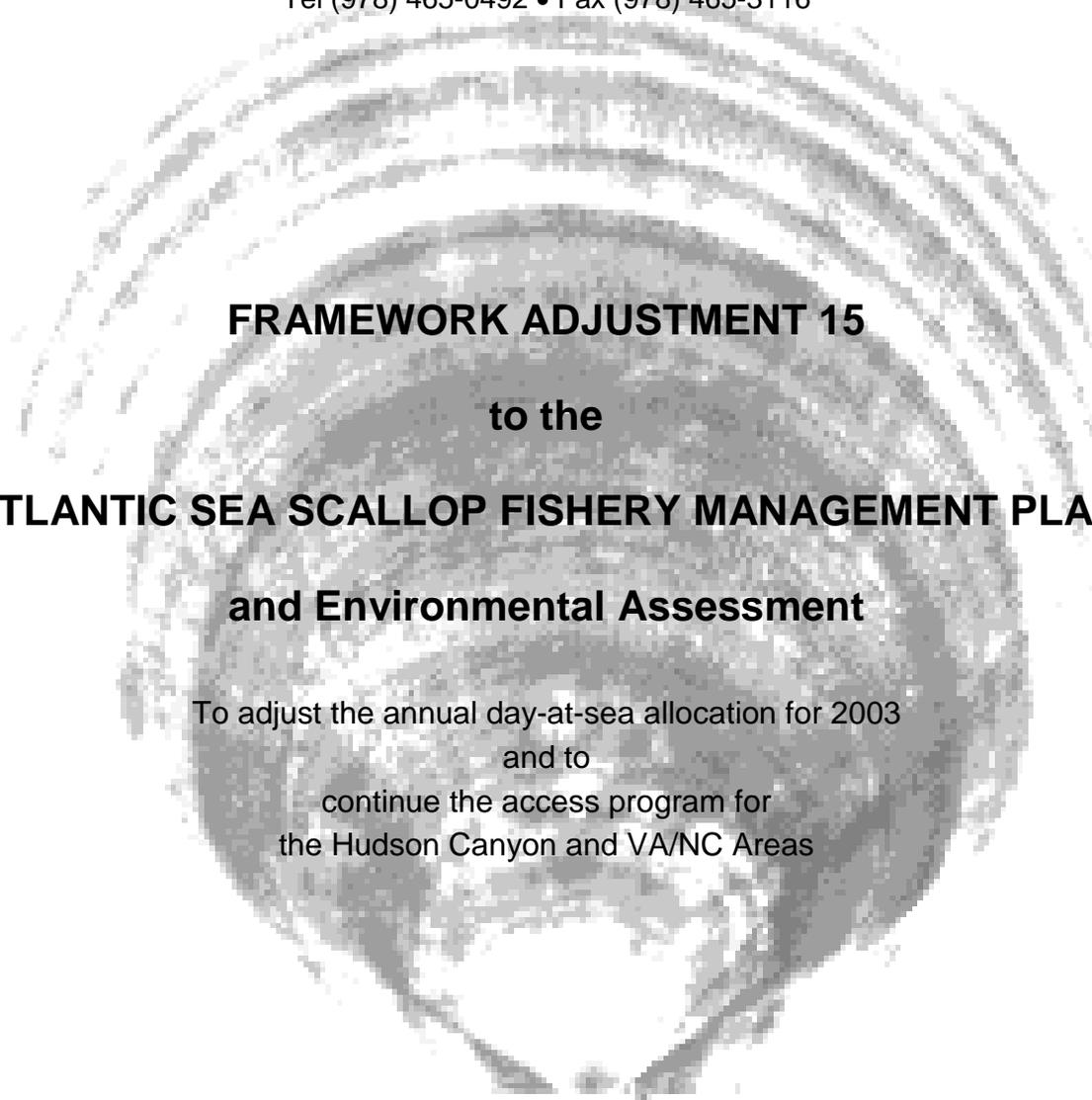


# **New England Fishery Management Council**

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## **FRAMEWORK ADJUSTMENT 15**

**to the**

## **ATLANTIC SEA SCALLOP FISHERY MANAGEMENT PLAN**

### **and Environmental Assessment**

To adjust the annual day-at-sea allocation for 2003  
and to  
continue the access program for  
the Hudson Canyon and VA/NC Areas

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

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## 2.0 Executive Summary

The proposed action for Framework Adjustment 15 includes an adjustment to the annual day-at-sea allocation for limited access scallop vessels and allocates up to three trips per vessel in a controlled access program for the Hudson Canyon and VA/NC Areas during the 2003 fishing years. In general, these adjustments are necessary to account for changes in the status of the scallop resource and largely continue the status quo management established by Framework Adjustment 14 during the 2000 and 2001 fishing years.

The document that follows describes the proposed actions, non-preferred alternatives, and considered but rejected alternatives that the Council considered during the development of Framework Adjustment 14. Included are a description of the affected environment and the biological, economic, social, and cumulative impacts of the proposed action.

## 3.0 INTRODUCTION AND BACKGROUND

Framework Adjustment 15 proposes an annual adjustment to management measures that includes changing the day-at-sea allocation schedule for 2003 to achieve Amendment 7 objectives and to achieve optimum yield. It also proposes to continue the controlled access program which wisely manages the scallop resource that has increased in abundance and size within the Hudson Canyon and VA/NC Areas, while using the opportunity to reduce fishing mortality elsewhere through a day-at-sea tradeoff, similar to the successful program in Framework Adjustments 11 and 13. The day-at-sea adjustment and area access program would be changed for the 2003 fishing year only, allowing time for the Council to carefully consider a broad range of management changes in Amendment 10.

This document describes the proposed management alternatives (Section 5.0) and analyzes their probable effects (Section 6.3.4), for the following two actions:

- An adjustment to the annual day-at-sea allocations for full-time, part-time, and occasional limited access scallop vessels (Section 5.1.1)
- A controlled access program to manage the fishery in the Hudson Canyon and VA/NC Areas, which would otherwise re-open under the general scallop management rules on March 1, 2003 (Section 5.1.2).

Since 1982, the Atlantic Sea Scallop FMP has regulated the fishery for scallops (Placopecten magellanicus) throughout the range on the Atlantic coast of the U.S. Initially the major regulations required scallop vessels to land scallops that averaged less than 35 to 40 count (meats per pound) or if landed in-shell, have a minimum shell height of 3 to 3½ -inches. Fishing effort increased to unsustainable levels in the late 1980s and 1990s, prompting the Council to develop Amendment 4 that became effective in 1994.

Amendment 4 radically changed the management of the sea scallop fishery and resource to achieve a maximum fishing mortality threshold equal to  $F_{5\%}$ . This reference point was calculated to protect recruitment by attempting to keep spawning stock biomass above five-percent of virgin conditions, a level thought to be sufficient to prevent a recruitment-caused stock collapse for a fecund species like sea scallops. Implemented with this management change were limited access permits, annual day-at-sea allocations, dredge ring-size minimums, restrictions on gear configuration to improve

escapement of small scallops, a minimum twine top mesh to improve finfish escapement, and a nine-man maximum crew limit. All were intended to reduce fishing mortality and/or reduce the capture and landing of small sea scallops. Both effects would allow biomass to increase and over the long term improve total yield to the fishery.

Initially the day-at-sea allocations began at 204 for full-time limited access vessels, 91 for part-time limited access vessels, and 18 for occasional limited access vessels. These annual allocations were reduced by Amendments 4 and 7, according to the schedule in the table below. Framework Adjustments 14 kept the day-at-sea allocations constant in 2001 and 2002 because the anticipated day-at-sea reductions in Amendment 7 were not needed to achieve the FMP's annual fishing mortality targets.

**Table 1.** Annual day-at-sea allocations and reported day-at-sea use by limited access scallop vessels.

Fishing year	1992	1993	1994 <sup>1</sup>	1995	1996	1997	1998	1999	2000	2001	2002 <sup>2</sup>	2003
Full-time			204	182	182	164	142	120	120	120	120	120
Part-time			91	82	82	66	57	48	48	48	48	48
Occasional			18	16	16	14	12	10	10	10	10	10
Day-at-sea use	44,934	40,490	36,747	33,490	34,404	30,832	27,208	22,925 <sup>3</sup>	25,045 <sup>4</sup>	27,639 <sup>5</sup>	27,639	28,034 <sup>6</sup>

<sup>1</sup> Initial day-at-sea allocation under Amendment 4

<sup>2</sup> Proposed day-at-sea allocations and estimated day-at-sea use for the 2002 fishing year, assuming that there will be an automatic 10 day-at-sea charge for trips in the Hudson Canyon and VA/NC Areas with an 18,000 pound scallop possession limit. With a 17,000 pound scallop possession limit, the expected day-at-sea use would increase by about 800-1,000 days.

<sup>3</sup> Accumulated days in 1999, including charges from the day-at-sea tradeoff for trips taken in the groundfish closed areas totaled 24,981 days.

<sup>4</sup> Accumulated days in 2000, including charges from the day-at-sea tradeoff for trips taken in the groundfish closed areas totaled 27,567 days.

<sup>5</sup> Accumulated days in 2001, including charges from the day-at-sea tradeoff for trips taken in the Hudson Canyon and VA/NC Areas totaled 28,602 days.

<sup>6</sup> Accumulated days in 2003 estimated based on the ratio to used days during 2001.

In 1994, Amendment 4 also prohibited the use of chafing gear, cookies, and triple links between rings. Vessels were required to use twine top mesh no less than 5½ inches to improve the escapement of finfish. Framework Adjustment 11 increased this regulation to an 8-inch minimum mesh to reduce finfish bycatch more and help to mitigate the potential increases of finfish bycatch in Closed Area II, re-opened to scallop fishing in 1999. This measure was successful and did not significantly affect the catches of larger scallops then becoming more abundant, so the Council has kept the 8-inch twine top mesh regulation in place. In the re-opened closed areas, where scallops were even larger and the finfish were thought to be more abundant, Framework Adjustment 11 and 13 required scallop vessels to use a 10-inch twine top mesh. It was thought that the vessels would not see a significant loss of these large scallops with the larger twine top mesh.

The crew limit was initially nine men to prevent vessels from targeting small scallops when and where they were abundant, by using more men to shuck the smaller scallops. It takes more time to shuck and equal weight of small scallops compared to larger scallops, so the crew limit helped replace the effectiveness of the meat count regulation that Amendment 7 discontinued. Framework Adjustment 1 reduced the crew limit to seven men in response to higher abundances of small scallops in the Mid-Atlantic in 1994.

Amendment 5 to the Northeast Multispecies FMP in 1994 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. Except for the limited access program in Framework Adjustment 11 and 13 during 1999 and 2000, these areas remain closed to scallop fishing. Amendment 7 to the Sea Scallop FMP continued the closure of the Hudson Canyon and VA/NC Areas, initially closed by Emergency Action in 1998. The Council closed these areas in response to above average recruitment and high abundance of small scallops. A sunset date for the closures was March 1, 2001 and would have allowed these areas to re-open without additional restrictions, if not for a Council-requested Interim Action to postpone the sunset date, until this framework adjustment becomes effective.

Framework Adjustment 14 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 retain and land 100 pounds of scallop meats if they had fished in the Hudson Canyon and VA/NC Areas. Because the rapidly rebuilding scallop resource in the open areas was causing catches to rise, it was necessary to increase the scallop possession limit to attract effort in the area access program for the automatic 10 day-at-sea charge. Economic analysis indicated that raising the scallop possession limit to 17,000 and 18,000 pounds per trip could have insufficient economic incentives to fish in the Hudson Canyon and VA/NC Areas. During 2001, this appears to have been the case, since only 55 percent of the TAC was taken by limited access scallop vessels, even though up to six trips had been authorized for authorized vessels<sup>7</sup>. Early indications are that fishing effort is likewise below expectations in the Hudson Canyon and VA/NC Areas during the 2002 fishing year, even though Framework Adjustment 14 increased the scallop possession limit to 18,000 pounds per trip.

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<sup>7</sup> All vessels with a limited access scallop permit, even if the permit were converted from a Confirmation of Permit History during the year, were initially authorized to take three trips in the Hudson Canyon and VA/NC Areas. On October 1, 2001, the Regional Administrator authorized an additional three trips for vessels that fished in the area access program before September 1, 2001.

Although the Amendment 7 management objectives remained unchanged in the subsequent framework adjustments, concern was expressed about the cumulative effects of the proposed management actions in Frameworks 11 to 14 and consideration of new area closures would have significant effects. The actions proposed in Framework Adjustment 14 were also intended for a two-year period and included a permanent measure that would prohibit vessels from landing large amounts of shell stock and/or shucking sea scallops while off the day-at-sea clock. The Council therefore developed and took comment on a Supplemental Environmental Impact Statement (SEIS), which analyzed the cumulative effects of scallop management since Amendment 7 and the projected effects of the measures proposed in Framework Adjustment 14.

In summary, the sea scallop fishery is governed primarily by day-at-sea allocations, crew limits, gear restrictions, and ad hoc area closures to achieve annual fishing mortality targets and achieve maximum sustainable yield (MSY). These efforts have been very successful, reducing fishing mortality and allowing biomass to recover nearly to the long-term targets well ahead of schedule. During the last seven years, the amount of fishing effort has declined from 45,000 days in 1992-1993 to 23,000 days in 2000-2001. At the same time, the number of limited access permits has declined from around 450 in 1994 to 340 in 2000. Only 276 of the 340 limited access permits used allocated days-at-sea in the 2000 fishing year. At the same time, age 2 and 3 scallops have become less vulnerable to the fishery because of gear restrictions, crew limits, and the Hudson Canyon and VA/NC Area closures. Overall fishing mortality on the Georges Bank stock has declined from 1.51 in 1991 to 0.15 in 1999 (NMFS 2001a), while biomass has increased from 1.30 kg/tow in the 1991 survey to 9.08 kg/tow in the 2000 survey (Table 2). For the Mid-Atlantic stock, fishing mortality has declined from 1.31 in 1991 to 0.43 in 1999 (NMFS 2001a), while biomass also increased from 0.99 kg/tow in the 1991 survey to 3.78 kg/tow in the 2000 survey (Table 3).

**Table 2.** Trends in landings, biomass, and fishing mortality for the Georges Bank scallop stock (NMFS 2001a and NMFS 2001b).

Calendar year	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001 <sup>8</sup>	2002
Landings (mt)	9,311	8,238	3,655	1,137	982	2,045	2,326	2,016	5,155	8,572 <sup>9</sup>	4,514	
Biomass (kg/tow)	1.30	1.65	0.53	0.46	0.80	1.51	1.50	3.72	3.53	3.67	8.92	~8.6 <sup>10</sup>
Fishing mortality	1.51	1.11	1.28	0.34	0.23	0.19	0.16	0.05	0.14	0.18	0.07	

<sup>8</sup> Fishing year 2001, ending February 28, based on preliminary statistics compiled by the NMFS NE Regional Office Fisheries Statistics Division and published at <http://www.nero.nmfs.gov/ro/fso/mul.htm>.

<sup>9</sup> Preliminary estimate.

<sup>10</sup> Preliminary estimate based on unaudited preliminary results from the 2002 scallop survey.

**Table 3.** Trends in landings, biomass, and fishing mortality for the Mid-Atlantic scallop stock (NMFS 2001a and NMFS 2001b).

Calendar year	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001 <sup>11</sup>	2002
Landings (mt)	7,011	4,955	2,778	5,872	6,318	4,999	2,910	2,948	4,653	6,579 <sup>12</sup>	15,533	
Biomass (kg/tow)	0.99	0.56	0.76	1.03	1.51	0.78	0.53	1.04	2.42	3.57	4.28	~4.3 <sup>13</sup>
Fishing mortality	1.31	1.54	1.12	1.20	0.95	1.12	0.92	0.69	0.43	0.33	0.37	

More information about the fishery, the fishing industry, scallop biology, economics, social factors, and other measures are described in the 2000 Scallop SAFE Report (NEFMC 2000a), the SAW Report (NMFS 2001a), and in the SARC Summary of Consensus (NMFS 2001b).

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### **3.1 Rationale for the Council's proposed action**

Although the combination of a 100 day-at-sea allocation (Section 5.2.1.2) and a Hudson Canyon and VA/NC Area TAC based on a rotational management fishing mortality target (Section 5.1.2.2.1) appeared to have considerable environmental benefits (reduced bottom contact without reducing short-term revenue or benefits, relative to status quo), the Council selected the preferred alternative due to the following considerations:

#### **The limited duration of the Framework 15 proposed action has a minimal effect on the long-term prognosis of the scallop resource.**

Although the effects on the scallop resource are greater if the proposed action were to continue beyond the 2003 fishing year, the short-term effects on the rebuilt scallop resource are negligible. In the Mid-Atlantic region, biomass is expected to decline by one to two percent more for the proposed action vs. non-preferred alternatives that allocate 100 full-time days (Table 5). For Georges Bank, the biomass would decline by six percent more in the open fishing areas for the proposed action compared to non-preferred alternatives allocating 100 days.

Overall, total exploitable biomass is projected to increase between six to seven percent for a 120 full time day-at-sea allocation vs. seven to eight percent for a 100 full time day-at-sea allocation (Table 5), due to the expected increase in scallop biomass within the groundfish closed areas on Georges Bank. Overall the Council believed that these projected biomass differences were negligible in the short term while Amendment 10 is under development.

#### **Uncertainty about the relationship between bottom contact time and reductions in habitat and bycatch impacts.**

The amount of habitat and bycatch impact depends not only on the total fleet activity, but also on the distribution of fishing activity relative to the distribution of vulnerable habitats and bycatch. While

<sup>11</sup> See footnote 8.

<sup>12</sup> Preliminary estimate.

<sup>13</sup> Preliminary estimate based on unaudited preliminary results from the 2002 scallop survey.

the directionality (i.e. less fishing usually means fewer impacts) and distribution of habitat or bycatch is known at a broad scale, the response of the fleet to changes in resource distribution and different day-at-sea allocations is not as well known.

Fleet effort distribution response to varying biomass distributions has been analyzed within the context of rotational management area analysis and a fleet dynamics model has been used in the Framework Adjustment 15 analysis. This model predicts, based on past effort patterns and biomass distributions, that with equal catch per effort, the scallop fleet will tend to favor Mid-Atlantic scallop beds. This bias toward fishing in the Mid-Atlantic arises because it is less expensive to fish there and because it is located centrally between the major ports of New Bedford, MA; Point Pleasant and Cape May, NJ; and Hampton/Seaford, VA. At times, however, the biomass in the South Channel or on Georges Bank is sufficiently high (compared to the Mid-Atlantic) that vessels from New Bedford<sup>14</sup> favor fishing there, even though some costs (heavier gear and a higher risk of gear damage or loss) are greater.

Overall, the projections indicate that a substantial majority of scallop fishing effort in 2003 would occur in the Mid-Atlantic, rather than on the open parts of Georges Bank and the Great South Channel. Reducing day-at-sea allocations, however, would increase the penalty for fishing in more remote locations, such as in the Mid-Atlantic for New Bedford vessels. Thus with a lower day-at-sea allocation, some vessels might elect to fish closer to their primary port and some fishing effort from New England vessels might shift to areas around Georges Bank, where sensitive habitat and groundfish bycatch are more common. Shifting to scallop areas closer to the primary port could also increase the ratio between fishing time and trip length, thereby increasing the total bottom contact time over the amount predicted by the projections (Section 6.3.4.1.1). If reductions in day-at-sea allocations were to induce this type of behavioral shift, the reduction in habitat and bycatch impacts might not be as great as the model predicts based on the estimates of total bottom contact.

### **Uncertainty in estimated profitability of each scallop vessel**

Although the predicted landings and revenue for 2003 is expected to be equal or greater than the record 2001 year, the impacts of a lower day-at-sea allocation would vary among vessels. For 167 of the 280 limited access scallop vessels that fish for more than 100 days-at-sea (or an equivalent amount for other permit categories), the lower day-at-sea allocation would cause a considerable reduction in revenue, compared to the status quo, and would have to be made up by the higher daily catches and reduced fishing costs when fishing in the Hudson Canyon and VA/NC Area access program. For vessels fishing from Mid-Atlantic ports, this might be a reasonable tradeoff and they might be able to make up for and profit from the extra trips into the Hudson Canyon Area for fewer days. Other New England vessels could have significant negative effects on revenue and profits, especially those that usually fish in the Gulf of Maine and Georges Bank, and may not be able to participate in the Hudson Canyon and VA/NC Area access program without incurring substantial cost. These vessels and others that are currently near their break-even with a 120 day-at-sea allocation may not be able to operate profitably with a lower day-at-sea allocation.

