

**DRAFT**

**Amendment 15**  
to the Scallop Fishery Management Plan

Including a  
Draft Environmental Impact Statement (DEIS)  
and  
Initial Regulatory Flexibility Analysis (IRFA)

**This document includes modification made by the Scallop Committee on September 1/2, 2009**

Input from the SSC, PDT, and AP have been integrated from meetings held in June-August.

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



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## **1.0 BACKGROUND AND PURPOSE**

### **1.1 SUMMARY OF PAST MANAGEMENT ACTIONS**

*To be completed later.*

### **1.2 PURPOSE AND NEED**

The primary need for this action is to bring the Scallop FMP in compliance with the re-authorized Magnuson-Stevens Conservation and Management Act (MSA). The Act was reauthorized in 2007 and included several new legal requirements. Foremost, the Act requires that each fishery use annual catch limits (ACLs) to prevent overfishing, including measures to ensure accountability. The Scallop FMP is required to be compliant with these new regulations by 2011 since the stock is not subject to overfishing. Therefore, the primary purpose of this amendment is to consider measures that will implement annual catch limits and accountability measures (AMs) to prevent overfishing.

The secondary need for this action is to address excess capacity in the limited access (LA) scallop fishery and provide more flexibility for efficient utilization of the resource. The secondary purpose of this amendment is to consider measures that address capacity in the limited access scallop fishery and improve overall economic performance while considering impacts on various fisheries and fishing communities. Measures to improve the economic efficiency of the limited access fishery, an objective of National Standard 5, will also take into account the importance of fishery resources to fishing communities to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities (National Standard 8). This action will also include measures to minimize costs and unnecessary duplication (National Standard 7).

The third need for this action is to adjust several aspects of the overall program to make the scallop management plan more effective. This action will include five distinct purposes related to this third overall management need. The first purpose is to consider measures that will adjust the current overfishing definition (OFD) to be more compatible with area rotation. Specifically, the new overfishing definition would average fishing mortality over time and not space; area-specific thresholds would be set based on past fishing mortality rates and area rotation policies. The second purpose is to consider minor adjustments to the recently-implemented limited access general category management program. The specific topics being considered for this second purpose regarding the general category program adjustments are: an allowance of IFQ rollover; allocation of area specific IFQ; a specific general category sector application; modifications to the general category possession limit; and adjusting the restriction on maximum quota per fishing platform from 2% to 2.5% of the total general category allocation.

The third purpose related to the third need of Amendment 15 is to consider measures to address the essential fish habitat (EFH) closed areas under the Scallop FMP if Phase II of the EFH Amendment is delayed. Specifically, this action would consider making the EFH closed areas consistent under both the Scallop and Groundfish FMP for scallop vessels if Phase II of the EFH Omnibus Amendment is delayed. A fourth purpose to make the overall program more effective would be to consider adjustments to the current research set-aside (RSA) program. A range of

options are being considered to address timing concerns and efficient use of resource for the RSA program. The last purpose this action will consider is measures to change the scallop fishing year because it is currently out of sync with the framework adjustment process and the timing of when scallop survey data are available for management decisions. Amendment 15 is considering changing the start of the fishing year from March 1 to May 1.

Table 1 is a summary of the three needs for this action and the handful of purposes associated with those overall management needs.

**Table 1 – Summary of purposes and needs identified for Amendment 15**

<b>Need</b>	<b>Purpose</b>	<b>Description</b>	<b>Section</b>
I – Compliance with MSA 2007	1 - Consider measures that will implement ACLs and AMs to prevent overfishing	This section will include alternatives that identify various fisheries in this FMP and relevant ACLs and AMs	3.2
II - Address excess capacity in the LA scallop fishery	1 – Consider addressing capacity in the LA fishery and improve overall economic performance	This section will consider alternatives to address capacity including permit stacking, leasing, IFQs, and adjustments to the RMA program.	<b>3.3</b>
III - Adjust several aspects of the overall program to make the Scallop FMP more effective	1 – Consider adjusting the current OFD to be more compatible with area rotation	This section will consider changes to the OFD so that fishing mortality is averaged over time and not space.	<b>3.4.1</b>
	2 – Consider adjustments to the limited access general category management program	This section will consider an alternative for IFQ rollover, IFQ allocation by area, a GC sector application, modifications to the GC possession limit and an adjustment to the maximum IFQ per GC vessel restriction.	<b>3.4.2</b>
	3 – Consider addressing the essential fish habitat (EFH) closed areas under the Scallop FMP if Phase II of the EFH Amendment is delayed	This section will consider only one alternative – make the EFH closed areas consistent under both the Scallop and Groundfish FMP for scallop vessels	<b>3.4.3</b>
	4 – Consider adjustments to the current (RSA) program	This section will consider a range of options designed to address timing concerns and other aspects of the RSA program	<b>3.4.4</b>
	5 – Consider adjusting the scallop fishing year	This section will consider changing the scallop FY from March 1 to May 1	<b>3.4.5</b>

### **1.3 NOTICE OF INTENT AND SCOPING**

The New England Fishery Management Council published a Notice of Intent (NOI) to announce its intent to develop Amendment 15 and prepare an EIS to analyze the impacts of the proposed



management alternatives on March 5, 2008. The purpose of the NOI was to alert the interested public of the re-commencement of the scoping process and to provide for public participation in compliance with environmental documentation requirements.

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

The Council approved a scoping document at the February 2008 Council meeting. The scoping document was available for the public to use during the scoping period ([www.nefmc.org](http://www.nefmc.org)) and was provided at scoping hearings. Four scoping hearings were held in April 2008 in Virginia, New Jersey, Maine and Massachusetts. Notice of the scoping hearings was mailed to over 500 individuals and was solicited on the Council website as well as regional industry publications. About 25 written comments were submitted during the scoping period which ended on April 4, 2008. Comments received during scoping were considered carefully by the Council when developing the management alternatives under consideration in this amendment. A detailed summary of the scoping hearings and written scoping comments received is provided in Section ???. Appendix I includes copies of all the written scoping comments received.

## **2.0 GOALS AND OBJECTIVES**

There are three goals of this action: 1) bring the Scallop FMP in compliance with new requirements of the re-authorized MSA; 2) address excess capacity in the limited access (LA) scallop fishery; and 3) consider measures to adjust several aspects of the overall program to make the scallop management plan more effective.

In order to address these three goals, the Council has developed specific objectives to aid in the identification of a range of alternatives. Seven objectives have been identified:

1. Identify and implement appropriate ACLs and AMs for various components of the scallop fishery
2. Consider addressing capacity in the limited access scallop fishery and improve overall economic performance while considering impacts on various fisheries and fishing communities
3. Consider adjusting the current overfishing definition (OFD) to be more compatible with area rotation
4. Consider adjustments to the limited access general category management program
5. Consider addressing the essential fish habitat (EFH) closed areas under the Scallop FMP if Phase II of the EFH Amendment is delayed
6. Consider adjustments to the current research set-aside (RSA) program to address timing concerns and efficient use of resource for the purposes of research
7. Consider adjusting the scallop fishing year because it is currently out of sync with the framework adjustment process and the timing of when scallop survey data are available for management decisions

### 3.0 MANAGEMENT ALTERNATIVES UNDER CONSIDERATION

#### 3.1 NO ACTION

The National Environmental Policy Act (NEPA) requires that the “No Action” alternative be included and considered in a federal action. (*Add more about no action*). This alternative summarizes the existing management measures in place if the Council does not approve Amendment 15. Subsequent sections also include a No Action alternative, but they are specific to that management topic, whereas this section is a summary of all measures currently in place.

*Add paragraph about A10 and A11 followed by a summary of all current regulations in table below. **Ready to insert.***

<a href="#">§648.50</a>	Shell-height standard.
<a href="#">§648.51</a>	Gear and crew restrictions.
<a href="#">§648.52</a>	Possession and landing limits.
<a href="#">§648.53</a>	Total allowable catch, DAS allocations, and Individual Fishing Quotas.
<a href="#">§648.54</a>	State waters exemption.
<a href="#">§648.55</a>	Framework adjustments to management measures.
<a href="#">§648.56</a>	Scallop research.
<a href="#">§648.57</a>	Sea scallop area rotation program.
<a href="#">§648.58</a>	Rotational Closed Areas.
<a href="#">§648.59</a>	Sea Scallop Access Areas.
<a href="#">§648.60</a>	Sea scallop area access program requirements.
<a href="#">§648.61</a>	EFH closed areas.
<a href="#">§648.62</a>	Northern Gulf of Maine (NGOM) scallop management area.
<a href="#">§648.63</a>	General category Sectors and harvesting cooperatives.

### **3.2 COMPLIANCE WITH RE-AUTHORIZED MAGNUSON-STEVENSON CONSERVATION AND MANAGEMENT ACT (MSA)**

The MSA was reauthorized in 2007. Section 104(a) (10) of the Act established new requirements to end and prevent overfishing, including annual catch limits (ACLs) and accountability measures (AMs). Section 303(a)(15) was added to the MSA to read as follows: “establish a mechanism for specifying annual catch limits in the plan (including a multiyear plan), implementing regulations, or annual specifications, at a level such that overfishing does not occur in the fishery, including measures to ensure accountability.” ACLs and AMs are required by fishing year 2010 if overfishing is occurring in a fishery, and they are required for all other fisheries by fishing year 2011. The Council intends to approve this action during the summer of 2010 so that measures establishing ACLs can be implemented by the start of the 2011 fishing year, as required by the MSRA.

According to NMFS, overfishing still occurs at various levels in 48 fisheries in US waters. Therefore, the highest priority of the reauthorized MSA was to strengthen the Act to end overfishing. The Act also included new fishery-wide requirements for the role of scientific advice in the management process that the Council will address through revised Science and Statistical Committee (SSC) policies and procedures. This amendment will not include measures to comply with new SSC requirements; they will be implemented across all FMPs under NEFMC jurisdiction. Section ??? is a summary of the new requirements related to SSC responsibilities and how the Council intends to comply with the proposed guidance.

Before guidance was published, Rosenberg et al., through the Lenfest Ocean Program, published “Setting Annual Catch Limits for U.S. Fisheries: An Expert Working Group Report” in 2007. This group provided principles to setting ACLs, as well as a process. Their principles are summarized as follows: ACLs should prevent overfishing for all stocks within a fishery and ensure rebuilding requirements are met, ACLs should take into account the consequences of overfishing, uncertainty should be accounted for when setting ACLs as well as stock vulnerability, consider not grouping stocks because that can undermine sustainability, buffers should be increased proportionally with risk of overfishing, and ACLs should be used to compare actual catch to determine how well the management plan controlled fishing.

With some rewording to make this applicable to scallops, the Lenfest working group’s guidance on the process for setting ACLs is as follows: scientists should evaluate vulnerability and susceptibility to the fishery and then determine a sensible OFL based on MSY and uncertainties, managers should decide an acceptable level of risk for exceeding OFL considering the consequences of overfishing, scientists should recommend an ABC below OFL that accounts for uncertainties by increasing the buffers, and managers and scientists should evaluate the performance of management regularly with respect to adhering to the ACL in terms of preventing overfishing over multiple years.

In June 2008, NMFS published proposed guidance on how each Council should comply with new ACL and AM requirements. The proposed rule attempted to clarify the relationship between ACLs, maximum sustainable yield (MSY), optimum yield (OY), and other applicable reference points. The proposed regulations included details about how FMPs must prevent

overfishing while achieving OY on a continuing basis. There were definitions of several new and existing terms. The rule also described what is required in an FMP related to National Standard 1 (prevent overfishing and rebuild overfished stocks). There is guidance on what defines a “fishery” and which stocks are and are not required to have ACLs and AMs. There are also detailed descriptions of exceptions to these requirements, guidance for international fisheries, and various requirements for describing data collection and estimation methods. The Council identified a number of issues with the proposed guidance as drafted, and some of those issues were addressed in the final rule.

On January 16, 2009, the final rule was published. Other than general editing, there were few substantive changes. First, the annual catch target (ACT) is now considered an accountability measure (AM) and is an option, rather than a required reference point. Consequently, there is no longer a required ACT control rule either. Second, the SSC role was clarified to read that the most relevant SSC recommendation is the ABC, not the ACL itself, which is more of a policy decision. Third, ecosystem component species are not required to be classified, which had been unclear in the proposed rule. Fourth, the description of the relationship of OFL to MSY, and ACT to OY was replaced with, “A Council may choose to use a single control rule that combines both scientific and management uncertainty and supports the ABC recommendation and establishment of ACL and, if used, ACT.” This would supplant the previous description that required two control rules, one each for scientific and management uncertainty. Lastly, for in-season AMs, the final rule states that FMPs should include in-season closure authority giving NMFS the ability to close fisheries if it determines...that an ACL has been exceeded or is projected to be reached...to prevent overfishing. As the Council continues to understand the intent of the final rule, some revisions may be made to the following sections.

Below is a summary of relevant terms and requirements.

### **3.2.1 Definitions and integration of new terms with existing scallop reference points**

The final rule includes definitions of several new and existing terms. This section summarizes what each required term is and clarifies what each terms means relative to the Scallop FMP. **The Scallop FMP information is in boldface.**

#### **3.2.1.1 Items pertaining to classification of stocks in an FMP identified in the final rule (FR Vol. 74 No. 11, pp 3178-3213):**

Stocks in a fishery: Stocks identified in an FMP, including target stocks and non-target stocks. These may be grouped into stock complexes.

Target stock: Target stock is defined as “stocks that fishers seek to catch for sale or personal use, including “economic discards.” **For the scallop FMP, the target stock is Atlantic sea scallops.**

Non-target species: Non-target species are defined as species that are caught incidentally during the pursuit of target stocks in a fishery, including “regulatory discard.” They may or may not be retained for sale or personal use. Non-target species may be included in a fishery, and if so, should be identified at the stock level. Some may be identified as ecosystem component species.

The Scallop PDT conducted a preliminary analysis of bycatch in the scallop fishery based on results of the SBRM Amendment and Wigley et al. 2008. Based on that analysis, there are several species that have been caught as bycatch to some degree in the scallop fishery that may warrant further consideration in the future (See Section ???). However, the Council has determined that at this time non-target species with sub-ACLs will only be identified by the primary FMP. **Therefore, the only non-target species that has been identified for the scallop fishery is yellowtail flounder (all three stocks). No other FMPs have identified that a sub-ACL is necessary for the scallop fishery at this time. In addition, advice from NMFS is that species that are not managed under an FMP do not have to be identified as non-target species (i.e. protected resources).**

Ecosystem Component Species: To be considered an ecosystem component (EC) species, the species should: 1) be a non-target fish species (or stock), 2) not be determined to be subject to overfishing or overfished, 3) not be likely to become subject to overfishing or overfished, and 4) not generally be retained for sale or personal use. Occasional retention would not, in itself, preclude consideration of the species under EC classification. EC species may be (but are not required to be) included in an FMP for: data collection reasons, ecosystem considerations related to specification of OY of the associated fishery, considerations in the development of conservation and management measures, and/or to address other ecosystem issues. Councils should consider measures for the fishery to minimize bycatch of EC species.

**The PDT discussed several potential species (sponges, turtles and starfish), but none are recommended at this time.** Input from NMFS and in the Final Rule is that turtles would not qualify as an ecosystem component species because they are managed under the Endangered Species Act (ESA). The final rule states that the MSRA does not compel FMPs to include particular stocks or stock complexes, but authorizes the Councils or Secretary to make the determination of what conservation and management needs are and how best to address them. Further, it clarifies that while National Standard 9 requires that FMPs minimize bycatch and bycatch mortality, National Standard 6 requires that conservation and management measures minimize costs and avoid unnecessary duplication; the final rule states that additional protections are afforded to some species under the Endangered Species Act, regardless of whether they are listed as stocks in a fishery.

Reclassification: Catch from a fishery should be monitored by the Council on a regular basis to determine if the stocks and species are appropriately classified in the FMP. **All catch in the scallop fishery has been and will continue to be monitored on a regular basis, so stocks and species could be reclassified as necessary.**

Stocks or species in more than one FMP: If a stock or species falls into this situation, Councils should choose a primary FMP in which status determinations criteria, reference points, etc. are established. The other FMPs should have consistent conservation and management measures. **This is consistent with how the Council manages different stocks in various FMPs; reference points for specific stocks are included in the primary FMP.**

Stock complex: Group of stocks sufficiently similar in geographic distribution, etc. such that the impact of management actions on the stocks is similar. **The scallop resource is considered one stock.**

Indicator stocks: A stock with measurable status determination criteria that can be used to help manage and evaluate more poorly known stocks within a complex. **There are no indicator stocks for the scallop resource, and the scallop stock is not currently identified as an indicator stock for anything else.**

Vulnerability: A combination of a stock's productivity and susceptibility to the fishery. **This concept is discussed related to scientific uncertainty and setting acceptable biological catch for the scallop resource.**

### **3.2.1.2 Items or descriptions to be addressed within the FMP pertaining to National Standard 1, as discussed in the final rule:**

- ***MSY and SDC:***

Maximum Sustainable Yield (MSY): Largest long-term average catch or yield that can be taken from a stock (complex) under prevailing ecological, environmental conditions, and fishery technological characteristics, and the distribution of catch among fleets.  $F_{MSY}$  results in MSY.  $F_{msy}$  is the fishing mortality rate that, if applied over the long term would result in MSY.  $B_{msy}$  means the long-term average size of the stock or stock complex that would be achieved by fishing at  $F_{msy}$ . Because MSY is a long-term average, it need not be estimated annually, but it must be based on the best scientific information available. When data are insufficient to estimate MSY directly, Councils should adopt other measures of reproductive potential that can serve as reasonable proxies for MSY,  $F_{msy}$  and  $B_{msy}$ , to the extent possible.

**In the scallop fishery, the FMP utilizes an  $F_{max}$  reference point (proxy for  $F_{msy}$ ), which corresponds to the MSY. Currently  $F_{msy} = 0.29$  and  $B_{msy} = 54,300$  mt. (120 million pounds).**

Status determination criteria (SDC): Quantifiable factors (maximum fishing mortality threshold, overfishing limit, and minimum stock size threshold (or their proxies)) that are used to determine if overfishing has occurred or if the stock complex is overfished. It includes the maximum fishing mortality threshold, OFL, and minimum stock size threshold. SDC must be expressed in a way that enables the Council to monitor each stock, and determine annually, if possible, whether overfishing is occurring and whether the stock is overfished. In specifying SDC, a Council must provide an analysis of how the SDC were chosen and how they relate to reproductive potential. Each FMP must specify, to the extent possible, objective and measurable SDC.

**For the Scallop FMP the SDC for “overfishing” would depend on whether the fishery is at a fishing mortality above  $F_{threshold}$  ( $F=0.29$ ). The SDC for “overfished” would depend if the biomass is below  $B_{threshold}$  (currently estimated to be 54,300 mt. or 120 million pounds).**

Maximum fishing mortality threshold (MFMT): Is the level of fishing mortality, on an annual basis, above which overfishing is occurring. **For the Scallop FMP this corresponds to  $F_{\text{threshold}}$  is defined as an F rate of 0.29.**

Overfishing Limit (OFL): OFL means the annual amount of catch that corresponds to the estimate of MFMT applied to a stock's abundance and is expressed in terms of numbers or weight of fish. OFL is an estimate of the catch level above which overfishing is occurring, corresponds to the level that jeopardizes the capacity of a stock to produce MSY on a continuing basis.

**For example, Framework 19 estimated that biomass in 2009 would be 339 million pounds. If a fishing mortality threshold of 0.29 is applied to that amount then OFL would equal 61 million pounds.**

Minimum sustainable stock threshold (MSST): MSST means the level of biomass below which the stock is considered to be overfished, and corresponds to the level that jeopardizes the capacity of the stock to produce MSY on a continuing basis. If the fishing mortality rate exceeds the MFMT, or the catch exceeds the OFL for one year or more, overfishing is occurring, and if the estimated stock size in a given year falls below the MSST, the stock is considered overfished. NMFS recommends that the MSST be  $\frac{1}{2} B_{\text{max}}$ .

**For the Scallop FMP,  $B_{\text{threshold}}$  has been defined as  $\frac{1}{2} B_{\text{max}}$  and  $B_{\text{max}} = B_{\text{target}}$ . Therefore to update old terms with new terms, the following applies for the Scallop FMP,  $MSST = B_{\text{threshold}}$  and both are equal to  $\frac{1}{2}$  of  $B_{\text{max}}$ . Currently  $B_{\text{max}} = B_{\text{target}} = 108,600$  mt (239 million pounds) so  $\frac{1}{2} B_{\text{max}} = B_{\text{threshold}} = MSST = 54,300$  mt. or 120 million pounds.**

- ***Optimum Yield (OY)***:

OY: The amount of fish that will provide the greatest overall benefit to the Nation prescribed on the basis of the fishery MSY, reduced by relevant social, economic, or ecological factor.

OY Specification Analysis: Must be consistent with factors described in Final Rule. OY can be set very close to MSY if MFMT and current biomass estimates are known with a high level of certainty and management controls can accurately limit catch, assuming no other reductions are necessary for social, economic, or ecological factors. A list of items to include and how they should be expressed in setting OY can be found in the final rule (Section (e)(3)(v)).

- ***ABC Control Rule and Mechanisms for Specifying ACLs***:

ABC Control Rule: A specified approach to setting the ABC for a stock (complex) as a function of scientific uncertainty in the estimate of OFL and any other scientific uncertainty.

Catch: Total quantity of fish taken, including discard mortality.

Acceptable Biological Catch (ABC): The maximum catch that is recommended for harvest, consistent with meeting the biological objectives of the management plan. ABC can never exceed the OFL. The determination of ABC will consider scientific uncertainty.

**For the Scallop FMP, ABC will be set at a catch amount produced by a fishing mortality equivalent to having a 25% chance of exceeding OFL. This is based on a recommendation of the SSC using quantitative and qualitative analyses of scientific uncertainty completed by the Scallop PDT. See Section 3.2.3.7 for details.**

Annual Catch Limit (ACL): Annual amount of catch over which accountability measures are triggered. ACL can be equal to but can never exceed the ABC. ACL should be set lower than the ABC when necessary due to uncertainty over the effectiveness of management measures. **For the Scallop FMP, ACL = ABC; therefore the catch that corresponds to a fishing mortality level that has 25% chance of exceeding OFL.**

Sector-ACLs: Council may, but isn't required, to divide an ACL into sector-ACLs. Sectors include gear groups within a fishery. Sector-specific ACLs may be necessary if the different sectors differ in their degree of management uncertainty so that appropriate AMs can be developed for each sector. **The Scallop FMP will have two sector ACLs: one for the limited access scallop fishery (LA) and one for the limited access general category scallop fishery (LAGC).**

State/federal ACLs: The final rule states that “for stocks or stock complexes that have harvest in state or territorial waters, FMPs and FMP amendments should include an ACL for the overall stock that may be further divided. For example, the overall ACL could be divided into a Federal-ACL and State-ACL.” However, Federal management is limited to the portion of the fishery under Federal authority.

Annual Catch Target (ACT): An amount of annual catch of a stock or stock complex that is the management target of the fishery and accounts for management uncertainty. A stock or stock complex's ACT should usually be less than its ACL.

**For the Scallop FMP, use of an ACT is recommended as a “proactive” in-season accountability measure to help ensure the ACL is not exceeded. There will be separate Acts for the two sub-ACLs: one for the limited access fishery and one for the general category fishery. Both are set below the sub-ACL to account for management uncertainty. See Section 3.2.3.8 for details.**

ACT Control Rule: Approach to setting the ACT for a stock or stock complex such that the risk of exceeding the ACL due to management uncertainty is acceptably low.

**This action is not specifying a specific ACT control rule, it is not required.**

- ***Accountability Measures (AMs):***

AMs: Management controls that prevent ACLs or sector-ACLs from being exceeded (in-season AMs), where possible, and correct or mitigate overages if they occur.

In-season AM: Includes (but is not limited to) an ACT, closure of a fishery, closure of a specific area, reductions in effort, or changes in trip size or bag limits based on in-season monitoring of the fishery. For fisheries without in-season management control, AMs should utilize ACTs that are set below ACLs so catches do not exceed ACL.



AMs for when ACL is exceeded: AM that is triggered and implemented as soon as possible to correct the operational issue that caused the ACL overage. Can include modifications of in-season AMs and/or overage adjustments. If catch exceeds the ACL more than once in four years, the system of ACLs and AMs should be re-evaluated.

AMs based on multi-year data: For fisheries without annual data upon which to base AMs, AMs could be based on comparisons of average catch to average ACL over a 3-year moving average period, or some other period based on an appropriate analysis.

State-Federal AMs: FMPs must have, at a minimum, AMs for the Federal portion of the state-federal fisheries. AMs could, for example, include closing the EEZ when the Federal portion of the ACL is reached.

**The Scallop FMP has alternatives for in-season AMs and AMs for when ACLs are exceeded. Use of an ACT is recommended as a “proactive” in-season accountability measure to help ensure the ACL is not exceeded. The FMP also includes several other “reactive” AM alternatives if the fishery exceeds sub-ACLs. See Section 3.2.4.1.**

### 3.2.2 Summary of old and new terms and how they will be integrated in Scallop FMP

Although the MSRA has introduced many new terms, they are not vastly different than those currently used in the Scallop FMP. The table below attempts to link old and new terms together and defines what these terms stand for and what values will be associated with the new required terms. Many of the same values have been used in the Scallop FMP to determine if overfishing has occurred and if the stock is overfished.

**Table 2 – Summary of old and new terms with definitions and associated values**

Old Term	New Term	Definition	Value for Scallop FMP
MSY	MSY	Largest long-term average catch or yield. Results from applying $F_{msy}$ .	$F_{msy} = F_{max} = 0.29$ 54,300 mt. or 120 million lb.
$F_{threshold}$ , $B_{threshold}$	SDC	Quantifiable factors used to determine if overfishing has occurred and if stock is overfished	SDC for Scallop FMP is $F_{threshold}$ of 0.29 and $B_{threshold}$ of 54,300 mt.
$F_{threshold}$	MFMT	Level of fishing mortality above which overfishing is occurring.	MFMT = $F_{threshold} = 0.29$
$B_{threshold} = \frac{1}{2} B_{max}$ and $B_{max} = B_{target} = B_{msy}$	MSST	Level of biomass below which stock is considered overfished.	MSST = $B_{threshold} = \frac{1}{2} B_{max}$
	OFL	Annual amount of catch above which overfishing is occurring, results from applying MFMT or $F_{threshold}$ to stock abundance.	OFL = 61 million lbs. for 2009
OY	OY	MSY reduced by relevant social, economic, and ecological factors.	OY = ACL
	ABC	Maximum catch recommended for harvest. Can never exceed OFL and should consider scientific uncertainty.	ABC set X% lower than OFL (SSC recommendation)
OY	ACL	Annual amount of catch over which accountability measures triggered. ACL can equal but never exceed ABC	ABC = ACL
	Sector ACL	Overall ACL can be divided into sub-ACLs if differences in degree of management uncertainty.	Scallop FMP will have 2 sub-ACLs: one for limited access (LA) and one for limited access general category fishery (LAGC). ACL = LA ACL + LAGC ACL
Catch from $F_{target}$	ACT	Amount of annual catch that is the management target and accounts for management uncertainty.	Scallop FMP will have 2 ACTs: LA ACT will be set Y% below LA ACL and LAGC ACT will be set Z% lower than LAGC ACL.

### **3.2.3 Alternatives under consideration for implementing ACLs in the Scallop FMP**

#### **3.2.3.1 No Action**

If this option is selected, a process for implementing Annual Catch Limits (ACLs) will not be adopted in this action.

#### **3.2.3.2 ACL structure**

The new ACL related terms required under MSRA described in Table 2 will be implemented and the structure will be applied based on the flowchart in Figure 1. The overall ACL will be divided into two sub-ACLs: one for the limited access scallop fishery (LA) and one for the limited access general category scallop fishery (LAGC). Each sub-ACL will have an associated ACT.

There are specific buffers proposed between these required terms. A buffer for scientific uncertainty between OFL and ABC and another buffer for management uncertainty between both sub-ACLs and sub-ACTs for the limited access and general category fisheries. Figure 2 summarizes that ABC will be set at X% below OFL and  $ABC=ACL$  (See Section 3.2.3.7 for the details of the buffer for scientific uncertainty). The scallop ACL will be divided into 2 sub-ACLs (LA and LAGC). Each sub-ACL will have associated sub-ACTs and the buffer between the LA ACL and ACT will be Y%, and the buffer between the limited access general category ACL and ACT will be set at Z% to account for differences in management uncertainty. Section 3.2.3.8 summarizes the buffers for management uncertainty for these two sub-ACLs.

