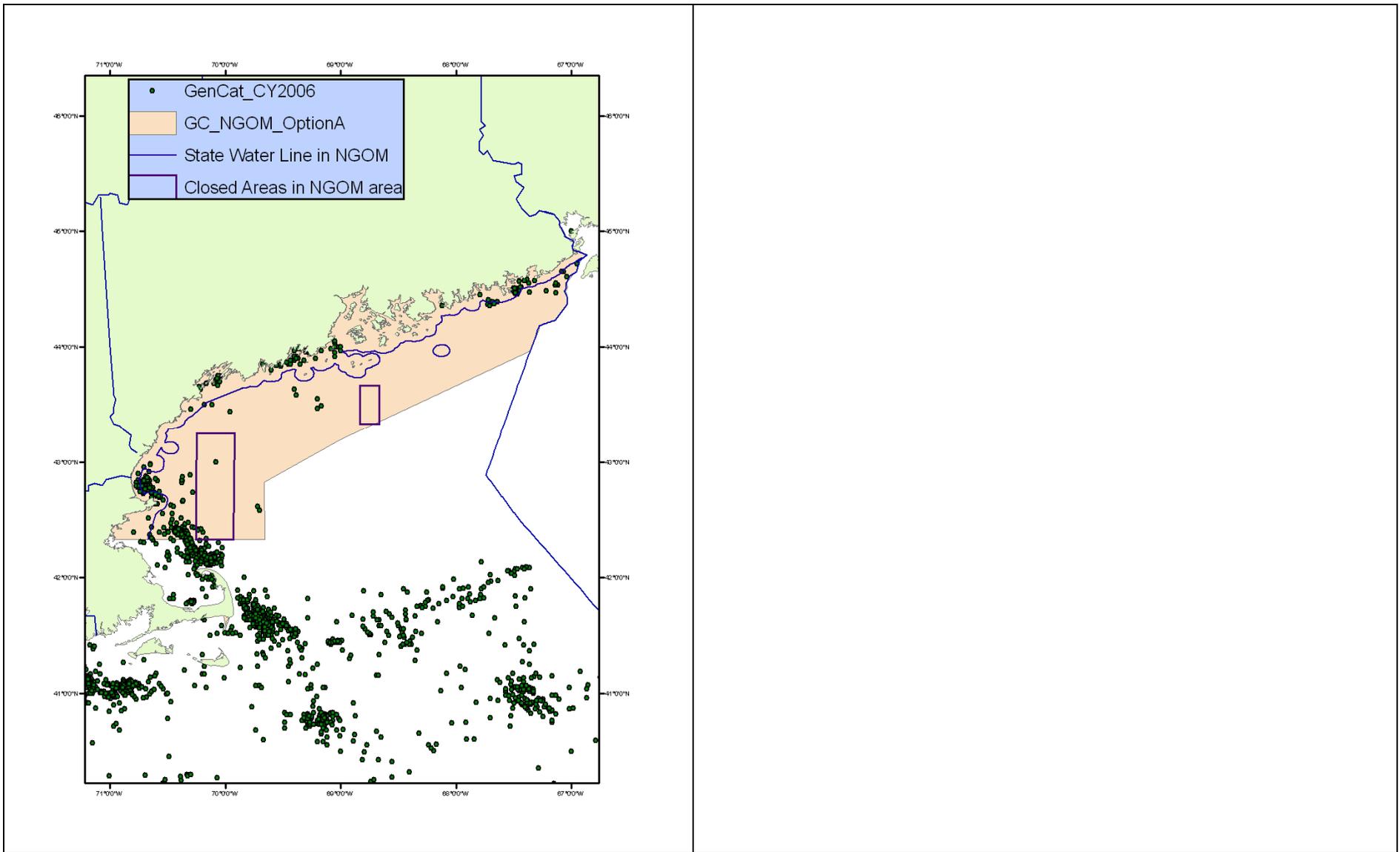
The PDT reviewed this information and recommends that the hard-TAC for the next two fishing years be 64,000 pounds per year. First, there is uncertainty about the resource in the GOM in general, and there is uncertainty about how much of past landings have been and will be from state waters in the future. In order to account for this uncertainty the PDT discussed taking 80% of the average landings from federal waters if it is assumed that average landings are close to long-term MSY. However, since the PDT acknowledges that some of future landings from vessels that qualify to fish under this TAC will come from state waters; the PDT recommends that the average landing value not be reduced since some level of future landings is expected to come from state waters.

Figure 27 – General category effort by calendar year within the Gulf of Maine (VTR data from 2000-October 2006)









5.1.10.2 General category access area management

General category allocations in access areas will remain a fleetwide number of trips per area. This action is considering a variety of alternatives for total allocation into access areas for the general category fishery: 2% per area, 5% per area, 0% for Closed Area II and a small percentage for Closed Area II. The prohibition on deckloading from access areas also applies to general category vessels.

Overall, allocating 5% or 2% to the general category fishery will not have impacts on the scallop resource overall since the same overall amount of scallops will be harvested. There are no major differences in mortality from limited access gear compared to general category gear. Total effort levels are different between the fisheries in terms of dredge size, tow length and trip length, but since there is an overall allocation in pounds made to either fishery, overall impacts on mortality should be the same.

5.1.11 Estimate of mortality from incidental catch

If approved by Amendment 11, an estimate of mortality from incidental catch will be reduced from the total TAC on an annual basis. The PDT estimates that 50,000 pounds should be considered for this source of mortality. Considering mortality from incidental catch in a more direct way could have indirect benefits on the scallop resource by taking this source of mortality into account before allocations are made to the fishery. The PDT will review this estimate and revise it if expected mortality from incidental catch changes in the future.

5.1.12 Revision of overfishing definition

This action is considering revising the overfishing definition based on results from the recent scallop stock assessment, SAW 45. Specifically, the Bmax value in survey weight per tow would be revised to an absolute value of scallop meat and Fmax would be changed to 0.29 (from 0.24). However, there is an alternative to maintain the same fishing mortality target of 0.20, even though the fishing mortality threshold has increased.

Accepting the new overfishing definition recommended by the SARC is expected to have benefits on the scallop resource because the model used to generate these results is considered less bias. The updated model uses more information and is an improvement from the previous methods used. In addition, maintaining the fishing mortality target at $F=0.20$ is precautionary and reduces the risk of overfishing, having long term beneficial impacts on the scallop resource overall.

5.1.13 Minor adjustments to the observer set-aside program

This action includes an alternative that would consider applying a higher compensation rate for vessels carrying an observer in open areas, compared to access area trips. In addition, there are a number of administrative adjustments that are being considered to improve the program overall.

This alternative is not expected to have impacts on the scallop resource.

5.1.14 Area closures to protect young scallops

This action is considering several new areas as scallop rotational areas. Small scallops have shown up in the 2007 survey in the Hudson Canyon area as well as the Great South Channel.

5.1.14.1 Hudson Canyon area

In order to get a sense of expected impacts from this closure it is useful to compare the projected exploitable biomass and LPUE estimates for the HCS and HCL alternatives compared to DMV2, because these alternatives are the same except for the HC closure. Obviously, exploitable biomass in the HC area is expected to be higher in the short term under the two HC alternatives as well as the preferred alternative that closes the existing HC area. Overall biomass is similar for the alternatives a few years in the future, but in the long term, the DMV2 alternative is projected to have lower biomass than the preferred and HC alternatives. In 2009, the LPUE for HC is closer to 1,700 pounds per day for the HC alternatives and about 1,900 for both the preferred and HC alternatives that propose closing an area in HC for several years to protect small scallops in that area. As with any rotational closure, it is more beneficial to harvest scallops after they have reached their growth potential to maximize yield. Therefore, since there are small scallops in that area, if they are given several years to grow then fewer scallops will be harvested in the future, thus reducing mortality with positive benefits on the resource.

5.1.14.2 Great South Channel area

In order to get a sense of expected impacts from this closure it is useful to compare the projected exploitable biomass and LPUE estimates for the SCH alternative compared to DMV2, because these alternatives are the same except for the SCH closure. Obviously, exploitable biomass in the SCH closure is expected to be higher in the short term under the SCH alternative compared to DMV2. However, exploitable biomass in open areas in the Channel are hit relatively hard if the SCH area is closed, since few open areas on GB have high scallop abundance. IN the long-term this alternative is expected to have higher exploitable biomass than the DMV2 alternative, but closing the proposed area in the GSC would increase overall bottom area swept since that area includes some of the higher LPUE areas left in open areas. IN addition, this closure is expected to have some displacement effects since there are limited areas left that the fishery can use open area DAS. Therefore, this alternative is expected to increase F in other areas compared to the DMV2 alternative (Table 69). As with any rotational closure, it is more beneficial to harvest scallops after they have reached their growth potential to maximize yield. Therefore, since there are small scallops in that area, if they are given several years to grow then fewer scallops will be harvested in the future, thus reducing mortality with positive benefits on the resource. In addition, this area includes a concentration of small scallops that have not shown up on Georges Bank in recent years, and could produce an access area akin to the NL in the near future if managed like an access area.

5.1.15 Other measures

5.1.15.1 30-day VMS power-down provision

An alternative is being considered that would permit a vessel to power down their VMS unit for a minimum of 30 days if the vessel is not going to fish during that time.

This alternative is not expected to have impacts on the scallop resource.

5.1.15.2 Clarification on when a vessel can leave on an access area trip

This alternative would clarify when a vessel can leave on an access area trip. Specifically, the No Action would remain in effect; a vessel can leave on an access area trip before the area opens, but it may not enter the access area until the area has opened.

This alternative is not expected to have impacts on the scallop resource.

5.2 IMPACTS ON PHYSICAL ENVIRONMENT AND EFH

(to be handed out at Council meeting)

5.3 IMPACTS ON PROTECTED RESOURCES

(to be handed out at Council meeting)

5.4 ECONOMIC IMPACTS

5.4.1 Aggregate economic impacts of the rotation area alternatives

The section provides a cost/benefit analysis of the area rotation alternatives, including the no action alternative, proposed by the Council through Framework Action 19 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 of all the measures and allocations that are specified in the present regulations. Specifically, under “No Action,” in open areas, limited access scallop vessels would receive the same allocation as FY2007, full time vessels would receive an allocation of 51 open area DAS in both 2008 and 2009. The trip allocations for access areas would also roll over. Consistent with Framework 20 to the FMP as approved by the Council, full-time vessels would receive 3 Elephant Trunk Access Area trips. The Georges Bank access area allocations are dependent on the schedule of areas that are to be opened. In 2008, the Closed Area I (CAI) and Closed Area II (CAII) access areas are scheduled to open. One trip would be allocated to CAI for full-time vessels, consistent with the 2007 scallop fishery regulations. General category vessels would be allocated 216 trips to CAI in the 2008 fishing year. There would be no allocated trips in CAII because the scallop regulations for 2007 do not include a trip allocation in 2007 for CAII. In 2009, the CAII and Nantucket Lightship access areas are scheduled to open. However, no trips would be allocated because the regulations do not specify any trip allocations for 2008 (i.e., the fishing year preceding the 2009 fishing year, consistent with the regulation cited above). The Hudson Canyon Access Area would become part of the open areas on March 1, 2008, and the Delmarva area would remain closed through February 28, 2010, as specified in the scallop fishery regulations.

The economic impacts are presented in Table 76 to Table 85 using an updated estimate of prices, revenues and total net benefits. The long-term economic analyses are based on the biological

model simulations for landings, DAS and LPUE. For the short-term, the biological model projections approximated the landings under the no action scenario and under other alternatives to the degree it is possible using a very sophisticated biological model. According to the model simulations, however, the day-at-sea is estimated to be 52 days in 2008 (rather than 51 days) for the no action alternative and 33 days (rather than 35 days) in 2008 and 43 days in 2009 (rather than 42 days) for the preferred alternative assuming that 326 full-time equivalent vessels will participate in the scallop fishery in 2008-2009. In order to provide an economic analysis consistent with the 51 DAS under no action in 2008 and 35 DAS in 2008 and 42 DAS in 2009 for the preferred option the following adjustments are made to the landings and DAS projections:

- For no action scenario, the landings in 2008 will be 0.3 million lb. less because the day-at-sea allocations will be 51 not 52. For this reason, scallop landings estimated from biological landings are lowered by 0.3 million lb. for no action scenario and DAS is lowered by 326 days. For the preferred option, allocating 35 instead of 33 increases landings by 0.7 million lb. in 2008 (open area $LPUE=1103$, $1103*2*326=719,156$ lb.) In 2009, however, the results indicate 43 days, but allocation will be 42 days, which will result a decrease in landings by 0.4 million lb. ($1266*1*326=412716$ lb.) compared to model simulations. Similarly adjustment made to the total DAS, increasing it by 652 for 2008 and reducing it by 326 days for 2009 for the preferred option.
- No adjustments are made to long-term biological simulations for landings and DAS because the short-term changes in landings for the no-action and preferred options are small and are not expected to change the long-term results in any significant way. For example, for the two year period (2008-2009), the increase in landings will be 0.3 million lb. for the preferred option, and the decrease in landings is 0.3 million lb. for the no action alternative. These estimates are expected to sufficiently represent the biological and economic impacts under the no action and other alternatives.

5.4.2 Summary of overall economic impacts of the alternatives

- The projected scallop landings for the preferred option and other alternatives are higher compared to no action scenario in 2008 and 2009 compared to no action, with the exceptions of the large Hudson canyon alternative (HCL) in 2008 (Table 76).
- The prices are estimated using the prices model described in Amendment 11. The significant changes in external factors, i.e., in exports, imports, value of dollar, export and import prices since 2005, however, affected the scallop prices significantly in recent years. Given that the future values of these external variables are uncertain, the prices and revenues are estimated here by using a range of estimates: The higher price estimates correspond to the price model outputs at the recent values of import prices and level of exports. The lower price estimates are obtained by reducing forecasted prices from the price model by 10% to more closely approximate the recent prices.
- The preferred option and the other alternatives are expected to increase revenues both in year 2008 and 2009 compared to the no action scenario regardless of the range of prices used (Table 77). Although of value of total scallop revenue changes according to whether lower or higher prices are used in estimation, the percentage change in revenue compared to no action stays the same for each alternative. In 2009, the revenues for the preferred option are expected to exceed the revenues under no action by about 6.2%, and slightly more under other alternatives.

- The results are similar for the impacts on total economic benefits. Total benefits are equal to the sum of consumer benefits (i.e., surplus) and producer benefits (i.e., surplus). The cumulative value of total benefits for alternative options is expected to exceed the no action benefits by 4.5% to 15.5 % for the range of prices used in the estimates. Preferred option will increase total economic benefits by about 5.5% to 5.8% in the short-term, i.e., during 2008-20009 fishing years (Table 80 and Table 81).
- Over the long-term, all alternatives are expected to increase scallop revenues by 0.5% to 1.5% and total net benefits by 1% to 3% depending on the alternative. (Table 83, Table 84 and Table 85). The positive impacts of the preferred option on net economic benefits (2.68%) either exceed or very similar to the value of benefits under other alternatives (Table 84 and Table 85).

5.4.2.1 Short-term Economic Impacts

Table 76. Short-term impacts of alternatives on landings, LPUE and DAS

Fishing year	Alternatives	Landings (lb.)	LPUE	DAS-used (fleet total)	% Change in landings from No action
2008	No Action	43.4	1475	29,256	
	Preferred option	44.4	1593	27,903	2.3%
	DMV closed (Similar to SQ, DMV3)	46.3	1780	25,870	6.7%
	DMV closed in 2008, open in 2009 (DMV2)	46.3	1780	25,865	6.7%
	HC closure, large (HCL)	43.2	1706	25,204	-0.5%
	HC closure, small (HCS)	44.0	1718	25,468	1.4%
	South Channel closed, HC open (SCH)	51.1	1555	32,711	17.7%
	South Channel and HC closed (SCH+HC)	44.2	1427	30,823	1.8%
2009	No Action	41.3	1578	26,044	
	Preferred option	45.9	1632	27,949	11.1%
	DMV closed (Similar to SQ, DMV3)	52.6	1785	29,380	27.2%
	DMV closed in 2008, open in 2009 (DMV2)	51.6	1665	30,859	24.8%
	HC closure, large (HCL)	48.7	1647	29,461	17.8%
	HC closure, small (HCS)	49.2	1682	29,195	19.2%
	South Channel closed, HC open (SCH)	54.9	1482	36,990	33.0%
	South Channel and HC closed (SCH+HC)	46.3	1434	32,221	12.1%
2008-2009 average	No Action	42.6	1527	27,813	
	Preferred option	45.0	1612	27,763	6.6%
	DMV closed (Similar to SQ, DMV3)	49.4	1783	27,625	16.8%
	DMV closed in 2008, open in 2009 (DMV2)	48.9	1723	28,362	15.6%
	HC closure, large (HCL)	46.0	1676	27,332	8.5%
	HC closure, small (HCS)	46.6	1700	27,332	10.0%
	South Channel closed, HC open (SCH)	53.0	1519	34,850	25.1%
	South Channel and HC closed (SCH+HC)	45.3	1430	31,522	6.8%

Table 77. Short-term economic impacts on landings, prices and revenues (in 2006 inflation adjusted prices)

Fishing year	Alternatives	Ex-vessel Price (Lower)	Ex-vessel Price (Higher)	Total Revenue, (Lower prices, mill. \$)	Total Revenue, (Higher prices, mill. \$)	% Change in Revenue from No action
2008	No Action	7.70	8.47	336	369	
	Preferred option	7.66	8.43	340	374	1.3%
	DMV closed (Similar to SQ, DMV3)	7.46	8.24	345	382	2.9%
	DMV closed in 2008, open in 2009 (DMV2)	7.46	8.24	345	382	2.9%
	HC closure, large (HCL)	7.77	8.59	336	371	0.1%
	HC closure, small (HCS)	7.69	8.50	338	374	0.8%
	South Channel closed, HC open (SCH)	7.00	7.74	358	395	6.5%
	South Channel and HC closed (SCH+HC)	7.67	8.47	339	375	1.0%
2009	No Action	7.90	8.73	326	361	
	Preferred option	7.55	8.30	347	381	6.2%
	DMV closed (Similar to SQ, DMV3)	6.91	7.64	363	402	11.3%
	DMV closed in 2008, open in 2009 (DMV2)	7.00	7.74	361	399	10.6%
	HC closure, large (HCL)	7.28	8.05	354	392	8.5%
	HC closure, small (HCS)	7.23	7.99	356	393	9.0%
	South Channel closed, HC open (SCH)	6.69	7.40	368	406	12.7%
	South Channel and HC closed (SCH+HC)	7.51	8.30	348	384	6.5%
2008-2009 average	No Action	7.80	8.60	331	365	
	Preferred option	7.61	8.36	343	378	3.7%
	DMV closed (Similar to SQ, DMV3)	7.19	7.94	354	392	7.1%
	DMV closed in 2008, open in 2009 (DMV2)	7.23	7.99	353	390	6.7%
	HC closure, large (HCL)	7.52	8.32	345	381	4.2%
	HC closure, small (HCS)	7.46	8.24	347	384	4.8%
	South Channel closed, HC open (SCH)	6.85	7.57	363	401	9.6%
	South Channel and HC closed (SCH+HC)	7.59	8.38	343	380	3.7%

Table 78. Short-term economic impacts of alternatives on producer, consumer and total benefits (in 2006 inflation adjusted prices, in million \$, lower ex-vessel prices)

Fishing year	Alternatives	Trip Costs* (\$ million)	Producer Surplus (\$ million)	Consumer Surplus (\$ million)	Total Benefits (\$ million)
2008	No Action	41	295	94	389
	Preferred option	36	309	104	413
	DMV closed (Similar to SQ, DMV3)	36	309	104	413
	DMV closed in 2008, open in 2009 (DMV2)	35	301	94	394
	HC closure, large (HCL)	36	303	96	399
	HC closure, small (HCS)	46	312	121	433
	South Channel closed, HC open (SCH)	43	296	97	393
	South Channel and HC closed (SCH+HC)	39	301	99	400
2009	No Action	36	290	87	377
	Preferred option	43	318	124	442
	DMV closed (Similar to SQ, DMV3)	41	322	127	450
	DMV closed in 2008, open in 2009 (DMV2)	41	313	113	426
	HC closure, large (HCL)	41	315	115	430
	HC closure, small (HCS)	52	316	136	452
	South Channel closed, HC open (SCH)	45	303	105	408
	South Channel and HC closed (SCH+HC)	39	307	103	410

* Includes trip costs such as food, fuel, ice, water, oil and repair costs for gear.

Table 79. Short-term economic impacts of alternatives on producer, consumer and total benefits (in 2006 inflation adjusted prices, in million \$, lower ex-vessel prices)

Fishing year	Alternatives	Producer Surplus % change	Consumer Surplus % change	Total benefits % change
2008	No Action			
	Preferred option	5%	11%	6%
	DMV closed (Similar to SQ, DMV3)	5%	11%	6%
	DMV closed in 2008, open in 2009 (DMV2)	2%	-1%	2%
	HC closure, large (HCL)	3%	2%	3%
	HC closure, small (HCS)	6%	31%	11%
	South Channel closed, HC open (SCH)	1%	3%	1%
	South Channel and HC closed (SCH+HC)	2%	6%	3%
2009	No Action	10%	43%	17%
	Preferred option	11%	46%	19%
	DMV closed (Similar to SQ, DMV3)	8%	30%	13%
	DMV closed in 2008, open in 2009 (DMV2)	9%	32%	14%
	HC closure, large (HCL)	9%	56%	20%
	HC closure, small (HCS)	4%	21%	8%
	South Channel closed, HC open (SCH)	6%	18%	9%
	South Channel and HC closed (SCH+HC)	10%	43%	17%

Table 80. Short-term cumulative benefits compared to no action (in 2006 inflation adjusted prices, lower ex-vessel prices)

Fishing year	Alternatives	Present value of Consumer Surplus (mill. \$)	Present value of Producer Surplus (mill. \$)	Present value of Total Benefits** (mill. \$)	Total benefits net of no action (mill. \$)	% Change in Total Benefits
2008-2009	No Action	175	566	740	-	
	Preferred option	195	588	783	43	5.8%
	DMV closed (Similar to SQ, DMV3)	220	606	826	86	11.6%
	DMV closed in 2008, open in 2009 (DMV2)	223	610	834	93	12.6%
	HC closure, large (HCL)	199	593	793	52	7.0%
	HC closure, small (HCS)	204	597	801	60	8.2%
	South Channel closed, HC open (SCH)	248	607	856	115	15.5%
	South Channel and HC closed (SCH+HC)	195	579	774	33	4.5%

Table 81. Short-term cumulative benefits compared to no action (in 2006 inflation adjusted prices, higher ex-vessel prices)

Fishing year	Alternatives	Present value of Consumer Surplus (mill. \$)	Present value of Producer Surplus (mill. \$)	Present value of Total Benefits** (mill. \$)	Total benefits net of no action (mill. \$)	% Change in Total Benefits
2008-2009	No Action	157	631	788	-	
	Preferred option	177	655	831	43	5.5%
	DMV closed (Similar to SQ, DMV3)	200	678	878	90	11.4%
	DMV closed in 2008, open in 2009 (DMV2)	203	683	886	98	12.4%
	HC closure, large (HCL)	180	663	843	55	7.0%
	HC closure, small (HCS)	184	668	852	64	8.1%
	South Channel closed, HC open (SCH)	228	681	909	121	15.3%
	South Channel and HC closed (SCH+HC)	176	649	824	36	4.6%

5.4.2.2 Long-term Economic Impacts

Table 82. Long-term landings and effort compared to no action

Fishing year	Alternatives	Landings (lb.)	LPUE	Average Total DAS-used
2008-2021	No Action	50.1	1721	28,695
	Preferred option	50.7	1729	28,781
	DMV closed (Similar to SQ, DMV3)	52.2	1744	29,565
	DMV closed in 2008, open in 2009 (DMV2)	52.0	1735	29,603
	HC closure, large (HCL)	50.8	1747	28,756
	HC closure, small (HCS)	52.1	1748	29,269
	South Channel closed, HC open (SCH)	52.1	1703	30,211
	South Channel and HC closed (SCH+HC)	50.8	1708	29,420

Table 83. Long-term revenues compared to no action (in 2006 inflation adjusted prices)

Fishing year	Alternatives	Ex-vessel Price (Lower)	Ex-vessel Price (Higher)	Total Revenue, (Lower prices, mill. \$)	Total Revenue, (Higher prices, mill. \$)	% Change in Revenue from No action
2008-2021 average	No Action	7.2	7.9	357.8	395.4	
	Preferred option	7.1	7.9	359.5	397.3	0.48%
	DMV closed (Similar to SQ, DMV3)	7.0	7.7	362.9	401.1	1.43%
	DMV closed in 2008, open in 2009 (DMV2)	7.0	7.7	362.5	400.6	1.31%
	HC closure, large (HCL)	7.1	7.9	359.9	397.7	0.59%
	HC closure, small (HCS)	7.0	7.7	362.7	400.9	1.38%
	South Channel closed, HC open (SCH)	7.0	7.7	363.4	401.6	1.57%
	South Channel and HC closed (SCH+HC)	7.1	7.9	360.1	398.0	0.64%

Table 84. Long-term cumulative benefits compared to no action (in 2006 inflation adjusted prices, million \$, lower ex-vessel prices)

Fishing year	Alternatives	Cum. present value of Consumer Surplus (\$ million)	Cum. present value of Producer Surplus (\$ million)	Cum. present value of Total Benefits (\$ million)	Cum. present value of Net Benefits (\$ million)	% Change in Benefits from No action
2008-2021	No Action	1,087	3,014	4,101	-	
	Preferred option	1,156	3,058	4,214	113	2.75%
	DMV closed (Similar to SQ, DMV3)	1,166	3,063	4,229	129	3.14%
	DMV closed in 2008, open in 2009 (DMV2)	1,110	3,038	4,148	48	1.16%
	HC closure, large (HCL)	1,153	3,058	4,211	110	2.68%
	HC closure, small (HCS)	1,171	3,060	4,231	130	3.17%
	South Channel closed, HC open (SCH)	1,114	3,032	4,146	45	1.10%
	South Channel and HC closed (SCH+HC)	1,108	3,033	4,141	40	0.97%

Table 85. Long-term cumulative benefits compared to no action (in 2006 inflation adjusted prices, million \$, higher ex-vessel prices)

Fishing year	Alternatives	Cum. present value of Consumer Surplus (\$ million)	Cum. present value of Producer Surplus (\$ million)	Cum. present value of Total Benefits (\$ million)	Cum. present value of Net Benefits (\$ million)	% Change in Benefits from No action
2008-2021	No Action	991	3,364	4,354	-	
	Preferred option	1,058	3,413	4,471	117	2.68%
	DMV closed (Similar to SQ, DMV3)	1,068	3,419	4,487	133	3.06%
	DMV closed in 2008, open in 2009 (DMV2)	1,013	3,390	4,404	49	1.13%
	HC closure, large (HCL)	1,055	3,412	4,468	113	2.60%
	HC closure, small (HCS)	1,073	3,416	4,489	135	3.10%
	South Channel closed, HC open (SCH)	1,017	3,385	4,402	47	1.09%
	South Channel and HC closed (SCH+HC)	1,011	3,385	4,396	41	0.95%

5.4.3 Impacts of compensation rate for vessels fishing in open areas compared to access area trips

Currently a vessel that is required to carry an observer in an access area receives a 400 pound per day compensation and a reduced DAS accrual rate of 0.15 per day for an open area trip carrying an observer. This alternative would still give a vessel a specific compensation rate based on whether the trip was in an access area or not, but the rate would be higher for open area trips than access area trips. NMFS would still ultimately assign the rates after consideration of available data, but this alternative would recommend that a higher rate be used for open area trips.

The economic impacts of the observer coverage on the vessel owners and the crew will depend to what extent the allowance provided by NMFS will be able to cover cost of observer coverage. Landing extra pounds either through increased possession limit or reduced DAS accrual will also extend the trip and increase the trip costs and hours worked by the crew. Therefore the fishing costs should also be taken into account in assessing potential impacts of observer coverage. Finally, economic impacts will depend on the scallop prices, which will impact the amount of revenue from the compensation pounds provided by NMFS through the TAC set-aside. The analyses below provide scenarios assuming an ex-vessel price of \$6.50 per pound (average scallop ex-vessel price in 2006). Obviously, if prices increase above this level, less compensation pounds or DAS accrual rates will be sufficient to cover the observer costs and the trip expenses.

Table 86 provides an analysis of various levels of compensation pounds for access areas and reduced day-at-sea accrual rates for open areas. The increase in the trip length necessary to land the compensation pounds will vary with average trip length of a vessel and with scallop pounds per day-at-sea (LPUE) a vessel lands. The recent biological projections show that LPUE could range from 1000 pounds in the open areas to 2,150 in the access areas. The LPUE in any specific fishing area and time will be lower or higher from these averages, however, depending on the resource conditions in that area. Landings per day-at-sea will also change with the vessel characteristics including gross tonnage and horse power as well as with the number of crew on board. Clearly, the lower the fishing power a vessel has, the higher will be the increase in trip length to land the compensation pounds. For these reasons, the analyses shown in below include scenarios with LPUE ranging from 650 lb. to 2150 lb. per day-at-sea. Obviously, if vessels could

land more scallop pounds than these amounts, the costs of observer coverage net of trip expenses will be less than estimated in Table 86 .

For example, assuming an LPUE of 2,150 lb. in the access areas, a compensation amount of even 200 pounds would cover the observer and the trip costs of a trip with observer on board (Scenario 2). For a vessel with a smaller fishing power (with an LPUE of 700 pounds per day-at-sea) however, a higher compensation rate would be necessary (250 pounds, Scenario 3). The compensation amounts provided to the vessels was much higher, 400 pounds, than these amounts in 2006 (Scenario 1), which is one of the reasons why this alternative does not recommend a higher rate for the access areas.

The scenarios 4, 5 and 6 in Table 86 show the impacts of different DAS accrual rates for the observer coverage in the open areas. Using the rate applied in 2006 fishing year, i.e., 0.15 DAS accrual reduction (with an observer) would not be large enough to cover observer costs and the increase in trip costs. As a result, the total crew income would decrease by \$1,438 due to the costs of observer coverage (Scenario 4). This is because, LPUE is much lower in the open areas, at a LPUE of 1000 per day, and accrual rate of 0.15 provides only 150 pounds ($1000 \times 0.15 = 150$ lb.) per day as a compensation for observe coverage, much less than the 400 pounds provided for access areas. Instead, a DAS accrual rate of about 0.30 would provide a compensation of 300 pounds per day-at-sea, covering the vessel and crew expenses due to carrying an observer onboard (Scenario 4). If the estimates for landings, exports, and other factors affecting demand materialize and scallop prices increase to \$7.70 per pound in 2008, a lower DAS accrual rate of 0.2 (Table 87, Scenario 5) would provide sufficient compensation for the observer coverage. This rate may not be large enough, however, for a small vessel landing only 650 pounds per day-at-sea or in a part of open-area where the catch rates are low. Rather, a rate of 0.45 DAS (0.35 DAS) if the prices are 6.50 per pound (\$7.70 per pound) may be necessary to prevent impacting crew income negatively (Scenario 6 in Table 86 and Table 87). These adjustments would respond to public comment that the program does not work in areas with lower catch rates and a higher compensation rate for open area trips may reduce the financial burden of observer coverage for many vessels to some degree. In order to prevent the total observer set-aside from being used faster as a result, the compensation rate for access area trips should decline, however (for example \$300 pounds per day).

Table 86. Impacts of observer coverage on crew and vessel income (Assumptions: Cost of observers=\$800 per day-at-sea)

Observer allowance	Access areas			Open areas		
	Scenario-1	Scenario-2	Scenario-3	Scenario-4	Scenario-5	Scenario-6
LPUE (Scallop lb. /day-at-sea)	2,150	2,150	750	1,000	1,000	650
Scallop price	6.50	6.50	6.50	6.50	6.50	6.50
Reduced DAS accrual rate for open areas				0.15	0.3	0.45
Compensation lb. per day	400	200	250	150	300	293
Trip with no observer coverage						
Trip length (without observer)	8.4	8.4	10.0	8	8	8
Scallop pounds landed without observer	18,000	18,000	7,500	8,000	8,000	5,200
Scallop revenue	117,000	117,000	48,750	52,000	52,000	33,800
Trip cost per DAS	1,400	1,400	900	1,400	1,400	900
Total trip costs	11,721	11,721	9,000	11,200	11,200	7,200
Crew income (net of trip costs)	52,629	52,629	17,813	17,400	17,400	11,390
Crew income per day-at-sea	6,286	6,286	1,781	2,175	2,175	1,424
Vessel share	52,650	52,650	21,938	23,400	23,400	15,210
Vessel share per day-at-sea	6,289	6,289	2,194	2,925	2,925	1,901
Trip with observer coverage						
Increase in trip length with observer	1.6	0.8	3.3	1.2	2.4	3.6
Trip length with observer coverage	9.9	9.2	13.3	9.2	10.4	11.6
Total scallop pounds from trip	21,349	19,674	10,000	9,200	10,400	7,540
Scallop Revenue	138,767	127,884	65,000	59,800	67,600	49,010
Observer costs	7,944	7,321	10,667	7,360	8,320	9,280
Scallop revenue net of observer costs	130,824	120,563	54,333	52,440	59,280	39,730
Trip costs	13,902	12,811	12,000	12,880	14,560	10,440
Crew income (net of trip costs)	58,051	53,498	17,883	15,962	18,044	11,412
Crew income per day-at-sea	5,846	5,846	1,341	1,735	1,735	984
Change in crew income per day-at-sea	-440	-440	-440	-440	-440	-440
Total costs of observer coverage for crew	5,422	869	71	-1,438	644	22
Vessel share	58,871	54,253	24,450	23,598	26,676	17,879
Vessel share per day-at-sea	5,929	5,929	1,834	2,565	2,565	1,541
Change in vessel share per day-at-sea	-360	-360	-360	-360	-360	-360
Total costs of observer coverage for vessel-owner	6,221	1,603	2,513	198	3,276	2,669
Total cost to crew and vessel-owner	11,643	2,473	2,583	-1,240	3,920	2,690

Table 87. Impacts of observer coverage on crew and vessel income (Assumptions: Cost of observers=\$800 per day-at-sea)

Observer allowance	Access areas			Open areas		
	Scenario-1	Scenario-2	Scenario-3	Scenario-4	Scenario-5	Scenario-6
LPUE (Scallop lb. /day-at-sea)	2,150	2,150	750	1,000	1,000	650
Scallop price	7.70	7.70	7.70	7.70	7.70	7.70
Reduced DAS accrual rate for open areas				0.15	0.2	0.35
Compensation lb. per day	400	200	250	150	200	228
Trip with no observer coverage						
Trip length (without observer)	8.4	8.4	10.0	8	8	8
Scallop pounds landed without observer	18,000	18,000	7,500	8,000	8,000	5,200
Scallop revenue	138,600	138,600	57,750	61,600	61,600	40,040
Trip cost per DAS	1,400	1,400	900	1,400	1,400	900
Total trip costs	11,721	11,721	9,000	11,200	11,200	7,200
Crew income (net of trip costs)	64,509	64,509	22,763	22,680	22,680	14,822
Crew income per day-at-sea	7,705	7,705	2,276	2,835	2,835	1,853
Vessel share	62,370	62,370	25,988	27,720	27,720	18,018
Vessel share per day-at-sea	7,450	7,450	2,599	3,465	3,465	2,252
Trip with observer coverage						
Increase in trip length with observer	1.6	0.8	3.3	1.2	1.6	2.8
Trip length with observer coverage	9.9	9.2	13.3	9.2	9.6	10.8
Total scallop pounds from trip	21,349	19,674	10,000	9,200	9,600	7,020
Scallop Revenue	164,386	151,493	77,000	70,840	73,920	54,054
Observer costs	7,944	7,321	10,667	7,360	7,680	8,640
Scallop revenue net of observer costs	156,442	144,172	66,333	63,480	66,240	45,414
Trip costs	13,902	12,811	12,000	12,880	13,440	9,720
Crew income (net of trip costs)	72,142	66,484	24,483	22,034	22,992	15,258
Crew income per day-at-sea	7,265	7,265	1,836	2,395	2,395	1,413
Change in crew income per day-at-sea	-440	-440	-440	-440	-440	-440
Total costs of observer coverage for crew	7,633	1,974	1,721	-646	312	436
Vessel share	70,399	64,878	29,850	28,566	29,808	20,436
Vessel share per day-at-sea	7,090	7,090	2,239	3,105	3,105	1,892
Change in vessel share per day-at-sea	-360	-360	-360	-360	-360	-360
Total costs of observer coverage for vessel-owner	8,029	2,508	3,863	846	2,088	2,418
Total cost to crew and vessel-owner	15,662	4,482	5,583	200	2,400	2,854

5.5 SOCIAL IMPACTS

(to be handed out at Council meeting)

6.0 COMPLIANCE WITH APPLICABLE LAW

[Staff will complete this section after the Council selects final measures]

NEW ENGLAND FISHERY MANAGEMENT Council

Scallops

I. STATUS

A. Management Actions

Both Framework 20 and Amendment 11 have been submitted to NMFS and they are currently being reviewed. Framework 20 is expected to be implemented in the near future and a proposed rule for Amendment 11 is expected later this fall.

B. Meetings

- A joint General Category and Scallop Advisory Panel meeting was held on October 10
- The Scallop Committee met on October 11

II. COUNCIL ACTION

- A. The Council will review and approve management measures for Framework 19
- B. The Council will review and approve research priorities for 2008 and 2009

III. INFORMATION

1. Draft Framework 19
2. Joint General Category and Scallop Advisory Panel meeting summary (Oct 10)
3. Scallop Committee meeting summary (Oct 11)
4. Memo from PDT regarding research priorities
5. Memo from Maine DMR regarding alternative method for estimating NGOM TAC

#2



**New England Fishery Management Council
Joint General Category and Scallop Advisory Panel Meeting**

Wednesday, October 10, 2007 – Holiday Inn – Peabody, MA

Attendance: Most advisory panel members were present for the meeting. Several Council staff in attendance were Deirdre Boelke, Demet Haksever, and Sarah Pautzke, as well as Dr. Dvora Hart from the Northeast Fisheries Science Center. About a dozen members of the public were in the audience and several Scallop Committee members were present as well.

Bill Wells, the Chair of the Scallop Advisory Panel, chaired the meeting. The primary purpose of the meeting was to recommend preferred alternatives for Framework 19 for the Scallop Committee to consider the following day. The advisors did not have time to identify preferred alternatives for each management topic, but did provide input on a dozen or so priority items. The primary purpose of FW19 is to set specifications for FY2008-2009, address several measures related to Amendment 11 decisions, and several other issues. After introductions, Ms. Deirdre Boelke gave a presentation that explained the alternatives under consideration and described the various meeting materials.

Dr. Dvora Hart gave a presentation on the 2007 survey data available as well as results of the simulations used to estimate biological impacts of the alternatives under consideration. Topics covered included: 2006 and 2007 biomass estimates, distribution of scallop biomass per area, recruitment for 2007, short and long term impacts of FW19 alternatives including biomass estimates, expected catch, DAS, bottom area swept, as well as general information about the various models used (SAMS model and CASA model).

In summary, Dr. Hart explained that there has been a reduction in biomass in 2007 compared to 2006, mostly in the GB area due to high levels of fishing effort in that area. Overall, 1/3 of total biomass is in the ET area, and another quarter is within EFH closed areas on GB. Recruitment on GB is the highest it has been since 2000. After a number of questions and answers related to both presentations the panel took a morning break, and then proceeded topic by topic.

POTENTIAL NEW ROTATIONAL AREAS TO PROTECT SMALL SCALLOPS

• **HUDSON CANYON**

The PDT sent a memo to advisors seeking input on potential boundaries for a scallop rotational area in the Hudson Canyon vicinity because high levels of recruitment were seen on the 2007 survey. Most advisors were supportive of leaving the Hudson Canyon (HC) closure boundaries alone. It was argued that the existing boundaries are recognized by industry and enforcement already and the majority of survey tows with high recruitment were contained within that area. However, there was also considerable support for moving the boundary slightly to the west to include more area with high recruitment. The General Category vessels were supportive of the closure overall, but want to be sure they would receive an allocation of access in the future when the areas reopened – perhaps 5% of the allowable catch. One advisor pointed out that the survey

locations on the map represent a smaller area than an actual survey tow, so there should be some wiggle room when deciding on boundary placement. A member of the audience reminded the panel that there are other measures already in place that protect smaller scallops, i.e. crew size restrictions and ring size; therefore, trying to include every last tow with high recruitment is not necessary. Overall, the group was supportive of a closure in this region, but voiced concern that more areas are being closed and fewer areas are reopening; open areas are experiencing harder fishing pressure as a result.

By Consensus:

Support the current HC boundary as a scallop rotational area (neither of the proposed ten-minute-square alternatives). The area should close for both 2008 and 2009 (the new HC area would not include the north east corner of the ET area that used to be included in the HC area).

- **GREAT SOUTH CHANNEL**

In the Great South Channel (GSC), it was mentioned that there are too many outside constraints that may restrict access at a future date, including the newly identified cod HAPC and yellowtail bycatch TACs. It was argued that a more comprehensive plan is needed for Georges Bank before a scallop rotational area can be closed. One advisor expressed concern that this closure would end the general category fishery in New England. Other concerns included the displacement of fishing effort to the north to an area that probably cannot sustain a fishery for very long, and concerns that forcing boats further offshore could have safety issues. One commenter pointed out that the GSC has one of the higher LPUEs for open areas, and if that area is closed then total open area DAS would have to further be reduced. While a closure on GB could result in high catches in future years similar to the Nantucket Lightship area, the panel could not support a closure in this area with so many unknowns that could compromise the effectiveness of the program.

By Consensus:

Advisors are opposed to a closure in the GSC in this action.

OVERALL SCENARIO FOR FW19 ALLOCATIONS: HC-SM with average of $F=0.20$

Once the panel identified the areas that should be considered for area rotation, those decisions limited the choices for overall scenarios for allocation. Of the seven scenarios under consideration, the panel was most supportive of one access area trip on GB per year, 4 trips in ET in 2008, 3 in 2009, opening Delmarva in 2009 for 1 trip, and closing the current HC area (equivalent to the smaller of the 2 HC areas analyzed). The panel was concerned about the reduction in open area DAS compared to FY2007 allocations of 51 for full-time vessels. Several speakers did not understand why there was such a reduction in open area DAS when the stock is not overfished and the overall long-term biomass projections are positive. Staff explained that the final numbers based on 2007 data were surprising; however, the percent of total biomass in all open areas is only 17%, since so many areas are off limits. In addition, the general category fishery is allocated 10% of total catch in 2008, so when that reverts to 5% and some areas recover in a year, DAS and total catch levels rebound in 2009.

The panel discussed several ways to mitigate impacts of relatively low open area DAS in 2008. One idea included an average fishing mortality rate of $F=0.20$ over two years so that a higher F

could be applied in 2008 and lower F in 2009. It was recommended that if 5 DAS were moved to 2008 from 2009, the overall F would remain at F=0.20 for the two years combined, but overall landings would be stabilized between years and expected negative impacts in 2008 would be reduced. Other ideas included the use of a notice action procedure to reduce 2009 DAS if allocating more DAS in 2008; an alternative that would combine “No Action” with the HC-SM closure to get 1 trip in CA1 and Lightship, nothing in CA2, 3 trips in ET, nothing in HC or Delmarva, close the HC, and increase DAS to 42; or an alternative that would provide some level of access in CA1 or CA2 to compensate for lower DAS in open areas. Ultimately, the group supported the first idea by consensus (HC-small with an average F=0.20 to mitigate impacts of lower DAS in 2008), and submitted the others as other ideas that could be considered.