### **A significant fraction of the lower bottom contact time, predicted by the model, could be achieved by raising the TAC and encouraging day-at-sea use in the Hudson Canyon Area**

The 27 percent reduction in predicted bottom contact time was for an alternative that combined the 100 day-at-sea allocation (Section 5.2.1.2) with a TAC based on a rotational management fishing mortality target (Section 5.1.2.2.1). Catches, revenue, and net benefits that nearly match (in the short-

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<sup>14</sup> New Bedford is located closer to the South Channel scallop area, but it is nearly equidistant between eastern Georges Bank scallop areas and scallop areas in the NY Bight region of the Mid-Atlantic.

term) or exceed (in the long term) the estimated results for the status quo, in large part because of the expected catches from the Hudson Canyon Area. On the other hand, the reduction in bottom contact time came from both the reduced day-at-sea use and from the area access program. This reduction arises because the estimated catch rates in the Hudson Canyon Area exceed the shucking capacity by a substantial amount. As a result of the regulations that require no more than seven crew members and requires at-sea shucking, vessels must stop fishing to allow the crew to process the accumulated catch. There is also a reduction in total fishing effort caused by the day-at-sea tradeoff, which is expected to reduce a vessels annual day-at-sea allocation an average of 1.5 days for each trip taken in the Hudson Canyon Area. The predicted outcome is dependent on full participation in the area access program, i.e. all allocated trips are taken.

Compared to the status quo, the proposed area access program and the TAC based on a rotational management fishing mortality target ( $F=0.32$ ) is expected to reduce bottom contact time by 11 percent, through the mechanisms described above and in Section 6.3.4.1.1. Although participation in the 2001 area access program was less than anticipated, most of the expected fishing effort in the Hudson Canyon and VA/NC Areas would come from trips that would have otherwise fished in the open parts of the Mid-Atlantic. This would have a direct benefit to the scallop resource, bringing down the high fishing mortality where scallops are small, without the uncertainties associated with a reduction in day-at-sea allocations.

**Council policy has not yet reduced optimum yield or effort allocations in a fishery to reduce habitat and/or bycatch impacts. Instead more direct methods, such as area closures and/or gear restrictions, have been used to address these issues without reducing optimal fishery allocations for target species.**

Even though restrictions on effort or catch can have a positive effect on minimizing habitat and bycatch impacts, the Council's policy has been to set allocations based on the effects on current and future catches of target species. Other and potentially less costly regulations have customarily been considered for minimizing the effects on habitat and bycatch.

## 4.0 MANAGEMENT ALTERNATIVES AND QUALITATIVE IMPACTS

### 4.1 *Proposed Action*

#### 4.1.1 Annual Day-at-sea Allocations for Limited access Scallop Vessels

The framework adjustment would set the annual day-at-sea allocations for limited access scallop vessels in the 2003 fishing year. If the Council can complete Amendment 10, it could go into effect during the 2003 fishing year, replacing the management measures and allocations described below. Implementation of Amendment 10 by the beginning of the 2004 fishing year is more likely, however.

##### 4.1.1.1 120 Full-time, 48 Part-time, and 10 Occasional Day-at-Sea Allocations during the 2003 Fishing Years (Status quo)

The framework adjustment proposes to adjust the day-at-sea allocations in the 2003 fishing year to be consistent with Amendment 7 fishing mortality targets. If this alternative is approved and implemented, full-time scallop vessels would receive 120 days-at-sea to fish for scallops during March 1, 2003 to February 28, 2004. Part-time vessels would receive 48 days-at-sea and occasional vessels would receive 10 days-at-sea. Up to 10 unused days-at-sea from 2002 may be carried over by some limited access vessels into the 2003 fishing year.

**Rationale:** Allocating days-at-sea at the 2002 level to vessels with limited access scallop permits would generate about 28,034 days of fishing effort, as measured by the vessel monitoring or call-in systems. With the three areas closed to scallop fishing on Georges Bank and the area access program for the Hudson Canyon and VA/NC Areas (for example, with a 21,000 pound – 10 day-at-sea tradeoff) this alternative is estimated to have a nearly 100-percent probability of achieving the Amendment 7 mortality schedule. The updated projections (Section 6.3.4.1.1) indicates that the present biomass levels will not be jeopardized over the short-term by this day-at-sea adjustment. In fact, several years of above average recruitment and scallop growth in closed areas have been more favorable than anticipated, improving prospects for rebuilding much quicker than the schedule anticipated by Amendment 7.

The analysis of this option is given in Section 6.3.4.1.1. Higher day-at-sea allocations were rejected because there is less certainty that Amendment 7 biomass objectives would be achieved, and that the higher day-at-sea allocation could produce a sustainable, optimum yield. The following factors were considered in the Plan Development Team's and Advisor's recommendation to increase the full-time day-at-sea allocation to no more than 120 days. The rationale behind these considerations are more fully described in the 2000 SAFE Report (NEFMC 2000).

- Uncertainty in the stock status
- Uncertainty in the fishing mortality reference points
- Uncertainty in the biomass reference points
- Uncertainty in the DAS/F relationship
- The potential for instability in management regulations
- Consistency with secondary FMP objectives
- More stable production over the long term
- Fewer community impacts.

This alternative, allocating 120 days to full-time scallop vessels, would therefore have a better chance to achieve the fishing mortality target than greater day-at-sea allocations (Section 5.2.1.3) and it would better account for the uncertainty in the model assumptions and closed area access policies. Net benefits would increase by \$28 - 32 million (Section 6.3.4.4.2). Producer surplus would decline by \$71 - 73 million and consumer surplus would increase by \$101 - 106 million. For 2003 alone, producer surplus would increase by \$7-11 million, consumer surplus by \$40-50 million, and total benefits by \$47-61 million, compared to no action.

#### **4.1.2 Controlled access program for the Hudson Canyon and VA/NC Areas**

This section proposes a program to restrict fishing effort in the Hudson Canyon and VA/NC Areas, which have seen considerable increases in scallop biomass due to closures that followed favorable recruitment in 1997. It substitutes for the automatic re-opening of the Hudson Canyon and VA/NC Areas that Amendment 7 would have allowed to sunset on March 1, 2001. The program uses the above average biomass in the Hudson Canyon and VA/NC Areas as leverage to reduce total fishing effort through a day-at-sea tradeoff mechanism, following the highly successful program in Framework Adjustments 11 and 13 for Closed Area I, Closed Area II, and the Nantucket Lightship Area. Unless the Council takes other action, the Hudson Canyon and VA/NC Areas will revert to a fully-open status on March 1, 2003, when the proposed access program expires.

This section describes how the Hudson Canyon and VA/NC Area access program would continue. Most of the provisions of the successful program in 2001 and 2002 would remain unchanged in 2003. Only the TACs, trip allocations, and scallop possession limit would change, reflecting changes in resource biomass and updated data. For setting TACs, two alternatives are described below. One non-preferred alternative in Section 5.2.2.1, would follow the procedure adopted in Framework Adjustment 14, would set the TACs for the Hudson Canyon and VA/NC Areas with a target  $F$  equal to the resource-wide target adopted in Amendment 7 ( $F=0.20$ ). The preferred alternative (Section 5.1.2.2.1) would set the TACs based on recent research that show long-term yield under area rotation benefits from increasing the fishing mortality rate above the resource-wide target when areas close and re-open to fishing, and increasing the target until the time-averaged mortality rate is equal to the stock-wide target ( $F=0.20$ ). Even though the Hudson Canyon and VA/NC Areas were open to limited fishing activity in 2001 and 2002, the Council is proposing to set a TAC as if they were open in the first year, following a three-year closure ( $F=0.32$ ).

The Council is also proposing to increase the scallop possession limit for the area access program to 21,000 lbs. in 2003, from 18,000 lbs. in 2002. This change is needed because the catches elsewhere in 2001 and 2002 were sufficiently high to offset or exceed any economic incentive to fish in the area access program. New projections (Section 6.3.4.1.1) indicate that the open area LPUE will increase slightly more in 2003, making necessary an increase in the scallop possession limit if the area access program is to attract fishing effort.

Lastly, the number of trips to be allocated depends on the re-estimated TACs, the scallop possession limit, and the number of vessels expected to fish for scallops<sup>15</sup>. With the area rotation mortality target ( $F=0.32$ ), the TAC would be 50% higher than with the Amendment 7 target, and Framework Adjustment 15 could allocate up to three trips, rather than two, with a 21,000 pound possession limit.

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<sup>15</sup> As in previous actions, the number of vessels expected to fish is the number that used scallop days-at-sea in the previous year. A mid-season adjustment of trip allocations takes into account the vessels that choose not to fish in the area access program, due to economic or other reasons.

**4.1.2.1 Boundaries and Seasons**

***4.1.2.1.1 Boundaries of area access program (to apply to the Hudson Canyon Area and/or the VA/NC Area)***

Scallop vessels eligible to access and fish for sea scallops will be able to fish in either or both of the areas known as the “Hudson Canyon South Closed Area” and the “Virginia Beach Closed Area” within the boundaries described in Table 7 and shown as the northern and southern area in Map 1, respectively. The Council considered continuing the access program for both areas, or discontinuing the access program for the VA/NC Area. Under the non-preferred alternative (Section 5.2), the access program for the VA/NC Area is discontinued, it would re-open to general scallop management regulations as if there were no regulatory boundaries. If the access program only applies to the Hudson Canyon Area in 2003, the boundaries of that area would remain unchanged.

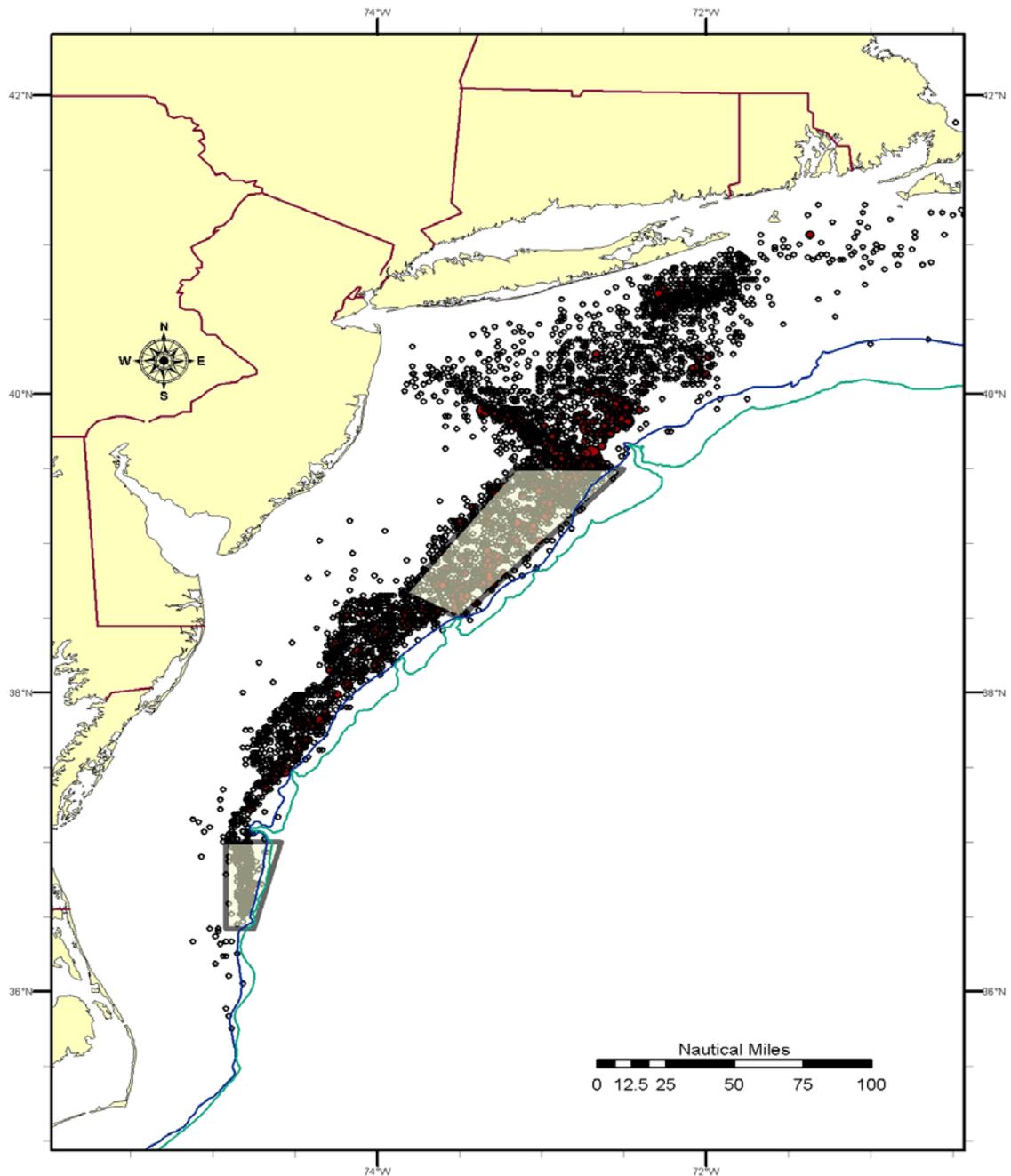
The Council chose to continue the access program for both areas, making boundaries of the 2003 area access program identical to the boundaries of the original closure, implemented by Interim Action on April 3, 1998 and made extended to March 1, 2001 by Amendment 7. For brevity, these areas are heretofore labeled “Hudson Canyon Area” and “VA/NC Area”, respectively in this document.

No portions of the Hudson Canyon and VA/NC Areas will remain closed during the 2003 fishing year, in the seasons specified in Section 5.1.2.1.2. No buffer zones<sup>16</sup> surrounding the areas will exist. Eligible vessels will be able to fish one or more trips in either or both of these areas until the end of the season specified in Section 5.1.2.1.2 or until the Regional Administrator closes an area because the scallop landings are expected to exceed the TAC for that area. Vessels may not take any more trips in an area than it is authorized to take in both areas. For example, a vessel would be authorized to take three trips during the 2003 fishing season in total and no more than one of those before May 31, 2003. Before May 31, the vessel may fish one trip in either area described here. After May 31, the vessel could split its trips between areas or take all the trips in one area until each area closes because scallop landings equal its TAC.

**Table 4.** Boundaries of the “Hudson Canyon South Closed Area” and the “Virginia Beach Closed Area”.

Hudson Canyon Area			VA/NC Area		
Point label	Latitude	Longitude	Point label	Latitude	Longitude
H1	39°30’N	73°10’W	V1	37°00’N	74°55’W
H2	39°30’N	72°30’W	V2	37°00’N	74°35’W
H3	38°30’N	73°30’W	V3	36°25’N	74°45’W
H4	38°40’N	73°50’W	V4	36°25’N	74°55’W
H1	39°30’N	73°10’W	V1	37°00’N	74°55’W

<sup>16</sup> A buffer zone would designate an area where scallop fishing was prohibited or different regulations apply compared to other areas where scallop fishing can occur as governed by normal Scallop FMP regulations.



**Map 1.** Size and configuration of the Hudson Canyon and VA/NC Areas, controlled access areas in the Mid-Atlantic. These areas, totaling 1934 nm<sup>2</sup>, are compared with the 1982-2000 sea scallop survey distribution for tows greater than 500 g of scallop meats per tow. The 50 and 100 fathom contours are shown as a reference.

**Rationale:** The boundaries of the Hudson Canyon and VA/NC Areas were chosen to protect small scallops in areas observed by the 1997 R/V Albatross scallop survey. The distribution of large scallops within these areas during the 2001 survey is however heterogeneous, especially in the Hudson Canyon Area where a secondary large year class also appeared in 1998. Large scallops tend to be concentrated in the shallower survey strata while the scallops in deeper strata appear to be smaller and would benefit from a longer closure. The PDT examine this issue in the 2000 SAFE Report (NEFMC 2000) and found that the differences were too small to recommend a smaller area to allow scallop fishing within the Hudson Canyon and VA/NC Areas, a condition that has not appreciably changed. The PDT therefore recommended that the Council consider allowing the access program to apply to the entire portion of both of the Hudson Canyon and VA/NC Areas, partly because it would be more beneficial to reduce fishing effort in other areas rather to protect the smaller scallops within the boundaries of the Hudson Canyon and VA/NC Areas. Section 6.3.4.1.2 gives biomass and size estimates for depth strata within the Hudson Canyon and VA/NC Areas.

The conditions in the VA/NC Area are considerably different than those in the Hudson Canyon Area, however. Based on the 2001 survey, the biomass in the VA/NC Area was projected to be 251 mt in 2002, even after accounting for the 2001 landings of 307,000 lbs. (139 mt). Either due to sampling variability, non-reported catch, and/or discard/non-catch mortality, the observed biomass in the 2002 survey was only 11 mt, 95 percent below our expectations. The 2002 survey also observed very low abundance of small scallops in the VA/NC Area, so there is little justification for scallop biology for continuing the access program there. If the access program is continued, it would economically close the VA/NC Area until scallop biomass recovered to levels that rival or exceed catches elsewhere. This may, however, have some localized habitat and bycatch benefits.

Access to the Hudson Canyon Area is desirable at this time because of the high biomass that has increased during the 1998 to 2000 closure. This access would maintain or increase the current landings, while removing fishing effort from other areas and promoting scallop biomass increases elsewhere. Although there are smaller scallops in the deeper portions of the Hudson Canyon Area, it will be more profitable for vessels to fish in shallower portions within it where larger scallops occur. There are no known differences in finfish bycatch or habitat within these areas that would indicate a longer closure in portions of these closed areas to minimize bycatch or protect habitat. Buffer zones are not thought to improve enforceability, based on the experience with Framework Adjustment 11, which allowed access to Closed Area II, surrounded by a buffer zone. It could have positive effects on scallop conservation, but area closures elsewhere would be more productive.

#### ***4.1.2.1.2 Season***

Both of the areas described above will re-open to scallop fishing for vessels with limited access scallop permits on April 1, 2003. Limited access vessels will be able to take authorized trips that begin on this date. If the 2002 TACs are not taken by the end of the 2002 fishing year, the areas would remain open to scallop fishing on March 1, 2003, with new trip allocations (Section 5.1.2.2) and possession limit (Section 5.1.2.5). The areas will remain open for all limited access and authorized vessels with General Category scallop permits until one of the following three events occurs:

1. The fishing year ends on February 28, 2004
2. The scallop landings from an area exceed its TAC and the Regional Administrator closes the fishery by authorizing no more trips and reducing the scallop possession limit to zero.
3. The vessel has taken its authorized trips to fish for scallops within the Hudson Canyon and VA/NC Areas.

Vessels may take Hudson Canyon and VA/NC area trips under their initial trip allocation (5.1.2.2.1.2) according to the schedule specified in Table 9. In addition, vessels that initiate an area access program trip by August 31, 2003 may be eligible (see Section 5.1.2.1.3) to take additional trips between October 1, 2003 and when the areas close to scallop fishing (or the end of the fishing year if the areas do not close). To be eligible for additional trips, vessels must initiate a trip by declaring that it is taking a Hudson Canyon Area or VA/NC Area trip and recording a VMS position on a scallop day-at-sea on or before August 31, 2003.

**Rationale:** Postponing the season until April 1 would delay the opening of the season until finfish bycatch was less than in the early spring. Typically, the most intense fishing effort occurs when areas first open and the catch per unit effort is highest. Delaying the season for too long would have other undesirable effects including: reducing the flexibility for the fleet to fish when scallop prices are high, minimizing the market impacts from oversupply during a restricted season, habitat and water quality impacts associated with intensive discarding of shells and viscera after removing the scallop meat, safety and enforcement concerns arising from a shorter fishing season or crowding, and the availability of qualified observers. If the controlled access areas remain open through the end of the 2002 fishing year, however, a similar temporary increase in fishing effort is not expected during March 2003, because fishing would have been continuous and there would be less advantage to fishing there on opening day.

#### ***4.1.2.1.3 In-season adjustment procedure***

In addition to the ability to change the scallop possession limit during the course of the season the Regional Administrator may also re-allocate unused trips on or after October 1, 2003 based on the participation through August 31, 2003. In determining if qualifying vessels are able to have more trips after October 1, the Regional Administrator should assume that all vessels that take one or more trips in the Hudson Canyon and VA/NC Areas before September 1, 2003 will use all of its initial allocation. Thus the in-season adjustment would re-distribute trips that were forfeited by vessels not taking trips in the Hudson Canyon and VA/NC Areas plus any adjustments that might be possible from landings that are less than the scallop possession limit.

After October 1, qualifying vessels would be able to take any of their remaining trips from the initial allocation plus any additional trips that the Regional Administrator may authorize. Vessels may not carry over unused trips from one year to the next, or forward from the Framework Adjustment 14 allocation.