#### **3.2.3.3 Northern Gulf of Maine ACL**

In addition to the ACL for the directed scallop fishery (LA and LAGC), a separate NGOM ACL will be specified and will have a separate hard-TAC. Because resource in the NGOM is currently not incorporated in the overall assessment of the scallop resource, the ACL for this area can be treated separately as long as it is within the overall OFL for the resource. Therefore, an estimate of catch from this area will be added to the OFL and later removed before setting ABC and the overall ACL for the scallop fishery.

Amendment 11 to the Scallop FMP implemented a hard-TAC for vessels that qualify to fish under a limited access NGOM permit. That action specified that the Scallop PDT will recommend a hard-TAC for the federal portion of the scallop resource in the NGOM using historical landings until funding is secured to undertake a NGOM stock assessment.

Framework 19 to the Scallop FMP is the first action that set a hard-TAC for this area. The TAC was set to be both 70,000 pounds in 2008 and 2009. This amount is based on the average VTR landings from 2000-2006 from federal waters outside of EFH and groundfish mortality closed areas. The rationale behind this value was that there is uncertainty about the resource in the NGOM as well as landings data, so the PDT discussed removing 80% from the average to account for this uncertainty. However, it was also acknowledged that some future landings will likely come from state waters, so the PDT recommended that no reduction be taken from the average landings amount at this time.

It should be noted that in 2008 only 14% of the hard-TAC was harvested. There could be many reasons for this, but it does not seem that exceeding the hard-TAC is likely. Between March 1,

2009 and July 19, 2008 about 8% of the TAC was harvested. This is primarily a winter fishery so landings are expected to increase, but are not expected to come close to the 70,000 pound limit. Therefore, current estimate of NGOM ACL is 70,000 pounds.

### 3.2.3.4 Other sources of scallop fishing mortality

There are three additional sources of fishing mortality that will be taken into account before setting OFL. Mortality from discards (in all fisheries), incidental catch, and catch by vessels with state only scallop permits in state waters will be removed before setting OFL. Currently it is estimated that dead discard mortality equals 370,373 pounds, 6.8 million pounds for incidental catch mortality (5.5 million pounds from GB and 1.3 million pounds for the MA). Both these estimates are from the recent scallop assessment using 2006 data. Incidental mortality was unusually high in 2006 because most of the fishing occurred in Georges Bank (which is assumed to have much higher incidental M than the Mid-Atlantic). The third source of additional scallop fishing mortality is from landings in state waters by vessels without federal scallop permits; for fishing year 2008, the current estimate of this catch is over 160,000 pounds. These estimates will be periodically re-evaluated in scallop assessments and can be adjusted. The PDT will account for these sources of mortality when setting OFL. Each source of mortality is described in more detail below.

- *State Waters*

The Council does not have the authority to set AMs on state fisheries and vessels; as such there are no ACLs or AMs for harvest in state waters from vessels that have state permits only. There are only a handful of states that have state scallop permits, and catch from these vessels is tracked by individual states and ASMFC. ASMFC has provided an estimate of catch by state only permitted vessels. The estimate is just over 160,000 pounds for fishing year 2008, and this value will be re-evaluated in the future if catch amounts change.

**Table 3 – Summary of state water catch by vessels without a federal scallop permit**

State	Meat Pounds	Metric Tons
ME <sup>1</sup>	121,929.30	55.31
MA <sup>2</sup>	26,430.16	11.99
NH	*	*
NY	*	*
RI <sup>2</sup>	12,905.47	5.85
State Total	161,264.93	73.15
Coastwide Total (ME-VA)	52,344,986.18	23,742.06
Percentage	0.31%	0.31%
*Less than 500 lbs		
1 Data pulled from state harvester reports.		
2 Data pulled from the ACCSP SAFIS database.		

Harvest from these states will be taken into account in the overall ACL flowchart: estimated catch will be added into the overall OFL and removed again before the ABC/ACL is identified. The PDT is not sure if NMFS can require states to report catch from state permitted vessels, but it was identified as an issue in terms of when and how catch from this source will be available and integrated into the overall ACL process. Catch from vessels with federal permits that fish in state waters will be included in the overall estimate of OFL because these vessels are required to report landings to NMFS because they have a federal permit.

- *Discards*

Mortality from discards (including dead discards) are already taken into account during the development of OFL because the YPR relationships already include a discard estimate. A 20% mortality of these discards is also incorporated into the SAMS and YPR models. Incidental mortality (mortality on scallops impacted by gear while fishing but not brought on deck) is also included in the OFL estimate. The 2006 estimate for discard mortality is 370,373 lbs; the incidental mortality estimate for 2006 for Georges Bank is 5.5 million lbs, and for the Mid Atlantic is 1.3 million lbs. Similar to how catch from state waters permitted vessels will be accounted for, all mortality from discards and incidental mortality will be added to the estimate of OFL and later removed from OFL to clarify that this source of mortality is accounted for in the process.

Current estimate of mortality from discards is 370,000 pounds and 6.8 million pounds from mortality from incidental catch (mortality on scallops impacted by gear while fishing but not brought on deck). These values together is approximately 7.17 million pounds (based on 2006 data). These have been updated for 2008 (?) and were presented to the SSC in August 2009. The updated estimate of mortality from dead discards and incidental catch is about 7.4 million pounds. These values will be re-evaluated in future assessments.

- *Incidental Catch*

There are roughly 240 limited access general category incidental catch permits that are allowed to catch up to 40 lbs per trip; this accounts for a very small percent of overall catch. It was decided that even if this component of the fishery grew out of control, total catch from this permit category would still be within the difference between ACT and ACL. *The PDT recommended that this component of the fishery should not have a sub-ACL at this time; but recommended that consideration of new sub-ACLs should be added to the list of frameworkable items.* That way, in a few years, if a re-evaluation of this permit category shows that catch has increased substantially a sub-ACL with associated AMs could be considered.

Current estimate of catch from this component of the fishery is 50,000 pounds. Amendment 11 set that as a target TAC that can be adjusted up or down. It is a target TAC so it is not monitored real time and the fishery does not close if the target is reached, but this value will be re-evaluated in the future and modified if necessary. Once these vessels are required to have an incidental permit and new reporting requirements, estimated catch from this sector is expected to improve.

### **3.2.3.5 ACL sub-components**

An overall ACL will be applied to the overall scallop fishery with two sub-ACLs for the LA and LAGC fisheries (See Figure 1). Mortality from discards, incidental catch, and catch from state

permitted vessels will be accounted for in setting OFL (OFL will be reduced by estimates of catch from these sources of mortality). Each sub-ACL will have an associated ACT with separate accountability measures (AMs). Before sub-ACLs are set, an estimate of mortality from incidental catch permits will be removed, currently 50,000 pounds. Catch associated with the research and observer set-aside programs will also be removed before the ACL is divided into two sub-ACLs. The primary reason there will be two ACLs is so that AMs can be applied to the component of the fishery responsible for the excess catch. Thus, one component of the fishery will not shut another out.

It needs to be clarified that this action will modify the allocation decision made in Amendment 11 to allocate 5% of the total projected catch to the general category vessels that qualify for a LAGC permit, 0.5% to limited access vessels that qualify for a LAGC permit, and 94.5% for limited access vessels. The intent of Amendment 11 was to allocate 5% to the general category fishery, and since that action did not anticipate ACLs, that allocation decision should be in terms of ACL, not ACT. Therefore, the allocation decision will be applied before buffers for management uncertainty are applied since currently the two fisheries have different levels of uncertainty.

Figure 1 - Recommended flow chart for ACLs for the scallop fishery.

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### 3.2.3.6 Placement of terms and buffers for uncertainty

The MSRA discusses that in setting catch levels the Council needs to recognize and account for uncertainty in setting and achieving harvest levels. Overall the level of scientific and management uncertainty in the Scallop FMP are relatively low. Multiple surveys and methods are used to assess the scallop resource on an annual basis. A benchmark assessment is completed every three years, and the Scallop PDT evaluates the status of the resource each year. Section 3.2.3.7 below summarizes the scientific uncertainty in estimating OFL and how certain the estimate of ABC is with respect to preventing overfishing. **Based on a recommendation from the SSC, ABC will be set corresponding to a fishing mortality that has 25% chance of exceeding OFL, as depicted in Figure 2.**

For the Scallop FMP, the Council has decided to use ACTs an in-season accountability measure. What that means is that management uncertainty will be accounted for as the buffer between ACL and ACT, rather than the difference between ABC and ACL if no ACT was used. Therefore, the Scallop FMP will use an overall approach of  $OFL > ABC = ACL > ACT$ . ABC will equal the ACL because management uncertainty is accounted for between the ACL and ACL and scientific uncertainty is accounted for between OFL and ABC. Keep in mind that the overall ACL will be divided between the limited access and general category sectors and each ACL will have an associated ACT.

The Scallop FMP has decided to go with 1)  $OFL > ABC = ACL > ACT$  for 3 main reasons:

1. AMs are likely hardTACs or something like them that restrict fishing by season and/or area. Hard TACs can lead to derby fishing having negative impacts on the fishery. Derby fishing has all sorts of negative consequences such as increased bycatch, lower price for product due to spikes in supply, loss of yield if fishing shifts to seasons with lower meat weights, etc. One goal of this FMP is stable and consistent landings. Markets have been developed in the US and abroad based on a steady supply of fresh scallops being available all year long.
2. In addition, an ACT would help avoid localized overfishing; with some scallops locked in closed areas that remain unavailable to the scallop fishery, fishing mortality is higher in open areas. If open area DAS are set too high, localized overfishing is a potential.
3. Public perception issue. The scallop industry has told the Council they would support setting fishing allocations at ACT below ACL so that there is not a misunderstanding in the public that the scallop resource is not managed responsibly. If AMs are not triggered, the public is more confident that management is working. There are a variety of reasons why a fishery could exceed a fishing target, including some that are not the control of the fishery or caused by fishing, so if a fishery is under or over a target the ramifications are different than if the fishery is under or over an ACL.

Overall, by having an ACT as an in-season AM, the management plan can “address and minimize both the frequency and magnitude of overages” by setting management measures below ACL. It may be more beneficial to catch less than the resource can biologically support,

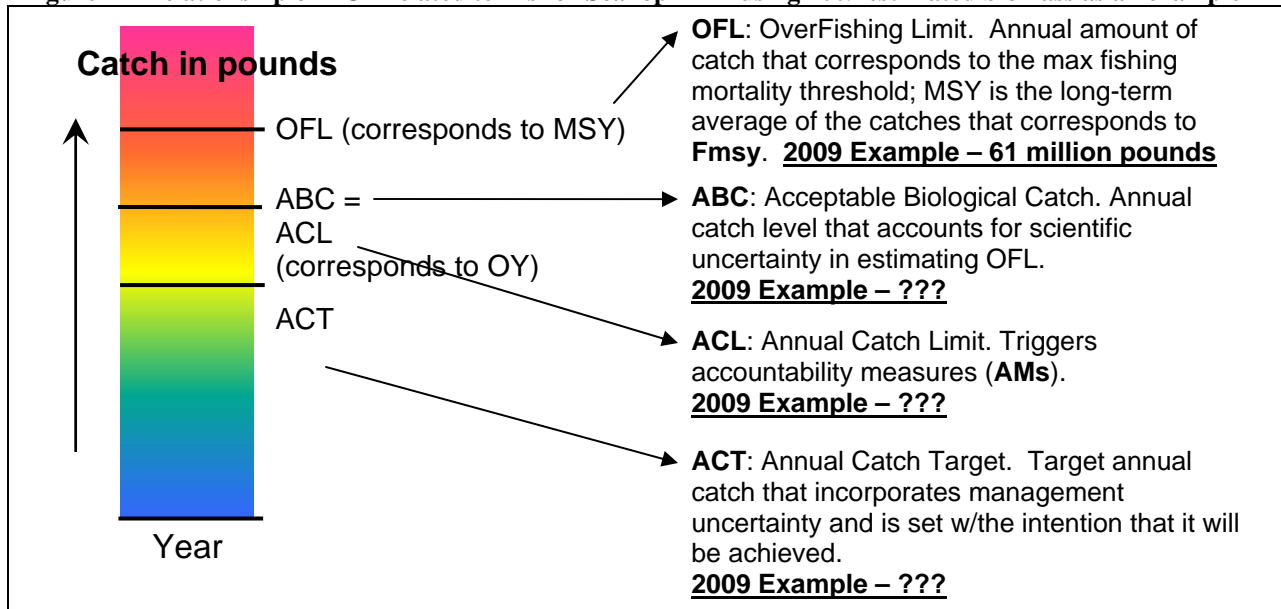
compared to catching the maximum and running a greater risk of triggering AMs that would cause derby fishing. Most AMs the Council has developed so far have derby effects and that is not a good way to manage the scallop fishery. It should be noted that this amendment also includes reactive AMs, so if both the ACT and ACL are exceeded, other AMs would be triggered that would reduce future catch to account for any overages above the ACL.

As for management uncertainty, there is some management uncertainty in this scallop fishery, but it is relatively low because the majority of the fishery is managed under output controls that cap catch (access area trips have a possession limit and the general category fishery is managed under IFQs). Actual catch has exceeded projected catch for a variety of reasons, but the estimates are getting closer. There is reason to believe they will come even closer since the general category fishery is under IFQs, more access area trips are allocated now than in years past with a possession limit per trip, more surveys are being conducted, and more is known about parameters used to estimate biomass, so catch estimates should be improved. In addition, if general monitoring programs improve, it may be feasible to reduce the buffer between ACL and ACT. Section 3.2.3.8 summarizes the level of management uncertainty in this fishery. Because the limited access and general category vessels are under different management regimes with different levels of management uncertainty they each have a separate buffer between their sub-ACLs and sub-ACTs. **In summary, there will be two options considered for the buffer between the sub-ACL and sub-ACT for the limited access fishery and two options considered for the buffer between the sub-ACL and sub-ACT for the limited access general category fishery.**

The combination of the scientific and management uncertainty buffers proposed in this action (X% between OFL and ABC and Y% between LA sub-ACL and LA sub-ACT and Z% between LAGC sub-ACL and LAGC sub-ACT) are similar to the overall buffer that the Scallop FMP has used in the past. Specifically, in recent years the difference between applying  $F_{\text{threshold}}$  and  $F_{\text{target}}$  to available biomass has resulted in about a 20% buffer between target catch and the threshold for  $F_{\text{msy}}$ .



**Figure 2 – Relationship of ACL related terms for Scallop FMP using 2009 estimated biomass as an example**



**WILL NEED TO UPDATE FIGURE AFTER FINAL ABC RECOMMENDATION IS MADE.**

The actual catch amounts in pounds that correspond to these acronyms will be determined in each framework that sets specifications, but the distance between each term (percentage amounts) will remain the same unless a future framework or amendment action considers changing them. However, the PDT recommends that the Council still have the authority to set the overall fishing mortality target (ACT) lower than ???% of the ACL if there is a justified reason. In the past the Council has set the fishing target below  $F_{target}$ , and it is understood that the Council would still have the authority to set management measures more precautionary than ACT if warranted. However, if the Council wanted to set management measures above ACT, that action would have to also consider revising ACT to a higher value closer to ACL.

Since abundance and catch estimates are not available yet for FY2011 when ACLs are required to be in place, this document will include projected values for FY2009 as an example to show how the terms interact. It is assumed that similar rationale would be used to determine the distance between reference points in the future after ACLs are implemented.

In summary, based on 2009 data (2009 exploitable biomass = 154,000mt = 339 million lbs):

OFL:  $F=0.29$  applied to 339 million lbs = 61 million lbs (corresponds to  $F_{msy}=F_{max}=F_{threshold}$ )  
 ABC:  $F=???$  applied to 339 million lbs = ??? million lbs (???% of  $F_{max}$  for scientific uncertainty)  
 ACL:  $F=???$  applied to 339 million lbs = ??? million lbs (corresponds to ???% of  $F_{max}$ )  
 Sub-ACL for LA fishery = ??? (95% of available catch or ACL)  
 Sub-ACL for LAGC fishery = ??? (5% of available catch or ACL)  
 Sub-ACT for LA fishery = ??? (Y% of LA sub-ACL)  
 Sub-ACT for LAGC fishery = ??? (Z% of LAGC sub-ACL)

### 3.2.3.7 Description of scientific uncertainty

Scientific uncertainty stems from incomplete or inaccurate data, model error, and environmental variation (Rosenberg et al. 2007). It affects estimates within assessments, including mortality, growth rates, and recruitment (SARC 32). Scientific uncertainty can arise from variability in growth rates, differences in aging techniques, and also statistical errors (SARC 39). Rosenberg and Restrepo (1994; as quoted in SARC 32) identified 5 types: measurement error (in observed quantities), process error (or natural population variability), model error (mis-specification of assumed values or model structure), estimation error (in population parameters or reference points, due to any of the preceding types of errors), and implementation error (or the inability to achieve targets exactly for whatever reason). Implementation error falls generally under the realm of management uncertainty, discussed in the next section.

In order to identify the appropriate buffer between OFL and ABC, the Scallop PDT evaluated the level of scientific uncertainty in two ways. First, a qualitative evaluation of the various biological parameters was completed in terms of the overall level of uncertainty related to each parameter and the impact of that uncertainty on the overall assessment (Section 3.2.3.7.1). Second, as requested by the SSC, the PDT conducted a quantitative analysis of scientific uncertainty (Section ???). Specifically, a quantified estimate of uncertainty in the estimate of OFL and MSY was conducted.

**Based on a combination of these analyses, the SSC recommended that ABC be set at the catch that corresponds to a fishing mortality level that has a 25% chance of exceeding OFL.**

#### 3.2.3.7.1 Qualitative analysis of scientific uncertainty

The current stock assessment determines biomass, recruitment, biological reference points, and fishing mortality. Each has its own associated uncertainty. The most recent scallop assessment (2007) used a size-structured forward projecting assessment model (CASA), which produced more accurate results than previous models (rescaled F approach). The most recent assessment took into account more sources of data and updated research results to provide a more precise and less bias estimate.

The sources of data include: the NEFSC dredge survey, the winter bottom trawl and SMAST small camera video surveys, commercial landings, shell height measurements for landed scallops from port and sea sampling, commercial landings per unit of effort, and growth increment data from growth rings on scallop shells. The recent assessment used new growth data for the first time, which indicate that Mid-Atlantic sea scallops do not grow as large but reach their maximum size faster than previously assumed, while the Georges Bank scallops have growth similar to the previously estimated growth curve. These new growth data estimates have some error associated with them. Lastly, new shell height/meat weight relationships for survey and commercial catches were used. The shell height-meat weight relationships for catches were adjusted to account for shucking practices, water absorption and transport, as well as seasonal patterns in meat weights during each year.

While the scallop stock assessment is a relatively data rich assessments there are various sources of uncertainty that are highlighted in recent assessment reports:

- There are relatively small, but imprecisely known amounts of sea scallop biomass occur in areas outside the regularly surveyed NEFSC shellfish strata (NEFSC Reference Doc. 06-20), which can lead to biological uncertainty in the assessment. However, landings from regions outside Georges Bank and the Mid-Atlantic are comparatively minor (NEFSC Reference Doc. 06-20).
- Spatial averaging of the overfishing definition over the closed, open, and access areas leads to uncertainty about the status determination of whether overfishing is occurring (NEFSC Reference Doc. 06-20); it is known that fishing levels in the open areas are high due to the large amount of biomass in the closed areas. This allows a higher F in open areas – potential localized overfishing because averaged with no fishing on resource in closed areas.
- The ability to link dealer reports and vessel trip reports in data processing is reduced by incomplete data reports and other problems, which make it difficult to precisely estimate catches and fishing effort, and to prorate catches and fishing effort among areas and gear types (SAW 39).
- Regulatory and reporting changes cause uncertainty while comparing trends in fishing effort and catch rates before and after 1994 (SAW 39).

The scallop assessment is generally conducted about every three years. Reference points are updated and new information about catch, recruitment and other factors are evaluated. Various parameters are used in the assessment and the values used are based on the best available science.

Below is a description of the parameters used in the assessment including the most recent research data used to produce each parameter and if discussed, the degree of uncertainty associated with each parameter and the importance of that parameter on the overall assessment of the scallop resource. References included in the following assessment parameters were cited from the 45<sup>th</sup> SAW report. The Scallop PDT has evaluated the level of uncertainty on a scale of 0-4 (zero is no uncertainty, 1= little uncertainty, 2= some uncertainty, 3= fairly uncertain, and 4=completely uncertain) as well as the importance or effect of that parameter on the overall assessment of the scallop resource on a scale of 1-3 (1= low, 2=moderate, and 3=high effect). The second score is a way to qualify the uncertainty of each parameter in terms of importance or effect, a value was given to describe the sensitivity of each parameter – whether the level of uncertainty has a small or large impact on the overall assessment of the resource.

The PDT does point out that there is a big difference between uncertainty and variability that should be kept in mind. Variability is generally included in modeling, but even if you are certain, the variability can affect forecasting. For example, the scallop assessment is relatively certain about growth, but there is still variability in yield because the seasonality of the fishery is unpredictable. There is variability through the year and between years, which will affect forecasting.

- **Growth**

Sea scallop growth is traditionally modeled using the von Bertalanffy growth equation. Previous sea scallop assessments used the growth curves estimated by Serchuk et al. (1979), but reviewers expressed concern about a lack of recent growth information. Subsequently, a growth study was performed using shells collected during the 2001-2006 NEFSC scallop surveys. The growth curves based on these new data have lower  $L_{\infty}$  and higher  $K$  values than in previous estimates for both the Mid-Atlantic and Georges Bank (Table 4).

**Table 4 - Growth parameters for Atlantic sea scallops**

Source	Region	$L_{\infty}$	SE	$K$	SE
New					
	Mid-Atlantic	131.6	0.4	0.495	0.004
	Georges Bank	146.5	0.3	0.375	0.002
Serchuk et al. (1979)					
	Mid-Atlantic	151.8		0.2997	
	Georges Bank	152.5		0.3374	

This was identified by PDT members as the primary, most important parameter in terms of having an impact on the overall estimate of biomass. If it is misestimated, the ramifications are consequential. It can cause an over- or under-estimation of available biomass and is particularly important for forecasting. For example, growth was overestimated in Hudson Canyon and the three year projection for that area was much higher than reality – the biomass was much lower than originally projected. There is a standard error associated with growth, which is a built-in measure of uncertainty.

*Overall the PDT ranks this parameter as:*

**Uncertainty = 2      Importance/effect on assessment = 3**

- **Maturity and fecundity**

Sexual maturity commences at age 2, although individuals younger than 4 years may contribute little to total egg production (MacDonald and Thompson 1985; NEFSC 1993). All sea scallops >40 mm are considered mature individuals and annual fecundity increases quickly with shell height (MacDonald and Thompson 1985; McGarvey et al. 1992). Spawning generally occurs in late summer or early autumn, although there is evidence of spring and autumn spawning in the Mid-Atlantic Bight (DuPaul et al. 1989) and limited winter-early spring spawning on Georges Bank (Almeida et al. 1994 and Dibacco et al. 1995).

A PDT member explained that this has little effect on the outcome of the assessment; in fact, because there is so little data on this parameter, it is not used in the assessment. There is uncertainty associated with the shell height / egg number relationship because it is based on a study in Canada, which may not be exactly fitting for Georges Bank or the Mid-Atlantic; further, the relationship may vary annually. So, there is uncertainty with this parameter, but it is not incorporated in the assessments as far as estimates are concerned – it is just used to ensure there is enough spawning.

*Overall the PDT ranks this parameter as:*

**Uncertainty = 2 to 3      Importance/effect on assessment = 1**

- **Shell height / Meat weight relationship**

Shell-height/meat-weight relationships allow conversion from numbers of scallops at a given size to equivalent meat weights. NEFSC (2001) obtained blended estimates used in the last two estimates from the combination of the SH/MW relationships from Serchuk and Rak (1983) and the NEFSC (1999) based on meat weights that were taken on land (after being frozen or brought in live). The NEFSC collected new SH/MW data during the annual sea scallop surveys during July, 2001-2006, from meats that were weighed at sea just after shucking. The new data give slightly higher predicted meat weights at a given shell height than NEFSC (2001). In the recent assessment, depth-adjusted SH/MW relationships were used to calculate survey biomass information, but traditional relationships were used in the CASA and SAMS models in which depth is not explicit.

Observer and landings data were used to adjust the survey SH/MW relationships for use with the commercial catch because the meat weights for landed scallops may be different from those predicted based on the NEFSC survey (because of time of year collected, shucking, water uptake during storage, area collected). Gains in meat weight during storage on ice are highly variable and uncertain, but for this assessment meats were assumed to have gained by 3% to account for water absorption during storage and transport when accounting for numbers landed (DuPaul 1990).

Both Georges Bank and the Mid-Atlantic showed a drop in meat weights between August and October, coinciding with the September-October spawning period. Mid-Atlantic meat weights were less than predicted based on summer sea scallop survey relationships in all months. The highest meat weights were in July. Estimates of meat weights for Georges Bank for February through May are uncertain because they were based on a limited number of observed trips and samples. Average weight of individual sea scallops in the catch was calculated based on size composition, shell-height meat relationship, annual anomaly, and adjustment for water absorption.

A PDT member explained that the SH/MW relationship has a moderate effect on the outcome of the assessment and there is a little uncertainty associated with it due to inter-annual variation. There is also water gain during transport and only a small number of observed trips are used to estimate the shell height/meat weight relationships used (in comparison to the overall fishery). However, it was pointed out that these two issues have a minor contribution to uncertainty. Overall, our understanding of this relationship is high, but it varies inter-annually, so there is some uncertainty due to the moderate variability.

*Overall the PDT ranks this parameter as:*

**Uncertainty = 2      Importance /effect on assessment = 2**

- **Natural mortality**

Natural mortality estimates are based on surveys of clapper data. Based on previous assessments (NEFSC 2001, 2004), the natural mortality rate for sea scallops in this assessment was assumed to be  $M = 0.1 \text{ y}^{-1}$  for scallops with shell heights greater than 40 mm. The  $M$  estimate is based on ratios of clappers to live scallops in survey data (Merrill and Posgay 1964). Clappers are shells from dead scallops that still have both halves connected by the hinge ligament. MacDonald and Thompson (1986) suggested that natural mortality increases at larger shell heights. Clapper ratios for Mid-Atlantic and Georges Bank are lower than previously calculated by Merrill and

Posgay (1964), but it is unclear whether this is due to lower natural mortality, differences in the clapper separation rate, or changes in clapper catch-ability due to the change from an unlined to a lined dredge. Georges Bank has seen recent increases in clapper ratios, which may represent episodic mortality events or could be related to the increases in size/age in the Georges Bank stock. Larger size classes tend to have higher clapper ratios, but it is unclear whether this is due to increased separation time of larger clappers or to an increased natural mortality as scallops age, or a combination of both (NEFSC 2004).

There is better information in the scallop fishery than in most other fisheries because of the ability to assess natural mortality through assessing clappers' state of decomposition. Additionally, we have Closed Areas in which there are un-fished areas to analyze natural mortality. However, overall there is still a lot of uncertainty associated with this parameter. The PDT initially ranked uncertainty as 2.5, but the SSC urged the PDT to use 3 and the PDT agreed. *Overall the PDT ranks this parameter as:*

**Uncertainty = 3      Importance/effect on assessment = 3**

- **Catch data**

The US sea scallop fishery is conducted mainly by roughly 350 limited access vessels, with additional landings by the limited access general category fishery that can land up to 400 lbs per trip or day without a limited access permit. Although the predominant fishing gear is the New Bedford style scallop dredge, some vessels use otter trawls in the Mid-Atlantic. Recreational catch is negligible.

Landings on Georges Bank were fairly steady from 1999-2004 at 5000 mt and increased in 2005-2006, primarily due to the reopening of portions of the groundfish closed areas. Until recently, landings in the Mid-Atlantic were lower than on Georges Bank. There has been an upward trend in recruitment and landings in the Mid-Atlantic from the mid-eighties. Landings peaked in 2004 at 24,494 mt before declining during 2005-2006. Landings from other areas are minor in comparison. Gulf of Maine landings were less than 1% of the total US sea scallop landings in 2006, as were Southern New England landings.