The advisors supported **HC-SM**, which provides the following:

Year	CL1	CL2	NLS	ET	DMV	HC	Sch	OpDAS	IndvDAS	Average F=0.2
2008	Cl	Cl	1 trip	4 trips	Cl	Cl	Op	12331	30	35
2009	Cl	1 trip	Cl	3 trips	1 trip	Cl	Op	16202	47	42

By consensus:

In terms of the overall scenario –

The advisors discussed several ways to reduce impacts of open area reductions in 2008 by:

- 1. Considering an alternative that would have an average F=0.20 for both years (closer to F=0.21 in 2008 and F=0.19 in 2009 to increase open area DAS in 2008 and reduce open area DAS in 2009)**

Not by consensus – but other ideas suggested by the advisors:

- 2. Set up a notice action procedure to revisit open area DAS in 2009 based on updated estimates of LPUE**
- 3. Combined scenario between No Action and HC-sm (1 trip in CA1, 1 trip in NL, 3 trips in ET, close HC and allocate open area DAS in between 29 and 51)**
- 4. Consider a reduced trip in CA1 or CA2 in 2008 as a way to provide more effort in 2008 other than more open area DAS**

2005 UN-USED HUDSON CANYON TRIPS

The question at hand was whether to extend unused 2005 HC trips for an additional 3 months into the next fishing year or let them expire. Ms. Boelke addressed concerns about the effects on 2008 DAS allocation and mortality, saying that if the area stays open into FY2008, then mortality assumed to occur in 2007 would be shifted to 2008. This alternative would probably increase overall F very little (about F=0.01) and if the Council wanted the overall target fishing mortality to remain at F=0.20, then open area DAS may have to be reduced to account for this mortality. The advisors requested that staff determine just how much 2008 allocations would be affected if the 3-month extension was permitted. The advisors passed a motion to support No Action, but it passed on a very narrow margin.

Alternative related to expiration of HC trips on February 29, 2007 (No Action)

Vote: 3:2:4, passes but very narrow.

GENERAL CATEGORY ALLOCATIONS IN ACCESS AREAS

The Panel addressed whether the general category fishery should be allocated 2% or 5% of each access area to reduce derby fishing in those areas during the transition period to limited entry. Most speakers did not agree that an allocation of 2% would reduce derby fishing. It was pointed out that a lower percentage does not do anything to prevent the derby, it just makes it smaller. It was argued that at 2% the general category fishery would be forced to fish in open areas with smaller and fewer scallops. Therefore, the majority of the panel supported a 5% allocation for all areas except CA2. However, several limited access vessel owners opposed 5% because if a higher allocation in access areas for the general category resulted in less trips in ETA for the limited access fishery, then some speakers did not support a higher allocation for the general category fishery. The advisors requested that staff calculate approximately how many open area DAS would be allocated if the general category fishery was allocated 2% in access areas compared to 5%, and if ETA tips would be reduced if general category vessels were allocated 5% of total allocation in access areas.

By consensus:

Advisors support a 5% allocation for general category vessels in all access areas (except CA2). However some limited access advisors did not support 5% if that translated into a reduction in trips in the ET area for the limited access fishery. Staff was requested to evaluate the impacts of 2% compared to 5% on allocations for the Committee to consider tomorrow.

DELMARVA SEASONAL CLOSURE

To reduce potential turtle interactions, a seasonal closure in the Delmarva access area was considered. The group reviewed the limited data available on turtle bycatch rates in this region. As the issue was discussed, it became evident that this closure would most likely have more beneficial impacts on reducing non-harvest mortality on scallops compared to potential benefits on turtles. If the area was closed during months of the year with higher water and air temperatures, then fewer scallops would die that were brought on deck and eventually returned to the sea. The group agreed that a three month period may be beneficial for this area that is further to the south than ET and it was suggested that the name of the alternative be revised to clarify that the closure would have two purposes. It was also discussed that closures to commercial fishing are not the only way to improve the status of sea turtles. In fact, it was argued that there are other approaches that would have more direct results such as placing turtle eggs in hatcheries and releasing them. The advisors decided that NMFS should examine other ways to increase survivability of turtles aside from closures to commercial fisheries.

Rather than a seasonal closure, consider requesting that NMFS investigate the use of turtle hatcheries to increase survivability of turtles to offset any potential perceived impacts from commercial fishing and other sources.

Vote: 6:0:0

Support a seasonal closure from August to Oct 31 in the Delmarva area to reduce non-harvest mortality as well as reduce potential interactions with sea turtles.

Vote: 4:1:0, motion passes

CREW-SIZE LIMITATIONS

The Advisory Panel chose not to change anything with regards to crew-size limitations. While the advisors originally proposed an alternative that would restrict crew size to 8 or 9 in access areas, they did not feel it was warranted based on review of recent observer data. Since it does not seem that vessels are taking larger crews to target smaller scallops, the advisors discussed that the restriction may not be necessary. Several advisors argued that there are a couple vessels considering the roe-on market, and this fishery may require more crew. Therefore, if this measure could reduce incentive to pursue a roe-on fishery, this panel did not want to support it. Furthermore, there were arguments made about safety and training purposes.

By consensus: support for No action in terms of crew size restrictions in the access areas.

2008 QUARTERLY HARD TAC FOR THE GENERAL CATEGORY FISHERY

From Amendment 11, one measure this action needs to include is the hard-TAC allocations for the general category fishery for the transition period to limited entry. The PDT reviewed historical landings and expected catch in 2008 and prepared 2 options for the advisors to consider. The PDT recommends that the first 2 quarters be elevated to account for an increase in ETA allocations compared to 2007 and previous years. They also recommend that 30-40% of the total TAC be allocated to the first two quarters such that if the TAC is not harvested, it would roll over to following quarters. Quarter 2 is expected to remain a high quarter for landings; however, access to GB areas in June will be lower. The Advisory Panel reviewed the options and did not have a preference for either option presented. It was suggested that some TAC be saved for Quarter 3 and 4 to accommodate traditional winter fisheries that target scallops in some regions as well as land scallops more incidentally in other fisheries.

COST RECOVERY PROGRAM FOR THE GENERAL CATEGORY IFQ PROGRAM

The panel briefly reviewed the alternatives for the cost recovery program that is being implemented to cover costs from the IFQ program (data collection and analysis, management, and enforcement). In general, the general category advisors were more supportive of a program where the vessel was responsible to pay the cost recovery directly to the government, rather than through a dealer. It was pointed out that some vessels use multiple dealers and it would be difficult to keep track of which dealer owed what. In addition, most speakers were more supportive of being responsible for submitting their payment to be sure it was paid on time, etc. because ramifications of late payments or failing to pay still fall on the IFQ shareholder, not the dealer.

By consensus: vessel owner, not the dealer, pays NMFS for the general category IFQ program.

#3



New England Fishery Management Council
Scallop Oversight Committee Meeting
 Thursday, October 11, 2007 – Holiday Inn – Peabody, MA

Attendance:

Committee Members: David Simpson (Chair), Dennis Spitsbergen (vice-Chair), Rip Cunningham, Hannah Goodale (designee for Pat Kurkul), Terry Stockwell, Rodney Avila, Jim Salisbury and Dana Rice.

Council Staff: Deirdre Boelke and Demet Haksever

NMFS Staff: Peter Christopher, Dvora Hart and Gene Martin

There were about 25 members of the public present at the meeting.

The meeting began just after 9:00 am and Mr. Simpson reviewed the agenda. The primary purpose of the meeting was to identify preferred alternatives for Framework 19 and to approve research priorities for FY 2008-2009.

Ms. Boelke reviewed the meeting materials and gave a presentation of the range of alternatives under consideration. Dr. Dvora Hart gave a presentation on the 2007 survey data available as well as results of the simulations used to estimate biological impacts of the alternatives under consideration. Ms. Boelke then reviewed the motions passed the previous day at the Advisory Panel meeting. In general, the Committee agreed with most of the motions passed by the advisors as preferred alternatives for Framework 19. The Committee addressed each issue in the framework topic by topic.

POTENTIAL NEW ROTATIONAL CLOSURES

The Committee agreed with the preferred alternative recommended by advisors for the Hudson Canyon area. Most recruitment in 2007 is within those boundaries and both industry members and enforcement are familiar with the area. Staff explained that the advisors were not supportive of the proposed closure in the Great South Channel in this action because there are too many outside constraints such as the new proposed HAPC area that overlaps with this area, as well as a potential YT TAC that could apply to the area. One member of the audience added that closing the proposed area in the GSC would increase overall bottom time because that area includes some of the higher LPUE areas left in open areas. Rather than specifically address this area, the Committee decided to identify a scenario overall first, which would in effect dictate whether the Committee supports a closure in the Channel in this action. Based on Motion #2 below, the Committee supported inclusion of the Hudson Canyon area, but not the proposed closure in the Channel.

Motion 1: Spitsbergen/Salisbury

Approve AP recommendation for new rotational area in Hudson Canyon to be the existing HC area (excluding southwest portion that overlaps with current ETA area).

6:00, motion passed

OVERALL SCENARIO FOR ALLOCATION

The Committee then discussed which overall scenario should be identified as preferred for overall allocation. Again, the Committee heard concerns about the reduction in open area DAS compared to 2007. Staff explained that while the stock is not overfished and biomass estimates are well above the target, open area DAS need to be reduced because most of the biomass is not in open areas. Specifically, most is within closed areas or rotational areas; therefore since fishing effort is not uniform, open area DAS need to be lower to reach $F=0.20$. Later in the day it was suggested that the overall fishing mortality target may be too precautionary and, in light of the new assessment results, several members of the audience suggested that the target should be increased since the proposed threshold is now $F=0.29$ compared to $F=0.24$. It was explained that the Council decided to maintain the fishing mortality target of $F=0.20$ at the September Council meeting for several reasons including the fact that fishing is not uniform, the model has underestimated mortality in the past, and management measures have exceeded the target in recent years despite allocating effort at $F=0.20$.

Motion 2: Cunningham/Stockwell

Accept “HC-sm” scenario as the preferred alternative with the average $F=0.2$ over two years to increase open area DAS in 2008 and reduce DAS in 2009 (Specifically, 35 DAS in 2008 compared to 30, and 42 DAS in 2009 compared to 47 DAS). This preferred alternative includes that any unused 2005 HC trips would expire on Feb 29, 2008 (No Action).

7:0:0, motion passed

The Committee then decided to identify preferred alternatives for the rest of the alternatives starting from the beginning of the document. Once the overall scenario is selected, measures for allocation in GB access areas, Elephant Trunk, Delmarva, and open areas are complete. One issue related to the ET program that was unclear was details about the Notice Action procedure. The Committee agreed with the PDT that an additional trigger should be added related to overall fishing mortality and not just biomass in the ET. Therefore a trigger was included that would reduce the number of trips in the ET if the estimated overall F fell below the threshold of $F=0.29$. **By consensus – Approve additional trigger for ET Notice Action that would reduce ET allocation in 2009 by 1 trip if overall F is projected to be above the fishing mortality threshold in 2009. The PDT will prepare a report for Council review in Fall 2008 with updated fishing mortality rates, in time for the agency to take final action by February 1.**

Next, staff described the bycatch data available for turtle takes in the Delmarva area compared to other areas in the Mid-Atlantic. While the Committee was supportive of a seasonal closure, the data available was not conclusive that a seasonal closure would actually reduce impacts. Furthermore, it was evident that a more supportive reason for the seasonal closure would be to reduce non-harvest mortality of scallops during warmer months (August through October). Initially the Committee considered changing the title of the alternative to clarify both purposes, then even removing reference to turtle reductions all together since several speakers explained the potential benefits of preventing effort during warmer months and when scallops are spawning. It was also pointed out that the seasonal closure for ET was implemented before the FMP mandated the use of turtle chains in the Mid-Atlantic.

Ultimately, the Committee decided to recommend this alternative be moved to the considered but rejected section since the plan already has measures in place to reduce interactions with turtles (chain mats) and the data available did not support a closure. The Committee also felt the seasonal closure in ET may not be necessary since the location and time turtles are present can not be predicted, thus a seasonal closure is probably not the best management tool in this case, and chain mats are expected to be more effective. As for a measure to reduce non-harvest mortality on scallops, the Committee agreed that the industry knows the optimal time to harvest scallops from this region because of meat quality and other reasons, so a seasonal closure would be micromanaging the fleet unnecessarily.

Motion 3: Salisbury/Avila

Approve as a preferred alternative, a three month seasonal closure from August 1 through Sept 30 in the Delmarva access area to reduce non-harvest mortality on scallops.

Motion withdrawn.

Motion 4: Avila/Rice

Move Alternative 2.3.4.2.2 to considered but rejected section of Framework 19. (seasonal closure to reduce potential interactions with sea turtles in Delmarva)

Vote: 7:0:0, motion passed

Motion 5: Spitsbergen/Salisbury

Move seasonal closure alternative for ET to considered but rejected section of Framework 19.

Vote: 6:1:0, motion passed

The Committee then discussed the alternative to restrict the maximum number of crew on limited access scallop trips in access areas. The Committee agreed with the advisors that there is no evidence that the elimination on crew size is leading to vessels taking more crew and targeting smaller scallops. Therefore, the Committee supports No Action at this time. As for the prohibition on deckloading, the Committee again agrees with the advisors that all vessels would be prohibited from leaving an access area with more than 50 bu. of in-shell scallops. The Committee added that no exceptions should be made for this prohibition.

Motion 6: Cunningham/Avila

Identify the No Action Alternative as preferred for crew size maximum in access areas (no crew size limit).

7:0:0, motion passed

Motion 7: Cunningham/Rice

Identify as preferred – prohibition on deckloading with more than 50 bu. of in-shell scallops for all scallop vessels leaving an access area with no exceptions (Option A).

Vote: 6:1:0, motion passed

The Committee briefly discussed how open area set-asides should be allocated and it was decided that no changes should be considered from the No Action, which is that the open area set aside is removed in the form of DAS after general category allocations have been made and before limited access vessels are allocated DAS. The open area DAS set-aside would be allocated for research and to defray the cost of carrying an observer in open areas on limited

access vessels. The Committee then moved onto the alternatives specific to the general category fishery. First, they discussed how the quarterly hard-TAC should be divided. Several speakers suggested that one way to reduce derby effects would be to allocate the fleetwide trips in access areas by quarter, rather than all on the date the area opens. For example, rather than allocating 1,000 ET trips on March 1, those trips could be allocated over the course of the year at the start of each quarter. One Committee member voiced concern that measures may not be frameworkable since Amendment 11 did not consider allocating access area allocations in that way. It was also suggested that the language in this section needs to be changed to clarify that these interim measures should remain in place for the interim period, not just FY2008 in case it takes longer to implement the IFQ program.

Motion 8: Cunningham/Avila

Identify as preferred option B for the quarterly hard-TAC for the interim period to limited entry for the general category fishery (40% in Q1, 45% in Q2, 10% in Q3, and 5% in Q4).

Motion to substitute: Salisbury/Rice

Option A for Option B as preferred – “missing” 5% would be allocated to Q4 (35% in Q1, 40% in Q2, 15% in Q3, and 10% in Q4).

Vote:6:1:0, motion carried

Main motion as substituted:

6:0:1, motion passed

The Committee discussed the cost recovery alternative for the IFQ program. While NMFS has not been able to provide actual cost estimates for monitoring this program, the Committee reviewed potential alternatives for how the funds would be collected. The Committee agreed with the advisors that the quota owner should be responsible for paying the cost recovery fee, even if the owner leases its quota. In addition, the Committee discussed that rather than an actual fee based on value of individual landings, the fee should be based on a fixed value of IFQ units based on an average price per pound of scallop sold that year. For example, if a vessel is required to pay 3% of ex-vessel value of scallops landed, their fee should be 3% of the fleet average, not 3% of their exact sales. This alternative was included because there were concerns about a trip based system and potential corruption with transactions and impacts on prices, etc.

Motion 9: Cunningham/Spitsbergen

Recommend Alternative 2 as preferred alternative for cost recovery for the IFQ program (IFQ shareholder directly pays).

Vote: 7:0:0

Motion 10: Salisbury/Spitsbergen

Refine Alternative 2 so it includes an average annual value rather than a trip by trip value per vessel. Understood that owner always responsible for payment even if quota is leased.

Vote: 7:0:0

After the transition period, the Committee believes that the general category fishery should be allocated 5% in each access area except Closed Area II. The idea is that, for the transition period, a smaller allocation would be appropriate so that all landings from access areas do not fill the entire quarterly hard-TAC, leaving some catch for general category vessels that do not

participate in access areas. It was discussed that allocating access to Closed Area I is not feasible for the general category fishery; therefore the general category fishery would be allocated more access in open areas in lieu of Closed Area II access. Since there are not expected to be any SAP programs in Closed Area II in 2008 or 2009, then no access is necessary for general category landings from that area from groundfish vessels that may have been participating in a SAP program. It was argued that the next Scallop amendment should consider allocating IFQ by area for the general category fishery to provide an opportunity for each vessel to participate in all access areas if they want to and potentially reduce derby effects.

Motion 11: Spitsbergen/Avila

Select a 5% allocation for the general category fishery in all access areas after the transition period is over, except zero percent in CA2.

Vote: 7:0:0, motion passed

Next the Committee reviewed a document prepared by NMFS that summarized the administrative changes that could be made to the observer set-aside program to make it more effective. Most are general but the Committee did discuss several that could have additional requirements on the industry. The Committee approved that the list should be included in Framework 19 with input on the following specific issues. In addition, the Committee requested clarification on two issues from the Observer Program before the Council could support inclusion of these issues for final action.

By consensus – approval of observer program modifications as recommended by NMFS Observer Program (all aspects including the specific items discussed below).

1. middle of page 2 related to additional report requirements
2. change to call in procedure to 72 hours to NMFS and 48 hours to provider
3. 10 day notification issue
4. Include a definition for a “day” in terms of how a provider can charge for a day – to make equal with how a vessel is charged for a day- when a vessel crosses the VMS demarcation line and when it comes back.

Remand third bullet back to Observer Program for more clarification before Committee can support. In addition, remand why providers need 18 hours rather than 12 hours to call a vessel back.

The Committee reviewed research priorities recommended by the PDT and accepted them all without changes.

Motion 12: Stockwell/Rice

Adopt research priorities recommended by PDT for FY2008 and 2009.

Vote:6:0:0, motion passed

One Committee member then requested that the Committee reconsider the NGOM hard-TAC recommended by the PDT. Amendment 11 recommends that the hard-TAC be set for the federal resource in the NGOM. The PDT plotted general category VTR landings in the NGOM and removed landings from state waters as well as areas closed to fishing (WGOM and Jeffries Bank). One Committee member argued that Amendment 11 was not clear about how the TAC should be determined, and he argued that state landings from federally permitted vessels should

count as well as landings from limited access vessels. The same Committee member provided a memo from MEDMR staff presenting an alternative method for calculating a higher NGOM TAC. The Committee member requested that the Committee consider this higher TAC and method. One Committee member wasn't necessarily supportive of another method, but was supportive of figuring out if there was an error in the method used by the PDT. Ultimately, the Committee passed a motion for the PDT to review and consider the MEDMR memo, but was concerned about approving an actual estimate until the PDT could review the data used. The Committee requested that the PDT review this method and respond so the full Council can consider both approaches at the final Council meeting.

Motion 13: Stockwell/Rice

Identify a hard TAC for the NGOM to be 136,000 pounds for both FY2008 and FY2009.

Motion withdrawn

Motion 14: Stockwell/Rice

Send ME DMR memo to PDT and include in Council mailing so people can consider different methods used to estimate the NGOM TAC. PDT is requested to respond if the methods should be revisited.

Vote: 6:0:0, motion passed

The meeting adjourned after 6:00 PM and staff passed out applications for new advisors for the 2008-2010 term. The Committee is going to review these applications and make recommendations for the Executive Committee to consider at their next meeting in early November.



New England Fishery Management Council

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Frank Blount, *Chairman* | Paul J. Howard, *Executive Director*

MEMORANDUM

DATE: August 27, 2007
TO: Scallop Committee
FROM: Scallop Plan Development Team
SUBJECT: Recommendation of Research Priorities for 2008 and 2009

The Council is required to identify research priorities each year for the scallop research set-aside program. The PDT reviewed the list of priorities used for the 2007 program last year and made several recommendations for updating that list. Overall, the same items were approved with one addition (#9). Since the federal scallop dredge survey is currently in a transition period, the PDT believes that research projects that either facilitate calibration of the current dredge to a new dredge, or projects that compare various survey techniques would enhance the development of a new scallop assessment survey. The other topics identified last year remain priorities, and several changes have been recommended for clarification. The text below reflects the final recommendation of the Scallop PDT for the 2008-2009 research set-aside program.

Last year the Scallop Committee requested that a list of what was funded from the previous year be made available before proposals are due for the following year. Following the list of recommended research priorities is a list of the proposals that were funded in 2007.

2008/2009 Scallop Research Set-Aside Program Needs and Priorities:

HIGHEST PRIORITY: An intensive industry-based survey of each of the access areas (access areas in Georges Bank including Closed Area I, Closed Area II, and Nantucket Lightship, as well as Elephant Trunk and Delmarva areas). These surveys can then be used to estimate total allowable catches (TACs) under the rotational area management program if the data from these surveys are available by August 2008 for the 2008 RSA program, or August 2009 for the 2009 RSA program.

OTHER PRIORITIES (not listed in order of importance):

1. Other surveys, including areas not surveyed by the annual NMFS survey (i.e., offshore Gulf of Maine and Southern New England).
2. Scallop biology, including studies aimed at understanding recruitment processes (reproduction, larval and early post-settlement stages), growth, natural mortality (including predation and disease), incidental gear mortality, and discard mortality.
3. Identification and evaluation of methods to reduce groundfish bycatch (i.e., gear research).
4. Identification and evaluation of methods to reduce habitat impacts, including, but not limited to: broader investigation of variability in dredging efficiency across habitats, times, areas, and gear designs; and research on habitat effects from scallop fishing and development of practicable methods to minimize or mitigate those impacts.

5. Habitat characterization research including, but not limited to: video and/or photo transects of the bottom within scallop access areas and within closed scallop areas and in comparable fished areas that are both subject and not subject to scallop fishing, before and after scallop commences; development of high resolution sediment mapping of scallop fishing areas using Canadian sea scallop industry mapping efforts as an example process; identification of nursery and over-wintering habitats of species that are vulnerable to habitat alteration by scallop fishing; and other research that related to habitats affected by scallop fishing, including, but not limited to, long-term or chronic effects of scallop fishing on marine resource productivity, other ecosystem effects, habitat recovery potential, and fine scale fishing effort in related to fine scale habitat distribution. In particular, projects that directly support evaluation of present and candidate EFH closures and HAPCs to assess whether these areas are accomplishing their stated purposes and to assist better definition of the complex ecosystem processes that occur in these areas.
6. Identification of sources of sea turtle interactions and/or identification of ways to minimize interactions with sea turtles. Two priority topics identified include evaluation and analysis of factors affecting bycatch rates of sea turtles and development of scallop dredge and trawl operations that would reduce or eliminate the threat or harm of sea turtle interactions. Other issues related to sea turtle research include, but are not limited to: gear modifications, or fishing techniques that may be used to reduce or eliminate the threat of sea turtle interactions without unacceptable reduction in scallop retention, comparison and analysis of turtle capture rates of similar gear in other fisheries, and turtle behavior.
7. Improved information concerning scallop abundance and evaluation of the distribution, size composition, and density of scallops, including but not limited to: efforts to develop a cooperative industry-based resource survey, high resolution surveys that include distribution, biomass of exploitable size scallops, recruitment, mortality, and growth rate information, research that provides more detailed scallop life history information (especially on age and area specific natural mortality and growth) and to identify stock-recruitment relationships, intensive sampling on both sides of access boundaries for fishing year 2007 and in subsequent years to gauge the short-and long-terms effects of fishing on the resource.
8. Scallop and area management research, including but not limited to: evaluation of ways to control predation on scallops; research to actively manage spat collection and seeding of sea scallops; social and economic impacts and consequences of closing areas to enhance productivity and improve yield of sea scallops and other species; and estimation of factors affecting fishing power for each limited access vessel.
9. Research projects that would help calibrate the transition of the federal dredge survey, or projects that compare various survey techniques and methods would assist with the current transition period of the federal scallop dredge survey.

Funded 2007 Research Set-Aside Projects

Of the fourteen proposals that were received for the 2007 Research Set-aside Program, six were approved for funding.

Title
Characterization of Benthic Habitat and Scallop Abundance Using Optical Imaging Technology: Phase II
Developing an Improved Dredge for Standardized Surveys of the Sea Scallop Resource
Field Testing of a New Dredge for the Sea Scallop Fishery
An assessment of Sea Scallop Abundance and Distribution in Selected Closed Areas: Georges Bank Area I and II, Nantucket Lightship and Elephant Trunk
Calibrating Industry Scallops Surveys with NOAA Vessel Platforms
High-Resolution Video Survey of the Habitat and Sea Scallop Resource in the Elephant Trunk and Nantucket Lightship Closed Areas

Maine DMR Discussion and Alternative Proposal for NGOM Management Area TAC #5

Maine DMR contends that the PDT's proposed 64,000 pound NGOM TAC does not accurately reflect the capacity of the NGOM Management Area scallop resource, and therefore would severely and unfairly restrict opportunities for NGOM general category scallop fishermen.

DMR landings program and resource management staff analyzed the PDT's proposed TAC and highlights while A11 stipulates that all federal permit holder landings from the NGOM count toward the NGOM TAC, state waters landings by federal scallop permit holders were not included in the development of the TAC. This disparity is significant as from 2000-2006 state landings accounted for roughly 50% of all GC landings in the NGOM Management Area. Consequently, the proposed 64,000 pound TAC will essentially limit federally permitted GC scallop fishermen in the NGOM to half their historic landings.

DMR staff concluded that if scallop landings from both state and federal waters count toward the TAC, they should both be included in the development of that TAC. DMR staff also determined that the landings data used to determine the average annual NGOM landings was partially incomplete. Specifically:

1. The PDT used 2006 data that was complete only through October 11, 2006. These data exclude over 2.5 months of data, including the opening month (December) of Maine and New Hampshire's state waters fisheries.
2. DMR staff determined that when the PDT examined state versus federal landings, they did not consider Statistical Area 467. Although this area does not include US federal waters, it does include Maine's Cobscook Bay, which supports an extremely productive scallop fishery utilized by both state and state/federal permittees. The following table shows data through 2005 including SA 467, and is therefore a more accurate reflection of total NGOM landings.

Calendar Year	VTR landings from within the NGOM area	VTR landings from within state waters in the NGOM	VTR landings from within GF and EFH closed areas in NGOM	VTR landings from entire NGOM, excluding closed areas
2000	71,276	39,322	822	70,454
2001	148,235	86,487	2,432	145,803
2002	285,335	150,748	799	284,536
2003	176,907	102,451	0	176,907
2004	50,289	27,461	1,332	48,957
2005	77,838	17,257	2,160	75,678
Average	134,980	70,621	1,258	133,723

3. It is important to note that the above landings came exclusively from general category vessels. Any trips in excess of 1,200 pounds were excluded under the assumption that the data was an error of some sort. This amounts to an average of 26,000 pounds per year being categorically dismissed (a low of 1,997 pounds in

2004 to a high of 88,078 pounds in 2002). Some of these “errors” could have been from actual GC vessels that took trips longer than 3 days. These (74) records should be examined individually to check for conversion errors or other problems rather than being dismissed in total (time constraints prevented DMR staff from conducting this analysis).

4. The PDT arrived at the proposed TAC of 64,000 pounds by averaging general category VTR scallop landings from the federal portion of the NGOM from 2000-2006. Although standard protocol is to reduce this amount by 20% (13,000 pounds) for conservation, the PDT opted not to do so in acknowledgement that some landings would be taken from state waters. However, federal vessels averaged roughly 65,000 pounds of scallops from state waters from 2000-2006 (70,000 pounds when using complete data through 2005). Proposing the use of 13,000 pounds as a proxy for 65,000 pounds (70,000 pounds) that were excluded is not an equitable equivalency.
5. DMR staff maintains that scallops taken by limited access vessels from NGOM waters *must* be applied toward the NGOM TAC. Because complete fisheries independent data was not available, fisheries dependent data was used to approximate the capacity of the NGOM resource. Yet limited access vessels’ landings were excluded from the TAC development process. Limited access vessels took an average of 36,000 pounds of scallops from the NGOM from 2000-2005 (2006 data not yet available).

Calendar Year	GC vessels, NGOM landings, excluding closed areas	LA vessels NGOM landings	Total NGOM landings by federally permitted scallop vessels
2000	70,454	71,120	141,574
2001	145,803	28,850	174,653
2002	284,536	71,404	355,940
2003	176,907	2,673	179,580
2004	48,957	19,770	68,727
2005	75,678	20,450	96,128
Average	133,723	35,711	169,434

Therefore, Maine DMR proposes an initial NGOM TAC of 136,000 pounds. This amount is justified by taking the average annual landings of all federally permitted scallop vessels from 2000-2005 (169,434 pounds), and subtracting 20% (33,887 pounds) for conservation purposes.

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October 22, 2007

VIA ELECTRONIC MAIL

Mr. John Pappalardo, Chair
New England Fishery Management Council
50 Water Street, Mill 2
Newburyport, MA 01950

Re: Framework Adjustment 19 to the Scallop FMP

Dear Chairman Pappalardo:

We submit this letter on behalf of the Fisheries Survival Fund ("FSF"), in connection with the Council's consideration of Framework 19 to the Atlantic Scallop Fishery Management Plan at its special October 25, 2007, meeting in Wakefield, Massachusetts. As you know, FSF represents the bulk of the full time limited access scallop fleet.

EXECUTIVE SUMMARY

FSF appreciates the work the Council, and especially its staff, have done to move Framework 19 through to completion on the heels of Scallop Amendments 11-13, Framework Adjustment 20, and an Elephant Trunk Area emergency action in the past year. FSF's participants support virtually every recommendation of the Scallop Committee for Framework 19.

However, FSF strongly opposes the open area days-at-sea ("DAS") allocation recommended by the Scallop Committee. The Scallop Committee recommended 35 open area DAS for 2008 and 42 open area DAS for 2009. The Plan Development Team ("PDT") had recommended 29 open area DAS for 2008 and 47 open area DAS for 2009, but the Scallop Committee opted to "borrow" 5 DAS from 2009 to be used in 2008. Either option is not warranted; fishing year 2008 should not see a 30-40% cut in open area DAS. Scallop biomass is 150% of the target, the resource is sustainably fished, and uncertainties regarding catch levels are increasingly being mitigated. Most significantly, the status quo allocation of 51 DAS for each of these years would allow the scallop resource to continue to build.

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The open area DAS reduction derives from an admitted “policy” decision by the PDT. More specifically, the PDT this year developed a new assessment model for the scallop fishery, called the CASA model. The overall scallop resource remains in solid shape under the CASA model; in fact, the CASA-based assessment estimates overall scallop biomass in 2006 to be a full 150% of the target biomass. Relevant for present purposes, the CASA model increases the scallop threshold fishing mortality rate to $F=0.29$ (up from $F=0.24$). However, the PDT did not recommend the CASA model’s increase in the target fishing mortality rate from $F=0.20$ (contained in Amendment 10) to $F=0.23$ in conjunction with the proposed increase in the threshold fishing mortality rate to $F=0.29$. Unless the target rate is increased to $F=0.23$, there will be a nearly thirty percent difference between target and threshold fishing mortality rates. Such a difference represents a huge, and unwarranted, buffer between target and threshold fishing mortality rates.¹ Ultimately, the Scallop Committee left the issue of the appropriate F_{target} for the Council to resolve. Allowing for the target fishing mortality rate to increase to $F=0.23$, which is the resource-wide target F projected under the CASA model, would allow open area DAS to remain near their current levels, while allowing the overall scallop resource to continue to build.

According to the Framework 19 document, the only rationale presented for applying this level of extra precaution to an already exceedingly abundant resource (and for the corresponding cut in scallop fishing effort), is the lack of integration between scallop management and other Council actions, in particular, those relating to habitat. Over 20% of the scallop resource is currently (that is, before any action is taken with respect to the Great South Channel) locked away in habitat closures. It may be fine, in theory, for the Council to pretend to divorce habitat decisions from fisheries management decisions (as it purported to do with the Omnibus Habitat Phase I HAPC determinations), but that distinction is already breaking down in practical effect.² Nonetheless, Amendment 10, and the results of the CASA model, provide the Council with flexibility to set open area DAS more appropriately.

¹ The draft Framework 19 document currently available online contains a disconnect between the open area DAS section and the new reference point section that bears note. The open area DAS section states that “open area DAS are set at a level that equals a value such that resource-wide average fishing mortality is expected to be 80% of F_{max} , estimated to be a fishing mortality rate of $F=0.2$.” Framework 19 (Scallop Committee Draft), at 28. In contrast, the same document, in the Overfishing Definition section, states that, using the new CASA model, “the biomass reference point [for 2006] would be 166,000 mt. [existing biomass level, that is] and the fishing mortality target would be 0.23” *Id.* at 41.

² FSF would also note that the Council has never, in our experience, been presented with as candid an assessment of the impacts of existing habitat closures on the day-to-day scallop fishery as is contained in the draft Framework 19 document.

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OPEN AREA DAS ALLOCATIONS

The Scallop Committee recommendation would provide 35 open area DAS in 2008, by “borrowing” 5 days from 2009, leaving only 42 open area days for 2009. The bottom line is that the proposed reduction in open areas DAS for 2008 from this year’s 51 open area DAS represents a 30% reduction, which would have been a 43% reduction without the “borrowing.”

As explained above, however, the scallop resource is stable now, and projected to increase even with no action. It is not in the sort of decline that should be prompting the Council to consider additional layers of precaution that would result in 30-40% cuts in open area DAS. More specifically, NMFS has estimated the scallop resource at around 350 million pounds (160,000 metric tons) for both 2006 and 2007. Furthermore and significantly, scallop abundance is projected easily to exceed 200,000 metric tons in the coming years, even if the Council takes no action in Framework 19 (that is, maintains open area DAS at 51). Moreover, current scallop abundance is 150% greater than the target biomass level of 109,000 metric tons, using the new CASA method of estimating scallop abundance and reference points. Thus, the scallop resource is already being managed very effectively with regards to abundance.

FSF is concerned about efforts to manage scallops to incredibly high levels of abundance, as opposed to optimum yield. The Magnuson-Stevens Act does not mandate the Council to manage fisheries resources to maximize abundance; the Act’s mandate is to optimize yield from the resource. 16 U.S.C. § 1851(a)(1). “The term ‘optimum’, with respect to the yield from a fishery, means the amount of fish which will provide the greatest overall benefit to the Nation, particularly with respect to food production and recreational opportunities,” while also considering the “protection of marine habitats.” *Id.* § 1802(28)(A) (emphasis added). Managing the scallop resource on a basis to maximize abundance at levels found to exceed long-term equilibrium levels runs counter to National Standard 1’s purposes. Rather, as the National Standard 1 guidelines counsel, under these circumstances, the proper course of action is “to reexamine the adequacy of the OY specifications.” 50 C.F.R. § 600310(f)(5)(i).

The real-world consequences to the PDT’s approach are patent. With the current estimated scallop biomass of 160,000 metric tons, a harvest of even 20% of the overall resource would be 70 million pounds. That figure stands in sharp contrast to the estimated 45 million pounds that the Scallop Committee has recommended to the Council in Framework 19.

TARGET OVERFISHING DEFINITION

The Scallop Committee draft Framework 19 document explains:

A fishing mortality target is not a scientifically driven estimate, it is a policy decision. National Standard 1 requires the target to be below the threshold for

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precautionary purposes, but does not specify how much below. The Committee briefly discussed adjusting the fishing mortality target in light of the new assessment. In terms of a recommendation, the Committee decided to wait until the new stock assessment report could be summarized in more detail and the issues could be more fully described by the PDT.

Framework 19 (Scallop Committee Draft), at 42. The Committee then deferred this issue to the Council.

In this regard, the Council should not maintain an artificially low target fishing rate for the scallop fishery. The Council is currently using an F_{target} of $F=0.20$, which was the F_{target} when the $F_{\text{threshold}}$ was $F=0.24$. This level is consistent with Amendment 10's setting the stock-wide target fishing mortality as 80% of F_{max} ; $F=0.20$ is 80% of $F=0.24$. (Amendment 10, at 3-22).

The latest stock assessment model has revised $F_{\text{threshold}}$ to $F=0.29$, which should entail a corresponding increase in F_{target} to $F=0.23$, if the resource-wide target F were to remain at 80% of the threshold F . A fishing mortality rate of $F=0.23$ would still be below the pre-existing Amendment 10 overfishing threshold of $F=0.24$. If F_{target} were set at 0.23, then the scallop fishery would be able to continue to be allocated approximately 51 open area days at sea. The overfishing definition the Council adopted in Amendment 10 is purposefully flexible enough to allow for this modification of the fishing mortality rate. The Council ought to change the target fishing mortality rate to $F=0.23$, and not force an unnecessary reduction in fishing effort.

No particular basis exists to create an additional layer of precaution by opting not to re-align the resource-wide target fishing mortality rate with the new CASA-based threshold rate. As explained above, sources of uncertainty relating to the scallop fishery are being reduced. A majority of the fishery is being managed under a hard TAC system in the access area program, the General Category is now being managed to a hard TAC and many recent participants will no longer be able to continue in the fishery under Amendment 11, and sources of uncertainty in the assessment have been substantially reduced via the new CASA model. If anything, then, any buffer for uncertainty between threshold and target fishing levels should be reduced, not increased. If there were an increase in uncertainty in the management of the scallop fishery, then perhaps the kind of precaution being used for Framework 19 would be justified, but the exact opposite is true and there is no justification for an increase in precaution at this time.

According to the draft Framework 19 document, the main element of concern contributing to the healthy and sustainably fished scallop fishery facing tighter restrictions, even though there is no overfishing and the biomass of the stock has not declined, is the lack of access to the full scallop resource. As explained above, according to current NMFS estimates, a full 21% of the total scallop resource is off-limits in habitat closed areas on Georges Bank. Notably, these are

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permanent (at least for now) habitat closures, not Georges Bank groundfish closures that are being used as rotational scallop access areas.

Parenthetically, the situation would degenerate further if the Council decides, in Phase II of Omnibus Habitat Amendment, to further limit scalloping opportunities with punitive closures in the newly-designated Great South Channel HAPC. Recent survey data shows a significant amount of scallop recruitment in the Great South Channel.³ And, as the information FSF presented to the Council at its September meeting during the final HAPC debate would have predicted, the scallop settlement is generally between the 50 meter and 70 meter depth contours in the Channel. While the Council decided to make its Phase I HAPC designations in a management vacuum, it must start recognizing its decisions all have impacts on each other. After all, isn't that managing with the ecosystem in mind?

CONCLUSION

In conclusion, this is not a situation where marked increases in precaution are warranted, or even advisable. The Council should set the target fishing mortality rate for 2008-09 at $F=0.23$, a level that would permit open area DAS not to have to be reduced dramatically on a fishery that is sustainably fished, evermore predictably managed, and with a biomass that is 150% of the target and increasing. Such a result is appropriate given the more accurate and precise CASA model's changed assessment. It is also consistent with the methodology and flexibility provided in Amendment 10 to set reference points. The Council should employ that flexibility and ensure scallop management stays on track of permitting the fishery to harvest an optimum yield.

Please do not hesitate to contact us if you have any questions or require additional information.

Sincerely,



David E. Frulla
Shaun M. Gehan
Andrew E. Minkiewicz

Counsel for the Fisheries Survival Fund

³ Unfortunately, because of the existing habitat and groundfish closures on Georges Bank, it is impracticable to implement a rotational closure in the Great South Channel, even if (and it's not clear based on the Council's vote on the HAPC), the area would ever open again, were it closed for scallop grow-out. There are currently barely enough open areas on Georges Bank.

This document includes:

- 1. An updated version of Section 4.2 (Description of Physical Environment and EFH)**
- 2. Section 5.2 - Impacts on EFH (starting on page 18 of this document)**

These two sections will be incorporated into the main document before submission.

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1.1 PHYSICAL ENVIRONMENT AND ESSENTIAL FISH HABITAT

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. Several recent reports have been published which add to our understanding of the physical and biological environment of this region, including Amendment 11 (NEFMC, 2007). This section deals with the *affected* environment and does not present the effects of the proposed management program.

1.1.1 Description of the Physical Environment

This section contains a brief description of the physical and biological environments 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. Further detailed descriptions of the physical environment can be found in section 4.2 of Amendment 11.

The Northeast shelf ecosystem (Figure 9) extends from the Gulf of Maine south to the state of North Carolina, and encompasses the area 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: the Gulf of Maine (GOM), Georges Bank, the Mid-Atlantic Bight, the continental slope, and some New England Seamounts. Occasionally Southern New England, an additional subsystem, is described; however, we incorporated the distinctive features of this region into the descriptions of Georges Bank and the Mid-Atlantic Bight.

The GOM 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.

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. 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.

The availability of food for planktivores is highly influenced by oceanographic properties. Changes in primary production from upwelling and other oceanographic processes affect the amount of organic matter available for other organisms higher up the food chain, and thus influence their abundance and distribution. Organic matter produced in the photic zone sinks to the bottom and provides food 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, such as bottom-dwelling sand lance, provide an important food source for many managed piscivorous species. 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.

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.

1.1.1.1 Inshore

The GOM includes more than 59,570 km² (23,000 mi²) of estuarine drainage areas, with the majority in Maine, including 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. In southwestern GOM, major estuaries are Massachusetts Bay and Great Bay in New Hampshire. Estuaries are important for nutrient recycling and primary production, and function as important breeding and feeding grounds for many fish and shellfish populations, shorebirds, migratory waterfowl, and mammals. Estuarine features such as salt marshes, mud flats, and submerged aquatic vegetation are critical to inshore and offshore fishery resources of the GOM. Coastal rocky intertidal zones and sand beaches are important habitats for fishery resources and are also important for nutrient recycling and primary production.

Human activities in the surrounding watersheds impact the chemical loading of nutrients (especially nitrogen and phosphorus) and contaminants (heavy metals and organic) that enter estuarine systems, as do various biophysical processes such as hydrology, sediment type, metabolism of imported non-living dissolved organic carbon (DOC) and particulate organic carbon (POC), burial of DOC and POC, geochemical processes, biological processes that convert POC to DOC, and export of living and non-living total organic matter to the coastal ocean. These physical, chemical, geological and biological processes provide the context for the water column and benthic sedimentary habitat characteristics and biophysical structure.

Seasonal and interannual changes in temperature and salinity, influenced by the North Atlantic Oscillation (NOA), are another important set of estuarine characteristics. The NOA is based on atmospheric pressure differences between the North Atlantic Ocean and Mid-Atlantic regions that influence the strength of the westerly winds. A positive NOA index can be associated with warmer water temperatures, higher salinity values, a decline of winter-spring diatom bloom and higher early spring zooplankton abundance, decrease in demersal fish biomass (including winter flounder, windowpane flounder, red hake), increase in demersal decapods (crabs and lobsters), and immigration of smaller, southern pelagic fish species (anchovy, butterfish, long finned squid) (Oviatt, 2004). A negative NOA 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). Thus, large scale meteorological events affect the interannual temperature and salinity seasonal patterns in East Coast estuaries.

1.1.1.2 Gulf of Maine

The Gulf of Maine is actually an enclosed coastal sea of 90,700 km², bounded by Browns Bank, the Nova Scotian (Scotian) Shelf, New England states, and Cape Cod and Georges Bank (GB). The 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 GOM is topographically unlike any other part of the continental border along the east coast of the U.S. It contains 21 distinct basins separated by ridges, banks, and swells with depths exceeding 250 m. 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 and lower flat-topped banks and gentle swells. Some of these rises are remnants of the sedimentary shelf not removed by glaciers. Others are glacial moraines or outcroppings of bedrock. Substrate types include thick mud deposits that form topographically smooth terrains (primarily in coastal valleys and basins), bedrock (to depths of 60m), sand in some high areas, and gravel, sometimes with boulders, in other areas (depths 20-40m).

An intense seasonal cycle of winter cooling and turnover, springtime freshwater runoff, and summer warming influences oceanographic and biologic processes in the GOM. The Gulf has a general counterclockwise surface current that flows around its coastal margin that is primarily driven by fresh, cold Scotian Shelf water and freshwater river runoff, but is also influenced by dense, relatively warm and saline slope water entering through the northeast Channel. Water exits the GOM primarily through the 75 m deep Great South Channel and over the eastern portion of Georges Bank.

Stratification of GOM surface waters during spring and summer creates the “Maine intermediate water” (MIW), which is sandwiched between more saline Maine bottom water and 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. These circulation and water properties can vary significantly from year to year.