**Rationale:** The in-season adjustment is needed to respond to the uncertainty about how many vessels will fish in the Hudson Canyon and VA/NC Areas. It increases the likelihood that the fleet will take the TACs and achieve optimum yield, reducing fishing mortality in the areas that are now open. This procedure will make the adjustment more rational and orderly, by reducing the Regional Administrator's uncertainty about how many of the initial allocation of trips would be taken in the second period, after October 1 and sets a baseline for decision making on August 31. There is a prohibition on carrying forward unused trips into subsequent fishing years because it is better for vessels to fish this year rather than next in the Hudson Canyon and VA/NC Areas, reducing effort in the now open areas as soon as possible.

The Council choose August 31 as the appropriate time to determine eligibility for making additional trips as a compromise. On one hand, the August 31 date provides sufficient time and flexibility for vessels to make at least one trip to the Hudson Canyon and VA/NC Areas and be eligible to continue fishing there in the fall. On the other hand, the August 31 date also gives the Regional Administrator

sufficient time to determine how many trips to re-allocate to eligible vessels and gives them sufficient time to take those trips before the end of the fishing year without concentrating the trips into January and February, when summer flounder bycatch could be above average.

#### **4.1.2.2 Effort and Catch Limits**

The access program for the Hudson Canyon and VA/NC Areas will continue the procedure established in Framework Adjustment 14 and analyzed in its DSEIS, except that higher scallop possession limits are proposed to make it more attractive to fish within the Hudson Canyon and VA/NC Areas. As catches elsewhere increase with increasing biomass, it no longer is profitable for vessels to fish in the area access program when they can catch more scallops per charged day-at-sea without participating in the area access program. Projections indicate that catches elsewhere will average about 1,600 pounds per day over the season. In some cases, the catches could be even higher. A scallop possession limit of 17,000 pounds did not appear to be sufficient in 2001 to attract the intended fishing. The Council therefore choose a 21,000 pound scallop possession limit for a 10 day-at-sea trip to encourage more fishing effort (up to the optimum levels) in the Hudson Canyon and VA/NC Areas, so the program achieves its conservation benefits as estimated by the analysis. If insufficient effort is attracted to the Hudson Canyon and VA/NC Areas, then fishing mortality in other areas with smaller scallops will be higher than the optimum level. Unlike the analysis in Framework Adjustment 14, the economic analysis (Section 6.3.4.4.9) for this action indicates that a 21,000 pound scallop possession limit would be more economically attractive, increasing the likelihood that vessels take their authorized trips rather than fishing in the remaining open fishing areas.

The rotation management fishing mortality target would allow the Council to allocate more trips for fishing in the Hudson Canyon and VA/NC Areas during 2003, an outcome that reduces bottom contact time overall and fishing mortality elsewhere, particularly in the Delmarva and off NJ where small scallops were observed in the 2002 scallop survey. This could also help offset the economic impacts if the Council chooses the alternative in Section 5.2.1.2 rather than the status quo (Section 5.1.1.1). This alternative would leverage the biomass in the Hudson Canyon Area to reduce mortality in the existing open areas, where mortality is estimated to exceed sustainable levels. As a result, scallop biomass would be higher than if the Council chose the status quo (i.e. a 120 day-at-sea allocation and a "Low F" TAC).

##### ***4.1.2.2.1 Rotational management target ( $F=0.32$ ) - Total Allowable Catch (TAC), trip allocations, and TAC set-asides***

When the Regional Administrator determines that the scallop landings from either one of the areas exceed its TAC, the Regional Administrator will prohibit vessels from fishing for sea scallops in the area by prohibiting the possession of sea scallops within it, subject to the regulations concerning transiting. The TAC has a direct bearing on the initial and re-allocated number of trips that eligible vessels may take within these areas. The details of the two fishing mortality alternatives are discussed below and in Section 5.2.2.1. TAC set asides would fund research, fund observers, and account for landings by vessels without limited access scallop permits that might target sea scallops or catch sea scallops as a bycatch.

**Rationale:** The purpose of the TAC is to ensure that the fleet does not exceed the fishing mortality targets for the areas and that biomass in these areas can continue to support the fishery for several years while the remainder of the resource rebuilds. It is also used as the basis to determine the initial number of trips to be allocated to eligible vessels and to estimate how many trips that the Regional Administrator may authorize for an in-season adjustment.

#### **4.1.2.2.1.1 Total Allowable Catch (TAC) for the rotational management TAC**

The TAC for the Hudson Canyon Area would be 7,740mt (17.06 million lbs.) for 2003, based on a fishing mortality target equal to 0.32 (26 percent exploitation rate). The TAC for the VA/NC Area would be 105 mt (0.23 million lbs.).

**Rationale:** This target would set the TACs based on recent research that show long-term yield under area rotation benefits from increasing the fishing mortality rate above the resource-wide target when areas close and re-open to fishing, and increasing the target until the time-averaged mortality rate is equal to the stock-wide target ( $F=0.20$ ). Even though the Hudson Canyon and VA/NC Areas were open to limited fishing activity in 2001 and 2002, the Council is proposing to set a TAC as if they were open in the first year, following a three-year closure ( $F=0.32$ ).

Although a formal mortality assessment of the Hudson Canyon and VA/NC Areas during the 2001 fishing year has not been done yet, the time averaged fishing mortality for the areas would be 0.12. This estimate assumes that the fishing mortality rate in 2001 and 2002 was/is 0.20, although landings in 2001 (and probably 2002) are/will be well under the target TACs. If the area access program for the Hudson Canyon and VA/NC Areas had to continue in 2004 and 2005, for example, the average mortality rate could be 0.44, which has been factored into the biomass and yield projections in (Section 6.3.4.1.1).

This alternative would produce higher landings from the Hudson Canyon and VA/NC Areas in 2003 than the Amendment 7 target described in Section 5.2.2.1, but the biomass increase in the Hudson Canyon and VA/NC Areas would increase less, reducing lower yield in future years compared to the status quo. If the proposed action had to be extended beyond 2003 to allow biomass elsewhere to rebuild, landings could decline if future recruitment is less than anticipated or if total fishing effort increases. Total fishing effort could increase through more efficient use of a day-at-sea, re-activation of a significant number of Confirmation of Permit Histories, or a higher day-at-sea utilization rate by active limited access scallop vessels. This strategy may require other, new area closures to ensure that biomass elsewhere rebuilds before the yield in the Hudson Canyon and VA/NC Areas declines to more normal levels after being re-opened and fished down to a long-term average.

The higher than average TAC is beneficial to the resource while reducing habitat and bycatch impacts, because it would be most effective in taking fishing effort from elsewhere and allowing more rapid rebuilding in overfished portions of the resource. It is also justified because biomass in the Hudson Canyon Area is very high, possibly higher than a level that would over the long term produce MSY.

#### **4.1.2.2.1.2 Trip allocations**

With the rotation management target TAC option and a 21,000 lb. scallop possession limit, the Regional Administrator would allocate 830 trips to the fleet, or up to 3 trips for eligible limited access scallop vessels, taking into account the number of full-time, part-time, and occasional limited access scallop permits. Limited access vessels would be authorized to take these authorized trips in either area during the season, as long as the scallop catches do not equal or exceed the TAC for each area and the area closes (Section 5.1.2.2). After one area closes because scallop landings exceed its TAC, vessels may take their remaining trips in the other area until it closes.

The preferred option associated with a 21,000 pound scallop possession limit is therefore three trips (Table 8). The analysis includes a scallop possession limit ranging from 11,000 to 31,000 pounds of scallop meats, included the preferred alternative of 21,000 pounds. With three trips, the scallop possession limit could be no more than 21,000 pounds without expecting the fishery to exceed the TACs,

causing the areas to close. Alternatively, four trips could be allocated with a scallop possession limit no more than 16,000 pounds. These allocations exclude a one-percent set aside to fund research, a two percent set-aside to fund observers, and a five percent set-aside for General Category vessel access.

**Table 5.** Allocations of trips for the Mid-Atlantic area access program in 2003 and the estimated number of trips for each area that can be taken if all vessels participate, assuming full participation in the Hudson Canyon Area and 50 percent participation in the VA/NC Area. The trip allocations are combined for both areas and are shown in the last column<sup>17</sup>. Estimates exclude a one percent set-aside to fund research and another one-percent set-aside to fund the observer program.

<b>F= 0.32 rotation target</b>	<b>Hudson Canyon</b>	<b>VA/NC Area</b>	<b>All</b>
<b>Expected vessel participation</b>			
Full-time	242	121	
Part-time	34	17	
Occasional	4	2	
Total estimated participation	280	140	
TAC per vessel	60,942	1,653	62,596

<b>Trips limit (lbs. meat weight)</b>	<b>Total number of trips to allocate</b>		
11000	1,657	22	1,680
13000	1,381	19	1,400
16000	1,105	15	1,120
<b>21000</b>	<b>829</b>	<b>11</b>	<b>840</b>
31000	552	7	560

<b>Trips limit (lbs. meat weight)</b>	<b>Number of trips per vessel to allocate</b>		
11000	5	0	6
13000	4	0	5
16000	3	0	4
<b>21000</b>	<b>2</b>	<b>0</b>	<b>3</b>
31000	1	0	2

The Regional Administrator would authorize limited access vessels to take the initial trip allocation in a sequential, step-wise program (Table 9). Vessels will be authorized to take no more than one trip before April 30 in each fishing year. A second trip may start no earlier than May 1 and no more than two trips may be taken by May 31. A third trip may start no earlier than June 1 and no more than three trips may be taken by July 15. After August 31, a vessel may begin a trip up to the total allocation that vessels are authorized to take within the Hudson Canyon and VA/NC Areas.

To be eligible to take more than three Hudson Canyon or VA/NC Area trips, if authorized by the Regional Administrator, a limited access scallop vessel will have to begin at least one trip before September 1. See Section 5.1.2.6.1 for a description of when a trip has begun for this purpose. If the status quo (Section 5.1.2.3.2) is chosen, a vessel intending to preserve its eligibility for more trips need only to declare a Hudson Canyon and VA/NC Areas trip and report one VMS position ocean ward from the VMS monitoring line. A limited access scallop vessel would lose 10 days-at-sea for this purpose, but it would have a negligible impact on vessels that do not use all of its days-at-sea during a fishing year.

<sup>17</sup> Due to rounding, the combined number of trips that can be allocated may be greater than the sum of the maximum number of trips that would not exceed the individual area TACs.

**Table 6.** Trip allocation schedule for limited access vessels

Inclusive dates	Maximum number of authorized trips to the Hudson Canyon and VA/NC Areas, combined
April 1 to April 30	1 trip
May 1 to May 31	2 trips
June 1 to July 15	3 trips
July 16 until end of season	3 trips or greater amounts if authorized by in-season adjustment;

Assuming a 120 full-time day-at-sea allocation (Section 5.1.1.1), part-time vessels will have a maximum allocation of 58 days-at-sea in the 2003 fishing year<sup>18</sup>, part-time vessels can take a maximum of five area access trips in any combination. A part-time vessel would therefore be eligible for three additional trips (see below) from an in-season adjustment. An occasional scallop vessel will have a maximum allocation of 19 days in the 2003 fishing year<sup>19</sup> and would therefore be eligible to take only one trip in any one area, regardless of additional allocations through a possible in-season adjustment via the provision described below.

The number of trips that can be allocated depends on the scallop possession limit and the number of vessels that are eligible to participate. The analysis assumes that all vessels that have a limited access scallop permit, excluding the Confirmation of Permit Histories, will take all trips to the Hudson Canyon and VA/NC Areas allocated to them. Vessel owners that re-activate a Confirmation of Permit History will be eligible for a full complement of trips, subject to the restrictions that govern use by other vessels with a limited access scallop permit.

**Rationale:** The purpose of a trip allocation is to prevent a derby-style fishery that is based solely on a TAC, without allocating individual quotas to the limited access scallop vessels. With only a TAC, the vessels would fish as quickly as possible before the landings exceeded the TAC, having adverse effects on prices, product quality, cost, flexibility, safety, bycatch, and possibly habitat impacts. Individual quotas would require significantly more catch reporting, monitoring, and auditing than is currently possible. An allocation of trips is therefore the least costly form of management control for an FMP that relies mainly on day-at-sea allocations and crew limits to control fishing mortality.

The analysis indicates that an initial allocation of three trips in 2003 can be authorized to limited access scallop vessels without exceeding the TAC. With a 21,000 pound scallop possession limit, the analysis estimates that the TACs would be exceeded if 50 percent of active vessels fished more than one trip in the VA/NC Area and more than four trips in the Hudson Canyon Area if all 280 active vessels<sup>20</sup> fish all authorized trips. As in Frameworks 11, 13 and 14, participation has been less than expected and an in-season adjustment was made in 1999 to 2001. Lower than expected participation for authorized Hudson Canyon and VA/NC Areas trips would indicate that an allocation of additional trips on or after October 1 would be needed to harvest optimum yield.

Vessels would be allowed to use the authorized trips in either area. If the vessels fish mainly in the VA/NC Area, it will obviously close early from scallop landings exceeding the TAC. This is entirely consistent with the current and projected resource condition that scallops in this area are near or larger

<sup>18</sup> A part-time scallop vessel will have a 48 day-at-sea allocation in the 2003 fishing year plus up to 10 unused days-at-sea carried forward from the 2003 fishing year.

<sup>19</sup> An occasional scallop vessel will have a 10 day-at-sea allocation in the 2003 fishing year plus up to nine unused days-at-sea carried forward from the 2002 fishing year (it must have used at least one day-at-sea to be eligible to carry forward unused days).

<sup>20</sup> An active vessel is defined as a vessel that had an active permit in the 2001 fishing year, whether or not it actually was charged days while fishing for sea scallops.

than optimum harvesting size, while the scallops in the Hudson Canyon Area are a bit below optimum size. A combined allocation of trips would therefore ensure that the TAC for the VA/NC Area was taken by the fishery and minimize (within the objectives of this framework adjustment) the fishing effort in the Hudson Canyon Area where scallops are smaller, on average, but not as small as scallops in areas that are now open to fishing.

The sequential (delayed) trip allocation is needed to prevent vessels from taking the trips all at one time, having an adverse impact on scallop prices, product quality, costs, flexibility, finfish bycatch, and possibly habitat impacts. The finfish bycatch issue is most important during the spring in the VA/NC Area, where summer flounder are more abundant. This sequential trip allocation would prevent vessels from taking more than one or two trips in the expectation that the scallop landings will quickly exceed the TACs.

#### **4.1.2.2.1.3 TAC set-asides to fund research, to fund observers, and for access by General Category scallop vessels**

##### **One-percent set-aside for research**

One percent of the scallop TAC for each of the Hudson Canyon and VA/NC Areas would be set-aside for harvest under a special program described in Section 5.1.13 of Framework Adjustment 13 (NEFMC 1999b). Framework Adjustment 13 specified that the Council would delegate to its Research Steering Committee responsibility for soliciting research proposals in the form of a Request for Proposals, establishing research priorities, developing review criteria, evaluating proposals and making recommendations to the Regional Administrator on specific research projects. Framework Adjustment 15 provides that, with the concurrence of the Council, NMFS may convene an evaluation team for the purpose of reviewing proposals in the event that a closed meeting is necessary for the review and evaluation of research proposals.

NMFS will monitor the landings from limited access scallop vessels that fish in the closed area and close the fishery when the landings exceed or are projected to exceed the overall scallop TAC, reduced by this and other set-asides. Accounting for all three set-asides described in this section, the TAC that will apply to landings from limited access scallop vessels would be 98 percent of the total. The research set aside would total 172,953 lbs. (78 mt) in 2003 (Table 10).

**Rationale:** A set aside is necessary to fund and enable important scallop research in the Hudson Canyon and VA/NC Areas and elsewhere. This information about the scallop resource, ways to reduce bycatch, habitat, and other information will be crucial as the Council evaluates area based management and Amendment 10.

**Table 7.** Summary of TACs and limits for scallop access in the Hudson Canyon and VA/NC Areas during the 2003 fishing year.

<b>2001 Maximum Allocations</b>		<b>Hudson Canyon Area</b>	<b>VA/NC Area</b>
<b>Scallops</b>	Total TAC	17.06 million lbs. (7,740 mt)	0.23 million lbs. (105 mt)
	TAC for limited access vessels	16.72 million lbs. (7,585 mt)	0.23 million lbs. (103 mt)
	Two percent TAC for observers <sup>21</sup>	341,276 lbs. (155 mt)	4,630 lbs. (2 mt)
	One percent TAC to fund scallop research	170,638 lbs. (77 mt)	2,315 lbs. (1 mt)
<b>Initial trip allocation for limited access vessels</b>		Up to 3, combined with the VA/NC Area trips	Up to 3, combined with the Hudson Canyon Area trips
<b>Scallop possession limit</b>	Limited access vessels	Up to 21,000 lbs. per trip	Up to 21,000 lbs. per trip
	General category vessels	100 lbs. per trip	100 lbs. per trip
<b>Regulated multispecies possession limit</b>	Limited access vessels	300 lbs. per trip	300 lbs. per trip
	General category vessels	Zero possession	Zero possession

#### **One-percent set-aside and one-percent supplement for funding observers**

One percent of the scallop TAC for both of the Hudson Canyon and VA/NC Areas would be set-aside to pay for observers as described in Section 5.1.2.8. One-percent of the TAC will be added on to the total TAC, also for this purpose. The purpose of the TAC set aside is to pay for the daily cost of observers (including fixed and variable costs for salary, administration, training, etc.), data entry, auditing, and analysis. NMFS may authorize vessels that carry observers to land more than the scallop possession limit with the additional revenue used to pay for the observer at a rate determined by the NMFS. NMFS will monitor the landings from limited access scallop vessels that fish in the closed area and close the fishery when the landings exceed or are projected to exceed the overall scallop TAC, reduced by this and other set-asides.

Accounting for both set-asides, the TAC that will apply to landings from limited access scallop vessels would be 98 percent of the total (Table 10). The set aside to pay for observers would total 345,905 lbs. (139 mt) in 2003 (Table 10) An equal amount would be added to the TAC set-aside to fund observers as a supplement.

**Rationale:** In the Closed Area II fishery in 1999, the one-percent TAC was insufficient to account for the additional authorized landings to fund the observer program at a 25 percent sampling intensity. Precise monitoring of bycatch for administration of a TAC is not needed for the Hudson Canyon and VA/NC Areas and a lower sampling intensity would provide adequate statistics for research and analysis of finfish catches, discarding, and fishing behavior. Section 5.1.2.8 requires that at least 10 percent of the trips by vessels in each category (Limited access vessel using dredges, limited access vessel using trawls, and General Category scallop vessels using dredges) are observed for the Hudson Canyon Area and 20 percent of the trips by vessels in each category for the VA/NC Area. Since the sampling intensity is 40 percent of the amount required by Framework Adjustment 13 with a two-percent TAC set aside, a two-percent set aside will be sufficient for the expected sea sampling program in the Hudson Canyon and VA/NC Areas (Section 6.3.4.1.3).

<sup>21</sup> The two percent TAC for funding observers includes one percent deducted from the overall TAC and a one percent supplement.

The TAC set aside in 2001 was sufficient to pay for the Hudson Canyon and VA/NC Area observer program, although vessels sometimes were not fully compensated by the extra landings for the cost of the observer on their vessel. While there was no guarantee that the full cost of the observer would be paid by the higher possession limit on vessels carrying observers (Section 5.1.2.8.1), the intent of the program was to achieve this goal. Some of the reason that the observer cost was not fully compensated by the set-aside program came from lower scallop prices in 2001. A higher authorized possession limit for observed trips would help make up for the vessel's shortfall, without harming the resource as long as the overall TAC was not exceeded.

#### ***4.1.2.2.2 Triggered Area Closure***

If at any time, information or data indicate that the total scallop landings will meet the TAC for either area, the Regional Administrator will suspend the re-opening of the area to scallop vessels via publication of a Federal Register notice.

**Rationale:** This prevents the catches from exceeding the fishing mortality target and also allows flexibility for vessels to choose which area to fish. Since the area is smaller and has a much lower predicted biomass (Section 6.3.4.1.1), the VA/NC Area is more likely to close due to this provision, although it is now unlikely that any vessels will take a trip to the VA/NC Area under current resource conditions and the risk of losing days before the vessel could catch the scallop possession limit.

#### ***4.1.2.2.3 Day-at-sea restrictions and tradeoffs***

Vessels that declare into and begin a trip (Section 5.1.2.6.1) into either of the Hudson Canyon and VA/NC Areas on a scallop day-at-sea will automatically be charged 10 days-at-sea or the actual time at sea, whichever is more.

**Rationale:** An accumulation of days-at-sea for trips in the Hudson Canyon and VA/NC Areas must be greater than the actual trip length to compensate for the increased scallop mortality caused by fishing in areas with more abundant scallops. For vessels that would otherwise use most or all of their day-at-sea allocations, the effect of the added tradeoff is to reduce the available fishing time elsewhere. This in turn reduces fishing mortality in those areas to compensate for the added mortality in the Hudson Canyon and VA/NC Areas for 24 hours of fishing time. For the stock as a whole, the intent is to prevent mortality from increasing from the area access program, i.e. the program is conservation neutral relative to the goals of the FMP.

