

Additional Correspondence

Designing Measures to Limit Accumulation of Fishing Privileges in the Northeast Multispecies Fishery

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Prepared by



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Abbreviations

ACE	Annual Catch Entitlement
ACL	Annual Catch Limits
BSAI	Bering Sea and Aleutian Islands
CFA	Community Fishing Association
CQE	Community Quota Entities
ECC	Eligible Crab Communities
FY	Fishing Year
IFQ	Individual Fishing Quota
IPQ	Individual Processing Quota
ITQ	Individual Transferable Quota
NEFMC	New England Fishery Management Council
NERO	New England Regional Office (of NMFS)
NMFS	National Marine Fisheries Service
PQS	Processing Quota Share
PSC	Potential Sector Contributions
QP	Quota Pounds
QS	Quota Share
TAC	Total Allowable Catch
VS	Vessel Size

1 Introduction

On June 23, 2010, the New England Fishery Management Council (NEFMC) approved the following goals to maintain diversity and limit accumulation of fishing privileges in the Northeast multispecies fishery:

- 1) Maintain inshore and offshore fleets;
- 2) To the extent possible, maintain a diverse groundfish fishery, including different gear types, vessel sizes, geographic locations, and levels of participation;
- 3) Maintain a balance in the geographic distribution of landings to protect fishing communities and the infrastructure they provide; and
- 4) Prohibit any person from acquiring excessive access to the resource, in order to prevent extraction of disproportionate economic rents from other permits holders.

In September 2010, the NEFMC published a white paper summarizing the diversification and accumulation issues facing the fishery. The white paper can be reviewed on the Gulf of Maine Research Institute web page at <http://www.gmri.org/upload/files/Fleet%20Div%20whitepaper.pdf>. A NEFMC presentation summarizing the Amendment 18 issues is available at the NEFMC web page: <http://www.nefmc.org/nemulti/planamen/Amend%2018/scoping%20hearings/A18%20Scoping%20Presentation.pdf>.

On December 21, 2011, a Federal Register notice was published (and later corrected on February 21, 2012) indicating that the NEFMC, with the New England Regional Office (NERO) of the National Marine Fisheries Service (NMFS) intended to develop an Environmental Impact Statement that would, if any action is taken, become Amendment 18. The notice also published a control date, the intent of which was “to alert the fishing industry and the public that any present or future accumulation of fishing privileges may be limited or may not be allowed after or prior to the published control date.” The control date was established as April 7, 2011.

Between January 17 and January 30, 2012, the NEFMC conducted a series of 10 scoping meetings.¹ In addition to the public meeting, the NEFMC accepted written scoping comments through March 1, 2012.² An overview of the comments received during scoping process can be found at http://www.nefmc.org/nemulti/council_mtg_docs/June%202012/10_A18_Comments_Corrected.pdf.

In August 2012, the Environmental Defense Fund contracted Northern Economics, Inc. to develop a discussion paper that describes how accumulation limits might be developed for the Northeast multispecies fishery in order to meet management objectives. The sections below lay out a range of alternatives for decision-makers to consider when designing accumulation limits.

A companion report, prepared as part of the same project, examines another approach to meeting management objectives by protecting fleet diversity. That report, titled *Designing Measures to Protect Fleet Diversity in the Northeast Multispecies Fishery*, is also available from the Environmental Defense Fund.

¹ See http://www.nefmc.org/nemulti/council_mtg_docs/June%202012/11_A18=SCOPING_HEARINGS.pdf for a transcript of comments received at the scoping hearings.

² See http://www.nefmc.org/nemulti/council_mtg_docs/June%202012/12_A18_ScopingComments.pdf for the written comments received by the NEFMC during the Amendment 18 scoping process.

An appendix, attached to each of these reports, contains a review of measures enacted in other catch share fisheries to prevent excessive consolidation, protect fleet diversity, and minimize impacts to fishing communities.

2 Designing Accumulation Limits in the Northeast Multispecies Fishery

The following sections are intended to guide the design of a measure to limit accumulation of fishing privileges by describing the various components that would comprise a measure. For each component, an array of possible options and sub-options are provided. These choices should not be viewed as all-inclusive. There are undoubtedly many other ways to limit accumulation. It is hoped, however, that the options described will at least provide a foundation upon which a measure to limit accumulation can be developed.