There is uncertainty associated with comparing fishing effort and catch rate trends before and after 1994 due to regulatory and reporting changes. Additionally, the ability to link DR and VTR reports while data processing is reduced by incomplete data reports and other problems, which make it difficult to precisely estimate catches and fishing effort and prorate catches and fishing effort among areas and gear types. However, there have been significant improvements in general category reporting in recent years, decreasing the level of uncertainty.

Landings per unit effort (LPUE) trended downward until around 1998 (with occasional spikes probably attributable to strong recruitment events), but has increased considerably from 1999-2003 as the stock recovered. Further increases were seen in 2005-2006 on Georges Bank due primarily to the reopening of groundfish closed areas. LPUE in the limited access fishery has averaged about 1600 lbs/day in recent years, compared to the 400 lbs/day by a general category vessel.

It was discussed that although this is a large part of the assessment, this may not need to be included. However, another argument is that there is uncertainty about this due to unreported landings and inaccurate data entries. Inaccurate landings estimates would impact assessment results. It was noted, though, that landings reports have gotten much better in the General Category fishery, which is where a large part of the uncertainty used to be. Catch data impacts the CASA model primarily and will have a small impact on the assessment.

*Overall the PDT ranks this parameter as:*

**Uncertainty = 1      Importance/effect on assessment = 2**

- **Discards**

Sea scallops are sometimes discarded on directed scallop trips because they are too small to be economically profitable to shuck or because of high-grading during access area trips to previously-closed areas. Ratios of discard to total catch (by weight) were recorded by sea samplers aboard commercial vessels since 1992, though sampling intensity on non-access area trips was low until 2003. Discard ratios were low from 2005-2006, probably due to new gear regulations (4" rings) that went into effect at the end of 2004.

Sea scallops are also caught and either landed or discarded in fisheries targeting finfish and other invertebrates. Observer sea sample data from trawl trips targeting other species were used to calculate the ratio of pounds of scallops caught per pound of target species landed to obtain the estimate of scallop bycatch. A small amount of uncertainty is associated with this method because it is calculated by multiplying by total landings of target species from VTR records, which may not include all landings, thus resulting in an underestimate of scallop discards. Overall, we have good information on discards in the scallop fishery.

*Overall the PDT ranks this parameter as:*

**Discards uncertainty = 1      Importance/effect on assessment = 1**

- **Discard mortality**

Discarded sea scallops may suffer mortality on deck due to crushing, high temperatures, or desiccation and is highly variable across seasons due to different water temperatures and air temperatures. There may also be mortality after being thrown back into the water (physiological stress and shock), or from increased predation due to shock and inability to swim, or from shell damage (Veale et al. 2000; Jenkins and Brand 2001). About 90% of tagged scallops were still living several days after being tagged and placed back in the water (Murawski and Serchuk 1989). Total discard mortality (including mortality on deck) is uncertain but has been estimated as 20% (10% on deck + 10% after release) in previous assessments (NEFSC 2001, 2004).

We have good information for discards, but not for discard mortality, which can vary depending on season, water temperature, and air temperature, among other factors. Both have a small effect on the outcome of the assessment, which has a fairly low sensitivity to discard mortality and discards. It was pointed out that since 4-inch rings were implemented, discards and discard mortality has likely reduced. There is much uncertainty about the 20% discard mortality estimate used in the assessment; this is an area that needs more research.

*Overall the PDT ranks this parameter as:*

**Discard mortality uncertainty = 3      Importance/effect on assessment = 1**

- **Incidental mortality**

Scallop dredges likely kill and injure some scallops that are contacted but not caught, primarily due to damage caused to the shells by the dredge. Roughly 5-20% of the scallops remaining in the dredge track suffer non-landed mortality, depending on the substrate (Caddy 1973; Murawski and Serchuk 1989). For this assessment, incidental mortality was assumed to be 0.15  $F_L$  on Georges Bank and 0.04  $F_L$  in the Mid-Atlantic.

Incidental mortality has a moderate effect on the assessment, more so than discard mortality. The findings of the two studies that examined this issue were conflicting; one found fairly high incidental mortality while the other saw little or none. SARC39 conducted a sensitivity analysis of this parameter on per-recruit calculations and found that the effects of incidental mortality on reference points is modest, but non-negligible.

*Overall the PDT ranks this parameter as:*

**Uncertainty = 3      Importance in assessment = 2**

- **Commercial Shell Height Data**

Size compositions from port samples after 1984 when meat count regulations were in force are not used in this assessment because the samples appear to be selected for their size rather than being randomly selected based on differences between port and at-sea measurements. Due to limited observer coverage, shell height data collected at sea prior to 2003 should be interpreted cautiously. Shell heights from port and at-sea sampling indicate that from 1975-1998 sea scallops between 70-90 mm often made up a considerable portion of the landings, but sizes selected by the fishery have increased since then such that scallops less than 90 mm were rarely taken from 2002-2006. Dealer landings also indicate an increase in scallop size in landings (80% of 2006 landings were in the 10-20 count and <10 count categories).

Shell height data from observed commercial trips has been incorporated into the CASA model, and uncertainty has reduced in the more recent years as the number of observed trips has increased. In the past, commercial shell heights were obtained from port samples that were likely biased, which had a substantial effect on assessment results.

*Overall the PDT ranks this parameter as:*

**Uncertainty = 1      Importance/effect on assessment = 3**

- **Commercial Gear Selectivity**

The study conducted to determine the selectivity of the new gear (4" rings, 10" twine tops; required by Amendment 10, 2004) by towing a commercial dredge aside an NEFSC lined sea scallop survey dredge determined that the new gear has a more gradual selectivity curve that is shifted to the right compared to the 3.5" ring dredges that were in use from 1996-2004.

A study that estimated the selectivity of commercial dredge gear with 4" rings was recently published (Yochum and DuPaul), so it is well understood. Commercial gear selectivity is used in forecasting, but is not directly used in the CASA model.

*Overall the PDT ranks this parameter as:*

**Uncertainty = 1      Importance/effect on assessment = 1**

- **Survey Gear Selectivity**



The NEFSC, beginning in 1979, uses an 8 foot dredge with 2” rings and a 1.5” plastic mesh liner, which retain smaller scallops than dredges without liners. Shell height data from SMAST video surveys from 2003-2006 were used to estimate survey dredge selectivity, which indicate that the survey dredge has constant selectivity and efficiency for sea scallops 40+ mm shell height. Thus, no adjustment was made to dredge survey shell height composition or abundance indices in this assessment to accommodate survey dredge selectivity. The relative abundance of small scallops is higher in unadjusted dredge survey composition data. Survey time series without selectivity adjustments are preferable technically.

Current evidence suggests that the survey dredge has flat selectivity for scallops >4 cm. Modest deviations from flat selectivity would have only modest effects on the assessment.

*Overall the PDT ranks this parameter as:*

**Uncertainty = 1      Importance/effect on assessment = 2**

- **Commercial Dredge Efficiency**

Evidence from a number of studies indicates that commercial dredge efficiency is between 40-60%; efficiency is near the higher end on relatively smooth sandy bottoms, such as occurs in the Mid-Atlantic, and at the lower end of this range on rocky bottoms. No assumption for commercial dredge efficiency is used in either the CASA assessment model or the SAMS forecasting model. It is used, however, in estimation of biomass from commercial dredge surveys.

*Overall the PDT ranks this parameter as:*

**Uncertainty = 1.5      Importance/effect on assessment = 1**

- **Survey Dredge Efficiency**

The survey dredge has lower efficiency than commercial dredges (~70% that of commercial dredges), probably due to the liner used in the survey dredge to catch small scallops. Thus, the survey dredge efficiency is between 28-42%. The CASA assessment model does not use an assumption on survey dredge efficiency, but it is used in the SAMS model and in estimating biomass from survey-dredge surveys.

*Overall the PDT ranks this parameter as:*

**Uncertainty = 1.5      Importance/effect on assessment = 2**

- **Stock-Recruit Relationship**

There is no indication that recruitment of Georges Bank sea scallops has ever been limited by egg production/spawning stock biomass. Sea scallops are highly fecund, and there is a gyre on Georges Bank that should retain a high percentage of larvae. The target BMSY proxy is well above the sea scallop biomass that occurred during the 1980s and 1990s, so that the current target should be well above the point where recruitment limitation occurs.

By contrast, recruitment of Mid-Atlantic sea scallops has increased in recent years when spawning stock biomass has been higher. However, the trend towards higher recruitment started before the increase in biomass, so environmental factors are at least partially responsible for the increased recruitment. Thus, there is uncertainty whether or not there is a true relationship between recruitment and spawning biomass. And if there is a relationship, there would be a positive impact on the scallop resource, so in terms of risk from this uncertainty it is low.

**Uncertainty = 3      Importance/effect on assessment = 2**

- **Density Dependence**

Analysis of growth and shell height/meat weight indicates no evidence of natural density-dependence among adults in closed areas. In fished areas, there is a small density-dependence growth effect, likely from greater fishing mortality in faster growing areas.

**Uncertainty = 2      Importance/effect on assessment = 2**

**Qualitative uncertainty - overall**

There is some degree of uncertainty related to all these parameters, which are summarized above and fully described in the recent assessments. However, overall the scallop assessment process is advanced in terms of the data sources and body of research available for the various parameters used in the assessment. Table 5 is a summary of the level of uncertainty and effect of that uncertainty on the scallop assessment. When all the parameters are combined there is little to some uncertainty associated with the scallop assessment (overall score of 1.5). In addition, there is low to some effect of these uncertainties on the overall assessment of the scallop resource. The Scallop PDT originally recommended that a 10% buffer be used between OFL and ABC to account for this level of scientific uncertainty. However, the SSC reviewed this approach and requested that more quantitative analyses be completed to establish an ABC control rule that would be more consistent with the final guidelines (Section 3.2.3.7.2).

**Table 5 – Summary of qualitative scientific uncertainty by parameter**

Parameter	Uncertainty (Score from 0-4)	Importance or Effect on Outcome of Assessment
Growth	2	High
Maturity and fecundity	2.5	Low
Shell height / Meat weight relationships	2	Some
Natural mortality	2.5	High
Catch data	1	Some
Discards	1	Low
Discard mortality	3	Low
Incidental mortality	3	Some
Commercial shell height data	1	High
Commercial gear selectivity	1	Low
Survey gear selectivity	1	Some
Commercial gear efficiency	1.5	Low
Survey gear efficiency	1.5	Some
Stock-recruit relationship	3	Some
Density dependence	2	Some
Averages	1.87	Low to Some

Importance or effect on outcome of assessment		
Low	Medium	High

Uncertainty	Low	<ul style="list-style-type: none"> <li>• Discards</li> <li>• Commercial gear selectivity</li> <li>• Commercial gear efficiency</li> </ul>	<ul style="list-style-type: none"> <li>• Catch data</li> <li>• Survey gear selectivity</li> <li>• Survey gear efficiency</li> </ul>	Commercial SH data
	Medium	Maturity and fecundity	<ul style="list-style-type: none"> <li>• SH-MW relationships</li> <li>• Natural mortality</li> <li>• Density dependence</li> </ul>	Growth
	High	Discard mortality	<ul style="list-style-type: none"> <li>• Incidental mortality</li> <li>• Stock-recruit relationship</li> </ul>	<i>none</i>

### 3.2.3.7.2 Quantitative analysis of scientific uncertainty

On February 6, 2009, the SSC reviewed the qualitative analysis recommended by the PDT that could be used for setting ABC. While the SSC agreed that the proposed general process for setting ACLs is appropriate, they recommended that some specific modifications are needed to comply with the final rule on National Standard 1 Guidelines, which was published after the PDT prepared the qualitative analyses.

The SSC prepared several final memos to the Council and PDT, reporting that “the proposed ABC does not explicitly account for uncertainty, there is no quantified measure of uncertainty in OFL (including uncertainty in the  $F_{MSY}$  proxy as well as the projected stock biomass), and there is no evaluation of how the ABC method performs with respect to preventing overfishing. Therefore, there is no scientific basis for using 90% of  $F_{max}$  to derive ABC.” In addition, “the SSC recognizes that the scallop stock assessment is one of the most informative assessments in the region, and the fishery is one of the most successfully managed. The positive status of the stock and the management system reflect the high-quality of science being produced by the Scallop PDT. The SSC also acknowledges that the draft Amendment document was developed before the final National Standard Guidelines were published (January 16 2009).”

#### SSC Recommendation:

- 1. Managing the current fishery so that fishing mortality is less than  $F_{max}$  complies with National Standard 1 (preventing overfishing while achieving the optimum yield on a continuing basis).**
- 2. At this time, no analysis has been provided to demonstrate that the proposed ABC complies with National Standard 1 Guidelines. Uncertainty in the estimate of OFL has not been quantified, and performance of alternative ABC methods with respect to preventing overfishing has not been evaluated. Therefore, a method to derive ABC will be recommended at a later date.**

Specifically, the SSC requested “a quantified estimate of uncertainty in OFL (including uncertainty in the  $F_{MSY}$  proxy as well as the projected stock biomass). A distribution of the projected value of OFL (the projected catch associated with  $F_{max}$ ) will allow the SSC to use a lower quantile of the projected OFL such that ABC is lower, but not significantly different than

OFL. In general, stochastic projection would be an appropriate approach to estimating uncertainty in OFL, but the SSC feels that the Scallop PDT is the most qualified group to determine the most appropriate method. Eventually, the SSC would like to base its ABC recommendation on an evaluation of how alternative ABC methods perform with respect to preventing overfishing.” The SSC provided several alternative ABC methods for the Scallop PDT to consider.

The Scallop PDT met in March, May and July 2009 to develop analyses to satisfy SSC suggestions. On August 11, 2009 and the SSC approved the PDT recommendation to set ABC at the fishing mortality rate estimated to have 25% chance of exceeding OFL. The detailed quantitative analyses presented to the PDT is available in Appendix ???. In summary, Monte-Carlo simulations were used to determine the distribution around the model parameters. These distributions were used to model Fmax in both the Mid Atlantic and Georges Bank. The probability of overfishing was plotted alongside the fraction loss of YPR to search for a best risk scenario.

INSERT FINAL SSC RECOMMENDATION FROM MEMO PRESENTED TO THE COUNCIL ON SEPT 23.

### **3.2.3.7.3 ABC control rule**

#### *(iii) ABC control rule*

means a specified approach to setting the ABC for a stock or stock complex as a function of the scientific uncertainty in the estimate of OFL and any other scientific uncertainty (*see* paragraph (f)(4) of this section).

MSRA requires that these values and terms be in place for FY2011. Since estimates of scallop biomass are not available for 2011 yet, a subsequent action will actually implement the associated terms. The Council intends to work on Framework 22 in 2010 and that action will likely include the ABC specific values for FY2011 and FY2012; this amendment will approve the concept and foundation, and subsequent actions will include the actual values for applicable fishing years.

After the SSC provides their final input to the Council at the September Council meeting this section will be updated with their advice.

### **3.2.3.8 Description of management uncertainty**

Management uncertainty encompasses factors such as efficacy of management controls and monitoring effectiveness. It also includes implementation error, described above as the inability to achieve targets exactly for whatever reason (Rosenberg and Restrepo 1994, in SARC 32). If the allocations are highly controlled and high quality data is collected, management uncertainty will be low, which allows the difference between the ACL and ACT to be minimized or eliminated.

There are two primary fishery components in the scallop fishery: the limited access fishery and the general category fishery. Each is managed differently so the level of management uncertainty varies for these fleets. Therefore, the Council decided to have two separate sub-ACLs for these fleets, with different buffers for management uncertainty to recognize that there are different levels of management uncertainty for these fleets.

Overall, there are only a handful of issues that contribute to management uncertainty in the scallop fishery. The Scallop PDT has identified seven primary sources of management uncertainty: 1) fishing mortality from the general category fishery; 2) increases in fishing effort from limited access vessels becoming “active” and switching from the confirmation of permit history (CPH) permit category; 3) mortality from the allowance of vessels to carry-over up to 10 DAS to the next fishing year; 4) increased mortality from vessels that upgrade or are replaced with new vessels; 5) uncertainty in catch from open area DAS (estimated versus actual landings per DAS); 6) ability of plan to monitor and enforce all catch; and 7) changes in fishing behavior that could increase landings above projected values.

The first two sources of management uncertainty are no longer an issue: mortality from the general category fishery and increases in fishing effort from limited access vessel becoming active from the CPH category. Until Amendment 11 was implemented, the general category fishery was an open access fishery so any vessel could apply for and receive a general category scallop permit. The only restriction was a 400 pound possession limit. The total mortality from this component of the fishery varied, but has increased since 2004, and that is one of the primary reasons total projected catch has been exceeded for the fishery overall in recent years. For example, the PDT estimated that mortality from the general category fishery in open areas would be equivalent to 3,500 DAS (or about 6.4 million pounds) in 2006. In reality the general category fishery caught 6.8 million pounds that year, and that is one of the primary reasons the fishery exceeded the management target in 2006 (Table 6).

**Table 6 - Scallop landings from general category vessels from 1994 to present**

FishYear	Total scallop landings (LA and GC)	Total scallop landings by General Category vessels only	
		LBS	%
1994	14,907,265	95,268	0.64%
1995	15,807,941	123,967	0.78%
1996	16,447,682	204,635	1.24%
1997	12,619,221	310,049	2.46%
1998	11,186,468	164,435	1.47%
1999	21,286,244	150,482	0.71%
2000	32,929,475	357,691	1.09%
2001	45,164,706	1,216,947	2.69%
2002	49,808,416	983,775	1.98%
2003	54,778,793	1,809,071	3.30%
2004	61,714,971	3,245,661	5.26%
2005	53,214,097	7,495,884	14.09%
2006	56,149,105	6,838,083	12.18%

Amendment 11 implemented limited entry for this component of the fishery, as well as an IFQ program for qualifying vessels. So the general category fishery will be limited to the total IFQ allocated to qualifying vessels. Therefore, the likelihood of that component of the fishery exceeding the target is minimal.

The other source of management uncertainty that is no longer an issue is additional boats becoming active in the fishery. A permit owner is allowed to put their permit in “CPH” if the vessel is not going to fish that year. In the past there were several dozen permits in CPH on an annual basis, but in recent years that trend has changed and now there are zero permits in CPH – all permits are active and in the fishery (Table 7). The total number of active limited access vessels in 2000 was 298, and in 2007 it was 369. In the past the PDT would estimate how many permits would be active in the fishery and how many vessels would use their full allocation, but in some years the number of active vessels would be greater and more DAS would be used than projected. For example, in recent years the PDT has used a full-time equivalent estimate of 325, but based on the table below the number of full-time equivalent vessels has been above that in 2005-2007. It does seem that this source of management uncertainty is essentially gone because there are no vessels left in CPH and the number of full-time equivalent vessels is stabilizing.

**Table 7 - Scallop Permits by Application Year**

AP_YEAR	FT	PT	OCC	FTSMD	PTSMD	FTTRW	PTTRW	OCCTRW	Grand Total	FT Equiv.
1994	225	24	5	6	8	25	27	26	346	282
1995	227	22	3	4	7	32	30	26	351	289
1996	217	19	3	5	8	28	27	25	332	274
1997	201	16	2	3	9	27	29	24	311	255
1998	203	11	3	2	7	23	27	19	295	248
1999	210	10	4	1	3	15	21	20	284	242
2000	219	16	4	2	4	17	20	16	298	256
2001	222	14	4	13	6	16	18	17	310	268
2002	232	14	4	26	6	16	11	15	324	288
2003	237	10	3	37	19	16	8	8	338	306
2004	240	4	3	48	25	15	3	5	343	316
2005	248	3	1	56	29	18		5	360	335
2006	255	3	2	59	34	14			367	343
2007	256	2	1	63	35	12			369	346

The remaining four sources of management uncertainty will be described in more detail in the following sections. Three are relevant for the limited access fishery (carryover DAS, upgrades and vessel replacements, and catch from open area DAS), and one is relevant for both components of the fishery (ability to monitor and enforce all catch).

It should be noted that there are several measures in the Scallop FMP that have the ability to cause the FMP to *undershoot* an ACL. For example, if an access area is closed due to the YT TAC being reached before all allocated trips are taken, that expected catch for that area will not be reached. In addition, each limited access vessel is allocated a set number of open area DAS and access area trips and they may not use all allocated effort in a given fishing year. A vessel can carry over up to 10 DAS, but access area effort can only be carried over for the first 60 days of the following fishing year. Table 8 is a summary of allocated and used DAS by year. For most years over 80% of all allocated DAS were used. While unused DAS is a way the fishery may undershoot an ACT or ACL, it can also be viewed as a source of management uncertainty, because those DAS can be carried forward, increasing the risk of exceeding an ACT or ACL in subsequent fishing years (See Section 3.2.3.8.1 below for a discussion of management uncertainty from the DAS carryover provision).

Likewise, general category IFQ vessels may not use all allocated quota each year. It is too early to know how much quota is unused since the IFQ program has not been fully implemented yet. Leasing may reduce the amount of unused quota, but it still may be a factor in undershooting ACTs and ACLs. These measures could be viewed as measures that reduce overall risk of exceeding an ACL.

**Table 8 – Number of allocated and used DAS for FY2000-FY2009 (to date)**

	DAS allocated	DAS used	% DAS used	Carry over DAS	Closed Area Conversion DAS
2000	32522	24786	76.2%		
2001	34034	28860	84.8%		
2002	35835	30026	83.8%		
2003	37953	32147	84.7%		
2004	22462	16062	71.5%		
2005	15344	14364	93.6%		
2006	20343	17229	84.7%	1158	2098
2007	18577	15238	82.0%	1950	
2008	14216	11853	83.4%	2322	491
2009	14923	5130*	34.4%*	1804	1050

\*Preliminary for 2009 - DAS used for March 1, 2009 through June 30, 2009  
DAS data from NERO website: <http://www.nero.noaa.gov/ro/fso/das.htm>

### 3.2.3.8.1 Limited access scallop fishery

With respect to the limited access fishery (full-time, part-time, and occasional permits), the primary source of management uncertainty is the open area DAS allocation to full-time vessels. The effort from part-time and occasional vessels does not contribute enough to warrant serious consideration in the identification of sources of management uncertainty because there are very few vessels left in these categories. Increased catch from carryover DAS and vessel upgrades and replacements are sources of management uncertainty as well. Each will be described below separately.

- *Estimate of catch from open areas*

The PDT uses a sophisticated model to predict the catch per day from open area DAS, but it varies by vessel, area and time of year. For example, in 2007 the average LPUE per DAS was about ???, and the projection in FW18 was ???. While the estimated versus actual LPUE is a major source of management uncertainty, the overall number of open area DAS are less in recent years compared to earlier years, so the degree of uncertainty is less compared to several years ago. But since there is no output restriction on the catch for a vessel in open areas, there is not 100% certainty that a vessel or the fleet overall will not catch more than projected levels per DAS.

While catch from open area DAS is viewed as a source of management uncertainty, the PDT feels strongly that DAS management may account for risk associated with projected versus actual estimates better than full output controls on catch. Specifically, if biomass projections are higher than actual biomass, DAS allocations will be set higher as well. But if biomass is actually lower than projected the catch rates will be lower per DAS since less biomass is available than projected. However, if a complete output control was used for open areas (i.e. possession limit per trip or quota for the year per vessel) each vessel would harvest that amount – whether the biomass estimate was high or low. Since DAS is a limit on the time a vessel can fish, it is better linked to the amount of resource actually available; in a sense DAS are self regulating because catch rates match the biomass available and the vessel can only harvest what it can in a set amount of time.



In recent years, more limited access fishing has been in access areas compared to fishing under open area DAS (Table 9). In 2004 there were 7 trips allocated, but that is the year Hudson Canyon first opened and fishing mortality was very high in that area. Furthermore, vessels were given the opportunity to take access area trips in GB access areas, but they did not have to take them; they could use open area DAS instead. And in 2005, while there were five trips allocated, but many of those were in Hudson Canyon, and there was not sufficient resource in that area to support all those trips, so many of those trips were not actually fished until 2006-2007 – vessels were permitted to carry allocated 2005 trips forward. When fishing in access areas, vessels are allocated a set number of trips with a possession limit. Thus, there is high management certainty for access area effort in terms of actual versus projected catch. These trips are not an allocation of quota so vessels may end up harvesting less per trip or not take trips for whatever reason. But, there is a maximum catch per area that has a high degree of certainty due to a possession limit.

The biomass estimates for access areas are arguably more accurate than open areas because these areas generally have more than one survey. Very often the research set-aside program under the Scallop FMP supports research projects that estimate biomass in access areas; that is one of the top research priorities of the program. The research projects generally have more stations and when combined with the federal survey give more robust results.

**Table 9 – Number of DAS and access area trips allocated by year**

Year	Total DAS allocated	FT	PT	Occ	Number of AA trips (FT)
2000	32522	120*	48	10	6
2001	34034	120*	48	10	3
2002	35835	120*	48	10	3
2003	37953	120*	48	10	3
2004	22462	42	17	4	7
2005	15344	40	16	3	5
2006	20343	52	21	4	5
2007	18577	51	20	4	5
2008	14216	35	14	3	5
2009	14923	42	17	3	5

Allocated DAS from NERO website: <http://www.nero.noaa.gov/ro/fso/das.htm>

\* Note that before 2004, access area trips counted toward annual DAS. For example, 10DAS would be charged per vessel if they participated in an access area program. Vessels did not have to take access area trips, but if they did 10 or 12 DAS would be charged against their annual allocation depending on the area and year. Since 2004 vessels are allocated area specific trips, if they do not take them they do not get additional DAS.

*The PDT is still trying to get similar data to the table below for previous years to show shift of catch from open areas to access areas.*

**Table 10 – FY2007 and FY2008 limited access scallop catch by area\***

Area	FY2007 landings (mt)	FY2007 landings (lb)	FY2007 percent of total	FY2008 landings (mt)	FY2008 landings (lb)	FY2008 percent of total
Closed Area 1	2,418	5,330,677	10%			
Elephant Trunk	7,666	16,900,105	32%	10,637	23,450,386	51%
Hudson Canyon	2,450	5,401,334	10%	56	122,518	0.3%
Nantucket Lightship	2,550	5,621,156	10%	2,098	4,624,387	10%
Open area	9,205	20,293,343	38%	8,205	18,088,743	39%
Annual Total	24,289	53,546,615		20,995	46,286,033	

\* Does not include RSA catch or landings by limited access vessels on LAGC trips

*The PDT is still planning to quantify uncertainty from open area DAS – but it is very difficult to distinguish from other sources of management and scientific uncertainty. Dr. Dvora Hart will be presenting some ideas the PDT has about quantifying all management uncertainty, including uncertainty from open area catch.*

- *Carry over provision*

There are currently several “carry-over” provisions that increase management uncertainty in terms of controlling the maximum catch per year. For example, each limited access vessel is permitted to carry over up to 10 DAS to the next fishing year. Most DAS are used each year, but there is potential for this effort to be carried over to the next fishing year, so ACLs for the second year could be impacted. In addition, limited access vessels are permitted to take an access area trip or compensation trip in an access area within the first 60 days of the next fishing year if the area is open the following year. This was implemented as a way to promote safety at sea so vessels are not in a use-it-or-lose-it situation at the end of the fishing year. However, measures like this add some degree of uncertainty in terms of when catch will be harvested. It is not additional catch, but could increase catch to a small degree in the subsequent fishing year.

In order to analyze the potential impact of these carryover provisions on future catch, the PDT ran a scenario for FY2007. Rather than each vessel fishing 51 DAS, each vessel fishes 56 DAS (5 carryover DAS from FY2006). For recent fishing years the fleet has carried over roughly 1800 DAS, so about 5 DAS each (Table 8). When this simulation is run total catch increases about 10% (Table 11). This is a complex measure because technically this is not additional catch, it was accounted for, but in previous fishing years. It is also possible that vessels will continue to carry DAS forward, and not fish them all in a subsequent fishing year. So while this measure may have a higher risk of exceeding an ACT or ACL, it should be taken into consideration that in order to increase catch from this provision in one year, catch was lower in a different fishing year, so over time catch will even out. What is important is if there is a change in the total number of carry over DAS from year to year. If there is a sudden drop in the total number of DAS carried forward by the fleet, then landings will likely increase in that fishing year. The PDT will continue to monitor the number of DAS carried forward. It was also suggested that if this becomes a major source of management uncertainty the Council may want to consider reducing the amount of DAS a vessel can carry forward to reduce uncertainty. Now that total DAS have reduced from 120 to closer to 40 DAS, a 10 DAS carryover provision has gone from 8% of total DAS allocated to close to 25%.