Accounting for the differences in scallop yield inside and outside of the Hudson Canyon and VA/NC Areas, a 10 day-at-sea accumulation would decrease fishing effort (i.e. the number of scallops removed from the stock) by about 1,200 days (four percent) for the Amendment 7 TAC (Section 5.2.2.2) and about 1,800 days (six percent) for the rotation management TAC alternative (Section 5.1.2.2.1.1). The projections estimate that compared to the status quo (120 day-at-sea allocation; Amendment 7 TAC), the rotation management area TAC alternative would reduce total area swept by 11 percent, reduce Georges Bank open area mortality by 11 percent. Mortality for the Mid-Atlantic region, including the Hudson Canyon and VA/NC Areas would increase by 16 percent, but the mortality in the otherwise open areas would decline.

Higher day-at-sea accumulation amounts for each area access program trip would decrease mortality and vice versa. Higher scallop possession limits would be less conservative and vice versa. In fact, the analysis shows that an 25,000 scallop possession limit provides very little benefit from the day-

at-sea tradeoff (Section 6.3.4.1.7). If additional trips are authorized, fishing mortality would decline relative to the analysis from the added day-at-sea tradeoffs. This occurs because at that point, there would be fewer unused days for vessels to use in the re-opened areas and the added trips would be catching larger scallops in the Hudson Canyon and VA/NC Areas than would an equivalent trips elsewhere.

#### ***4.1.2.2.4 Maximum trip length***

There is no maximum trip length for vessels that fish in the Hudson Canyon and VA/NC Areas. Vessels on authorized trips in these areas would accrue 10 days-at-sea or the actual time at sea, whichever is greater.

**Rationale:** A maximum trip length would prevent vessels from fishing longer than 10 days if catch rates substantially decline. A limit on the trip length appears unnecessary, however because either the catch would have to exceed the TAC for this to occur or the catch rates would probably be below the point where it is more favorable to fish in the open areas rather than in the groundfish closed areas.

#### **4.1.2.3 Eligibility**

##### ***4.1.2.3.1 Limited access scallop vessels***

All vessels with scallop limited access permit and days-at-sea allocations will be eligible to fish under the program to access the closed areas. In addition to active vessels with a limited access scallop permit, this would include vessels that did not fish during 2001 (the base year for analysis) or for 2002 (the year immediately proceeding the proposed action) and vessels re-activating history permits. Inactive vessels or history permits are eligible to fish in the re-opened areas to ensure equitable access for all legal scallop vessels.

Permit-holders with “Confirmation of Permit Histories” (CPH) may not fish with two permits on one vessel in any given year. In other words, if a person owns Vessel A and also possesses a CPH for Vessel B (a vessel no longer owned), the owner of Vessel A may not fish both Vessel A’s scallop days-at-sea and Vessel B’s scallop day-at-sea history on Vessel A during the same year. This policy is consistent with the rules that prevent owners of multiple vessels from stacking permits onto one vessel and preventing the use of more than one vessel’s days-at-sea on a single vessel.

Inactive vessels with limited access scallop permits could be fishing for other species in New England or other regions and would not therefore be using scallop days. History permits, on the other hand, could be transferred to a replacement vessel to fish for scallops.

There were 280 vessels that have limited access scallop permits in 2001 and these vessels will be allocated 32,764 days-at-sea for the 2003 fishing year beginning March 1, with a 120 day-at-sea allocations (Section 6.3.4.1.4). In addition, there are 43 inactive permits<sup>22</sup> and 39 confirmation of permit histories that could be reactivated during the year by applying for a replacement vessel permit. Depending on the option chosen, there could be 553 to 829 potential trips to the two areas combined. Assuming a 10-day trip, the total number of potential trips by the fleet is 3,880, but this effort is restricted by the trip allocations (Section 5.2.2.3) and the TACs (Section 5.2.2.2), which require the Regional Administrator to re-close the areas when the landings meet this amount.

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<sup>22</sup> An inactive permit is an issued limited access scallop permit that used no days-at-sea during the 2001 fishing year.

Table 8. Number of eligible vessels with full-time, part-time, and occasional scallop limited access permits issued during the 2001 fishing year.

Category	Vessel Permits	Confirmation of Permit Histories and inactive permits	Total Eligible Vessels	2003 Day-at-sea allocation (Section 5.1.1.1) with carry over	Maximum 10-day trips
Full time	242	33	275	120 to 130	12 - 13
Part time	34	15	49	48 to 58	4 - 5
Occasional	4	26	30	10 to 20	1 - 2
Total	280	74	354	37,091 <sup>23</sup>	3,526 to 3,880

**Rationale:** Limited access scallop vessels have permits to target scallops and use days-at-sea. There is no justification or objective that would exclude any class of limited access permit from fishing in the closed areas. Exclusion of a class of limited access scallop vessels would not be fair and equitable.

#### ***4.1.2.3.2 Eligibility to receive more Hudson Canyon and VA/NC Areas trips from an in-season adjustment***

Vessels that fish on a scallop day-at-sea in either of the Hudson Canyon and VA/NC Areas will be eligible for additional trips if authorized by the Regional Office on or after October 1. The timing of the in-season adjustment and when vessels may fish is described in Section 5.1.2.1.3. Vessels that meet this eligibility criterion may continue to fish in either or both of the Hudson Canyon and VA/NC Areas, provided that the Regional Office has not closed them because landings from the area have met its TAC.

Vessels will have qualified for additional trips and have begun that trip for the purposes of eligibility for additional trips (Section 5.1.2.1.3) by declaring that it will make a Hudson Canyon Area or VA/NC Area trip and beginning a trip<sup>24</sup>.

**Rationale:** Enforcement must know when a vessel is or is not authorized to fish in the Hudson Canyon and VA/NC Areas. The activity code would enable law enforcement to quickly check if the vessel is authorized to be fishing in the areas. Without the activation code or some other means of authorization, it would be impossible to distinguish between a vessel that had already taken its allocated trips and one that had not and is therefore authorized to fish in the Hudson Canyon and VA/NC Areas. This specification also has implications for determining when a vessel is eligible for additional trips, if the Regional Administrator authorizes more trips on or after October 1, and for adjusting the automatic day-at-sea charge for Hudson Canyon or VA/NC Area trips on broken trips.

Under the status quo option, a vessel would be eligible for additional trips by simply declaring a trip and reporting one or more VMS positions seaward of the VMS monitoring line before August 31. This would be costly for vessels that utilize all of its annual day-at-sea allocations, because it would be automatically charged 10 days-at-sea. Since most vessels do not use their full compliment of day-at-sea allocations, doing this would have no cost to the vessel yet it would prevent the management plan from achieving optimum yield. Fortunately, this was not an observed problem in 2001 and the Regional Administrator was able to allocate an additional two trips for 182 full and part-time vessels that fished in the Hudson Canyon and VA/NC Areas before August 31.

<sup>23</sup> The day-at-sea tradeoff would reduce allocated days by about 1,200 to 1,800 days, depending on the TAC alternative selected.

<sup>24</sup> This is normally interpreted to mean that the vessel has begun a scallop day-at-sea by call-in or by reporting one or more VMS positions seaward of the VMS monitoring line.

#### 4.1.2.4 Gear restrictions

##### 4.1.2.4.1 Dredges and trawls

Except for the twine top adjustment in Section 5.1.2.4.2, limited access scallop vessels that fish in the Hudson Canyon and VA/NC Areas must use a scallop dredge that conforms to §648.51 (Gear and Crew Restrictions) and §648.2 (definition of “dredge or dredge gear”), including ring size, configuration and linkage, and maximum width. According to this regulation, the combined dredge width shall not exceed 31 feet (9.4 m). Vessels that are authorized by §648.51 (f) to use trawls on a scallop day-at-sea may continue to use trawls on a scallop day-at-sea in the Hudson Canyon and VA/NC Areas, provided that the fishing gear complies with all applicable regulations.

**Rationale:** Limited access vessels would be required to comply with the existing regulations that apply to any other scallop area when the vessel is in the day-at-sea program. This alternative is preferred because prohibiting vessels from using trawls in the Hudson Canyon and VA/NC Areas would be unfair, unless there were significant conservation benefits from prohibiting the gear. Vessels that are authorized to use trawls based on their fishing history tend to be more prevalent in Mid-Atlantic ports than in New England (NEFMC 2000). Some vessels may be incapable of using dredges without significant and costly retrofitting.

Vessels using trawls to catch sea scallops have poorer size selectivity, higher finfish bycatch, and higher discard mortality than vessels using dredges (Dr. W. DuPaul, VIMS, pers. comm.). While these are all undesirable characteristics, the difference in size selectivity between trawls and dredges may be less of a factor in the Hudson Canyon and VA/NC Areas where scallops are predominately larger. Overall, it could be more beneficial to encourage vessels that use trawls to fish in the Hudson Canyon and VA/NC Areas, postponing mortality on small scallops that they would otherwise catch in areas now open to fishing. Similarly, the higher catches in the Hudson Canyon and VA/NC Areas could significantly shorten tow duration, reducing total fishing time for vessels using trawls than is expected for dredge vessels. This could reduce finfish bycatch, depending on the distribution of finfish caught by scallop trawls.

##### 4.1.2.4.2 Twine tops

Any vessel with a limited access scallop permit that fishes in the Hudson Canyon and VA/NC Areas must use a scallop dredge with a twine top having diamond mesh no smaller than 10-inches (25.40 cm). This mesh may be hung on the square or the diamond within the area of the dredge occupied by the twine top. The mesh will be measured using the same methods for the current 8-inch twine top, as described in §648.51(a)(2)(iii).

**Rationale:** The purpose of this measure is to reduce groundfish and other finfish bycatch and take advantage of recent research that shows a significant reduction of bycatch, especially for flatfish, with insignificant reductions of scallop catch when scallops are large. Framework Adjustment 11 also included a measure to increase the twine top mesh to 8-inches diamond in all other areas, to mitigate the groundfish bycatch while fishing in the closed areas. This permanent increase to an 8-inch twine top became effective on December 9, 1999, six months after the implementation of the Framework Adjustment 11 measures.

The larger twine top mesh is expected to produce significant reductions for many species, especially flatfish like yellowtail flounder, winter flounder, and windowpane flounder. On the other hand, a larger twine top is not expected to significantly reduce monkfish and adult roundfish catches. Catches

of summer flounder and possibly skates could be reduced as well, benefiting those species and reducing the opportunity of plugging the dredge bag. Dredge bags that are clean and not plugged with fish have been reported to release more small scallops through and between the rings, improving size selection of the dredge.

Although the standard is now 8-inch mesh twine tops, the Closed Area II scallop fishery access program (NEFMC 1999a) required scallop vessels to use 10-inch mesh twine tops as did the Hudson Canyon and VA/NC area access program in 2001. At least 211 vessels participated in the fishery and now have these twine tops on hand. Whether due to larger twine tops or other factors, the bycatch estimates for the Hudson Canyon and VA/NC Areas in 2001 was low for species like summer flounder, spiny dogfish, black sea bass, red hake, and others. The estimated catches of monkfish and little skate were over a million pounds each, but small individuals of these species probably benefited from the larger twine top as well.

#### **4.1.2.5 Possession limits**

##### ***4.1.2.5.1 Scallop possession limit for limited access vessels***

Vessels on a scallop day-at-sea may possess no more than 21,000 pounds of scallop meats on trips that had fished in the Hudson Canyon and VA/NC Areas in 2003. This limit is derived from the total number of allocated trips divided into the combined TACs (see Table 16), rounded up to the nearest 1,000 pounds. The Regional Administrator may make one or more in-season adjustments to the scallop possession limit at any time during the either season or after October 1, assuming that each future trip will catch the scallop possession limit.

**Rationale:** The scallop possession limit will ensure that the scallop fishery does not exceed the scallop TAC for the Hudson Canyon and VA/NC Areas. According to the analysis (Section 6.3.4.1.2), the scallop possession limit, coupled with the trip allocation for each area, is expected to allow the fleet to harvest 102 percent of the Hudson Canyon and VA/NC Area TACs in 2003.

A non-uniform scallop possession limit (i.e different possession limit by area) would allow Framework 15 to define a program that would more closely achieve the TACs, but a different possession limit for each area would be much more complicated and difficult to enforce. In place of such a complicated system, the Council and the Enforcement Committee preferred a uniform scallop possession limit for all areas, with an in-season adjustment procedure for trip allocations and/or the scallop possession limit to enable the fishery to catch the TACs. One option that would increase the proportion of the TAC that would be available is to increase the scallop possession limit to the maximum amount that does not exceed the combined TACs with the same number of trips that could be allocated with a 21,000 lbs. scallop possession limit.

The analysis assumes that 50 percent of eligible vessels will take one trip in the VA/NC Area and 100 percent of eligible vessels will take the remaining trips in the Hudson Canyon Area. The Council does not expect all eligible vessels to fish and the actual catch by participating vessels will be considerably lower than the TAC. The in-season adjustment, on or after October 1 will allow vessels to utilize trips that are not taken by eligible vessels before August 31. The estimated total fishing effort, scallop catch, and bycatch are reported in Section 6.3.4.1.

A wide range of trip allocations (three to nine trips) and trip limits (approximately 9,000 to 41,000 pounds) were analyzed and evaluated. The choices are shown in Table 16, and Table 10, and the estimated impacts are given in Section 6.3.4.1.2.

Section 6.3.4.4.9 suggests that a possession limit less than 18,000 pounds will be insufficient to attract fishing effort into the Hudson Canyon and VA/NC Areas, because of the net revenue per day-at-sea expected in the areas that are now open to fishing. On the other hand, Section 6.3.4.1.4 suggests that it will take about 8½ days-at-sea in the Hudson Canyon and VA/NC Areas to catch a 21,000 pound of sea scallops (including steam time to and from port), so higher amounts would be less conservative (Section 6.3.4.1.4), especially in light of possible increases of effort from higher day-at-sea utilization or from new vessels with converted Confirmation of Permit Histories.

Although lower trip limits (with more allocated trips) were estimated to be more profitable than fishing in the existing open areas, the Council opted for the highest scallop trip limit that would be conservation neutral. This approach gave the greatest assurance that eligible vessels would fish in the Hudson Canyon and VA/NC Areas and reduce their fishing effort in the open areas, where smaller scallops predominate. With a 21,000 pound scallop possession limit, the conservation benefits of the day-at-sea tradeoff are expected to be four percent for the Amendment 7 TAC option and six percent for the rotation management TAC option.

At 24,000 pounds, the analysis (Section 6.3.4.1.4) estimates that there would be negligible conservation benefit arising from the day-at-sea tradeoff (Section 5.1.2.2.3). This occurs because there are limits to the amount of scallops that can be processed with a seven-man crew. While the day-at-sea tradeoff itself imparts little conservation benefit with higher trip limits, there would still be a significant reduction in actual fishing time when vessels stopped fishing to allow the crew’s shucking process catch up with the catches. In 2001, the Council chose to round the trip limit down to err on the side of caution. In 2003, less caution is needed because the areas could re-open without restrictions at the end of the fishing year. A second factor in this recommendation as a preferred alternative is that re-activation of latent or unused permits would be more likely in 2003 than in 2001 as catches continue increasing. In this case, the product of the allocated trips and the scallop possession limit would slightly exceed the TACs, but it would be less likely to generate a derby-style fishery managed by a TAC alone.

**Table 9. Rotation management TAC alternative (Section 5.1.2.2.1):** Net conservation effect of the day-at-sea tradeoff in 2003 on the estimated number of scallops caught compared to the number of scallops caught by the status quo (120 day-at-sea allocation, Amendment 7 TAC target, and 18,000 lb. scallop possession limit).

Day-at-sea tradeoff option (DAS/possession limit)	Average trip length (days)	Alternative				
		100 DAS F = 0.20 target	100 DAS F = 0.32 target	120 DAS F = 0.20 target	120 DAS F = 0.32 target	140 DAS F = 0.32 target
10/9,000	3.6	-47.5%	-78.0%	-32.4%	-62.9%	-45.4%
10/11,000	4.4	-35.3%	-59.7%	-20.2%	-44.7%	-27.4%
10/14,000	5.6	-23.2%	-41.5%	-8.1%	-26.4%	-9.4%
10/18,000	7.2	-15.1%	-29.3%	0.0%	-14.2%	2.6%
10/21,000	8.4	-11.0%	-23.2%	4.1%	-8.1%	8.6%
10/41,000	16.3	1.1%	-4.9%	16.2%	10.2%	26.6%

There are significant impediments for Confirmation of Permit Histories (CPH) to be reactivated. The profits from four trips and the day-at-sea adjustment (about \$114 to \$181 thousand) may not be enough to justify the cost of reactivating the permit on a new or replacement vessel. Other factors, including the expected increase in open area catches during the 2003 fishing year (included in the estimated profit above) are more likely to induce owners to reactivate vessels with Confirmation of

Permit Histories. Any reactivation of a CPH is likely to be more than offset by non-participation of the 35 vessels that did not fish for scallops during the 2001 fishing year.

Since the price differential is small between large and small scallops and discard mortality is generally low, highgrading (i.e. discarding less valuable scallops) is not likely to occur or be a significant problem, since discard survival is usually high. On the other hand, if the price for large scallops is significantly higher than that for smaller scallops, vessels may begin to high-grade to get the highest possible price for the trip's 21,000 pounds of scallops. Some of this behavior was reported in the Hudson Canyon Area during 2001 when the price for U10 scallops exceeded that for 10-20 count scallops by over \$1.00 per pound. Since the largest scallops were just under the U10 classification, a few small scallops could make the catch fall into the next lower meat count, with a significant effect on price to the boat, unless the boat graded the catch before landing.

#### ***4.1.2.5.2 Vessels with General Category scallop permits***

The scallop possession limit for vessels fishing with a General Category scallop permit in the Hudson Canyon and VA/NC Areas will be lowered (relative to no action) to 100 pounds of scallop meats. These vessels may not retain and possess in-shell scallops. Vessels with limited access scallop permits, but not on a scallop day-at-sea while fishing inside of the Hudson Canyon and VA/NC Areas will have the same possession limit that applies to vessels with a General Category scallop permit.

The scallop possession limit will remain in effect to accommodate scallop bycatch in the Hudson Canyon and VA/NC Areas throughout the year, even if an area closes for limited access scallop vessels. On March 1, 2004, the scallop possession limit for General Category vessels fishing in the Hudson Canyon and VA/NC Areas will change to the level that applies to these vessels while fishing in other open scallop areas (i.e. with a 400 pounds meat weight possession limit).

**Rationale:** This alternative allows vessels with a General Category scallop permit to retain a reasonable amount of scallop bycatch, reducing regulatory discards. It is not anticipated that a low, 100-pound limit would be a significant threat to enforcing the scallop possession limit for limited access vessels nor would it create an incentive for vessels without a limited access permit to target sea scallops in the restricted Hudson Canyon and VA/NC Areas. A higher scallop possession limit could open up a directed open-access scallop fishery in a restricted scallop fishery management area. The prohibition on possessing in-shell scallops is needed to prevent a broad-scale, open access shell stock fishery from developing and reduce the opportunity for illegal transfers of shell stock at sea.

#### ***4.1.2.5.3 Shellstock – 50 US Bushels***

Any vessel with a limited access scallop permit on an authorized scallop trip in the Hudson Canyon and VA/NC Areas will be prohibited from possessing more than 50 US bushels of shell stock when it is no longer in these areas. For purposes of enforcing the scallop trip limit, 50 US bushels of shell stock shall be counted as 400 pounds of scallop meat.

**Rationale:** The purpose of this measure is to prevent vessels from catching more than the scallop trip limit allows and discarding the excess scallops in port. It will also ease the enforcement burden caused by the potential for partial offloadings as scallops are shucked in port. On the other hand, it is necessary to allow some landings of shell stock to satisfy a market for large, live scallops.

#### **4.1.2.6 Enforcement Provisions**

##### ***4.1.2.6.1 Trip Declaration and Notification***

An activity code will be incorporated into the VMS programming to indicate when a scallop vessel is on a closed area trip. A vessel may set an activation code for a controlled access program trip no more than the number of trips authorized for fishing within the Hudson Canyon and VA/NC Areas (Section 5.1.2.1.1). NMFS may trigger a controlled access program trip when either the vessel's VMS reports its first position within one of the areas or when notified by the existing VMS email capabilities that the vessel will be taking an access area trip. To simplify administration and enhance monitoring, NMFS may require email notification of a controlled access trip before leaving the dock. No additional notification is required at the end of a trip, before landing.

##### ***4.1.2.6.2 Vessel operation and landing***

To simplify law enforcement and reduce the potential for mis-reporting, vessels on an area access trip (Section 5.1.2.1.1) may not fish for any species except within the Hudson Canyon and VA/NC Areas. Vessels fishing for scallops during a scallop day-at-sea in one of these areas may not enter or re-enter the other area. Partial unloadings of the catch at more than one dealer is also prohibited.