As described by Tyrrell (2005), the Gulf of Maine rocky intertidal zone is often inhabited by an abundance of brown seaweeds, which form an underwater canopy at high tide. When the tide is low, the algae lie on the rocks, protecting snails, mussels, barnacles, and crabs from exposure to sun, wind, rain, and bird predators. The abundance and primary productivity of brown seaweeds contributes to the high productivity of the rocky intertidal shores (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 tidal heights.

Boulders in the Gulf of Maine intertidal zone serve as substrate for similar species as rocky outcrops, including algae, mollusks, and other sessile organisms, because they are not frequently overturned by waves due to their large size (Tyrrell, 2005). Boulders provide shelter from wind, sun, rain, and predators for small organisms that 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).

1.1.1.3 Georges Bank

Georges Bank is a shallow (3-150 m depth), elongate (161 km wide by 322 km long) extension of the continental shelf 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 such that overall coarsening of the bottom sediments is anticipated (Valentine et al., 1993).

Georges Bank bottom topography 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. Sediments range 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 with strong currents (average tidal currents >4 km/hr). Shoals and troughs characterize the bottom, with superimposed sand dunes. Dunes migrate at variable rates; the ridges may also move. Currents 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 the water masses of the Gulf of Maine, Georges Bank, and the Atlantic Ocean, which differ in temperature, salinity, nutrient concentration, and planktonic communities that influence productivity and may influence fish abundance and distribution. Georges Bank waters are vertically well-mixed. 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.

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 13. Theroux and Grosslein (1987) identified four (4) macrobenthic invertebrate assemblages. Their assemblages are associated with those identified by Valentine et al. (1993) in Table 13. Sea scallops occur in the Northeast Peak assemblage, which varies in depth and

current strength and includes coarse sediments, such as gravel and coarse sand with interspersed boulders, cobbles, and pebbles.

Along with high levels of primary productivity, Georges Bank has been historically characterized by high levels of fish production. Depth and salinity were identified as major physical influences explaining assemblage structure. 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. Trends in spatial overlap over time generally reflect changes in species abundance, such that as a species' abundance increases, their range expands as does their spatial overlap with other species. The opposite is also true – as their abundance decreases, so does their spatial overlap with other species.

Seasonal trends in spatial overlap are also apparent. Spiny dogfish, for example, have a far stronger association and a far broader range of species' associations in the winter than they do in the summer. Similarly, winter skate is a more prevalent co-correspondent in winter than other times of the year.

1.1.1.4 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. Sediments are generally finer-grained sand than those found on Georges Bank. The Mid-Atlantic Bight was shaped largely by sea level fluctuations caused by past ice ages.

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. Storm events can cause much more energetic variations in flow. Tidal currents on the inner shelf have a higher flow rate than that of the general southwestward flow.

Slope water tends to be warmer and more saline than shelf water. The abrupt gradient where these two water masses meet is the shelf-slope front, which is usually located at the edge of the shelf and touches bottom at about 75-100 m depth of water. The position of the front is highly variable and can be influenced by many physical factors.

A permanent thermocline exists in slope waters from 200-600 m. A warm, mixed layer approximately 40 m thick resides above the permanent thermocline. In shallower near-shore waters, stratification is usually established by early June; the waters are homogenous by October (in most years) due to fall mixing.

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 angles 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. Numerous canyons incise the slope. Primary morphological features include shallow shelf valleys and channels, shoal massifs, scarps, and low sand ridges and swales (Figure 11). For a more detailed description of these morphological features, refer to Amendment 11, section 4.2.1.2.

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. Sand and gravel cover most of the shelf. Sediment transport is episodic, storm-related, and in the same southwesterly direction as the current. Mud is rare over most of the shelf, but is common in the Hudson Shelf Valley.

The northern portion of the Mid-Atlantic Bight is sometimes referred to as the southern New England Shelf. A formation of this region that deserves note is the “mud patch,” 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 occasionally re-suspended by large storms. This habitat is an anomaly of the outer continental shelf.

Three broad faunal zones related to water depth and sediment type were identified for the Mid-Atlantic by Pratt (1973): sand fauna, silty sand fauna, and 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 14, Figure 17): inner shelf, central shelf, central and inner shelf swales, outer shelf, outer shelf swales, shelf break, and continental slope. Sediments in the region studied (Hudson Shelf Valley south to Chesapeake Bay) were dominated by sand with little finer material. Sea scallops appear to be distributed primarily in the central and outer shelf subdivisions.

1.1.2 Essential Fish Habitat

Essential Fish Habitat is defined for four life stages of all managed species in the NEFMCs Omnibus Habitat Amendment (Amendment 9 to the Atlantic Sea Scallop FMP). Adverse impacts from the management action are possible for any species with EFH overlapping the footprint of the Atlantic sea scallop fishery. Detailed information on the development of, and trends in, the fishery may be found in [Section 4.4](#) of this document.

1.1.2.1 Geographic and temporal extent of the fishery

The Atlantic sea scallop fishery takes place in concentrated areas in and around George’s Bank and off the Mid-Atlantic coast, in waters extending from the near-coast out to the continental shelf (Figure 1). Figure 2 shows the geographic range of both the General Category and Limited Access permit components (the two primary permits available) of this fishery for the years 2005-2007. Contrasting these fishery effort plots with similar plots from the FSEIS for Amendment 10 to the Atlantic sea scallop FMP (Figure 3) shows that the limited access permit scallop fishery has contracted markedly in its range from the late 1990’s through the most recent three years.

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This concentration of fishing effort is likely to be to the benefit of benthic communities extant in areas where fishing pressures have abated, while the maps show that areas of high intensity fishing were also fished at relatively high levels in the past and, consequently, it may be inferred that fishing pressure here is not likely to degrade habitats beyond their baselines.

For the purposes of this management action, the baseline time period from which to project impacts on habitat will be the most recent three-year period (2005-2007) as shown in Figure 3.

Figure 1 – Geographic extent of the Atlantic sea scallop fishery

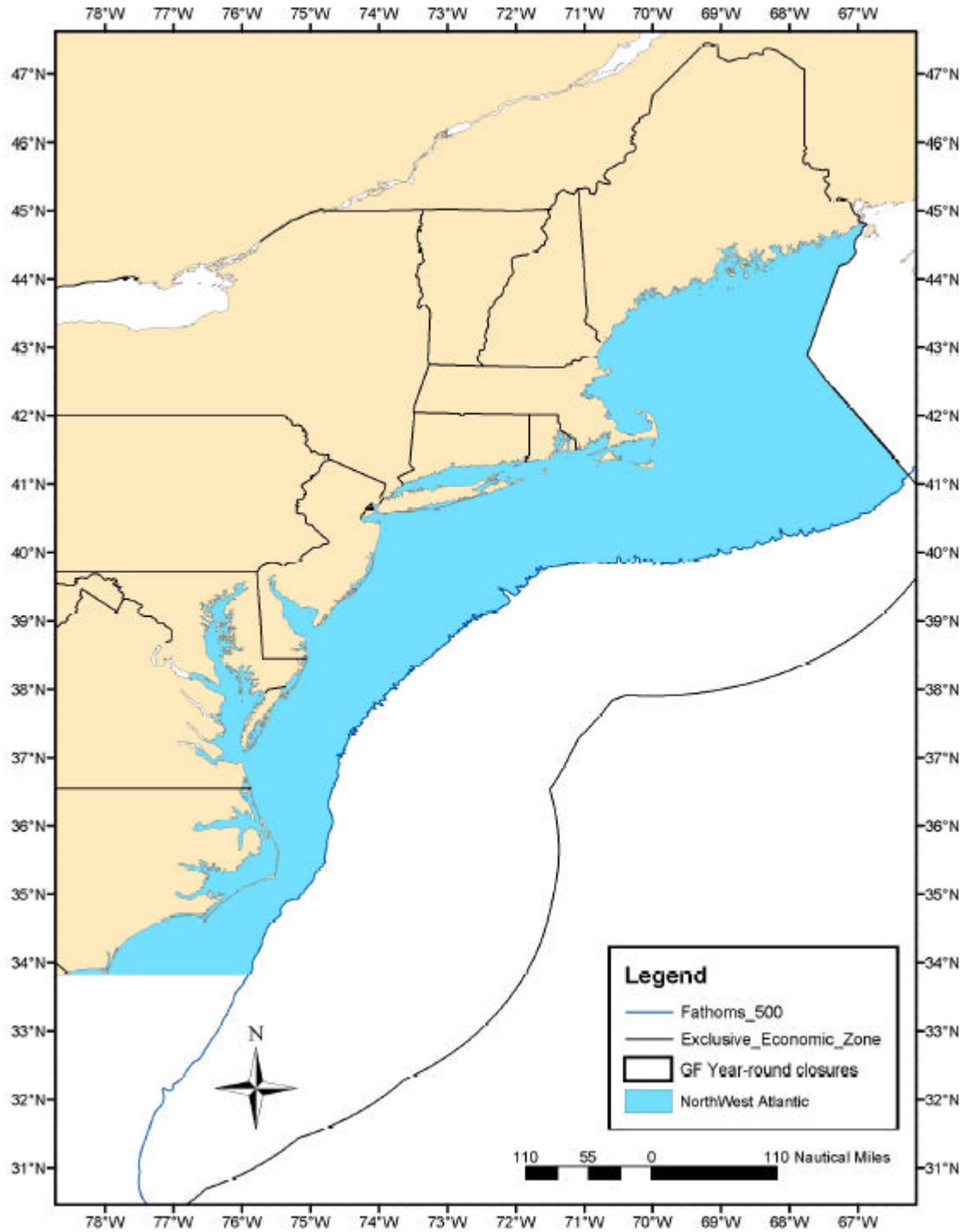


Figure 2 - 1998, 1999 and 2000 Limited Access scallop vessel VMS effort (source: FSEIS Scallop Am10)

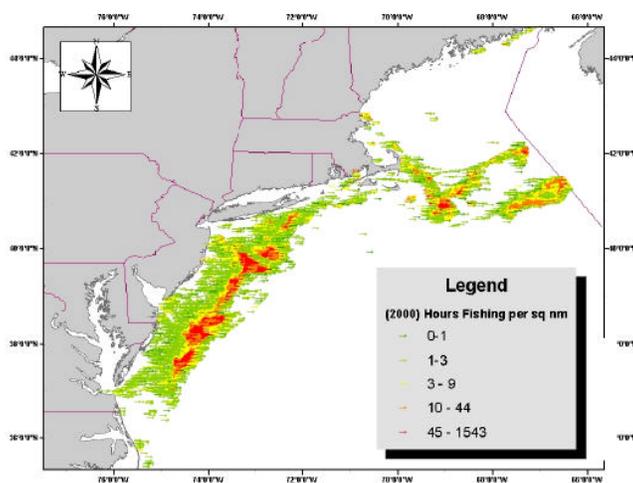
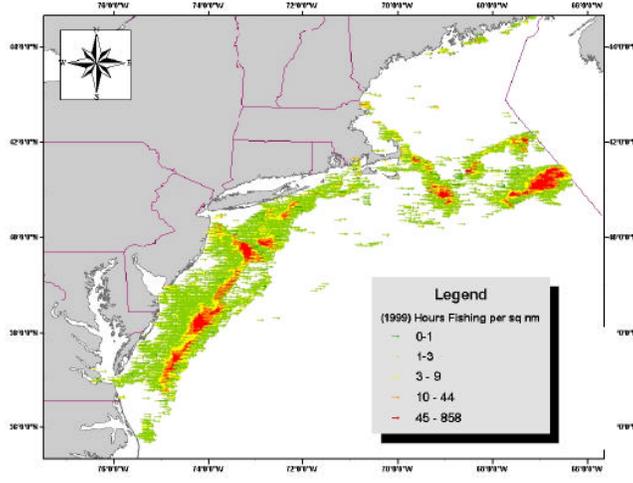
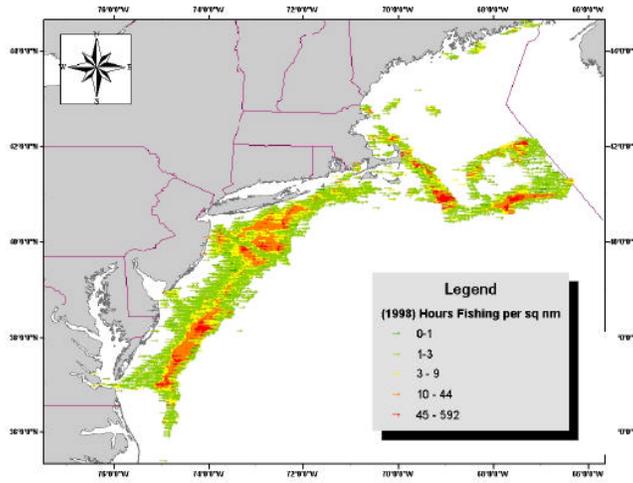
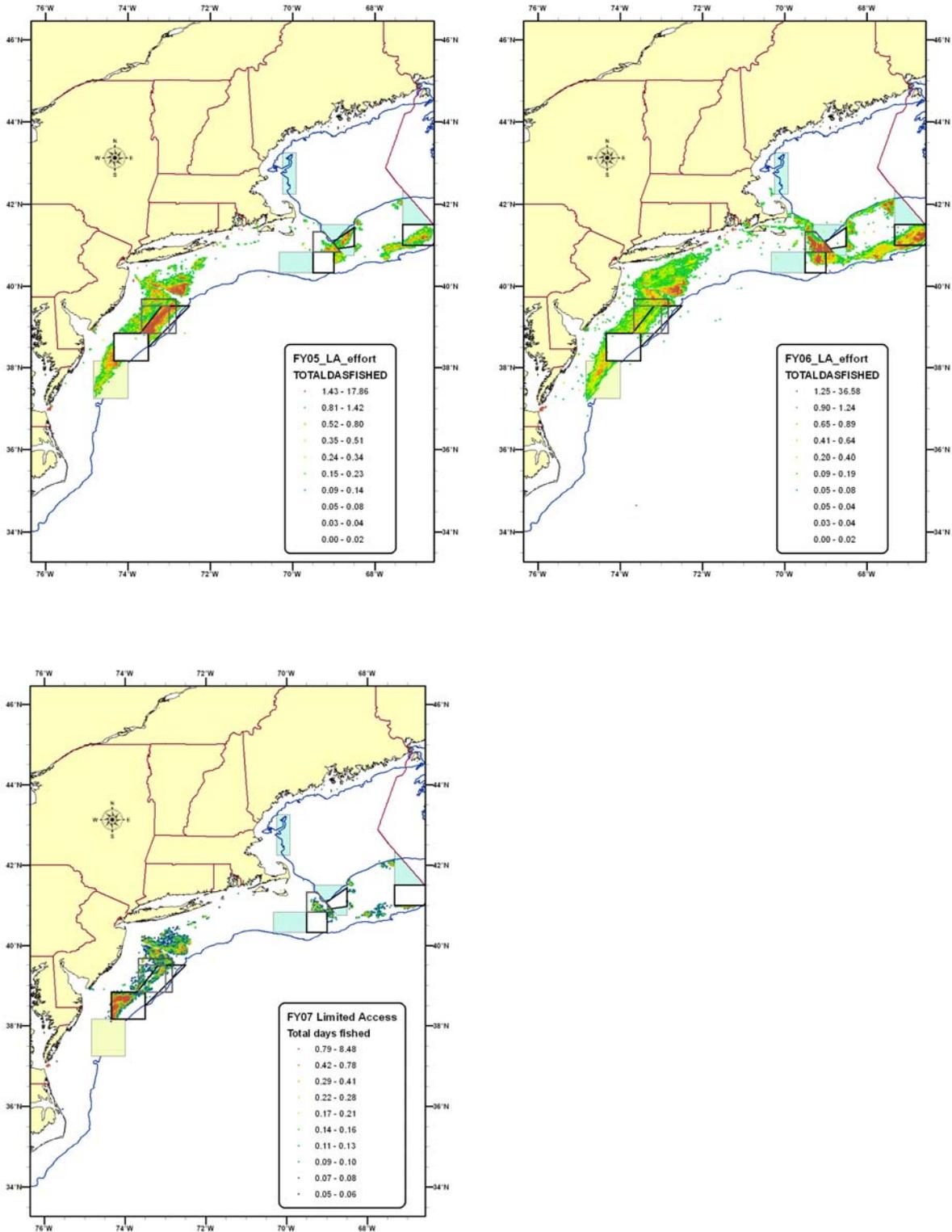


Figure 3 – 2005, 2006 and 2007 (through Aug 7) Limited Access scallop VMS effort (reproduced from Fig 4, this document)



1.1.2.2 Designated 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.*

1.1.2.3 Adverse impacts of fishing on EFH

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

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

- Potentially adverse habitat impacts from bottom trawling occur throughout most of the NE region on a variety of substrates;
- High levels of fishing activity with scallop dredges occur primarily in the Mid-Atlantic region and secondarily on Georges Bank, according to the vessel trip report data from 1995 – 2001. Intense dredge activity from the same data show that the highest intensity of scallop fishing is in the Great South Channel and portions of the Mid-Atlantic region from Long Island to VA. The VMS data from 1998 confirms this assessment and also shows high scallop fishing intensity in the southern part of Closed Area II because the period included the area access program during the 1999 and 2000 fishing years which was intended to have high levels of effort to reduce impacts in open areas where smaller scallops existed.
- Potentially adverse habitat impacts from scallop dredging may occur in areas where scallop effort overlaps with areas where EFH has been designated for species with vulnerable EFH. According to the analysis within this document, scallop fishing effort is distributed in the same proportion as juvenile and adult EFH designations, but areas with more intense scallop fishing effort tend to be over areas with less EFH designations for species with vulnerable EFH.

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

Otter Trawls

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

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

Scallop Dredge (New Bedford style)

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

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

Gear types other than otter trawls and scallop dredges, in the context of the Atlantic Sea Scallop fishery, were not found to have adverse effects the Essential Fish Habitat as currently designated in this region. See Table 9 for a description of the species and life stages 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 1 - Summary species and life stage’s EFH adversely impacted by otter trawling and scallop dredging (gears that adversely impact EFH used in the Scallop fishery).

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

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Species	Life Stage	Vulnerability to Otter Trawling	Vulnerability to Scallop Dredging	Depth in meters (EFH Designation)	Substrate (EFH Designation)
					gravelly bottom
Haddock	A	High	High	35-100	pebble gravel
Haddock	J	High	High	40-150	broken ground, pebbles, smooth hard sand, smooth areas between rocky patches
Little Skate	A	Mod	Mod	0-137, mostly 73-91	sand or gravel or mud
Little Skate	J	Mod	Mod	0-137, mostly 73-91	sand or gravel or mud
Ocean Pout	A	High	High	<110	soft sediments
Ocean Pout	J	High	High	<80	smooth bottom near rocks or algae
Ocean Pout	L	High	High	<50	close to hard bottom nesting areas
Ocean Pout	E	High	High	<50	hard bottom, sheltered holes
Pollock	A	Mod	Mod	15-365	hard bottom, artificial reefs
Red Hake	A	Mod	Mod	10-130	sand and mud
Red Hake	J	High	High	<100	shell and live scallops
Redfish	A	Mod	Mod	50-350	silt, mud, or hard bottom
Redfish	J	High	High	25-400	silt, mud, or hard bottom
Rosette Skate	A	Mod	Mod	33-530, mostly 74-274	soft substrates including sand/mud and mud
Rosette Skate	J	Mod	Mod	33-530, mostly 74-274	soft substrates including sand/mud and mud
Scup	J	Mod	Mod	0-38	inshore sand, mud, mussel and eelgrass beds
Silver Hake	J	Mod	Mod	20-270	all substrate types
Smooth Skate	A	High	High	31-874, mostly	soft mud, sand,

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Species	Life Stage	Vulnerability to Otter Trawling	Vulnerability to Scallop Dredging	Depth in meters (EFH Designation)	Substrate (EFH Designation)
				110-457	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

For the purposes of this management action, potential for adverse impacts is highest for scallop fishing with New Bedford-style dredges, and it is this component that will form the crux of the impacts analysis. Of the species and life stages listed in Table 1, all may be assumed to overlap with some portion of the geographic extent of the scallop fishery and therefore all are potentially vulnerable to changes in fishing behavior resulting from this management action.

Area swept, an estimate of the amount of bottom that is contacted with fishing gear, will be used to establish the likelihood for, and potential severity of, adverse impacts of scallop fishing on EFH. Although the use of area swept is a crude way to determine habitat impacts because it does not account for the fact that certain habitat impacts (e.g., damage or removal of attached epifauna) are most pronounced during the first pass of the dredge, and decline in severity with each subsequent pass, nor does it account for spatial shifts in fishing effort, it is a useful tool to understand the potential short- and long-term overall change in the extent of bottom contact by a gear that has been shown to adversely affect EFH in a manner that is more than minimal and less than temporary in nature (see Amendment 10 to the Atlantic Sea Scallop FMP and Amendment 13 to the Northeast Multispecies FMP).

Trends in area swept are shown below. While trends in area swept have not been documented in the early part of this century, based on analysis conducted in Framework 18 to the scallop FMP (Table 3) it is plain to see that the amount of gear in contact with benthic habitats has declined sharply over the past decade. Furthermore, as evidenced by the contraction of fishing areas in the limited access permit scallop fishery, the area swept estimates provided for the baseline years are more likely to represent highly compressed fishing effort and, to a greater degree than in years passed, multiple passes of the same substrate.

Table 2 – Hours Fished and Area Swept, 1990-1999 (source: FSEIS Scallop Amendment 10)

Year	Days-at-Sea	Hours Fished (total based on 17.2 hour fishing day)	Area Swept (sqnm)
1990	41,191	708,485	16,266
1991	42,122	724,498	16,634
1992	42,670	733,924	16,850
1993	34,469	592,867	13,612
1994	28,223	485,436	11,145
1995	28,446	489,271	11,233
1996	29,730	511,356	11,740
1997	29,532	507,950	11,662
1998	25,441	437,585	10,047
1999	24,720	425,184	9,762

Table 3 – Baseline Area Swept estimates (source: EA for Framework 18 to the scallop FMP)

Source of projection	Projected Area Swept
2006-2007 Status Quo	3,739
FW18 proposed action as implemented	4,880

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1.2 Impacts on Essential Fish Habitat

The purpose of this action is to achieve the objectives of the Atlantic Sea Scallop Fishery Management Plan (FMP) to prevent overfishing and improve yield-per-recruit from the fishery. The primary need for this action is to set specifications to adjust the day-at-sea (DAS) allocations and area rotation schedule for the 2008 and 2009 fishing years.

Six rotational fishing areas are included in this Framework: Closed Area II (CAII), Closed Area I (CAI), the Nantucket Lightship Closed Area (NLCA), the Hudson Canyon Area (HCA), the Elephant Trunk Area (ETA) and the Delmarva Area. Measures included in this Framework primarily serve to set 2008 and 2009 access levels to these areas, and to change fishing effort levels in the areas outside of these six rotational areas. The impacts of actions proposed in this Framework will derive from changes in fishing pressure within the footprint of the scallop

fishery (see Section 4 of this document for detailed descriptions of the geographic range of this fishery and its overlap with designated EFH).

For each of the six rotational fishing areas included, eight scenarios encompass different combinations of openings and closures for 2008 and 2009, each designed to meet the biological, social and economic objectives of the FMP and framework action. Overall, there are sixteen categories of measures, some with sub-options, covering fishery management strategies such as further restrictions considered for crew limits and deck loading of scallops when fishing in rotational areas. Measures are proposed for open area DAS allocations, the general category scallop fishery, bycatch reporting, changes to the overfishing definition, and new area closures are considered to protect young scallops.

Of these, changes to the limited access fishery stemming from combinations of rotational fishing areas have the potential to adversely affect habitats in areas where EFH is designated, particularly if fishing effort patterns change from the baseline conditions. Changes to the general category scallop fishery may also adversely affect such habitats. Additional area closures to protect juvenile scallops may move effort off sensitive habitats (specifically the area in the Great South Channel), and DAS reductions in the open areas will further reduce fishing effort and consequent impacts on habitat relative to baseline conditions. Other proposed measures are not likely to have discernable impacts on habitats where EFH is designated.

1.2.1 No Action

Description of the measure

In 2008, the No Action alternative would allocate one trip in Closed Area I, 3 in Elephant Trunk and approximately 20,000 open area DAS (or 51 DAS for a full-time vessel). In 2009, two areas on Georges Bank would technically be open under the area rotation schedule, but no allocation would be made for those areas. The limited access fishery would be allocated the same number of open area DAS as in 2008.

Impacts on designated EFH

The No Action alternative has higher total bottom swept area projections than the other alternatives, with the exception of the “SCH” and “SCH+HC” alternative - the alternatives that would close the area in the Channel. However, because this measure extends the conditions in place after Framework 18, there is little if any potential for adverse affects beyond established baseline conditions.

No Action for Amendment 11

Description of the measure

This alternative assumes that Amendment 11 is not approved, and the general category fishery would remain an open access fishery.

Impacts on designated EFH

Because the general category fishery would not be constrained overall in terms of total effort there is the potential for increased fishing pressure using New Bedford-style dredges. If the general category fishery fishes with higher intensity than projected, there is a risk that the impacts of this fishery on EFH could exceed baseline levels, though the magnitude of this risk is

very difficult to quantify. Furthermore, the general category component of the fishery is relatively small (approximately 10% of total landings) relative to the limited access fishery. They use dredges with lower relative impact due to their smaller size, and their daily poundage limit places a natural economic limit on profitable levels of fishing by putting a premium on efficient use of gear.

Measures that will be in effect March 1, 2008 until FW19 is implemented

Description of the measures

This alternative considers several measures as backstops if FW19 is not implemented before the start of the 2008 fishing year. Specifications from Amendment 10 and Framework 18 would carry-over until FW19 is implemented.

Impacts on designated EFH

Since the measures included in this alternative will serve as a backstop, even if effort levels are higher than projected in 2008, subsequent measures will be taken to account for any overages; therefore, over the two-year period, the impacts of this alternative on habitats designated EFH should be neutral. For example, if a full-time limited access vessel uses more DAS in FY2008 before FW19 is implemented (up to 51 as allocated under FW18) and this action only allocated 35 then any additional DAS used in 2008 will be reduced for that vessel's 2009 allocation. Baseline levels of effort and adverse habitat impacts would be maintained unless unforeseen shifts in fishing practices redirected fishing effort, but there are no indications that such events are likely.

1.2.2 Management scenarios

Description of the measures

The alternatives described in Section 3.0 of this document are separated out by area, (i.e. Georges Bank access areas, Elephant Trunk, Delmarva etc.) but due to the interrelated nature of area rotation and how the model projects impacts for the entire resource overall, it is difficult to pull out specific impacts by area. Table 4 describes the various scenarios considered. The **No Action** alternative assesses the impacts of essentially rolling over current specifications. There are two alternatives that consider revising the order of the Georges Bank access area schedule (**DMV3** and **DMV2**). The only difference between these two alternatives is that one keeps the Delmarva area closed for both 2008 and 2009, and one alternative considers access in 2009. The rest of the scenarios include various alternatives related to new rotational areas to protect small scallops: **HCL** would close a 5X5 ten-minute-square area near the current Hudson Canyon closed area; **HCS** would close a 4X4 ten-minute square area near the current Hudson Canyon area; **SCH** would close an area in the South Channel northeast of Nantucket Lightship; and **SCHHC** would close both areas – the smaller HC area and the SCH area.

All four of these scenarios include the same assumptions for allocations as scenario “DMV2” (one trip in NL in 2008, one trip in CAII in 2009, one trip in Delmarva in 2009, and 4 trips in ET in 2008 and 3 trips in ET in 2009). All scenarios then identify a certain level of open area DAS based on which areas are accessible to reach an overall fishing mortality target of $F=0.20$. An additional scenario is similar to HC-sm, but it proposes to close the existing HC area (not the 4X4 ten-minute square area) and it allocates more DAS in open areas in 2008 and fewer DAS in 2009 for an average $F=0.20$ for both years combined; this alternative is called “Pref”, for the

preferred alternative. The EFH analyses are mostly based on the projections of area swept for the scallop fishery under the various alternatives (Table 5 and Figure 4).

Impacts on designated EFH

As previously stated, the impacts on habitats designated EFH are based primarily on the amount of time scallop dredges are expected to contact the bottom. Because the footprint of the scallop fisheries overlaps with designated EFH for nearly all managed species and life stages, and because they comprise bottom habitats from sandy to cobble, and occur primarily in high-energy environments, it is not possible to disaggregate the significance of impact across habitat types. For this reason the overall level of impact across all habitats is the preferred metric.

Impacts projections are based on results from an updated version of the SAMS (Scallop Area Management Simulator) model. This model has been used to project abundances and landings to aid management decisions since 1999. This model is a size-structured model that forecasts scallop populations in a number of areas. In this version of the model, Georges Bank was divided into the three access portions of the groundfish closures, the three no access portions of these areas, a proposed closure area in the South Channel, the remainder of the South Channel, the Northern Edge and Peak, and the Southeast Part of Georges Bank. The Mid-Atlantic was subdivided into six areas: Virginia Beach, Delmarva, the Elephant Trunk Access Area, the proposed new version of the Hudson Canyon South Access Area, New York Bight South, and Long Island.

Table 4 – Summary of scenarios considered in the biological projections for Framework 19

2008		CL1	CL2	NLS	ET	Dmv	HC	Sch	IndvDAS*
No Action		1 trip	0 trip	Cl	3 trips	Cl	Op	Op	51
Preferred		Cl	Cl	1 trip	4 trips	Cl	Cl	Op	35
Dmv 3		Cl	Cl	1 trip	4 trips	Cl	Op	Op	32
Dmv 2		Cl	Cl	1 trip	4 trips	Cl	Op	Op	32
HC-sm		Cl	Cl	1 trip	4 trips	Cl	Cl	Op	30
HC-lar		Cl	Cl	1 trip	4 trips	Cl	Cl	Op	29
Sch		Cl	Cl	1 trip	4 trips	Cl	Op	Cl	50
Sch+HC		Cl	Cl	1 trip	4 trips	Cl	Cl	Cl	42
2009		CL1	CL2	NLS	ET	Dmv	HC	Sch	IndvDAS
No Action		Cl	0 trip	0 trip	3 trips	Cl	Op	Op	51
Preferred		Cl	1 trip	Cl	3 trips	1 trip	Cl	Op	42
Dmv 3		Cl	1 trip	Cl	3 trips	Cl	Op	Op	60
Dmv 2		Cl	1 trip	Cl	3 trips	1 trip	Op	Op	48
HC-sm		Cl	1 trip	Cl	3 trips	1 trip	Cl	Op	47
HC-lar		Cl	1 trip	Cl	3 trips	1 trip	Cl	Op	47
Sch		Cl	1 trip	Cl	3 trips	1 trip	Op	Cl	69
Sch+HC		Cl	1 trip	Cl	3 trips	1 trip	Cl	Cl	54

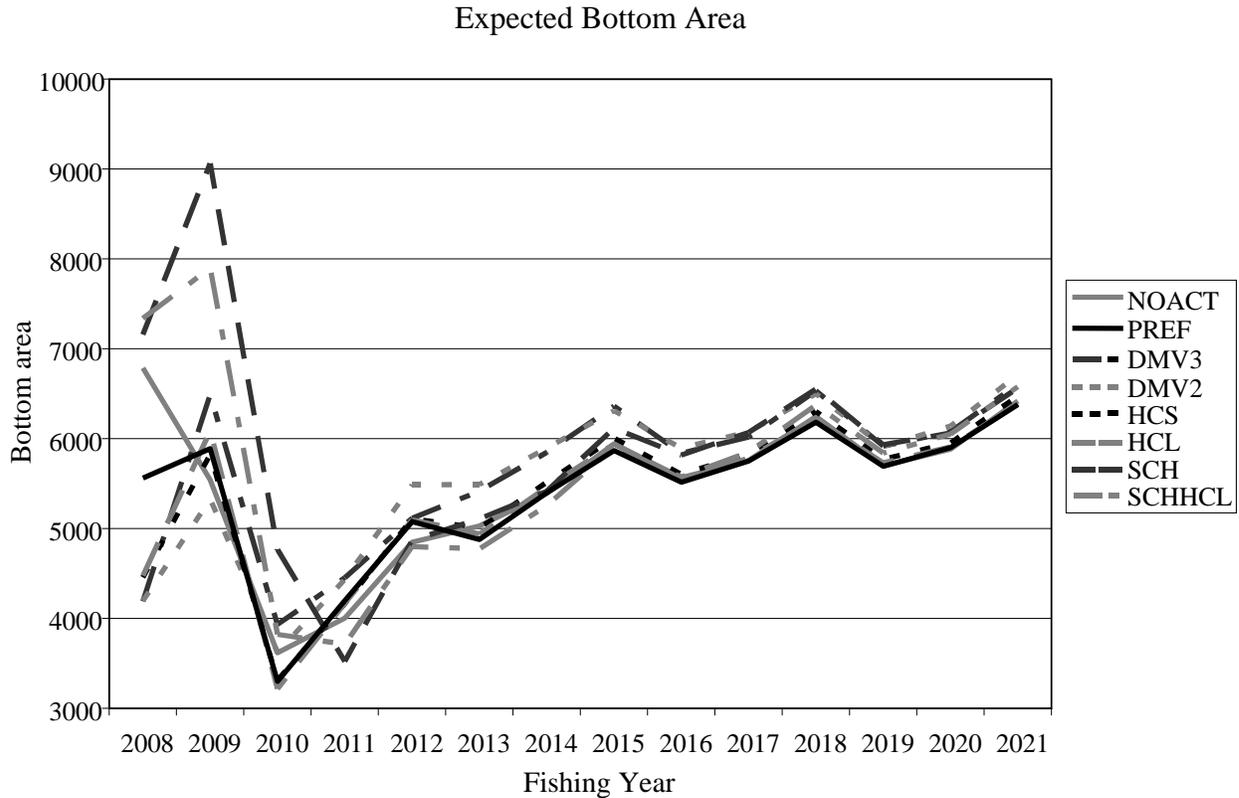
* The full-time individual DAS value is based on an estimate of 326 active full-time equivalent limited access vessels out of 350 limited access permits in 2007. These values have removed TAC for general category allocations and set-asides.

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Table 5. Projected bottom area for limited access permit holders

FISH YEAR	AREA TYPE	SCENARIOS								
		AREA	NOACT	PREF	DMV3	DMV2	HCL	HCS	SCH	SCHHC
2008	ACCESS	CL1Acc	380	-	-	-	-	-	-	-
		CL2S	-	-	-	-	-	-	-	-
		Dmv	-	-	-	-	-	-	-	-
		ET	529	762	749	749	762	749	1,406	762
		NLSAcc	-	397	394	398	397	396	743	397
	ACCESS Average		182	232	229	229	232	229	430	232
	OPEN	HCS	1,162	-	761	762	-	144	3,019	-
		LI	1,350	1,257	579	580	856	814	2,648	2,000
		NEP	897	838	401	401	579	552	1,778	1,304
		NYBS	827	591	398	399	626	598	1,612	1,229
		SchCl	603	671	407	407	533	516		
		SchOp	563	604	299	300	426	407	1,265	900
		SEP	446	413	185	185	276	261	897	704
VB	26	24	11	11	16	15	53	40		
OPEN Average		734	550	380	381	414	414	1,610	882	
2008 Total		6,783	5,558	4,185	4,192	4,472	4,454	13,420	7,335	
2009	ACCESS	CL1Acc	-	-	-	-	-	-	-	
		CL2S	-	359	358	359	358	358	671	359
		Dmv	-	253	-	253	254	254	475	253
		ET	643	676	629	629	676	629	1,180	676
		NLSAcc	-	-	-	-	-	-	-	-
	ACCESS Average		129	258	197	248	258	248	465	258
	OPEN	HCS	1,087	-	1,314	988	-	146	3,486	-
		LI	1,048	1,248	1,066	769	1,244	1,137	3,458	2,047
		NEP	756	899	799	586	907	837	2,419	1,368
		NYBS	641	765	718	536	886	822	1,966	1,237
SchCl		448	477	556	442	555	532			
SchOp		402	595	551	407	612	569	1,547	843	
SEP	470	561	452	322	539	489	1,642	1,021		
VB	45	53	43	31	51	46	148	91		
OPEN Average		612	575	688	510	599	572	2,095	944	
2009 Total		5,539	5,886	6,487	5,321	6,082	5,820	16,992	7,896	
Grand Total		12,322	11,444	10,672	9,513	10,554	10,273	30,412	15,230	

Figure 4 – Comparison of expected bottom area projections for limited access permit holders under the scenarios under consideration (2008-2021)



1.2.3 Georges Bank Access Areas

Description of the measures

This framework is considering two different options for access areas on Georges Bank: the No Action alternative and Alternative 1- revision of GB openings. The main difference between these alternatives is that only one access area would open annually under Alternative 1– Nantucket Lightship in 2008 and Closed Area II in 2009. All scenarios under consideration include a revision of the GB access areas (Alternative 1) except the No Action alternative. The scenario that considers just revising the order of access on GB is DMV3 – Delmarva would not reopen in 2009 and no new areas would close to protect small scallops.

Impacts on designated EFH

Compared to the No Action alternative, the preferred alternative has lower projected bottom contact (area swept) in most areas in 2008. In 2009, open area DAS are higher under DMV3 and SCH than the No Action alternative. Overall LPUE averaged for both years for the preferred alternative is higher than the No Action Alternative except for the two scenarios that include a closure in the Channel. In general the habitat impacts of all scenarios are expected to be positive relative to baseline conditions because access is allocated in areas with more biomass (ET and NL) compared to areas with lower biomass such as open areas and Closed Area I, resulting in more concentrated, less diffuse fishing pressure.

1.2.4 Hudson Canyon Access Area

Description of the measures

No Action for this alternative would mean that all un-used 2005 limited access trips would expire on February 29, 2008. There is one scenario that would extend the duration of the program for three additional months until May 1, 2008.

Impacts on designated EFH

In general, if un-used 2005 trips are not taken the impacts on the designated EFH would be positive relative to the baseline period. However, if vessels that have not used their trips decide to use their trips between now and the end of the 2007 fishing year rather than lose that opportunity, then fishing pressure could be high on scallops in that area as a result. However, because fishing pressure is relatively concentrated in this area, the additional effort would be unlikely to increase adverse impacts above baseline periods. Additionally, the alternative that allows an extension until May 1, 2008 may spread effort out over time, allowing for a higher likelihood of multiple passes over the same bottom rather than a more diffuse, but temporally concentrated, fishing strategy.

1.2.5 Elephant Trunk Access Area

Description of the measures

Four trips in ETAA would be authorized in 2008 and three trips in 2009. The area will open on March 1 with a 2-month seasonal closure from September 1-October 31 to reduce potential interactions with sea turtles. A notice action procedure has been included to reduce the number of trips in this area if updated biomass estimates suggest it is necessary to do so.

Impacts on designated EFH

The resource in the ETA is greater than any other area. Even with four trips (DMV3) compared to three trips under the No Action alternative, the exploitable biomass is still very high (78.6 compared to 86.8). Under area rotation, effort should be allocated to areas with the greatest exploitable biomass. Allocating 4 trips in 2008 and 3 trips in 2009 is not expected to have adverse impacts on designated EFH beyond those felt in the baseline period for this reason.

The seasonal closure may benefit habitats in areas of designated EFH, but it is unclear if this action will result in more diffuse fishing pressure or not. If it does, there may be slight adverse impacts felt (relative to baseline); however, if the effort remains in areas typically fished and overall effort levels decrease as per the projections outlined in this document, then these measures will have a neutral-to-beneficial impact on designated EFH by maintaining or reducing total time that the gear is in contact with the bottom.

1.2.6 Delmarva Access Area

Description of the measures

Updated estimates recommend that the Delmarva area may support one access area trip in 2009. The area will open on March 1, and there is an alternative to consider a seasonal closure from August 1-October 31 to reduce potential interactions with sea turtles. A notice action procedure has been included to reduce the number of trips in this area if updated biomass estimates suggest it is necessary to do so.

Impacts on designated EFH

The impacts of this alternative can be considered comparing DMV3(Delmarva does not open) and DVM2 (Delmarva opens in 2009). By allocating some effort from the Delmarva area in 2009 the open area DAS for that year are reduced by 12 DAS for an full-time vessel. Therefore, DAS used, and anticipated bottom contact time for scallop gear, are lower overall if the area opens since catch rates are expected to be much higher in the Delmarva area compared to open areas. This measure would have a positive impact on habitats designated as EFH. In addition, substrate in Delmarva is sandy bottom, less vulnerable to impacts from fishing gear.

1.2.7 Other restrictions related to access areas

Restriction on the number of crew on limited access scallop vessels

Description of the measures

This action is considering a restriction on crew size of 8 or 9 persons. Since FW18 eliminated the crew size restriction on access area trips, observed trips do not seem to be impacting the size of scallops harvested.

Impacts on designated EFH

This measure is unlikely to appreciably change overall bottom contact time and will most likely have a neutral impact on designated EFH relative to the baseline period. If vessels engage in high-grading practices due to the additional manpower available, then bottom contact time could increase relative to that predicted in the projections. The likelihood of this circumstance is unknown.

Prohibition on deckloading when leaving an access area (>50 bu.)

Description of the measure

This action is considering an alternative that would prohibit any scallop vessel from leaving an access area with more than 50 bu. of in-shell scallop on deck.

Impacts on designated EFH

This measure is unlikely to appreciably change overall bottom contact time and will most likely have a neutral impact on designated EFH relative to the baseline period. The possibility exists, however, that vessels spending time cutting scallops with a dredge deployed (and contacting the bottom) as a quasi-anchor will be more likely to do so if they must cut out all scallops prior to departing an access area. In this case, such a measure could be construed as having an adverse impact on habitats, though it is impossible to quantify such an impact without data on the frequency and location of this practice.

1.2.8 TAC set-asides for observers and research

Description of the measure

This action maintains the current policy of setting aside 2% of available TAC in access areas for research, and 1% to provide funding for observers.

Impacts on designated EFH

This measure will have no direct impact on designated EFH. However, dedicated research into the bottom types in the affected area and impacts of fishing on these substrates will help

fisherman and fishery managers better understand, document, and minimize the potential adverse impacts of fishing on EFH.

1.2.9 Open Area allocations for limited access vessels

Description of the measures

After the Council decides which access areas will be available for the next two fishing years, the open area DAS are estimated to reach an overall target F rate of 0.20. The range of open area DAS under consideration is about 12,000-20,000 total DAS for 2008, or about 29 to 51 individual open area DAS for full-time vessels.

Impacts on designated EFH

The total (16-24,000) and individual open area DAS are higher for 2009 (42-69 for full-time vessels). In general, alternatives with higher open area DAS have higher estimates for DAS used and, consequently, higher bottom contact time. In addition, LPUE in open areas is lower for these alternatives compared to the scenarios that allocate fewer DAS, resulting in more time contacting the bottom for a given catch of scallops. Therefore, additional open area DAS increases will have an adverse impact on designated EFH. The magnitude of this impacts is, however, not directly proportional to the DAS increases beyond baseline levels due to the patchy nature of scallop fishing. If low open-area biomass encourages fisherman to seek areas of previously-lower scallop fishing pressure, than the magnitude of this adverse impact may be significant. If, however, fisherman seek to maximize their DAS allocations by concentrating in areas of known (and hence well-fished) biomass, then the impacts of additional open area DAS will likely be insignificant.

1.2.10 TAC set-asides for observers and research

Description of the measures

This action maintains the current policy of setting aside 2% of available limited access DAS in open areas for research, and 1% to provide funding for observers.

Impacts on designated EFH

This measure will have no impact on designated EFH. However, dedicated research into the bottom types in the affected area and impacts of fishing on these substrates will help fisherman and fishery managers better understand, document, and minimize the potential adverse impacts of fishing on EFH.

1.2.11 Measures for general category vessels

No Action

Quarterly hard-TAC for transition period to limited entry

Description of the measures

If Amendment 11 is approved, there will be a quarterly hard-TAC implemented for the transition period to limited entry (most likely for all of FY2008). The total general category allocation (open and access areas) will be divided into four quarters.

Impacts on designated EFH

Since there is an overall TAC, and because the fishery is prosecuted in 400-pound ‘units’, this alternative is not expected to have any impact on designated EFH relative to the baseline period.

Alternative to reduce derby fishing in access areas

Description of the measures

This action is considering allocating 2% of the total catch to general category vessels in access areas in 2008 only to reduce derby fishing in those areas while vessels are under appeal for the IFQ program.