**Table 11 – Scenario for management uncertainty related to carryover provision**  
 Scenario is for FY2007 (56 DAS – 5 DAS carryover DAS from original 51 DAS allocation)

hp	len	lpueop14	newves	agev	Count of VP_NUM	sclan/vessel	sim.sclan	sclantot-51DAS
392	61	1,585	-	17	5	70,669.53	353,348	319,663.90
431	77	1,585	-	23	9	73,489.77	661,408	598,357.59
523	64	1,585	-	30	5	74,576.23	372,881	337,335.30
530	77	1,585	-	27	25	76,444.23	1,911,106	1,728,924.86
618	66	1,585	-	20	4	78,091.15	312,365	282,587.67
641	81	1,585	-	20	37	80,401.01	2,974,838	2,691,253.60
763	65	1,585	-	29	4	80,823.05	323,292	292,473.54
814	83	1,585	-	29	74	84,099.65	6,223,374	5,630,114.92
950	64	1,585	-	24	1	84,772.27	84,772	76,691.14
959	86	1,585	-	22	30	87,824.51	2,634,735	2,383,572.58
1,121	89	1,585	-	26	38	90,740.34	3,448,133	3,119,430.84
1,299	90	1,585	-	16	12	94,640.55	1,135,687	1,027,424.41
1,545	99	1,585	-	23	11	98,349.98	1,081,850	978,719.71
<b>814</b>	<b>77</b>	<b>1,585</b>			<b>255</b>	<b>82,686</b>	<b>21,517,788</b>	<b>19,466,550</b>
							<b>10.5%</b>	

There are also two rollover measures proposed in Amendment 15 that might contribute to management uncertainty: 1) potential IFQ rollover in the LAGC fishery, and 2) potential RSA rollover for the overall fishery RSA program. Generally, the management uncertainty associated with these two measures would be very low because it is such a small portion of the overall fishery. IFQ vessels would be restricted to carry over a limited portion of their IFQ and the RSA program is a small portion of the overall catch to start with. Therefore, these measures are not likely to significantly affect the certainty of catch for a given fishing year.

- *Vessel upgrades and replacements*

All limited access vessels are permitted to upgrade their permit once, and are allowed to replace their vessel within the same vessel replacement criteria (10:10:20 for HP:GRT:Length). This is a source of management uncertainty because if a vessel increases its horsepower, it is potentially able to catch more per DAS. This is not a real issue for access area trips because vessels are limited to a possession limit, but if many vessels in the fishery upgrade, overall catch could increase as a result. It is not likely that many vessels will upgrade or be replaced in a single year because it is expensive.

NMFS estimates that approximately 1/3 of the current limited access vessels have completed their one-time vessel upgrade allowance. Therefore, about 2/3 of the fleet could still upgrade their horsepower beyond 10%. The analyses below describe what the potential impacts of more upgrading could mean for overall catch. Again, this is not likely going to happen overnight and the PDT can monitor it and adjust future projections based on more vessels upgrading.

Vessel replacement is another type of management uncertainty. Vessels are permitted to be replaced if the HP:GRT:Length of the new vessel is within the 10:10:20 restrictions – horsepower cannot be increase by more than 10%, GRT cannot be increased by more than 10%, and length cannot be increased by more than 20%. If some fraction of the fleet replaces their

vessels in one year catch could increase. The analyses below describe the potential impact of vessel replacement. Again, it is very unlikely that a large number of vessels will be replaced in one year since it is very expensive.

The PDT analyzed the impact of this source of uncertainty on estimated catch. Below are two scenarios: first, the largest vessels in the fleet upgrade their permits and put their permits on new vessels (Table 12). Second, 30% of each vessel class upgrades and puts their permits on new vessels (Table 13). For both scenarios the 2007 fishing year is used for the simulation (51 DAS, open area landings estimated to be 20.3 million pounds). If the largest vessels upgrade and replace, overall catch is expected to increase by 4.6%. And if 30% of all vessels in each vessel class upgrade and replace, overall catch is expected to increase by 2.3%.

**Table 12 – Scenario 1 for management uncertainty related to vessel upgrades and replacements**  
(Scenario 1 assumes that the largest vessels upgrade and replace (36% of FT vessels))

upgradegrp	hp	len	newves	agev	Count of VP NUM	sclan/vessel	sim.sclan	sclantot-51DAS
-	392	61	-	17	5	63,932.78	319,664	319,663.90
-	431	77	-	23	9	66,484.18	598,358	598,357.59
-	523	64	-	30	5	67,467.06	337,335	337,335.30
-	530	77	-	27	25	69,156.99	1,728,925	1,728,924.86
-	618	66	-	20	4	70,646.92	282,588	282,587.67
-	641	81	-	20	37	72,736.58	2,691,254	2,691,253.60
-	763	65	-	29	4	73,118.38	292,474	292,473.54
-	814	83	-	29	74	76,082.63	5,630,115	5,630,114.92
-	950	64	-	24	1	76,691.14	76,691	76,691.14
1	1,151	95	1	1	30	88,862.00	2,665,860	2,383,572.58
1	1,345	98	1	1	38	92,122.41	3,500,651	3,119,430.84
1	1,559	99	1	1	12	95,094.56	1,141,135	1,027,424.41
1	1,854	109	1	1	11	99,586.98	1,095,457	978,719.71
	<b>890</b>	<b>80</b>			<b>255</b>	<b>77,845</b>	<b>20,360,505</b>	<b>19,466,550</b>
							<b>4.6%</b>	

**Table 13 – Scenario 2 for management uncertainty related to vessel upgrades and replacements**  
(Scenario 2 assumes that 30% of vessels in each vessel class will upgrade and replace vessel)

hp	len	lpueop14	newves	agev	Count of VP_NUM	sclan/vessel	sim.sclan	sclantot-51DAS
416	63	1,585	-	12	5	65,362.47	326,812	319,663.90
457	79	1,585	-	16	9	67,978.82	611,809	598,357.59
554	66	1,585	-	21	5	68,990.17	344,951	337,335.30
562	79	1,585	-	19	25	70,715.93	1,767,898	1,728,924.86
655	68	1,585	-	14	4	72,231.57	288,926	282,587.67
679	83	1,585	-	15	37	74,368.64	2,751,640	2,691,253.60
809	67	1,585	-	21	4	74,768.57	299,074	292,473.54
863	85	1,585	-	20	74	77,799.53	5,757,165	5,630,114.92
1,007	66	1,585	-	17	1	78,417.05	78,417	76,691.14
1,017	89	1,585	-	16	30	81,237.79	2,437,134	2,383,572.58
1,188	92	1,585	-	18	38	83,939.93	3,189,717	3,119,430.84
1,377	93	1,585	-	11	12	87,528.85	1,050,346	1,027,424.41
1,638	102	1,585	-	16	11	90,975.15	1,000,727	978,719.71
<b>863</b>	<b>79</b>	<b>1,585</b>			<b>255</b>	<b>76,486</b>	<b>19,904,617</b>	<b>19,466,550</b>
							<b>2.3%</b>	

- *Overall*

The three sources of management uncertainty above are all related to open area DAS effort. It has been mentioned that catch from access areas has a much higher degree of certainty in terms of actual catch. The PDT discussed that there is a level of uncertainty related to access area trips as well however, in terms of overall monitoring and enforcement. Similar to the general category IFQ program, this component of the limited access fishery does have a high degree of certainty in terms of landings, but that is dependent on a sufficient monitoring and enforcement program.

Currently the violations for exceeding the possession limit for an access area trip are severe, and industry members have voiced that they would rather land less because the penalties are so high for noncompliance. Overall, the PDT is confident in the monitoring and enforcement of catch from access area trips, but recognizes that a small part of the overall buffer between the LA sub-ACL and ACT should recognize that monitoring and enforcement of access area trips are not perfect.

**Overall, when all three sources are considered, along with the issue of monitoring and enforcement uncertainty, the PDT recommends that the buffer between the limited access sub-ACL and ACT should be one of the following two options:**

**Option 1: LA ACT set at F rate with 25% probability of exceeding LA portion of total ACL (after removing incidental catch, general category ACL, and set asides from the overall ABC=ACL).**

Similar to how ABC is set at F rate with 25% probability of exceeding the OFL, this buffer would be based on similar analyses that would identify an F rate with 25% probability of exceeding ABC. Currently, this estimate is approximately 0.24 when ABC is set at 0.28.

**Option 2: Identify a specific buffer based on results of new analyses of A) variability in estimate of LPUE, or B) projected LPUE compared to actual estimates from open area DAS.**

Scallop Committee requested that one option base the LA buffer primarily on the uncertainty in open area catch since that has been identified as the primary source of management uncertainty for the LA fishery. The PDT is still developing the most appropriate way to do this.

**3.2.3.8.2 General category scallop fishery**

Since implementation of Amendment 11 there are three general category permit types: limited access general category IFQ permits, limited access incidental catch permits, and limited access Northern Gulf of Maine (NGOM) permits. This action proposes to account for catch from the incidental catch permits in setting OFL (See 3.2.3.4). As for the NGOM permits, catch will be accounted for in a separate ACL that is removed before the overall ACL for the directed fishery (See 3.2.3.3). Because resource in the NGOM is currently not incorporated in the overall assessment of the scallop resource, the ACL for this area can be treated separately as long as it is within the overall OFL for the resource. This area is managed under a hard TAC and a 200 pound possession limit.

The limited access general category IFQ fishery (LAGC) is under the directed ACL for the scallop fishery. The ACL for the directed fishery (LA and LAGC) is further divided into two ACLs. The LAGC ACL is equal to 5% of the total ACL for the general category qualifiers and 0.5% for the limited access vessels that also qualified for a LAGC permit. This action proposes that a management uncertainty buffer be applied for this component of the fishery, but it should be very small since this fishery is managed under an IFQ. All vessels that qualify for this permit will be allocated an individual amount of quota based on their contribution factor (historical catch and years active in the general category scallop fishery).

**The Committee recommends two options for consideration:**

**Option 1: Zero buffer (LAGC ACL = LAGC ACT)**

**Option 2: Up to 5% buffer to account for potential monitoring concerns, IFQ carryover provision and other implementation error**

**3.2.3.9 Accountability measures for Scallop ACLs**

According to the final rule, AMs are management controls implemented for stocks such that exceeding the ACL or sector-ACL is prevented, where possible, and corrected or mitigated if it occurs. AMs include: (1) Those that are applied in-season and designed to prevent the ACL from being reached, including an ACT; (2) measures applied after the fishing year that are designed to address the operational issue that caused the ACL overage, ensuring it does not happen in subsequent fishing years, and, as necessary, address any scientific harm to the stock; and (3) those based on multi-year average data which are still reviewed and applied annually.

AMs should address and minimize both the frequency of overages and the magnitude of an overage. AMs should be designed so that if an ACL is exceeded, specific adjustments are effective in the next fishing year, or as soon as possible, with explanation of why more timely adjustment is not possible. A “multiyear plan” is a plan that establishes harvest specifications or harvest guidelines for each year of a time period greater than one year. Because “multiyear plans” establish ACLs and ACTs for more than one year at a time, they should include AMs that provide if an ACL is exceeded in one year, then a subsequent year’s harvest specification (including ACLs and ACTs) could be revised. This is the case for the Scallop FMP – so ACLs and AMs should be set for the length of time that the framework or specification is in place, usually 2 fishing years at a time.

The final rule recommends that as a performance standard, if the average catch exceeds the average ACL more than once in the last four years, then the ACL – AM system should be re-evaluated to improve its performance. The initial ACL and management measures should incorporate information from previous years so that AMs based on average ACLs can be applied from the first year.

Scallop catch is monitored throughout the year. Vessels are required to report landings after each trip, and dealers are required to report landings each week. It could be possible to consider in-season adjustments if necessary, but since the ACT is set lower than the ACL, an in-season AM beyond the ACT may not be warranted at this time. Since fishing effort will be allocated based on the ACT, the ACT itself will serve as the primary in-season AM due to the buffer between ACT and ACL; lower allocations are given to the fishery in an effort to prevent the ACL from being exceeded. The LA and LAGC fisheries will each have their own ACT stemming from their own sub-ACL.

#### **3.2.3.9.1 Limited Access AMs**

**The primary AM for the limited access fishery is the use of an ACT.** The buffer between ACL and ACT would act as a proactive in-season AM. Setting allocations to ACT rather than ACL would reduce the likelihood of exceeding the ACL.

If the sub-ACL for the limited access fleet is exceeded the simplest, cleanest AM would be an **overall DAS reduction in the subsequent year to account for any overages.** The PDT will identify how much the LA sub-ACL was exceeded, identify an appropriate DAS equivalent for that overage, and total DAS allocations for the LA fleet will be reduced the following year to account for that overage.

#### **Option to include a disclaimer for when AM would not be triggered.**

**If overall F is re-estimated after the fishing year has ended and is more than one standard deviation below overall F for ACL (currently estimated to be 0.28), AMs for the limited access fishery would not be triggered. One standard deviation around ACL is 0.04 (range of 0.24 to 0.32). Therefore if reestimated F is 0.23 or less AMs would not be triggered.**

This disclaimer was originally discussed by the PDT because there have been cases in recent years when actual catch is higher than estimated, primarily because catch-per-day is higher than

estimated. Concurrently, F was lower than projected. It is possible that biomass was underestimated in these cases and if the ACL is exceeded for that reason, it is awkward to trigger AMs when biomass is higher than expected. It was also pointed out that while actual catch is sometimes substantially higher than projected, most of the projections have a CV of at least 10%, meaning that the actual biomass could be at least 20% higher or lower than the estimate, and even 30-40% higher in years further out in the projection.

If the limited access scallop fishery exceeds their ACL, the PDT will re-estimate F the summer after that fishing year is completed. The scallop fishing year ends February 28. NMFS should have a good idea if ACLs were exceeded by the following June. If NMFS finds that the limited access ACL has been exceeded, then the PDT will re-estimate F for that fishing year using new information before September. If the updated estimate of F is less than one standard deviation of F associated with ACL then LA AMs will not be triggered for the fishing year that starts the following March. If however, updated F is below ACL but within one standard deviation (currently 0.24 and higher), AMs will be triggered for the following fishing year. The PDT will estimate how many DAS should be reduced per vessel to account for the overage if AMs are triggered.

#### **3.2.3.9.2 General Category AMs**

**The primary AM for the limited access general category ACL is the use of an ACT.** The buffer between ACL and ACT would act as a proactive in-season AM. Setting allocations to ACT rather than ACL would reduce the likelihood of exceeding the ACL. **If an individual vessel exceeds their IFQ or leased IFQ in a given fishing year, their IFQ the following fishing year would be reduced the following fishing year by the same amount.** If they exceed their IFQ in excess of their allocation the following year, any outstanding overage would carry over to future fishing years. The Committee clarified that if an individual leases quota and exceeds the amount he/she can fish for the year, that individual is subject to any AMs that may be associated with the leased quota.

#### **3.2.3.9.3 NGOM AMs**

Technically, the NGOM already has an in-season AM because when the hard-TAC is predicted to be reached, the fishery is closed. If that component of the fishery exceeds the overall hard-TAC (equal to the NGOM ACL) after all data is final, then the hard TAC the following year could be reduced by that amount the following fishing year, or by mid season the following fishing year if data are not available (i.e. reduction on June 1 if necessary).

#### **3.2.3.10 Scallop ACL for other fisheries**

The scallop fishery may want to consider implementing ACLs for other fisheries in which scallops are appreciably caught as bycatch. However, based on bycatch analyses and input from PDT, there are no fisheries that catch an appreciable amount of scallops as discards (Table 14). Based on CY2005 data used in the SBRM Amendment, 2% of all scallop discards are from other fisheries and when compared to total scallop catch (landed plus discards), that percentage is



reduced to about 0.5%. Therefore, no scallop sub-ACLs in other fisheries will be considered at this time; the expected impacts on overall mortality are low from non-targeted fisheries.

**Table 14 – Summary of scallop discards by gear type for from 2005 observer data (SBRM Amendment)**

<b>Gear Type</b>	<b>Access Area</b>	<b>Area Fished</b>	<b>Mesh Group</b>	<b>Trip Category</b>	<b>Sea Scallop</b>
Longline	HOOK	NE	all	all	
Longline	OPEN	MA	all	all	
Longline	OPEN	NE	all	all	
Hand Line	OPEN	MA	all	all	
Hand Line	OPEN	NE	all	all	0
Otter Trawl	B	MA	large	all	
Otter Trawl	B	NE	small	all	
Otter Trawl	B	NE	large	all	14.04
Otter Trawl	OPEN	MA	small	all	42.75
Otter Trawl	OPEN	MA	large	all	13.96
Otter Trawl	OPEN	NE	small	all	3.56
Otter Trawl	OPEN	NE	large	all	15.32
Otter Trawl	USCAN	MA	small	all	
Otter Trawl	USCAN	MA	large	all	
Otter Trawl	USCAN	NE	small	all	0.02
Otter Trawl	USCAN	NE	large	all	32.3
Scallop Trawl	CLOSED	MA	all	general	
Scallop Trawl	CLOSED	MA	all	limited	
Scallop Trawl	CLOSED	NE	all	limited	
Scallop Trawl	OPEN	MA	all	general	450.22
Scallop Trawl	OPEN	MA	all	limited	
Scallop Trawl	OPEN	NE	all	general	
Scallop Trawl	OPEN	NE	all	limited	
Shrimp Trawl	OPEN	MA	all	all	
Shrimp Trawl	OPEN	NE	all	all	0.1
Sink, Anchor, Drift Gillnet	OPEN	MA	small	all	
Sink, Anchor, Drift Gillnet	OPEN	MA	large	all	
Sink, Anchor, Drift Gillnet	OPEN	MA	xlg	all	1.81
Sink, Anchor, Drift Gillnet	OPEN	NE	small	all	
Sink, Anchor, Drift Gillnet	OPEN	NE	large	all	
Sink, Anchor, Drift Gillnet	OPEN	NE	xlg	all	0.26
Purse Seine	OPEN	MA	all	all	
Purse Seine	OPEN	NE	all	all	0
Scallop Dredge	CLOSED	MA	all	general	
Scallop Dredge	CLOSED	MA	all	limited	790.91
Scallop Dredge	CLOSED	NE	all	general	124.85
Scallop Dredge	CLOSED	NE	all	limited	673.3
Scallop Dredge	OPEN	MA	all	general	105.69
Scallop Dredge	OPEN	MA	all	limited	2024.29
Scallop Dredge	OPEN	NE	all	general	499.72
Scallop Dredge	OPEN	NE	all	limited	1098.35
Mid-water paired & single Trawl	OPEN	MA	all	all	0

Mid-water paired & single Trawl	OPEN	NE	all	all	0
<b>Total Discards</b>					5891.45
Non-Scallop Gear Totals					124.12
Non-Scallop percent					0.02
Total Commercial Landings (2005)					24280
Non-Scallop Gear Discards as Percent of Total Landings					0.005112

### 3.2.3.11 ACLs set in other FMPs for the scallop fishery

To date the only ACL under another FMP that may be set for the scallop fishery is yellowtail flounder (all three stocks: GB, SNE/MA, and CC). Amendment 16 to the Multispecies FMP established an ACL sub-component for the scallop fishery because the scallop fleet accounts for over 5% of catch of YT flounder. The Groundfish Committee has considered other species, but no other species have been identified at this time. Section 3.2.3.11.1 below describes the data the Scallop PDT used to highlight species that may need to be considered at some point, but YTF will have the only non-target ACL the Scallop FMP will consider.

The Skate FMP has not identified a sub-ACL for the scallop fishery, so Amendment 15 will not consider details of a skate ACL for the scallop fishery. In addition, the ACL amendment for the Monkfish FMP has not been developed yet. However, if the Monkfish FMP determines that a sub-ACL should be considered for the scallop fishery, the details of that ACL will be developed in the Monkfish FMP. Lastly, the Scallop PDT has identified fluke (summer flounder) as a potential species that is caught in the scallop fishery as bycatch. The action to implement ACLs for the fluke fishery has not been developed yet, but if ACLs are considered for the scallop fishery in that FMP, then a subsequent scallop action would include details about that ACL. In summary, when an FMP identifies an ACL for the scallop fishery, a subsequent scallop action will address the assigned ACLs and consider corresponding AMs.

#### 3.2.3.11.1 Analysis used to identify potential non-target species

To identify potential non-target species caught incidentally in the scallop fishery, the Scallop PDT considered discard info from the 2008 SBRM report, Wigley et al. 2008, and various assessments such as GARM III and the Skates Datapoor Workshop (Table 15). A note of caution in just using the 2008 SBRM data was that it was not extrapolated out to the entire fisheries. Therefore, fisheries with higher observer coverage, such as the scallop fishery, appeared to have more bycatch than other fisheries. The PDT discussed that if an “appreciable” amount of total discards is from scallop gears, then a non-target ACL may be warranted. The PDT discussed that more than 5% of total landings caught as discards in the scallop fishery would qualify as appreciable for this case. As a starting point, the PDT looked at the 2008 SBRM report. Based on that report in which 2007/8 data was compiled, the species with more than 5% of total estimated catch from discards in the scallop fishery are: fluke, winter flounder, monkfish, barndoor skates, little skates, unidentified skates, surfclams, and ocean quahogs. These species were narrowed down by looking at the report presented by Wigley et al. (2008). While it is based on 2005 data, it is extrapolated out across fisheries such that a consistent conclusion can be made. Based on this report, the PDT identified the following species as having more than 5% of total estimated catch from discards in the scallop fishery: monkfish, skates (overall), windowpane flounder (Table 16).

In addition to the snapshot of information available from the 2008 SBRM process and Wigley et al. (2008), the PDT also reviewed discard info for the scallop fishery in recent assessments for the species listed above. GARM III for multispecies identified that the scallop fishery caught more than 5% of the bycatch (compared to overall catch) for some species by region (Table 16). Georges Bank (GB) and Southern New England (SNE) yellowtail flounder were caught in amounts greater than 5%, but the Cape Cod yellowtail only has occasional spikes over 5%. GB winter flounder has catch over 5%, but SNE nor Gulf of Maine (GOM) winter flounder is caught appreciably. Although there is greater than 5% caught in both the GB/GOM and SNE regions for windowpane flounder, the catch is generally higher in SNE. The Skates Datapoor Working Group identified the greatest bycatch for the scallop fishery of little and winter skates. Lastly, when extrapolated out across the entire fishery, the ocean quahog and surfclam assessments show close to zero bycatch of these species by the scallop fishery. While not included in the following tables, the PDT also discussed in general that other species to keep in mind for the future may be 4-spot flounder and Icelandic scallops.

The PDT recommends that this action only considers ACLs for non-target species that have been first identified by the primary FMP that manages that species. For example, while the scallop fishery catches several groundfish species, the only species identified by the Groundfish FMP that requires an ACL for the scallop fishery is CC, SNE/MA, and GB YT. Likewise, unless the Monkfish, Skate, and/or Summer Flounder FMPs identify that a sub-ACL should be allocated to the scallop fishery, no ACL or AM measures will be considered for those non-target species in this action. It is possible that the Scallop FMP will have to consider ACL and AM measures for other species in the future if the primary FMP first identifies it as necessary.

**Table 15 – Summary of discards by species in scallop gear types (Based on 2005 observer data presented in Wigley et al. 2008)**

Species	Fishery Landings + discards	Scallop Fishery Total	Scallop Overall Percent
Bluefish	3,058	0	0
Atlantic Herring	100,071	0.05	0.0
Atlantic Salmon	0	0	
Deep Sea Red Crab	2,117	0.14	0.0 *
Atl. Sea Scallop	219,901	5767.33	2.6
Atl. Mackerel	43,780	1.42	0.0
Illex Squid	13,623	1.61	0.0 **
Loligo Squid	17,890	3.48	0.0 **
Butterfish	1,422	0.14	0.0
Monkfish	23,154	2563.1	11.1
Atl. Cod	7,182	2.63	0.0
Haddock	8,121	3.54	0.0
Yellowtail Flounder	4,803	229.07	4.8
American Plaice	1,652	8.35	0.5
Witch Flounder	2,940	48.63	1.7
Winter Flounder	4,026	118	2.9
Pollock	6,580	0.03	0.0
Acadian Redfish	648	0.32	0.0

White Hake	2,809	5.43	0.2	**
Windowpane Flounder	935	164.81	17.6	
Atl. Halibut	31	0.01	0.0	
Ocean Pout	161	4.44	2.8	
Silver Hake	10,257	17.34	0.2	
Offshore Hake	24	0	0	**
Red Hake	1,959	61.72	3.2	**
Skates	50,168	10697.41	21.3	
Spiny Dogfish	5,489	47.07	0.9	
Summer Flounder	9,005	381.53	4.2	
Scup	4,815	1.47	0.0	
Black Sea Bass	1,395	4.76	0.3	
Atlantic Surfclam	140,886	13.55	0.0	*
Ocean Quahog	113,857	57.48	0.1	*
Tilefish	706	0	0	

\* These species have gear-specific, directed fisheries that were not observed in 2005

\*\* Potential "mixed" species: squid unknown, and red, offshore, and white hake mix.

**Table 16 – Summary of discards by species in scallop gear types (Based GARM III analyses, except for skates)**

Species	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
GB Yellowtail flounder	9.6	14.1	23.6	16.4	0.8	1.1	8.0	1.3	5.2	15.9	7.7
SNE Yellowtail flounder	17.0	11.8	9.9	9.4	1.5	2.3	10.6	3.1	18.5	19.2	23.0
CC/GOM Yellowtail flounder	21.0	14.1	1.9	1.0	3.7	0.6	1.2	1.4	0.4	0.6	5.4
GB Winter flounder	4.8	3.5	3.7	2.6	0.4	0.7	0.1	0.2	4.0	6.9	13.2
GB/GOM Windowpane flounder	19.5	10.5	5.6	6.0	9.9	12.7	3.0	2.2	1.8	11.1	9.4
SNE Windowpane flounder	44.4	28.4	23.6	9.9	3.9	18.2	15.8	10.5	32.8	15.6	17.9
Skate Complex*	41.3	19.0	35.3	20.4	13.7	26.3	23.1	15.2	17.8	20.4	20.5

\* Data is from the Skate Datapoor Workshop

### 3.2.3.11.2 Yellowtail flounder

As proposed in Amendment 16 to the Multispecies FMP, yellowtail flounder caught in the scallop fishery will be initially treated as an “other sub-component” of the ACL for all three yellowtail flounder stocks. Scallop Amendment 15 (this action) will identify AMs for the catch of yellowtail flounder in the scallop fishery. Once these AMs are specified, yellowtail flounder caught in the scallop fishery will be considered a sub-ACL controlled by an AM. It is expected that the first groundfish fishing year that this will occur is FY 2011, after implementation of Scallop Amendment 15 in March 2011. If scallop Amendment 15 adopts an in-season AM, then these AMs might be triggered in groundfish fishing year 2011; if in-season AMs are not adopted, then any overage of the FY 2011 ACL would be addressed by AMs implemented in scallop FY 2012.

The specific value for a yellowtail flounder ACL is not specified in either Multispecies Amendment 16 or Scallop Amendment 15 because this will be determined as part of the adjustment process under the Multispecies plan. Catches of regulated groundfish in the scallop fisheries depend on a wide range of factors: scallop and groundfish abundance, the scallop rotational management program, etc. These factors are variable and cannot be predicted with

certainty until closer to the start of the both the scallop and multispecies fishing years. The amount of yellowtail flounder allowed for the scallop dredge fishery will, at a minimum, be consistent with the incidental catch amounts for the closed area access programs (ten percent of the GB yellowtail flounder and SNE/MA yellowtail flounder ACL when CAI, CAII, or the NLCA access programs are in effect). Nothing in Amendment 16 changes the current regulations that limit scallop catch to 10% of the total YT TAC (or in the future ACL). So unless something is changed the scallop fishery will still be limited to 10% in access areas, regardless if more of the total ACL is allocated to the scallop fishery. The Scallop Committee passed a motion on September 1 to “recommend that the Council consider addressing the 10% limit on YT bycatch in access areas in FW21 or FW22, depending on staff resources.