**Rationale:** Circumvention of the scallop possession limit will significantly undermine the conservation goals of the proposed action. Allowing scallop fishing on area access trips elsewhere would provide greater opportunity to transfer scallops at sea, thereby avoiding the scallop possession limit. The allocation of trips and the scallop possession limit are the primary management measures for controlling scallop catch and are intended to prevent the fishery from exceeding the scallop TAC.

Partial unloadings could also reduce the effectiveness of the scallop possession limit to keep landings below the TAC. Allowing landings of scallops at more than one dock or port would make it harder to track and monitor the landings from closed area trips.

##### ***4.1.2.6.3 Penalties for Controlled Access Area Fishery Violations***

Since many of the measures in the proposed action ensure that the FMPs meet their conservation goals for scallops, yellowtail flounder, and other groundfish, the Council considers violations of the closed area fishery management measures to be a very serious offense, particularly for intentional and willful violations. These type of violations include significant overages of the possession limits, transfers at sea, exceeding the crew limits, fishing with non-conforming gear, and fishing on more than the number of authorized trips. Penalties should therefore be commensurate with the seriousness of the violation, possibly including barring future access to areas that had been closed to rebuild scallops or other species

**Rationale:** There will be substantial economic incentives to break the rules for fishing in the Hudson Canyon and VA/NC Areas, largely due to the differences in the resource condition in these areas compared to the existing open areas. This provision establishes the Council's intent about intentional and willful violations of the proposed action. NMFS should take this intent into account when determining appropriate penalties for serious violations.

#### **4.1.2.7 Reporting requirements**

The reporting requirements would continue the existing requirements for vessels fishing for scallops in the Hudson Canyon and VA/NC Areas during 2001 and 2002.

#### ***4.1.2.7.1 Vessel monitoring systems (VMS)***

All limited access scallop vessels that fish in the Hudson Canyon and VA/NC Areas will be required to have a functional VMS onboard. In addition to the current VMS-based reporting requirements, the Regional Administrator may require vessels that fish for scallops in these areas to make daily reports on the haul weight of scallops, yellowtail flounder, summer flounder, skates, and monkfish; the total number of tows since the last daily report; and the area fished. This daily report must be made via the e-mail messaging capability built into the VMS units.

**Rationale:** The additional reporting requirements are necessary for NMFS to monitor the fishery and make in-season adjustments to the trip allocations or discontinue the area access program because the scallop landings exceed the TACs. Currently all full and part-time vessels are required to have a VMS onboard. It is anticipated that very few occasional vessels will want to fish in the re-opened closed areas due to the day-at-sea cost and due to the smaller size of most vessels with occasional limited access scallop permits. During 2003, occasional scallop vessel will receive 4 to 12 days-at-sea for the year. One trip to the Hudson Canyon or VA/NC Areas would therefore cost them most of their annual day-at-sea allocation.

#### ***4.1.2.7.2 More frequent polling of VMS equipment***

NMFS will increase the polling frequency for all limited access scallop vessels with VMS systems (regardless of whether the vessel fishes in the Hudson Canyon and VA/NC Areas) to an average of twice per hour, from the current rate of one polling per hour. This enhanced polling frequency would begin on the latter of March 1, 2003, or whenever limited access scallop vessels are authorized to make trips within the Hudson Canyon and VA/NC Areas. The enhanced polling frequency would terminate when both areas are no longer open for scallop fishing if the landings equal the TACs. The added costs associated with the increased messaging and associated administrative costs are to be borne by the scallop vessels with VMS systems.

**Rationale:** The increased polling frequency will enhance the monitoring capability to catch violators when fishing in the area access program. Since the average would be a polling every 30 minutes, there would be a 50% chance of detection for entries into the Hudson Canyon and VA/NC Areas of more than 15 minutes and a 100 percent chance of detection for entries into the closed areas for longer than 30 minutes. The Council believes this will be sufficient to catch violators that could be transferring scallops at sea to circumvent the scallop possession limit or attempting to take a tow within the Hudson Canyon and VA/NC Areas while not on an area access trip.

The original intent of the scallop VMS program was to determine when a vessel was at sea or at the dock, to be able to deduct the correct number of days-at-sea from a vessel's annual allocation. For this new purpose, more frequent polling is needed. It is also necessary to increase the polling frequency for scallop vessels that are not on a Hudson Canyon or VA/NC Area trip, since the purpose of the provision is to prevent transfers at sea to other scallop vessels. It is not necessary to monitor non-scallop vessels, because it would be highly unusual for a vessel to be unloading large amounts of scallops without scallop fishing gear onboard.

#### ***4.1.2.7.3 Vessel trip reports (VTR)***

In addition to the information that NMFS currently requires scallop vessels to submit on Vessel Trip Reports (VTR), the Regional Administrator is encouraged to require vessels on area access program trips to report the following detailed information:

Start and end time of each tow

- Duration of tow
- Latitude and longitude coordinates of each tow
- Depth of tow
- A description of the gear used
- The number of crew members aboard the vessel
- Subjective description of the habitat they are dredging
- An estimated amount and size of scallops caught on each tow
- Characterization (amount, size, and condition) of all bycatch for each species.

**Rationale:** More detailed information is needed to evaluate future area rotation strategies and the effects they will have on scallops, bycatch species, and habitat. There is very little information to assess how a full-scale commercial fishery will operate under a condition that is representative of a rebuilt scallop resource. Since conditions in the Hudson Canyon Area are more in line with a rebuilt resource, this information is crucial for developing a rotational area management strategy, contemplated for Amendment 10. The model developed for this framework adjustment makes some very basic assumptions about fishing operations and the distribution of fishing effort relative to the resource (Section 8.1.4.1 in Framework Adjustment 11; NEFMC 1999a). On average, the model assumptions are acceptable for estimating overall impacts, but changes in fishing strategies and non-uniform fishing effort could cause different results. The above list of variables, collected for each controlled access trip, would allow the Council to refine and modify this model to improve its predictive capabilities.

#### **4.1.2.8 Observer requirements**

##### ***4.1.2.8.1 Vessels must carry observers on 10 percent of Hudson Canyon Area trips and 20 percent of VA/NC Area trips***

Two-percent of the scallop TAC will be allocated (Section 5.1.2.2.1.3) to authorize additional landings on trips carrying a NMFS-approved observer. NMFS will determine and authorize additional landings on observed trips to defray the observer costs. Any scallop landings on observed trips that exceed the scallop possession limit will be counted against the TAC set aside for observers, rather than the scallop TAC (Section 5.1.2.2.1.1).

As a goal, the minimum observer coverage should be 10 percent of the scallop trips for each gear and permit category in the Hudson Canyon and VA/NC Areas and 20 percent of the scallop trips for each gear used by limited access scallop vessels in the VA/NC Area. The gear/permit categories include limited access scallop vessels using dredges and limited access scallop vessels using trawls. Sea sampling by observers on General Category scallop vessels fishing in the Hudson Canyon and VA/NC Areas would not be required to meet this sampling frequency goal.

Sampling frequency would therefore be equivalent for limited access vessels using trawls, limited access vessels using dredges. The Regional Administrator should take whatever steps are necessary to achieve these observer coverage goals, including training of new observers, contracting with third parties, seeking other funding sources, authorizing fewer closed area trips, or even delaying the controlled access program for fishing in the Hudson Canyon and VA/NC Areas.

NMFS may require any vessel fishing on a scallop day-at-sea within the Hudson Canyon and VA/NC Areas (Section 5.1.2.1.1) to carry a NMFS-approved observer. The cost of carrying the observer will be borne by the vessel, unless otherwise authorized by the Regional Administrator. The Regional Administrator shall authorize such vessel, carrying an observer, to land an amount of scallops above the scallop possession limit to help defray the cost of carrying an observer. The observer will be paid through and by a means established by the Regional Administrator for paying observers for the closed area scallop fishery. The vessel is obligated to pay the observer costs regardless of whether the vessel lands or sells any scallops on the observed trip.

In addition to the customary data that sea samplers collect, NMFS should also take steps to also collect the following information:

- Detailed written and photographic records of all bycatch associated with scallop fishing in the closed areas
- The characterization of bycatch should include a classification of sediment information and associated macro-invertebrates
- Finfish discard and discard mortality data.

**Rationale:** A high level of observer coverage is needed because of the concerns over important impacts from scallop fishing and the uncertainty about how a full-scale commercial fishery will operate under conditions characteristic of a rebuilt resource. These concerns include bycatch and bycatch avoidance, discarding, damage and recovery of habitat, and detailed scallop fishery behavior.

The observer data is not as crucial for administering a bycatch TAC, as it was for the groundfish closed areas in 2000. Twenty-five percent observer coverage is therefore unnecessary and for most other sub-sampling programs 100 trips for each provides an adequate number of observations for precision at a moderate level of detail. The smaller the sample stratification within the areas, the greater number of trips is required to achieve the same level of precision. If future analysis requires stratification in four zones, for example, this sampling intensity would provide for an average of 25 samples in each zone, but in proportion to the effort in that zone. More stratification would provide fewer samples. The 100 trips is therefore a rough estimate of the amount of samples needed for analysis of future management analysis. It is impossible to accurately specify a minimum amount for the each area in total, because the amount of detail needed by future management actions cannot be anticipated. Ten percent of trips in each gear and permit category for the Hudson Canyon Area and a higher sampling frequency, 20 percent, is needed in the VA/NC Area because of its small size, low TAC, and low total number of trips (see Section 6.3.4.1.3).

A compelling reason to closely monitor the closed area scallop fishery with a high level of observer coverage is to quantify how a full-scale commercial fishery would operate under conditions that are characteristic of a rebuilt resource. Observers collect more detailed information, often on a tow-by-tow basis, than is possible via VTRs, VMS or dealer reports. These alternative sources of information also tell little about discarding<sup>25</sup>. This detailed information is crucial for identifying where and how the fishery operates within the re-opened closed area, so that the information can be applied to future openings of closed areas as part of a rotational area management strategy, contemplated by Amendment 10. Unlike the model used to estimate fishing time and catch from the proposed closed area fishery, scallop fishing will not have uniform effort across the closed area since it will be affected by scallop density, bycatch, vessel crowding, and other factors. The sea sampling data, coupled with VTRs, will be used to fine tune the model developed to estimate impacts of the closed area scallop fishery.

A second reason for the observer sampling is to better understand the important differences in fishing efficiency and behavior of different types of vessels in rebuild areas. One significant unknown is how vessels using trawls will operate in the re-opened areas. It may be that the fishing behavior and dynamic changes differently for vessels using trawls and vessels using dredges. These differences affect the impacts of the day-at-sea tradeoff, discarding, and where the vessels choose to fish within the re-opened areas. At-sea data collection will provide important information to answer this type of questions (see Section 6.3.4.1.3).

Collection of information about the unrecorded catch (including invertebrates, scallop shells, and rocks) via photographic records would be cost-efficient compared to counting or estimating these variables in addition to the data now collected. This data would be quantitative in nature, but has a very

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<sup>25</sup> Vessel operators report the hail weight, but not the size distribution, of discards on each day of fishing. These hail-weights are thought to be unreliable, however, and are not used without a source of data to validate the results. Observer data serves to validate discard information on VTRs.

good potential to identify trends that would be used in future scallop management actions. Sediment samples would allow the collection of data related to habitat in scallop resource areas. This information is of critical value to managers, but as of yet, there are no broad-scale programs to collect this data. Lastly, the collection of discard and discard mortality information would address the Sustainable Fisheries Act mandate associated with National Standard 9. Additional training would be required for observers to evaluate discards and the potential for discard mortality, but it would be a big improvement over scientific “assumptions” and fishermen’s “anecdotal” reports that often disagree.

It is necessary to fund this intense data collection activity through a TAC set aside, because no other funding is available. Most funding for observers comes from a Sea Sampling Observer Program to identify and enumerate marine mammal encounters. Since scallop dredges have few encounters with marine mammals, sea sampling scallop trips has a relatively low priority. Additional observer coverage is sometimes funded to take biological samples and record discards, but these scarce funds are used for other equally important fisheries like groundfish.

To enable some of the scallop landings to fund observers, the Regional Administrator may establish a mechanism for these proceeds to pay for observers and help defray the costs of carrying an observer. At five dollars per pound, the additional landings associated with a two-percent TAC set aside and the rotation management TAC target could provide between \$1.9 and \$2.1 million to fund this activity. Since the Council anticipates that 828 to 1,380 trips could be taken by active limited access scallop vessels, this fund could allow from \$4,800 to \$12,100 (or about 2,500 lbs.) per observed trip at a 10 percent sampling frequency, more than enough to provide funds for the proposed sampling intensity (Table 13). In the worst case, i.e. the lowest scallop possession limit associated with the greatest number of trips, the estimated costs would be between 53 and 59 percent of available funds, assuming the \$595 per observer-day cost. As such, the one-percent supplemental TAC set-aside would provide a sufficient buffer against unanticipated costs.

**Table 10. Rotation management TAC target:** Gross value of 2003 TAC set aside (assuming an average price of \$3.25 per pound) and observer costs (assuming that the daily observer cost is \$595 and the average trip duration is six days for limited access vessels).

Observers	Cost of trips to be sampled			Total	Observer cost/trip	Pounds of landings
	10%	20%				
Sampling intensity						
Value of TAC set aside	\$ 1,109,146	\$ 15,047		1,124,192		
Scallop possession limit						
11000	\$ 590,720	\$ 16,027		606,747	\$ 3,563.93	1,097
13000	\$ 559,317	\$ 15,175		574,492	\$ 4,049.64	1,246
16000	\$ 528,001	\$ 14,326		542,327	\$ 4,778.21	1,470
21000	\$ 496,630	\$ 13,474		510,105	\$ 5,992.50	1,844
31000	\$ 465,211	\$ 12,622		477,833	\$ 8,421.07	2,591

It is inadvisable for the vessel to pay the observer directly, due to a potential conflict of interest. A fund for such purpose could be established, on the other hand, into which a fixed fee per observed day, paid through authorized, additional scallop landings could be deposited to defray the observer costs or pay for observers through a third-party contract.

#### 4.1.2.9 Day-at-sea adjustments for broken trips to the Hudson Canyon and VA/NC Areas

Under the present Area Access Program, vessels on a Hudson Canyon or VA/NC Area trip are automatically charged a minimum of 10 days against their annual day-at-sea allocation. Trips that take longer than 10 days are charged for actual time at sea. Some vessels are forced to return to port early, due to many possibly unforeseen conditions or events, including inclement weather, medical emergencies, and equipment failure. Under NMFS policy, vessels are considered for an exemption from this automatic 10 day-at-sea charge if vessel owners request consideration from the Regional Administrator of the

circumstances of the broken trip. Vessels that are granted an exemption under this policy are charged for actual time at sea, as if they are on a limited access scallop fishing trip conducted elsewhere and conditions demanded an early return to port.

The Council considered two alternative approaches to addressing this issue. The preferred alternative (described below) would continue giving the Regional Administrator discretion in setting criteria for which Hudson Canyon and VA/NC Area trips would be eligible for a day-at-sea tradeoff exemption, due to circumstances beyond the captain's control. A second alternative (described in Section 5.2.2.5) would set a maximum amount of landings that could occur for Hudson Canyon and VA/NC Area trips to be eligible for a day-at-sea exemption.

#### ***4.1.2.9.1 No Action - NMFS will Continue to Address Broken Trips through Policy***

Under this alternative, the Regional Administrator would continue to establish a policy to consider potential day-at-sea adjustments for vessels with broken trips in the Hudson Canyon and VA/NC Areas. Day-at-sea adjustments would be considered under the policy on a case by case basis. This is the way in which such requests were considered in previous closed area exemption and area access programs. The Regional Administrator could maintain the current policy or make minor revisions to the policy as necessary or as conditions in the fishery require.

**Rationale:** Allowing exemptions through NMFS policy to address broken trips would maintain the Regional Administrator's discretion in determining whether vessels are eligible for an exemption or not. After thorough consideration, the Council determined that more work was needed to resolve the enforcement problems associated with previous proposals. The Council therefore chose to re-consider the previous Framework Adjustment 14 proposal in Amendment 10 and continue the status quo alternative during this interim period before Amendment 10 is approved. The Council would like to liberalize the current criteria however so that it reduces the cost associated with the risk of losing unused days on artificially shortened trips. Doing this could promote more fishing in the Hudson Canyon and VA/NC Areas by vessels using their authorized trips, rather than fishing in the other open scallop areas where mortality is above  $F_{max}$ .

## ***4.2 Non-preferred alternatives***

### **4.2.1 Annual Day-at-sea Allocations for Limited access Scallop Vessels**

#### **4.2.1.1 45 Full-time, 18 Part-time, And 4 Occasional Day-at-Sea Allocations during the 2003 Fishing Year; (No Action)**

According to the Amendment 7 schedule, vessels issued a full-time limited access scallop permits in 2003 would receive 45 days to fish for scallops from March 1, 2003 to February 28, 2004 with dredges or trawls (if authorized). Vessels with part-time permits would receive 18 days and vessels with occasional permits would receive 4 days to fish for scallops during March 1, 2003 to February 28, 2004.

**Rationale:** The Amendment 7 day-at-sea allocations were intended to achieve specific fishing mortality objectives and promote rebuilding of scallop biomass within the timeframe specified by the amendment. The day-at-sea allocation schedule was estimated based on an assumption of average recruitment from 1978 to 1997 and the assumption that all areas were considered potentially open to fishing. Instead, a significant portion of the scallop resource has remained closed to fishing (despite the effects of

Framework Adjustments 11 and 13 that allowed temporary access to portions of the Georges Bank closed areas) and scallop biomass has rebuilt more quickly than anticipated due to above average recruitment. The area closures and crew limit has therefore proved more conservative than anticipated and the very restrictive day-at-sea allocations predicted in Amendment 7 have proven to be unnecessary under current conditions. In fact, scallop biomass has rebuilt much more quickly than anticipated and new projections show that the average scallop biomass for both stock are near or exceed the Amendment 7 biomass targets, much earlier than anticipated by Amendment 7. One problem however will be that a significant fraction of that biomass will be in areas that are temporarily or possibly permanently closed to sea scallop fishing.

The no action day-at-sea allocation would be necessary to meet the mortality targets if all areas were open to fishing and average recruitment occurred (NEFMC 1999b). This prediction is consistent with the analysis and assumptions for Amendment 7. According to the new analysis, which accounts for the protection afforded by closed areas, there is a nearly zero probability of exceeding the Amendment 7 fishing mortality target ( $F = 0.22$ ) for the 2003 fishing years. This is a highly conservative allocation given current conditions and would produce significant reductions in net benefits (Section 6.3.4.4.7). The status quo day-at-sea allocations are therefore unnecessary and counter-productive to achieving the management goals in Amendment 7.

Compared to status quo (Section 5.1.1.1), producer surplus will decline by \$7 million, consumer surplus by \$40 million, and total benefits by \$47 million for 2003. Over the long-term, net benefits would be \$28 million lower than those for the status quo.

#### **4.2.1.2 100 Full-time, 40 Part-time, and 8 Occasional Day-at-Sea Allocations during the 2003 Fishing Years**

The framework adjustment proposes to adjust the day-at-sea allocations in the 2003 fishing year to be consistent with Amendment 7 fishing mortality targets. If this alternative is approved and implemented, full-time scallop vessels would receive 100 days-at-sea to fish for scallops during March 1, 2003 to February 28, 2004. Part-time vessels would receive 40 days-at-sea and occasional vessels would receive 8 days-at-sea. Up to 10 unused days-at-sea from 2002 may be carried over by some limited access vessels into the 2003 fishing year.

**Rationale:** Increasing the day-at-sea allocation to these levels 2002 would generate about 24,807 days of fishing effort, as measured by the vessel monitoring or call-in systems. This is about the same amount of nominal fishing effort that occurred during the 2000 fishing year, even though there has been a gradual increase in active permits and day-at-sea use. Even with this higher allocation of days, compared to no action, with the three areas closed to scallop fishing on Georges Bank and the area access program for the Hudson Canyon and VA/NC Areas (for example, with a 21,000 pound – 10 day-at-sea tradeoff) this alternative is also estimated to have a nearly 100-percent probability of achieving the Amendment 7 mortality schedule. The updated projections (Section 6.3.4.1.1) indicate that the present biomass levels will not be jeopardized over the short-term by this day-at-sea adjustment.