Impacts on designated EFH

The primary affect of this measure is to transfer a portion of the open access catch from the general category fishery to the limited access fishery. Because there is no clear difference in adverse impact to designated EFH for a given amount of scallop yield between the two fisheries, there is not expected to be any adverse impact on designated EFH relative to the baseline period.

IFQ program for general category fishery

Description of the measures

If Amendment 11 is approved then general category qualifiers will receive an individual fishing quota based on their contribution to historical landings. IFQs will not be area specific; a vessel can choose to participate in an access area program and landings will be removed from their individual allocation. Vessels will be permitted to catch that quota in any area available (open areas or access areas until the fleetwide allocation is harvested). This action includes an alternative for a cost recovery program for the general category IFQ vessels approved under Amendment 11. It includes a program that could collect up to 3% of ex-vessel value of scallop product landed.

Impacts on designated EFH

The cost recovery program is administrative in nature and is not expected to have any impact on habitats designated EFH.

Northern Gulf of Maine (NGOM) hard-TAC

Description of the measures

If this program is approved under Amendment 11, this framework includes the hard-TAC allocation for vessels with a limited entry NGOM permit. The PDT recommendation is 64,000 pounds for both years. Once the TAC is reached, no scallop vessels are permitted to fish in the NGOM area.

Impacts on designated EFH

Because all scallop fishing is prohibited once the TAC is reached, provided the TAC is set at the appropriate level and is effectively monitored these measures should have no impact beyond that documented in the baseline period.

General category access area management

Description of the measures

General category allocations in access areas will remain a fleetwide number of trips per area. This action is considering a variety of alternatives for total allocation into access areas for the

general category fishery: 2% per area, 5% per area, 0% for Closed Area II and a small percentage for Closed Area II. The prohibition on deckloading from access areas also applies to general category vessels.

Impacts on designated EFH

Overall, allocating 5% or 2% to the general category fishery will not have impacts on the scallop resource overall since the same overall amount of scallops will be harvested. There are no major differences in mortality from limited access gear compared to general category gear. These measures do not change overall fishing pressure and they are not likely to influence the distribution of that fishing pressure and thus are expected to have a neutral impact on designated EFH.

1.2.12 Estimate of mortality from incidental catch

Description of the measure

If approved by Amendment 11, an estimate of mortality from incidental catch will be reduced from the total TAC on an annual basis.

Impacts on designated EFH

The consequence of this measure is to effectively reduce landings by scallop vessels by an amount proportional to their incidental catch mortality, which may reduce bottom contact time relative to baseline periods. However, this reduction is likely to be small enough to not have any appreciable impact on designated EFH.

1.2.13 Revision of overfishing definition

Description of the measure

This action is considering revising the overfishing definition based on results from the recent scallop stock assessment, SAW 45.

Impacts on designated EFH

These alternatives are related to identifying the status of the scallop resource and setting sustainable management measures; therefore are not expected to have any impact on habitats designated EFH.

1.2.14 Minor adjustments to the observer set-aside program

Description of the measure

This action includes an alternative that would consider applying a higher compensation rate for vessels carrying an observer in open areas, compared to access area trips. In addition, there are a number of administrative adjustments that are being considered to improve the program overall.

Impacts on designated EFH

These alternatives are administrative in nature and is not expected to have any impact on habitats designated EFH.

1.2.15 Area closures to protect young scallops

This action is considering several new areas as scallop rotational areas. Small scallops have shown up in the 2007 survey in the Hudson Canyon area as well as the Great South Channel.

Hudson Canyon area

Impacts on designated EFH

Additional rotational will minimize the effects of fishing on designated EFH if those areas prove to be of proportionally high abundance, allowing for decreased bottom contact time and spatially focused fishing practices relative to baseline periods. While this affect is likely under these measures, not enough is known currently about the implementation strategy to make conclusive determinations on the magnitude of any reductions in adverse impacts to designated EFH.

Great South Channel area

Impacts on designated EFH

Additional rotational will minimize the effects of fishing on designated EFH if those areas prove to be of proportionally high abundance, allowing for decreased bottom contact time and spatially focused fishing practices relative to baseline periods. While this affect is likely under these measures, not enough is known currently about the implementation strategy to make conclusive determinations on the magnitude of any reductions in adverse impacts to designated EFH.

1.2.16 Other measures

30-day VMS power-down provision

Description of the measures

An alternative is being considered that would permit a vessel to power down their VMS unit for a minimum of 30 days if the vessel is not going to fish during that time.

Impacts on designated EFH

This alternative is administrative in nature and is not expected to have any impact on habitats designated EFH.

Clarification on when a vessel can leave on an access area trip

Description of the measures

This alternative would clarify when a vessel can leave on an access area trip. Specifically, the No Action would remain in effect; a vessel can leave on an access area trip before the area opens, but it may not enter the access area until the area has opened.

Impacts on designated EFH

This alternative is administrative in nature and is not expected to have any impact on habitats designated EFH.

Discussion of Maine DMR memo regarding NGOM hard-TAC

The Scallop PDT had a conference call on Friday, October 19 in response to the Committee motion below. The PDT reviewed the data queries and methods used by the Maine DMR and these methods were determined to be accurate and valid. However, the PDT still supports the methods they produced for the NGOM hard-TAC based on the information provided in Amendment 11 and based on PDT interpretation of Council instructions. The Council should consider the information in Amendment 11 and decide which methods best reflect the intent of the NGOM alternative and TAC. This document includes: 1) a description of the NGOM alternative as submitted in Amendment 11; 2) the PDT's original recommendation for a hard-TAC for FW19 as well as a revised recommendation; 3) the final memo prepared by Maine DMR (revised from the memo sent in the Council binder); 4) Committee discussion and motion related to this issue from October 11 meeting; and 5) PDT notes from conference call on October 19.

1. Description of NGOM alternative from Amendment 11

Establish a Northern Gulf of Maine Management Area Limited Entry Program without landings criteria (*proposed action*)

This alternative would develop a separate limited entry general category program in the GOM exemption area north of 42°20N (**Option A**) (See Figure 1 – hatched area north of 42°20). Following the public comment process the Council developed this alternative to combine some of the alternatives in this section to better reflect the intent of this alternative. Specifically, a limited entry program is recommended but with no landings criteria in order to provide a reduced level of access to a wider range of vessels in this region. Vessels that had a permit at the time of the control date (November 1, 2004) would be permitted to fish in the NGOM area with a 200 pound possession limit. Vessels would be restricted to fish for scallops with a 10.5 ft. dredge, unless the vessel was also fishing under a limited access multispecies or monkfish permit. These vessels would be exempt from the dredge restriction. Vessels in this permit category would be exempt from upgrade restrictions as described in Section 3.1.2.5.2 and vessels would be required to report through VMS. The details of the alternative are described in the bullets below.

The area would be under a hard-TAC set by the Scallop PDT based on the federal portion of scallop resource in the NGOM. All federal permit holder landings from the NGOM count toward the NGOM TAC, and if a vessel qualifies for a limited entry general category permit under Amendment 11 then any landings from the NGOM will count against their individual allocation as well as the NGOM TAC. Once the TAC is reached for the area no federal scallop vessel would be permitted to fish for scallops in the NGOM.

1. Create a NGOM scallop management area with a separate hard TAC for just the scallop resource in federal waters. 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. Landings from the NGOM area will not be counted against the General Category TAC.

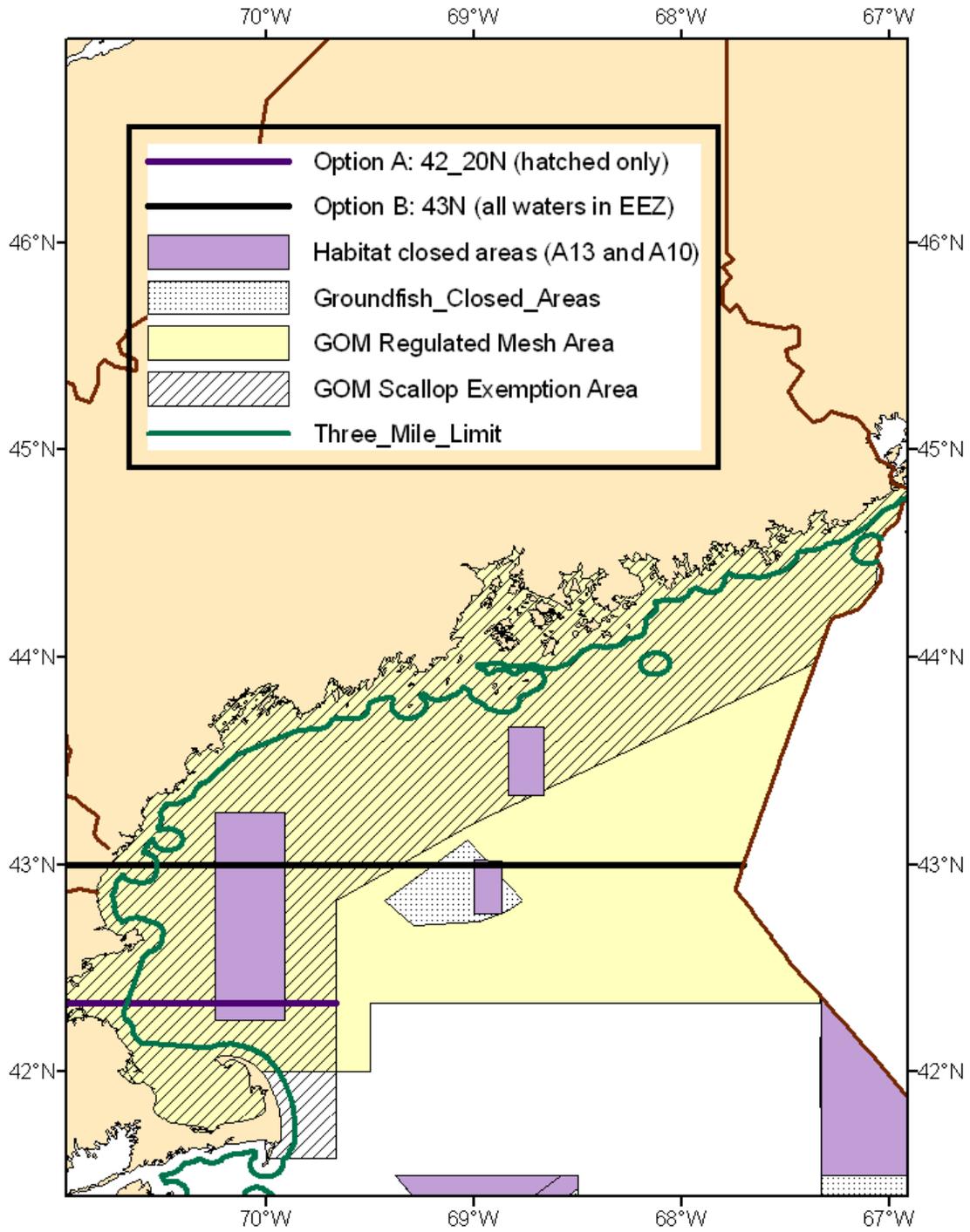
2. To qualify for a NGOM scallop permit, one must have had a General Category scallop permit at the time the control date was implement (November 1, 2004).
3. If a vessel qualifies for a NGOM permit they are restricted to fish for scallops in the NGOM area, and only until the TAC is reached for that area. Once that fishery closes no scallop fishing can take place in the NGOM, regardless of permit type.
4. If a vessel qualifies for a “regular” 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 will also be restricted to the 200 pounds possession limit when fishing in the NGOM. If this vessel wants to fish in the NGOM it must declare into that area and those landings will also 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 possess 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: Following the public comment period on the DSEIS the Council developed this alternative to combine some of the alternatives in this section to better reflect the intent of this alternative. Although, the Council decided that limited access was necessary to manage scallops in this area, it has developed rules that are more compatible with the needs of local fishermen. Also, the scallop resource increases sporadically with the result that scallops were not available in abundant quantities during the qualification time period. As a result, the Council decided that the limited access criteria to the NGOM should be based on whether or not a vessel had a permit on the control date (November 1, 2004) rather than on the amount of scallops a vessel had landed. Additionally, because vessels catch fewer scallops in the NGOM, the Council decided that a 200-pound trip limit would be more appropriate and reduce incentive to increase effort in that area. In order to control the amount of scallops landed from the area overall, a hard-TAC will be implemented for the federal portion of the NGOM. One of the primary reasons the Council developed this additional alternative was in response to several concerns the Regional Administrator raised related to the approvability of the original limited entry alternative (Alternative 3.1.4.3). This alternative is intended to address those concerns. Specifically, she raised issues of conservation, administrative burden and enforceability. The Council designed this alternative in an attempt to address these concerns and allow for a placeholder for future management of scallops in the NGOM if and when they return. It was discussed that these vessels did not contribute to the problem, and this alternative would allow a supplemental fishery for vessels that have depended on this resource as part of total revenue over time.

First, since NMFS can't track state landings there is no way to monitor a TAC that encompasses both landings from state and federal waters, so this alternative applies only to the resource in the federal portion of the NGOM. Since the federal portion of this resource is a small portion, this TAC will be small, thus conservative for the area overall. Second, in order to ensure the TAC is not exceeded, all scallop landings in that area would count against the TAC as well as an individual allocation if landed by a "regular" general category vessel. This alternative also clarifies that no vessel would be permitted to possess an incidental level of scallop catch once the TAC is caught, another conservative provision. In addition, all limited access permit holders will most likely not be permitted to fish for or land (in federal or state waters) any species of fish authorized by the permit, unless and until the permit has been issued or renewed, pending a proposed rule to reconcile state and federal commercial fishing vessel permit programs. On April 6, 2007 NMFS published a proposed rule that is considering a revision to the limited access permit program that would prevent a vessel from fishing under a state permit before it has applied for or renewed its federal permit (72 FR 17085). This proposed rule was not final when Amendment 11 was submitted, but is expected to be final rule sometime later this summer. This potential revision is seen as a conservative provision that will prevent a federal permit from fishing under the federal TAC and then moving into state waters.

The Regional Administrator also voiced concern about the administrative burden of implementing a limited entry program with the 100 pound landings criteria. She argued that qualifying vessels with that low criteria over an 11-year time period would be a very resource intensive program, for little utility since it would qualify almost everyone that landed a scallop in that area since 1994. If an upgrade restriction was also applied it would be administratively unacceptable to have NMFS track vessel replacements, etc. for hundreds of vessels. Lastly, in terms of enforceability since all vessels would be prohibited from having more than 200 pounds in the area, and no scallop fishing will be permitted in the area after the TAC is caught it would be enforceable. In addition, vessels will be required to have VMS, report through VMS and can transit in the area with more than 200 pounds if gear is stowed and fishing took place outside the NGOM area.

Figure 1 – Potential boundaries for the NGOM Management Area



2. PDT’s original recommendation for a NGOM hard-TAC and revised estimate using updated data

Background on the recommended NGOM hard-TAC

The proposed area is the GOM exemption area north of 42 20. The Council directed the PDT to develop an estimate for the hard-TAC based on the federal portion of the resource within this area. VTR landings information is not very reliable for specific location information, but can provide a general idea of fishing location over a longer period of time and for a large number of vessels. Below is a table with the total landings from VTR data for 2000-2006 (through October 2006) within in the NGOM, as well as landings from the federal portion only. All trips over 1,200 pounds per trip were eliminated from the database. Most trips were below that amount, but a significant number of trips in 2001 and 2002 were above that amount. The average landings from within the NGOM for this time period were about 123,000 pounds. After landings from state waters and areas now closed to fishing are removed, the average landings are reduced to about 64 thousand pounds, or 52% of landings in the NGOM area (Table 1).

Table 1 – Summary of landings from within the NGOM area (VTR data from 2000-October 2006)

Calendar Year	VTR landings from within the NGOM area	VTR landings from within state waters in the NGOM	VTR landings from within the GF and EFH closed areas in NGOM	VTR landings from within federal waters only in the NGOM area
2000	66,649	33,444	822	32,383 (49%)
2001	141,825	78,089	2,432	61,304 (43%)
2002	264,175	117,862	799	145,514 (55%)
2003	171,622	100,942	0	70,680 (41%)
2004	46,718	23,434	1,332	21,952 (47%)
2005	75,608	24,541	2,160	48,907 (65%)
2006*	91,771	21,842	3,316	66,613 (73%)
AVG	122,624	57,165	1,552	63,908 (52%)

* Through October 11, 2006

The PDT reviewed this information and recommends that the hard-TAC for the next two fishing years be 64,000 pounds per year. First, there is uncertainty about the resource in the GOM in general, and there is uncertainty about how much of past landings have been and will be from state waters in the future. In order to account for this uncertainty the PDT discussed taking 80% of the average landings from federal waters if it is assumed that average landings are close to long-term MSY. However, since the PDT acknowledges that some of future landings from vessels that qualify to fish under this TAC will come from state waters; the PDT recommends that the average landing value not be reduced since some level of future landings is expected to come from state waters.

Revised NGOM hard-TAC recommendation

After the Scallop Committee meeting and PDT conference call staff updated the VTR data used to compute the table above so that it could be compared with the methods prepared by Maine DMR. The PDT used the same data table for 2000-2006 and the updated table is presented below. This recommended TAC has been modified slightly as a result of the PDT using the data table Maine DMR prepared, but still using the same assumptions for what to include in the estimate (i.e. federal landings by general category vessels only).

The revised hard-TAC using this data set and the same assumptions as before would be 70,000; compared to 64,000.

Table 2 – Summary of general category landings from within federal waters in the NGOM area

Calendar Year	GC landings from federal waters in NGOM
2000	30,127
2001	59,382
2002	140,177
2003	84,488
2004	24,571
2005	59,366
2006	87,207
AVG	69,331

3. Revised Proposal from Maine DMR

Maine DMR proposes a revised initial NGOM TAC of 126,000 pounds (the annual average of all federally permitted vessels (158,069 pounds), minus a 20% (31,614 pounds) conservation reduction). This TAC differs from DMR’s original proposed TAC of 136,000 pounds for two principal reasons:

- 1.) DMR subsequently generated a more comprehensive record of landings data through 2006 (these methods were approved by the scallop PDT on October 19).
- 2.) DMR has analyzed this revised data, and removed all landings from groundfish and Essential Fish Habitat closures in addition to all general category trips over 1200 pounds.

Additional Justification:

- While A11 stipulates that all federal permit holder landings from the NGOM count toward the NGOM TAC, state waters landings by federal scallop permit holders were not included in the development of the TAC. The Council’s decision to base the NGOM TAC exclusively on the federal portion of the resource was based on the assumption that “since NMFS can’t track state landings there is no way to monitor a TAC that encompasses both landings from state and federal waters, so this alternative applies only to the resource in the federal portion of the NGOM.” This statement is inaccurate. All federal scallop vessels are required to submit VTR’s documenting their catch in both state and federal waters. In fact, NMFS data documents that roughly 50% of VTR landings (2000-2006) came from state waters (see table). Consequently, *as NMFS data indicates*, a TAC based exclusively on the federal portion of the resource will limit federally permitted scallop fishermen in the NGOM to approximately half their historic landings.
- Limited access vessels took an average of 29,000 pounds of scallops from the NGOM from 2000-2006 yet limited access vessels’ landings were excluded from the NGOM TAC development process. Limited access vessels landings must be included in NGOM TAC development. To require a fishery to be managed by a hard TAC but not apply its landings toward the attainment of that TAC is illogical.
- The exclusion of all GC landings over 1200 pounds results in an average annual exclusion of 24,000 pounds, or roughly 15% of overall NGOM landings. Although some of these entries may have contained errors, they certainly were not all erroneous. The PDT argues the data-limited nature of the NGOM scallop resource necessitates a reduction of average landings of between 20-40% to set a conservative TAC. DMR maintains that since 15% of landings have already been excluded, a reduction of 20% is adequately conservative.

Annual landings (open areas) for federally permitted vessels, 2000-2006

Calendar Year	General Category Vessels			Limited Access Vessels			Grand Total
	State	Fed	Total	State	Fed	Total	
2000	39,878	30,127	70,006	43,006	28,214	71,220	141,226
2001	84,842	59,382	144,224	27,450	1,400	28,850	173,074
2002	133,613	140,177	273,790	54,253	5,546	59,799	333,589
2003	89,882	84,488	174,370	2,673	0	2,673	177,043
2004	22,832	24,571	47,403	18,083	1,687	19,770	67,173
2005	17,568	59,366	76,934	6,350	14,100	20,450	97,384
2006	29,788	87,207	116,995	0	0	0	116,995
Total Yearly Average	418,403	485,318	903,722	151,815	50,947	202,762	1,106,484
	59,772	69,331	129,103	21,688	7,278	28,966	158,069

**DRAFT**

#9

This document includes:

1. *An updated Section 4.3 (Description of Protected Resources)*
2. *Section 5.3 - Impacts on Protected Resources (starting on page 5 of this document)*

*These two sections will be incorporated into the main document before submission.***I. PROTECTED RESOURCES – AFFECTED ENVIRONMENT**

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

	<i>Status</i>
Northern right whale (<i>Eubalaena glacialis</i>)	Endangered
Humpback whale (<i>Megaptera novaeangliae</i>)	Endangered
Fin whale (<i>Balaenoptera physalus</i>)	Endangered
Blue whale (<i>Balaenoptera musculus</i>)	Endangered
Sei whale (<i>Balaenoptera borealis</i>)	Endangered
Sperm whale (<i>Physeter macrocephalus</i>)	Endangered
Minke whale (<i>Balaenoptera acutorostrata</i>)	Protected
Pilot whale (<i>Globicephala</i> spp.)	Protected
Spotted dolphin (<i>Stenella frontalis</i>)	Protected
Risso's dolphin (<i>Grampus griseus</i>)	Protected
White-sided dolphin (<i>Lagenorhynchus acutus</i>)	Protected
Common dolphin (<i>Delphinus delphis</i>)	Protected
Bottlenose dolphin: coastal stocks (<i>Tursiops truncatus</i>)	Protected
Harbor porpoise (<i>Phocoena phocoena</i>)	Protected

Seals

Harbor seal (<i>Phoca vitulina</i>)	Protected
Gray seal (<i>Halichoerus grypus</i>)	Protected
Harp seal (<i>Phoca groenlandica</i>)	Protected
Hooded seal (<i>Cystophora cristata</i>)	Protected

Sea Turtles

Leatherback sea turtle (<i>Dermochelys coriacea</i>)	Endangered
Kemp's ridley sea turtle (<i>Lepidochelys kempii</i>)	Endangered
Green sea turtle (<i>Chelonia mydas</i>)	Endangered*
Loggerhead sea turtle (<i>Caretta caretta</i>)	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 Maine 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 this action 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 (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. 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 Opinion 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 Opinion 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 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 Opinion 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 Opinion, Murray (2007) calculated 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 vessel 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).

II. IMPACTS OF FRAMEWORK ADJUSTMENT 19 ON PROTECTED RESOURCES

Background

The Framework Adjustment 19 alternatives are evaluated below for their impacts on protected resources with a focus on threatened and endangered sea turtles, as noted in the Affected Environment Section. As with the analyses provided in the last scallop management action, the species considered here are loggerhead, leatherback, Kemp's ridley and green sea turtles.

Both scallop dredge and scallop trawl gear will be addressed, 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.

To briefly summarize the sea scallop fishery management program, it employs a limited access permit system and controls DAS use in scallop open areas. Limited numbers of trips with trip limits also are allowed in designated rotational access areas. 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, a circumstance that maybe addressed by Amendment 11 to the Atlantic Sea Scallop Fishery Management Plan.

Although scallop fishing is a year-round activity, the distribution of turtles throughout most of the Mid-Atlantic is seasonal --- May through November. Therefore, a portion of scallop fishing occurs at times when turtles are not likely to be present, the result of habitat and water temperature preferences.

With respect to sea turtle interactions with the fishery overall, it is noteworthy that there were very low levels of observer coverage throughout the fishery up to 2003. Since that time bycatch rates, with a focus on the Mid-Atlantic have been analyzed in a number of publications that will be discussed later in this document.

Other factors also may affect the nature of scallop fishery/ sea turtles interactions. Beginning in September 2006, federally permitted scallop dredge gear 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.

With respect to Framework Adjustment 19, six rotational fishing areas are considered. Closed Area II (CAII), Closed Area I (CAI), the Nantucket Lightship Closed Area (NLCA), the Hudson

Canyon Area (HCA), the Elephant Trunk Area (ETA) and the Delmarva Area. Measures primarily serve to set 2008 and 2009 access levels to these areas, and to change fishing effort levels in the areas outside of these six rotational areas. Additional measures address further restrictions on crew limits and deck loading of scallops when fishing in rotational areas. Measures also are proposed for the general category scallop fishery, bycatch reporting, changes to the overfishing definition and new area closures to protect young scallops.

Discussions regarding sea turtle interactions with the fishery are largely qualitative and based on factors such as DAS use and bottom area swept. It is important to recognize that neither factor directly relates to the frequency of turtle bycatch in the fishery, but does provide some measure of how much effort is projected to occur and which areas might be subject to more or less activity based on catch rates. Although it is not repeated in each alternative, the general assumption is made that turtles interactions occur when and where scallop fishing effort overlaps with the presence of sea turtles. Risks may be greater during turtles high use periods, but interactions could still occur in the margins of that period given that both turtle distribution and fishing activities are highly variable.

Turtle bycatch numbers are generally low across years, and bycatch rates tend to be similar in many areas with some exceptions, even in high use areas in the Mid-Atlantic. Turtle bycatch analyses to date have not identified specific times and areas where the greatest probability of bycatch is likely to occur in any given year.

No Action

In 2008, the No Action alternative would allocate one trip in Closed Area I, 3 in the ETA and approximately 20,000 open area DAS (or 51 DAS for a full-time vessel). Three trips would also be allowed in the ETA in 2009, while there would be zero trips in the Georges Bank access areas in that year. (CAII and NLS would technically be open under the area rotation schedule, but no allocations would be made for those areas as discussed earlier in the FW 19 document, while Closed Area I would simply be closed). The limited access fishery would be allocated the same number of open area DAS as in 2008, about 20,000 or 51 per full-time vessel.

Further, in both years pending further action, the ETA is 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 with an opening date of 2010.

Compared to most of the other alternatives, the No Action scenario could, in very general terms, represent greater risks to sea turtles, at least based on DAS use. In 2008, No Action has the highest open area DAS (nearly 20,000) as well as total DAS except for the SCH and SCH+HC alternatives which are both higher yet (Table 70 in the FW19 document). Overall, No Action has the lowest DAS used estimate for access areas, but the highest for open areas. In 2009, No Action projections show lower total DAS because of fewer access area trips, i.e. virtually none on Georges Bank and three in the ETA where catch rates should be higher, and a drop in total catch.

While DAS use is a measure of effort and increases could be associated with negative impacts to protected species under the No Action scenario, impacts in the Mid-Atlantic area could still be uncertain, depending on the overlap of effort and the presence of turtles during high use periods. The Elephant Trunk Area contains about 32 percent of the scallop biomass (Figure 9, FW 19 document), reflected in the relatively low levels area swept for both 2008 and 2009, a value that reflects higher scallop catch rates (Table 72, FW 19 document). This factor, along with the September-October seasonal closure to protect sea turtles during the period when bycatch rates have historically been highest, could result in positive impacts for turtles within the ETA. Conversely, turtles outside of the ETA, in Hudson Canyon and other open areas in the Mid-Atlantic for example, might be subject to greater impacts when vessels take advantage of the scallop biomass in those areas, keeping in mind that the Delmarva area also would be closed.

In further considering potential consequences for No Action, the high level of bottom area swept for the open areas (again the SCH and SCH+HC are the only alternatives that are higher yet) is problematic. In 2009, the total bottom area swept calculation is similar for all scenarios except SCH which is significantly higher. While only 17 percent of the scallop biomass is in the Mid-Atlantic and Georges Bank open areas combined, effort shifts to the Mid-Atlantic may be attractive as a result of the fairly significant levels of scallop biomass that remain in the Hudson Canyon area outside of the access areas with attendant consequences to turtles in the area.

No Action for Amendment 11

Description of the measure

This alternative assumes that Amendment 11 is not approved, and the general category fishery would remain an open access fishery.

Impacts on protected species

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 general category participants could harvest sea scallops with an open access permit without meaningful controls on effort and fishing mortality or any associated bycatch.

Measures that will be in Effect March 1, 2008 until Framework 19 Implementation

Description of the measures

This alternative considers several measures as backstops if FW19 is not implemented before the start of the 2008 fishing year. Specifications from Amendment 10 and Framework 18 would carry-over until FW19 is implemented.

Impacts on protected species

There is little likelihood that the measures included as a backstop will have any measurable effects on sea turtles, given the specifications that would carry over have been in place since 2004 and June 2006, respectively.

MANAGEMENT SCENARIOS

Description of the measures

The alternatives described in the FW19 document of are separated out by area, (i.e. Georges Bank access areas, Elephant Trunk, Delmarva etc.) but due to the interrelated nature of area

rotation and how the model projects impacts for the entire resource overall, it is difficult to pull out specific impacts by area. The No Action alternative assesses the impacts of essentially rolling over current specifications. There are two alternatives that consider revising the order of the Georges Bank access area schedule (DMV3 and DMV2). The only difference between these two alternatives is that one keeps the Delmarva area closed for both 2008 and 2009, and one alternative considers access in 2009. The rest of the scenarios include various alternatives related to new rotational areas to protect small scallops: HCL would close a 5X5 ten-minute-square area near the current Hudson Canyon closed area; HCS would close a 4X4 ten-minute square area near the current Hudson Canyon area; SCH would close an area in the South Channel northeast of Nantucket Lightship; and SCHC would close both areas – the smaller HC area and the SCH area.

All four of these scenarios include the same assumptions for allocations as scenario “DMV2” (one trip in NL in 2008, one trip in CAII in 2009, one trip in Delmarva in 2009, and 4 trips in ET in 2008 and 3 trips in ET in 2009). All scenarios identify a certain level of open area DAS based on which areas are accessible to reach an overall fishing mortality target of $F=0.20$. An additional scenario is similar to HC-sm, but it proposes to close the existing HC area (not the 4X4 ten-minute square area) and it allocates more DAS in open areas in 2008 and fewer DAS in 2009 for an average $F=0.20$ for both years combined; this alternative is called “Pref”, for the preferred alternative.

Georges Bank Access Areas

Description of the measures

This framework is considering two different options for access areas on Georges Bank: the No Action alternative and Alternative 1- revision of GB openings. The main difference between these alternatives is that only one access area would open annually under Alternative 1– Nantucket Lightship in 2008 and Closed Area II in 2009. All scenarios under consideration include a revision of the GB access areas (Alternative 1) except the No Action alternative. The scenario that considers just revising the order of access on GB is DMV3 – Delmarva would not reopen in 2009 and no new areas would close to protect small scallops.

Impacts on protected species

While benefits are expected to accrue to the scallop resource with the revised alternative, the revised order for Closed Area I, Closed Area II and the Nantucket Lightship access areas will likely produce few discernable impacts to sea turtles in Georges Bank region, as compared to No Action, because of the location of the access areas. While there are now documented sea turtle interactions in the scallop fishery on Georges Bank, takes have thus far been relatively rare events as a result of turtle distribution as well as their habitat preferences, especially during the colder months of the year.

Adjustments when YT flounder bycatch TAC is reached

Description of the measures

If the YT flounder bycatch TAC is reached, limited access vessels are permitted to use access area trips at a compensation rate in open areas. Analyses suggest that the compensation for Nantucket Lightship in 2008 would be 7.7 DAS, and 7.9 DAS for Closed Area II trips in 2009.

Impacts on protected species

Given the alternative under consideration would increase open area DAS, there is a potential for increased scallop fishery interactions with turtles if the additional DAS were used in times and places where there is an overlap. If Hudson Canyon is closed, for example, as in the preferred alternative, effort may shift to the Channel area where few negative impacts might be expected. Other alternatives such as the SCH alternative could result in greater negative effects if the additional effort moves to the open Hudson Canyon area and effort increases during the turtle high use periods.

Hudson Canyon Access Area

Description of the measures

No Action for this alternative would mean that all un-used 2005 limited access trips would expire on February 29, 2008. There is one scenario that would extend the duration of the program for three additional months until May 1, 2008.

Impacts on protected species

In general, if un-used 2005 trips are not taken, the impacts on sea turtles could be positive. If vessels that have not used their trips decide to use them between now and the end of the 2007 fishing year rather than lose that opportunity, impacts may still be positive or at least neutral because the trips would be made prior to the May-November turtle high use period. The alternative that allows an extension until May 1, 2008 may reduce scallop mortality in the short term compared to No Action, if vessels decide to wait until after scallops have grown in the spring (i.e. April and May), but could increase impacts to sea turtles, again if an overlap occurs.

Elephant Trunk Access Area

Description of the measures

Four trips in ETA would be authorized in 2008 and three trips in 2009. The area will open on March 1 with a 2-month seasonal closure from September 1-October 31 to reduce potential interactions with sea turtles. A notice action procedure has been included to reduce the number of trips in this area if updated biomass estimates suggest it is necessary to do so.

The Scallop Committee also has recommended eliminating the seasonal closure 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.

Impacts on protected species

Relative to No Action, the extra trip in the ETA in 2008 contained in all other alternatives could have a neutral or even negative impact on turtles in the area if all allocated trips are taken, a result of the very high density of scallops available to the fishery. A mitigating factor may be the September-October seasonal closure, a period when bycatch rates in the Mid-Atlantic have been historically higher than in other months.

With respect to elimination of the seasonal closure, there are low numbers of turtle bycatch in the Mid-Atlantic overall and similarities among rates across all months in many of the areas of the Mid-Atlantic, with the exception of the ETA (Figure 1). It should be noted that the precautionary

action taken in the Elephant Trunk Area has produced little evidence of harm, and is supported by relatively high observed bycatch rates at least in the dredge fishery between 2003-2005 (Figure 2). Further, the seasonal closure has only been in place for one year, and it is likely too early to determine if adjustments are necessary. Based on this information, an action to approve this change could result in negative effects in comparison to the No Action which would leave the closure in place.

Delmarva Access Area

Description of the measures

Updated estimates recommend that the Delmarva area may support one access area trip in 2009. The area will open on March 1, and there is an alternative to consider a seasonal closure from August 1-October 31 to reduce potential interactions with sea turtles. A notice action procedure has been included to reduce the number of trips in this area if updated biomass estimates suggest it is necessary to do so.

Impacts on protected species

The impacts of this alternative can be considered comparing DMV3 (Delmarva does not open) and DVM2 (Delmarva opens in 2009). By allocating some effort from the Delmarva area in 2009, the open area DAS for that year are reduced by 12 DAS for a full-time vessel. Therefore, DAS used, and anticipated bottom contact time for scallop gear, are lower overall if the area opens since catch rates are expected to be much higher in the Delmarva area compared to open areas. From this perspective, this measure could have an overall positive impact on sea turtles in the Mid-Atlantic relative to No Action.

The following discussion relates to the seasonal closure being considered to reduce potential risk of interactions between turtles and scallop gear. To date, regression models describing turtle bycatch in relation to environmental factors, such as sea surface temperature or depth, have been used to predict bycatch rates of turtles in scallop dredge gear in the Mid-Atlantic (Murray 2004, 2005, 2007). The Murray reports are the most statistically rigorous analyses of bycatch currently available and include information on observer coverage levels as well as a discussion about uncertainties in the data.

Rates are stratified for the dredge fishery only based on factors that affect bycatch rates, and have been reported over the June to November period when turtle interactions are more likely to occur in the Mid-Atlantic. To consider optimal times for a seasonal closure to protect sea turtles in the Delmarva region, should it open in 2009, information on observed turtle interactions in this area from both the dredge and trawl fisheries for 2002-2006 is provided below (Table 1), as well as additional information from the Mid-Atlantic scallop dredge fishery from 2003-2005. It should be noted here that, while complete information for 2006 is unavailable at present, there have been takes in the Delmarva area in both scallop trawl and dredge gear, and that rates may be higher in scallop trawl gear based on the information currently available.

In the Delmarva region from 2002-2006, turtle captures occurred in June (14.3%), July (21.5%), August (7.1%), September (7.1%), and October (50.0%) in scallop dredge and trawl gear (Table 1).

Table 1. Loggerhead turtle bycatch in scallop dredge and scallop trawl gear in the Delmarva Closure Area, 2002-2006

Trip Letter	Year	Month of haul	Day of haul	Gear type	Animal Condition
A	2005	June	16	Trawl	Alive
A	2005	June	16	Trawl	Alive
B	2005	July	7	Trawl	Alive
C	2005	July	8	Trawl	Alive
D	2003	August	10	Dredge	Alive
E	2004	July	28	Dredge	Alive
F	2006	September	22	Trawl	Severely decomposed
G	2004	October	3	Trawl	Alive
H	2002	October	5	Dredge	Alive
I	2004	October	7	Dredge	Alive
G	2004	October	8	Trawl	Alive
I	2004	October	8	Dredge	Alive
G	2004	October	9	Trawl	Alive
J (off-watch haul)	2003	October	14	Dredge	Alive

In addition to information on observed takes, observed bycatch rates (defined as the number of observed turtles /observed dredge hours in the fishery) were calculated in four scallop management areas during the months of June-October, again for dredge gear only (Table 2). These four areas were the Hudson Canyon Access Area, the Elephant Trunk Access Area, the Delmarva area, and Outside of these areas west of 71°W and south of 42°N.

The most recent data suggest that in the Delmarva Area bycatch rates have historically been higher in August than September (albeit the sample size is very low). Over the entire Mid-Atlantic area, rates have been higher in August than October. A seasonal closure in October in the Delmarva region appears likely to benefit turtles based on rates for the dredge fishery. However, closing the area for September as well could potentially increase the risk to turtles if trips that would have been made during that time period are made in August instead.

An August-October closure would capture the period of highest bycatch, but ignores the issue of zero rates in September. It is precautionary relative to potentially reducing sea turtle interactions in that the measure would close the area during the late summer and early fall months when takes have been observed; however, the closure does not ensure an overall reduction in turtle interactions if effort is displaced into the margins outside of the closure area, where rates are similar.

It also must be emphasized that because of the low numbers of turtle bycatch in the Mid-Atlantic overall and the similarity among rates across all months in many of the areas of the Mid-Atlantic, with the exception of the ETA, there is uncertainty in the level of benefit this particular seasonal closure will provide. It must be noted, however, that the precautionary

action taken in the Elephant Trunk Area has produced little evidence of harm, and is supported by relatively high observed bycatch rates at least in the dredge fishery between 2003-2005 (Figure 1).

As further closures are considered, it would be prudent for the Council to also revisit those that are in place to reduce the risk of sea turtle interactions as more data become available.

Figure 1. Observed bycatch rates of turtles in the Mid-Atlantic scallop dredge fishery only, 2003-2005.

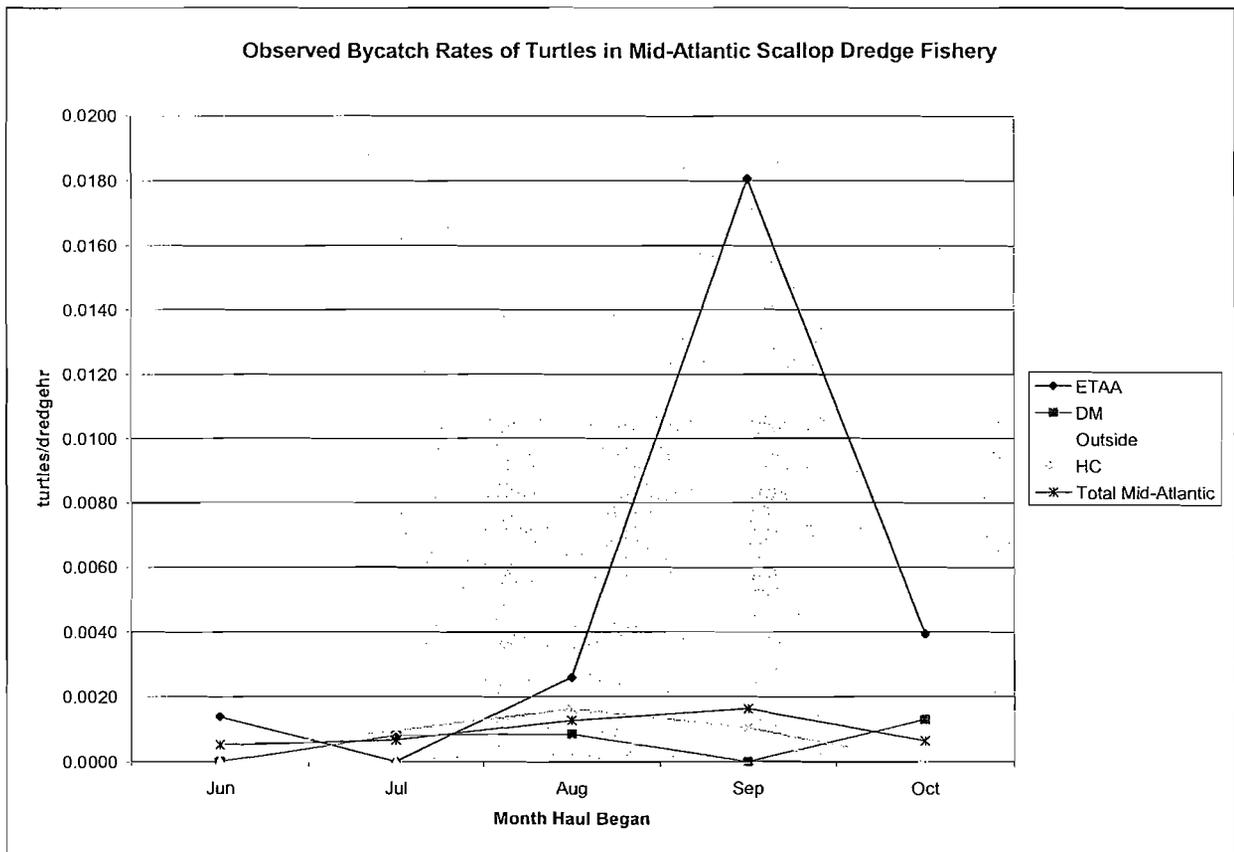
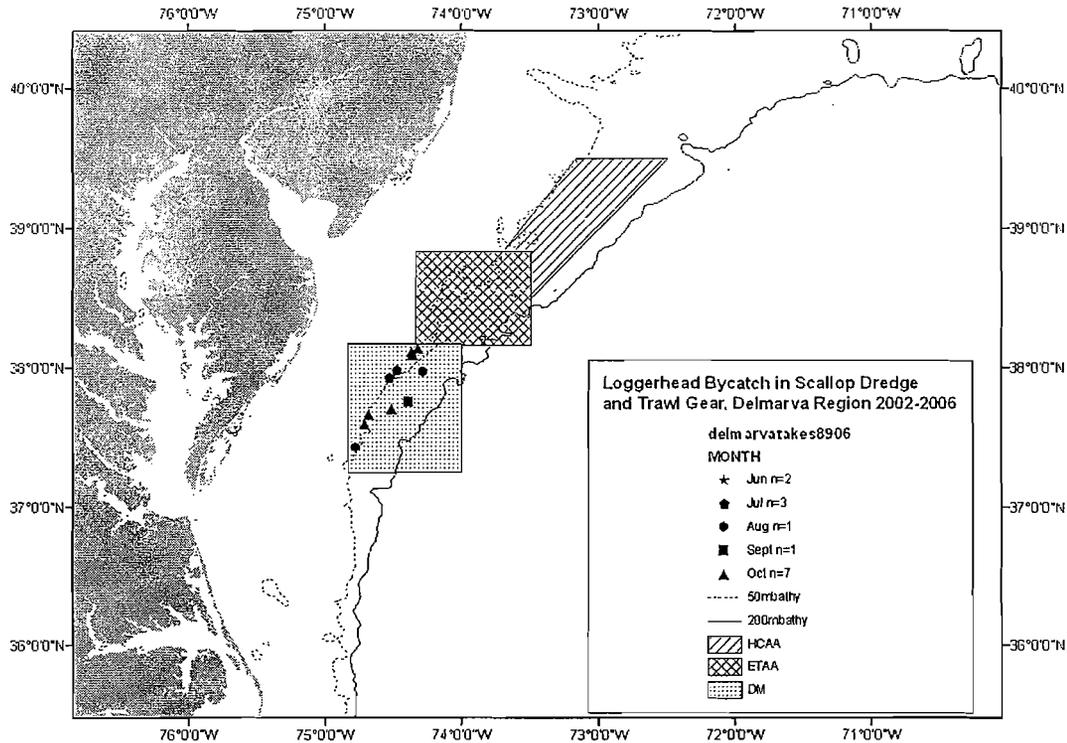


Figure 2. 2003-2005 Observed Bycatch Rates in Scallop Dredge Gear in Mid-Atlantic (west of 71, south of 42)

2003-2005 Observed Bycatch Rates in Scallop Dredge Gear in Mid-Atlantic (west of 71, south of 42)																		
Month haul began	Location																	
	Hudson Canyon Access Area	Elephant Trunk*					Delmarva					Outside Access Areas in Mid-Atlantic					Total Mid-Atlantic	
	turtles	observed dredgehrs	turtles/dredgehr	turtles	observed dredgehrs	turtles/dredgehr	turtles	observed dredgehrs	turtles/dredgehr	turtles	observed dredgehrs	turtles/dredgehr	turtles	observed dredgehrs	turtles/dredgehr	turtles	observed dredgehrs	turtles/dredgehr
Jun	1	2392.0	0.0004	2	1441.5	0.0014	0	425.8	0.0000	0	1506.9	0.0000	3	5766.2	0.0005			
Jul	3	3144.0	0.0010	0	560.8	0.0000	1	1241.4	0.0008	0	1045.9	0.0000	4	5992.1	0.0007			
Aug	5	3054.8	0.0016	1	386.4	0.0026	1	1159.9	0.0009	1	1658.9	0.0006	8	6260.0	0.0013			
Sep	3	2860.6	0.0010	6	332.2	0.0181	0	941.6	0.0000	1	2008.0	0.0005	10	6142.4	0.0016			
Oct	0	2836.8	0.0000	2	507.8	0.0039	3	2296.3	0.0013	0	2083.9	0.0000	5	7724.8	0.0006			
Total	12	14288.2		11	3228.7		5	6065.0		2	8303.6		30	31885.5	0.0009			
*area closed July 23 2004 - Mar 2007																		

Figure 3. Loggerhead bycatch in scallop dredge and scallop trawl gear in Delmarva Closure Area, 2002-2006



“Chain mats” should prove helpful in mitigating turtle interactions in a more comprehensive manner now that the gear modification is has been approved by NOAA Fisheries. The rule (71 FR 50361, August 23, 2006) requires all scallop vessels with a federal scallop permit (limited access and general category) using scallop dredge gear, regardless of dredge size, to install ‘chain mats’ on dredges fished in Mid-Atlantic waters south of 41 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.