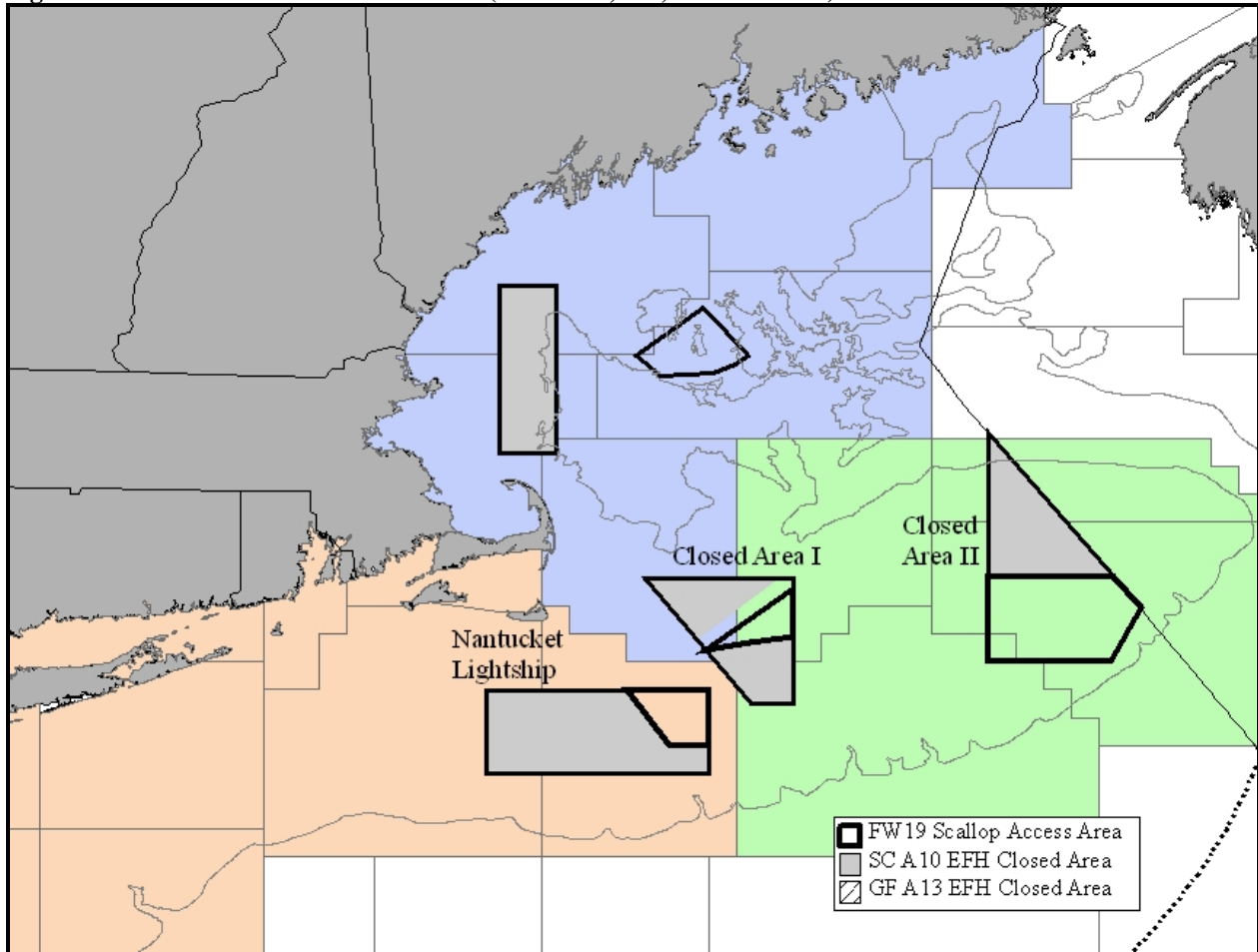
Amendment 16 to the Multispecies FMP is expected to be implemented by May 2010. Since Amendment 16 identifies the scallop fishery as an “other sub-component” of the YT ACL, YT catch in the scallop fishery will need to be factored in when setting the YT ACL for the multispecies fishery. The amount of YT allocated to the scallop sub-component will not officially be an ACL until 2011 after Amendment 15 is implemented, but it is still necessary to identify how much YT catch is expected in the scallop fishery in 2010, so an allocation decision can be made in the specifications package for the Multispecies FMP. The multispecies specifications package will include measures for 2010 and 2011, as well as 2012. Therefore, the Scallop PDT will work with the Groundfish PDT to assess expected YT catch in the scallop fishery for the next few fishing years. Then the Council will be able to identify how much YT (for all three stocks) should be allocated to the scallop fishery as an “other-sub-component” of the overall YT ACL. These allocation decisions will be made in the multispecies specification package. Framework 21 to the Scallop FMP will set scallop specifications for 2010, and these YT related decisions may affect the alternatives under consideration in that action as well. The Council is expected to make decisions about both these actions at the November Council meeting.

After 2010 is addressed, and once Amendment 15 is implemented and the YT sub-component becomes a sub-ACL the process for setting this sub-ACL will be as follows. For CC/GOM and SNE/MA YT the total YT ACL will be identified by the Groundfish PDT the summer before the ACL is to be in place. The Scallop PDT will provide expected DAS allocations and access area schedules for several years out. The PDTs will provide a recommendation to the Groundfish Committee and the percent allocated to the scallop sub-ACL will be considered in the multispecies specifications package for those fishing years, usually two or three years at a time. The scallop specification packages will identify scallop management measures around these decisions in case scallop measures have to be modified based on the amount of YT allocated to the scallop fishery.

For GB YT the process is more complex because that resource is in both US and Canadian waters and a sharing agreement has been established between the two countries that sets a total combined TAC for GB YT and identifies how much each country can harvest. The Transboundary Resources Assessment Committee (TRAC) reviews updated science and makes a recommendation about an appropriate TAC; that meeting is generally held in June each year. Results are available by July 1 and the Transboundary Management Guidance Committee (TMGC) is a policy group from both Canada and the US and they decide what the total TAC will

be and what share each country will receive. The TMGC generally meets in September each year. After the TMGC decision the Council will know how much GB YT is available for the following fishing year. These results are then available for the Council to use in relative multispecies and scallop actions.

**Figure 3 – Yellowtail flounder stock areas (GOM/CC, GB, and SNE/MA)**



### 3.2.3.11.2.1 Accountability measures (AMs) in the scallop fishery for YT sub-ACL

Ultimately, the PDT recommends that the stock wide ACL for each YT species be applied to the full stock area and it would be more advantageous to have AMs applied to open areas rather than access areas. Specifically, the PDT recommends that access area programs within YT stock areas should proceed as allocated and no vessel should be shut out of access areas if a sub-ACL for YT is reached during the year. One goal of the Scallop FMP is to keep scallop fishing in areas with high catch per unit of effort, so if the total YT sub-ACL is exceeded, open area DAS in that stock area should be limited or reduced to account for any overages, overages should not be accounted for in access areas and AMs that affect access area fishing are not preferred. The PDT discussed that with current monitoring systems, a YT sub-ACL AM may need to be in subsequent fishing years, not in-season. However, both types of AMs are considered below.

Currently this sub-ACL is for the entire scallop fishery – both LA and LAGC permits; there are no alternatives that would further sub-divide the sub-ACL allocated to the scallop fishery.

#### **3.2.3.11.2.1.1 Seasonal closure of a portion of the stock area pre-identified as having high bycatch**

PDT would pre identify areas that have higher bycatch rates within a YT stock area and only those areas would close. The areas would close to both limited access and limited access general category vessels.

- *Option A - in-season*

During the year, YT bycatch would be monitored by stock area, including projected catch in both open and access areas. When the agency projects that ??? (75% ?) of the total YT-sub ACL has been harvested, specific pre-identified areas within that stock area would close to the scallop fishery in order to reduce YT catch.

- *Option B – AM effective in year 3*

During the year, YT bycatch would be monitored by stock area, including projected catch in both open and access areas. At the end of the fishing year NMFS will determine the total YT caught in each stock area. If a YT sub-ACL is exceeded, pre-identified areas within that stock area would close to the scallop fishery in Year 3, not the subsequent fishing year because data will not be available in time to have measures in place by the start of the scallop fishing year. It may be possible that those areas within the stock area could re-open later in the subsequent fishing year if the ACL was not exceeded by a large amount; it may not be necessary to keep the areas closed for the full fishing year.

#### **3.2.3.11.2.1.2 In-season closure of entire YT stock area**

This alternative would close an entire YT stock area to both LA and GC vessels when a YT sub-ACL has been reached. LAGC vessels would only be permitted to harvest their IFQ in other YT stock areas, and if the fleet had trips left in an access area, those trips would be moved to a different access area in a different YT stock area, if available.

During the year, YT bycatch would be monitored by stock area, including projected catch in both open and access areas. When the agency projects that a sub-ACL has been exceeded, the scallop fishery will no longer be permitted to use open area DAS or IFQ in that stock area and any access area trips left in that stock area will have to be used in access areas in other YT stock areas (if any are available). The PDT will have to identify in advance what access areas would be available if trips have to be shifted and how many trips may be available in different areas.

#### **3.2.3.11.2.1.3 Fleetwide maximum of DAS and percent of IFQ that can be used in a stock area**

This alternative would institute a fleet maximum DAS that can be used in a stock area for year three to account for an overage of the YTF sub-ACL in year one. The PDT would determine how much the fishery exceeded the YT sub-ACL, then that would be removed from the YT sub-ACL for year 3. An estimate would be made in terms of how many DAS would be expected to catch the total YT remaining, and a fleet max would be implemented for that stock area for year 3. Similarly, a fleetwide maximum percentage of LAGC IFQ would be implemented for year 3.

#### **3.2.3.11.2.1.4 Individual maximum of DAS and percent of IFQ that can be used in a stock area**

This alternative would institute an individual maximum number of DAS that can be used in a stock area for year three to account for an overage of the YTF sub-ACL in year one. The PDT would determine how much the fishery exceeded the YT sub-ACL, then that would be removed from the YT sub-ACL for year 3. An estimate would be made in terms of how many DAS would be expected to catch the total YT remaining, and an individual maximum number of DAS would be instituted per vessel for that stock area for year 3. Similarly, an individual maximum percent (or poundage?) of IFQ that can be used in that stock area will be instituted in year 3.

Since these would be on an individual basis the Council may want to consider allowing vessels to trade area specific DAS/IFQ to reduce distribution impacts.

#### **3.2.3.11.2.1.5 Revise the opening date of access areas on Georges Bank**

A member of the Committee asked if the dates of the access area openings could be changed to a time that reduces yellowtail bycatch. This has been considered but it is not an acceptable as an AM, it is just a measure to reduce bycatch. The Committee included it in case it can be considered an AM or considered in a possible joint framework (FW21 or 22). A member of the audience pointed out that part of the reason the date is currently set at June 15 is because it's just before peak spawning and the weather is more ideal.

#### **3.2.3.12 Administrative process for setting ACLs in the Scallop FMP**

This section describes the administrative process for setting ACLs for Atlantic sea scallops. The ACL process will become an element of the existing periodic adjustment process. The Scallop FMP is on a biennial adjustment process and management measures are generally set two years at a time. Biennially, the PDT evaluates whether management measures need to be revised in order to meet mortality objectives. The PDT is required to submit suggested measures to the Council by September 1 (or November 1 if the fishing year is changed in this action) if revisions are necessary.

During this same process, the PDT will develop recommendations for Acceptable Biological Catch (ABC) for the scallop stock based on mortality objectives ( $F_{max}$ ,  $F_{threshold}$ ,  $F_{target}$ ). These recommendations form the basis for setting ACLs. The PDT recommendations will include the following elements:

- OFL estimate for the next two fishing years. While it is expected that the OFL will be determined every two years, the PDT will recommend it for three years in case there is a delay in implementation of a subsequent action.
- ABC recommendation for the length of time the action is in place. The PDT recommendation should report the catch that results from the ABC control rule recommended by the SSC (See Section 3.2.3.7.3). The PDT will present updated ABC recommendations to the SSC before final approval by the Council. The PDT may recommend a change to the ABC control rule or ultimate buffer between OFL and ABC, but it must be approved by the SSC. If a change in the distance of the buffer is recommended, the recommendation should include an explicit discussion of



the scientific uncertainties that are taken into account in developing the recommendation. In order to evaluate these uncertainties, the PDT will develop an informal document that describes the issues that will be considered. This information will be provided for the consideration of the SSC and the Council. It is not intended to be binding on either body. The ABC control rule, or the buffer between OFL and ABC can be modified by framework action or in a specification process, it does not need to be considered in a full Amendment process. While it is expected that ABCs will be determined every two years, the PDT will recommend them for three years in case of a delay in implementation of a subsequent action.

- An evaluation of whether the ABCs have been exceeded in earlier years.
- As part of the biennial adjustment process, the PDT should evaluate whether rebuilding is needed and adjust as necessary to account for exceeding the OFL, should that occur. In that instance,  $F_{\text{rebuild}}$  will be used instead of  $F_{\text{target}}$ .

The PDT will also develop a recommendation to the Council for setting ACLs. This action proposes that  $ACL=ABC$ , but the PDT can recommend an ACL lower than ABC if it is sufficiently justified. The overall ACL will be broken into two sub-ACLs, one each for the LA and LAGC fisheries. The PDT will then re-evaluate management uncertainty for each fishery and recommend ACTs for each sub-ACL. The ACTs will be set at a certain percent of the fisheries' ACLs (LA and LAGC, respectively). If a change in the distance of the buffer is recommended, the recommendation should include an explicit discussion of the management uncertainties that are taken into account in developing the recommendation. In order to evaluate these uncertainties, the PDT will develop an informal document that describes the issues that will be considered. The buffers between sub-ALC and ACTs can be modified by framework or in the specification process; it does not need to be considered in a full Amendment process. The Council may ask the SSC to comment on the PDT recommendations on ACLs and ACTs, but that is not required. Should the SSC recommend an ACL that differs from that originally recommend by the PDT, the PDT will revise its ACL recommendations if necessary. The PDT's ACL recommendations will include:

- A summary indicating whether ACLs have been exceeded in recent years. For the first action implementing ACLs, a summary of whether the allocations were exceeded for the prior 2 years will be included, but will not reference the term "ACL."
- A recommendation for setting ACLs for the next two years. The PDT will describe the uncertainties and risks considered when developing these recommendations. While it is expected that ACLs will be determined every two years, the PDT will recommend them for three years in case of a delay in implementation of a subsequent action.

The PDT recommendations for setting ABC will be provided to the SSC prior to the September Council meeting (or November Council meeting if the fishing year is changed). Guided by terms of reference prepared by the Council, the SSC will review the PDT recommendations and will either approve those recommendations or will provide alternative recommendations. In either case, the SSC will explicitly describe the elements of scientific uncertainty that were considered in developing its recommendation. If the SSC recommends an ABC that differs from the PDT recommendation, the PDT will revise its recommendations using the new ABCs. If requested by

the Council, the SSC may comment on the uncertainty and risk that should be considered by the Council when setting ACLs and ACTs and whether the PDT has identified those elements sufficiently for Council consideration.

The Council will consider the ABC recommendations of the SSC and the ACL recommendations of the PDT and will make a decision on those recommendations prior to October 1 (or December 1 if the fishing year is changed in this action). If the Council questions the SSC recommendation, it can ask for a more detailed explanation from the SSC, but the Council must establish an ACL that is equal to or lower than the ABC recommended by the SSC. When setting ACLs, the Council will consider the advice of the SSC and the PDT and will provide the rationale used for setting the ACLs.

Once the Council has approved ACLs, they will be submitted to NMFS prior to November 1 (or January 1 if the fishing year is changed in this action) for approval and implementation. ACLs can be implemented in several ways. If the Council is submitting a management action as part of the periodic adjustment process, the ACLs can be included in that document. Alternatively, the ACLs can be submitted as part of a specification package supported by the appropriate NEPA document. It should be noted that in many instances, ACLs merely reflect the catch associated with the mortality targets determined by the management plan and therefore the impacts are consistent with those evaluated when the mortality targets were adopted. For this reason, in those instances that an ACL is not revised, it is anticipated that there will not be a need for a new supporting NEPA document.

After receipt of the Council decision for ACLs – either as part of a new management action or as part of a specification package – NMFS will review the Council’s decision and, if consistent with applicable law, will implement the ACL consistent with the Administrative Procedures Act (APA).

### **3.2.3.13 Monitoring ACLs**

Current monitoring techniques already used in the sea scallop fishery will be used to monitor ACLs. These include daily monitoring of catch in the access areas and yearly estimates of catch in the open areas. This could also include the quarterly monitoring that is currently ongoing in the general category fishery while they convert to the limited access general category IFQ fishery. At a recent Scallop Committee meeting NMFS mentioned that monitoring YT sub-ACLs may necessitate new monitoring requirements, but no specific recommendations have been included at this time.

*From final rule:*

- (h)(3)(i) Fisheries Data – Councils should describe general data collection methods, as well as any specific data collection methods used for all stocks (complexes) and ecosystem components
- 1) List sources of mortality (landed and discarded, commercial and recreational)
  - 2) Describe data collection and estimation methods used to quantify total catch mortality, including information on management tools, frequency with which data are collected and updated, and scope of sampling coverage for each fishery, -and-

- 3) Describe methods used to compile catch data from various data collection methods and how those data are used to determine the relationship between total catch and the ACL

#### **3.2.3.14 Timing of ACL monitoring and triggering AMs**

Once this action is implemented, if an ACL (LA sub-ACL, LAGC sub-ACL, or the YT sub-ACLs allocated to the scallop fishery) is exceeded AMs are triggered. The question is when are AMs triggered. Due to time lags in monitoring of some aspects of the ACL program and scheduling of Council meetings it may not be feasible that AMs are effective right at the start of a subsequent fishing year.

For example, Framework 22 is expected to implement ACLs for both 2011 and 2012. Fishing year 2011 will run from March 1, 2011 through February 28, 2012, unless the fishing year is changed and then it will run from May 1, 2011 through April 30, 2012. Final catch data for fishing year 2011 is not available until about June 1, 2012. At that time the PDT can determine if either the LA sub-ACL and/or LAGC sub-ACL have been exceeded. Leaving some time for PDT review and analysis, the PDT could notify the Council and NMFS by August 1 if AMs should be triggered. If that is the case, by March 1, 2012 selected AMs could be in place. For example, if the number of open area DAS need to be reduced to account for an overage in the LA sub-ACL in 2011, vessels will be notified before March 1, 2011 how many DAS they will be allocated.

Another option could be that AMs are triggered not in the subsequent year, but two years out. So if an ACL is exceeded in 2011, AMs would be effective in 2013.

As for the YT sub-ACLs the timing is a little more complex. The in-season AM options could be implemented in-season, but the ones that require review at the end of the year will likely not be able to be implemented until the start of Year 3.

### **3.3 MEASURES TO ADDRESS EXCESS CAPACITY IN THE LIMITED ACCESS SCALLOP FISHERY AND PROVIDE MORE FLEXIBILITY FOR EFFICIENT UTILIZATION OF THE RESOURCE**

There is currently excess capacity in the limited access scallop fishery; that is, the capacity of individual vessels and the fleet as a whole is greater than what is needed to harvest sustainable levels of catch. Since the limited access program was implemented in 1994, the number of DAS has reduced steadily. Due to effort reductions in Amendment 4 (1994) and Amendment 7 (1999), DAS allocations were reduced almost by half from 204 DAS in 1994 to 120 DAS in 1999. Since 1999 more effort has been allocated to access areas rather than open areas, so the number of open area DAS allocated has continued to decline. Currently, open area DAS allocations are closer to 40 DAS and five access area trips for a full-time vessel. For an average full-time vessel, that represents about 80 DAS per year – about 40 in open areas and 40 in access areas.

Some members of the industry have approached the Council explaining that this level of effort is insufficient to maintain vessels and crew throughout the year with increasing costs. Some crews routinely work on multiple vessels in one fishing year. The Council has heard that some ports are congested with vessels tied to the dock for the majority of the year causing safety and space issues. While this fishery remains profitable, concerns have been raised about the continued ability to remain profitability while operating inefficiently: wasting fuel, electricity, maintenance expenses. Therefore, the Council is considering a range of options to reduce excess capacity in the limited access fishery and thereby increase the efficiency of the fishery overall, improve safety, and reduce costs of the limited access harvest of scallops.

#### **3.3.1 No Action**

If this alternative is selected, then no additional measures would be implemented to reduce capacity in the limited access scallop fishery. All current restrictions would remain in place.

**Rationale:** This alternative would be selected if the Council determines that there is no need to reduce capacity in the limited access scallop fishery. The Council would determine that current permit restrictions, gear and crew restrictions, vessel upgrade restrictions, possession limits and other effort controls are sufficient to control capacity of this fleet.

#### **3.3.2 Permit Stacking**

This group of alternatives would allow a single limited access vessel to have more than one limited access scallop permit. During early development of this action, there was an alternative to allow stacking of more than two permits, but that was rejected from consideration (See Section 3.6.2.4). Therefore, these stacking alternatives are limited to stacking of two permits only. There are various options below including specific adjustments that would be applied if a vessel decides to stack permits in order to keep fishing effort conservation neutral. There are also specifics related to the status of stacked permits and limits on activity of that vessel in terms of participation in other fisheries.

This alternative is not applicable to limited access general category permits, only full-time, part-time and occasional limited access scallop permits (scallop permit categories 2 through 9).

### **3.3.2.1 Restrict stacking to two permits only**

This alternative would allow a limited access scallop vessel to have up to two limited access permits. Specifically, the vessel would be permitted to fish the allocations for both permits. Both permits could be of unlike permit categories and unlike vessel baselines in terms of horsepower and length.

The purchase of a permit would be permanent – no leasing would be permitted unless leasing is also permitted by this action (Section 3.6.2.7). One individual who currently owns two permits on two separate vessels would be permitted to stack those two permits on one vessel. This action may place additional restrictions on stacking in terms of fishing power adjustments and other provisions – See Sections 3.3.2.2 and 3.3.2.3.

**Rationale:** This alternative could reduce the size of the scallop fleet by allowing a limited level of permit stacking. Idled vessels could be sold or scrapped and future investments could be put into one vessel instead of two. It has been argued that limited stacking would prevent excessive consolidation in the fishery, compared to unrestricted permit stacking.

### **3.3.2.2 Fishing power adjustment for stacking permits**

In order to address the concern that stacking could move effort from less powerful or lower-performing vessels to more powerful or higher-performing vessels, potentially increasing capacity and fishing mortality, the Council is considering alternatives for adjusting stacked permits. It is possible for the Council to select one or more of these stacking options.

#### **3.3.2.2.1 Permits can be stacked provided there is a fishing power adjustment**

A fishing power adjustment would be applied regardless of whether the two permits being stacked are compatible based upon current replacement criteria. The PDT has developed a production model that incorporates a variety of vessel characteristics to estimate fishing power per vessel based on historical data. An adjustment would be made to the “stacked” permit only if the fishing power of that second permit is higher than the original permit. The adjustment will be set so that landings will not increase as a result of stacking. Adjustments are only made down – (i.e. if a smaller permit is being placed on a larger vessel that does not meet the replacement criteria, the fishing allocation of DAS is adjusted down. If a larger permit is being placed on a smaller vessel, the smaller vessel does not get additional DAS). The fishing power adjustment is for DAS only and would not adjust access area trips since that activity is controlled by output controls (possession limit). So if a full-time permit was stacked with an occasional permit, that vessel would be permitted to take multiple access area trips, but would be bound to the possession limit associated with each trip.

**The Committee approved inclusion of two adjustments: a “fishing power adjustment” that would be applied based on the HP and length class of each vessel involved in stacking, and a second “mortality adjustment” that would be applied to all transactions. The range for the second adjustment is 5%-11%.** The value for the second adjustment can be modified by framework to an amount outside the initial percentage considered. In addition, if input controls

are adjusted in future actions the fishing power adjustment factors (both adjustments) should be reconsidered and possibly adjusted.

**Rationale:** This alternative is designed to keep the program at least conservation neutral or even reduce overall capacity by adjusting the DAS of a stacked permit if it is being moved to a vessel with higher fishing capability. Whether permits are within the same vessel replacement criteria or not, a fishing power adjustment would be applied to ensure that capacity does not increase as a result of stacking permits.

#### ***Details of fishing power adjustment***

The fishing power adjustment (FPA) would be applied based on what horsepower/length group each vessel involved in the stack/lease is in (~0-30% adjustment for dredge vessels). In order to derive a formula for adjusting DAS transfers for the difference in the vessel fishing power, an annual open area production model was estimated using different functional forms and variables including horsepower, gross tonnage, length, crew size, DAS-used, dredge size, time trend, a proxy for open area biomass, and variables separating the impacts of small dredge and scallop trawl vessels. The goal was to derive a relatively simple functional form with variables that could be measured reliably and couldn't be changed easily. For example, as some scallop industry members indicated, gross tonnage of a vessel could be altered relatively easily compared to changing the length of the vessel. Similarly, it would be relatively easy to change number of crew (up to the crew limit) or the dredge size. Consistent with these concerns, a production model is used to estimate annual scallop landings per vessel as a function of DAS-used, proxy for biomass, horsepower, length and two additional variables that indicate whether the vessel is a small dredge or a scallop trawl. The details of the model are described in Section ???.

The full-time time dredge vessels are grouped into 13 groups by their HP and length (Table 18). This grouping allows many vessels with similar characteristics and adjustment factors to be placed in the same group. In terms of HP, 8 groups are constructed starting with 500 HP and with including vessels up to 20% higher HP in the same group using the vessel replacement criteria for HP. The length grouping identifies small vessels with 50 to 70 feet and large vessels with more than 70 feet.

Table 18 shows the adjustment factors for this group of vessels for fishing power, i.e., for HP and length. Although, larger length groups could be subdivided into more subgroups, the examination of Table 18 shows that the incremental difference in the adjustment factors for HP and length is already quite small between these 13 groups, and having more groups would possibly have a marginal influence on the adjustment values. The same adjustment factors are relevant for DAS transfers full-time, part-time and occasional dredge vessels, between small scallop dredges or between scallop trawls. If DAS transfers take place between a regular and a small dredge or between a dredge and a trawl, however, the adjustment coefficients would be lower than shown in Table 18.