As with the other alternatives below for allocating 120 or 140 days-at-sea, this alternative is unsustainable in the long run without access to important scallop resource areas on Georges Bank. Should this occur, the biomass levels and CPUE are expected to increase in the short-term but decline in the long-term. After this time, the majority of scallops from the past few years of favorable recruitment would have been caught. Over the short term, higher day-at-sea allocations would cause biomass to decline in open fishing areas faster than the above alternatives. For this alternative, however, the change in exploitable biomass for the resource would increase by 7 - 8 percent in 2004 and by 13 - 15 percent by

2006. LPUE and biomass in areas that are now open would change from -1 to 7 percent in 2004 and by -7 to 10 percent by 2006, depending on the TAC and amount of fishing effort in the Hudson Canyon Area.

The analysis of this option is given in Section 6.3.4.1.1. This alternative would be more risk adverse than those in Sections 5.1.1.1 and 5.2.1.3, considering the following factors:

- Uncertainty in the stock status
- Uncertainty in the fishing mortality reference points
- Uncertainty in the biomass reference points
- Uncertainty in the DAS/F relationship
- The potential for instability in management regulations
- Consistency with secondary FMP objectives
- More stable production over the long term
- Fewer community impacts.

This alternative to increase the day-at-sea allocations to a lower amount than the status quo would therefore have a higher probability to achieve the fishing mortality target and it would have a less uncertainty in the model assumptions and closed area access policies. Net benefits would increase by \$66 - 74 million (Section 6.3.4.4.2). Producer surplus would decline by \$30 - 31 million and consumer surplus would increase by \$97 - 103 million. For 2003 alone, producer surplus would increase by \$7-12 million, consumer surplus by \$31-39 million, and total benefits by \$38-50 million, compared to no action.

The major advantage of a 100 day-at-sea allocation in 2003 is that it appears to minimize fishing time and therefore habitat and bycatch impacts, while causing trivial declines in fleet landings and revenue when combined with setting the Hudson Canyon and VA/NC Area TACs based on a rotation management area target. Coupled with the cost-savings derived from reducing variable costs, producer surplus and net benefits even increase in the short-term (i.e. one year). With the "Low F" TAC for the Hudson Canyon and VA/NC Areas, landings would decline by 7 percent and revenue would decline by two percent, but with the "High F" TAC the landings decline only one percent and revenue would be unaffected, compared to the status quo. On the other hand, total fishing time would decline by 16 to 27 percent, having similar reductions in habitat and bycatch impacts, depending on how fishing effort is distributed.

In the short-term, overall biomass would increase somewhat more than the status quo (120 days), but in the presently open areas, the biomass is projected to decline in 2004 by 2 to 7 percent in the Mid-Atlantic and by 6 to 11 percent for Georges Bank. This decline is slightly less than the decline projected for the status quo, 3 to 9 percent in the Mid-Atlantic and 12 to 17 percent for Georges Bank (Table 5). Over the longer term through 2007, the projections indicate open area biomass declining by 35 - 41 percent in the Mid-Atlantic and by 15 to 18 percent for Georges Bank. All are less than the decline in open area biomass projected for the status quo day-at-sea allocation.

Although this alternative had important environmental benefits, the Council did not prefer this alternative because of the following considerations:

- Uncertainty about the relationship between bottom contact time and reductions in habitat and bycatch impacts.
- Uncertainty in estimated profitability of each scallop vessel
- A significant fraction of the lower bottom contact time, predicted by the model, could be achieved by raising the TAC and encouraging day-at-sea use in the Hudson Canyon Area

- Council policy has not yet reduced optimum yield or effort allocations in a fishery to reduce habitat and/or bycatch impacts. Instead more direct methods, such as area closures and/or gear restrictions, have been used to address these issues without reducing optimal fishery allocations for target species.

These considerations and the rationale for the Council's proposed action is given in Section 1.0. Based on public comments, the Council determined that these factors outweighed other environmental benefits that were intangible (i.e. reducing habitat impacts through less bottom contact time) and uncertain (e.g. fishing costs and profitability). The Council therefore chose the status quo day-at-sea allocation as its preferred alternative, even though the technical analysis predicted lower scallop mortality and bottom contact time (with an associated reduction in habitat and bycatch impacts) with little or no short-term cost.

#### **4.2.1.3 140 Full-time, 56 Part-time, and 12 Occasional Day-at-Sea Allocations during the 2003 Fishing Years**

The framework adjustment proposes to adjust the day-at-sea allocations in the 2003 fishing year to be consistent with Amendment 7 fishing mortality targets. If this alternative is approved and implemented, full-time scallop vessels would receive 140 days-at-sea to fish for scallops during March 1, 2003 to February 28, 2004. Part-time vessels would receive 56 days-at-sea and occasional vessels would receive 12 days-at-sea. Up to 10 unused days-at-sea from 2002 may be carried over by some limited access vessels into the 2003 fishing year.

**Rationale:** Increasing the day-at-sea allocation to these levels 2002 would generate about 33,356 days of fishing effort, as measured by the vessel monitoring or call-in systems. Even with this higher allocation, with the three areas closed to scallop fishing on Georges Bank and the area access program for the Hudson Canyon and VA/NC Areas (for example, with a 21,000 pound – 10 day-at-sea tradeoff) this alternative is also estimated to have a nearly 100-percent probability of achieving the Amendment 7 mortality schedule. The updated projections (Section 6.3.4.1.1) indicates that the present biomass levels will not be jeopardized over the short-term by this day-at-sea adjustment.

As with the above alternatives for allocating 100 to 120 days-at-sea, this alternative is unsustainable in the long run without access to important scallop resource areas on Georges Bank. Should this occur, the biomass levels and CPUE are expected to decline, especially after 2006. After this time, the majority of scallops from the past few years of favorable recruitment would have been caught. Over the short term, higher day-at-sea allocations would cause biomass to decline in open fishing areas faster than the above alternatives. The change in exploitable biomass for the resource would increase by 4 percent in 2004 and by 7 percent by 2006, yet LPUE and biomass in areas that are now open would decline by 5 and 27 percent, respectively.

The analysis of this option is given in Section 6.3.4.1.1. Higher day-at-sea allocations were not preferred because there is less certainty that Amendment 7 biomass objectives would be achieved, and that the higher day-at-sea allocation could produce a sustainable, optimum yield. The following factors contributed to this opinion.

- Uncertainty in the stock status
- Uncertainty in the fishing mortality reference points
- Uncertainty in the biomass reference points
- Uncertainty in the DAS/F relationship
- The potential for instability in management regulations

- Consistency with secondary FMP objectives
- More stable production over the long term
- Fewer community impacts.

This alternative to increase the day-at-sea allocations above the status quo would therefore have a lower chance to achieve the fishing mortality target (although in 2003 and beyond, it has a greater than 90 percent chance to not exceed the Amendment 7 target due to the effect of the current area closures) and it would have a greater uncertainty in the model assumptions and closed area access policies. Net benefits would decline by \$49 million (Section 6.3.4.4.2). Producer surplus would decline by \$151 million and consumer surplus would increase by \$102 million. For 2003 alone, producer surplus would increase by \$8 million, consumer surplus by \$65 million, and total benefits by \$73 million, compared to no action.

Despite meeting the mortality objectives of the FMP and Amendment 7, the Council did not choose this alternative for the proposed action, because it had negative economic benefits and higher impacts on habitat and bycatch. Current landings and profitability could be maintained with the status quo day-at-sea allocation, while the Council is considering Amendment 10.

## **4.2.2 Controlled access program for the Hudson Canyon and VA/NC Areas**

### **4.2.2.1 Amendment 7 target (F=0.20) - Total Allowable Catch (TAC), trip allocations, and TAC set-aside**

When the Regional Administrator determines that the scallop landings from either one of the areas exceed its TAC, the Regional Administrator will prohibit vessels from fishing for sea scallops in the area by prohibiting the possession of sea scallops within it, subject to the regulations concerning transiting. The TAC has a direct bearing on the initial and re-allocated number of trips that eligible vessels may take within these areas as discussed below. TAC set asides would fund research, fund observers, and account for landings by vessels without limited access scallop permits that might target sea scallops or catch sea scallops as a bycatch.

**Rationale:** The purpose of the TAC is to ensure that the fleet does not exceed the fishing mortality targets for the areas and that biomass in these areas can continue to support the fishery for several years while the remainder of the resource rebuilds. It is also used as the basis to determine the initial number of trips to be allocated to eligible vessels and to estimate how many trips that the Regional Administrator may authorize for an in-season adjustment.

### **4.2.2.2 Total Allowable Catch (TAC) for the Amendment 7 target**

The TAC for the Hudson Canyon Area would be 5,151 mt (11.36 million lbs.) for 2003, based on a fishing mortality target equal to 0.20 (16 percent exploitation rate). The TAC for the VA/NC Area would be 69 mt (150,000 lbs.).

**Rationale:** These TACs would allow landings of sea scallops that are consistent with the fishing mortality target (F = 0.20) in the overfishing definition. This would produce lower landings in 2003 than the High F option described below, but the biomass in the areas would not decline as rapidly and there would be a higher yield in future years if the proposed action had to extend beyond 2003, rotation management area management in Amendment 10. A longer rebuilding period for areas now fished may be needed if future recruitment is less than anticipated or if total fishing effort increases. Total fishing effort could increase through more efficient use of a day-at-sea, re-activation of a significant number of

Confirmation of Permit Histories, or a higher day-at-sea utilization rate by active limited access scallop vessels.

At the TAC, the average biomass in the Hudson Canyon Area is expected to increase by 2 percent between the end of 2002 and the end of 2003, after accounting for the removal of the TAC. For the VA/NC Area, the total biomass is expected to increase by 53 percent. The proposed TACs are in the long-term unsustainable, but biomass is expected to continue increasing in these areas through 2004 because of favorable recruitment.

Under this option, the total biomass for the Mid-Atlantic is expected to decline by 2 –3 percent to 4.5 to 4.6 kg/tow (15 percent above the  $B_{MSY}$  proxy for Mid-Atlantic scallops) in 2004. For the open fishing areas of Georges Bank, the projections estimate that biomass would decrease by 11 - 17 percent to in 2003, depending on whether the regulations in 2003 allocate 100 or 120 full-time days-at-sea. The high biomass in the Georges Bank closed areas (increasing by 16 percent to 30.7 kg/tow in 2004), however, keeps the total biomass well above the 8.2 kg/tow target. Projections for this option are given in Section 6.3.4.1.1 and the TAC estimates are presented in Section 6.3.4.1.2.

The Amendment 7 fishing mortality target for the controlled access program was not chosen because the Council wanted to encourage vessels to fish in the Hudson Canyon Area where the scallop size is projected to be larger than the scallops found elsewhere in open fishing areas. Coupled with the crew-limited shucking capacity and the day-at-sea tradeoff, the higher TAC in the proposed action would decrease overall scallop mortality and achieve a large part of the reductions in bottom contact time associated with a 100 day-at-sea allocation (11 vs. 27 percent reduction relative to status quo). Thus, this alternative would have higher environmental impacts and lower economic benefits than the TAC alternative chosen for the proposed action.

#### **4.2.2.3 Trip allocations with the Amendment 7 target TAC**

With the Low F TAC option, the Regional Administrator would allocate 553 trips to the fleet, or two trips for each eligible limited access scallop vessel, taking into account the number of full-time, part-time, and occasional limited access scallop permits (see calculations in the tables below). Limited access vessels would be authorized to take these allocated trips in either area during the season, as long as the scallop catches do not equal or exceed the TAC for each area and the area closes (Section 5.1.2.2). After one area closes because scallop landings exceed its TAC, vessels may take their remaining trips in the other area until it too closes.

Economic analysis indicates that a low scallop possession limit would be insufficient to allow vessels to profitably fish in the Hudson Canyon and VA/NC Areas, compared to their catch and returns by fishing 10 days in other parts of the scallop resource. Based on the expected catch rates and shucking capacity, the projections estimate that it will take an average vessel 8.5 days to catch 21,000 pounds. Higher limits would be unachievable for the average vessel in 10 days and the Council's Advisory Committee was skeptical that vessels could process higher landings per day-at-sea.

The fleet fished less than the optimal amount in 2001 when the scallop possession limit was 17,000 pounds and the LPUE in other areas is expected to be higher in 2003 than it was in 2001. The preferred trip allocation option for this alternative is therefore a 21,000 pound scallop possession limit and a two trip allocation in 2003. The analysis includes a scallop possession limit ranging from 9,000 to 41,000 pounds of scallop meats, ranging from an allocation of one to five trips per limited access vessel.

**Table 11.** Allocations of trips for the Mid-Atlantic area access program in 2003 and the estimated number of trips for each area that can be taken if all vessels participate, assuming full participation in the Hudson Canyon Area and 50 percent participation in the VA/NC Area. The preferred alternative is indicated by the light shading (yellow if printed in color) associated with a 21,000 pound scallop possession limit. The trip allocations are combined for both areas and are shown in the last column<sup>26</sup>. Estimates exclude a one percent set-aside to fund research and another one-percent set-aside to fund the observer program.

<b>F= 0.20 Amendment 7 target</b>	<b>Hudson Canyon</b>	<b>VA/NC Area</b>	<b>All</b>
<b>Expected vessel participation</b>			
Full-time	242	121	
Part-time	34	17	
Occasional	4	2	
Total estimated participation	280	140	
TAC per vessel	40,557	1,087	41,644

<b>Trips limit (lbs. meat weight)</b>	<b>Total number of trips to allocate</b>		
9000	1,382	19	1,400
11000	1,105	15	1,120
14000	829	11	840
21000	553	7	560
41000	276	4	280

<b>Trips limit (lbs. meat weight)</b>	<b>Number of trips per vessel to allocate</b>		
9000	4	0	5
11000	3	0	4
14000	2	0	3
21000	1	0	2
41000	#N/A	0	1

The Regional Administrator would give out or authorize the initial trip allocation for limited access in a sequential, step-wise program (To be eligible to take more than three Hudson Canyon or VA/NC Area trips, if authorized by the Regional Administrator, a limited access scallop vessel will have to begin at least one trip before September 1.

Table 15). Vessels will be authorized to take no more than one trip before April 30. A second trip may start no earlier than May 1 and no more than two trips may be taken by July 15. After July 15, a vessel may begin a trip up to the total allocation that vessels are authorized to take within the Hudson Canyon and VA/NC Areas. After October 1, more than two trips may be taken, if additional trips are authorized by the Regional Administrator.

To be eligible to take more than three Hudson Canyon or VA/NC Area trips, if authorized by the Regional Administrator, a limited access scallop vessel will have to begin at least one trip before September 1.

**Table 12.** Trip allocation schedule for limited access vessels

<b>Inclusive dates</b>	<b>Maximum number of authorized trips to the Hudson Canyon and VA/NC Areas, combined</b>
April 1 to April 30	1 trip
May 1 to July 15	2 trips
July 16 until end of season	2 trips or greater amounts if authorized by in-season adjustment;

<sup>26</sup> Due to rounding, the combined number of trips that can be allocated may be greater than the sum of the maximum number of trips that would not exceed the individual area TACs.

Assuming a 120 full-time day-at-sea allocation (Section 5.1.1.1), part-time vessels will have a maximum allocation of 58 days-at-sea in the 2003 fishing year<sup>27</sup>, part-time vessels can take a maximum of five area access trips in any combination. A part-time vessel would therefore be eligible for three additional trips (see below) from an in-season adjustment. An occasional scallop vessel will have a maximum allocation of 19 days in the 2003 fishing year<sup>28</sup> and would therefore be eligible to take only one trip in any one area, regardless of additional allocations through a possible in-season adjustment via the provision described below.

The number of trips that can be allocated depends on the scallop possession limit and the number of vessels that are eligible to participate. The analysis assumes that all vessels that have a limited access scallop permit, excluding the Confirmation of Permit Histories, will take all trips to the Hudson Canyon and VA/NC Areas allocated to them. Vessel owners that re-activate a Confirmation of Permit History will be eligible for a full complement of trips, subject to the restrictions that govern use by other vessels with a limited access scallop permit.

**Rationale:** The purpose and expected impacts of the trip allocations are identical to those described in Section 5.1.2.2.1.2. The analysis indicates that an initial allocation of two trips can be authorized to limited access scallop vessels without exceeding the TAC. As for Frameworks 11, 13 and 14, participation has been less than expected and an in-season adjustment was made in 1999 - 2001. Lower than expected participation for authorized Hudson Canyon and VA/NC Area trips would indicate that an allocation of additional trips on or after October 1 would be needed to harvest optimum yield.

The possession limits discussed in this section are the same as those in the proposed action, but the number of trips that can be allocated is lower because the TAC for this non-preferred alternative is lower. It also affects the trip allocation schedule described above.

#### **4.2.2.4 TAC set-asides to fund research, to fund observers, and for access by General Category scallop vessels**

With the Amendment 7 target mortality alternative, the TAC set asides would be identical to those described in Section 5.1.2.2.1.3, but the amounts would differ. The estimates of TACs and set asides with the Amendment 7 mortality target TAC are given in the table below.

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<sup>27</sup> A part-time scallop vessel will have a 48 day-at-sea allocation in the 2003 fishing year plus up to 10 unused days-at-sea carried forward from the 2003 fishing year.

<sup>28</sup> An occasional scallop vessel will have a 10 day-at-sea allocation in the 2003 fishing year plus up to nine unused days-at-sea carried forward from the 2002 fishing year (it must have used at least one day-at-sea to be eligible to carry forward unused days).

**Table 13.** Summary of TACs and possession limits for limited access scallop vessels fishing in the Hudson Canyon and VA/NC Areas during the 2003 fishing year.

2003 Maximum Allocations		Hudson Canyon Area	VA/NC Area
<b>Scallops</b>	Total TAC	11.36 million lbs. (5,151 mt)	0.15 million lbs. (69 mt)
	TAC for limited access vessels	11.13 million lbs. (5,048mt)	0.15 million lbs. (68 mt)
	Two percent TAC for observers	227,120 lbs. (103 mt)	3,042 lbs. (1.4 mt)
	One percent TAC to fund scallop research	113,560 lbs. (52 mt)	1,521 lbs. (0.7 mt)
<b>Initial trip allocation for limited access vessels<sup>29</sup></b>		Two trips, combined with the VA/NC Area trips	Two trips, combined with the Hudson Canyon Area trips
<b>Scallop possession limit</b>		21,000 lbs. per trip	21,000 lbs. per trip
<b>Regulated multispecies possession limit</b>		300 lbs. per trip	300 lbs. per trip

#### 4.2.2.5 Day-at-sea adjustments for broken trips to the Hudson Canyon and VA/NC Areas

##### 4.2.2.5.1 Implement through Regulation an Exemption Program for Broken Trips

Under this alternative, Framework 15 would specify the terms of an exemption to day-at-sea adjustments to vessels that meet specified criteria. A vessel that declares into and starts a scallop Area Access Program trip by crossing the VMS demarcation line would still automatically have 10 DAS deducted. After the end of a scallop Area Access Program trip, upon written request of a vessel owner, if either of the criteria listed below are proven by a preponderance of the evidence, NMFS may: Deem the trip as a Non-Area Access Program trip; exempt a vessel from the automatic deduction of 10 DAS; and deduct only actual DAS accrued. A written request from the vessel owner and acceptable justification for the following criteria must be submitted pursuant to the section “Requirements for Requests”

1. The vessel returns to port before entering the scallop access area and does not fish, possess fish or scallops, or land fish or scallops during the trip.
2. The vessel returns to port with fish or scallops on board without entering the scallop access area and provides acceptable justification that the vessel did not intend to declare into the scallop access area, i.e., the vessel entered an incorrect VMS activity code.

Additionally, for trips that are deemed to be a trip into the Hudson Canyon or VA/NC Area, after the end of a scallop Area Access Program trip, upon written request of a vessel owner as specified below, NMFS may exempt a vessel from the automatic deduction of 10 DAS. NMFS may deduct only actual DAS accrued, if the criterion below is proven by a preponderance of the evidence. A written request from the vessel owner and acceptable justification for the following criterion must be submitted pursuant to the section “Requirements for Requests.”

1. A vessel has entered the Hudson Canyon or VA/NC Area and has been in the area for 48 hours or less, and has caught, retained, and/or landed less than 2,000 lb of scallop meats.

<sup>29</sup> The initial allocation of three trips is a combined three trip allocation to fish in either or both areas, provided that each area’s landings are below its TAC and the area remains open.

## Requirements for Requests

To receive a day-at-sea adjustment pursuant to the criteria described above a vessel owner must submit a written request to NMFS. The request must include the vessel name, permit number, sail date and time, land date and time, amount of product landed, and any other pertinent information. The request must include a statement explaining why the vessel was unable or never intended to fish in the access area, or that the vessel was prevented from fishing in the area for more than 48 hours, and caught, possessed, or landed less than 2,000 lb of scallops. The request must include corroborating evidence such as, for example, photos of vessel damage, repair invoices, hospital receipts, or affidavits. NMFS will make a determination regarding the accuracy of the landings and DAS information submitted. After considering the information submitted, NMFS will make the decision on whether to grant the day-at-sea adjustment or not.