The authority to define a specific measure to limit accumulation could be held and exercised by the NEFMC (with approval by NMFS) or it could be devolved by the Council upon individual sectors. Under the first approach, the measure selected by the NEFMC would likely be applied uniformly across all vessels participating in sectors. Under the second approach, each sector would be required to develop its own measure to limit accumulation. Once the measure was selected, it would be incorporated into the sector's operations plan. A sector would assess the results of the measure each year in its annual report submitted to NMFS and the NEFMC.

There are several basic approaches to preventing excessive accumulation of fishing privileges in the Northeast multispecies fishery. Limits may be placed on one or more of the following:

- 1) Number of limited access NE multispecies permits—along with associated Potential Sector Contributions (PSC)—that can be owned or controlled.
- 2) Amount of PSC of individual stocks that can be owned or controlled.
- 3) Amount of PSC in the aggregate that can be owned or controlled.
- 4) Amount of Annual Catch Entitlement (ACE) of individual stock that be used on any vessel.
- 5) Amount of ACE in the aggregate that can be used on any vessel.

The design of each of these approaches is discussed separately.

In addition, it is important to define the concept of “ownership and control” for two reasons: 1) corporations and partnerships may own permits, PSC, and vessels; and 2) the relationships between companies, and between their human (as opposed to corporate) owners may be complex. The following hypothetical example illustrates this potential complexity:

Assume that there is a proposed measure that states that no more than two permits (P) may be owned by a single owner. Also assume that P1 is owned by ABC Corp, P2 is owned by JK, Inc., and P3 is owned by XXX, LLC. On the surface it appears that no owner has more than one permit.

If it is discovered that ABC Corp is a wholly owned subsidiary of JK, Inc., then JK, Inc. owns two permits and is at the limit. This would only be the case if the rules established to enforce the accumulation limits applied not only to the “registered owner” of the permit, but also to the owners of any companies that were “registered owners” of permits.

If the measure limiting accumulation of permits and PSC applies to owners of companies, as well as to the “registered owner”, then it is reasonable to assume that the measure would apply not only to companies that own the registered owner, but all companies in an ownership chain, all the way down to the actual human beings that own the companies that own the permits and PSC.

If we assume that the proposed measure requires that the “registered owners” must annually submit a list of all owners of the permit/PSC including not only the registered owner, but also down to the level

of actual human beings, here are hypothetical lists submitted by the registered owners of the three permits described above.

Permit	Registered Owners	2nd Tier Owners	3rd Tier Owners
P1	ABC Corp	JK, Inc.	Person A & Person B
P2	JK, Inc.	Person A & Person B	None
P3	XXX, LLC	XYZ Co.	Person B

With the additional information it is clear that Person A is a part owner of two permits, and that Person B is a part owner of three permits. It may be reasonable for decision makers to determine that the accumulation limits apply to full or part ownership regardless of the ownership shares, and that Person B is over the limit, and Person A is at the limit.

Assume now that Person B's attorneys submit a comment that they will file a lawsuit on the grounds that while Person B does indeed own 100 percent of XYZ Co., he only owns 1 percent of JK, Inc., and that therefore he should not be considered to have a controlling interest in P1 or P2. They argue that Person B should be allowed to buy an additional permit.

The designers of the accumulation limits see the logic of the arguments and augment their measure with provisions that require registered owners to report actual owners down to the level of human beings, and to also report the equity share of each owner at all levels. They also determine that an ownership entity (i.e. any person or company that has an ownership interest in a permit) must have an equity share of 10 percent or more of a permit in order to have a controlling interest the permit. Finally, they change the wording of the proposed measure such that "no ownership entity may have a controlling interest in more than two permits."

Here are lists submitted by the registered owners of the three permits in the hypothetical situation described above.

Permit	Registered Owners	2nd Tier Owners	3rd Tier Owners
P1	ABC Corp (100%)	JK Inc (100%)	Person A (99%) & Person B (1%)
P2	JK Inc (100%)	Person A (99%) & Person B (1%)	None
P3	XXX LLC (100%)	XYZ Co (100%)	Person A (100%)

With this information it appears that Person A has a controlling interest in two permits and may not buy additional permits, and that Person B has a controlling interest in only one permit and is allowed to buy an additional permit.