**Table 17. Full-time Dredge Vessel Characteristics**

HP	Length	HP-Length Group	Number of vessels	HP	GRT	Length
<500	50-70	11	5	392	59	61
<500	>70	12	9	431	122	77
500-599	50-70	21	5	523	79	64
500-599	>70	22	25	530	132	77
600-719	50-70	31	4	618	99	66
600-719	>70	32	37	641	146	81
720-863	50-70	41	4	763	119	65
720-863	>70	42	74	814	166	83
864-1036	50-70	51	1	950	111	64
864-1036	>70	52	30	959	167	86
1037-1243	>70	62	38	1,121	183	89
1244-1492	>70	72	12	1,299	178	90
>=1493	>70	82	11	1,545	186	99

**Table 18. Adjustment factors for fishing year 2007 (Based on group means for HP and length for 255 full-time dredge vessels)**

HP	Length	HP-Len Group	adj11	adj12	adj21	adj22	adj31	adj32	adj41	adj42	adj51	Adj52	Adj62	Adj72
<500	50-70	11	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
<500	>70	12	0.958	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
500-599	50-70	21	0.936	0.977	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
500-599	>70	22	0.917	0.957	0.980	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
600-719	50-70	31	0.903	0.942	0.965	0.985	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
600-719	>70	32	0.876	0.914	0.936	0.955	0.970	1.000	1.000	1.000	1.000	1.000	1.000	1.000
720-863	50-70	41	0.862	0.900	0.921	0.940	0.955	0.984	1.000	1.000	1.000	1.000	1.000	1.000
720-863	>70	42	0.831	0.867	0.888	0.906	0.920	0.948	0.964	1.000	1.000	1.000	1.000	1.000
864-1036	50-70	51	0.825	0.861	0.882	0.900	0.914	0.942	0.957	0.993	1.000	1.000	1.000	1.000
864-1036	>70	52	0.800	0.835	0.855	0.873	0.886	0.914	0.928	0.963	0.970	1.000	1.000	1.000
1037-1243	>70	62	0.771	0.805	0.824	0.841	0.854	0.881	0.895	0.928	0.935	0.964	1.000	1.000
1244-1492	>70	72	0.747	0.780	0.798	0.815	0.827	0.853	0.866	0.899	0.905	0.933	0.969	1.000
>=1493	>70	82	0.714	0.745	0.763	0.779	0.791	0.815	0.828	0.859	0.865	0.892	0.926	0.956

**Table 19 – Adjustment factors for fishing year 2007 for stacking between trawl and dredge vessels (in 2007 there were 11 trawl vessels in the three HP/length classes in dealer records)**

HP	Length	Acquiring Fulltime HP-Length Group	Scallop Trawl : HP-Length Group DAS leased/stacked from		
			12	22	32
<500	50-70	11	0.955	0.989	1
<500	>70	12	0.915	0.947	0.983
500-599	50-70	21	0.894	0.925	0.960
500-599	>70	22	0.876	0.907	0.941
600-719	50-70	31	0.862	0.893	0.926
600-719	>70	32	0.837	0.866	0.899
720-863	50-70	41	0.824	0.853	0.885
720-863	>70	42	0.794	0.822	0.852
864-1036	50-70	51	0.788	0.816	0.846
864-1036	>70	52	0.764	0.791	0.821
1037-1243	>70	62	0.737	0.763	0.791
1244-1492	>70	72	0.714	0.739	0.766
>=1493	>70	82	0.682	0.706	0.733

**Table 20 - Adjustment factors for fishing year 2007 for stacking between small dredge and large dredge vessels (in 2007 there were 63 small dredge permits, 57 were FT small dredge in dealer records)**

HP	Length	Acquiring HP- Length Group	Full-time Small Dredge: HP-Length Group DAS leased/stacked from						
			11	12	21	22	32	42	72
<500	50-70	11	0.627	0.650	0.671	0.690	0.716	0.76	0.850
<500	>70	12	0.601	0.623	0.643	0.661	0.686	0.73	0.815
500-599	50-70	21	0.587	0.608	0.628	0.646	0.670	0.71	0.796
500-599	>70	22	0.575	0.596	0.615	0.632	0.657	0.70	0.780
600-719	50-70	31	0.566	0.587	0.606	0.623	0.647	0.68	0.768
600-719	>70	32	0.549	0.569	0.588	0.604	0.627	0.66	0.745
720-863	50-70	41	0.541	0.560	0.578	0.595	0.618	0.65	0.733
720-863	>70	42	0.521	0.540	0.557	0.573	0.595	0.63	0.707
864-1036	50-70	51	0.517	0.536	0.553	0.569	0.591	0.63	0.702
864-1036	>70	52	0.502	0.520	0.537	0.552	0.573	0.61	0.681
1037-1243	>70	62	0.484	0.501	0.517	0.532	0.552	0.58	0.656
1244-1492	>70	72	0.468	0.486	0.501	0.515	0.535	0.57	0.635
>=1493	>70	82	0.448	0.464	0.479	0.493	0.511	0.54	0.607

***Details of mortality adjustment***

In addition to the adjustment described above that would account for differences in fishing power based on various horsepower and length characteristics, the PDT also recommends an additional “mortality” adjustment. Based on the production model estimates, on the impact of vessel’s age on efficiency, and on factors that *are not taken into account* in the model but are expected to



increase LPUE when effort is stacked/leased, the PDT also recommended that an additional overall adjustment of 9% (Overall DAS or Mortality Adjustment) should be applied to the number of *days that are transferred*. This adjustment would be applied to all transactions regardless of HP and length class and would only apply to the permit or DAS that are transferred. The initial permit (and the DAS associated with the first permit) would not be affected by this adjustment. The final PDT recommendation is a range of 7-11% for this adjustment because that includes the standard error around the 9% point estimate. **The Committee expanded this range to 5%-11%.**

The PDT recommends that a second adjustment be applied to all stack/DAS lease transactions to recognize that LPUE increases when DAS increase, and there are other factors that influence LPUE that cannot be included in the production model – e.g. the skill of the captain and the crew, the age of the vessel, reduction gear ratio, size and shape of kort nozzle, etc.

The simulation results based on the production model coefficients indicated that the LPUE (landings per days-absent) is estimated to increase by about 5% if open area days-at-sea used is doubled as result of stacking or leasing. For example, consider a vessel that had an open area LPUE of 2000 lb. per days absent while fishing with 42 open area days-at-sea. The model results suggested that if this vessel doubles it open area days from 42 to 84 days through leasing/stacking, its LPUE could increase to 2100 per day-at-sea, increasing the total catch by 5%. Therefore, in order to keep the total catch constant, total days should be reduced by 5% from 84 days to approximately 80 days. To be consistent with the fishing power adjustment which is applied only to the transferred days, the same result could be obtained by reducing the transferred days, that is, 42 days-at-sea by about double of 5%. The reason why the adjustment is less than 10% ( $5\% \times 2$ ) has to do with the decline in LPUE as the number of transferred days is reduced (as a result of the adjustment). Taking this into account, the simulation model indicated that the transferred days-at-sea, i.e., 42 days, should be reduced approximately by about 9%, by about 4 days, to 38 days, in order to keep the fishing mortality constant.

The PDT discussed if the adjustment should be higher than 9% to account for factors that are not accounted for in the production model discussed below, but instead decided that there are also situations that could constrain a vessel with more DAS that would potentially reduce LPUE. Ultimately, the PDT was most comfortable with a range of 7-11% for this mortality adjustment because that is based on the best available science including the variance from the model output (standard deviation of 2% in either direction). It was also discussed that this adjustment could be re-evaluated after Amendment 15 to determine if 9% was the appropriate value to use and if not could be adjusted by framework.

The additional reasons why LPUE might increase as a result of permit stacking or DAS leasing as listed below.

1. If vessels are permitted to fish more DAS on one vessel the model suggests that average catch per DAS will increase for that vessel because it will have more flexibility in determining trip length.

2. LPUE is expected to increase by some degree due to other aspects of the vessel that influence fishing power that are not measured thus cannot be modeled (reduction gear ratio, use of kort nozzle, etc.).
3. LPUE is also expected to increase because it is assumed that DAS will transfer to the boat with more experienced and skillful crew and captain. If more DAS are fished by more efficient crew, more catch is expected.
4. The newer vessels have a higher LPUE and stacking permits on these boats (even when they are smaller in size) would increase fishing mortality if no overall DAS adjustment is applied.
5. LPUE is could change because of changes in fishing patterns. For example, a multi-vessel owner that sends both of its vessels to the most productive areas at the same time will not be able to do that after stacking/leasing. If this reduces the number of vessels that fish in that area per-unit of time, the overall LPUE would also decline at a slower rate than before.
6. On the other hand, a vessel owner could send two boats at the same time to fish in a very productive area, but with stacking it will not be able to do that. If this pushes the fishing date to seasons when the meat-weight is lower, than, LPUE could decline because of stacking. The overall result would depend whether the increase in LPUE because of the spreading out effort outweighs the negative impact on LPUE because the fishing takes place when meat-weight is lower. If three fourths of the boats share the same crew as was indicated by many boat owners, this means the vessels owned by multi boat owners usually do not fish at the same time most of the year. If this is the case, there might not be significant impacts on LPUE from changing the fishing patterns. In other situations, if an access area is closed because of YT TAC, or measures for turtles restrict fishing during certain seasons, the owners who stacked permits on single boats may have less flexibility relative to the ones that didn't. For example, multi-boat owners could send two of their vessels to fish at the same time before the areas are closed before Yellowtail TAC is reached, whereas the owners who stacked permits on one boat will not be able to do that and avoid closure.

#### **3.3.2.2.2 Permits can only be stacked which meet replacement criteria**

Permits could be stacked with no power adjustment if the baseline specifications of the permits involved meet the current vessel replacement criteria.

**Rationale:** Current replacement criteria of 20/10/10/10 (HP/GT/NT/LOA) were designed to prevent vessel replacements from increasing fishing capability; therefore if stacking were limited to vessels within the same specifications then the risk of increasing fishing capability is reduced. This alternative is being considered if the Council does not want to consider a fishing power adjustment.

#### **3.3.2.2.3 Permits in same replacement criteria have no adjustment applied and permits from different categories would be subject to fishing power adjustment**

No adjustment would be applied if vessels are from the same upgrade restriction category, and if vessels are from different categories the same power adjustment described in Section 3.3.2.2.1 would be applied to stacked permit, if the permit is from a higher upgrade category.

#### **3.3.2.2.4 Restriction on stacking for trawl permits**

If a trawl permit converts to a dredge vessel (through annual declaration) and stacks with another dredge permit it would not be permitted to convert back to a trawl permit and fish both permits with trawl gear. Once a trawl permit stacks with a dredge permit, it can't go back to being a trawl permit.

#### **3.3.2.3 Status of stacked permits**

At the September 2008 Committee meeting it was clarified that this alternative would restrict a vessel so that stacking a second permit could only occur once. A vessel could not stack two permits one year and then stack a third permit in the future. A vessel could only participate in stacking once. Only 2 permits can be stacked at any one given time per vessel. If vessel A stacks permit B (2<sup>nd</sup> permit) one year, that vessel cannot stack permit C (3<sup>rd</sup> permit) the following year. If de-stacking is also permitted, vessel A can de-stack permits A and B; vessel A would then be permitted to subsequently stack a different permit (A and C, for example). It was further clarified that all permits (all species) from vessel B would need to be stacked with vessel A.

The Committee included two options for de-stacking.

Option 1: Allow de-stacking

Option B: Prohibit de-stacking

It is understood that even with stacking permits will keep their identity. In addition, individual permits will count toward the 5% ownership restriction. One vessel with two permits would count as two permits in terms of the ownership maximum.

### **3.3.3 Leasing**

This group of alternatives would allow a limited access scallop vessel to lease fishing effort from another limited access permit. There is one option for DAS leasing and one for leasing of access area trips. There are various options being considered in terms of who can lease and other restrictions. There are also several alternatives for fishing power adjustments that would be applied to leased open area DAS in order to prevent increases in fishing capability. In addition, there are several alternatives designed to prevent increased fishing effort in other directed fisheries as a result of leasing. These leasing alternatives were designed to increase flexibility among limited access scallop vessels without increasing fishing effort in other directed fisheries that scallop vessels participate in.

This alternative is not applicable to limited access general category permits, only full-time, part-time and occasional limited access scallop permits (scallop permit categories 2 through 9).

#### **3.3.3.1 Leasing of open area DAS**

This alternative would allow a vessel to lease part or all of its open area DAS allocation on an annual basis. DAS would have to be leased in full day units, no leasing of partial DAS. Vessels would be permitted to lease DAS to one or more vessels. A vessel issues a valid LA scallop permit may transfer all its open area DAS for an infinite amount of time to another vessel with a

valid LA scallop permit in accordance with the conditions and restrictions described under this section. The RA has final approval authority for all DAS and access area transfer requests.

**Rationale:** This alternative provides an option for an individual to lease access. Compared to leasing of a full permit, this option is more flexible because it allows smaller units of access to be leased compared to a full permit. Some individuals may only want to lease some access in order to make a full year, i.e. 20 DAS compared to a full DAS allocation and access area trips. This option may accommodate more individuals as business plans change during the year and/or equipment fails. Additionally, it would allow greater negotiating opportunities compared to leasing a full permit.

#### **3.3.3.1.1 Fishing power adjustment for leasing open area DAS**

In order to address the concern that leasing could move effort from less powerful or lower-performing vessels to more powerful or higher-performing vessels, thus potentially increasing capacity and fishing mortality, the Council is considering an alternative for adjusting leased open area DAS. If leasing of DAS is approved and this alternative is selected, a fishing power adjustment would be applied if a vessel is leasing from another vessel with lower fishing power. Three options are under consideration:

- Option A: All leasing of DAS would be subject to a fishing power adjustment similar to the one being considered for the stacking alternative that is based on a production model developed by the PDT that factors in various vessel characteristics (based on individual basis or group basis).
- Option B: No adjustment would be applied, but vessels would be limited to lease DAS from other vessels in the same vessel replacement criteria baseline. Vessels from different vessel upgrade criteria would not be allowed to lease from each other.
- Option C: No adjustment would be applied if vessels in the same upgrade restriction category, and if vessels are from different categories the same power adjustment from Option A would be applied to leased DAS if vessels from different categories.

#### **3.3.3.1.2 Maximum DAS that can be leased**

The Lessee may lease open area DAS and access area trips up to twice the amount of allocation. Carryover DAS from the previous year are not included.

#### **3.3.3.1.3 DAS and landings history**

History of leased DAS use and landings will be considered in two alternatives:

- 1) Lessor will maintain DAS usage history and catch from leased effort would accrue to Lessee, or
- 2) DAS usage and catch history is applied to the Lessor.

As in the Groundfish FMP, for the purposes of accounting for leased DAS used, leased DAS will be accounted for (subtracted from available DAS) prior to allocated DAS. In the case of multiple leases to one vessel, history of leased DAS use will be presumed to remain with the Lessor in the order in which such leases were approved by NMFS.

### **3.3.3.2 Leasing of access area trips**

This alternative would allow a vessel to lease one or more access area trips on an annual basis. Portions of access area trips could not be leased, the entire trip and associated possession limit for that trip would have to be leased as one unit. Leasing of access area trips could occur between permit types and gear types with certain restrictions. Vessels would be permitted to lease trips to one or more vessels. A vessel would not be permitted to combine access area trips. This alternative would not need a fishing power adjustment clause because access area trips are managed with a possession limit. An output control is used to limit the total harvest per trip.

**Rationale:** This alternative provides an option for an individual to lease access area trips. Compared to leasing of a full permit, this option is more flexible because it allows smaller units of access to be leased compared to a full permit. Some individuals may only want to lease some access in order to make a full year, i.e. 2 access area trips compared to access for an entire limited access permit (DAS and access area trips). This option may be more realistic for a larger group of individuals because leasing some access is less expensive than having to lease an entire scallop permit.

### **3.3.3.3 Ownership cap provisions**

If leasing is approved, the current ownership cap of 5% of limited access permits should be amended and the following two options should be considered:

1. Any individual that owns the maximum number of permits allowed may not lease additional scallop DAS or access area trips; however, any person or entity may lease within the vessels that he/she owns and would be subject to all other leasing provisions
2. Notwithstanding (1) above, permit ownership and leasing of scallop DAS and access area trips shall be limited to no more than 5% of the permits or 5% of the allocation of scallop DAS and access area trips or poundage (including leased DAS and/or access area trips).

### **3.3.3.4 Leasing restrictions options**

There are two alternatives for restrictions on leasing based on permit categories:

1. Restrict leasing to same permit category only; or
2. Leasing will be allowed between different permit categories for access area trips only. If possession limits are different, the lessee would be limited to the possession limit of the lessor AND leasing of open area DAS between different permit categories would be prohibited

### **3.3.3.5 Application Requirements**

An application to lease must contain the following information: Lessor's owner name, vessel name, permit number and official number or state registration number; Lessee's owner name, vessel name, permit number and official number or state registration number; number of open area DAS to be leased; total price paid for leased DAS; signatures of Lessor and Lessee; and date the form was completed. All of this information will be held confidential according to applicable Federal law. Aggregate data may be used in DAS leasing analyses. Unless application is denied, the Lessee and Lessor will receive a confirmation of application approval from the RA within 45 days of receipt of application.

The RA may deny the application for the following reasons, including but not limited to: incomplete application, application submitted less than 60 days prior to the end of the fishing year, Lessor or Lessee does not have a valid LA scallop permit or is otherwise not eligible, the Lessor's or Lessee's DAS or LA scallop permit are under sanction pursuant to an enforcement proceeding, the Lessor's or Lessee's vessel is prohibited from fishing, the Lessor's or Lessee's vessel is not in compliance with conditions, restrictions, and requirements of this part, or the Lessor has an insufficient number of allocated or unused DAS available to lease. The RA will send a letter to the applicants describing the reason(s) for application rejection and the decision is final.

### **3.3.3.6 Leasing from vessels in CPH**

Unlike the Multispecies leasing program, the Council is considering the allowance of leasing scallop DAS and access area trips from vessels in confirmation of permit history (CPH). Two options are being considered: 1) allow leasing from vessels in CPH, 2) prohibit leasing from vessels in CPH.

### **3.3.3.7 Sub-leasing**

Additionally, the Committee discussed whether to allow sub-leasing. They agreed that sub-leasing and re-leasing of DAS and access area trips would be allowed with the same restrictions applied to original leases. Leased DAS and access area trips may not be carried over into the subsequent fishing year by the Lessor or Lessee.

### **3.3.3.8 Other Provisions for vessels that lease DAS and/or access area trips**

This alternative includes a variety of other provisions under consideration for leasing DAS and/or access area trips.

- The application to lease DAS and/or access area trips must be submitted to the Regional Office at least 45 days before the date on which the applicants desire to have the leased DAS or trips effective, and no less than 60 days prior to the end of the fishing year.
- DAS or trips may only be leased once during the fishing year. The Committee's intent is that the lease will last for one year, i.e. has an expiration date, which is the last day of the fishing year.
- Additionally, leasing can be between scallop permitted vessels only.
- If stacking is adopted in this amendment, leasing would be prohibited for vessels with stacked permits.

### ***NMFS RO – where does this need to go?***

#### Monkfish

A vessel that possesses a valid LA scallop permit and a valid LA monkfish Category C, D, F, G, or H permit and leases scallop DAS to or from another vessel is subject to the restrictions specified in.... (from GF: A vessel that possesses a valid limited access NE multispecies DAS permit and a valid limited access monkfish Category C, D, F, G, or H permit and leases NE multispecies DAS to or from another vessel is subject to the restrictions specified in §648.92(b)(2))

### **3.4 MEASURES TO ADJUST SPECIFIC ASPECTS OF FMP TO MAKE OVERALL PROGRAM MORE EFFECTIVE**

This section contains alternatives for various measures that are already in place. The topics include adjustments to the overfishing definition, modifications to the limited access general category program, revision of the EFH closed areas if Phase II to the Habitat Omnibus Amendment is delayed, improvements to the research set-aside program, and changing the fishing year.

#### **3.4.1 Measures to adjust the current overfishing definition (OFD) to be more compatible with area rotation**

National Standard 1 (NS1) of the Magnuson-Stevens Reauthorization Act of 2007 (MSRA) requires that “*conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the United States fishing industry.*” Overfishing and overfished are defined by the MSRA as “*a rate or level of fishing mortality that jeopardizes the capacity of a fishery to produce the maximum sustainable yield on a continuing basis.*” Optimum yield is defined as the amount of fish that will provide the greatest overall benefit to the nation and is based on the maximum sustainable yield from the fishery, as reduced by any relevant economic, social, or ecological factor.

When the MSA was reauthorized in 1996, the Council convened an Overfishing Definition Review Panel that reviewed existing overfishing definitions in the Northeast. The panel concluded that seven components are needed in an overfishing definition to meet the requirements of the reauthorized MSA and National Standard guidelines: status determination, maximum fishing mortality threshold, biomass target, specification of maximum sustainable and optimum yield, maximum rebuilding time period specification, and a control law or fishery mortality management strategy. The panel found the scallop fishery’s current overfishing definition to be consistent with new requirements of the MSA and National Standard 1 guidelines.

While the scallop fishery’s OFD is consistent with MSA and NS1 requirements and has been effective at keeping the scallop fishery above the overfished level and preventing overfishing overall, the current overfishing definition and overfishing reference points are based on the assumption that fishing mortality (F) is spatially uniform. But, in the scallop fishery this assumption is inaccurate because of unfished biomass in closed areas, variable Fs in access areas, and spatially variable fishing mortality in open areas that potentially leads to growth overfishing in these areas. Under the current OFD, closed and access areas protect the scallop stock from recruitment overfishing, but growth overfishing may occur in the open areas because the current OFD averages spatially across open and closed areas, i.e. F is higher in open areas to compensate for the zero fishing mortality in closed areas. The greater the fraction of scallops in the closed areas, the more ineffective the current OFD becomes because it is based on a spatially-averaged fishing mortality rate. Additionally, when more biomass is within closed areas, the estimated whole-stock F may be more sensitive to recruitment and measurement error than to changes in effort.

Currently, the Council maintains a reduced target  $F$  of 0.20 to compensate for this highly non-uniform fishing effort and help mitigate localized depletion of the scallop resource in the open areas. For this reason, similar to the PDT recommendation for Amendment 10, this action includes an alternative that would alter the OFD to be more spatially-explicit, i.e. allow different target  $F$ s for the open areas and access areas that vary within themselves over time. The PDT previously recommended altering the OFD during the development of Amendment 10 so that it better addressed area rotation and protected against loss of yield due to excessive open area fishing. The proposed OFD in A10 used a time-averaging approach for specific areas, such as the open areas and specific access areas, providing the ability to obtain yields that are higher than a constant  $F_{msy}$  (or  $F_{max}$ , the proxy for  $F_{msy}$  in the scallop fishery) allows, while maintaining flexibility and consistency in catch and other environmental factors that may require some areas to be closed (i.e., EFH and finfish discard concerns). The SSC reviewed the modified overfishing definition proposed in Amendment 10 and agreed with the PDT that the stock would not be protected from growth overfishing under the current OFD due to excessive fishing mortality rates in open areas. They also recognized that permanently closed areas offer a way to keep the total biomass above minimum biomass thresholds but potentially restrict fishing opportunities. Overall the SSC recommended that the modified overfishing definition “provides an appropriate scheme for addressing area rotation and protects against the loss of yield due to excessive fishing in open areas. It allows management flexibility both in terms of which areas are opened and the time frame over which the stock is utilized.”

Although the proposed OFD was not adopted in Amendment 10, the FSEIS for Amendment 10 and the scallop regulations at § 648.55 included a provision that allows the PDT to recommend more conservative management measures if the PDT determined such measures would be necessary to achieve optimum yield. Amendment 10 included the following (**emphasis added**):

#### 5.1.9 Framework Adjustment Process

...In order to assure that optimum yield is achieved, on a continuing basis, the PDT will develop, and modify as appropriate, the suite of management measures required to achieve optimum yield-per recruit from the exploitable components of the resource (e.g. those components available for harvest in the upcoming fishing years), taking into account at least the following factors:

- **Differential fishing mortality rates for the various spatial components of the resource**
- **Overall yields from the portions of the scallop resource available to the fishery**
- Outlook for phasing in and out closed and controlled access areas according to the area rotation strategy
- Potential adverse impacts on EFH.

Herein, the PDT has developed two alternative OFDs. The modified overfishing definitions achieve a time-averaged fishing mortality target between  $F=0.23$  and  $0.26$  in all areas not under long-term closure. The status quo and proposed definitions differ in how the fishing mortality rate is determined and judged against the fishing mortality reference points, and also in their flexibility. The modified approaches are designed to maximize yield from scallops that are or will be available to the fishery. Although the biomass level includes scallops that occur in long-term area closures, the fishing mortality rate is calculated from the proportion of exploitable scallops removed from areas available to the fishery. The fishing mortality target is set as a



percent of the threshold to lessen the risk of overfishing. Prior to Framework 18, that target was set at 80% of the threshold; however, it has been set lower than that in Frameworks 18 and 19 due to concerns about localized overfishing in the open areas. In Framework 19, the target was set at  $F=0.20$ , although the threshold is now 0.29 ( $80\% F_{\text{threshold}} = 0.23$ ) based on the recent stock assessment. The modified overfishing definition does include a principle that when a percentage of the total scallop biomass is within long-term closed areas, the fishing mortality target should increase from 80% of the threshold to something higher. Lastly, the modified definitions allow more flexibility for setting annual fishing mortality targets to meet area rotation objectives compared to the rigid overall target defined in the current overfishing definition.

Amendment 10 explained that in the near term (2004-2008), the current overfishing definition would produce higher landings and DAS allocations, but over the long-term, landings would be reduced. Amendment 10 explained that the A10-modified definition had favorable characteristics like reducing potential impacts on bycatch and habitat by reducing area swept, increasing catch by 10% with larger average scallop size, and in the long-term, producing higher stock biomass. The proposed hybrid OFD encounters the same short-term issues and provides the same long-term benefits. Ultimately the Council recommended to maintain the current overfishing definition but tried to achieve some of the favorable effects of the modified definition by requiring the use of 4" minimum size rings and by increasing the DAS tradeoff for controlled access areas. Additionally, some concern was voiced about the modified OFD being implemented along-side area rotation – some wanted to ensure area rotation was an effective strategy before making additional modifications to the fishery. Now that area rotation has been proven to be an effective strategy, the OFD could be altered to make it better adhere to area rotation policies.

The SSC, in October 2008, reconsidered a slightly revised OFD being developed in this amendment that accounts for spatial and temporal heterogeneity in fishing mortality rates to determine if any modifications or alternatives should be considered. Based on a technical review of the revised OFD, the SSC developed the following consensus statements:

1. The analyses supporting the proposed overfishing definition are scientifically sound and should be considered in Scallop Amendment 15.
2. The spatially adjusted  $F_{\text{max}}$  calculation used in this alternative is more realistic than the conventional  $F_{\text{max}}$  calculation because it is more compatible with the current area management strategy. For example, there may be an instance under the current overfishing definition in which the overall resource may not be experiencing overfishing, but given the spatial distribution of scallops and the fishery, individual management areas may be experiencing growth overfishing (i.e., producing less than maximum yield-per-recruit), resulting in foregone potential yield.
3. Although  $F_{\text{max}}$  may be a reasonable proxy for  $F_{\text{MSY}}$ , the SSC recommends more explicit consideration of long-term sustainable yield, rather than maximizing yield-per-recruit. For example, aspects of long-term sustainable yield include: non-equilibrium conditions, stock-recruit relationship, conservation of spawning potential, density dependence, and environmental influences; all of which should be monitored as a condition of managing the fishery based on  $F_{\text{max}}$ . Yield-per-recruit is sensitive to changes in the spatial patterns of

fishing and the age/size distribution of the catch. Alternatively, an overfishing definition based on spawning-biomass-per-recruit associated with high resource productivity would be less sensitive to changes in the nature of the fishery and would allow flexibility to manage for a variety of management objectives (e.g., optimum yield, economic and social utilities).

Following the SSC meeting in October 2008, the PDT worked on a “hybrid” alternative, combining aspects of the alternative proposed in A10 and the existing overfishing definition. The A10 proposed overfishing definition would be difficult to assess since the area used to calculate fishing mortality would change year to year as areas open and close. On the other hand, the greatest difficulty with the status quo OFD is that the fishing mortality target is set in an *ad hoc* manner. In the hybrid alternative, the threshold would be kept as in the status quo OFD (currently, a spatially averaged  $F$  of 0.29), whereas the target would be set using the proposed overfishing definition with the additional restriction that the spatially averaged fishing mortality shall be no higher than 80% of the threshold. Under the hybrid definition, the targets for the open and access areas would be set at the level appropriate for each area (e.g., using current information somewhere between 0.23 and 0.26 in open areas, and using the time-averaging principle in the access areas), thus preventing growth overfishing in the open areas, while keeping the current simple overfishing threshold.

Overall, three alternatives are considered in this section: the No Action (existing definition), the spatial/time averaged alternative (slightly modified version of the OFD that was proposed and not selected in Amendment 10), and a hybrid alternative (uses the threshold from No Action and the target from Amendment 10).

#### **3.4.1.1 No Action**

Under the no-action alternative, the OFD will remain the same, which spatially averages the fishing mortality estimate over the resource as a whole. This includes averaging over closed, open, and access areas.