**Rationale:** Implementing a regulation that provides for exemptions from the automatic 10-DAS charge eliminates the discretion of the Regional Administrator and allows the Council, through the scallop regulations, to control how the exemptions are granted.

One of the management measures proposed in Framework Adjustment 14, but not included as a final measure, was a provision that would have exempted vessels from the 10-DAS tradeoff if a vessel's trip into the Area Access Program was broken due to an emergency, breakdown, weather, or other unforeseen problem. The provision included a scale of catch by which a vessel's days would accrue on broken trips. Essentially, a vessel would be charged two DAS plus one DAS for each increment of scallop catch on board equal to 10% of the overall possession limit (17,000 lb in 2001, and 18,000 lb in 2002). During final deliberations of the Council on Framework Adjustment 14, the Regional Administrator and the Office for Law Enforcement commented that the proposed provision would cause significant administrative burdens and would be difficult to enforce effectively. They commented that the relative benefits of the program appeared to be outweighed by the overall costs of implementing such a program. The Regional Administrator also noted that the Regional Office had a policy in place that would allow case by case consideration of requests for exemptions.

During the 2001 fishing year under the existing Regional Office policy, one vessel (other than vessels that did not enter the area or entered the wrong VMS code) was granted an exemption from the 10-DAS tradeoff. Other vessels were classified as actually fishing in the Area Access Program, which was, by regulation, subject to the 10-DAS tradeoff. Many of the vessels that were denied exemptions had landed very low scallop catches and were in the Access Area for a very short period. Although the policy could not be modified mid-year, the Regional Office recognized problems in the policy and determined that it should be revisited for the following year. In addition, it appeared that low participation in the 2001 Area Access Program was partially a result of industry uncertainty and concern that they would be penalized for even short trips with small amounts of landings if they had breakdowns, emergencies, or were forced out due to weather conditions. The moderate catches in the Hudson Canyon and VA/NC Areas, compared with other fishing grounds, was to some not worth the extra risk imposed by this policy in case a trip was terminated pre-maturely (i.e. due to unforeseen conditions or events).

The Council did not approve this alternative, because the maximum landings and time limits would not accommodate many of the early trip terminations that scallop vessels had experienced, yet higher limits could open loopholes. There was further discussion of the Framework Adjustment 14 non-preferred alternative, but the flaws associated with that proposal had not been corrected and it was therefore not included as an analyzed alternative in the draft Framework Adjustment 15 document.

### **4.3 Alternatives Considered, But Rejected for the Framework Adjustment**

The following alternatives summarize some reasonable approaches for scallop management, but were rejected for this action. The purpose of a framework adjustment is to meet the approved FMP objectives with existing management measures, by either making them more or less restrictive. It is necessary to make these management adjustments to respond to changing resource conditions (e.g. increasing biomass, below or above average recruitment) and other events in the fishery (e.g. technological improvements that change fishing power, changes in effort distribution that may target larger or smaller scallops). The Council is meeting this mandate to account for variations and contingencies, consistent with National Standard 6, by initiating an annual framework adjustment.

The purpose of these framework adjustments is not for changing the FMP objectives or to develop new ways of managing the fisheries. This would lie outside the scope of measures already considered and analyzed by the FMP, and are not suitable for a framework adjustment according to the policy adopted by the Council in Amendment 4 to the Atlantic Sea Scallop FMP. These considerations are more appropriate for a regular plan amendment that develops new objectives or approaches to resource management with full and open participation of the public through scoping hearings and at least one round of public hearings on the draft amendment. Such an effort is presently continuing in association with Amendment 10, which will consider new objectives and better ways of managing the resource and the fishery. One of the new approaches under consideration is a formal area rotation plan to delay catch and non-catch mortality of scallops until they reach larger size, thereby increasing total yield. The amendment may also consider other approaches to achieve the same objective. These new approaches may entirely replace or augment existing measures to achieve approved goals and objectives for sea scallop management. The Council could also consider additional objectives or change existing objectives during the development of Amendment 10.

The discussion in this section describes other possible approaches to scallop management that were proposed during the scoping period for this SEIS, and other reasonable alternatives that might have been pursued. Each sub-section provides a rationale why the Council chose to reject these alternatives, at least for this framework action.

#### **4.3.1 Temporarily close new areas to scallop fishing to protect small scallops and/or have other beneficial effects**

The Council considered and rejected all alternatives that would close new areas to scallop fishing for the following reasons:

- 1) Formal criteria for designating scallop closures and recommendations for habitat closures are being carefully reviewed and developed in Amendment 10, and
- 2) Scallop closures require detailed analysis of survey data from the year before a proposed closure takes effect. Small scallops (40-70 mm) observed in the 2001 survey become partially vulnerable to fishing before the beginning of the 2003 fishing year, potentially making closures less effective (and possibly ineffective) than if the 2002 survey had been available. The geographic distribution of size frequencies and/or mean shell heights from the 2002 survey were not available for analysis.

- 3) Additional scallop closures would have a significantly negative economic effect, especially since the rotation management policy has not been developed to allow access to areas that are presently closed.

#### **4.3.2 Prohibit scallop dredging in gravel, cobble, and other hard-bottom areas**

Identified areas of sensitive habitat could be closed or partially curtailed in these complex areas to promote recovery and preserve habitat. There is ample scientific evidence that these areas provide an important benefit to some species through protection from predation and as a location to feed on small prey items. It has also been demonstrated that scallop dredge fishing alters the bottom, although the long-term implications are less clear.

**Rationale:** The Council rejected this alternative because more research is needed to understand the long-term impacts of scallop fishing by trawls or dredges. It is furthermore important to understand if the long-term implications are significant to the ecosystem for each type of habitat that could be disturbed by fishing.

On the other hand, it is not clear that additional closures are needed at this time. This framework adjustment leaves significant scallop resources areas on Georges Bank closed to scallop fishing and is believed to have a positive effect on habitat. Even during 1999 and 2000, when the Council allowed scallop fishing in the Georges Bank groundfish closed areas, large parts of them remained closed because of concerns about the impacts on habitat. Only the least sensitive areas, i.e. areas with sandy bottom, were temporarily opened by framework adjustment. For this action, however, even these areas would remain closed in 2003. A more thorough review of this policy and the objective to minimize habitat impacts is anticipated during the development of Amendment 10.

Presently, a large proportion of the known and mapped gravel, cobble, and boulder areas of the Gulf of Maine, Georges Bank, and Southern New England Shelf regions are enclosed by the current groundfish closed areas (Closed Area I, Closed Area II, Nantucket Lightship Closed Area, and Western Gulf of Maine Closed Area). Scallop fishing is prohibited in these areas and this prohibition will continue throughout the 2003 fishing year. Framework Adjustment 15 proposes to make no changes to these restrictions. In fishing years 1999 and 2000, portions of Closed Area I, Closed Area II, and the Nantucket Lightship Closed Area were temporarily re-opened for a limited amount of scallop fishing, but the portions of these closed areas known to contain hard-bottom habitats remained closed to scallop fishing.

While there are undoubtedly other areas of the Gulf of Maine, Georges Bank, and Southern New England Shelf that contain hard-bottom sediments such as gravel, cobbles, and boulders, many of these areas may not be mapped and are thus unknown. Even in the areas of known hard-bottom habitat, such as in the portions of the Great South Channel to the west of Closed Area I, if scallop fishing were restricted all other forms of bottom fishing (such as otter trawling) would continue. Any benefits to the habitats of these areas that may be derived from prohibitions on scallop dredging would be minimized as a result of the other fishing activities which would continue. Implementing restrictions on otter trawling and these other fishing activities would be outside the allowable scope of this framework adjustment.

Amendment 10 to the Scallop FMP and Amendment 13 to the Groundfish FMP will consider alternatives to restrict various forms of bottom-tending fishing gear in identified areas of habitat vulnerable to adverse effects from these types of fishing activities. These alternatives may include

modifications to the boundaries of the existing groundfish closed areas, establishing new closed areas, and/or establishing scallop management areas that differentiate hard-bottom areas.

### **4.3.3 Prohibit scallop dredging in areas containing sensitive EFH for overfished species**

This alternative would prohibiting scallop fishing or significantly reduce its intensity in area deemed essential habitat for overfished species, including Southern New England yellowtail flounder, monkfish, Georges Bank and Gulf of Maine haddock, Southern Georges Bank/Mid-Atlantic silver hake, ocean pout, Atlantic halibut, spiny dogfish, black sea bass, summer flounder, scup, and Atlantic bluefish. In most cases, this alternative would involve some form of year-around or seasonal closures.

**Rationale:** The Council rejected this alternative in broad terms because of its excessive impact on the fishery and because of uncertain benefits. Except for Southern New England yellowtail flounder, monkfish, and summer flounder, many of the above species are not vulnerable to scallop dredges and trawls. Secondary effects that arise from altered habitat or interruption of spawning activity are not well understood and there may be more efficient ways to address the overfished condition for these stocks.

Although incidental catches can be an issue for some stocks (e.g. spiny dogfish, monkfish, and Southern New England yellowtail flounder), total fishing mortality is widely recognized as the major factor that prevents overfished stocks from recovering. The Council has managed overfishing directly under the fishery management plans for these species, utilizing a combination of day-at-sea limits, gear restrictions, area closures, and other measures. Although monkfish catches in the scallop fishery are significant, the Monkfish FMP for example contains possession limits and day-at-sea use regulations that govern scallop vessels when they catch monkfish, either as a targeted catch or catches incidental to scalloping.

Cumulatively, the EFH designations for species managed by the New England Council cover the entire range of the scallop fishery. Prohibiting scallop dredging in areas containing EFH is not a practicable alternative, as it would require that scallop fishing itself be banned throughout its range. There is no legal distinction between EFH and “sensitive” EFH, as all EFH is given equal weight under the definition provided by the Magnuson-Stevens Act. The NMFS’ guidelines do offer, as a subset to the overall definition of EFH, the designation of “habitat areas of particular concern” (HAPC’s). According to the guidelines, HAPC’s should be areas of special importance and/or needing special protection.

Within the areas traditionally fished by the scallop industry, the Council designated an HAPC on the northern edge of Georges Bank. This designation was intended to protect an area of habitat particularly vulnerable to the adverse impacts associated with bottom-tending mobile fishing gear and particularly important for post-settlement juvenile groundfish, especially cod. The area designated as an HAPC has been closed to scallop fishing since 1995 and remains closed. This area was specifically excluded from the re-opened portions of the Georges Bank closed areas during the 1999 and 2000 fishing years. This area will remain closed to scallop fishing during the 2003 fishing year and opening that area was not considered during the development of Framework Adjustment 15.

The above two alternatives are not the only management options which offer conservation benefits to the environment and fish habitat within the geographic range of scallop fishing activity. In the 2003 fishing year, the four groundfish closed areas (Closed Areas I and II, Nantucket Lightship Closed Area, and the Western Gulf of Maine Closed Area) will remain closed to scallop fishing. These closures maintain approximately 30% of Georges Bank area and a significant portion of western Gulf of Maine off limits to scallop fishing and thus not subject to any adverse effects that may be associated with bottom-

tending mobile fishing gear such as scallop dredges. In terms of scallop yield, the Georges Bank and Western Gulf of Maine closures represent about 50% of the entire scallop resource. The proposed DAS allocations, even though they are an increase over the original Amendment 7 DAS schedule, are actually a significant reduction from the pre-Amendment 7 levels.

#### **4.3.4 Create spawning sanctuaries to improve scallop recruitment**

Spawning sanctuaries would involve area closures to scallop and other fishing gear to allow important concentrations of spawners to grow and reproduce undisturbed by fishing activity. Other types of marine activity may also have to be curtailed, especially ones that create water-borne sediment that interferes with scallop feeding and growth. Since there are no spawning migrations of sea scallops, these areas would probably remain closed or require activity restrictions in all seasons.

**Rationale:** The Council rejected this alternative because there is insufficient information to know what areas would be appropriate to close or curtail activity that would protect scallop brood stock. Scallops are extraordinarily fecund and scallop larvae are found in widely dispersed areas throughout the spring, summer and fall. The distribution of larvae depends on the timing of the spawn, water currents that affect the drift of larvae, and temperature that affects the speed of maturation and growth of water-borne larvae. These characteristics make it difficult to identify specific spawning sanctuaries that would be beneficial to protect.

There is also no evidence that yet suggests that the proximity of sea scallops, a broadcast spawner, is a limiting factor in determining recruitment success. Although recent recruitment has been above average, there is no research that specifically points to the present area closures as enhancing scallop recruitment. The above average recruitment that has been observed could have arisen from the increase of spawning stock biomass, from favorable environmental conditions, or both. Time will tell if the increase in spawning stock biomass improves recruitment for both favorable and unfavorable environmental conditions. New research into the mechanisms that affect spawning and larval drift as well as genetic studies designed to link spawners and progeny will also help improve our knowledge.

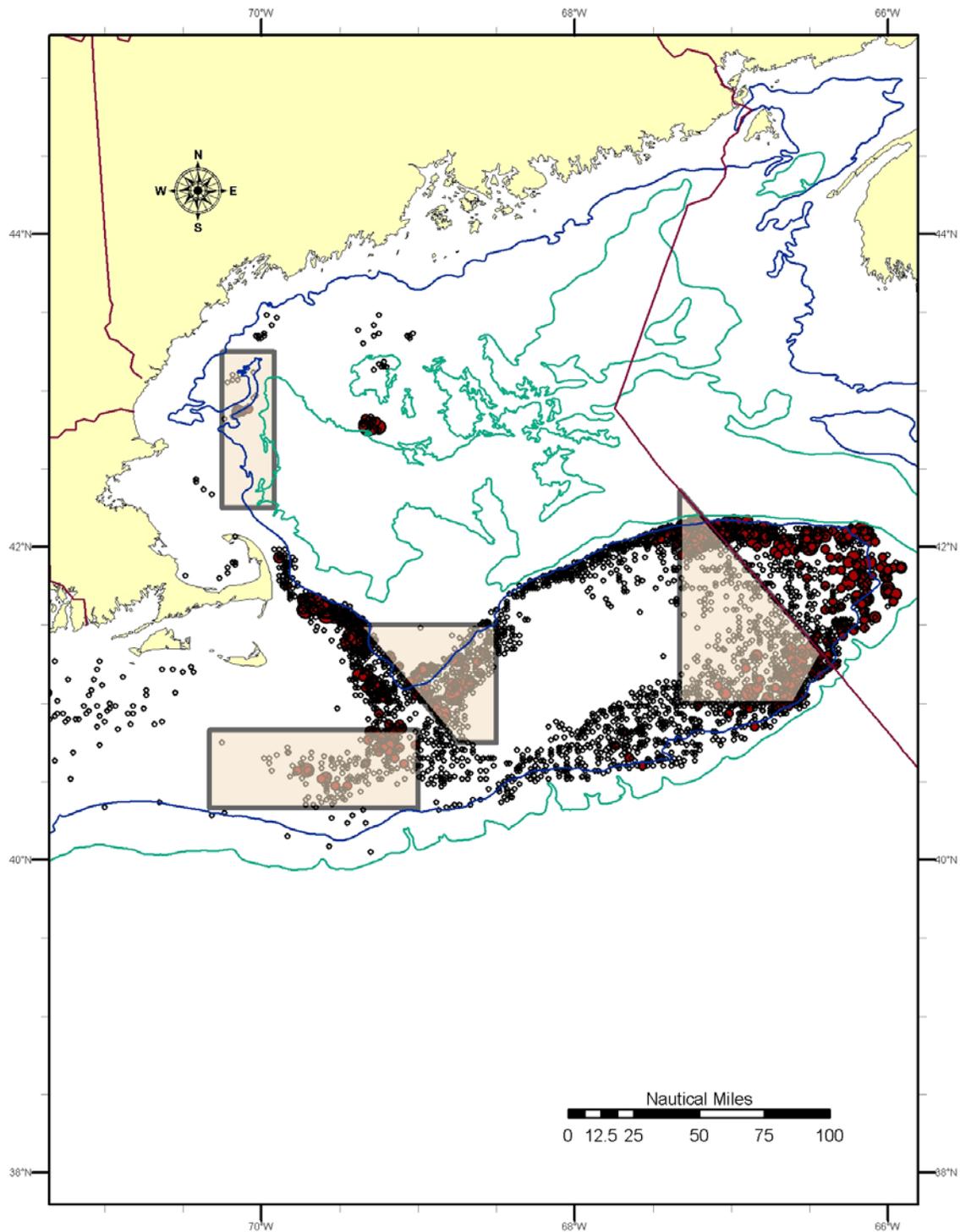
#### **4.3.5 Area closures to protect other at-risk species**

This alternative would include scallop fishing area closures to protect other species deemed to be “at-risk”. It would specifically use area closures, but have similar characteristics and objectives to other alternatives considered and rejected (See Section 5.3.3). It might have broader applicability, however, to also address incidental catch of marine mammals, threatened species, or endangered species.

**Rationale:** The Council rejected this alternative because it duplicates the management authority of other plans or laws and regulations. Although no formal definition of an “at-risk” species exists, the FMPs for managed species defines when a stock is overfished, i.e. “at-risk”. The regulations associated with the Marine Mammal Protection Act also define when marine mammals are at-risk from excessive incidental takes in fisheries, specific to gear type, area, and season. For species that are seriously at risk, the Endangered Species Act governs actions by fishery management councils and the plans promulgated under the Magnuson-Stevens Act. These concerns are evaluated throughout this document (see Sections 6.3.4.1.6, 6.3.4.3, 6.5, and 6.6 for example) and the Council does not believe that further action under this framework action is warranted.

#### **4.3.6 Re-open portions of the Georges Bank closed areas for scallop fishing**

As in Framework Adjustments 11 and 13 which opened portions of Closed Area I, Closed Area II, and Nantucket Lightship Area (Map 2) for limited scallop fishing, these areas would be re-evaluated and similar areas could again be opened under a program with a season, TACs for scallops and some overfished groundfish species, a scallop possession limit, trip allocations for limited access vessels, and other restrictions.



**Map 2.** Size and configuration of the Georges Bank groundfish closed areas, closed to scallop fishing. These areas, totaling 5854 nm<sup>2</sup>, are compared with the 1982-2000 sea scallop survey distribution for tows greater than 500 g of scallop meats per tow. The 50 and 100 fathom contours are shown as a reference.

**Rationale:** Although these management programs were very effective and there was low bycatch in 1999 and 2000, concerns over the long-term impacts on habitat prevented the Council from seriously considering continuing limited scallop fishing in the groundfish closures at this time. Public comment for the Notice of Intent to prepare in SEIS for Framework Adjustment 14 supported delaying access to the Georges Bank closures until it could be considered as a part of a formal area rotation system, if one is adopted by the Council in Amendment 10. As for Framework Adjustment 14, public comment for Framework Adjustment 15 also supported not opening the Georges Bank groundfish closed area – provided that the management could support a 120 day-at-sea allocation for full-time limited access vessels. On the other hand, keeping these areas closed in 2003 is expected to increase scallop fishing intensity in open areas of Georges Bank and the Mid-Atlantic, where smaller scallops are located.

#### **4.3.7 Require gear modifications to reduce bycatch, bycatch mortality, and/or habitat impacts**

This alternative would require scallop fishermen to use larger mesh, larger rings, or other restrictions to reduce bycatch and habitat impacts.

**Rationale:** The Council rejected this alternative because several significant steps have been taken since Amendment 4 to address these concerns. For example, Amendment 4 required scallop vessels to use gear with larger rings, larger mesh twine tops, use no chafing gear, donuts, or cookies. Framework Adjustment 1 required fewer links between the rings to improve scallop escapement, having a beneficial effect on other species and habitat. Framework Adjustments 11 and 13 required scallop vessels to use 10-inch twine top mesh within the groundfish closed areas, and this action proposes to continue the same action for the Hudson Canyon and VA/NC Areas. Framework Adjustment 11 also required an increase in the twine top mesh from 6 to 8 inches in all other scallop fishing areas, to mitigate the potential increase in finfish bycatch within the groundfish closed areas. This measure has been continued because of its positive benefits for reducing the bycatch of finfish and other species. Although more progress might be made with future research, the Council does not believe that this requires more action within this framework action.

#### **4.3.8 Require gear modifications to improve size selection of sea scallops or to reduce non-catch mortality**

Larger rings, larger mesh, or other gear modifications might be possible without significantly reducing the catch of large scallops.

**Rationale:** As noted above, there have been some significant changes in gear regulations since Amendment 4, which completely replaced the effect of the former meat count regulations and improved scallop size selection. If new gear changes reduce the catch of large scallops, then the measure could have a negative effect on scallops (increasing non-catch mortality), other species, and habitat by increasing the amount of fishing effort required to achieve optimum yield from the scallop resource. Future research, however, could identify new gear configurations that have the desired effect and is being considered in Amendment 10, now in development.