OTHER RESTRICTIONS RELATED TO ACCESS AREAS

Restriction on the number of crew on limited access scallop vessels

Description of the measures

This action is considering a restriction on crew size of 8 or 9 persons. Since FW18 eliminated the crew size restriction on access area trips, observed trips do not seem to be impacting the size of scallops harvested.

Impacts on protected resources

This measure is unlikely to result in any discernable effects to sea turtles unless vessels that might spend time cutting scallops with their dredges deployed are less likely to do so if they are able to

carry more crew and hence cut scallops faster without the need to cease fishing and reduce deck-loading. In this case, such a measure could possibly have a positive impact on reducing the risks of sea turtle interactions, though it is impossible to quantify such an impact without further information.

Prohibition on deckloading when leaving an access area (>50 bu.)

Description of the measure

This action is considering an alternative that would prohibit any scallop vessel from leaving an access area with more than 50 bu. of in-shell scallop on deck.

Impacts on designated protected resources

This measure is unlikely to affect sea turtle resources in any direct or measurable way. As with the previous measure, the possibility exists that vessels spending time cutting scallops with a dredge deployed could be more likely to do so if they had cut out all scallops prior to departing an access area. In this case, such a measure could have a potentially negative impact on sea turtles, though it is impossible to make any meaningful comments in the absence of relevant data.

TAC set-asides for observers and research

Description of the measure

This action maintains the current policy of setting aside 2% of available TAC in access areas for research, and 1% to provide funding for observers.

Impacts on protected resources

This alternative is expected to have indirect beneficial impacts on the sea turtle populations as a larger body of information collected through both research and observer program efforts contributes to the scallop management process and enhances information on protected species interactions.

Open Area allocations for limited access vessels

Description of the measures

After the Council decides which access areas will be available for the next two fishing years, the open area DAS are estimated to reach an overall target F rate of 0.20. The range of open area DAS under consideration is about 12,000-20,000 total DAS for 2008, or about 29 to 51 individual open area DAS for full-time vessels. The total (16-24,000) and individual open area DAS are higher for 2009 (42-69 for full-time vessels).

Impacts on protected resources

In general, alternatives with higher open area DAS have higher estimates for DAS used and, consequently, higher bottom contact time. In addition, LPUE in open areas is lower for these alternatives compared to the scenarios that allocate fewer DAS, resulting in more gear contacting the bottom for a given catch of scallops. The same rationale is useful in comparing alternatives relative to impacts on sea turtles. The alternatives with the greatest potential to negatively affect turtles are SCH and SCH = HC, while HC –lar and HC-sm would most likely result in the least negative outcome.

DAS set-asides for observers and research

Description of the measures

This action continues the set-aside program that deducts one-percent of the allocated DAS to help fund observers on limited access scallop vessels in open areas and two-percent to fund scallop related research with compensation trips taken in open scallop fishing areas. This allocation would be removed after the general category allocation is removed from open areas.

Impacts on protected resources

Few if any measureable impacts are likely to be associated with this management measure. It does however, help to facilitate research activities and observer coverage, both of which may have indirect beneficial impacts on sea turtle resources given that better information may enhance the development of solutions to protected species interactions.

MEASURES FOR GENERAL CATEGORY VESSELS

Quarterly hard-TAC for transition period to limited entry (FY2008)

Description of the measures

If Amendment 11 is approved, there will be a quarterly hard-TAC implemented for the transition period to limited entry (most likely for all of FY2008). The total general category allocation (open and access areas) will be divided into four quarters.

Impacts on protected species

No Action would provide an unlimited number of general category participants with the ability to harvest sea scallops with an open access permit without meaningful controls on effort and fishing mortality or any associated bycatch. Approval of the action overall is likely to result in benefits to sea turtles species inhabiting the management unit, but the quarterly hard-TAC is not likely to have measurable impacts except to potentially mitigate the possibility of concentrated effort over protracted periods of time.

Alternative to reduce derby fishing in access areas

Description of the measures

This action is considering allocating 2% of the total catch to general category vessels in access areas in 2008 only to reduce derby fishing in those areas while vessels are under appeal for the IFQ program.

Impacts on protected resources

There are no discernable differences between the impacts on sea turtles between the 2% and 5% access area allocation alternatives. Efforts to reduce derby fishing of whatever magnitude generally benefit protected resources by spreading effort out over time and areas.

IFQ program for general category fishery (FY2009)

Description of the measures

If Amendment 11 is approved general category qualifiers will receive an individual fishing quota based on their contribution to historical landings. IFQs will not be area specific; a vessel can choose to participate in an access area program and landings will be removed from their individual allocation. Vessels will be permitted to catch that quota in any area available (open areas or access areas until the fleetwide allocation is harvested).

Impacts on protected species

These measures do not change overall fishing effort, nor are they likely to influence the distribution of that fishing effort. As such, they are expected to have a neutral impact on sea turtles inhabiting the sea scallop management unit.

Cost Recovery Program

Description of the measures

This action includes an alternative for a cost recovery program for the general category IFQ vessels. It includes a program that could collect up to 3% of ex-vessel value of scallop product landed.

Impacts on protected resources

This program is administrative in nature and is not expected to have any impact on sea turtles or any other protected resources inhabiting the scallop management unit.

Northern Gulf of Maine (NGOM) hard-TAC

Description of the measures

If this program is approved under Amendment 11, this action will include a hard-TAC allocation for vessels with a limited entry NGOM permit. The PDT recommendation is 64,000 pounds for both years. Once the TAC is reached, no scallop vessels are permitted to fish in the NGOM area.

Impacts on protected species

The TAC recommendations under consideration with respect to the 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 are rare events in the Gulf of Maine under most circumstances, 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.

General category access area management

Description of the measures

General category allocations in access areas will maintain a fleetwide number of trips per area. A range of alternatives is being considered for total allocation into access areas for the general category fishery: 2% per area, 5% per area, 0% for Closed Area II and a small percentage for Closed Area II. The prohibition on deckloading from access areas also applies to general category vessels.

Impacts on protected resources

Overall, allocating 5% or 2% to the general category fishery will not have impacts on sea turtles relative to interactions with the scallop fishery. Given the same overall amount of scallops will be harvested, the measures are not expected to change overall fishing effort and are unlikely to influence the distribution effort --- likely resulting in neutral impacts to protected resources.

Estimate of mortality from incidental catch, revisions to the overfishing definition, SBRM, minor adjustments to the observer set-aside program, a 30-day VMS power-down provision and clarification on when a vessel can leave on an access area trip

Description of measures

See Sections 2.5, 2.6, 2.7, 2.8 and 2.10.

Impacts on protected resources

The above measures primarily affect the effectiveness of the scallop management program and will not result in any impacts, either positive or negative, to any protected species.

Area closures to protect young scallops

Several new areas are being considered as scallop rotational areas. Small scallops have shown up in the 2007 survey in the Hudson Canyon area as well as the Great South Channel.

New rotational area in Hudson Canyon vicinity

Description of the measures

The Scallop PDT recommended two areas for consideration in the Hudson Canyon (a 4x4 ten-minute square bounded between 38 50' and 39 30' N and 73 00' and 73 40' W and a 5x5 ten-minute square bounded between 38 50' and 39 40' N and 72 50' and 73 40' W). High numbers of small scallops (<70 mm) were caught on 2007 survey tows in this area.

Impacts on protected species

Additional rotational areas could reduce the potential negative impacts of scallop gear interactions with threatened and endangered sea turtles if they allow for decreased effort and bottom contact time relative to No Action in areas and at times when fishery interactions are most likely to occur. HCL and HCS have similar outcomes in 2008 with respect to total bottom area swept and somewhat less than the Preferred Alternative. The same is true for DAS used. No action results in higher total values in both bottom area swept and DAS used.

Great South Channel area

Description of the measures

The PDT recommended consideration of an area to the north of the Nantucket Lightship closed area and west of Closed Area I; the top left coordinate of the polygon is 41 20' N and 69 30' W and the bottom left coordinate is 40 50' N and 68 50' W (**Error! Reference source not found.**). This is the first year with decent recruitment on Georges Bank since 2001. High numbers of small scallops (<70 mm) were caught on 2007 survey tows in this area.

Impacts on protected species

Additional rotational areas could reduce the potential negative impacts of scallop gear interactions with threatened and endangered sea turtles if they allow for decreased effort and bottom contact time relative to No Action in areas and at times when fishery interactions are most likely to occur. Bottom area swept is dramatically greater under SCH than either the Preferred Alternative or No Action in 2008 as well as 2009 and the same pattern is true of DAS used. Values are greater for SCH than either the preferred and No Action alternatives.

**DRAFT**

#10

This document includes:

1. **An updated version of Section 5.4 (Economic Impacts)**
2. **Section 5.5 – Social Impacts (starting on page 31 of this document)**

These two sections will be incorporated into the main document before submission.

1.1 ECONOMIC IMPACTS**1.2 NO ACTION**

In 2008, the No Action alternative would allocate one trip in Closed Area I, 3 in Elephant Trunk and approximately 20,000 open area DAS (or 51 DAS for a full-time vessel). In 2009, two areas on Georges Bank would technically be open under the area rotation schedule, but no allocation would be made for those areas. The limited access fishery would be allocated the same number of open area DAS as in 2008.

The impacts of the no action were discussed above in 1.3 relative to the impacts of the alternatives described in Section 2.0. These impacts could be summarized as follows:

- Under the no action alternative, the landings will be less than the levels estimated for the preferred alternative and other options both in the short- and the long-term. This is because no action allocates fewer trips to the access areas compared to the other alternatives. Although it allocates more open area DAS (51 in 2008 and 2009), the landings from the open areas are not large enough to compensate for lower landings from access areas. This is because LPUE is lower in the open areas compared to access areas.
- As a result, total net benefits under no action will be 4.5% to 15.5% less than the other alternatives in the short-term (Table 5 and Table 6) and 1% to 3% less than the benefits for other alternatives in the long-term (Table 10 and Table 11). No action will result in \$43 million less economic benefits in the short-term (2008-09, Table 5) and in \$113 million less benefits compared to the preferred option over the long-term (2008-2021, Table 10).

No Action for Amendment 11

This alternative assumes that Amendment 11 is not approved, and the general category fishery would remain an open access fishery. The economic impacts of the no action were analyzed in Amendment 11, Section 5.4.2. The scallops landings and DAS allocations for limited access vessels were projected by assuming that general category landings will remain at 10% of total scallop landings in 2008 and 5% of scallop yield in 2009. If general category fishery continued to be open access, however, there would be always a risk for either more vessels entering the fishery, or for the general category landings to increase above 10%. This would result in the overfishing of the scallop resource with a consequent reduction in scallop yield and revenues. The decline in LPUE due to overfishing would also increase fishing costs per pound of scallops. This, combined with a reduction in revenues would lead to dissipation of the profits for all participants, including those of the limited access vessels and of general category vessels that are active in the scallop fishery. 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 caused by the decline in the productivity of the scallop resource, measured by LPUE (landings per unit effort).

Measures that will be in effect March 1, 2008 until FW19 is implemented

This alternative considers several measures as backstops if FW19 is not implemented before the start of the 2008 fishing year. Specifications from Amendment 10 and Framework 18 would carry-over until FW19 is implemented. Since the measures included in this alternative will serve as a backstop, even if effort levels are higher than projected in 2008, subsequent measures will be taken to account for any overages; For example, if a full-time limited access vessel uses more DAS in FY2008 before FW19 is implemented (up to 51 as allocated under FW18) and this action only allocated 35 then any additional DAS used in 2008 will be reduced from that vessel's 2009 allocation. The economic impacts of this measure on vessels that used more days than would be allocated in 2008 by Framework 19 (for example, 35 days-at-sea with the preferred option) will be positive in 2008, but negative in 2009 fishing year since their DAS allocation will be reduced by the overage, resulting in lower revenue and profits in 2009. The positive impacts in 2008 would likely to offset the negative impacts on revenues in 2009 since the prices would be lower in 2008 and higher in 2009 than estimated if many vessels uses higher day-at-sea allocations in 2008 versus in 2009 (with other factors affecting the price staying at the same levels).

Similarly, any general category Elephant Trunk area trips taken in 2008 above the ultimate allocation for 2008 will be deducted from the following fishing year. And if the Council ultimately selects to allocate more than 2% of access in ET – then those additional trips could be allocated whenever FW19 is implemented (i.e. 5%). If the general category quarterly hard TAC for Quarter 1 (March 1-May 31) is exceeded, then those pounds will be removed from Quarter 3 and/or 4. Any landings from within the Northern Gulf of Maine (NGOM) area caught in fishing year 2008 above the ultimate TAC for 2008 will be reduced the following year. Again, the economic impacts of these measures would be negative in 2009 fishing year since the allocations will be reduced by the overage, resulting in lower revenue and profits in 2009. The positive impacts in 2008 would likely to offset the negative impacts on revenues in 2009 since the prices would be lower in 2008 and higher in 2009 than estimated if many landings in 2008 exceed the allocations (with other factors affecting the price staying at the same levels).

1.3 AGGREGATE ECONOMIC IMPACTS OF THE ROTATION AREA ALTERNATIVES

The section provides a cost/benefit analysis of the area rotation alternatives, including the no action alternative, proposed by the Council through Framework Action 19 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 of all the measures and allocations that are specified in the present regulations. Specifically, under "No Action," in open areas, limited access scallop vessels would receive the same allocation as FY2007, full time vessels would receive an allocation of 51 open area DAS in both 2008 and 2009. The trip allocations for access areas would also roll over. Consistent with Framework 20 to the FMP as approved by the Council, full-time vessels would receive 3

Elephant Trunk Access Area trips. The Georges Bank access area allocations are dependent on the schedule of areas that are to be opened. In 2008, the Closed Area I (CAI) and Closed Area II (CAII) access areas are scheduled to open. One trip would be allocated to CAI for full-time vessels, consistent with the 2007 scallop fishery regulations. General category vessels would be allocated 216 trips to CAI in the 2008 fishing year. There would be no allocated trips in CAII because the scallop regulations for 2007 do not include a trip allocation in 2007 for CAII. In 2009, the CAII and Nantucket Lightship access areas are scheduled to open. However, no trips would be allocated because the regulations do not specify any trip allocations for 2008 (i.e., the fishing year preceding the 2009 fishing year, consistent with the regulation cited above). The Hudson Canyon Access Area would become part of the open areas on March 1, 2008, and the Delmarva area would remain closed through February 28, 2010, as specified in the scallop fishery regulations. The economic impacts are presented in Table 1 to Table 11 using an updated estimate of prices, revenues and total net benefits. The long-term economic analyses are based on the biological model simulations for landings, DAS and LPUE. For the short-term, the biological model projections approximated the landings under the no action scenario and under other alternatives to the degree it is possible using a very sophisticated biological model. According to the model simulations, however, the day-at-sea is estimated to be 52 days in 2008 (rather than 51 days) for the no action alternative and 33 days (rather than 35 days) in 2008 and 43 days in 2009 (rather than 42 days) for the preferred alternative assuming that 326 full-time equivalent vessels will participate in the scallop fishery in 2008-2009. In order to provide an economic analysis consistent with the 51 DAS under no action in 2008 and 35 DAS in 2008 and 42 DAS in 2009 for the preferred option the following adjustments are made to the landings and DAS projections:

- For no action scenario, the landings in 2008 will be 0.3 million lb. less because the day-at-sea allocations will be 51 not 52. For this reason, scallop landings estimated from biological landings are lowered by 0.3 million lb. for no action scenario and DAS is lowered by 326 days. For the preferred option, allocating 35 instead of 33 increases landings by 0.7 million lb. in 2008 (open area LPUE=1103, $1103 * 2 * 326 = 719,156$ lb.) In 2009, however, the results indicate 43 days, but allocation will be 42 days, which will result a decrease in landings by 0.4 million lb. ($1266 * 1 * 326 = 412,716$ lb.) compared to model simulations. Similarly adjustment made to the total DAS, increasing it by 652 for 2008 and reducing it by 326 days for 2009 for the preferred option.
- No adjustments are made to long-term biological simulations for landings and DAS because the short-term changes in landings for the no-action and preferred options are small and are not expected to change the long-term results in any significant way. For example, for the two year period (2008-2009), the increase in landings will be 0.3 million lb. for the preferred option, and the decrease in landings is 0.3 million lb. for the no action alternative. These estimates are expected to sufficiently represent the biological and economic impacts under the no action and other alternatives.

1.3.1 Summary of overall economic impacts of the alternatives

- The projected scallop landings for the preferred option and other alternatives are higher compared to no action scenario in 2008 and 2009, with the exception of the large Hudson canyon alternative (HCL) in 2008 (Table 1).
- The prices are estimated using the prices model described in Amendment 11. The significant changes in external factors, i.e., in exports, imports, value of dollar, export and

import prices since 2005, however, affected the scallop prices significantly in recent years. Given that the future values of these external variables are uncertain, the prices and revenues are estimated here by using a range of estimates: The higher price estimates correspond to the price model outputs at the recent values of import prices and level of exports. The lower price estimates are obtained by reducing forecasted prices from the price model by 10% to more closely approximate the recent prices.

- The preferred option and the other alternatives are expected to increase revenues both in year 2008 and 2009 compared to the no action scenario regardless of the range of prices used (Table 2). Although of value of total scallop revenue changes according to whether lower or higher prices are used in estimation, the percentage change in revenue compared to no action stays the same for each alternative. In 2009, the revenues for the preferred option are expected to exceed the revenues under no action by about 6.2%, and slightly more under other alternatives.
- The results are similar for the impacts on total economic benefits. Total benefits are equal to the sum of consumer benefits (i.e., surplus) and producer benefits (i.e., surplus). The cumulative value of total benefits for alternative options is expected to exceed the no action benefits by 4.5% to 15.5 % for the range of prices used in the estimates. Preferred option will increase total economic benefits by about 5.5% to 5.8% in the short-term, i.e., during 2008-2009 fishing years (Table 5 and Table 6).
- Over the long-term, all alternatives are expected to increase scallop revenues by 0.5% to 1.5% and total net benefits by 1% to 3% depending on the alternative (Table 9). The positive impacts of the preferred option on net economic benefits (2.68%) either exceed or very similar to the value of benefits under other alternatives (Table 10 and Table 11).

1.3.1.1 Short-term Economic Impacts

Table 1. Short-term impacts of alternatives on landings, LPUE and DAS

Fishing year	Alternatives	Landings (lb.)	LPUE	DAS-used (fleet total)	% Change in landings from No action
2008	No Action	43.4	1475	29,256	
	Preferred option	44.4	1593	27,903	2.3%
	DMV closed (Similar to SQ, DMV3)	46.3	1780	25,870	6.7%
	DMV closed in 2008, open in 2009 (DMV2)	46.3	1780	25,865	6.7%
	HC closure, large (HCL)	43.2	1706	25,204	-0.5%
	HC closure, small (HCS)	44.0	1718	25,468	1.4%
	South Channel closed, HC open (SCH)	51.1	1555	32,711	17.7%
	South Channel and HC closed (SCH+HC)	44.2	1427	30,823	1.8%
2009	No Action	41.3	1578	26,044	
	Preferred option	45.9	1632	27,949	11.1%
	DMV closed (Similar to SQ, DMV3)	52.6	1785	29,380	27.2%
	DMV closed in 2008, open in 2009 (DMV2)	51.6	1665	30,859	24.8%
	HC closure, large (HCL)	48.7	1647	29,461	17.8%
	HC closure, small (HCS)	49.2	1682	29,195	19.2%
	South Channel closed, HC open (SCH)	54.9	1482	36,990	33.0%
	South Channel and HC closed (SCH+HC)	46.3	1434	32,221	12.1%
2008-2009 average	No Action	42.6	1527	27,813	
	Preferred option	45.0	1612	27,763	6.6%
	DMV closed (Similar to SQ, DMV3)	49.4	1783	27,625	16.8%
	DMV closed in 2008, open in 2009 (DMV2)	48.9	1723	28,362	15.6%
	HC closure, large (HCL)	46.0	1676	27,332	8.5%
	HC closure, small (HCS)	46.6	1700	27,332	10.0%
	South Channel closed, HC open (SCH)	53.0	1519	34,850	25.1%
	South Channel and HC closed (SCH+HC)	45.3	1430	31,522	6.8%

Table 2. Short-term economic impacts on landings, prices and revenues (in 2006 inflation adjusted prices)

Fishing year	Alternatives	Ex-vessel Price (Lower)	Ex-vessel Price (Higher)	Total Revenue, (Lower prices, mill. \$)	Total Revenue, (Higher prices, mill. \$)	% Change in Revenue from No action
2008	No Action	7.70	8.47	336	369	
	Preferred option	7.66	8.43	340	374	1.3%
	DMV closed (Similar to SQ, DMV3)	7.46	8.24	345	382	2.9%
	DMV closed in 2008, open in 2009 (DMV2)	7.46	8.24	345	382	2.9%
	HC closure, large (HCL)	7.77	8.59	336	371	0.1%
	HC closure, small (HCS)	7.69	8.50	338	374	0.8%
	South Channel closed, HC open (SCH)	7.00	7.74	358	395	6.5%
	South Channel and HC closed (SCH+HC)	7.67	8.47	339	375	1.0%
2009	No Action	7.90	8.73	326	361	
	Preferred option	7.55	8.30	347	381	6.2%
	DMV closed (Similar to SQ, DMV3)	6.91	7.64	363	402	11.3%
	DMV closed in 2008, open in 2009 (DMV2)	7.00	7.74	361	399	10.6%
	HC closure, large (HCL)	7.28	8.05	354	392	8.5%
	HC closure, small (HCS)	7.23	7.99	356	393	9.0%
	South Channel closed, HC open (SCH)	6.69	7.40	368	406	12.7%
	South Channel and HC closed (SCH+HC)	7.51	8.30	348	384	6.5%
2008-2009 average	No Action	7.80	8.60	331	365	
	Preferred option	7.61	8.36	343	378	3.7%
	DMV closed (Similar to SQ, DMV3)	7.19	7.94	354	392	7.1%
	DMV closed in 2008, open in 2009 (DMV2)	7.23	7.99	353	390	6.7%
	HC closure, large (HCL)	7.52	8.32	345	381	4.2%
	HC closure, small (HCS)	7.46	8.24	347	384	4.8%
	South Channel closed, HC open (SCH)	6.85	7.57	363	401	9.6%
	South Channel and HC closed (SCH+HC)	7.59	8.38	343	380	3.7%

Table 3. Short-term economic impacts of alternatives on producer, consumer and total benefits (in 2006 inflation adjusted prices, in million \$, lower ex-vessel prices)

Fishing year	Alternatives	Trip Costs* (\$ million)	Producer Surplus (\$ million)	Consumer Surplus (\$ million)	Total Benefits (\$ million)
2008	No Action	41	295	94	389
	Preferred option	36	309	104	413
	DMV closed (Similar to SQ, DMV3)	36	309	104	413
	DMV closed in 2008, open in 2009 (DMV2)	35	301	94	394
	HC closure, large (HCL)	36	303	96	399
	HC closure, small (HCS)	46	312	121	433
	South Channel closed, HC open (SCH)	43	296	97	393
	South Channel and HC closed (SCH+HC)	39	301	99	400
	2009	No Action	36	290	87	377
Preferred option		43	318	124	442
DMV closed (Similar to SQ, DMV3)		41	322	127	450
DMV closed in 2008, open in 2009 (DMV2)		41	313	113	426
HC closure, large (HCL)		41	315	115	430
HC closure, small (HCS)		52	316	136	452
South Channel closed, HC open (SCH)		45	303	105	408
South Channel and HC closed (SCH+HC)		39	307	103	410

* Includes trip costs such as food, fuel, ice, water, oil and repair costs for gear.

Table 4. Short-term economic impacts of alternatives on producer, consumer and total benefits (in 2006 inflation adjusted prices, in million \$, lower ex-vessel prices)

Fishing year	Alternatives	Producer Surplus % change	Consumer Surplus % change	Total benefits % change
2008	No Action			
	Preferred option	5%	11%	6%
	DMV closed (Similar to SQ, DMV3)	5%	11%	6%
	DMV closed in 2008, open in 2009 (DMV2)	2%	-1%	2%
	HC closure, large (HCL)	3%	2%	3%
	HC closure, small (HCS)	6%	31%	11%
	South Channel closed, HC open (SCH)	1%	3%	1%
	South Channel and HC closed (SCH+HC)	2%	6%	3%
2009	No Action	10%	43%	17%
	Preferred option	11%	46%	19%
	DMV closed (Similar to SQ, DMV3)	8%	30%	13%
	DMV closed in 2008, open in 2009 (DMV2)	9%	32%	14%
	HC closure, large (HCL)	9%	56%	20%
	HC closure, small (HCS)	4%	21%	8%
	South Channel closed, HC open (SCH)	6%	18%	9%
	South Channel and HC closed (SCH+HC)	10%	43%	17%

Table 5. Short-term cumulative benefits compared to no action (in 2006 inflation adjusted prices, lower ex-vessel prices)

Fishing year	Alternatives	Present value of Consumer Surplus (mill. \$)	Present value of Producer Surplus (mill. \$)	Present value of Total Benefits** (mill. \$)	Total benefits net of no action (mill. \$)	% Change in Total Benefits
2008-2009	No Action	175	566	740	-	
	Preferred option	195	588	783	43	5.8%
	DMV closed (Similar to SQ, DMV3)	220	606	826	86	11.6%
	DMV closed in 2008, open in 2009 (DMV2)	223	610	834	93	12.6%
	HC closure, large (HCL)	199	593	793	52	7.0%
	HC closure, small (HCS)	204	597	801	60	8.2%
	South Channel closed, HC open (SCH)	248	607	856	115	15.5%
	South Channel and HC closed (SCH+HC)	195	579	774	33	4.5%

Table 6. Short-term cumulative benefits compared to no action (in 2006 inflation adjusted prices, higher ex-vessel prices)

Fishing year	Alternatives	Present value of Consumer Surplus (mill. \$)	Present value of Producer Surplus (mill. \$)	Present value of Total Benefits** (mill. \$)	Total benefits net of no action (mill. \$)	% Change in Total Benefits
2008-2009	No Action	157	631	788	-	
	Preferred option	177	655	831	43	5.5%
	DMV closed (Similar to SQ, DMV3)	200	678	878	90	11.4%
	DMV closed in 2008, open in 2009 (DMV2)	203	683	886	98	12.4%
	HC closure, large (HCL)	180	663	843	55	7.0%
	HC closure, small (HCS)	184	668	852	64	8.1%
	South Channel closed, HC open (SCH)	228	681	909	121	15.3%
	South Channel and HC closed (SCH+HC)	176	649	824	36	4.6%

Table 7. The estimated impacts of alternatives on revenues, costs, crew and vessel income for an average FT vessel (assuming annual fixed costs of \$177,216 and a 55% crew share)

Fishyear	Scenario	Price	Landings per FT vessel	Revenue per FT vessel	Annual Trips costs per FT vessel	Crew Income	Vessel Income	Vessel income net of fixed costs
2008	No Action	7.7	117,153	902,081	125,767	370,378	405,936	228,720
	Preferred option	7.66	118,491	907,640	110,429	388,772	408,438	231,222
	DMV closed (Similar to SQ, DMV3)	7.46	123,561	921,768	110,429	396,543	414,795	237,579
	DMV closed in 2008, open in 2009 (DMV2)	7.46	123,561	921,768	107,362	399,610	414,795	237,579
	HC closure, large (HCL)	7.77	115,288	895,790	110,429	382,255	403,106	225,890
	HC closure, small (HCS)	7.69	117,423	902,985	141,104	355,538	406,343	229,127
	South Channel closed, HC open (SCH)	7	136,371	954,598	131,902	393,127	429,569	252,353
	South Channel and HC closed (SCH+HC)	7.67	117,957	904,731	119,632	377,970	407,129	229,913
2009	No Action	7.9	117,756	930,270	110,429	401,219	418,621	241,405
	Preferred option	7.55	130,871	988,078	131,902	411,541	444,635	267,419
	DMV closed (Similar to SQ, DMV3)	6.91	149,975	1,036,324	125,767	444,211	466,346	289,130
	DMV closed in 2008, open in 2009 (DMV2)	7	147,123	1,029,863	125,767	440,658	463,438	286,222

HC closure, large (HCL)	7.28	138,855	1,010,863	125,767	430,208	454,888	277,672
HC closure, small (HCS)	7.23	140,280	1,014,227	159,509	398,316	456,402	279,186
South Channel closed, HC open (SCH)	6.69	156,532	1,047,202	138,037	437,924	471,241	294,025
South Channel and HC closed (SCH+HC)	7.51	132,012	991,409	119,632	425,643	446,134	268,918

1.3.1.2 Long-term Economic Impacts

Table 8. Long-term landings and effort compared to no action

Fishing year	Alternatives	Landings (lb.)	LPUE	Average Total DAS-used
2008-2021	No Action	50.1	1721	28,695
	Preferred option	50.7	1729	28,781
	DMV closed (Similar to SQ, DMV3)	52.2	1744	29,565
	DMV closed in 2008, open in 2009 (DMV2)	52.0	1735	29,603
	HC closure, large (HCL)	50.8	1747	28,756
	HC closure, small (HCS)	52.1	1748	29,269
	South Channel closed, HC open (SCH)	52.1	1703	30,211
	South Channel and HC closed (SCH+HC)	50.8	1708	29,420

Table 9. Long-term revenues compared to no action (in 2006 inflation adjusted prices)

Fishing year	Alternatives	Ex-vessel Price (Lower)	Ex-vessel Price (Higher)	Total Revenue, (Lower prices, mill. \$)	Total Revenue, (Higher prices, mill. \$)	% Change in Revenue from No action
2008-2021 average	No Action	7.2	7.9	357.8	395.4	
	Preferred option	7.1	7.9	359.5	397.3	0.48%
	DMV closed (Similar to SQ, DMV3)	7.0	7.7	362.9	401.1	1.43%
	DMV closed in 2008, open in 2009 (DMV2)	7.0	7.7	362.5	400.6	1.31%
	HC closure, large (HCL)	7.1	7.9	359.9	397.7	0.59%
	HC closure, small (HCS)	7.0	7.7	362.7	400.9	1.38%
	South Channel closed, HC open (SCH)	7.0	7.7	363.4	401.6	1.57%
	South Channel and HC closed (SCH+HC)	7.1	7.9	360.1	398.0	0.64%

Table 10. Long-term cumulative benefits compared to no action (in 2006 inflation adjusted prices, million \$, lower ex-vessel prices)

Fishing year	Alternatives	Cum. present value of Consumer Surplus (\$ million)	Cum. present value of Producer Surplus (\$ million)	Cum. present value of Total Benefits (\$ million)	Cum. present value of Net Benefits (\$ million)	% Change in Benefits from No action
2008-2021	No Action	1,087	3,014	4,101	-	
	Preferred option	1,156	3,058	4,214	113	2.75%
	DMV closed (Similar to SQ, DMV3)	1,166	3,063	4,229	129	3.14%
	DMV closed in 2008, open in 2009 (DMV2)	1,110	3,038	4,148	48	1.16%
	HC closure, large (HCL)	1,153	3,058	4,211	110	2.68%
	HC closure, small (HCS)	1,171	3,060	4,231	130	3.17%
	South Channel closed, HC open (SCH)	1,114	3,032	4,146	45	1.10%
	South Channel and HC closed (SCH+HC)	1,108	3,033	4,141	40	0.97%

Table 11. Long-term cumulative benefits compared to no action (in 2006 inflation adjusted prices, million \$, higher ex-vessel prices)

Fishing year	Alternatives	Cum. present value of Consumer Surplus (\$ million)	Cum. present value of Producer Surplus (\$ million)	Cum. present value of Total Benefits (\$ million)	Cum. present value of Net Benefits (\$ million)	% Change in Benefits from No action
2008-2021	No Action	991	3,364	4,354	-	
	Preferred option	1,058	3,413	4,471	117	2.68%
	DMV closed (Similar to SQ, DMV3)	1,068	3,419	4,487	133	3.06%
	DMV closed in 2008, open in 2009 (DMV2)	1,013	3,390	4,404	49	1.13%
	HC closure, large (HCL)	1,055	3,412	4,468	113	2.60%
	HC closure, small (HCS)	1,073	3,416	4,489	135	3.10%
	South Channel closed, HC open (SCH)	1,017	3,385	4,402	47	1.09%
	South Channel and HC closed (SCH+HC)	1,011	3,385	4,396	41	0.95%

1.4 GEORGES BANK ACCESS AREAS

1.4.1 Revision of Georges Bank Openings

This framework is considering two different options for access areas on Georges Bank: the No Action alternative and Alternative 1- revision of GB openings. The main difference between these alternatives is that only one access area would open annually under Alternative 1— Nantucket Lightship in 2008 and Closed Area II in 2009, and no trips to Closed Area 1, whereas the No Action alternative would allocate one trip to Closed area 1. The economic impacts of the no action alternative and Alternative 1 (revision of Georges Bank opening) are analyzed in Section 1.3 in combination with other open and access area measures. By itself, the revision of Georges Bank openings will have positive economic impacts because access is allocated in areas with more biomass (ET and NLS in 2008) compared to areas with lower biomass such as open areas and Closed Area I. This will help increase yield, landings and revenues from the fishery both in the short-and the long-term, benefiting both limited access and general category vessels that participate in the scallop fishery. Increase in landings and lower prices will have positive impacts on consumers and lower fishing costs per pound of scallops due to fishing in more productive areas combined with higher revenues will increase producer benefits. As a result, total economic benefits are expected to be positive compared to the no action alternative (See Table 1 to Table 11 above).

1.4.2 Adjustments when yellowtail flounder catches reach 10% TAC limit

If the YT flounder bycatch TAC is reached, limited access vessels with unused Georges Bank access area trips would have their open area DAS allocations increased by a prorated amount that is calculated to achieve an equal amount of scallop mortality per DAS. Analyses suggest that the compensation for Nantucket Lightship in 2008 would be 7.7 DAS and 7.9 DAS for Closed Area II trips in 2009. Since the compensation rates are determined by estimating an equivalent level of mortality, the overall impacts of this alternative on the scallop resource are expected to be neutral. For example, the number of scallops harvested in 7.7 DAS in open areas in 2008 is

expected to be equal to the number of scallops harvested on one 18,000 pound access area trip in Nantucket Lightship.

This alternative will have a positive impact on vessels although the scallop pounds per trip could be lower than the allocated pounds for the Georges Bank access area trips due to the proration. In other words, this alternative will help to minimize loss in pounds and revenue due to the closure of access areas before a vessel takes its trip, without entirely compensating for the loss. Although the loss in landings and revenue due to the closure and proration of the open area trips cannot be predicted accurately at this time, in some cases the loss could be significant depending on the open area meat counts. For example if the open area LPUE average 1100 pound per day-at-sea as estimated by the biological model, catches from the additional open area trips could be 8,470 pounds (applying a DAS compensation rate of 7.7) for 2008, and could be 8,690 pounds (at 7.9 days) for 2009) compared to the 18,000 lbs. of trips lost due to closure of the access areas. Evaluated at a scallop price of \$7.66 per pound for the estimated price under the preferred alternative, for example, the reduction in revenue compared to the access area revenue could exceed \$73,000 in the first case and \$70,000 in the second case. The catch rates in the open areas vary, however, from one area to another and also according to the vessel size. Therefore, the revenue loss due to a yellowtail TAC closure will vary from one vessel to another depending on the open area fished. In general, the higher the meat count in the open areas, higher will be catches from these trips, and smaller will be the loss.

1.4.3 Hudson Canyon Access Area

1.4.3.1 No Action (*Preferred by Scallop Committee*)

No Action for this alternative would mean that all un-used 2005 limited access trips would expire on February 29, 2008. There are 2,097,064 pounds of the original TAC remaining (as of September 10, 2007); this is the equivalent of 117 trips. Assuming that scallop price will be around of \$6.5 per pound (average price for 2006 fishing year), total remaining scallop pounds from Hudson Canyon would generate about \$13.6 million in scallop revenues. Conversely, if Hudson Canyon trips expire before any pounds landed, this would result in a loss \$13.6 million for the scallop fishery as a whole. It is likely that more trips will be taken before the end of FY2007, however (February 28, 2008), since some trips could still be economical for the vessels depending on the landings per day-at-sea (LPUE) from this area at the time of the trip (Table 12).

Straightforwardly, not taking a Hudson Canyon trip would result in a potential revenue loss of \$117,000 from the 18,000 lb. trip landing evaluated at a price of \$6.5 per pound of scallops. This could amount to about 10% of revenue loss or more for some vessels, given that average revenue for a full-time scallop dredge was over \$1 million in 2006 and less for other scallop vessels (see SAFE 2007, Table 13). According to the biological projections, the LPUE could improve in 2007, averaging about 1,400 pound per day-sea. At this level of LPUE, it would take about 13 days to land 18,000 pounds from a trip resulting in \$99,000 in net revenues (i.e., gross revenue minus trip expenses). If LPUE is lower, however, it would require a longer trip to land the allocated 18,000 pounds of scallop from a trip. For example, it would take 18 days to land 18,000 pounds if LPUE is about 1000 pounds per DAS, and it would take 26 days to land 18,000 pounds if LPUE is about 700 pounds per DAS, obviously too long for many vessels to take. A small vessel that could only land 700 pounds, for example, could choose to spend only 12 days in this area, for example, landing 8,400 pounds instead of the 18,000 pounds. This trip would

still generate some revenue for the vessel-owner and the crew, but would fall short of the revenue that could be obtained from a trip landing of 18,000 pounds of scallops. Therefore, although some vessels will still take their Hudson Canyon trips if they are going to expire at the end of 2007 fishing year, the total landings could still fall short of the allocated TAC, thus, there could be some revenue loss for the vessels and the scallop fishery under no action. The amount of scallop revenue loss will probably be less than \$13.6 million but greater than zero depending on the LPUE in the Hudson Canyon area.

Table 12. LPUE, trip duration and economic impacts (Price=6.5 per pound, trip costs=\$1400 per Day-at-sea).

LPUE	Trip landings	Trip length	Gross trip revenue	Trip costs per DAS	Total trip costs	Net trip revenue	Crew income	Vessel share
700	18,000	26	117,000	1400	36000	81,000	28,350	52,650
700	8,400	12	54,600	1400	16800	37,800	13,230	24,570
1000	18,000	18	117,000	1400	25200	91,800	39,150	52,650
1000	12,000	12	78,000	1400	16800	61,200	26,100	35,100
1400	16,800	12	109,200	1400	16800	92,400	43,260	49,140
1400	18,000	13	117,000	1400	18000	99,000	46,350	52,650

The short-term economic impacts of this alternative could differ from the long-term impacts, however. If vessels that have not used their trips decide to use their trips between now and the end of the 2007 fishing year rather than lose that opportunity, then mortality could be high on scallops in that area as a result, with negative impacts on the scallop resource, thus on landings and revenues in the future.

1.4.3.2 Extend the duration of the Hudson Canyon Area program until May 31, 2008

This alternative would authorize vessels with unused 2005 Hudson Canyon trips to use those trips until May 31, 2008, three month extension to the current extension of February 28, 2008. Extending the date could allow some vessels to take advantage of these trips later in the year when yields are higher in the area and weather is better. Therefore, this alternative is expected to have larger economic benefits for the vessels that have not used their HC compared to the no action alternative. This alternative may also reduce mortality in the short term and help increase the biomass in the area compared to No Action, if vessels decide to wait until after scallops have grown in the spring (i.e. April and May), thus could generate larger economic benefits in the long-term.

On the other hand, extending the duration of Hudson Canyon until May 31, 2008 will slightly increase fishing mortality in 2008 fishing year. The impact of the additional F in 2008 is not expected to cause overfishing, but if this extension were permitted and the Council still wanted the overall F to equal $F=0.22$ for 2008 under the preferred alternative compared to $F=0.225$, then open area DAS would have to be reduced to compensate. For example, if the LPUE for open areas is about 1,360 pounds per day and if the 1.0 million pounds were harvested at that rate that would come out to about 735 DAS. When that value is applied over the 326 full-time limited access equivalent vessels, then each vessel could expect a reduction of approximately 2 open area DAS to bring overall F back to $F=0.22$ for FY2008. Given that the open area LPUE is estimated to be about 1000 pounds in the open areas, this action could reduce the scallop revenues by \$13,000 at a price of \$6.5, and \$15,000 at a price of \$7.5. This would undoubtedly have negative impacts on limited access vessels, especially on those that have already taken their Hudson Canyon trips in the previous fishing years.

1.4.4 Elephant Trunk Access Area

Updated estimates recommend four trips in ETAA in 2008 and three trips in 2009. The economic impacts of this alternative compared to the no action alternative which allocate three trips to this area are analyzed in Section 1.3 in combination with other open and access area measures. By itself, allocating four trips to ETAA will have positive economic impacts because this area has more biomass compared to areas with lower biomass such as open areas and Closed Area I. The increase in landings from this area will have positive impacts on consumers compared to no action. Lower fishing costs per pound of scallops due to fishing in this more productive area combined with higher revenues will increase producer benefits. As a result, total economic benefits are expected to be positive compared to the no action alternative (See Table 1 to Table 11 above).

The area will open on March 1 with a 2-month seasonal closure from September 1-October 31 to reduce potential interactions with sea turtles. The seasonal closure is expected to have indirect positive impacts on the scallop resource and on economic benefits by reducing effort in that area when scallop shell height to meat weight ratios are lower.

The Notice Action procedure is expected to have positive impacts on the scallop resource by providing a mechanism that can reduce effort in that area if updated information suggests the allocated level of effort is too high. Although reducing the number of trips in this area (if deemed necessary by the updated biological information) would lower scallop revenues and have negative impacts on the economic benefits in the short-term, the impacts of this action on economic benefits are expected to be positive. This is because this measure would help prevent overfishing, and ensure that optimum yield is achievable even if there is insufficient time to develop a framework adjustment. As a result, this procedure would have positive economic impacts by adjusting allocations in order to achieve optimal level of landings and revenues from the scallop resource.