The current overfishing definition has a static fishing mortality threshold that applies to the entire resource regardless of whether scallops in long-term closed areas contribute to yield. The current definition (as approved in Framework 19) reads:

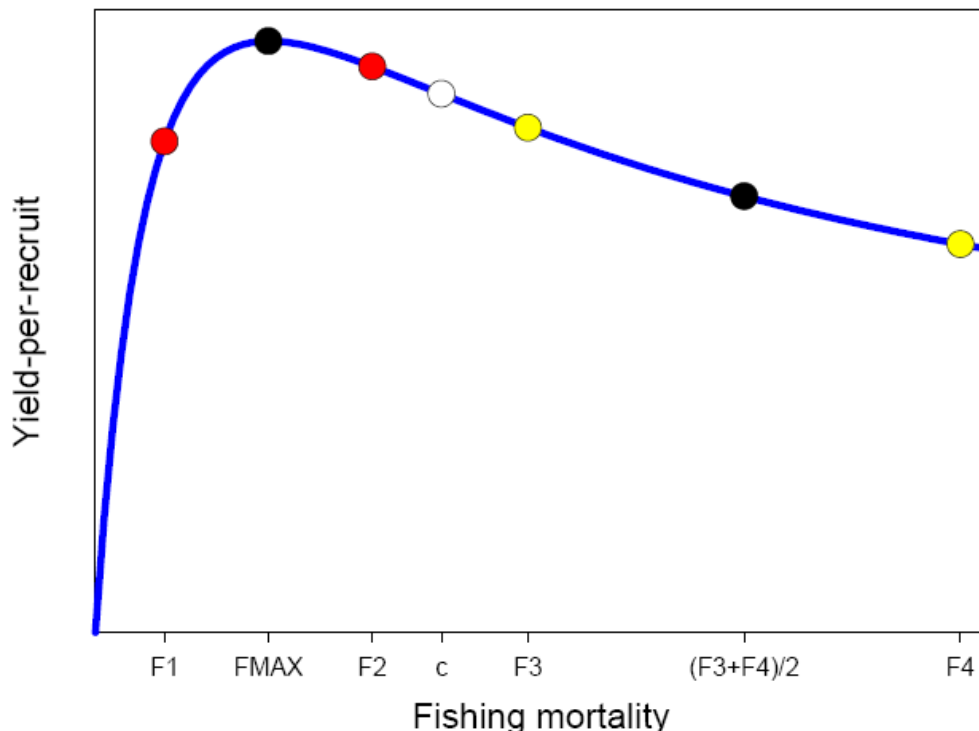
*“If stock biomass is equal or greater than  $B_{max}$  as measured by an absolute value of scallop meat (mt) (currently estimated at 108,600 mt. for scallops in the Georges Bank and Mid-Atlantic resource areas), overfishing occurs when fishing mortality exceeds  $F_{max}$ , currently estimated as 0.29.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

#### **3.4.1.2 Amendment 10 Overfishing Definition – Time-Averaged within Specific Areas**

The current OFD underestimates the effects of fishing mortality because  $F$  is averaged across closed, access, and open areas, which all receive different amounts of fishing pressure. Yield-per-recruit is reduced with a spatially averaged OFD (current) because the yield is far lower in

open areas. Additionally, the biomass-per-recruit is higher because of rotational management and the long-term closures. As presented by the SSC at the October 2008 Council meeting, the maximum yield-per-recruit is produced by fishing the *entire* resource at a constant rate of  $F_{max}$ , so the current variation in  $F$  produces less than the expected yield-per-recruit for the entire resource (this was also discussed during the 45<sup>th</sup> SAW for sea scallops). The proposed OFD would average over time within particular areas, thus considering spatial variation and allowing optimal yield to be harvested from both open and access areas. The proposed OFD would also remove the influence of the un-harvested biomass from closed areas (EFH) from the mortality estimate in the open areas, which is the primary cause for currently setting such a low  $F_{target}$ . An argument that has been presented against altering the OFD is that we already have a low  $F_{target}$ , a precautionary measure to help mitigate open area overfishing. However, the optimal spatially-averaged fishing mortality target varies from year to year, depending on the fraction of scallops in closed areas and currently there is no systematic way of setting the target.

With regards to the procedure for determining the OFD for each area, closed areas (both long-term and rotational) would not be included in the fishing mortality calculation. The threshold for access areas would be set using a time-averaging principle, which will typically be higher than it is for the open areas. The threshold for the open areas is the conventional  $F_{max}$ . The stock is overfishing if the  $F$  in the non-closed areas is higher than the number-weighted average of the combined targets for the access and open areas.



The  $F_{target}$  in open areas would be constant in the proposed OFD, unlike the  $F_{target}$  for access areas. The  $F_{target}$  for access areas can fluctuate over time to allow more fishing pressure when they are open due to the increased biomass accumulated while they are closed. While the PDT is not suggesting an astronomically high  $F$  for access areas, it is suggesting that the access areas can sustain a higher  $F$  than can the open areas that receive constant fishing pressure. For

example, the Elephant Trunk Access Area was closed for 2004-2006, receiving an F of 0.0. Now it could sustain an average F of 0.46 if it were to open for only 3 years, then close again to allow growth of recruited scallops.

The time-averaging within specific areas can result in various strategies that yield similar results. Below, each row will have similar yields and biomasses for a given (unspecified) area, but the rotational strategies will have slightly higher yields (between 2% and 8% higher than constant F):

- 1) F, F, F ...
- 2) 0, 2F, 0, 2F ...
- 3) 0, 0, 3F, 0, 0, 3F ...
- 4) 0, 0, 0, F, 2F, 3F, 0, 0, 0, F, 2F, 3F ...
- 5)  $\frac{1}{2}$  F,  $\frac{3}{2}$  F,  $\frac{1}{2}$  F,  $\frac{3}{2}$  F ...

For example, after a closure period of three years and a planned re-open period of another three years, the time-averaged fishing mortality target is 0.4 [i.e. 0.2 times 6 years divided by 3 years (the total period as a re-opened area)]. A useful variation on this calculation (and one that is risk adverse and reduces variability in landings) is to catch scallops at less than 0.4 in the first re-opened year, at 0.4 in the second year, and higher than 0.4 in the third (and last) re-opened year, as shown in the 4<sup>th</sup> line of the example above. The first year might be fished at a rate of 80% of the time averaged target (or F=0.32), the second year at 100% (F=0.40), and the third year at 120% (F=0.48).

There are two potential updates to the suggested OFD from Amendment 10. First, the Mid-Atlantic and Georges Bank open areas could be split, each with their own target Fs because of differences in growth rates and reference points. Second, instead of setting the target to 80% of the threshold, a higher percentage could be used when there are long-term closures (e.g., if 10% of all scallops were in EFH closures, then target in the open areas can be 90% of the threshold, rather than 80%).

Variations (often dictated by adaptive area rotation strategies) on the above example include the length of the closure, the length of the recently re-opened period, and the “ramping” strategy applied to the annual mortality targets in the re-opened areas. The following table shows how this would work:

**Table 21 - Example of ramped fishing mortality targets for re-opened areas, compared to mortality targets with no rotation and simple rotation with constant fishing mortality targets when re-opened. See Sections XXX for analysis of impacts.**

Year	Year N	1	2	3	4	5	6	7 - N	1	All
Status	Open	CL	CL	CL	Re-open	Re-open	Re-open	Open	CL	AVG
No rotation	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Simple rotation	0.20	0.00	0.00	0.00	0.40	0.40	0.40	0.20	0.00	0.20
Ramped rotation	0.20	0.00	0.00	0.00	0.32	0.40	0.48	0.20	0.00	0.20

### **3.4.1.3 Hybrid Overfishing Definition Alternative**

The hybrid alternative combines the overfishing threshold from the status quo overfishing definition with the fishing mortality target from the A10 alternative. Management is set to fishing mortality targets so that the calculation of the appropriate effort levels under the hybrid alternative will be similar to that under the A10 alternative. That is, target fishing mortality rates in the open and access areas would be set individually to levels that would obtain optimal yield. In open areas, effort would be set to 80-90% the  $F_{MSY}$  proxy (currently 0.29, resulting in a target between 0.23 and 0.26), whereas targets in access areas would generally be set higher, using the principle of time-averaging. The overfishing threshold would remain status quo (currently a spatially averaged  $F = 0.29$ ). In theory, fishing at such a spatially-averaged fishing mortality threshold could lead to localized overfishing and reduced yields. However, fishing effort levels under this alternative will be set to targets that take into account the spatially varying nature of this fishery, so that the risk of localized overfishing should be minimal. Keeping the threshold as in status quo would allow much simpler assessment as to whether or not overfishing is occurring.

### **3.4.2 Minor adjustments to the limited access general category management program**

These alternatives include several potential modifications to the limited entry program recently implemented for the general category fishery. Amendment 11 to the Scallop FMP limited access in the general category fishery and implemented an IFQ program for qualifying vessels. Several specific ideas were raised during that process but were delayed for consideration because they would require more time for development and analysis. This action is currently considering alternatives to address the following specific issues: rollover of IFQ, consideration of a general category sector application, modification of the general category possession limit, and modification of the maximum quota restriction one vessel can harvest. Other modifications related to Amendment 11 will not be considered in this action.

#### **3.4.2.1 Provision to allow IFQ rollover**

The Council is considering a rollover allowance for general category IFQ permit holders. If for some reason a vessel is unable to harvest their full IFQ in a given fishing year, a rollover allowance authorizes a vessel to carry forward unused quota for use in the following fishing year.

##### **3.4.2.1.1 No Action**

This alternative would maintain that IFQ expires at the end of a fishing year. A permit owner would be prohibited from carrying forward any unused IFQ into the following fishing year.

##### **3.4.2.1.2 Allow IFQ rollover up to 15%**

This alternative would allow an IFQ permit holder to carry forward up to 15% of their IFQ to the proceeding fishing year. NMFS will automatically carryover any unused IFQ to the following fishing year up to 15%.

#### **3.4.2.2 Consideration of a general category sector application**

One specific sector application has been received (Appendix II – attached to this DEIS). The Committee reviewed the application and passed a motion to include it in Amendment 15 – but

with no exceptions. The sector would be permitted to apply and be approved in this action, but only under the existing sector regulations. Specifically, the only measure that sector vessels are explicitly exempt from is being able to exceed their individual IFQ. If vessels in the sector combine IFQ, how the total IFQ is landed in terms of the vessel platform is not specified. The other exemptions this sector has requested in their application were not supported for inclusion in Amendment 15.

The Committee has learned that this group is no longer interested in becoming a sector, so have withdrawn their application. This alternative will be moved to the considered and rejected section of this action.

### **3.4.2.3 Modify the general category possession limit**

The Council is considering a modification to the general category possession limit in response to requests from some of the industry that the current possession limit is not economically feasible.

#### **3.4.2.3.1 No Action**

This alternative would maintain the 400 pound possession limit.

#### **3.4.2.3.2 Modify the possession limit up to 1,000 pounds**

This alternative would modify the possession limit up to 1,000 pounds; the Council would be permitted to identify the final possession limit up to 1,000 pounds at the final meeting.

**Rationale:** This alternative was included to respond to requests from the industry that the current possession limit is not economically feasible due to increased costs. This possession limit would recognize that the Council supports that the general category permit remain a “small boat” permit, but due to changes implemented by A11 that altered the fishery, as well as increased costs (e.g., fuel), a moderate increase in possession would be justified.

#### **3.4.2.3.3 Eliminate the possession limit**

This alternative would eliminate the possession limit for general category vessels.

**Rationale:** This alternative was included to respond to requests from the industry that the current possession limit is not economically feasible due to increased costs. In addition, this alternative was added to recognize that A11 changed the general category fishery and since it is managed by IFQs, a possession limit is not needed. This alternative would support that A11 was a wholesale change to the permit category and the possession limit should be eliminated.

### **3.4.2.4 Modify the maximum quota one general category vessel can fish**

The Council is considering this alternative to respond to input from the industry that the current ownership restrictions are not consistent. There are currently two ownership restrictions in place: 1) a restriction on the maximum amount of quota an individual can own (5%); and 2) a restriction on the maximum amount of quota that can be harvested from one platform (2%).

#### **3.4.2.4.1 No Action**

This alternative would maintain the current restriction of 2% maximum quota allocation on each general category vessel.

#### **3.4.2.4.2 Modify the maximum quota one vessel can fish from 2% to 2.5% of total general category allocation**

This modification would change the 2% maximum quota per vessel restriction to 2.5% of the total general category allocation.

**Rationale:** It has been argued that the two ownership restrictions together require an individual to own more than two vessels for no substantial reason if they want to own 5% of the general category fishery. This alternative would make the restrictions more compatible.

#### **3.4.2.5 Allow LAGC quota to be transferred from IFQ permits**

The Council asked the Committee and PDT to consider developing an alternative that would allow a limited access general category IFQ permit to be split from other permits held by the same vessel. The Interspecies Committee also discussed the issue and recommended development of an alternative that would allow quota, not the permit, to be split from the vessel, which would avoid the permit splitting issue that is consistent in all LA programs in this area. The Council then voted at the April 2009 Council meeting against allowing LAGC permit owners to permanently transfer their IFQ permit and its associated allocation independent of all other permits.

The Council voted at the April 2009 meeting to have the Committee and PDT develop alternatives that allow permanent transfer of IFQ quota, either to another IFQ permit holder or to a community-based trust or permit bank. It is noted that the NGOM permit does not need to be considered because those vessels do not receive IFQ. Additionally, the only vessels that can participate are those that already qualify for an LAGC IFQ permit.

*\*\*This section is not clear if LA vessels with LAGC permits are included. All specifically prohibited them from leasing IFQ – but this is different. Would LA vessels with LAGC permits be allowed to permanently transfer their IFQ to another LAGC permit. Issues do come up about the 5% versus 0.5% split – does that matter?*

##### **3.4.2.5.1 Allow LAGC IFQ permit owners to permanently transfer some or all quota allocation to another IFQ permit holder**

The intent of this alternative is to allow LAGC IFQ permit owners to permanently transfer some or all of their quota allocation independent of their IFQ permit to another LAGC IFQ permit holder while retaining the permit itself.

##### **3.4.2.5.2 Allow LAGC IFQ permits owners to permanently transfer some or all allocation to a community-based trust or permit bank**

This alternative would allow LAGC IFQ permit owners to permanently transfer some or all of their quota allocation independent of their IFQ permit to a community-based trust or permit bank while retaining the permit itself. Conversely, it would allow a permit bank to lease/transfer the IFQ to any LAGC IFQ permit holder.

### **3.4.2.6 Implementation of Community Fishing Associations (CFAs)**

At the April NEFMC Council meeting, the NEFMC passed a motion to have the scallop PDT “[r]esearch and discuss the potential use of “regional fishery associations” or something like them (permit bank) in terms of an entity being permitted to purchase IFQ with or without having to own a LAGC IFQ permit.”

The PDT discussed this issue at the May 2009 PDT meeting and ultimately developed two options for the Committee to consider: 1) consider adjustments to the current sector provisions to make them more place-based and allow other entities to control quota, and 2) develop a separate RFA or CFA program with details of provisions that would be considered. The Committee only adapted 2), and requested staff continue to identify issues that need to still be resolved and also requested that the advisory panel review the details and provide input on this alternative.

Community Fishing Associations and similar entities are being developed throughout the United States, particularly the west and northwest coasts, to deal with the rationalization of various fisheries, which can negatively affect the sustainability of fishing communities. For example, with the sablefish and halibut rationalization programs in Alaska, various larger entities purchased or were initially allocated large enough quotas that it effectively hurt the sustainability of fishing communities and villages along the Gulf of Alaska coastline. To help mitigate this problem, the North Pacific Fishery Management Council, in conjunction with the State of Alaska, created Community Quota Entities, which are non-profit organizations that can hold quota on behalf of the represented community/communities and allow various fishermen to lease and fish the quota. Further, the Pacific Fishery Management Council (PFMC) is developing Community Fishing Associations to address the consolidation concerns caused by the groundfish trawl rationalization program. The PFMC is currently in development of these CFAs, but their issues are more similar to those that have been raised in New England.

Concern has been raised at recent New England Fishery Management Council meetings about consolidation of the IFQ among LAGC participants. Even though the IFQ program is not fully implemented yet, (expected in March 2010), there is concern that larger entities will buy out smaller boat permits, stack IFQ, and effectively reduce the number of vessels in ports and number of players in the general category fishery. This will more than likely have negative consequences on the fishing communities throughout New England. The Scallop PDT, now, has been tasked with developing alternatives for creating Community Fishing Organizations, which would be permitted to acquire quota for distribution throughout the geographic community it represents.

The primary concerns described at meetings are that small, independent fishermen are at risk because of escalating prices for permits and LAGC IFQ, which are preventing new local entrants into the fishery. There is concern that permits are going to leave smaller fishing communities and lead to corporate consolidation impacting historical fishing communities. One specific goal identified is to enable an entity to hold quota and lease it to qualified fishermen in their defined community. The entity would not need to own a vessel and would not have to be engaged in harvesting. Some have voiced that the organizations should be place-based, or focused on a particular community. This alternative would consider explicit regulatory language to recognize



and support *non-profit* entities that could purchase and hold permits and/or quota to be leased to qualified local fishermen at affordable rates.

#### **3.4.2.6.1 No Action**

A process for future community fishing associations or CFAs would not be established in Amendment 15.

#### **3.4.2.6.2 Establish a process for Community Fishery Associations**

This alternative would establish a process for the creation of Community Fishery Associations (CFAs), non-profit organizations that are allowed to hold quota (and permits if approved) on behalf of a defined community. These groups may be formed around common homeport(s) and/or landing port(s), and are designed to support local commercial fishermen. The following text provides an outline for the various required components of such an entity, including: required definitions, qualification/application, geographic designation/community affiliation, participation requirements and restrictions, Community Sustainability Plan (as outlined in Magnuson-Stevens Reauthorization Act), and other considerations for these entities.

Recently, the Pacific Fishery Management Council (PFMC) has also taken steps to address similar problems facing traditional fishing communities on the West Coast as a result of the trawl rationalization process. The PFMC is currently developing regulatory support for CFAs using language of the Magnuson-Stevens Act. This proposal draws extensively on these PFMC efforts.

*Rationale:* The purpose of establishing this process is to allow greater opportunities for fishery participants to proactively engage in resource governance, provide greater flexibility for fishermen, enable communities to thrive by establishing a community-driven plan, and create outcomes that are more socially and economically beneficial for communities within the biological limitations of the fishery. These entities would also support qualified new entrants to the fishery by allocating some portion of the holdings to be leased to individuals who have harvesting experience in the local fishery and who are working to start an independent fishing operation in that community.

- **Definition of a CFA**

A Community Fishing Association may be a partnership, voluntary association or other non-profit entity established under the laws of the U.S. that is eligible to hold quota (and possibly permits) and distribute said quota/permits to permitted fishermen within the geographic community that the CFA represents. These entities will be beholden to the eligibility requirements and participation criteria governing Regional Fishery Associations as outlined in the Magnuson-Stevens Act.

The goals of establishing Community Fishing Associations are to:

1. Mitigate the potentially negative economic and social impacts of current transitions to quota management in the LAGC fishery.
2. Provide affordable local industry access to fisheries resources.
3. Provide opportunities for qualified new entrants to the fishery.
4. Preserve traditional fishing communities and necessary onshore infrastructure.

- **Qualification as a CFA**

To be recognized as a CFA, an entity must:

1. Meet the geographic designation and membership requirements (below).
2. Have the expressed support of local governing entities (county, city or port district).
3. Meet the organizational standards (below).
4. Develop an adequate community sustainability plan (MSA 303A(c)(3)(i)(IV)).
5. Be organized and maintained as a non-profit corporation under U.S. law.

- **What CFAs Can Own and Lease Out**

*Option A, Quota Only.* Under this option CFAs would be able to purchase IFQ which can be leased to qualifying fishermen already possessing a LAGC permit.

*Option B, Quota and Permits.* This option would allow CFAs to purchase IFQ and permits which can then be leased to qualifying fishermen within the community.

- **Geographic Designations and Community Affiliations**

CFAs must be located within the management area of the Council (Based on MSA 303A(c)(3)). The geographic areas served by a CFA may overlap with the area served by another. However, a CFA may only represent one ‘community’ (i.e., a single management company *may not* administer multiple CFAs).

For the purposes of this program, a ‘community’ is defined here as either a single coastal town or small number of coastal towns that are geographically and economically interconnected. Prior to approval, a CFA must demonstrate substantial support of community members and governing jurisdictions in the area it seeks to represent

- **Participation Requirements**

Participation (holding of quota, leasing of quota and harvest) in a CFA is voluntary and is restricted only to community residents who have interest in commercial fishing operations (how specific should this be, how big do you want the universe? If limited to fishermen only could limit the potential pool of investors?). The program developed by this FMP is limited to the LAGC scallop portion of the fishery, and harvest of the IFQ is restricted to LAGC fishermen only. These fishermen may lease CFA-held permits/quota to be harvested in compliance with all existing and relevant state, federal and international commercial fishing regulations. Harvest of LAGC IFQ under a CFA is restricted to individuals that qualified for a LAGC permit under Amendment 11, unless the option to allow for new entrants is included and approved in a future CFA application.

- **Organization and Operational Standards**

CFAs will establish open and transparent application and qualification criteria for the distribution of permits/quota to community fishermen. These entities will comply with existing and relevant leasing and transfer regulations that currently apply to individual permit-holders including lease reporting protocols, size-class or baseline restrictions, etc.

- **Community Sustainability Plan**

The CFA shall develop a community sustainability plan consistent with required sections of MSRA (MSA 303A(c)(3)(i)(IV)) that includes the following:

1. Specification of the organization's goals and objectives and the means by which it intends to meet those goals and objectives.

2. Description of how the CFA will contribute to the social development, economic development, and conservation needs of the fishery locally, including the needs of entry-level and small vessel owner-operators, captains, and crew. The description shall include anticipated efforts to address the following as necessary to maintain the characteristic of the community or support its economic development:

- a. sustaining effort by groundfish fisheries;
- b. maintaining crew, processing and seasonal employment opportunities;
- c. maintaining local processing activity;
- d. meeting local community and municipality needs; and
- e. investing in local infrastructure.

- **Measure to Allow New Entrants**

CFAs would allocate a portion of the IFQ holdings to be leased to new entrants to the fishery within the community (*does the Committee want to weigh in on how much can be set aside for new entrants or not – should a maximum be included since it is a new limited entry program that recently cut out participants?*). The idea is to encourage entry of individuals who have harvesting experience in the local fishery and who wish to start an independent fishing operation in that community, thus ensuring the future of the community fleet.

- **Restrictions on Holding Quota**

Much concern in the early stages of CFA research has been that quota will be improperly obtained or used in ways that are a detriment to the LAGC fishery and/or the same community it is designed to help, i.e. obtaining IFQ with the intent that it not be harvested. For this reason a stringent application process and monitoring plan must be implemented to be sure the CFA benefits the community as intended and overall scallop plan in terms of optimizing yield.

- **Application for Status as a CFA**

CFA applications will include:

1. Articles of incorporation and bylaws.
2. Organization chart and explanation of management structure.
3. A community sustainability plan (see above; MSA 303A(c)(3)(i)(IV)).
4. All information needed for NMFS to assess compliance with control limits.
5. Operating procedures including description of a. roles and responsibilities of the association, board members, staff, and contractors, the process and criteria by which permits/quota will be distributed, and dispute resolution processes.
5. Documentation that shows compliance with all other CFA eligibility requirements.

- **Criteria for Evaluating Applications and Approval Process**

CFAs will be approved provided a complete application has been provided to the New England Fishery Management Council and the National Marine Fisheries Service by agreed upon deadlines. The Council will ensure that all requirements listed above are fully and satisfactorily

met prior to approval, including those pertaining to geographic representation and community support. Approval will include specification of special responsibilities and considerations being afforded the CFA (e.g. the level of quota shares control that will be afforded the CFA).

- **General Participation and Special Considerations**

CFAs will participate in common with all other participants in the IFQ program and have the same rights and responsibilities, except with respect to special responsibilities and considerations provided for by the Council and through NMFS regulations. General participation includes leasing quota under provisions identical to those which apply to all other participants in the LAGC fishery.

**Special Consideration – Accumulation Limits**

CFAs would be obligated to remain within existing and relevant accumulation limits unless the New England Fishery Management Council decided to explicitly amend such limits in a future action. Currently, an individual permit holder can own up to 5% of the total LAGC IFQ allocation, and a sector can hold up to 20%. The ownership limit under consideration by the PFMC for a CFA is 10%. This accumulation limit recognizes that to be effective, a CFA must be able to accumulate sufficient fisheries access to support more than a single fishing operation within the community, while maintaining a relatively low cap. This action is considering a limit of 10% (???) for any CFA.

**Special Responsibility – Reporting Requirements**

CFAs would be required to report annually on specific aspects of their operations, CFA performance measures, etc. Specifically, each entity will be required to report the number of lease applications received for their permits/quota; the number, names, and characteristics of the financially independent fishing operations that leased the CFAs permits/quota; the proportion of permits/quota leased in a given year relative to the entity's total holdings; and a summary of how holdings were distributed among applicants. This will help to confirm that the quota is remaining within the community as intended.

- **Monitoring of CFAs**

The Council noted that current monitoring provisions may not encompass what is needed to track use of CFA IFQ. There may be need for addition of a new (VMS) code by NMFS. Additional research into requirements for effective monitoring is required. Will each individual trip need to be monitored in terms of whether it is fishing under leased IFQ or its own?

- **Movement between CFAs**

As multiple CFAs may simultaneously support a given community, a fisherman may lease quota from more than one CFA during a given fishing year. Each permit-holder will remain bound by the existing individual harvesting and ownership caps. The relationship between a CFA and a participating fisherman who leases a permit and/or quota is terminated with the harvest of the leased pounds; from the perspective of the Council and NMFS, there is no membership or expectation of continuing connection between these two independent entities (CFA and the individual).

- **Program Evaluation**

The Community Fishing Association (CFA) program developed by the NEFMC would be reviewed 2 years after implementation to ensure progress in achieving the stated programmatic objectives and to make any small revisions required. Thereafter, this program would be reviewed as necessary by the Council and/or NMFS.

- **Organizational Evaluation**

Performance of individual Community Fishing Associations (CFAs) would be fully reviewed after 2 years of operation. Performance will be measured based on the ability of the CFA to support the objectives of the program and to help meet the needs of the fishing community. This review will result in the continued approval, conditional approval (with specific operational changes to be made), or the disapproval of the CFA by the Council and/or NMFS.

After this initial review, each program will undergo a full review every 5 yrs or more frequently if deemed necessary by the Council and/or NMFS.

### **3.4.3 Measures to address EFH closed areas if EFH Omnibus Amendment 2 is delayed**

One component of the EFH Omnibus Amendment 2 is the development of alternatives for minimizing adverse impacts of fishing on EFH to the extent practicable. This includes a review and possible modification of existing EFH closed areas, as well as other measures that are in place to minimize impacts of fishing on EFH. The Council is expected to approve a final range of alternatives in March 2010. However, this timeline is not adequate enough to allow the Scallop Committee and Council to know what areas will most likely be available as potential scallop rotational areas before the fall of 2009 when measures would have to be developed for the 2010 fishing year (Framework 21). With this delay of the EFH amendment, access into Georges Bank closed areas is still limited to areas not closed to the scallop fishery for EFH under both the Scallop FMP and the Groundfish FMP.

Framework 16/39 (2004) proposed to make the two plans consistent in terms of closed areas to minimize adverse impacts on EFH, but that action was challenged because it was not done in an amendment (just a framework) and, as a result, areas closed for EFH under both Amendment 10 and Amendment 13 still apply to the scallop fishery. In most cases the two plans are consistent, with two important differences in terms of areas with relatively high scallop abundance: the northern part of Closed Area II north of the cod HAPC, and the central portion of Closed Area I south of the original scallop access area (See Figure 4). This action is considering alternatives to address the inconsistent EFH areas currently closed to the scallop fishery under both the Scallop and Groundfish FMPs.

#### **3.4.3.1 No Action**

This alternative would maintain the measures in place to minimize impacts on EFH. Specifically, areas closed in Amendment 10 and Amendment 13 to minimize impacts on EFH would apply to the scallop fishery unless modified under Phase II of the EFH Omnibus Amendment (Amendment 14 to the Scallop FMP).