#### **4.3.9 Increase annual day-at-sea allocations above the 2002 allocations for limited access scallop vessels**

Higher day-at-sea allocations would be authorized for limited access scallop vessels to fish during the 2003 fishing years.

**Rationale:** Higher day-at-sea limits appear to be unwarranted at this time because of the increased risk of overfishing (see Sections 6.3.3.1.3 and 6.3.4.1.1) and the high fishing mortality rate in open fishing areas, especially in the Mid-Atlantic. Higher fishing effort could reduce long-term benefits and increase uncertainty (NEFMC 2000), while also increasing habitat and bycatch impacts. Although an increase to 140 days is analyzed in this framework adjustment, its main purpose is to show that higher day-at-sea allocations could be justified in 2003 because they wouldn't exceed the annual fishing mortality target, specified in Amendment 7. Thus the lower day-at-sea allocations being contemplated by the framework adjustment have positive benefits for reducing habitat and bycatch impacts and improve scallop yield over the longer term.

#### **4.3.10 Increase the crew limit for limited access scallop vessels**

This alternative would allow limited access scallop vessels to carry eight or nine men to increase the shucking capacity and fishing power of the vessel.

**Rationale:** Although this could have a positive benefit on safety, the primary purpose of the higher limit would be to increase the fishing power limited access vessels and allow them to land more scallops per day-at-sea. Increases in fishing power also appear to be unwarranted at this time for the reasons given in the section above. There also do not appear to be signs of deteriorating safety from the crew limits or other restrictions on limited access scallop vessels (NEMFC 2000).

#### **4.3.11 Allocate individual quotas to vessels fishing in the Hudson Canyon and VA/NC Areas**

Instead of setting a limit on the number of authorized trips taken by limited access scallop vessels in the Hudson Canyon and VA/NC Areas, Framework Adjustment 15 could authorize vessels to land a maximum amount of sea scallops on trips that entered the Hudson Canyon and VA/NC Areas to fish. Instead of allowing three trips with a 21,000 pound scallop possession limit, for example, each limited access vessel would be authorized to land 63,000 pounds of sea scallops on trips where the vessel declared that it would fish in the Hudson Canyon and VA/NC Areas. Vessels would not be able to fish in the Hudson Canyon and VA/NC Areas unless it declared it was intending to fish there before starting the trip.

**Rationale:** Mechanisms are now in place to monitor day-at-sea use and the location of the vessel with minimal added cost. The infrastructure to identify authorized Hudson Canyon and VA/NC Area trips also exists. On these trips, it is relatively easy to determine whether the vessel has significantly exceeded the scallop possession limit, either at sea and/or at the dock. On the other hand, monitoring landings to ensure compliance would require costly systems, possibly certified offloading points, and bag tags. These new monitoring systems could drive the costs above the net revenue derived from fishing in the Hudson Canyon and VA/NC Areas, and the Council therefore rejected this alternative.

#### **4.3.12 Allow consolidation of fishing rights through transferability or stacking of permits or day-at-sea allocations, or through buybacks**

This alternative would allow fishermen to combine existing permits, allowing a vessel to be utilized more efficiently to catch scallops. It could involve permit stacking, combining day-at-sea allocations, quotas, or buybacks of active or inactive permits.

**Rationale:** Several related alternatives have been considered in the last five years to address this issue. Most have not been favored by public comment and were not approved. The Council has therefore rejected this alternative for the framework action, but further consideration may be taken up in future amendments.

#### **4.3.13 Require sea sampling by observers on a minimum proportion of trips for scallop fishing in all areas**

This alternative would require NMFS to place more observers on scallop vessels in the day-at-sea program or aboard vessels with a General Category scallop permit.

**Rationale:** Although the Council supports additional sea sampling on scallop vessels, the Council rejected this alternative because of its high cost and lack of a mechanism to pay for its costs. Under the program for fishing in the Hudson Canyon and VA/NC Areas, Section 5.1.2.8 requires NMFS to place observers on scallop vessels and the vessel pays for the observer and all associated costs. Vessels carrying observers are given an exemption from the scallop possession limit to land a larger amount of scallops to pay for the extra cost. A portion of the TAC will be set aside for this specific purpose. No similar mechanism is possible for trips in other areas because there is no TAC and there is no scallop possession limit. Funding from other sources within NMFS is also not available.

Most of the funding associated for at-sea observers have been allocated to target fisheries with a higher level of marine mammal and turtle interactions. Unlike other areas, the observers on Hudson Canyon Area trips during 2001 noted an exceptional number of turtle encounters, mainly with loggerhead sea turtles. These data are presently being analyzed and NMFS has initiated a biological opinion. In the mean time, NMFS has allocated more observers to scallop fishery trips in the Mid-Atlantic to determine if the encounters are more widespread and problematic.

#### **4.3.14 Require closed seasons or other types of measures to reduce encounters with sea turtles**

This alternative would take steps to reduce the probability of encounters with sea turtles while scallop fishing. The measures might include seasonal closures and/or fishing operation restrictions to reduce the probability of encounters and/or increase the probability of survival from an encounter.

**Rationale:** NMFS is presently analyzing the extent of the problem and the cause of the encounters observed in the Hudson Canyon Area during 2001. The higher number of sea turtle interactions could have come from a variety of sources or causes, so the remedy is uncertain at this time. Some responses may make sense for the Hudson Canyon Area, but could cause additional sea turtle interactions elsewhere or have other unintended adverse effects. As such, it is premature to take action with this framework adjustment, until this information has been analyzed and/or a solution is recommended in the forthcoming biological opinion.

#### 4.3.15 Require experimental determination of MSY and OY by a date certain

Although not exactly a management alternative, the Council through its authority to can set fishery policy encourage research in specific areas. One way of doing this is to change the priority of research initiatives when proposals are submitted to the Council's Research Steering Committee.

**Rationale:** The Council rejected this alternative because the use of a proxy biological reference point for sea scallops was recommended by the Council's Overfishing Definition Review Panel and peer reviewed by qualified scientists on the NMFS' Stock Assessment Review Committee (SARC; NMFS 1999) and on the Council's Scientific and Statistics Committee. All groups have determined that the use of  $F_{max}$  and  $B_{max}$  were acceptable proxies for  $F_{MSY}$  and  $B_{MSY}$  under the Amendment 7 management strategy. There was initially considerable doubt by some whether the biomass proxy was achievable, i.e. the reference point was too high. Recent events however have shown that the reference points were not only achievable, they were quickly achievable with the conservation built into the Sea Scallop FMP.

On the other hand, area rotation imposes a completely different set of conditions that affect how overfishing should be defined. SAW 32 (NMFS 2001) recommended that the Council consider using an overfishing definition that relies on methods which average fishing mortality over time, rather than those that average fishing mortality over space. The Council's Plan Development Team has been considering this issue, but the outcome will depend on the type of area rotation that is considered. As such, this alternative is being addressed by the PDT during the development of Amendment 10.

The above reference points are furthermore being analyzed for the development of Amendment 10. Although the values may be updated to include recent recruitment data in the averages, the Scallop PDT and the Council's Scientific and Statistical Committee are recommending the use of these parameters as proxies for  $F_{MSY}$  and  $B_{MSY}$ , even though the structure of the overfishing definition may change to accommodate the effect of rotation management and long-term, indefinite closures on the stock status determination of overfishing.

## **5.0 APPLICABLE LAW**

### **5.1 *Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) – Consistency with National Standards and other required provisions***

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### **5.2 *Magnuson-Stevens Act Required Provisions for FMPs***

In addition to the above National Standards, Section 303 of the Magnuson-Stevens Act proscribes 14 provisions that the Council must take into account and address when developing plans and amendments. The explanation below briefly describes how the FMP addresses these required provisions and whether the proposed action alters the FMP with regard to the provisions.

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## **5.3 National Environmental Policy Act (NEPA) – Environmental Assessment (EA)**

### **5.3.1 Purpose and Need**

The purpose and need for the proposed management action is described in Section 4.0. This EA provides a brief summary and update of the affected environment in Section 6.3.3 and analyzes the impacts of the proposed management alternatives in Section 6.3.4. The management actions in Section 5.0 are an adjustment to the existing management system, responding to new conditions in the resource that have in part arisen from recent management actions (in particular area closures) and several years of above average recruitment. As such, the analysis in this document pertains to the management adjustments recommended by the industry and by the Council's Plan Development Team for the 2001 and 2002 fishing years that fall within the scope of measures that can be implemented by a framework adjustment to the Atlantic Sea Scallop FMP.

New and different management systems might increase yield with fewer environmental impacts, but may not be implemented as part of an annual framework adjustment. Changes in management targets and approaches require an FMP amendment. During the next fishing year, the Council plans a more comprehensive analysis of alternative types of management systems in Amendment 10 to the Atlantic Sea Scallop FMP.

### **5.3.2 Description of Management Action**

The description of the preferred and non-preferred alternatives is in Section 5.0.

### **5.3.3 Affected Environment**

#### **5.3.3.1 Biological Environment**

##### ***5.3.3.1.1 Sea scallop life history, habitat, and the physical environment***

A review of the sea scallop life history was given in Amendment 4 (NEMFC 1993) and Amendment 7 (NEFMC 1998). An overview of sea scallop biology is also reported in Shumway 1991.

A comprehensive description of the physical environment in which sea scallops occur and an assessment of the impacts to habitat resulting from a variety of fishing practices are presented in the Council's omnibus Essential Fish Habitat (EFH) Amendment (NEFMC 1998). The EFH Amendment identifies and describes the essential fish habitat for sea scallops as well as seventeen other Council-managed fishery resource species.

##### ***5.3.3.1.2 Status of the Resource***

Stocks assessments are conducted frequently by the Northeast Fisheries Science Center and reviewed by a Stock Assessment Review Committee. The last assessment was reported in 2001 using 2000 fishery and resource survey data (NEFSC 2001a). That assessment concluded:

*The U.S. Georges Bank portion of the sea scallop stock is not overfished overfishing is not occurring. The Mid-Atlantic portion of the stock is not overfished (i.e. below  $\frac{1}{4} B_{MSY}$  biomass threshold), but overfishing is occurring (i.e. mortality is above  $F_{max}$ .)*

The Northeast Fisheries Science Center performed a new stock assessment that updated the status of the resource using the 1999 and 2000 scallop surveys and estimate area-specific fishing mortality through 1999. The assessment also included new information on dredge efficiency and tow length, two factors that affect our estimates of total stock biomass and fishing mortality.

The assessment results (SAW 32; NMFS 2001) were reported to the Council in January 2001 and were considered during the approval of the proposed action, but the biological analysis in the EA and this document used all of the information included in the SAW 32 stock assessment. The biomass and landings estimates are therefore consistent with the updated information and no revisions are needed until new survey information is available or different dredge efficiency estimates are accepted (see below).

For the Georges Bank stock area, the updated estimates are near the same values as in SAW 29, but the declining fishing mortality trend is steeper for the updated estimates (Table 17). Fishing mortality is now estimated to be higher in 1992-1993 and lower in 1996-1998. Fishing mortality in 1999 was estimated to increase from 1998, partly due to the increased landings from fishing in Closed Area II. For comparison, the projections in Section 6.3.4.1.1 estimate fishing mortality in 2000 to be around 0.06 to 0.08, taking into account the higher biomass estimates from the 2000 R/V Albatross survey and the TACs expected to be harvested from Closed Area I, Closed Area II, and the Nantucket Lightship Area.

One notable difference between the updated assessment and the projections in Section 6.3.4.1.1 are the higher fishing mortality estimates in the Mid-Atlantic stock area. Table 17 compares the old and new fishing mortality estimates from successive scallop assessments. For the Mid-Atlantic stock area, the SAW 32 fishing mortality estimates are consistently higher than those from SAW 29. SAW 32 estimated the 1999 fishing mortality to be 0.43, below the Amendment 7 threshold mortality (0.83) but above the threshold mortality for 2000 (0.34). For comparison, the projections in Section 6.3.4.1.1 estimate fishing mortality in 2000 to be around 0.09 to 0.14, taking into account the higher biomass estimates from the 2000 R/V Albatross survey and the expected catches in 2000.

Even though the 1999 fishing mortality estimate for the Mid-Atlantic is above the Amendment 7 target for 2000, the FMP treats the scallop fishery as one with a single resource made up of two biological components (with individual overfishing definitions). Even if fishing mortality remained at 1999 levels (the day-at-sea allocations remained constant in 2000, but biomass increased substantially suggesting a possible decrease in fishing mortality with existing measures), the average fishing mortality, weighted by exploitable biomass, would be 0.24, below the Amendment 7 targets for 2000 (0.34) and 2001 (0.28).

**Table 14.** Comparison of updated fishing mortality estimates to the last assessment for 1998 (NMFS 1999 and NMFS 2001).

Stock	SAW	1992	1993	1994	1995	1996	1997	1998	1999
Georges Bank	29	0.85	1.22	0.43	0.22	0.24	0.24	0.09	
	32	1.11	1.28	0.34	0.23	0.19	0.16	0.05	0.14
Mid-Atlantic	29	1.14	0.47	0.74	0.50	0.81	0.67	0.30	
	32	1.54	1.12	1.20	0.95	1.12	0.92	0.69	0.43

A second piece of new information in the SAW 32 report is the preliminary research in the Hudson Canyon and VA/NC Areas indicated that dredge efficiency may be higher than assumed in the biomass estimates and projections (Section 6.3.4.1.2). SAW 32 reported that:

*“The Patch model with  $\gamma=0.75$  and the LD model gave mean efficiencies of 0.59 and 0.58 in the southern Mid-Atlantic Bight stock area compared to 0.27 and 0.30 in the northern Georges Bank stock area.”*

These results were not fully adopted by the SARC however, which reported in the SAW 32 Consensus Summary of Assessments (NMFS 2001) that there was unsatisfactory uncertainty arising from the covariance in the estimates of dredge efficiency and scallop density:

*“Depletion studies have been pursued for the scallop surveys because the ability to convert biomass estimates from the survey to the population level using estimates of dredge efficiency is important for the assessment of these stocks. While significant progress has been made on estimating the efficiency of the dredge, the analyses of the experiments where both efficiency and density have to be estimated from the same data has been problematic. The SARC considered preliminary results of depletion studies where independent density estimates were provided from photographic surveys in the same general area. This approach was seen to be an improvement in experimental design and the SARC recommended that further studies of this kind be done. In particular, the design should be such that the depletion studies must be in exactly the same area that the photographic survey was done.*

*At present, photographic/depletion experiments are only available for Georges Bank. The results of these experiments are preliminary and deficiencies in the design noted above need to be addressed. Therefore, the SARC could not recommend new efficiency factors for Georges Bank. We have no new information on efficiency estimates using this experimental design for the Mid-Atlantic area.”*

The projections (Section 6.3.4.1.1) and biomass (Section 6.3.4.1.2) estimates assume a 40% dredge efficiency for the Georges Bank resource and a 70% dredge efficiency for the Mid-Atlantic resource. If this is incorrect and the preliminary Mid-Atlantic results are accurate, the effect on the analysis in this document would be that the Hudson Canyon and VA/NC Area biomass estimates are too high. In this case, the TACs would allow a higher fishing mortality than planned ( $F=0.2$ ) and biomass in these areas would decline faster than projected. Given the fact that biomass is well above target levels in these areas, a faster reduction in biomass from a possible mis-specification is not significant. If the harvest rate were continued beyond 2003, however, it would be desirable to collect the data needed to improve the dredge efficiency estimate for relevant types of substrates and locations.

### ***5.3.3.1.3 Status and management of the scallop resource in Canada***

A description of Canadian scallop management was reported in NEFMC 1998. The effects of Canadian management on the scallop resource are considered in assessments, but because scallops are not very mobile the primary effect is on recruits that were spawned in Canada and settle in the U.S. This mainly affects the scallop resource on the Northern Edge and possibly the South Channel, near Closed Area I (Naidu 1991).

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### **5.3.3.2 Habitat**

A description of scallop habitat and analysis of impacts by fishing and other activities was reported in Amendment 9 to the Atlantic Sea Scallop FMP (NEFMC 1998b). This information was updated in the Council's Habitat Annual Review Report (NEFMC 2000b), prepared by the EFH Technical Team. Section 6.3.4.2 evaluates the potential impacts of the proposed management alternatives and updates the status of the affected environment with regard to essential fish habitat.

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### **5.3.3.3 Human Environment**

#### ***5.3.3.3.1 Scallop landings and fishing fleet***

Scallop landings, day-at-sea use, and a description of the fishing fleet are updated by annual SAFE Reports. The status of the resource and the fishery for the 1999 fishing year is described in Sections 3.1 to 3.3 of the 2000 SAFE Report (NEFMC 2000). The status for the current fishing year and predicted annual results are described in Section 4.0 of the 2000 SAFE Report.

#### ***5.3.3.3.2 Economic activity***

The economic factors related to the Atlantic sea scallop fishery are described in Section 3.4 of the 2000 SAFE Report (NEFMC 2000).

#### ***5.3.3.3.3 Social factors***

A thorough update and description of social factors related to the scallop resource and its fishery are reported in Section 3.5 of the 2000 SAFE Report (NEFMC 2000).

### **5.3.4 Environmental Consequences - Analysis of Impacts**

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Cumulative impacts of the proposed action and the FMP regulations are described within Section 6.3.5 (Finding of No Significant Impact) and analyzed more fully within Section 6.3.4 (Environmental Consequences).

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#### **5.4 Regulatory Impact Review (RIR; Executive Order 12866)**

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#### **5.5 Coastal Zone Management Act (CZMA)**

Request for determinations of consistency with the Coastal Zone Management Act will be sent to coastal states that boarder the Atlantic Sea Scallop resource after the Council chooses the proposed action and submits the Final Framework Adjustment 15 document for official review and approval.

#### **5.6 Paperwork Reduction Act (PRA)**

This section will be prepared and submitted under a different cover.

## 6.0 GLOSSARY

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**VTS** - an electronic vessel tracking system, often used to record the time a vessel is at sea on a fishing trip or to enforce closed areas.

## 7.0 LITERATURE CITED

<\\GOLDENEYE\Council Documents\AdministrativeRecord\SCALLOPS\Frameworks\Framework 15\References.doc>

## 8.0 ACKNOWLEDGMENTS; AGENCIES AND PERSONS CONSULTED

Framework Adjustment 15 was prepared and evaluated in consultation with the National Marine Fisheries Service and the Mid-Atlantic Fishery Management Council.

Much of the data, analysis, and graphics included in this document were the result of hard work, often under unreasonable time demands, by the employees of NMFS (Woods Hole) and the Virginia Institute of Marine Science (VIMS, Gloucester Point, VA). The data for the Hudson Canyon and VA/NC Areas would not have been gathered without the hard work and efforts by the crew and captains that participated in the VIMS experimental fishery. Special thanks should go to Dr. Dvora Hart (NMFS), Dr. Julie Olsen (NMFS), Dr. David K. Stevenson, Louis A. Chiarella, C. Dianne Stephan, Dr. Robert N. Reid, and Dr. William DuPaul (VIMS for their expert assistance in preparing the analyses and graphics in this document. Draft text and analyses were also contributed by technical staff members including Andrew Applegate, Demet Haksever, Patricia Fiorelli, Leslie-Ann McGee, and Diedre Valentine.

## 9.0 COMMENTS

### 9.1 *Council Meetings Where Framework Adjustment 15 Was The Primary Focus*

<u>Date &amp; Location</u>	<u>Type and focus of meeting</u>
June 25, 2002 at Rockland, ME	Scoping meeting to initiate Framework Adjustment 15 and determine the scope of the issues that the framework would consider
July 8, 2002 at Warwick, RI	Advisory Committee meeting to discuss and recommend management alternatives that should be considered in the annual framework adjustment
July 9, 2002 at Warwick, RI	Oversight Committee meeting to identify and recommend management alternatives that should be included in the annual framework adjustment and analyzed in the EA
July 23, 2002 at Portland, ME	Initial framework meeting; Selection of management measures to be considered and analyzed
August 16, 2002 at Plymouth,	Plan Development Team meeting to review and analyze the analysis

MA  
September 9, 2002

of management alternatives in the annual framework adjustment  
Oversight Committee meeting to review the analysis of alternatives  
and recommend a preferred alternative

September 12, 2002

Second and final framework meeting to choose and approve the  
proposed action for the annual framework adjustment

## **9.2 Oral Comments on the Environmental Assessment and Response to Oral and Written Comments**

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### **9.3 *Written Comments***

The Council received the following comments through September 12, 2002, when it approved the proposed action. The Council received 568 of letters on Framework Adjustment 15 via FAX on or before Sept. 11, 2002. These letters were mainly identical to one another and urged the Council to disapprove Framework Adjustment 15. In addition, the Council received 673 written comments after September 12, 2002, but these comments were nearly identical to the comments received before this date. An example of these FAXed letters is included in the document for the record. All other copies are filed in the Council's administrative record and are available for inspection at the office.