1.4.5 Delmarva Access Area

According to the preferred option and other alternatives (except for no action and DMV 3) the Delmarva area will be open for in 2009 with one trip allocated to full-time limited access vessels. The economic impacts of this alternative compared to the no action alternative which would keep this area closed are analyzed in Section 1.3 in combination with other open and access area measures. By itself, providing access to Delmarva will have positive economic impacts because this area has more biomass compared to areas open areas and Closed Area I. Increase in landings due to access in this area will have positive impacts on consumers under the preferred alternative compared to no action. Lower fishing costs per pound of scallops due to fishing in this more productive area combined with higher revenues will increase producer benefits. As a result, total economic benefits are expected to be positive compared to the no action alternative (See Table 1 to Table 11 above).

There is also a notice action procedure that allow trip allocations to this area to be adjusted based on the updated survey. Similar to the Notice Action procedure for the Elephant Trunk Area, this procedure is expected to have positive impacts on the scallop resource by providing a mechanism

that can reduce effort in that area if updated information suggests the allocated level of effort is too high. Although reducing the number of trips (if deemed necessary by the updated biological information) would lower scallop revenues and have negative impacts on the economic benefits in the short-term, the impacts of this action on economic benefits are expected to be positive. This is because this measure would help prevent overfishing, and thus have positive impacts on the scallop resource, landings and revenues over the long-term.

1.4.6 Other restrictions related to access areas

1.4.6.1 Restriction on the number of crew on limited access scallop vessels

The no action would continue to allow a vessel to carry any number of crew it wishes on an access area trip. No crew limit would give vessels the most flexibility, potentially reducing total fishing costs, increasing total benefits for crew and vessel owners, but reducing income per crew member. Increasing crew limits could improve safety and provide more opportunity for training new crew members.

The alternative action is considering, however, a restriction on crew size of 8 or 9 persons. This measure in conjunction with possession limits and gear restrictions would help reduce scallop mortality and control effort, and thus could have potential positive impacts on the scallop resource, landings, and revenues over the long-term. Although, based on the information available it does not appear that trips with more crew members are targeting smaller scallops or impacting the size of scallops harvested, there is a potential risk of overfishing if vessels carry larger crews to shuck larger numbers of smaller scallops per day. On the other hand, limiting crew size would reduce vessel's flexibility and increase the trip costs. Since more crew could shuck a larger number of scallops, the catch per day is expected to increase, shortening the trip time to land the possession limit. Given that only 14 out of 85 trips had more than seven crew members (16%), and only one had 9 crew, however, this action is expected to affect only a few vessels (Table 12?? in biological impacts). Overall, both the economic benefits and costs of this action are expected to be small.

1.4.6.2 Prohibition on deckloading when leaving an access area (>50 bu.)

The prohibition on deckloading is expected to have positive economic impacts on scallop fishery. Deckloading will prevent a vessel having more scallops on board than are necessary to achieve the possession limit and will reduce discard mortality especially for small scallops, which are more likely to be discarded with deckloading compared to larger scallops. Therefore, prohibiting deckloading on access area trips will help prevent additional scallop mortality associated with discarding, thus will result in higher yield, revenues and economic benefits from the scallop resource.

1.4.7 TAC set-asides for observers and research

This action maintains the current policy of setting aside 2% of available TAC in access areas for research, and 1% to provide funding for observers. This alternative is expected to have indirect economic benefits on the sea scallop fishery by improving scallop management through better data and information made possible by research and the observer program.

1.4.8 Open Area allocations for limited access vessels

The economic impacts of open area DAS allocations for the limited access vessels are analyzed in Section 1.3 in combination with other open and access area measures (See Table 1 to Table 11 above). Allocating more open area day-at-sea does not necessarily increase landings, revenues and economic benefits if this results in smaller access area trip allocations to keep the overall fishing mortality exceeding the sustainable levels. For example, although more open area DAS would be allocated under no action (51 days) as opposed to the preferred action (35 days) in 2008, total landings, revenues and economic benefits would be lower with no action. This is because one less trip will be allocated to ET area and another trip would be allocated to relatively less productive Closed Area 1.

1.4.9 Measures for general category vessels

1.4.9.1.1 No Action

The No Action for this fishery would assume that Amendment 11 is approved as the Council recommended it. Specifically, a quarterly hard-TAC would be implemented for general category qualifiers (and vessels under appeal) while the fishery is in a transition to limited entry (12-18 months). Ten percent of the total projected scallop catch would be allocated to the general category fishery (open and access area fishing) and would be divided into quarters based on historical trends in landings. Qualifying vessels would then be allocated an individual fishing quota after the transition period expires. This framework assumes that the transition period will expire at the end of the 2008 fishing year (February 28, 2009), but it is possible it may expire sooner. In which case, vessels could receive an individual allocation of fishing quota for part of the 2008 fishing year and all of FY2009.

Under the preferred area rotation alternative, total landings are expected to be 44 million pounds which would provide about 4.4 million pounds for the general category fishery at 10% TAC. This amount is very close to the scallop landings in 2006 by general category vessels that had a permit before the control date. Table 13 shows that these vessels landed about 5.5 million in 2005 but much less, about 4.6 million pounds in 2006. Therefore, total general category TAC will be slightly less than the landings in 2006, thus expected to have slight negative economic impacts on the general category fishery compared to 2006. On the other hand, compared to continuation of open access, the limited access with hard TAC is expected to have positive economic impacts over the long-term on general category vessels that qualify for limited access (see Section 5.4.3 of Amendment 11).

Table 13. The recent activity by general category vessels according to date of the permit

Data	Permit after the control date	Permit before the control date	Grand Total
2004 fish year			
Number of vessels	28	404	432
Average scallop landings per vessel (lb.)	2,780	6,815	6,553
Total scallop landings (lb.)	77,832	2,753,198	2,831,030
Percentage of general category scallop landings	3%	97%	100%
Percentage of total scallop landings	0.1%	4.5%	4.6%
2005 fish year			
Number of vessels	103	516	619
Average scallop landings per vessel (lb.)	12,992	11,193	11,493
Total scallop landings (lb.)	1,338,151	5,775,755	7,113,906
Percentage of scallop landings	19%	81%	100%
Percentage of total scallop landings	2.5%	10.8%	13.3%
2006 fish year			
Number of vessels	153	490	643
Average scallop landings per vessel (lb.)	12,502	9,375	10,119
Total scallop landings (lb.)	1,912,731	4,593,805	6,506,536
Percentage of scallop landings	29%	71%	100%
Percentage of total scallop landings	3.4%	8.3%	11.6%
2007 fish year (preliminary March-July)			
Number of vessels	99	321	420
Average scallop landings per vessel (lb.)	10,286	6,286	7,229
Total scallop landings (lb.)	1,018,316	2,017,709	3,036,025
Percentage of scallop landings	34%	66%	100%
Percentage of total scallop landings	2.7%	5.2%	7.9%

Table 14. General category scallop landings, revenue and ex-vessel price by permit date

Fishyear	Data	Permit after the control date	Permit before the control date	Grand Total
2004	Scallop landings (lb.)	77,832	2,753,198	2,831,030
	Scallop revenue (\$)	401,759	14,304,952	14,706,711
	Ex-vessel price (\$)	5.2	5.6	5.6
2005	Scallop landings (lb.)	1,338,151	5,775,755	7,113,906
	Scallop revenue (\$)	10,332,157	44,183,519	54,515,676
	Ex-vessel price (\$)	7.6	7.7	7.7
2006	Scallop landings (lb.)	1,912,731	4,593,805	6,506,536
	Scallop revenue (\$)	12,401,181	30,541,260	42,942,441
	Ex-vessel price (\$)	6.5	6.8	6.7
2007	Scallop landings (lb.)	1,018,316	2,017,709	3,036,025
	Scallop revenue (\$)	6,381,188	11,490,911	17,872,099
	Ex-vessel price (\$)	6.4	5.9	6.0

1.4.9.1.2 Quarterly hard-TAC for transition period to limited entry (FY2008)

If Amendment 11 is approved, there will be a quarterly hard-TAC implemented for the transition period to limited entry (most likely for all of FY2008). The economic impacts of quarterly TACs were discussed in Amendment 11 and the impacts of the Framework 19 will be within the range of impacts analyzed in Amendment 11. In general, the division of the total hard TAC into quarterly TACs will reduce race to fish to some extent, thus will lessen the negative impacts that could arise from derby fishing such as negative impacts on price due to market gluts.

Similarly, Framework 19 proposed to divide general category allocation (10% of total scallop TAC) into four quarters with higher proposed allocations during the spring and summer (Quarters 1 and 2) when meat weights are larger. Overall general category landings were historically highest during the second quarter (about 44% landed from June-August). Based on landings data from the last few years about 20% of landings were in Quarter 1 and another 20% in Quarter 3 (Table 17 and Table 18).

Table 18 indicates that the scallop landings in the first quarter (March to May) as a percentage of overall scallop landings increased to 33% in 2006 fish year from about 19% in 2005. Again, the highest proportion of landings occurred in the second quarter as expected when the NLS area opened to fishing in June 15, 2006 (42%).

Both option A and B would allocate a larger percentage of landings in Quarter 1 (35% for option A and 40% for option B) compared to the historical average during the recent years. Option B would allocate the historical average (45%) to the second quarter but option A would allocate slightly less (40%) compared to historical average. This is due to scheduled opening of ET area in March 2008 with potentially 1065 trips for the general category vessels combined with a smaller allocation of trips to Georges Bank access areas opening in the second quarter (June 15). General category TAC is expected to be around 4.4 million pounds for the preferred option and around 4.3 to 5.0 million pounds for other options corresponding to about 10% of scallop yield in 2008. If it is assumed that general category TAC for the access areas will be 2% of the total, 1065 trips (about 426,000 pounds at 400 pounds per trip) could be potentially allocated to general category vessels for the ET area alone. This is about 10% of the general category TAC. If, however, 5% of ET area TAC were allocated to general category vessels, then ET trips would amount to 20% of the general category TAC.

Assigning either a 35% or a 40% TAC to the first quarter is expected to provide opportunity to the general category vessels to take their Elephant Trunk area trips and still fish in the opening areas during March to May 2008. Assigning a higher TAC in the first quarter than the historical average will also prevent some unrealistic TAC set for the first quarter in case there is a delay in the implementation of Framework 19. Option A would distribute quarterly TAC similar to what has been observed in 2006, the most recent fishing year for which complete data is available, whereas Option B almost doubles the percentage distribution of general category landings in the first quarter compared to the historical average. As a result, Option A will have lower impacts on general category vessels in terms of timing of their fishing activities compared to the recent fishing year. Since unused TAC from Quarter 1 would roll over to Quarter 3, and unused TAC from Quarter 2 would roll over to the fourth quarter, there will be less incentive for the general category vessels to land scallops until all the TAC allocated to Quarter 1 and Quarter 2 is reached if catching them later make more economic sense. As a result, these measures are

expected to reduce derby fishing and negative economic impacts associated with it. Although, higher TACs allocated for Quarter 1 and Quarter 2 under Option B will reduce the derby fishing relatively more compared to Option A in those quarters, the opposite could happen in Quarter 3 and 4 if all the TAC allocated to first two quarters are landed.

The distribution of general category revenue among the quarters would be similar to distribution of landings if the average scallop price is the same for each quarter. Table 19 shows that the ex-vessel price varies from quarter to quarter, sometimes higher in the first quarter as it were in 2004 and in 2006, but sometimes lower in first quarter compared top the other quarters (2005). Many factors, including import prices, volume of exports and export prices, the composition of landings in terms of size of scallops, scallop pounds landed affect the prices in any day, month and season. In general and assuming other factors that affect price stay the same, higher relative landings in any period or in any quarter would lower price. Given that general category landings are expected to be 10% of the total scallop landings, allocating whether 35% (Option A) versus 40% (Option B) in the first quarter, or allocating whether 40% (Option A) versus 45% (Option B) in the second quarter, by itself is not expected to have significant impact on the scallop ex-vessel prices, thus on the distribution of revenues. Even though, scallop prices could be slightly lower in Quarters 1 and 2 under option 2, it is possible for other factors, such as increase in demand for exports, to counteract this impact and to increase price. Thus it is not possible to predict accurately, how the slight differences in the composition of landings within a quarter would have the overall revenues of the general category vessels. In addition, actual landings in these quarters could differ than the allocated amounts given that shortfalls from the quota would roll-over to quarter 3 and quarter 4.

Table 15 – Summary of quarterly TAC allocations for the general category fishery for the interim period to limited entry (FY2008)

	Q1 (Mar-May)	Q2 (June-Aug)	Q3 (Sept-Nov)	Q4 (Dec-Feb)
Option A*	35%	40%	15%	10%
Option B	40%	45%	10%	5%

* Preferred by Scallop Committee

Table 16. Scallop landings (lb.) by general category fleet by quarter

Quarter	FISHYEAR			
	2004	2005	2006	2007*
Q1: Mar-May	542,912	1,232,749	2,090,113	1,618,605
Q2: Jun-Aug	1,264,395	3,147,830	2,764,452	1,417,420
Q3: Sep-Nov	670,236	1,868,298	1,139,716	
Q4: Dec-Feb	353,487	865,029	512,255	
Grand Total	2,831,030	7,113,906	6,506,536	3,036,025

* Preliminary: March to July

Table 17. Percentage distribution of general category scallop landings by quarter (all general category vessels)

Quarter	FISHYEAR			
	2004	2005	2006	Average of 2004 - 2006
Q1: Mar-May	19%	17%	32%	23%
Q2:Jun-Aug	45%	44%	42%	44%
Q3:Sep-Nov	24%	26%	18%	22%
Q4:Dec-Feb	12%	12%	8%	11%
Grand Total	100%	100%	100%	100%

Table 18. Percentage distribution of general category scallop landings by quarter by general category vessels that had a permit before the control date

Quarter	FISHYEAR			
	2004	2005	2006	Average of 2004 - 2006
Q1: Mar-May	19%	19%	33%	24%
Q2:Jun-Aug	45%	45%	43%	44%
Q3:Sep-Nov	24%	24%	17%	22%
Q4:Dec-Feb	13%	11%	7%	10%
Grand Total	100%	100%	100%	100%

Table 19. Scallop landings, revenue and ex-vessel price by quarter by all general category vessels

Fishyear	Data	Q1: Mar-May	Q2:Jun-Aug	Q3:Sep-Nov	Q4:Dec-Feb	Grand Total
2004	Scallop landings (lb.)	542,912	1,264,395	670,236	353,487	2,831,030
	Scallop revenue (\$)	2,658,538	6,012,814	3,771,936	2,263,423	14,706,711
	Ex-vessel price (\$)	5.3	5.0	6.2	6.5	5.6
2005	Scallop landings (lb.)	1,232,749	3,147,830	1,868,298	865,029	7,113,906
	Scallop revenue (\$)	8,415,436	22,968,523	16,150,899	6,980,818	54,515,676
	Ex-vessel price (\$)	6.9	7.2	8.7	8.2	7.7
2006	Scallop landings (lb.)	2,090,113	2,764,452	1,139,716	512,255	6,506,536
	Scallop revenue (\$)	14,593,517	17,420,983	7,342,103	3,585,838	42,942,441
	Ex-vessel price (\$)	7.1	6.4	6.5	7.3	6.7
2007	Scallop landings (lb.)	1,618,605	1,417,420			3,036,025
	Scallop revenue (\$)	9,653,737	8,218,362			17,872,099
	Ex-vessel price (\$)	6.2	5.9			6.0

1.4.9.1.3 IFQ program for general category fishery (FY2009)

If Amendment 11 is approved as recommended, an IFQ program will be implemented for general category vessels that qualify for a limited access permit. Vessels will be allocated an individual amount of scallop meat in pounds per fishing year. Their individual allocation will be based on their catch history from their best fishing year between March 1, 2000 and November 1, 2004. Their best year's landings would determine their "contribution factor". The sum of all qualifying vessels best year landings will be added together and each vessel will receive a

contribution factor – or percent of the total best year landings. That percentage will be multiplied by the total available catch for general category vessels (5% of the total catch). Therefore, a vessel’s individual allocation will vary by year based on available catch, but their contribution factor will remain the same.

Vessels will be permitted to catch that quota from any area that is open each fishing year (open areas and specific access areas until the fleetwide number of general category trips is harvested). Vessels would be permitted to trade and or buy/sell quota on a limited basis. The full IFQ program is expected to be implemented for FY2009, or sooner if possible. As analyzed in Amendment 11 the IFQ program are expected to be positive for the scallop fishery and for the participants of the general category limited access. Because a 5% TAC will be allocated to general category fishery, total general category landings will decline to about 2.2 million lb. under the preferred option. For example, in fishing year 2006, total scallop landings by those 490 vessels that had a permit before the control date were about 4.6 million pounds, but many of these vessels will not qualify for limited access general category fishery because they do not meet the poundage criteria (Table 13 and Table 14 above). Table 20 shows that those vessels that qualified for limited access landed 3.8 million pounds in their best year and about 3.3 million lb. in 2005 fishing year, and less in 2006 fishing year (up to January 2006.) As a result, the short-term economic impacts of a 2.2 million TAC will be negative on many vessels as examined in see Section 7.9.6 and Section 5.4 of Amendment 11. The economic impacts of this TAC is within the range of impacts analyzed in Amendment 11 since the analyses assumed that general category TAC will be about 2.5 million lb. corresponding to a 50 million lb. total scallop TAC (see Section 7.9.6 and Section 5.4). Given that the TAC will be slightly lower in the short-term (2.2 million in 2009 under the preferred option) than 2.5 million lb., the economic impacts will be slightly more negative than discussed in Amendment 11. In the long-term, however, economic impacts will be positive for the vessels that qualify for the general category limited access fishery compared to the no action as discussed in Section 5.4.3 and Section 7.9.6.

Table 20. Recent activity of general category vessels that qualify and do not qualify for limited access

Qualification	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								
Qualify for limited access	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
General category vessels that had a permit only after the control date								
Qualify for limited access	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

Cost Recovery Program

One aspect of the IFQ program that was not specified in Amendment 11 is the required cost recovery program for an IFQ program. Therefore, Framework 19 includes an alternative for a cost recovery program for the general category IFQ vessels. It includes a program that could

collect up to 3% of ex-vessel value of scallop product landed. No action in regards to this measure would be contrary to the Congressional mandate to collect fees for IFQ programs as specified in the Magnuson-Stevens Act and therefore is not consistent with the MSA.

Total ex-vessel value for the general category fishery will vary according to the alternative that will be selected. Under the preferred alternative, total scallop landings is estimated to be 45.9 million lb. and ex-vessel prices are estimated to range from \$7.55 to \$8.30 depending on the assumptions made about factors that influence prices. At a 5% TAC for the general category fishery, a 3% cost recovery could range from \$53,050 to \$60,300. Obviously, if there is no change in ex-vessel prices because of the cost recovery payment, this payment will reduce vessels revenues by 3% and will have negative economic impacts on the general category vessels. Given that limited access general category fishery would constitute about %5.05 (including the limited access general category qualifiers) of the total landings, it could be difficult for these vessels to pass part of the cost of recovery to the consumers. On the other hand, the cost recovery program is instituted to pay for the administrative costs of IFQ programs which are expected to have positive impacts on the vessels that qualify for limited access general category fishery. These positive economic impacts are discussed in Section 5.4 and several subsections of 5.4 of Amendment 11. Specifically, the economic impacts of limited access were analyzed in Section 5.4.3, the general category TAC in section 5.4.5 and IFQs were in Section 5.4.8. The positive economic impacts of the IFQs are expected to exceed the costs of the cost recovery program. In addition, used appropriately, cost recovery can improve economic efficiency. Cost recovery may also have equity effects. It may improve equity by ensuring that those who use regulated products bear the costs. For regulatory agencies these broad principles suggest that the price of regulated products should incorporate all of the costs of bringing them to market, including the administrative costs of regulation.

1.4.9.2 Impacts of General category access area management

General category allocations in access areas will remain a fleetwide number of trips per area. This action includes a variety of alternatives for total allocation into access areas for the general category fishery: 2% per area, 5% per area, 0% for Closed Area II and a small percentage for Closed Area II. The number of trips and landings by area are shown in Table 21 and Table 22 below for these options.

This action is considering (Section 2.4.1.1.1) allocating 2% of the total catch to general category vessels in access areas in 2008 only to reduce derby fishing while vessels are under appeal for the IFQ program. This policy would be similar to allocations in Framework 18, which allocated 2% to the general category fishery for Georges Bank access areas and ETA. Therefore, this option will not be different from the no action regarding the percentage allocation for the access areas for general category fishery. Because more of open area TAC is allocated to the general category fishery when 2% is allocated for access areas, it will take longer for the overall TAC in the open areas to be reached. For example, under the preferred alternative, if 2% is allocated to the access areas, general category landings from open areas will be close to 3.7 million pounds whereas with 5% allocation to access areas it will be around 2.9 million pounds (Table 22). This will allow general category vessels to take an additional 1996 trips in open areas (0.8 million lb. divided by 400 lb.). On the other hand, it is not certain to what extent 2% allocation will be useful in reducing race to fish other than shortening the length of derby fishing due to a lower

number of access trips, 1331 trips, with 2% allocation, compared to 3,326 trips with 5% access area allocation. As a result of the race to fish in either case, a 5% allocation in access areas will increase landings a short period of time, and will have relatively more dampening affect on prices compared to 2% allocation. Also, a smaller allocation to access areas may reduce incentives for some vessels to fish in those areas especially if they have to travel a long way to these areas and if they expect that the area could be closed before they land their allocation.

General category total landings are not expected to change whether 2% or 5% is allocated for the access areas. Allocating 2% to access areas will increase the share of general category landings in the open areas, thus will help to reduce derby fishing in the open areas (since it will take longer for a higher TAC to be reached). For example, under the preferred alternative, if 2% is allocated to the access areas, general category landings from these areas will be around 530,000 lb. Since total general category landings should add up to 10% of total scallop landings, more open area landings, over 20% in this case, will be allocated to general category fishery (Table 22). If, however, 5% of the access areas are allocated to the general category fishery, then, the share of general category landings in open area landings will decline to about 18% for the preferred option. Because access areas are more productive and have higher LPUE than the open areas, however, it will take less fishing time to catch the 400 pound possession limit in those areas. The LPUE in open areas are estimated to be about 1,000 pounds, whereas in the open areas it is about 2,150 pounds. As a result, fishing costs will be lower and profits will be higher for trips taken in the access areas compared to open areas. Therefore, with 2% allocation for access areas the profits for the general category fishery will be lower as compared to a 5% allocation depending on the fishing costs and the time it takes to travel to the access areas. In other words, providing a lower TAC for the access areas may not have much impact on those vessels that are located closer to and fish routinely in open areas, but could have negative economic impacts on those vessels that fish in close proximity to the access areas, such as Elephant Trunk Area.

The alternative zero percent allocation to CAI for the 2009 fishing year will result in higher landings for the open areas for the general category TAC. In other words, those 704 trips that would be allocated to this area will be shifted to the open area and thus will increase open area general category landings by 281,600 lb. (704×400 lb.) under the preferred option. This alternative is expected to have positive economic impacts since most general category vessels do not fish in CAII. For example, if 200,000 lb. of scallop pounds allocated to this area are uncaught, then there will be a 1.4 million dollar revenue loss (at a price of \$7 per pound) for the general category and scallop fishery in general. Some multispecies vessels participating in SAP programs land scallops and the alternative that would allocate a small TAC for the CAII area could accommodate these vessels. Assuming that there will not be an YT SAP program in the southern portion of Closed Area II in 2009, even a small TAC allocated to this area may remain uncaught and lower the economic benefits for the general category fishery.

Table 21. Number of general category trips to access areas

Fish Year	Allocation	Area	NOACT	PREF	DMV3	DMV2	HCL	HCS	SCH	SCHHC
2008	2 % of access areas	CL1Acc	108	-	-	-	-	-	-	-
		ET	822	1,065	1,053	1,053	1,065	1,053	1,053	1,065
		NLSAcc	-	266	266	266	266	266	266	266
	Total number of trips		929	1,331	1,319	1,319	1,331	1,319	1,319	1,331
2008	5 % of Access areas	CL1Acc	270	-	-	-	-	-	-	-
		ET	2,054	2,662	2,632	2,632	2,662	2,632	2,632	2,662
		NLSAcc	-	665	665	665	665	665	665	665
	Total number of trips		2,323	3,326	3,296	3,296	3,326	3,296	3,297	3,326
2009	5% of Access areas	CL2	-	704	705	703	708	709	705	705
		DMV	-	726	-	725	720	721	722	730
		ET	2,092	1,967	1,879	1,873	1,973	1,882	1,875	1,974
	Total number of trips		2,092	3,397	2,584	3,301	3,401	3,312	3,302	3,410

Table 22. General category landings by access area

Fish year	Area	Data	NOACT	PREF	DMV3	DMV2	HCL	HCS	SCH	SCI
2008 10% of total, 2% of access	Access	Scallop landings (lb.)	371,759	532,230	527,433	527,433	532,224	527,402	527,486	532,230
	Open	Scallop landings (lb.)	3,880,565	3,696,146	3,959,509	3,960,305	3,656,247	3,733,960	4,420,573	3,750,000
	All	Total landings	4,252,324	4,228,376	4,486,942	4,487,738	4,188,471	4,261,362	4,948,058	4,282,230
		Open area landings as % of open area total	16%	24%	21%	21%	24%	23%	19%	
2008 10% of total, 5% of access	Access	Scallop lb.	929,396	1,330,576	1,318,582	1,318,582	1,330,561	1,318,506	1,318,714	1,330,576
	Open	Landings (lb.)	3,322,927	2,897,800	3,168,360	3,169,156	2,857,910	2,942,856	3,629,344	2,950,000
		Total landings	4,252,324	4,228,376	4,486,942	4,487,738	4,188,471	4,261,362	4,948,058	4,282,230
		Open area landings as % of open area total	14%	18%	17%	17%	19%	18%	16%	
2009 5% of total, 5% of all access	Access	Scallop lb.	836,725	1,358,667	1,033,627	1,320,435	1,360,273	1,324,969	1,320,861	1,358,667
	Open	Landings (lb.)	1,164,554	883,677	1,464,155	1,226,013	997,011	1,059,921	1,340,655	883,677
		Total landings	2,001,279	2,242,343	2,497,782	2,546,448	2,357,284	2,384,890	2,661,515	2,242,343
		Open area landings as % of open area total	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%

1.4.9.2.1 Northern Gulf of Maine (NGOM) hard-TAC

If this program is approved under Amendment 11, this framework includes the hard-TAC allocation for vessels with a limited entry NGOM permit. The PDT reviewed this information and recommends that the hard-TAC for the next two fishing years be 64,000 pounds per year. As analyzed in Amendment 11, this measure are expected to have positive economic impacts on a larger number of vessels that are not qualified for limited access but qualify for an NGOM permit since these vessels will have an opportunity to land scallops in this area when the resource conditions are favorable. At 64,000 pounds, and at an estimated price of about \$7.66 in 2008 and \$7.55 in 2009 under the preferred option, this allocation is expected to generate about a half of million scallop revenue for the vessels qualify for NGOM area access.

1.4.10 Incidental catch

If approved by Amendment 11, an estimate of mortality from incidental catch will be reduced from the total TAC on an annual basis. The PDT estimates that 50,000 pounds should be considered for this source of mortality. Removal of incidental catch from total landings before the trip and open area DAS allocations are determined will ensure that the fishing mortality targets are not exceeded. As a result, this measure will have positive impacts on the resource, scallop yield, revenues and total economic benefits.

1.4.11 Revision of overfishing definition

This action is considering revising the overfishing definition based on results from the recent scallop stock assessment, SAW 45. Specifically, the Bmax value in survey weight per tow would be revised to an absolute value of scallop meat and Fmax would be changed to 0.29 (from 0.24). However, there is an alternative to maintain the same fishing mortality target of 0.20, even though the fishing mortality threshold has increased.

Accepting the new overfishing definition recommended by the SARC is expected to have benefits on the scallop resource because the model used to generate these results is considered to have less bias. In addition, maintaining the fishing mortality target at $F=0.20$ is precautionary and reduces the risk of overfishing, having long term beneficial impacts on the scallop resource, scallop landings, revenues and total economic benefits.

1.4.12 Minor adjustments to the observer set-aside program

This action includes an alternative that would consider applying a higher compensation rate for vessels carrying an observer in open areas, compared to access area trips. In addition, there are a number of administrative adjustments that are being considered to improve the program overall.

1.4.12.1 Impacts of compensation rate for vessels fishing in open areas compared to access area trips

Currently a vessel that is required to carry an observer in an access area receives a 400 pound per day compensation and a reduced DAS accrual rate of 0.15 per day for an open area trip carrying an observer. This alternative would still give a vessel a specific compensation rate based on whether the trip was in an access area or not, but the rate would be higher for open area trips than the access area trips in order for vessels better able to cover the observer costs. NMFS would still ultimately assign the rates after consideration of available data, but this alternative would recommend that a higher rate be used for open area trips.

The economic impacts of the observer coverage on the vessel owners and the crew will depend to what extent the allowance provided by NMFS will be able to cover cost of observer coverage. Landing extra pounds either through increased possession limit or reduced DAS accrual will also extend the trip and increase the trip costs and hours worked by the crew. Therefore the fishing costs should also be taken into account in assessing potential impacts of observer coverage. Finally, economic impacts will depend on the scallop prices, which will impact the amount of revenue from the compensation pounds provided by NMFS through the TAC set-aside. The analyses below provide scenarios assuming an ex-vessel price of \$6.50 per pound (average

scallop ex-vessel price in 2006). Obviously, if prices increase above this level, the compensation pounds or DAS accrual rates will be sufficient to cover the observer costs and the trip expenses.

Table 23 and Table 24 provide an analysis of various levels of compensation pounds for access areas and reduced day-at-sea accrual rates for open areas. The increase in the trip length necessary to land the compensation pounds will vary with average trip length of a vessel and with scallop pounds per day-at-sea (LPUE) a vessel lands. The recent biological projections show that LPUE could range from 1000 pounds in the open areas to 2,150 in the access areas. The LPUE in any specific fishing area and time will be lower or higher from these averages, however, depending on the resource conditions in that area. Landings per day-at-sea will also change with the vessel characteristics including gross tonnage and horse power as well as with the number of crew on board. Clearly, the lower the fishing power a vessel has, the higher will be the increase in trip length to land the compensation pounds. For these reasons, the analyses shown in below include scenarios with LPUE ranging from 650 lb. to 2150 lb. per day-at-sea. Obviously, if vessels could land more scallop pounds than these amounts, the costs of observer coverage net of trip expenses will be less than estimated in Table 23 and Table 24.

For example, assuming an LPUE of 2,150 lb. in the access areas, a compensation amount of even 200 pounds would cover the observer and the trip costs of a trip with observer on board (Scenario 2). For a vessel with a smaller fishing power (with an LPUE of 700 pounds per day-at-sea) however, a higher compensation rate would be necessary (250 pounds, Scenario 3). The compensation amounts provided to the vessels was much higher, 400 pounds, than these amounts in 2006 (Scenario 1), which is one of the reasons why this alternative does not recommend a higher rate for the access areas.

The scenarios 4, 5 and 6 in Table 23 and Table 24 show the impacts of different DAS accrual rates for the observer coverage in the open areas. Using the rate applied in 2006 fishing year, i.e., 0.15 DAS accrual reduction (with an observer) would not be large enough to cover observer costs and the increase in trip costs. As a result, the total crew income would decrease by \$1,438 due to the costs of observer coverage (Scenario 4). This is because, LPUE is much lower in the open areas, at a LPUE of 1000 per day, and accrual rate of 0.15 provides only 150 pounds ($1000 \times 0.15 = 150$ lb.) per day as a compensation for observe coverage, much less than the 400 pounds provided for access areas. Instead, a DAS accrual rate of about 0.30 would provide a compensation of 300 pounds per day-at-sea, covering the vessel and crew expenses due to carrying an observer onboard (Scenario 4). If the estimates for landings, exports, and other factors affecting demand materialize and scallop prices increase to \$7.70 per pound in 2008, a lower DAS accrual rate of 0.2 (Table 24, Scenario 5) would provide sufficient compensation for the observer coverage. This rate may not be large enough, however, for a small vessel landing only 650 pounds per day-at-sea or in a part of open-area where the catch rates are low. Rather, a rate of 0.45 DAS (0.35 DAS) if the prices are 6.50 per pound (\$7.70 per pound) may be necessary to prevent impacting crew income negatively (Scenario 6 in Table 23 and Table 24). These adjustments would respond to public comment that the program does not work in areas with lower catch rates and a higher compensation rate for open area trips may reduce the financial burden of observer coverage for many vessels to some degree. In order to prevent the total observer set-aside from being used faster as a result, the compensation rate for access area trips should decline, however (for example \$300 pounds per day).

Table 23. Impacts of observer coverage on crew and vessel income (Assumptions: Cost of observers=\$800 per day-at-sea)

	Access areas			Open areas		
	Scenario-1	Scenario-2	Scenario-3	Scenario-4	Scenario-5	Scenario-6
Observer allowance						
LPUE (Scallop lb. /day-at-sea)	2,150	2,150	750	1,000	1,000	650
Scallop price	6.50	6.50	6.50	6.50	6.50	6.50
Reduced DAS accrual rate for open areas				0.15	0.3	0.45
Compensation lb. per day	400	200	250	150	300	293
Trip with no observer coverage						
Trip length (without observer)	8.4	8.4	10.0	8	8	8
Scallop pounds landed without observer	18,000	18,000	7,500	8,000	8,000	5,200
Scallop revenue	117,000	117,000	48,750	52,000	52,000	33,800
Trip cost per DAS	1,400	1,400	900	1,400	1,400	900
Total trip costs	11,721	11,721	9,000	11,200	11,200	7,200
Crew income (net of trip costs)	52,629	52,629	17,813	17,400	17,400	11,390
Crew income per day-at-sea	6,286	6,286	1,781	2,175	2,175	1,424
Vessel share	52,650	52,650	21,938	23,400	23,400	15,210
Vessel share per day-at-sea	6,289	6,289	2,194	2,925	2,925	1,901
Trip with observer coverage						
Increase in trip length with observer	1.6	0.8	3.3	1.2	2.4	3.6
Trip length with observer coverage	9.9	9.2	13.3	9.2	10.4	11.6
Total scallop pounds from trip	21,349	19,674	10,000	9,200	10,400	7,540
Scallop Revenue	138,767	127,884	65,000	59,800	67,600	49,010
Observer costs	7,944	7,321	10,667	7,360	8,320	9,280
Scallop revenue net of observer costs	130,824	120,563	54,333	52,440	59,280	39,730
Trip costs	13,902	12,811	12,000	12,880	14,560	10,440
Crew income (net of trip costs)	58,051	53,498	17,883	15,962	18,044	11,412
Crew income per day-at-sea	5,846	5,846	1,341	1,735	1,735	984
Change in crew income per day-at-sea	-440	-440	-440	-440	-440	-440
Total costs of observer coverage for crew	5,422	869	71	-1,438	644	22
Vessel share	58,871	54,253	24,450	23,598	26,676	17,879
Vessel share per day-at-sea	5,929	5,929	1,834	2,565	2,565	1,541
Change in vessel share per day-at-sea	-360	-360	-360	-360	-360	-360
Total costs of observer coverage for vessel-owner	6,221	1,603	2,513	198	3,276	2,669
Total cost to crew and vessel-owner	11,643	2,473	2,583	-1,240	3,920	2,690

Table 24. Impacts of observer coverage on crew and vessel income (Assumptions: Cost of observers=\$800 per day-at-sea)

Observer allowance	Access areas			Open areas		
	Scenario-1	Scenario-2	Scenario-3	Scenario-4	Scenario-5	Scenario-6
LPUE (Scallop lb. /day-at-sea)	2,150	2,150	750	1,000	1,000	650
Scallop price	7.70	7.70	7.70	7.70	7.70	7.70
Reduced DAS accrual rate for open areas				0.15	0.2	0.35
Compensation lb. per day	400	200	250	150	200	228
Trip with no observer coverage						
Trip length (without observer)	8.4	8.4	10.0	8	8	8
Scallop pounds landed without observer	18,000	18,000	7,500	8,000	8,000	5,200
Scallop revenue	138,600	138,600	57,750	61,600	61,600	40,040
Trip cost per DAS	1,400	1,400	900	1,400	1,400	900
Total trip costs	11,721	11,721	9,000	11,200	11,200	7,200
Crew income (net of trip costs)	64,509	64,509	22,763	22,680	22,680	14,822
Crew income per day-at-sea	7,705	7,705	2,276	2,835	2,835	1,853
Vessel share	62,370	62,370	25,988	27,720	27,720	18,018
Vessel share per day-at-sea	7,450	7,450	2,599	3,465	3,465	2,252
Trip with observer coverage						
Increase in trip length with observer	1.6	0.8	3.3	1.2	1.6	2.8
Trip length with observer coverage	9.9	9.2	13.3	9.2	9.6	10.8
Total scallop pounds from trip	21,349	19,674	10,000	9,200	9,600	7,020
Scallop Revenue	164,386	151,493	77,000	70,840	73,920	54,054
Observer costs	7,944	7,321	10,667	7,360	7,680	8,640
Scallop revenue net of observer costs	156,442	144,172	66,333	63,480	66,240	45,414
Trip costs	13,902	12,811	12,000	12,880	13,440	9,720
Crew income (net of trip costs)	72,142	66,484	24,483	22,034	22,992	15,258
Crew income per day-at-sea	7,265	7,265	1,836	2,395	2,395	1,413
Change in crew income per day-at-sea	-440	-440	-440	-440	-440	-440
Total costs of observer coverage for crew	7,633	1,974	1,721	-646	312	436
Vessel share	70,399	64,878	29,850	28,566	29,808	20,436
Vessel share per day-at-sea	7,090	7,090	2,239	3,105	3,105	1,892
Change in vessel share per day-at-sea	-360	-360	-360	-360	-360	-360
Total costs of observer coverage for vessel-owner	8,029	2,508	3,863	846	2,088	2,418
Total cost to crew and vessel-owner	15,662	4,482	5,583	200	2,400	2,854

1.4.13 Consider small adjustments to the current program to improve overall administration

The Scallop Committee reviewed a list of potential adjustments that could be considered in this action to improve the administration of the observer set-aside program for scallops. In general, these improvements are expected to have positive indirect economic impacts on the scallop fishery by improving the monitoring and management of the fishery.

1.4.14 Area closures to protect young scallops

This action is considering several new areas as scallop rotational areas. Small scallops have shown up in the 2007 survey in the Hudson Canyon area as well as the Great South Channel.

1.4.14.1 Hudson Canyon area

The impacts of various closure alternatives is analyzed Section 1.3 in combination with other access area and open DAS allocations. By itself, closure of Hudson Canyon area is expected to have positive economic impacts by reducing mortality and increasing yield from this area (See Table 1 to Table 11 above)..

1.4.14.2 Great South Channel area

The impacts of the SCH closure alternative is analyzed Section 1.3 in combination with other access area and open DAS allocations. By itself, closure of SCH area is expected to have positive economic impacts by reducing mortality and increasing yield from this area, but compared to the other alternatives, closure of SCH with Hudson Canyon open will allocate landings in relatively less productive areas. Although, in the short-term, this alternative will have larger economic benefits compared to the preferred action, in the long-term economic benefits of this option will be lower than the preferred alternative (See Table 1 to Table 11 above).

1.4.15 Other measures

1.4.15.1 30-day VMS power-down provision

An alternative is being considered that would permit a vessel to power down their VMS unit for a minimum of 30 days if the vessel is not going to fish during that time. Although, the cost of VMS service will almost stay the same with this alternative, there will be some minor savings from using the generator less. In addition, this action will reduce the burden on the vessel-owner to keep the vessel running for long-periods of time when it is not fishing. Therefore, this alternative is expected to have some positive economic impacts on the scallop vessels.

1.4.15.2 Clarification on when a vessel can leave on an access area trip

This alternative would clarify when a vessel can leave on an access area trip. Specifically, the No Action would remain in effect; a vessel can leave on an access area trip before the area opens, but it may not enter the access area until the area has opened. This alternative is expected to have indirect positive economic impacts on scallop vessels by preventing a vessel owner making a wrong decision about when to leave on an access area trip with possible economic consequences.

1.4.16 The data issues, uncertainties and risks

The dealer data for the 2005-2007 fishing years for the vessels with general category permits has the same problems that encountered in dealer data for the period before the control date, that is, it includes trips with scallop landings exceeding 400 lb. possession limit. Although, the data before the control date was reviewed by NMFS and several imperfect entries are corrected before the Amendment 11 analyses are done. There will not be sufficient time to conduct, however, a similar database review and correction process to the 2005-2007 dealer data before Framework 19 is developed. Instead, 2005-2007 dealer data for general category vessels is examined for

inaccuracies and those entries that seem to contradict with rules of general category fishing are eliminated from the analyses based on the following criteria:

- 1) The permit data was checked if some general category vessels had also limited access permit. The data for those vessels that had both a limited access permit and general category permit and landed significantly in excess of 1200 lb. of scallops are excluded from the analyses. It is assumed these vessels are actually limited access permits and there was a mistake in permit number in the dealer's records and/or that the permit category was incorrectly entered as general category in permit database. These were proved to be major sources of inaccuracy for the dealer data for the period 1994-2004 as well.
- 2) Two vessels with general category permits only but with scallop landings in significantly in excess of 10,000 lb. per trip are excluded. The records for the same vessels corresponded to two different limited access vessels with the same vessel name but a different permit number and were eliminated from the 1994-2004 data for Amendment 11 analyses for the same reasons.
- 3) Another vessel with general category permits only that have one or two trips with scallop landings exceeding 14000 lb. are excluded from the analysis. Possibly these trips are taken by a limited access vessel (could have the same vessel name as another general category vessel) but the permit number was incorrectly entered for a general category vessel. This vessel did not have any general category scallop landings during the period 2000-04. A trip entry for a qualifying vessel but with scallop landings in excess of 30,000 lb. is also excluded from the analysis.

The data used in the analyses includes all other entries in the dealer database for vessels with general category permits. There are still many trip entries in the data in excess of 400 lb. possession limit. These were kept assuming that some of these corresponded to multiple trip entries (especially those that has taken place over the weekend) or to those trips with observer on board. On the other hand, the reason for some of these entries exceeding 400 lb. could be because they were reported in live weight rather than in meat weight.

1.5 SOCIAL IMPACTS

1.5.1 No Action

In 2008, the No Action alternative would allocate one trip in Closed Area I, one in Nantucket Lightship, 3 in Elephant Trunk and approximately 20,000 open area DAS (or 51 DAS for a full-time vessel). In 2009, the same access area allocations would apply and total open area DAS would be closer to 19,000.

No Action for Amendment 11

This alternative assumes that Amendment 11 is not approved, and the general category fishery would remain an open access fishery.

Measures that will be in effect March 1, 2008 until FW19 is implemented

This alternative considers several measures as backstops if FW19 is not implemented before the start of the 2008 fishing year. Specifications from Amendment 10 and Framework 18 would carry-over until FW19 is implemented.

1.5.2 Georges Bank Access Areas

This framework is considering two different options for access areas on Georges Bank: the No Action alternative and Alternative 1- revision of GB openings. The main difference between these alternatives is that only one access area would open annually – Nantucket Lightship in 2008 and Closed Area II in 2009.

Overall access on GB is similar under No Action and Alternative 1, but in different areas, and under No Action fewer trips are allocated in 2009. When less access is allocated, the short-term social impacts include less flexibility for businesses stemming from short-term decreases in revenue (see Economic Impact section), which would affect more those businesses with smaller cash flows or fewer economic and social resources. This would be offset by slighter higher revenues in the long-term. As discussed in Amendment 10, the general impacts from area management are likely to be more negative on fishermen on smaller vessels or on fishermen who have particular knowledge of particular locales, both of whom are less likely to practice mobile fishing strategies. Closing areas, if they are traditional fishing grounds, would create fewer options and less flexible fishing conditions for those fishermen. The expected future increases in biomass from rotating closed areas would have more positive impacts on those more mobile fishermen who can switch areas more easily, and who have access to economic and social resources that enable them to more easily withstand fishing ups and downs.