#### **3.4.3.2 Modify the EFH areas closed to scallop gear under Scallop Amendment 10 to be**

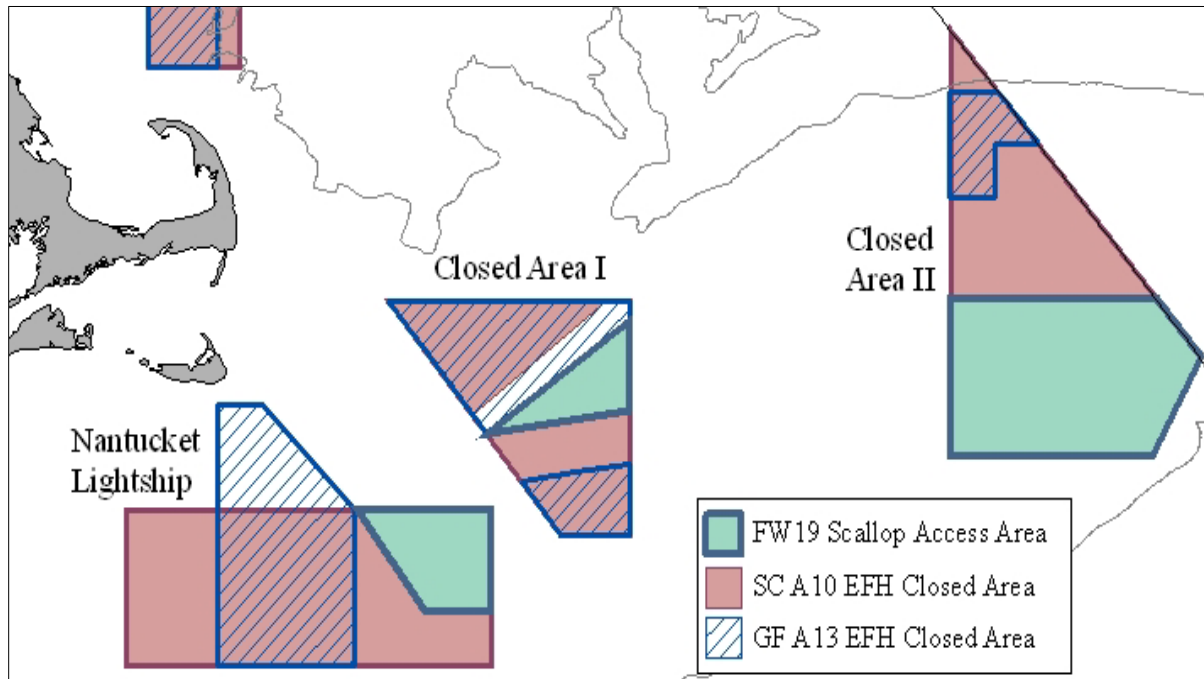
**consistent with Multispecies Amendment 13**

This alternative would consider making the EFH closed areas consistent under both FMPs if the EFH Omnibus Amendment 2 timeline is delayed. Rather than both the shaded and hatched areas in Figure 4 being closed to the scallop fishery for EFH, just the hatched areas would be closed to minimize impacts on EFH (consistent with A13 to the Groundfish FMP).

**Rationale:** This alternative was included in this action as a placeholder if the Habitat Omnibus Amendment is delayed. The Council discussed that the most appropriate place to evaluate habitat closed areas in EFH Omnibus Amendment 2, but because that action is delayed, this alternative would make the habitat areas consistent between the Groundfish and Scallop FMP as Framework 16/39 intended. The Council did not support closing both areas to scallop gear, but that has been the result of the legal challenge on this issue being considered in a framework rather than an amendment. Therefore, since the EFH Omnibus Amendment 2 is delayed, this alternative would make the areas consistent in the 2011 fishing year and beyond, unless subsequently modified by EFH Omnibus Amendment 2. The specification process for the scallop fishery could consider access to areas within the GF closed areas that are outside of the hatched areas, provided there is ample scallop resource to support access and all impacts are considered on finfish bycatch.

**Figure 4 – EFH areas closed to scallop gear**

*Hatched areas would be the only EFH areas closed to scallop gear if this alternative is selected – consistent with areas closed under A13 to the Multispecies FMP*



### **3.4.4 Measures to improve research set-aside program**

#### **3.4.4.1 No action**

No changes would be made to the existing research set-aside program.

#### **3.4.4.2 Publish federal funding opportunity as early as possible**

In recent years the federal funding opportunity announcement (FFO) has been published late. This alternative would request that NMFS publish the announcement by June before the beginning of the following fishing year.

**Rationale:** Most research under the RSA program is time sensitive (biomass surveys of access areas before openings, research during or before a seasonal closure for turtles etc). If the process starts late because the FFO is after the start of that fishing year, then the effectiveness of the RSA program and the selected research projects is compromised; timing of the FFO is critical so that research projects fulfill management needs. If the FFO could be published by June, then all the necessary procedural steps could be taken before the start of the fishing year, maximizing time for research and compensation trips before the end of the fishing year. Even if final specifications are not approved to be included in the FFO, the Council requests that the agency include ranges for TACs so that the announcement can be published as soon as possible.

#### **3.4.4.3 Extend the RSA program to be multi-year**

Currently research priorities, TACs for RSAs, and approved research projects are limited to one year. This alternative would modify that to be the length of time within a specification action. For example, this action will include specifications for FY2011 and FY2012; therefore the RSA TACs available and research proposals could also span up to two years. The solicitation would span a two year time frame, corresponding with the framework process. Projects could be awarded for one or two years.

**Rationale:** This alternative would increase flexibility for the applicant, reduce time and resources spent on the application and review process, and provide funding for some longer term projects. There are certain management needs that would benefit from two years of work rather than a single year. This alternative would also reduce the burdens associated with the application process, review process, and issuance of experimental fishing permits (EFPs) when necessary.

#### **3.4.4.4 Modify open area RSA allocation from DAS to pounds**

Currently 2% of open area DAS are set aside for the RSA program. This alternative would change the way open area effort is allocated for research from DAS into pounds. The framework document would include an estimate of catch per DAS and that value would be converted into a total poundage available for research, equivalent to 2% of the total effort available in open areas. The recommended value to start with is 1.0 million pounds. This value could be changed in a future framework action (increase or decrease).

**Rationale:** Fewer research proposals request funds from open areas because catch in open areas is lower than access areas and catch rates vary such that there is potentially more risk if catch

rates are lower than expected. If the RSA allocation from open areas was in pounds rather than DAS, then catch from compensation trips would be more straight-forward and vessels would have a set amount of catch rather than DAS.

#### **3.4.4.5 Modify entire RSA allocation to a fixed poundage rather than a percent**

Currently 2% of access area TACs and open area DAS are set aside for the research set-aside program. That amount of TAC and DAS varies depending on the total TAC and DAS for the fishery, but the percent stays the same (2%). This alternative would modify the program so that a set amount of catch was available year to year, rather than a set percentage of catch. For example, 1.0 million pounds would be set aside for research rather than a set percent of the total estimated catch (one million pounds is 2% of 50 million pounds). The one million pounds would be broken down by area, but it would not necessarily equal 2% of each area open to the fishery. In each framework action the Council will identify which areas RSA poundage will be removed from.

**Rationale:** Allocating a fixed amount (in pounds rather than a percent) would enable the announcement to come out earlier because the agency would know the total amount of TAC available for research before the specification package is approved – it would be a set amount that is the same poundage every year.

#### **3.4.4.6 Separate RSA TAC into 2 subsets (survey and other)**

This alternative would separate the RSA TAC into 2 subsets – 1) survey related work and 2) other research priorities. The Council identified survey related work as the topic with highest priority in the recent research priorities for 2008 and 2009, and dividing the research TAC will provide more emphasis and funding for survey work.

**Rationale:** The Scallop PDT has voiced that assessment of biomass in access areas is critical for the rotational system to work effectively. This change will not ensure that all areas are surveyed, but it should increase emphasis on survey related research proposals since at least one half of the research TAC will be reserved for that topic.

#### **3.4.4.7 Remove additional TAC specific for survey work in addition to 2% set-aside**

This alternative would add an additional 1% set-aside for access area surveys. The existing 2% set-aside would remain, but it would focus on other projects related to other research priorities. Therefore, there would be a total of 3% set-aside; 2% for general research topics and an additional 1% that would be reserved for survey work in access areas ready to re-open. It is understood that if an alternative is selected that converts % set aside into a poundage that would apply to this alternative as well.

**Rationale:** This alternative would recognize that assessing biomass in access areas is critical and 1% of the catch per year should be dedicated to that purpose. This alternative would also recognize that other research topics are also important, and 2% of the total catch should still be set aside to fund those research topics.

#### **3.4.4.8 Rollover of RSA TAC**

This action includes five alternatives for rollover of RSA TAC.



#### **3.4.4.8.1 Rollover of unused RSA TAC to the next fishing year**

Unused RSA TAC would rollover to the RSA funding announcement the following year.

#### **3.4.4.8.2 Rollover of unused RSA TAC to second solicitation in same fishing year**

Unused RSA TAC would rollover to a second announcement for the same year. All TAC would still need to be harvested by the end of that fishing year.

#### **3.4.4.8.3 Rollover of unused RSA TAC to same individuals for program development funds**

Unused RSA TAC would be allocated to the same individuals that received TAC that year so that those individuals could use small amounts of TAC to support investigation of smaller research projects related to the same projects.

#### **3.4.4.8.4 Rollover of unused TAC to help fund observer program**

Unused RSA TAC would rollover to the industry funded observer program.

#### **3.4.4.8.5 Rollover of unused TAC to compensate awarded projects**

If updated analyses suggest that the price per pound estimates used in the FFO were low, this alternative would allow the agency to allocate unused TAC to compensate. A project would be permitted to apply for compensation TAC if the price per pound was less than estimated and there is available TAC to allocate.

#### **3.4.4.9 Extension for harvesting compensation TAC**

Currently all RSA TAC has to be harvested by the end of that fishing year. This measure would allow a grace period during which the applicant could harvest compensation TAC beyond the end of the fishing year if an applicant cannot harvest their RSA pounds because, for example, their vessel broke. The Scallop Committee suggests a limited time period of one month to one quarter of the year.

#### **3.4.4.10 Increase public input of RSA review process**

This is not an alternative that would require changes to the current regulations, but two specific suggestions were made about how public input could be increased in this process. First, it was suggested that the Scallop Advisory Panel could recommend research priorities directly to the Scallop Committee to consider. Second, more advisory panel members could participate in the management review panel of research proposals.

#### **3.4.4.11 Regulations from which RSA projects are exempt**

This section includes a list of the measures from which research projects may be exempt. This list is restricted to measures implemented by the Scallop FMP. A researcher would not need to apply for an experimental fishing permit if the project wanted to be exempt from the following restrictions. The project would need to list the measures it wants to be exempt from in its research proposal.

The list of measures includes:

- Crew restrictions
- Seasonal closure in Elephant Trunk

- Requirement to return to port if fishing in more than one area

### **3.4.5 Measures to change the scallop fishing year**

The scallop fishing year is out of sync with the framework adjustment process and the timing of when the scallop survey data become available for analysis. As a result, actions have not been implemented at the start of the fishing year, TACs have been misestimated due to reliance on older data, and extra actions have been required to compensate. The Council has considered changing the scallop fishing year several times in the past, but each time the Council decided to maintain the status quo of March 1. One reason the Council is again considering modifying the scallop fishing year is in response to new requirements for ACLs. If the Council decides to allocate ACLs across various FMPs, it may be useful for FMPs to be on the same fishing year to the extent practicable (i.e., May 1 to be consistent with the Groundfish FMP).

#### **3.4.5.1 No Action**

This alternative would maintain the March 1 start date for the scallop fishing year.

#### **3.4.5.2 Change start of fishing year from March 1 to May 1**

This alternative would modify the start of the scallop fishing year to May 1.

**Rationale:** This alternative would improve integration of best available science into the management process. Moving the start of the fishing year back even two months allows for needed time to process, analyze, and integrate survey data from the current year into management decisions for fishery specifications the following year. This alternative would be most effective if the federal survey can be moved earlier in the year and data were available earlier in the summer (June rather than September).

## **3.5 ITEMS TO BE ADDED TO THE LIST OF FRAMEWORKABLE ITEMS IN THE FMP**

### **3.5.1 Modify the general category possession limit**

Regardless of whether Alternative 3.4.2.3.2 or 3.4.2.3.3 are selected (modifications to the general category possession limit) this alternative would add modifications to the possession limit to the list of frameworkable items so that issue could be considered by framework action in the future.

### **3.5.2 Adjustment to aspects of ACL management**

This action is considering implementing a new management strategy under ACL management that will use many new measures. All of the measures specified in this action would be able to be modified through framework actions. The specific ACL related measures that could be modified by framework include: modifying associated definitions and specification of OFL, ABC, ACLs and ACTs, all of which are specifically intended to be changed in future frameworks or specification packages as new information becomes available about the resource and fishery; the buffers identified for management uncertainty or scientific uncertainty (ABC control rule); accountability measures for scallop ACLs and other sub-ACLs allocated to the

scallop fishery; monitoring and reporting requirements associated with ACLs, timing of AM measures, and new ACLs that are not currently part of this program.

*\*\* New ACLs may be problematic since it involves an allocation decision. Should this be added, or should we leave it out with the understanding that a new ACL would likely trigger an amendment? Or Committee could allow new ACLs to be done through framework – for example, if a new sub-ACL should be identified for a different fishery that increases scallop bycatch for some reason.*

### **3.5.3 Fishing power adjustments**

If selected in Amendment 15, it is understood that these could be modified at a later date for a variety of reasons.

## **3.6 CONSIDERED AND REJECTED ALTERNATIVES**

During development of this action, the measures in this section were considered but rejected for various reasons; the “rationale for rejection” explains the primary reason why the Council chose not to pursue these alternatives in this amendment.

### **3.6.1 Convert open area DAS into access area trips with possession limits**

Access area trips have a possession limit per trip, so there is high certainty in terms of potential catch per unit of effort. On the other hand open area effort is not subject to a catch limit. There are other measures that limit catch in open areas such as gear restrictions and crew size limits, but catch rates vary per vessel, area, season, etc. Furthermore, vessels can adjust their fishing power by making adjustments to their vessel that are not fully incorporated in the estimate of fishing mortality. As a result, there is less certainty in catch and mortality from open area effort. Vessels are allocated the same DAS in each permit category, but individual catch per day varies.

One way to reduce this level of management uncertainty is to convert the allocation of open area DAS into trips (with a possession limit) in areas outside of access and closed areas. This approach would reduce uncertainty because each vessel would be limited to a maximum catch per trip. Ultimately, scientific uncertainty would be reduced as well because future estimates of catch would be more certain. Ultimately, this alternative would allow the buffer between the ACL and ACT to be reduced or even eliminated, and arguably the buffer between OFL and ABC could be reduced as well because catch would be more certain. The PDT did not yet identify a recommendation for how much the buffer should be reduced.

*Rationale for rejection:* This alternative was originally raised at a Committee meeting when potential measures for complying with ACLs and potential turtle restrictions in the Mid Atlantic were being discussed. Revisiting open area DAS management was discussed in the context of those two issues since one may require effort reductions in certain areas and seasons (turtle issue in the Mid-Atlantic) and increased certainty in catch (ACLs). This output control would increase certainty in catch from open areas compared to DAS. However, the PDT identified several potential issues with this approach related to scallop fishing mortality.

The PDT discussed that while this alternative would ensure a certain catch, it would not necessarily be linked to a certain fishing mortality rate, and ensuring a specific fishing mortality rate is more important in terms of preventing overfishing. It was pointed out that one benefit of open area DAS is that they are, in a sense, self-regulating. If projections are high and there is less biomass available, then catch per DAS will decline accordingly. However, if vessels were given a possession limit, they would have a higher F to catch that poundage if biomass is lower than estimated. Also, size of scallops harvested is an important issue to consider. When vessels are under DAS the potential to target smaller scallops is reduced; however, under a possession limit per trip vessels are more likely to catch their possession limit however they can (i.e. harvest more smaller scallops if that is what is available). Concern was expressed that assuming the benefits of access area trips to the open area was not appropriate because catch rates are very different.

In addition, there have been some legal discussions related to whether this alternative would essentially be an IFQ triggering referendum requirements etc. Currently the limited access fishery is allocated fishing opportunities in a combination of DAS to be used in open areas and a fixed number of trips with possession limits that can be used exclusively in specific access areas. This alternative would convert the open area DAS into trips with possession limits in areas outside of access and closed areas, or “open areas”. As a result, the full allocation for the year would be a specified number of trips with possession limits. Some concerns were raised that may essentially be the equivalent of allocating a quota or fixed percent of total TAC. In addition, preliminary economic analyses indicated that how the trips are allocated (equal or different possession limits based on historical data) would have substantial differential impacts. The fairness and flexibility issues with this alternative compared to DAS management would have to be considered in detail. Therefore, since this action needs to be implemented by March 1, 2011 to comply with ACL requirements, the Committee recommended this approach be moved to the considered and rejected section because of the timing concerns and the potential impacts on the scallop resource and fishing vessels highlighted by the PDT.

#### **3.6.1.1.1.1 Seasonal closure of the entire stock area (in-season).**

The Council directed the PDT to not further develop this alternative, but the gist is that when the YTF sub-ACL is projected to be reached for the entire stock area, the scallop fishery would close.

#### **3.6.1.1.2 GC AM**

*Option 2 – Overage would be reduced with an additional 7% applied*

### **3.6.2 Stacking alternatives**

The Committee discussed several alternatives related to stacking that were rejected for a variety of reasons. The alternatives below were rejected because the final DEIS includes a pared down list of options that will limit or reduce the risk of increased fishing power as a result of stacking.

**3.6.2.1 Restrict stacking to 2 permits and both would have to be from the same permit category (FT, PT, OCC) but not necessarily the same vessel baseline**

Vessels would be permitted to stack but would be restricted to permits within the same scallop permit category. A full-time permit could be stacked on a full-time vessel, but a part-time permit could not be stacked on a full-time vessel.

**3.6.2.2 Fishing power adjustment alternative based on gear and wheel size**

The specifics of this alternative were never developed completely. An advisor suggested this as an option, but the Committee was concerned about including it because NMFS does not track the data necessary for this limitation, so this approach could not currently be implemented.

**3.6.2.3 Equal fishing power adjustment alternative that would be a flat tax or percentage reduction regardless of permits being stacked**

All vessels would be subject to an adjustment regardless of whether permits are from different vessel baselines. For example, allocations from the second permit would be reduced by some percent (i.e. 5% or 10%) if stacked with another permit. The same percentage would apply for all permits.

**3.6.2.4 No fishing power adjustment for permit stacking or leasing**

The Scallop Committee recommended that this alternative be rejected because they support keeping capacity neutral. If no adjustment or restriction is applied, there is more risk that fishing power could increase as a result of stacking and leasing if permits from lower fishing power vessels are moved to vessels with higher fishing power.

**3.6.2.5 No restrictions on number of permits that can be stacked**

This alternative would allow a limited access scallop vessel to have multiple limited access permits stacked on one vessel – no restriction on the number of permits that could be stacked. A vessel would be permitted to have any combination of full-time, part-time and/or occasional limited access scallop permits. The Council recommended that this alternative be rejected at the October Council meeting.

**3.6.2.6 Sideboard for bycatch with stacking**

With the addition of the restriction above – may not be necessary to have this alternative anymore. Provided that all permits from the vessel that is relinquishing its scallop permit (Vessel B) go with the vessel that is purchasing the scallop permit (Vessel A), then Vessel B will not be permitted to fish for anything it used to have a permit for.

*Rationale for rejection:* The stacking related alternatives described above were rejected for a variety of reasons. Primarily, the Council wants to maintain restrictions on who can stack permits so that fishing power does not increase as a result of stacking. The intent of the stacking alternatives left in the DEIS would increase flexibility and efficiency for limited access vessels, but maintain or reduce capacity by preventing increased fishing power from permits that have been stacked. The Council rejected the alternative with no limit on the number of permits that can be stacked because the intent of the stacking alternatives is that they are limited in nature – a mega vessel with lots of allocation is not the intent. The sideboard alternative was rejected

because it was modified that all permits would have to be stacked – so a vessel would not be left with other permits if it stacked its scallop permit.

### **3.6.2.7 Permit leasing**

This alternative would only allow a vessel to lease all of its allocation (open area DAS and access area trip allocations) on an annual basis. This alternative would prohibit a vessel from using some of its allocation to harvest scallops and lease out some of its allocation of DAS or access area trips.

*Rationale for rejection:* This alternative was rejected because the DEIS includes an option for DAS leasing and access area trip leasing – so this would be redundant. If both those leasing options are selected, it is assumed that a vessel could essentially lease its full allocation of DAS and access area trips, so this full permit option is not necessary. This would be more restrictive and would reduce flexibility than if vessels were permitted to lease DAS and/or access area trips separately.

### **3.6.3 Individual fishing quota (IFQ) management**

In general, permit owners would be allocated scallop catch in pounds rather than DAS and access area trips. It has not been defined if the allocation would be equal for permits within the same permit category, based on historical catch levels, or some combination of the two. It has not been determined if quota would be transferrable or if any other restrictions would be considered like maximum ownership restrictions, vessel upgrade restrictions, etc.

*Rationale for rejection:* There was very little support for IFQs expressed during scoping; in fact, most spoke against consideration of an IFQ program in this amendment. The primary need for this action is to comply with new MSRA requirements related to ACLs, which need to be implemented by March 1, 2011. Concerns were raised about the time needed to develop and analyze a full IFQ program, including required 2/3 referendum support in New England, so timing was a serious reason this alternative was rejected for this action.

### **3.6.4 Measures to revise how the NGOM TAC is calculated**

The scoping document included an option to consider alternative ways to calculate the hard-TAC that is used to manage general category scallop fishing in the NGOM. Amendment 11 adopted a hard-TAC for that area that is based on historical landings from the NGOM area since there is no stock assessment of this area. Currently the hard TAC for the area is 70,000 pounds. The Council does have the authority to revise that value in future frameworks, but the process for setting the TAC is the same until a formal assessment of the resource in that area is available.

One scoping comment from the Maine Department of Marine Resources recommended that these three options be considered. These three ideas were discussed at the July 8, 2008 Scallop Committee meeting and it was recommended that they be moved to the considered and rejected section.

- 3.6.4.1 Landings from state waters should not count against NGOM TAC so that people can still fish in state waters after the federal TAC has been reached**
- 3.6.4.2 GC scallops caught in the NGOM should not count against IFQ tailored to scallops outside the NGOM.**
- 3.6.4.3 All scallop vessels should abide by the 200 lb daily limit in the NGOM, instead of allowing the LA vessels 18,000 lbs while restricting all others.**

*Rationale for rejection:* These ideas are focused on restrictions in the NGOM, and not alternative ways to calculate the TAC, thus the Committee recommended they be rejected. It was discussed that the NGOM program is not perfect, but the Council discussed these precise aspects of the program during development of Amendment 11 and decided that in order to ensure that the TAC is not exceeded, all landings in the area would have to count against the TAC (including landings on IFQ and limited access vessels fishing, and from state waters on all federal vessels). Amendment 11 was specific in what catch should be considered in calculating the TAC and what catch should count against the TAC once the fishery begins. The actual TAC can be changed by framework, but the foundation of what catch history is used, what catch is applied against the TAC, and what catch is not applied should potentially be considered in an amendment. The Council reviewed the status of alternatives in Amendment 15 at the November 2008 Council meeting and left these alternatives in the considered and rejected section.

### **3.6.5 Allocation of general category IFQ by area**

Under Amendment 11, a limited access general category vessel is allocated an annual IFQ based on their contribution to historical landings. The allocation is not area-specific and a vessel is authorized to harvest their quota from any area (open areas or access areas until the fleetwide maximum number of trips is reached for that area). This section is considering allocating IFQ specific to each area so a vessel would be restricted to catch (or trade) their IFQ by area.

#### **3.6.5.1.1 No Action**

This alternative would maintain the current IFQ allocation program as an overall allocation that is not area specific. A vessel is authorized to harvest their quota from any area (open areas or access areas until the fleetwide maximum number of trips is reached for that area).

#### **3.6.5.1.2 All IFQ permit holders would receive area-based allocations**

All qualifying IFQ general category vessels would receive area-based IFQ based on their contribution to historical landings. For example, if a vessel's contribution factor is 0.25% of the total general category fishery then that vessel would receive 0.25% of the TAC available to the general category fishery in all areas open to that fishery in a given year. Hypothetically, in 2009 if 0.25% equals a total allocation of 6,250 pounds, rather than receiving an overall allocation of 6,250 pounds, a vessel would receive 3,250 pounds from open areas, 500 pounds from Closed Area I, 500 pounds from Delmarva, and 2,000 pounds from Elephant Trunk.

**3.6.5.1.3 Only IFQ permit holders above a certain contribution factor level would receive an area-based allocation**

The Committee developed this alternative to reduce administrative burden of Alternative 3.6.5.1.2. This alternative would only allocate area-specific quota to individuals that qualify for IFQ above a certain percentage. **The exact amounts have not been identified yet**, but for example, all qualifiers would receive a general IFQ (not area specific quota) unless they qualify for **1%** or more of the total general category allocation. The table below shows several hypothetical examples of how this alternative would work for different vessels.

**Table 22 – Hypothetical example of area specific allocations for general category IFQ permits**

<b>Contribution Percentage</b>	Open Area	Elephant Trunk	Delmarva	Closed Area I	Total
<b>0.10%</b>	N/A	N/A	N/A	N/A	2,500
<b>0.25%</b>	N/A	N/A	N/A	N/A	6,250
<b>1.0%</b>	13,000	8,000	2,000	2,000	25,000
<b>2.0%</b>	26,000	16,000	4,000	4,000	50,000

N/A – Since these vessels qualify for less than 1% of the total general category allocation they would receive an IFQ allocation that is not area specific.

*Rationale for rejection:* This alternative was designed to provide the benefits of access areas to individual general category vessels that are more “directed” and have a greater dependence on the scallop resource compared to other general category vessels that fish for other species. However, the majority of general category qualifiers are vessels that fish for a variety of species and have qualified for lower amounts, thus may not be as inclined to fish in access areas, and in some cases may not want area allocations in various access areas up and down the coast. There would likely be burdens associated with relatively small allocations per area and the need to trade area access, which would increase administrative burden as well. A handful of industry members that originally supported these alternatives during Amendment 11, informed the Advisory Panel and Committee during this action that this approach may not be feasible; therefore the Committee recommended moving it to the considered and rejected section.

**3.6.6 Separation of YTF incidental catch TAC between LA and LAGC fisheries**

This alternative would take the total YT TAC allocated to the fishery for access areas on GB and divide it between the LA and LAGC fleets. It would likely be divided the same as the scallop TAC (approximately 95% for the LA fleet and 5% for the LAGC fleet). Therefore, if one component of the fishery caught their allocation of YT bycatch in an access area, the other component of the fishery could remain fishing in the access area.

*Rationale for rejection:* The Committee recommended this option be considered and rejected for the same reasons it was rejected in previous action – NMFS is concerned there is no feasible way to monitor such a small bycatch TAC in real time. The total YT TAC is small to begin with and if only 5% of that is allocated to the general category fishery it is likely that bycatch information would not be available before the area should close.



### **3.6.6.1 Limits on effort in other directed fisheries from vessels that have leased scallop DAS and/or access area trips**

These alternatives would ensure that catch in other fisheries that scallop vessels have permits in does not increase as a result of leasing. The Committee included consideration of several alternatives designed to prevent increased mortality in other directed fisheries that scallop vessels have permits in. For example, if Vessel A leases all its scallop effort to Vessel B, should Vessel A be constrained to prevent increased capacity in other fisheries as a result of leasing in the scallop fishery. With leasing, the Scallop Committee intends to keep capacity conservation neutral in both the scallop fishery and other fisheries that scallop vessels participate in.

*The Scallop Committee has requested that the Interspecies Committee consider this issue and these specific options as soon as possible. Interspecies Committee met on Feb 18 and recommended that the Scallop Committee move this alternative to the considered and rejected section. Primary reason is - no legal authority to manage other fisheries unless there is a link to scallop conservation. Interspecies Committee recommends that the Scallop Committee move these alternatives to the considered and rejected section.*

Include several sideboard alternatives for other directed fisheries prosecuted by permitted scallop vessels that lease allocation to another vessel:

1. no restriction on fishing in other fisheries vessel has permit for
2. limit catch of other directed fisheries to vessels “best year” from historical landings
3. if lease more than 50% of total effort (DAS and access area trips) the vessel would not be able to participate in other fisheries
4. if lease any amount, must “stand down” from all fisheries for the number of days/trips equal to the lease
5. if lease any amount, a vessel not permitted to fish in other fisheries

## **4.0 AFFECTED ENVIRONMENT**

## **5.0 ENVIRONMENTAL IMPACTS**

## **6.0 CONSISTENCY WITH MAGNUSON-STEVENSON CONSERVATION AND MANAGEMENT ACT**

## **7.0 RELATIONSHIP TO OTHER APPLICABLE LAW**

## **8.0 LIST OF PUBLIC MEETINGS**

## **APPENDICES**