1.5.2.1 Adjustments when YT flounder bycatch TAC is reached

If the YT flounder bycatch TAC is reached limited access vessels are permitted to use access area trips at a compensation rate in open areas. Analyses suggest that the compensation for Nantucket Lightship in 2008 would be 7.7 DAS, and 7.9 DAS for Closed Area II trips in 2009.

Given that compensation is provided, it is not expected that this measure would have any negative impacts and may have positive ones if it discourages derby fishing that might develop if TAC shut-down were imminent.

1.5.3 Hudson Canyon Access Area

No Action for this alternative would mean that all un-used 2005 limited access trips would expire on February 29, 2008. There is one alternative that would extend the duration of the program for three additional months until May 1, 2008.

No Action, which would entail the expiration of unused trips in the Hudson Canyon, would have negative impacts on those vessels that have, for various reasons, not used their 2005 allocation of special access trips. Since allocations are not guaranteed, that can have impacts on vessels by somewhat promoting them to take trips even when conditions are suboptimal.

1.5.4 Elephant Trunk Access Area

Framework 19 proposes additional trips to the Elephant Trunk Access area, compared to No Action, which would provide positive social impacts from the increased revenue for participants and the shorter trip costs and shorter tow-times for crew (though offset by increased steaming time for some participants). These positive impacts would be more accessible to those more mobile fishermen who can switch areas more easily and more fully utilize access areas.

The Notice Action would allow the rotational management system to work with greater efficiency and with a better ability to respond to changing resource conditions. As noted in Amendment 10, effective rotational management has both negative and positive social impacts: closing areas, if they are traditional fishing grounds, would create fewer options and less flexible fishing conditions for smaller-scale or less mobile fishermen, and could change day-to-day social and family interactions if a change in fishing practices to a more mobile strategy becomes the norm. The expected future increases in biomass from rotating closed areas would have more positive impacts on those more mobile fishermen who can switch areas more easily, and who have access to economic and social resources that enable them to more easily withstand fishing ups and downs.

1.5.5 Delmarva Access Area

Framework 19 proposes additional trips to the Delmarva Access area, compared to No Action, which would provide positive social impacts from the increased revenue for participants and the shorter trip costs and shorter tow-times for crew (though offset by increased steaming time for some participants). These positive impacts would be more accessible to those more mobile fishermen who can switch areas more easily and more fully utilize access areas.

The Notice Action would allow the rotational management system to work with greater efficiency and with a better ability to respond to changing resource conditions. As noted in Amendment 10, effective rotational management has both negative and positive social impacts: closing areas, if they are traditional fishing grounds, would create fewer options and less flexible fishing conditions for smaller-scale or less mobile fishermen, and could change day-to-day social and family interactions if a change in fishing practices to a more mobile strategy becomes the norm. The expected future increases in biomass from rotating closed areas would have more positive impacts on those more mobile fishermen who can switch areas more easily, and who have access to economic and social resources that enable them to more easily withstand fishing ups and downs.

1.5.6 Other restrictions related to access areas

1.5.6.1 Restriction on the number of crew on limited access scallop vessels

This action is considering a restriction on crew size of 8 or 9 persons.

Numerous fishermen and other stakeholders have noted the negative social impacts from crew limits, including safety issues, problems in getting sites on a vessel and the related issue of training a new generation of fishermen. If a higher number of crew does, though, contribute to targeting smaller scallops, there will be positive long-term impacts for the industry as a whole if such targeting can be discouraged with a restriction on crew size. Moreover, a smaller crew would have additional positive impacts since in most cases this would result in a higher share per person.

1.5.6.2 Prohibition on deckloading when leaving an access area (>50 bu.)

This action is considering an alternative that would prohibit any scallop vessel from leaving an access area with more than 50 bu. of in-shell scallop on deck.

Given that this measure has industry support and applies only to access areas, it is not expected to have negative social impacts overall and may have positive ones in the long-term if it contributes to the sustainability of the resource base.

1.5.7 TAC set-asides for observers and research

This action maintains the current policy of setting aside 2% of available TAC in access areas for research, and 1% to provide funding for observers.

In general, though setting aside a fraction of the resource has slightly negative impacts on the industry if revenues correspondingly decrease, both research and observers on board contribute positive impacts in the long-term to the extent that they help document and study resource conditions to enable better fisheries management.

1.5.8 Open Area allocations for limited access vessels

After the Council decides which access areas will be available for the next two fishing years, the open area DAS are estimated to reach an overall target F rate of 0.20. The range of open area DAS under consideration is about 12,000-20,000 total DAS for 2008, or about 28 to 51 individual open area DAS for full-time vessels. The total (16-24,000) and individual open area DAS are higher for 2009 (43-66 for full-time vessels).

While the preferred measures in Framework 19 propose fewer DAS in the open areas, the full social impacts of this must be seen together with biomass conditions and the DAS allocated in special access areas. Given that biomass conditions are relatively poorer in open areas, the decrease in allocated open-area DAS does not correspond to an equivalent decrease in revenue in the short-term, and reducing bottom time may result in better biomass conditions and hence revenues in the longer-term. Moreover, the decrease in open-area revenue can be counteracted by revenue from access areas, though the shift in fishing from open to special access areas can have negative social impacts on fishermen and fishing communities, such as when increased steaming time results in decreased time with family and community.

1.5.8.1 TAC set-asides for observers and research

This action maintains the current policy of setting aside 2% of available DAS in open areas for research, and 1% to provide funding for observers.

In general, though setting aside a fraction of the resource has slightly negative impacts on the industry if revenues correspondingly decrease, both research and observers on board contribute positive impacts in the long-term to the extent that they help document and study resource conditions to enable better fisheries management.

1.5.9 Measures for general category vessels

1.5.9.1 No Action

1.5.9.1.1 Quarterly hard-TAC for transition period to limited entry (FY2008)

If Amendment 11 is approved, there will be a quarterly hard-TAC implemented for the transition period to limited entry (most likely for all of FY2008). The total general category allocation (open and access areas) will be divided into four quarters.

Alternative to reduce derby fishing in access areas

This action is considering allocating 2% of the total catch to general category vessels in access areas in 2008 only to reduce derby fishing in those areas while vessels are under appeal for the IFQ program.

If the reduction in allocation to access areas from 5 to 2% is successful in discouraging derby fishing, then this measure would have positive social impacts by promoting safer fishing conditions and avoiding the negative impacts of product-supply gluts.

1.5.9.1.2 IFQ program for general category fishery (FY2009)

If Amendment 11 is approved then general category qualifiers will receive an individual fishing quota based on their contribution to historical landings. IFQs will not be area specific; a vessel can choose to participate in an access area program and landings will be removed from Vessels will be permitted to catch that quota in any area available

Cost Recovery Program

This action includes an alternative for a cost recovery program for the general category IFQ vessels. It includes a program that could collect up to 3% of ex-vessel value of scallop product landed. It will be a cost for vessels to pay for this program, but those costs are expected to outweigh any impacts if general category vessels were allocated 400 pound trips versus pounds.

1.5.9.1.3 Northern Gulf of Maine (NGOM) hard-TAC

If this program is approved under Amendment 11, this framework includes the hard-TAC allocation for NGOM vessels. The PDT recommendation is 64,000 pounds. Once the TAC is reached, no scallop vessels are permitted to fish in the NGOM area.

Section 5.5.3 of Amendment 11 assessed the social impacts of the proposed NGOM hard-TAC in more detail. In general, a hard-TAC could potentially lead to derby fishing.

1.5.9.2 General category access area management

General category allocations in access areas will remain a fleetwide number of trips per area. This action is considering a variety of alternatives for total allocation into access areas for the general category fishery: 2% per area, 5% per area, 0% for Closed Area II and a small percentage for Closed Area II. The prohibition on deckloading from access areas also applies to general category vessels.

Keeping access area allocations at the status quo of 2%—less than their overall 5% allocation—for general category vessels (measure 2.4.2.1.1) would mean general category fishermen would be expected to fish correspondingly more in open areas. They thus in essence would pay the costs of rotational management (not being able to fish in areas of their choosing) without gaining the benefits (increased biomass in special access areas). Increasing the allocation to 5% to be in line with Amendment 11 (measure 2.4.2.1.2.1) would be a positive benefit for those fishermen able to fish in the access areas. Changing this so that general category fishermen would have zero (measure 2.4.2.1.2.2) or a reduced allocation (measure 2.4.2.1.2.3) to Closed Area II would be expected to negatively impact only a small number because general category fishermen tend to have smaller vessels and might be less likely to fish further offshore in CLII.

1.5.10 Estimate of mortality from incidental catch

If approved by Amendment 11, an estimate of mortality from incidental catch will be reduced from the total TAC on an annual basis. The PDT estimates that 50,000 pounds should be considered for this source of mortality. The consequence of this measure is to effectively reduce landings by scallop vessels by an amount proportional to their incidental catch mortality, which may reduce overall effort levels; however, this reduction is likely to be small enough to not have any appreciable social impact on scallop vessels.

1.5.11 Revision of overfishing definition

This action is considering revising the overfishing definition based on results from the recent scallop stock assessment, SAW 45. Specifically, the Bmax value in survey weight per tow would be revised to an absolute value of scallop meat and Fmax would be changed to 0.29 (from 0.24). However, there is an alternative to maintain the same fishing mortality target of 0.20, even though the fishing mortality threshold has increased.

Any measure that increases the validity of the science supporting fisheries management should have positive impacts in the long-term by better contributing to the sustainability of the resource.

1.5.12 Minor adjustments to the observer set-aside program

This action includes an alternative that would consider applying a higher compensation rate for vessels carrying an observer in open areas, compared to access area trips. In addition, there are a number of administrative adjustments that are being considered to improve the program overall.

This measure would have positive social impacts in that it attempts to redress criticisms that open area trips with observers shoulder a higher cost burden than other trips, even though the benefits of observer coverage are for the industry and society as a whole.

1.5.13 Area closures to protect young scallops

This action is considering several new areas as scallop rotational areas. Small scallops have shown up in the 2007 survey in the Hudson Canyon area as well as the Great South Channel.

1.5.13.1 Hudson Canyon area

The short-term social impacts from area closures include less flexibility for businesses stemming from possible short-term decreases in revenue, which would affect more those businesses with smaller cash flows or fewer economic and social resources. This would be offset by slighter higher revenues in the long-term, since rotational area closures are designed to increase resource biomass and sustainability. As discussed in Amendment 10, the general impacts from area management are likely to be more negative on fishermen on smaller vessels or on fishermen who have particular knowledge of particular locales, both of whom are less likely to practice mobile fishing strategies. Closing areas, if they are traditional fishing grounds, would create fewer options and less flexible fishing conditions for those fishermen. The expected future increases in biomass from rotating closed areas would have more positive impacts on those more mobile fishermen who can switch areas more easily, and who have access to economic and social resources that enable them to more easily withstand fishing ups and downs.

1.5.13.2 Great South Channel area

The short-term social impacts from area closures include less flexibility for businesses stemming from possible short-term decreases in revenue, which would affect more those businesses with smaller cash flows or fewer economic and social resources. Closing the Great South Channel would in particular negatively impact those fishermen who fish predominantly on Georges Bank, since there are already a variety of restrictions on fishing in the area, and it would more negatively impact fishermen from surrounding areas, such as Cape Cod. This would be offset by slighter higher revenues in the long-term, since rotational area closures are designed to increase resource biomass and sustainability. As discussed in Amendment 10, the general impacts from area management are likely to be more negative on fishermen on smaller vessels or on fishermen who have particular knowledge of particular locales, both of whom are less likely to practice mobile fishing strategies. Closing areas, if they are traditional fishing grounds, would create fewer options and less flexible fishing conditions for those fishermen. The expected future increases in biomass from rotating closed areas would have more positive impacts on those more mobile fishermen who can switch areas more easily, and who have access to economic and social resources that enable them to more easily withstand fishing ups and downs.

1.5.14 Other measures

1.5.14.1 30-day VMS power-down provision

An alternative is being considered that would permit a vessel to power down their VMS unit for a minimum of 30 days if the vessel is not going to fish during that time.

This measure would have positive impacts on fishermen, particularly small-scale fishermen or those with small DAS allocations, by allowing them to reduce costs by powering down VMS when not fishing for extended periods.

1.5.14.2 Clarification on when a vessel can leave on an access area trip

This alternative would clarify when a vessel can leave on an access area trip. Specifically, the No Action would remain in effect; a vessel can leave on an access area trip before the area opens, but it may not enter the access area until the area has opened.

This action, by clarifying the legality of current practices, would have positive impacts by continuing to allow vessels to leave port at more flexible times.



Framework 19 Decision Document
New England Fishery Management Council
October 25, 2007 – Council Meeting – Wakefield, MA

The primary purpose of this document is to set specifications for the 2008 and 2009 fishing years. In addition, this action includes alternatives specific to measures approved by the Council in Amendment 11. Lastly, there are several alternatives related to other more minor aspects of the management program.

This decision document will outline 16 decisions the Council must make before submitting Framework 19 to NMFS for approval. Each decision is described separately. For further information other than what is described in this document, refer to the section numbers in FW19 referenced after each decision herein. Both the Scallop Committee and Advisory Panels met to review Framework 19 and identified preferred alternatives. Input from these two groups is included by decision.

I. Specifications for FY2008 and FY2009

- Decision 1 New area closures in Hudson Canyon and the Great South Channel
- Decision 2 Overall scenario
- Decision 3 Un-used trip extension for Hudson Canyon
- Decision 4 Elephant Trunk Access Area seasonal closure and Notice Action
- Decision 5 Delmarva Access Area seasonal closure and Notice Action
- Decision 6 Crew size restrictions
- Decision 7 Prohibition of deckloading

II. Amendment 11 related alternatives

- Decision 8 Quarterly hard TAC for general category vessels
- Decision 8b General Category allocations in access areas during transition period
- Decision 9 General Category allocations in access areas post transition period
- Decision 10 Cost Recovery Program
- Decision 11 Northern Gulf of Maine hard TAC
- Decision 12 Incidental catch mortality removal from projected total catch

III. Other minor adjustments to the scallop management program

- Decision 13 Overfishing definition
- Decision 14 Observer set-aside program
- Decision 15 30-Day VMS power down
- Decision 16 Clarification about when a vessel can leave for an access area trip

Decision 1: Potential new rotational areas in Hudson Canyon and the Great South Channel

The PDT recommended consideration of closures for HC and GSC based on high numbers of small scallops (<70mm) caught in these areas during the 2007 scallop survey. The PDT used the guidelines established in Amendment 10 for flexible area rotation boundaries. The advisors reviewed these alternatives, and recommended inclusion of the existing HC boundary as an additional alternative.

A) New rotational area in Hudson Canyon (HC) vicinity – Section 2.9.1 (page 54, Figure 3)

Section	Alternative	Description	Cmte Rec.	AP Rec.
2.9.1.1	No Action	No new rotational area in HC		
2.9.1.2	Smaller HC area	4x4 10min square; closed at least FY 2008 and 2009		
2.9.1.3	Larger HC area	5x5 10min square; closed at least FY 2008 and 2009		
2.9.1.4	Current HC boundaries	No change to current HC boundary, closed at least FY2008 and 2009	Committee identified as preferred	Advisors identified as preferred

B) New rotational area in the Channel (SCh) – Section 2.9.2 (page 58, Figure 5)

Section	Alternative	Description	Cmte Rec.	AP Rec.
2.9.2.1	No Action	No new rotational area in SCh	Committee identified as preferred	Advisors identified as preferred
2.9.2.2	New area	North of Nantucket Lightship, West of CAI; closed at least FY 2008 and 2009		

Biological Impacts – Section 5.1.14, pg. 147

HUDSON CANYON

- Short and long-term exploitable biomass higher in HC under the two HC alternatives and the preferred alternative (which also closes existing HC area), compared to DMV2 (no new closures)
- But 2009 LPUE is 1700 lbs/day for DMV2, and 1900 lbs/day for the preferred alternative and HC alternatives
- Because scallops are small in this area, giving them time to reach their growth potential maximizes yield

GREAT SOUTH CHANNEL

- This area includes a concentration of small scallops that have not shown up on Georges Bank in recent years
- Short-term and long-term exploitable biomass is higher under the SCh alternative
- However, exploitable biomass in open areas in the Channel are hit relatively hard if SCh is closed because few open areas on GB have high scallop abundance
- SCh is expected to increase F in other areas compared to DMV2 due to displacement

Economic Impacts – Document #10

- Closure of HC or SCh is expected to have positive economic impacts due to reduced mortality and increased yield in this area.
- Larger HC closure reduces overall landings slightly in 2008, but revenue impacts and total economic benefits will be higher in short- and long-term compared to No Action.
- Closure of SCh with the HC open will allocate landings in relatively less productive areas, reducing overall LPUE
- Closure of SCh in short-term will have larger revenues and economic benefits compared to preferred alternative, but in long-term results in lower overall economic benefits

Other Impacts – Documents # 7 and 9

- *Both areas:* If area proves to have proportionally high scallop abundance, then the closure would allow for decreased bottom contact time and spatially-focused fishing, thus minimizing effects of fishing on EFH
- *Both areas:* Magnitude of reductions of adverse impacts on EFH inconclusive
- *Both areas:* Short-term social impacts include less flexibility for businesses from short-term decreases in revenue, but which are slightly offset by higher long-term revenues
- *Both areas:* More negative impacts on fishermen with smaller vessels or who have knowledge of a particular locale due to fewer options and less flexible fishing conditions
- *Both areas:* Expected future biomass increase will have more positive impacts on mobile fishermen who can switch areas more easily

Decision 2: Overall Scenario – Section 2.3, page 14

Due to the interrelated nature of area rotation and how the model projects impacts for the entire resource overall, it is difficult to pull out specific impacts by area. Therefore, the various alternatives under consideration have been combined into a number of scenarios. The **No Action** alternative assesses the impacts of essentially rolling over current specifications. There are two alternatives that consider revising the order of the Georges Bank access area schedule (**DMV3** and **DMV2**). The only difference between these two alternatives is that one keeps the Delmarva area closed for both 2008 and 2009, and one alternative considers access in 2009. The rest of the scenarios include various alternatives related to new rotational areas to protect small scallops: **HCL** would close a 5X5 ten-minute-square area near the current Hudson Canyon closed area; **HCS** would close a 4X4 ten-minute square area near the current Hudson Canyon area; **SCH** would close an area in the South Channel northeast of Nantucket Lightship; and **SCHHC** would close both areas – the smaller HC area and the SCH area. See the table below for a summary of what each scenario has analyzed.

All four of these scenarios include the same assumptions for allocations as scenario “DMV2” (one trip in NL in 2008, one trip in CAII in 2009, one trip in Delmarva in 2009, and 4 trips in ET in 2008 and 3 trips in ET in 2009). All scenarios then identify a certain level of open area DAS based on which areas are accessible to reach an overall fishing mortality target of $F=0.20$. **After the Committee meeting, an additional alternative was added that is similar to HC-sm, but it proposes to close the existing HC area (not the 4X4 ten-minute square area) and it allocated more DAS in open areas in 2008 and fewer DAS in 2009 for an average $F=0.20$ for both years combined; this alternative is called “Pref”, for the preferred alternative.**

Summary of scenarios considered in Framework 19

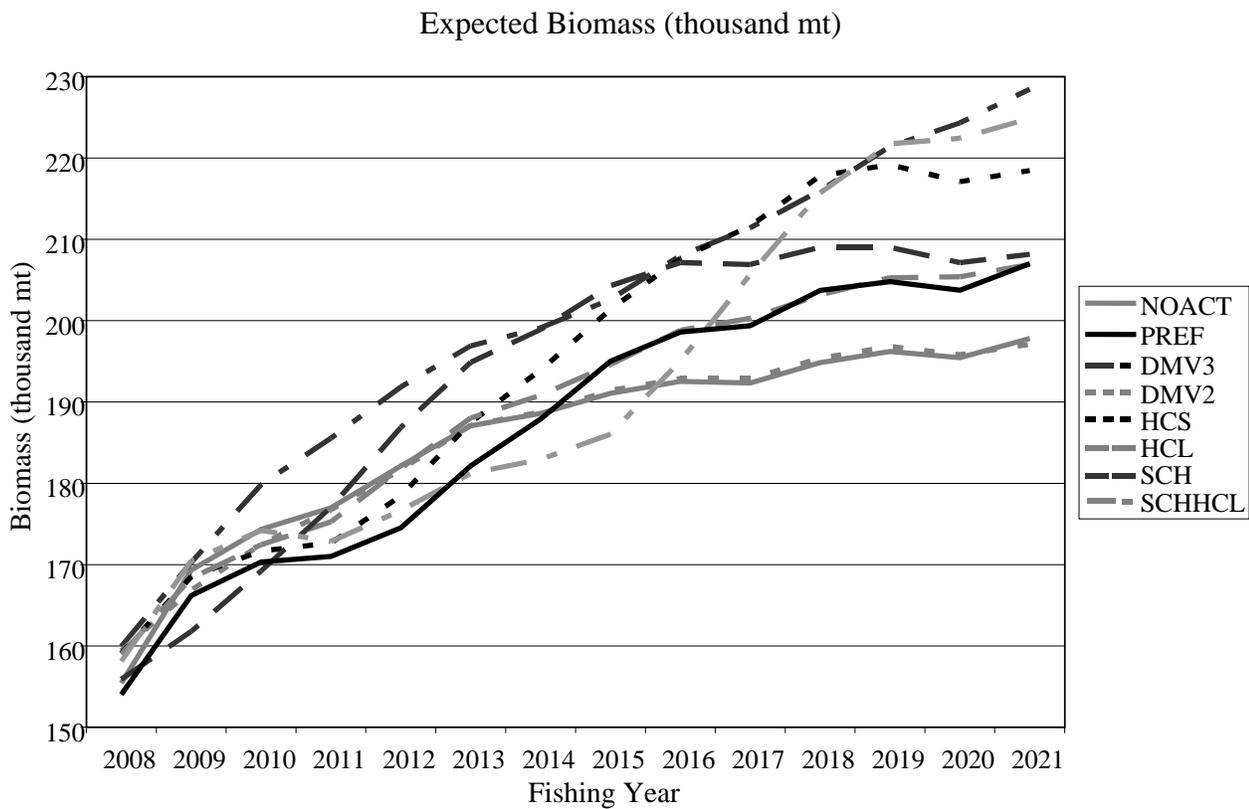
2008	CL1	CL2	NLS	ET	Dmv	HC	Sch	IndvDAS*	Projected F	Projected Catch	Projected bottom area
No Action	1 trip	0 trip	Cl	3 trips	Cl	Op	Op	51	0.24	43.6	6,783
Preferred	Cl	Cl	1 trip	4 trips	Cl	Cl	Op	35	0.22	44.4	5,558
Dmv 3	Cl	Cl	1 trip	4 trips	Cl	Op	Op	32	0.20	46.3	4,185
Dmv 2	Cl	Cl	1 trip	4 trips	Cl	Op	Op	32	0.20	46.3	4,185
HC-sm	Cl	Cl	1 trip	4 trips	Cl	Cl	Op	30	0.20	43.2	4,472
HC-lar	Cl	Cl	1 trip	4 trips	Cl	Cl	Op	29	0.20	44.0	4,454
Sch	Cl	Cl	1 trip	4 trips	Cl	Op	Cl	50	0.20	51.1	13,420
Sch+HC	Cl	Cl	1 trip	4 trips	Cl	Cl	Cl	42	0.20	44.2	7,335
2009	CL1	CL2	NLS	ET	Dmv	HC	Sch	IndvDAS*	Projected F	Projected Catch	Projected bottom area
No Action	Cl	0 trip	0 trip	3 trips	Cl	Op	Op	51	0.16	41.3	5,539
Preferred	Cl	1 trip	Cl	3 trips	1 trip	Cl	Op	42	0.18	45.9	5,886
Dmv 3	Cl	1 trip	Cl	3 trips	Cl	Op	Op	60	0.20	51.6	6,487
Dmv 2	Cl	1 trip	Cl	3 trips	1 trip	Op	Op	48	0.20	52.6	5,321
HC-sm	Cl	1 trip	Cl	3 trips	1 trip	Cl	Op	47	0.20	48.7	6,082
HC-lar	Cl	1 trip	Cl	3 trips	1 trip	Cl	Op	47	0.20	49.2	5,820
Sch	Cl	1 trip	Cl	3 trips	1 trip	Op	Cl	69	0.20	54.9	16,992
Sch+HC	Cl	1 trip	Cl	3 trips	1 trip	Cl	Cl	54	0.20	46.3	7,896

* The full-time individual DAS value is based on an estimate of 326 active full-time equivalent limited access vessels out of 350 limited access permits in 2007. These values have removed TAC for general category allocations and set-asides.

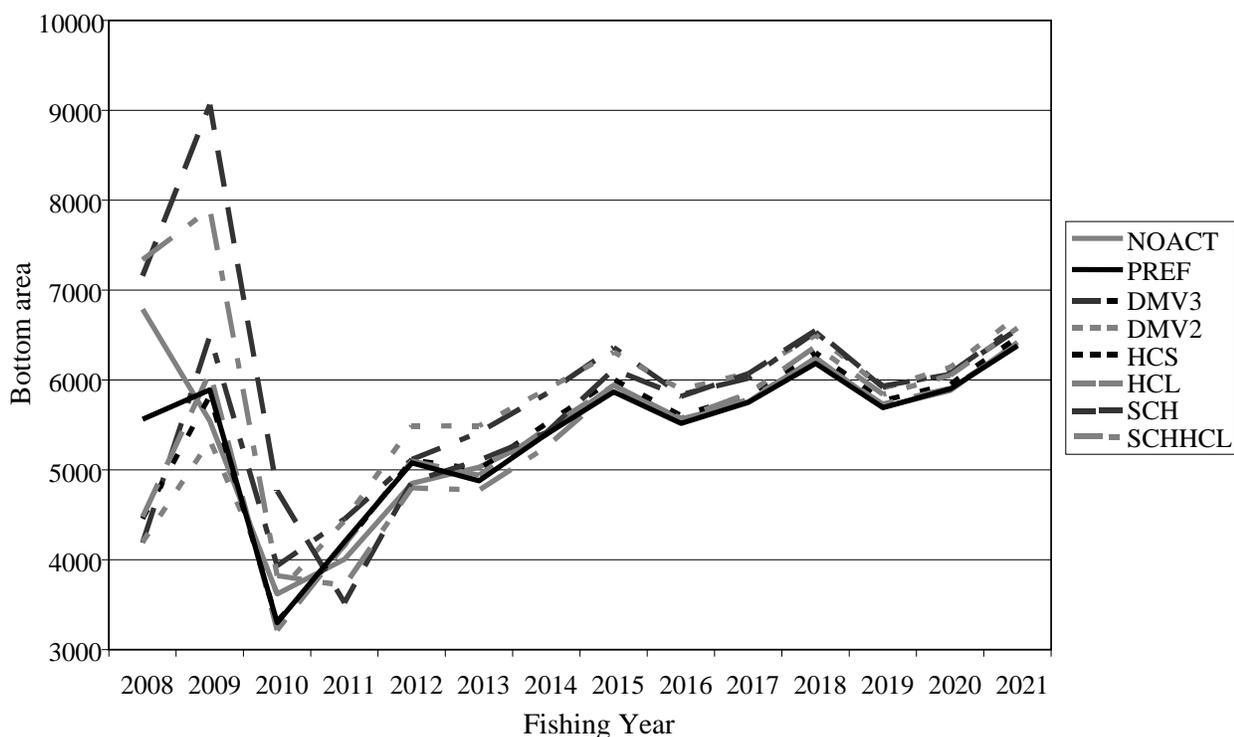
Decision 2 (continued):

Biological Impacts

- In general the projected exploitable biomass is similar overall when comparing the various scenarios but does vary by area. Biomass in open areas is lowest under alternatives that closed the area in the Channel and the No Action.
- Average LPUE is highest for the DMV and HC alternatives followed by the preferred alternative. Compared to the No Action alternative the preferred option has higher LPUE averages for both open and access areas for both years – thus lower impacts for same yield.



Expected Bottom Area



Economic Impacts – See Document #10

- Projected scallop landings for the preferred alternative and other alternatives are higher compared to No Action for FY2008 and 2009, with exception of the HCL alternative in 2008
- Preferred alternative and other alternatives expected to increase revenues in both 2008 and 2009 compared to No Action
- 2009: scallop revenues for preferred option expected to exceed the revenues under No Action by ~ 6.2%, and by slightly more under other alternatives
- Total benefits (consumer benefits + producer benefits) for alternative options expected to exceed No Action by 4.5% - 15.5% (range of prices considered in estimates)
- Preferred option will increase total economic benefits by ~5.5% - 5.8% in short-term
- Long-term: all alternatives expected to increase scallop revenues by 0.5% - 1.5% and total net benefits by 1% - 3%. Positive impacts of the preferred option on net economic benefits (2.68%) either exceed or are similar to benefits values under other alternatives.

Other Impacts – See Documents #7 and 9

- In general the habitat impacts of all scenarios are expected to be positive relative to baseline conditions because access is allocated in areas with more biomass (ET and NL) compared to areas with lower biomass such as open areas and Closed Area I, resulting in more concentrated, less diffuse fishing pressure.
- When less access is allocated, the short-term social impacts include less flexibility for businesses stemming from short-term decreases in revenue (see Economic Impact section), which would affect more those businesses with smaller cash flows or fewer economic and social resources. This would be offset by slighter higher revenues in the long-term.

Short term projections of catch, revenue, LPUE, DAS used and % Change in catch compared to No Action

Fishing year	Alternatives	Landings (lb.)	Total Revenue (Lower prices, mill. \$)	LPUE	DAS-used (fleet total)	% Change in landings from No action
2008	No Action	43.4	336	1475	29,256	
	Preferred option	44.4	340	1593	27,903	2.3%
	DMV closed (Similar to SQ, DMV3)	46.3	345	1780	25,870	6.7%
	DMV closed in 2008, open in 2009 (DMV2)	46.3	345	1780	25,865	6.7%
	HC closure, large (HCL)	43.2	336	1706	25,204	-0.5%
	HC closure, small (HCS)	44.0	338	1718	25,468	1.4%
	South Channel closed, HC open (SCH)	51.1	358	1555	32,711	17.7%
	South Channel and HC closed (SCH+HC)	44.2	339	1427	30,823	1.8%
2009	No Action	41.3	326	1578	26,044	
	Preferred option	45.9	347	1632	27,949	11.1%
	DMV closed (Similar to SQ, DMV3)	52.6	363	1785	29,380	27.2%
	DMV closed in 2008, open in 2009 (DMV2)	51.6	361	1665	30,859	24.8%
	HC closure, large (HCL)	48.7	354	1647	29,461	17.8%
	HC closure, small (HCS)	49.2	356	1682	29,195	19.2%
	South Channel closed, HC open (SCH)	54.9	368	1482	36,990	33.0%
	South Channel and HC closed (SCH+HC)	46.3	348	1434	32,221	12.1%

Short-term and long-term projections of total net benefits to society

Fishing year	Alternatives	Short-term Total benefits net of No action (mill. \$)	% Change in Total Benefits	Long-term Cum. present value of Net Benefits (\$ million)	% Change in LT Benefits from No action
2008-2021	No Action	-		-	
	Preferred option	43	5.8%	113	2.75%
	DMV closed (Similar to SQ, DMV3)	86	11.6%	129	3.14%
	DMV closed in 2008, open in 2009 (DMV2)	93	12.6%	48	1.16%
	HC closure, large (HCL)	52	7.0%	110	2.68%
	HC closure, small (HCS)	60	8.2%	130	3.17%
	South Channel closed, HC open (SCH)	115	15.5%	45	1.10%
	South Channel and HC closed (SCH+HC)	33	4.5%	40	0.97%

The DAS compensation program for limited access vessels would not change under this action. If the GB or SNE YT TAC is reached in an access area, then limited access scallop vessels would receive open area DAS as compensation for the area closing before all allocated trips are taken. Specifically, for Nantucket lightship in 2008, the DAS compensation would be 7.7 DAS, and 7.9DAS for Closed Area II in 2009. (See Section 2.3.1.2 for details, page 16)

Decision 3: Un-used 2005 Hudson Canyon Trips – Section 2.3.2, page 20

Hudson Canyon TACs for 2004 and 2005 were too high and biomass was fished down faster than anticipated, thus many vessels took sub-optimal trips or chose to delay trips all together. Some vessels still have not used their 2005 trips because the catch rates are still sub-optimal, so the Council is considering measures to extend the time to take remaining trips for 3 additional months until 5/31/08, at which point the area reverts to an open area and the boundaries dissolve.

Section	Alternative	Description	Cmte. Rec.	AP Rec.
2.3.2.1	No Action	All un-used HC trips expire 2/29/08 and area reverts to open	Committee identified as preferred	Advisors identified as preferred – but very narrow margin
2.3.2.2	Extend duration of HC to 5/31/08	Un-used trips can be used until 5/31/08		

Biological Impacts – Section 5.1.4, pg. 135

- Extension through May, 2008 results in higher mortality for that area than 2008 estimates
- Higher short-term mortality possibly in No Action because scallop spring growth hasn't occurred yet
- Long-term, scallops lose growth potential if trips are extended through May

Economic Impacts – See Document #10

- 117 trips remain as of September 10, 2007, and if all expire (worst case scenario) before any pounds are landed, it results in a \$13.6 million loss for fishery
- LPUE in HC could improve in 2007 according to biological projects to average 1400 lbs/day-at-sea, so it would take ~13 days to land 18,000 lbs in a trip, resulting in \$99,000 net revenue.
- Extending the date could allow vessels to take trips later in year when yields are higher, resulting in larger economic benefits compared to the No Action alternative.

Other Impacts – See Documents #7 and 9

- There is no discernable differences in EFH impacts between No Action and the extension compared to the baseline
- No Action results in negative impacts on fishermen who have not used their trips and may promote them to take trips in sub-optimal conditions

Decision 4: Elephant Trunk (ETA) Seasonal Closure and Notice Action – Section 2.3.3, p. 21

The number of trips allocated to this area is covered by the overall scenario selected under Decision 2. However, there are other alternatives related to a seasonal closure to reduce interactions with sea turtles and a Notice Action that the Council should specifically consider. The seasonal closure under consideration is the same as under Framework 18, and the Notice Action process is also the same, with an additional trigger based on updated estimates of overall F.

Section	Alternative	Description	Committee Rec.	AP Rec.
2.3.3.2	Seasonal Closure (Sept1-Oct 31)	Closure to potentially reduce interactions with sea turtles in the ETA.	Move to “considered but rejected”	AP did not address – but no discussion to remove
2.3.3.3	Notice Action procedure to reduce trips	Allows a procedure to adjust FY2009 ETA allocations by Notice Action to account for uncertainty.	By consensus Cmte approved inclusion of new overall F trigger	AP did not address

Biological Impacts – Section 5.1.5, pg. 136

SEASONAL CLOSURE

- A seasonal closure potentially reduces sea turtle interactions
- Indirect positive impact: reduces effort when shell height to meat weight ratios are lower – reduces scallop mortality

NOTICE ACTION

- This would have positive impacts on the scallop resource by providing a mechanism that can reduce effort and prevent overfishing if updated information suggests the allocated effort is too high

Economic Impacts

- Increased landings will have positive impacts on consumers compared to No Action
- Lower fishing costs per pound of scallops from fishing in this more productive area combined with higher revenues increases producer benefits, so total economic benefits expected to be positive compared to No Action.
- Seasonal closure not expected to have substantial economic impacts
- Notice action procedure would have positive economic impacts by adjusting allocations in order to achieve optimal level of landings and revenues from the scallop resource

Other Impacts

- 4 trips in 2008 and 3 in 2009 isn’t expected to have adverse EFH impacts beyond baseline
- If seasonal closure results in more diffuse fishing pressure, then there may be slight adverse impacts. However, if it doesn’t and effort remains in areas typically fished, and overall effort levels decrease, then there will be a neutral-to-beneficial impact on EFH by reducing or maintaining the total time gear is in contact with the bottom
- The extra trip in 2008 could have neutral or possibly negative impacts on sea turtles
- Removal of seasonal closure could potentially increase negative impacts on sea turtles
- Closing areas may result in negative social impacts on less-mobile fishermen

Decision 5: Delmarva Access Area Seasonal Closure and Notice Action – Section 2.3.4, p.23

The number of trips allocated to this area is covered by the overall scenario selected under Decision 2. However, there are other alternatives related to a seasonal closure to reduce interactions with sea turtles and a Notice Action that the Council should specifically consider. The seasonal closure that has been discussed is from August 1 through October 31, and the Notice Action process is similar to the notice action process approved under FW18 for ETAA.

Section	Alternative	Description	Committee Rec.	AP Rec.
2.3.4.2.2	Seasonal Closure (Aug1-Oct 31)	Closure to potentially reduce interactions with sea turtles in the Delmarva.	Move to “considered but rejected”	Support this alternative to reduce non-harvest mortality as well as reduce potential interactions with sea turtles
2.3.3.3	Notice Action procedure to reduce trips	Allows a procedure to adjust FY2009 Delmarva allocations by Notice Action to account for uncertainty.	No motion – but Cmte did not raise issue with this alternative	AP did not address

Biological Impacts – Section 5.1.6, pg.136

SEASONAL CLOSURE

- A seasonal closure could potentially reduce sea turtle interactions
- Indirect positive impact: reduces effort when shell height to meat weight ratios are lower – reduces scallop mortality

NOTICE ACTION

- This would have positive impacts by providing a mechanism that can reduce effort if updated information suggests the allocated effort is too high

Economic Impacts

- Seasonal closure not expected to have substantial economic impacts
- Notice action procedure would have positive economic impacts by adjusting allocations in order to achieve optimal level of landings and revenues from the scallop resource

Other Impacts

- Since DAS used would be reduced if Delmarva opens in 2009, so would anticipated bottom contact time, which would have a positive impact on EFH
- The Delmarva substrate is sandy, thus less vulnerable to impacts from fishing gear
- Effects of seasonal closure to potentially reduce interactions with sea turtles are uncertain
- Closing areas may have negative impacts on less-mobile fishermen

Decision 6: Crew Size Restriction – Section 2.3.5.1, page 27

Vessels with limited access permits may carry no more than 7 persons on a DAS trip in open areas. This measure was implemented to control fishing power of a vessel on a DAS. Under Framework 18, the Council recommended that the maximum crew restriction be lifted for access area trips since there is a possession limit. NMFS implemented Framework 18 with no maximum crew limit for access area trips. This action is reconsidering a maximum of 8 or 9 crew members because with no crew limit vessels could target smaller scallops in access areas as catches of larger scallops decline. Larger crews also have an effect on cull size, which may cause the number of shucked scallops to increase.

Section	Alternative	Description	Cmte. Rec.	AP Rec.
2.3.5.1.1	No Action	No limit on number of crew in access areas	Preferred	Preferred
2.3.5.1.2	Reduce maximum crew size	Max crew size restriction of either A) 8 or B) 9.		

Biological Impacts – Section 5.1.7.1, pg. 137

- With a larger crew, vessels have increased shucking ability so smaller scallops could be kept resulting in increased mortality
- This measure, in conjunction with gear restrictions and possession limits could help reduce scallop mortality, thus having positive impacts on the scallop resource

Economic Impacts

- Carrying more crew on an access trip may reduce fishing costs by potentially reducing time at sea.
- Limiting crew size would increase trip costs by reducing vessel’s flexibility
- Less pay for crew if more crew onboard
- Alternatively, larger crews potentially increase risk of overfishing because they can shuck more scallops per day, resulting in long-term reduction of scallop yields and economic benefits, although data does not show that larger crews are targeting smaller scallops
- Crew size reduction expected to have little effect under No Action for a few vessels with small impacts on economic benefits

Other Impacts

- This measure is unlikely to change overall bottom contact time, resulting in a neutral impact on designated EFH, unless high-grading practices occur, which may increase bottom contact time
- Additional crew could improve safety and provide training opportunities for new crew members, thus having positive social impacts
- However, a smaller crew would result in a higher share per person

Decision 7: Deckloading Prohibition – Section 2.3.5.2, page 27

A prohibition on deckloading in this case refers to a vessel being prohibited from leaving an access area with more than 50 bushels of in-shell scallops. The Council decided to consider this topic in Framework 19 in light of a recent interim action for the Elephant Trunk Access Area that included a prohibition on deckloading to reduce non-harvest scallop mortality.

Section	Alternative	Description	Comm. Rec.	AP Rec.
2.3.5.2.1	No Action	No restriction on amount of in-shell scallop onboard when leaving an access area, except in the ETA.		
2.3.5.2.2	Vessels may not leave an access area with more than 50 bu of in-shell scallops	A) No exceptions, all vessels are restricted to 50 bu limit under all circumstances; B) Vessel may leave an access area with more than 50 bu in-shell scallops if they are a general category vessel with an observer or the vessel has to break a trip due to a safety concern.	Preferred – Option A	AP did not have time to address this topic

Biological Impacts – Section 5.1.7.2, pg. 139

- Deckloading prohibition would reduce non-harvest scallop mortality by preventing a vessel from discarding scallops in an area with unsuitable habitat, thus having a positive impact
- Prohibiting deckloading may reduce on-deck mortality

Economic Impacts

- If a vessel can leave an access area with a deckload of scallops, shucking during return to port, then time at sea and fishing costs may be reduced
- Prohibiting deckloading on access area trips will help prevent additional scallop mortality associated with discarding, thus resulting in higher yield, revenues, and economic benefits

Other Impacts

- This measure is unlikely to change overall bottom contact time, resulting in a neutral impact on designated EFH
- Deckloading prohibition is not expected to have any negative social impacts

Decision 8: Quarterly Hard TAC for General Category Vessels – Section 2.4.1.1, page 32

The No Action for this fishery would assume that Amendment 11 is approved as the Council recommended it. Specifically, a quarterly hard-TAC would be implemented for general category qualifiers (and vessels under appeal) while the fishery is in a transition to limited entry. Ten percent of the total projected scallop catch would be allocated to the general category fishery (open and access area fishing) and would be divided into quarters based on historical trends in landings.

Section	Alternative	Description	Committee Rec.	AP Rec.
2.4.1.1	No Action	10% of total projected scallop catch allocated to general category fishery and divided into quarters based on historical trends.		
	A	Quarters 1-4 would have TACs of 35%, 40%, 15%, and 10%, respectively.	Preferred	AP did not identify a preferred alternative
	B	Quarters 1-4 would have TACs of 40%, 45%, 10%, and 5%, respectively.		

Overall general category landings are highest (about 40%) during the 2nd quarter (June-August). Based on landings data, 20% of the landings occur in Quarter 1, followed by another 20% in Quarter 3. The PDT recommends that the historical averages be modified to account for access area openings in 2008. In addition, higher TACs in the first two quarters would allow any unused TAC to rollover into the following quarters.

Biological Impacts – Section 5.1.10.1.1, pg. 139

- Due to overall TAC, this alternative is not expected to have impacts on the resource

Economic Impacts

- Division of total TAC into quarterly TACs will lessen negative impacts from derby fishing, such as negative impacts on price due to market gluts
- Higher TAC in 1st quarter is expected to provide opportunity to general category vessels to take their ETA trips and still be able to fish open areas March to May 2008 and also will prevent an unrealistic TAC for 1st quarter if there’s a delay in FW19 implementation
- Option A: due to quarterly distribution similar to 2006 observations, option A will have lower impacts on general category vessels regarding timing of their fishing activities
- Option B: will reduce derby fishing relatively more compared to option A in first 2 quarters, but the opposite could happen in quarters 3 and 4 if all allocated TAC from first 2 quarters are landed
- Unused TAC from Quarter 1 rolls to Quarter 3, and unused TAC from Quarter 2 rolls to the Quarter 4, so if catching them later makes more economic sense, there’s less incentive for general category vessels to land scallops until all TAC allocated to first 2 quarters is reached, thus potentially reducing derby fishing and associated negative economic impacts

Other Impacts

- No impact on designated EFH relative to baseline

Decision 8b: General Category Access Area Allocations during Transition Period – Section 2.4.1.1.1, page 35

The Committee recommended 2% of each access area to be allocated to the general category fishery rather than the recommended 5% for FY2009 to reduce derby fishing during the transition period to limited entry. If a lower allocation is given to areas with higher scallop catch, the derby effects are expected to be reduced compared to allocating 5% of the access areas to the general category fishery during the transition period. The remainder of the overall general category fishery 10% TAC will be allocated to open areas.

Section	Alternative	Description	Committee Rec.	AP Rec.
2.4.1.1.1	Transition period allocation for general category fishery	General category allocation in each access area of A) 2% or B) 5%.	Supported 2% for transition period	Support 5% in access areas (except CA2). However some LA advisors did not support 5% if that translated into a reduction in trips in the ET area for the limited access fishery.

Biological Impacts – Section 5.1.10.1.1, pg. 140

- No discernable difference between 2% and 5% because the remainder will still be harvested by the limited access fishery

Economic Impacts

- If 2% allocated for access areas, general category landings from open areas will be ~3.7 million lbs as opposed to 2.9 million lbs at a 5% allocation, so general category vessels can take an additional 1996 trips in open areas
- Derby fishing from a 5% allocation in access areas will result in more scallops landed in a shorter period of time, having a larger negative impact on prices compared to 2%
- Total profits for general category vessels could be lower at 2% than 5% because trips taken in access areas compared to open areas have lower fishing costs and higher profits
- If prices end up lower with a 5% access area allocation, the impacts on profits from fishing more in productive areas would be slight
- A 2% access area allocation may not have much impact on vessels located closer to and fish routinely in open areas, but may have negative economic impacts on vessels in proximity to access areas, such as the ETA

Other Impacts

- No impact on designated EFH relative to baseline
- If the change from 5% to 2% results in diminished derby fishing, then there are overall positive social impacts

Decision 9: General Category access area allocations post Transition Period – Section 2.4.2.1, page 41

Whatever areas deemed available for FY2008 and 2009 will also be available to the general category fishery. In the past, 2% has been allocated to the general category in a fleetwide allocation of trips. Once the maximum number of trips has been taken, the area closes to all general category vessels. For option 2.4.2.1.2, because the Committee also supports the action to reduce derby fishing during the transition period, this alternative would only apply for FY2009 (or until the IFQ program is implemented from Amendment 11).

Section	Alternative	Description	Committee Rec.	AP Rec.
2.4.2.1.1	Allocation of 5% of all areas for post-transition period	Fleetwide allocation of trips equal to 5% of each area open in FY2008 and 2009.		
2.4.2.1.2	Allocation of 5% for all access area, but 0% for CAII	Fleetwide allocation of trips equal to 5% of each area open in FY2008 and 2009, except a zero allocation for CAII.	Preferred	Preferred
2.4.2.1.3	Allocation of 5% for all access areas, but only a small % for CAII	Fleetwide allocation of trips equal to 5% of each area open in FY2008 and 2009, but a small allocation for CAII to account for scallop landings on multispecies vessels participating in SAP programs.		

Biological Impacts – Section 5.1.10.2, pg. 146

- Differences in % allocated to the general category fishery do not have impacts on the scallop resource overall because the same overall amount of scallops will be harvested

Economic Impacts

- 0% CAII allocation in FY 2009 results in higher open area landings for general category TAC and is expected to have positive economic impacts since most general category vessels do not fish CAII

Other Impacts

- No impact on designated EFH relative to baseline
- 2% allocation to the general category fishery may have negative social impacts on that fleet because they are “paying” the costs for area rotations without getting full benefits
- Zero or reduced CAII allocations would only negatively impact a handful of fishermen because general category fishermen tend to have smaller vessels, thus don’t fish CAII

Decision 10: Cost Recovery Program for General Category IFQs – Section 2.4.1.2.1, p. 35

Under Amendment 11, general category vessels that qualify for a limited access permit will be allocated an individual amount of scallop meat in pounds per fishing year, or an individual fishing quota (IFQ). Per the MSFCMA, NMFS is required to collect fees to recover the costs directly related to management, data collection and analysis, and enforcement of IFQ programs. This action considered two ways to collect the fees, and two ways to estimate the fee a vessel would have to pay at the end of a fishing year.

Section	Alternative	Description	Committee Rec.	AP Rec.
2.4.1.2.1.1	No Action	No fees collected; however, this option is not consistent with MSFCMA.		
2.4.1.2.1.2 2.4.1.2.1.3	Cost recovery program for IFQ programs	Covers costs associated with IFQ program and is mandatory under MSFCMA. Payment options: 1) vessel owner pays or 2) dealer pays. Determination options: 1) value reported by dealer when scallops are sold or 2) determined as average of ex-vessel values of all general category scallops landed March1-Nov30.	Alternative 2 – IFQ holder pays and fee is based on average ex-vessel value	Alt. 2 – IFQ holder pays. AP did not discuss different options for determining fee

Biological Impacts – Section 5.1.10.1.2, pg. 140

- This alternative is administrative and not expected to have direct impacts on the resource

Economic Impacts

- Preferred Alternative: for 2008, total scallop landings estimated at 45.9 million lbs and ex-vessel prices estimated from \$7.55 - \$8.30, so at a 5% TAC, a 3% cost recovery could range from \$53,050 - \$60,300 in 2008 and be slightly higher in 2009
- Positive economic impacts of IFQs for the general category limited access qualifiers are expected to exceed the costs of the cost recovery program

Other Impacts

- This measure is administrative and not expected to have direct impacts on EFH
- It will cost vessel owners to pay for this program, but costs are expected to outweigh negative impacts of allocating 400 trip units versus an IFQ allocation

Decision 11: Northern Gulf of Maine Hard TAC – Section 2.4.1.3, pg. 41

The Council approved a separate limited entry program for the NGOM with a hard-TAC under Amendment 11. If this provision is approved, Framework 19 will need to consider a separate hard TAC for this area for both 2008 and 2009. Amendment 11 specifies that the Scallop PDT will recommend a hard-TAC for the federal portion of the scallop resource in the NGOM. The amendment recommends that the hard-TAC be determined using historical landings until funding is secured to undertake a NGOM stock assessment.

The PDT reviewed landings data from the VTR database and originally recommend that the hard-TAC for this area be 64,000 pounds for both FY2008 and FY2009 (Option A). The Scallop Committee requested that the PDT review another method for estimating the TAC (Option B). Option B also uses VTR data but includes landings from limited access vessels as well as landings from within state waters from federally permitted vessels.

See separate document that explains the methods used in Option B in more detail – Document #8.

Section	Alternative	Description	Committee Rec.	AP Rec.
2.4.1.3	Northern Gulf of Maine hard TAC	Options A) Hard TAC of 64,000 lbs for both FY 2008 and 2009, or B) Another TAC that incorporates landings from LA and within state waters.	Suggested review of option B	AP did not have time to address this topic

Biological Impacts – Section 5.1.10.1.3, pg. 140

- No negative impacts on scallop resource if TAC is set at appropriate level and effectively monitored because scallop fishing is prohibited once TAC is reached
- Long run: hard TAC should help prevent overfishing the scallop resource

Economic Impacts

- GOM Hard TAC expected to have positive economic impacts on a larger number of vessels that do not qualify for limited access but do for an NGOM permit because it allows them to land scallops in this area during favorable resource conditions
- Preferred option: 64,000 lbs and an estimated price of ~\$7.66 in 2008 and \$7.55 in 2009, is expected to generate ~\$0.5 million scallop revenue for NGOM area access vessels

Other Impacts

- No impacts on EFH beyond those in baseline if TAC is set at appropriate level and effectively monitored because scallop fishing is prohibited once TAC is reached
- In general, a hard TAC could increase derby fishing

Decision 12: Incidental Catch Mortality – Section 2.5, page 43

Amendment 11 includes a provision that the Scallop FMP should consider the level of mortality from incidental catch and remove that from the projected total catch before allocations are made. If approved, the amendment requires the PDT to develop an estimate of mortality from incidental catch and remove that from the total. Based on review of VTR and dealer data, the PDT recommends taking recent VTR landings as a starting point for an estimate of mortality from incidental catch and increasing that to 50,000 pounds to account for an expected increase due to measures implemented by Amendment 11.

Section	Alternative	Description	Committee Rec.	AP Rec.
2.5	Identification of 50,000 pounds to be removed for incidental catch mortality	50,000 pounds will be removed from total projected catch before allocations are made.	No motion – but Cmte did not raise concern	AP did not have time to address this topic

Biological Impacts – Section 5.1.11, pg. 146

- This alternative will have indirect benefits to the scallop resource by taking incidental catch mortality into account before allocations are made to the fishery

Economic Impacts

- Removal of incidental catch before making allocations ensures fishing mortality targets are not exceeded, thus having a positive impact on the resource, scallop yield, revenues, and total economic benefits

Other Impacts

- May reduce bottom contact time, but not enough to have any substantial EFH impacts
- Although this measure effectively reduces catch, it’s likely small enough not to have any social impacts on scallop vessels

Decision 13: Overfishing Definition – Section 2.6, page 45

CASA, a size-structured forward-projecting assessment model was compared to the rescaled F approach and it was determined that CASA is generally more accurate and less biased. SAW 45 recommended that the reference points be adjusted based on the CASA results. Therefore this action considers revising the overfishing definition to be consistent with the units (mt) generated by the CASA model, rather than the kg/tow unit in the current definition. In addition, the CASA model suggests that the overfishing threshold should be revised to $F=0.29$ from $F=0.24$. The Council considered revising the overfishing target from $F=0.20$ because the threshold changed, but recommended that the target remain at 0.20 to be more precautionary.

Section	Alternative	Description	Comm. Rec.	AP Rec.
2.6.1	No Action	Overfishing definition stays the same, as do the units for the biomass reference points (kg/tow)		
2.6.2	Biomass Reference Point	The biomass reference point units would be changed from kg/tow to mt and reference points would change based on CASA model	No motion – but Cmte did not raise concern	AP did not have time to address this topic
2.6.3	Overfishing Target	Maintaining $F=0.2$ as target fishing mortality rate	Cmte discussed a higher F target but no motion was made related to this topic	AP did not have time to address this topic

Biological Impacts – Section 5.1.12, pg. 146

- Accepting new definition benefits the scallop resource because the new model is less bias, uses more information, and is an improvement over the previous model
- Long-term beneficial impacts overall because $F=0.2$ is precautionary and reduces the risk of overfishing
- The overfishing threshold of 0.29 is based on an assumption that fishing mortality is spatially uniform. In the scallop fishery, this assumption is not even close to being met due in part to closed areas. In the case of highly non-uniform fishing effort, the fishing mortality that maximizes yield per recruit will be less than the spatially uniform target (0.29). For this reason, the PDT recommends keeping the target at 0.20, thus preventing the possibility of severe localized overfishing that can occur at higher targets.

Economic Impacts

- Maintaining the fishing mortality target at $F=0.2$ is precautionary and reduces risk of overfishing, thus having positive impacts on the scallop resource, scallop landings, revenues and total economic benefits over the long-term

Other Impacts

- This measure is not expected to have any impacts on EFH
- Long term social benefits by contributing to the sustainability of the resource

Decision 14: Observer Set-Aside Program Improvements – Section 2.8, page 50

The Council recently approved an action to implement a mechanism to re-activate the industry-funded observer program for the scallop fishery (Amendment 13). During the process several issues were identified with the observer set-aside program, but due to timing constraints the Council did not develop alternatives to address those issues. Instead the Council approved an alternative that would allow adjustments to the observer set-aside program to be considered in a framework action. This is the first action since implementation of Amendment 13 that could include consideration of these issues. The Council decided to consider two issues at this time (the program does not work well in areas with lower catch rates (i.e. Hudson Canyon and some open areas and small adjustments needed to improve overall administration of program); the other issues were considered too complex to consider in this action.

Section	Alternative	Description	Committee Rec.	AP Rec.
2.8.1	Higher Compensation rate for fishing in open areas compared to access areas	This would increase the pounds and DAS compensated to vessels with an observer in open area trips and decrease compensation for access trips.	The Cmte did not have time to address this topic	The AP did not have time to address this topic
2.8.2	Small adjustments to improve overall administration	Potential adjustments that would improve administration of the observer set-aside program. Details in FW19 pgs. 51-53.	The Cmte approved what is in FW19 – some issues need more clarity	The AP did not have time to address this topic

Biological Impacts – Section 5.1.13, pg. 146

- This alternative is not expected to have impacts on the scallop resource

Economic Impacts

- LPUE is lower in open areas in general, so assigning higher compensation for these trips increases ability of vessels to pay for observer costs and trip expenses
- To prevent total observer set-aside from being used faster as a result of open area higher compensation, the compensation rate for access area trips should decline

Other Impacts

- Measures are administrative in nature and not expected to have any impact on EFH
- Positive social impacts because it addresses some criticisms that open area trips with observers shoulder a higher cost burden than other trips

Decision 15: 30-Day VMS Power Down – Section 2.10.1, page 59

This alternative was considered in response to public request to reduce costs and burdens associated with having to run a VMS unit when a scallop vessel is not fishing. Vessels would be allowed to power down their VMS unit for a minimum of 30 days, similar to the provision for the multispecies permits, as long as the vessel does not engage in any fisheries until the unit is turned back on.

Section	Alternative	Description	Committee Rec.	AP Rec.
2.10.1	30-Day VMS power down	Allows a vessel to power down their VMS unit for a minimum of 30 days, similar to multispecies permits, as long as the vessel does not engage in any fisheries.	The Cmte did not have time to address this topic	The AP did not have time to address this topic

Biological Impacts – Section 5.1.15.1, pg. 147

- This alternative is not expected to have impacts on the scallop resource

Economic Impacts

- VMS service cost will probably remain the same, but using generator less saves on costs
- This action reduces burden on vessel-owners to run vessel for long periods when it is not fishing
- Thus, alternative is expected to have some positive economic impacts on scallop vessels

Other Impacts

- Measures are administrative in nature and not expected to have any impact on EFH
- Positive impacts in that fishermen can power down their VMS when not fishing for an extended time, thus reducing costs

Decision 16: Clarification- When Vessel Can Leave for Access Area Trip – Section 2.10.2, p.59

Currently a scallop vessel can leave for an access area trip before the area opens, but it cannot fish in that area until the area opens. The agency requested that the Council clarify the intent of this measure because it is different than regulations in other fisheries and the agency is contacted by the public with questions about this regulation. The Scallop Committee supports No Action because scallop vessels are not allowed to fish until they are in an access area and there is a possession limit, thus prohibiting a vessel from leaving port before the area opens would only disadvantage vessels that are homeported farther away.

Section	Alternative	Description	Committee Rec.	AP Rec.
2.10.2	Clarification about when a vessel can leave for an access area trip (no action)	Remedies confusion about when a vessel can leave port on an access area trip. Vessel can leave for an access area trip before the area opens.	Affirms No Action	The AP did not have time to address this topic

Biological Impacts

- This alternative is not expected to have impacts on the scallop resource

Economic Impacts

- This alternative is expected to have indirect positive economic impacts on scallop vessels by preventing a vessel owner from making a wrong decision (with possible negative economic consequences) about when to leave on an access area trip

Other Impacts

- Measures are administrative in nature and not expected to have any impact on EFH
- Positive social impacts by continuing to allow vessels to leave port at more flexible times

****Reminder****

Council must review and approve research priorities for FY2008 and FY2009



Framework 19 – Final Council Meeting

October 25, 2007
Wakefield, MA

- Review and approve FW19 for submission
- Review and approve research priorities for FY2008-09

Purpose and Need

3 PRIMARY COMPONENTS

- **Decisions 1 – 7**

Set specifications for FY2008-2009

(DAS and access area allocations)

- **Decisions 8 - 12**

Measures related to Amendment 11

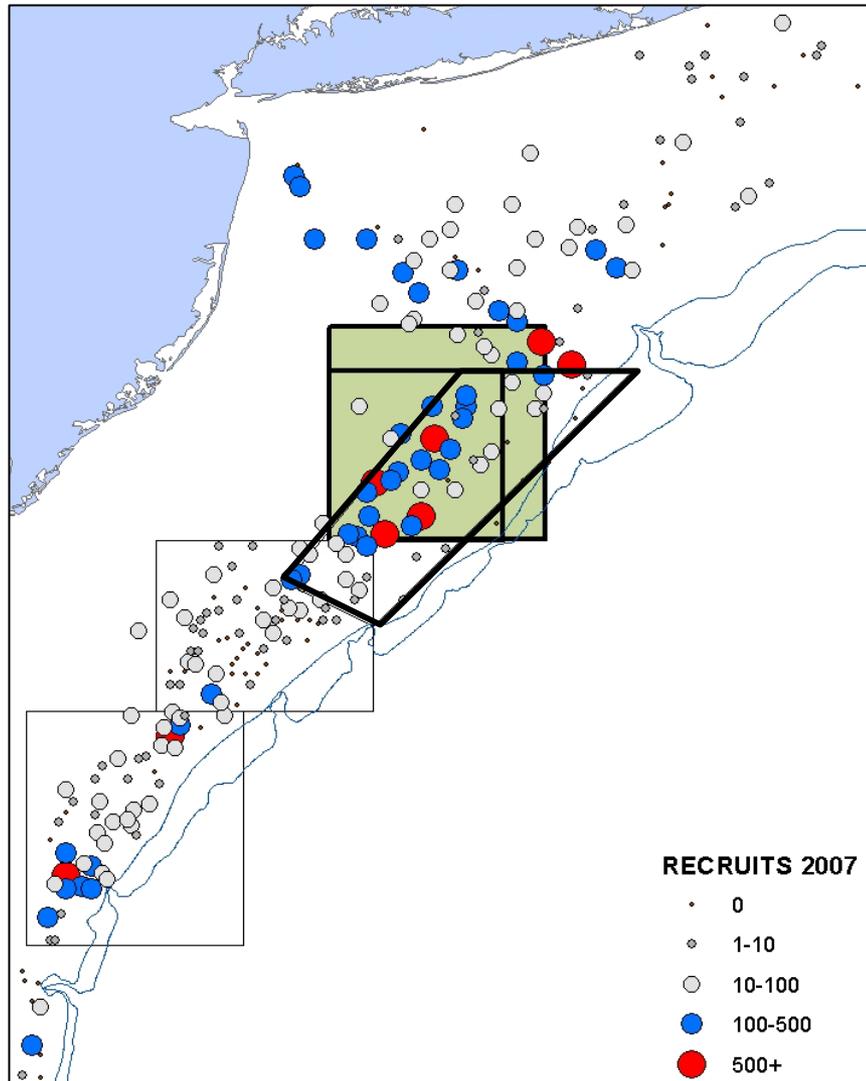
(hard-TAC for transition, cost recovery program, NGOM hard-TAC, incidental catch mortality)

- **Decisions 13-16**

Other Issues

(adjustments to the industry funded observer program, 30-day VMS power down provision)

Decision 1: New Area Closures in HC and SCh

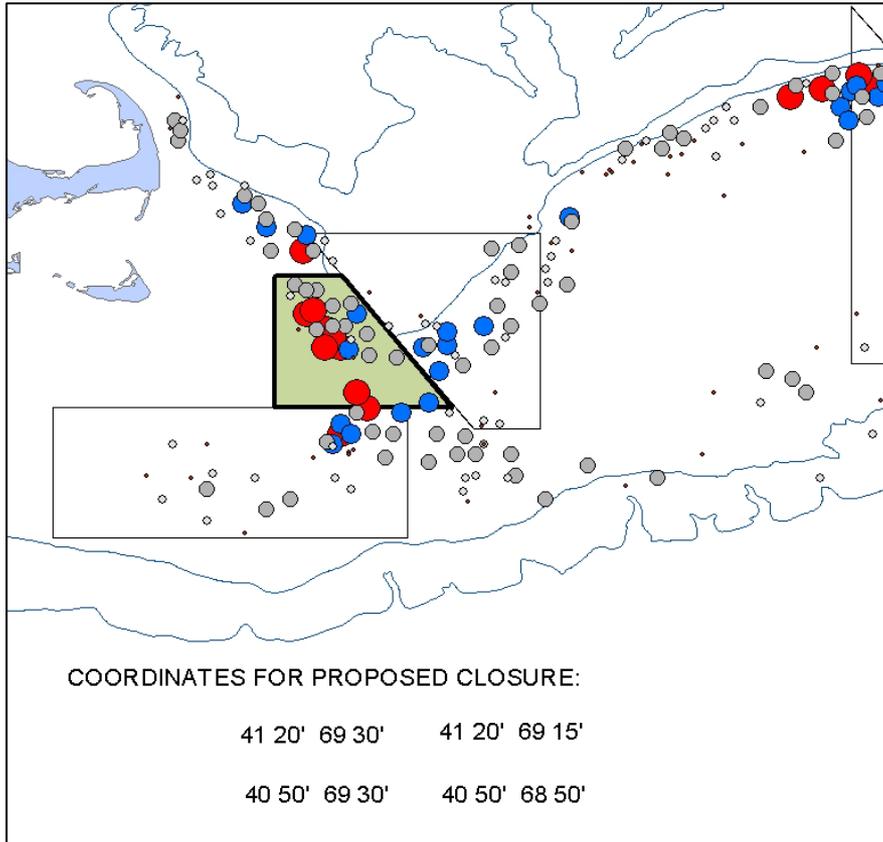


HUDSON CANYON AREA—
No Action
HC Small
HC Larger
Existing boundary

AP and Cmte Prefer
Existing boundary

Section 2.9.1 (p. 54, Figure 3)

Decision 1: New Area Closures in HC and SCh cont...

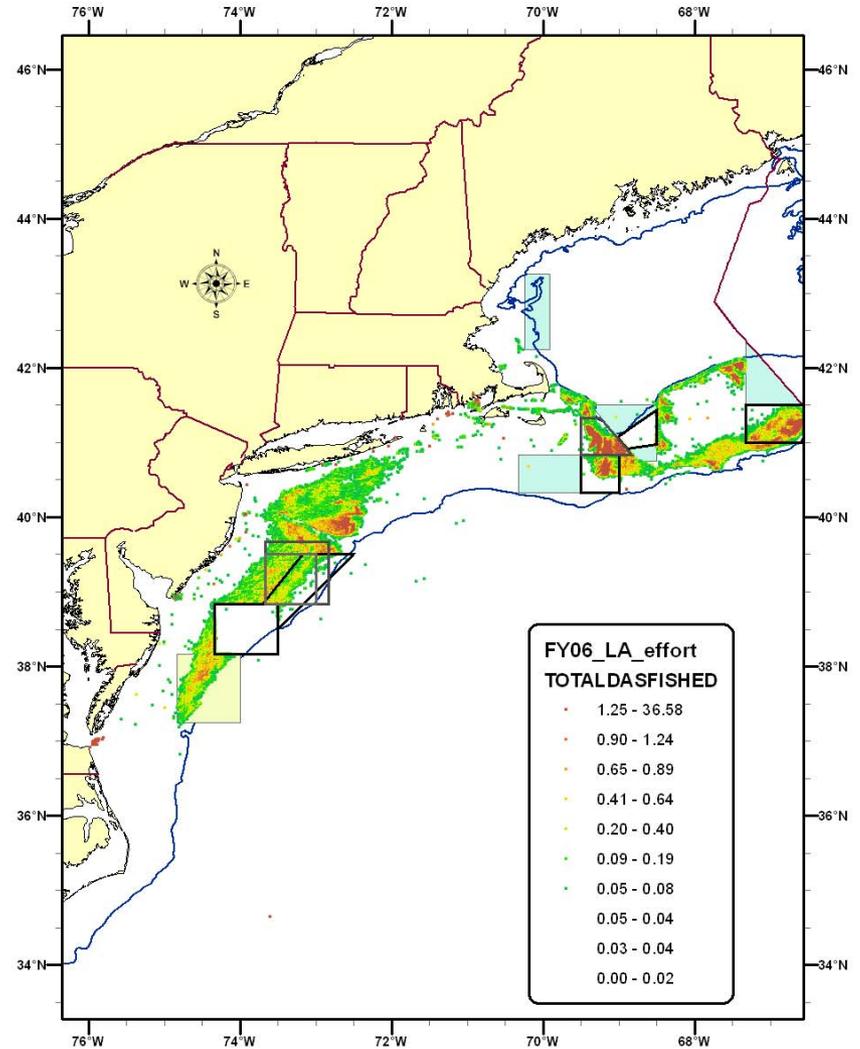
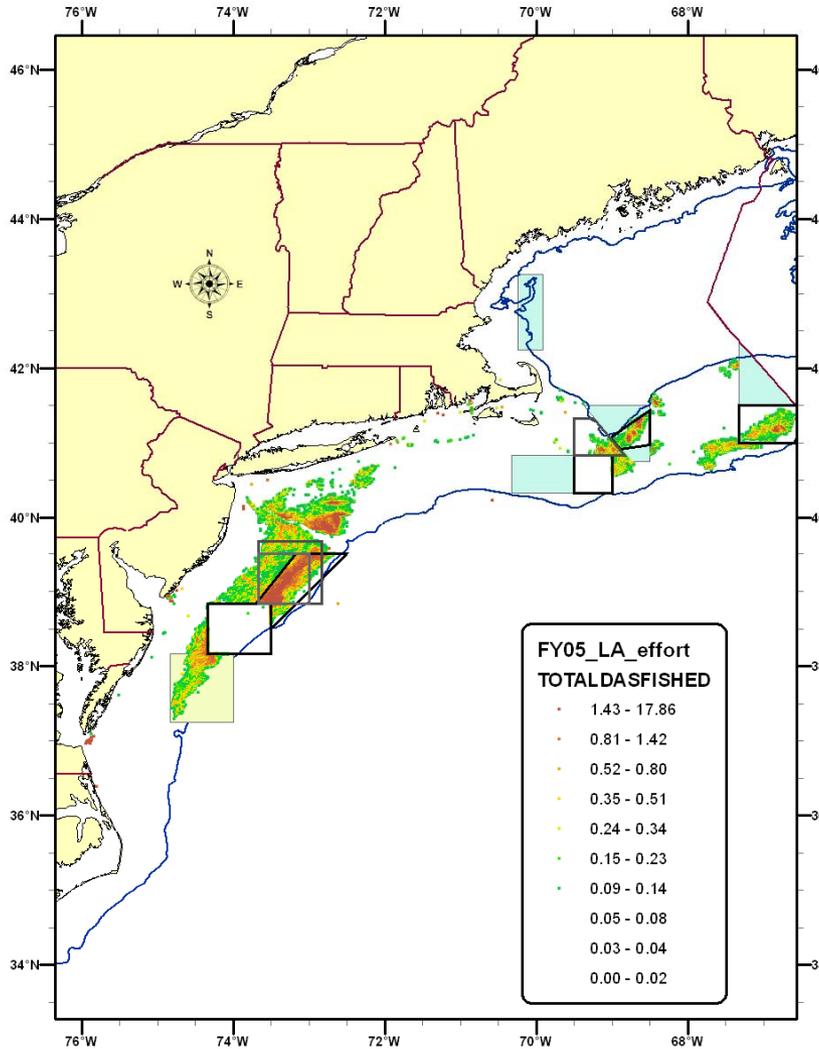


GS CHANNEL—
No Action
New Boundary

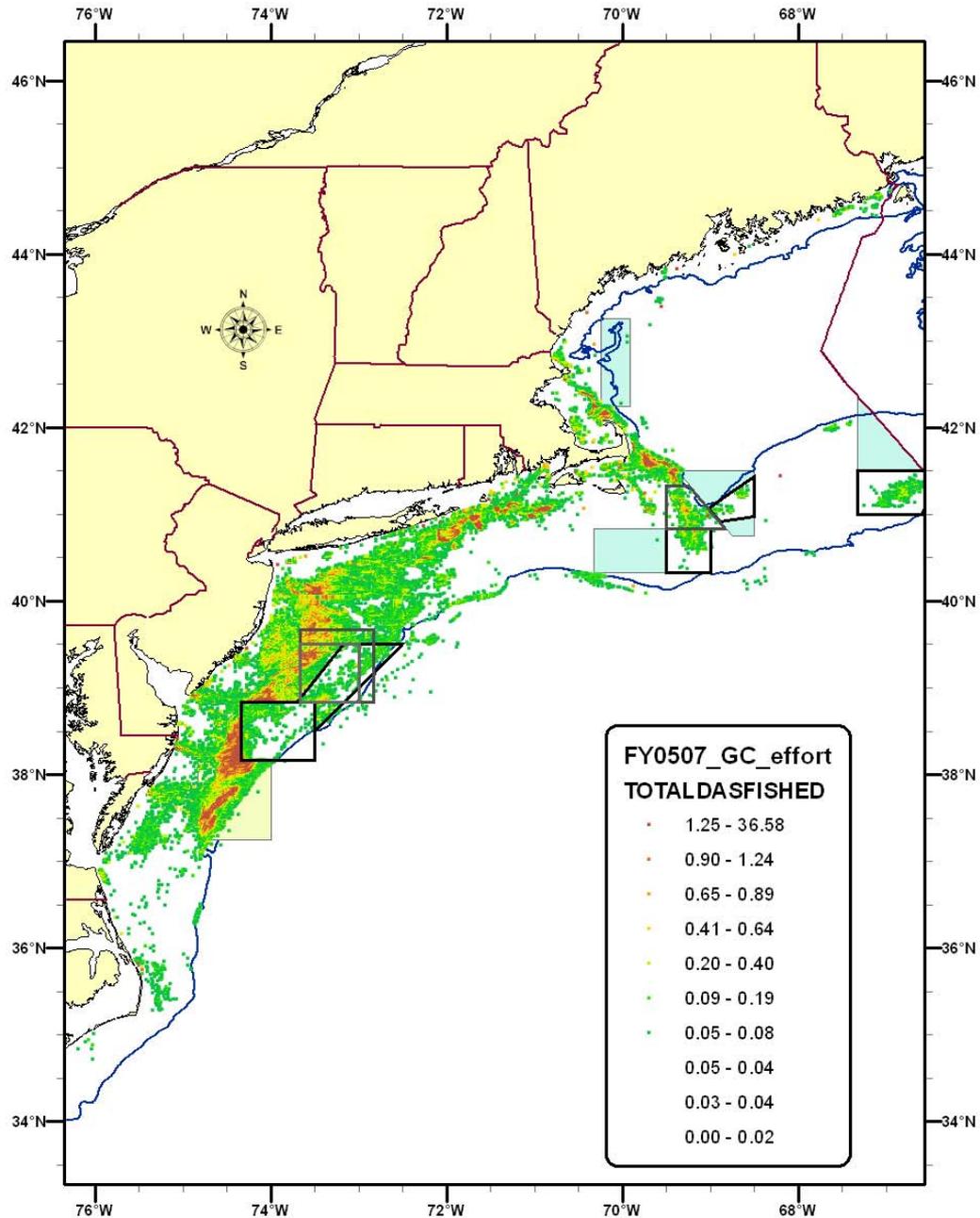
AP and Cmte Prefer
No Action

Section 2.9.2 (page 58, Figure 5)

LA Effort in 2005 and 2006



GC Effort FY05-07



Decision 2: Overall Scenario

At the September Council meeting the Council clarified that while the reference point for overfishing threshold changed to 0.29 based on results from recent assessment, the Council wanted to maintain the target of $F=0.20$.

The overfishing threshold of 0.29 is based on an assumption that fishing mortality is spatially uniform. In the scallop fishery, this assumption is not even close to being met due in part to closed areas. In the case of highly non-uniform fishing effort, the fishing mortality that maximizes yield per recruit will be less than the spatially uniform target (0.29). For this reason, the PDT recommends keeping the target at 0.20, thus preventing the possibility of severe localized overfishing that can occur at higher targets.

After that meeting seven scenarios were analyzed based on different combinations of area openings and closures. All scenarios were set to the target of $F=0.20$.

Decision 2: Overall Scenario (cont.)

At the Committee meeting on October 11, NMFS informed staff that the No Action alternative analyzed was not accurate based on how regulations are written if action is not taken.

Specifically, in open areas vessels would receive the same DAS as in 2007 (51, 20 and 4). Scallop access area allocations would roll over as well (3 trips for FT, and 856 trips for GC).

However, GB access areas are dependent on the schedule that is set in regulations already as well as areas currently open in 2007. So the PDT re-analyzed the No Action alternative eliminating a NL trip in 2008, and 2 GB trips in 2009.

This change reduced overall landings for the No Action alternative. Therefore, when scenarios under consideration in FW19 are compared to the “revised” No Action, overall impacts are more positive compared to the No Action alternative that allocated more access area trips on GB.

Decision 2: Overall Scenario

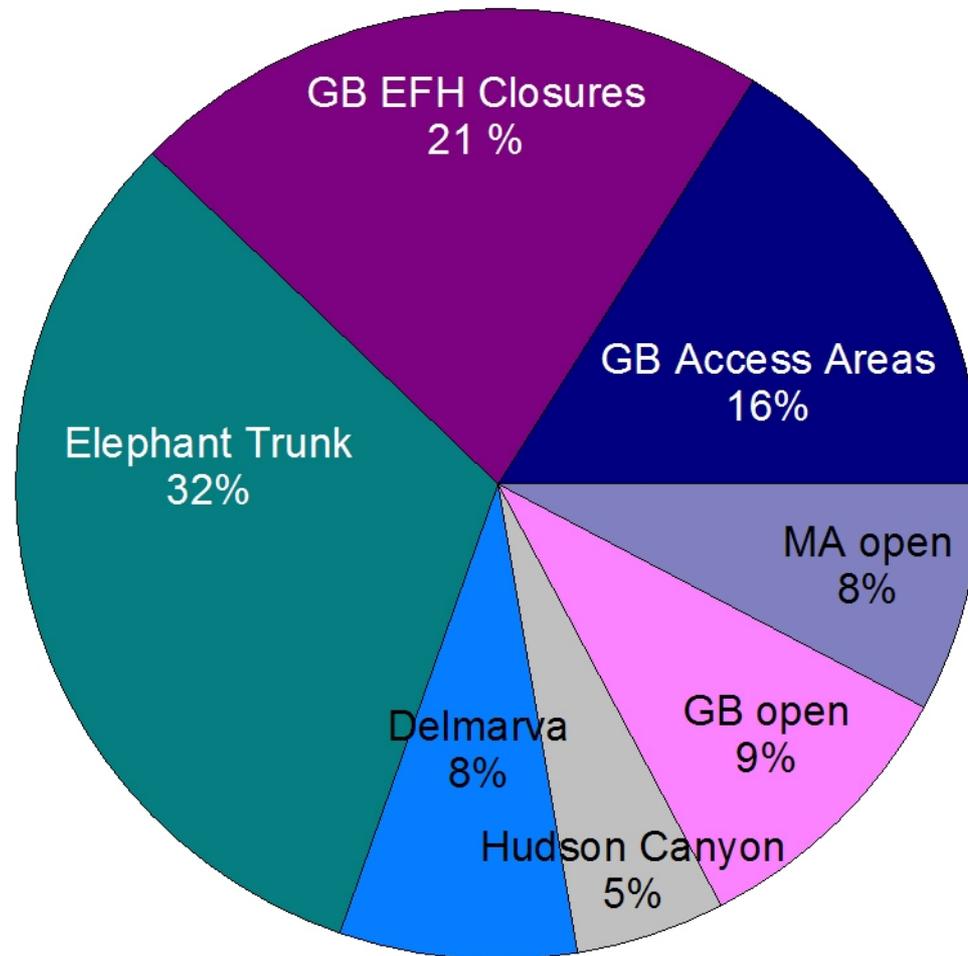
2008		CL1	CL2	NLS	ET	Dmv	HC	Sch	IndvDAS*
No Action		1 trip	0 trip	CI	3 trips	CI	Op	Op	51
Preferred		CI	CI	1 trip	4 trips	CI	CI	Op	35
Dmv 3		CI	CI	1 trip	4 trips	CI	Op	Op	32
Dmv 2		CI	CI	1 trip	4 trips	CI	Op	Op	32
HC-sm		CI	CI	1 trip	4 trips	CI	CI	Op	30
HC-lar		CI	CI	1 trip	4 trips	CI	CI	Op	29
Sch		CI	CI	1 trip	4 trips	CI	Op	CI	50
Sch+HC		CI	CI	1 trip	4 trips	CI	CI	CI	42
2009		CL1	CL2	NLS	ET	Dmv	HC	Sch	IndvDAS
No Action		CI	0 trip	0 trip	3 trips	CI	Op	Op	51
Preferred		CI	1 trip	CI	3 trips	1 trip	CI	Op	42
Dmv 3		CI	1 trip	CI	3 trips	CI	Op	Op	60
Dmv 2		CI	1 trip	CI	3 trips	1 trip	Op	Op	48
HC-sm		CI	1 trip	CI	3 trips	1 trip	CI	Op	47
HC-lar		CI	1 trip	CI	3 trips	1 trip	CI	Op	47
Sch		CI	1 trip	CI	3 trips	1 trip	Op	CI	69
Sch+HC		CI	1 trip	CI	3 trips	1 trip	CI	CI	54

PREFERRED ALTERNATIVE

- Compared to 2007, 16 less DAS in 08 (31% ↓)
9 less DAS in 09 (18% ↓)
- However, while No Action has 51 open area DAS, it has less access area trips so overall catch under No Action in 2008 is 43.3 million lb and revenue is \$336 million).

	2006	2007	2008	2009
DAS	52	51	35	42
AA trips	5	5	5	5
Landings	55.8	similar	44.4	45.9
% ch. 06			20% ↓	18% ↓
Revenue	361	similar	\$340-374	\$347-381
% ch. 06			5.8↓ - 3.6↑	3.8↓ - 5.5↑

Distribution of sea scallop biomass in 2007



Decision 3: Unused 2005 HC Trips

- Opened in 2001-2005
- Sub-optimal trips in 2005 – so FW18 allowed un-used trips to carry over through FY2006-2007
- Still un-used trips in that area

Section	Alternative	Description	Cmte. Rec.	AP Rec.
2.3.2.1	No Action	All un-used HC trips expire 2/29/08 and area reverts to open	Committee identified as preferred	Advisors identified as preferred – but very narrow margin
2.3.2.2	Extend duration of HC to 5/31/08	Un-used trips can be used until 5/31/08		

Decision 4: ETAA Seasonal Closure and Notice Action

Section	Alternative	Description	Committee Rec.	AP Rec.
2.3.3.2	Seasonal Closure (Sept1-Oct 31)	Closure to potentially reduce interactions with sea turtles in the ETA.	Move to “considered but rejected”	AP did not address – but no discussion to remove
2.3.3.3	Notice Action procedure to reduce trips	Allows a procedure to adjust FY2009 ETA allocations by Notice Action to account for uncertainty.	By consensus Cmte approved inclusion of new overall F trigger	AP did not address

Decision 5: Delmarva Seasonal Closure and Notice Action

Section	Alternative	Description	Committee Rec.	AP Rec.
2.3.4.2.2	Seasonal Closure (Aug1-Oct 31)	Closure to potentially reduce interactions with sea turtles in the Delmarva.	Move to “considered but rejected”	Support this alternative to reduce non-harvest mortality as well as reduce potential interactions with sea turtles
2.3.3.3	Notice Action procedure to reduce trips	Allows a procedure to adjust FY2009 Delmarva allocations by Notice Action to account for uncertainty.	No motion – but Cmte did not raise issue with this alternative	AP did not address

Decision 6: Crew Size Restriction

Section	Alternative	Description	Cmte. Rec.	AP Rec.
2.3.5.1.1	No Action	No limit on number of crew in access areas	Preferred	Preferred
2.3.5.1.2	Reduce maximum crew size	Max crew size restriction of either A) 8 or B) 9.		

Decision 7: Deckloading Prohibition

Section	Alternative	Description	Committee Rec.	AP Rec.
2.3.5.2.1	No Action	No restriction on amount of in-shell scallop onboard when leaving an access area, except in the ETA.		
2.3.5.2.2	Vessels may not leave an access area with more than 50 bu of in-shell scallops	A) No exceptions, all vessels are restricted to 50 bu limit under all circumstances; B) Vessel may leave an access area with more than 50 bu in-shell scallops if they are a general category vessel with an observer or the vessel has to break a trip due to a safety concern.	Preferred – Option A	

Decision 8: Quarterly Hard TAC for General Category Vessels

Alternative	Description	Committee Rec.	AP Rec.
No Action	10% of total projected scallop catch allocated to general category fishery and divided into quarters based on historical trends.		
A	Quarters 1-4 would have TACs of 35%, 40%, 15%, and 10%, respectively.	Preferred	
B	Quarters 1-4 would have TACs of 40%, 45%, 10%, and 5%, respectively.		

Decision 8b: General Category Access Area Allocations – During Transition

Section	Alternative	Description	Committee Rec.	AP Rec.
2.4.1.1.1	Transition period allocation for general category fishery	General category allocation in each access area of A) 2% or B) 5%.	Supported 2% for transition period	Support 5% in access areas (except CA2). However some LA advisors did not support 5% if that translated into a reduction in trips in the ET area for the limited access fishery.

Decision 9: General Category Access Area Allocations – Post Transition

Alternative	Description	Committee Rec.	AP Rec.
Allocation of 5% of all areas for post-transition period	Fleetwide allocation of trips equal to 5% of each area open in FY2008 and 2009.		
Allocation of 5% for all access area, but 0% for CAII	Fleetwide allocation of trips equal to 5% of each area open in FY2008 and 2009, except a zero allocation for CAII.	Preferred	Preferred
Allocation of 5% for all access areas, but only a small % for CAII	Fleetwide allocation of trips equal to 5% of each area open in FY2008 and 2009, but a small allocation for CAII to account for scallop landings on multispecies vessels participating in SAP programs.		

Decision 10: Cost Recovery Program

Alternative	Description	Committee Rec.	AP Rec.
Cost recovery program for IFQ programs	Covers costs associated with IFQ program and is mandatory under MSFCMA. Determination options: 1) value reported by dealer when scallops are sold or 2) determined as average of ex-vessel values of all general category scallops landed March1-Nov30. Payment options: 1) dealer pays or 2) vessel owner pays.	Alternative 2 – IFQ holder pays and fee is based on average ex-vessel value	Alt. 2 – IFQ holder pays. AP did not discuss different options for determining fee
No Action	No fees collected; however, this option is not consistent with MSFCMA.		

Decision 11: Northern GOM Hard TAC

See Document #8 for more information

Alternative	Description	Committee Rec.	AP Rec.
Northern Gulf of Maine hard TAC	Options A) Hard TAC of 64,000 lbs for both FY 2008 and 2009, or B) Another TAC that incorporates landings from within state waters as well.	Suggested review of option B	

Decision 12: Incidental Catch Mortality

Section	Alternative	Description	Committee Rec.	AP Rec.
2.5	Identification of 50,000 pounds to be removed for incidental catch mortality	50,000 pounds will be removed from total projected catch before allocations are made.	No motion – but Cmte did not raise concern	AP did not have time to address this topic

Decision 13: Overfishing Definition

Section	Alternative	Description	Comm. Rec.	AP Rec.
2.6.1	No Action	Overfishing definition stays the same, as do the units for the biomass reference points (kg/tow)		
2.6.2	Biomass Reference Point	The biomass reference point units would be changed from kg/tow to mt and reference points would change based on CASA model	No motion – but Cmte did not raise concern	AP did not have time to address this topic
2.6.3	Overfishing Target	Maintaining $F=0.2$ as target fishing mortality rate	Cmte discussed a higher F target but no motion was made related to this topic	AP did not have time to address this topic

Decision 14: Observer Set-Aside Program Improvements

Section	Alternative	Description	Committee Rec.	AP Rec.
2.8.1	Higher Compensation rate for fishing in open areas compared to access areas	This would increase the pounds and DAS compensated to vessels with an observer in open area trips and decrease compensation for access trips.	The Cmte did not have time to address this topic	The AP did not have time to address this topic
2.8.2	Small adjustments to improve overall administration	Potential adjustments that would improve administration of the observer set-aside program. Details in FW19 pgs. 51-53.	The Cmte approved what is in FW19 – some issues need more clarity	The AP did not have time to address this topic

Decision 15: 30-Day VMS Power Down

Section	Alternative	Description	Committee Rec.	AP Rec.
2.10.1	30-Day VMS power down	Allows a vessel to power down their VMS unit for a minimum of 30 days, similar to multispecies permits, as long as the vessel does not engage in any fisheries.		

Decision 16: Clarification on When a Vessel Can Leave for Access Trip

Section	Alternative	Description	Committee Rec.	AP Rec.
2.10.2	Clarification about when a vessel can leave for an access area trip (no action)	Remedies confusion about when a vessel can leave port on an access area trip. Vessel can leave for an access area trip before the area opens.	Agrees to No Action	

****Reminder****

**Council must review and approve
research priorities for FY2008 and
FY2009**