Unfortunately, the example is not over. Person C, the registered owner of permit P4, submits a letter to the decision makers complaining that Person A has an unfair advantage over other unmarried and childless permit holders. It turns out that while Person B is an accomplished skipper and fisherman, he is also the 15-year-old son of Person A. Person C's complaint goes on to argue that at a minimum, all family members living in same household regardless of age should be considered part of a single ownership entity.

Another commenter then adds that Person C wasn't completely forthright either. In fact Person C is a former crewmember of Person A's and the money for the P4 was provided by Person A, through an unsecured loan. Also, according to the commenter, P1 – P4 are all controlled by Person D. In spite of the fact there are no family or other legal ties linking Person D with Person A, Person D helped establish Person A in the fishing business years ago, and still makes many of the business decisions on the day-to-day operations.

The bottom line is that while it may be possible to establish measures that in theory limit the ownership and control of permits and PSC, it is very difficult to truly limit the influence that one person has on another.

2.1.1 Defining Ownership and Control if Accumulation Limits are Applied to Human Owners

The above discussion suggests that an accumulation limit measure can be applied to either:

- 1) the first level of permit ownership i.e. the registered owner of the permit, using information that is already reported to NMFS, or
- 2) the individual human beings that are behind the companies, corporations, and partnerships that are currently reported as owners of permits in the Northeast multispecies fishery.

The following suite of components, options and sub-options can be used to define ownership and control if it is determined that the measure should apply to individual human beings. In the following, the word “person” means a human being and does not include “corporate” persons.

Component 1) How will ownership entities be defined?

Ownership entities include all persons, companies, corporations, partnerships who are shareholders in a corporation owning or leasing a permit; who are partners (general or limited) to a permit owner or permit lessee; or any other company or person who, in any way, wholly or in part, owns or leases a multispecies groundfish permit. Under this definition, lessors of permits are not considered ownership entities, unless the lessor has ownership interest in a company that leases a permit.

The following options define different ways that family and household relationships will be treated. The options do not go into other types of relationships, e.g. extended family relationships or employer/employee relationships.

Option A. All persons are considered to be separate ownership entities regardless of age, family or household relationships, or any other relationship, documented or otherwise.

Option B. Persons that are part of the same household, as defined by the US Census at <http://www.census.gov/cps/about/cpsdef.html>, are considered to be part of the same ownership entity.

Option C. Persons living in the same household that are legally married and all children of either spouse that are 17 years of age or less that are living in that household, are considered to be part of the same ownership entity. Other persons outside of the immediate family unit that are living in the household are considered separate ownership entities.

Component 2) How will persons or companies that own a small percentage of a company be treated?

Ownership entities that have an ownership interest that is equal to or exceeds the percentage specified in the options below must be reported to NMFS by the registered owner/lessee of each multispecies groundfish permit prior to the beginning of each fishing year.

Option A. Ownership entities must be reported if they have an ownership interest of one percent or more equity share in the permit, unless the ownership entity is not a person—in which case there is no minimum equity share below which reporting is not required.

Option B. Ownership entities must be reported if they have an ownership interest of five percent or more equity share in the permit, unless the ownership entity is not a person—in which case there is no minimum equity share below which reporting is not required.

Option C. Ownership entities must be reported if they have an ownership interest of 10 percent or more equity share in the permit, unless the ownership entity is not a person—in which case there is no minimum equity share below which reporting is not required.

Component 3) The treatment of Permit Banks with respect to ownership and control of permits.

Option A. Permit Banks that are officially recognized as such by NMFS-NEO, are exempt from restrictions on the ownership and control of permits and/or PSC resulting from those permits.

Option B. Permit Banks are treated no differently than any other permit owner.

Component 4) The treatment of lienholders with respect to control of permits.

Option A. The potential that lienholders may exert a controlling interest in a permit is recognized. Because of this, a Permit Lien Registration System will be implemented. All liens on permits and PSC must be reported by both the registered owner of the permit and the lienholder. If in the future, it is determined by NMFS or the NEFMC that lienholders that may be exerting significant amount of control in the multispecies fishery, then limits on the accumulation of liens on permits in the fishery may be implemented.

Option B. While it is recognized that lienholders may exert some control over ownership entities, no action with respect to liens and lienholders will be taken.

2.1.2 Approaches that Limit Accumulation of Permits

Accumulation Limit Approach 1:

Limit the number of permits that may controlled by an Ownership Entity.

In this approach, the number of permits that may be controlled by an owner is limited. Under this approach, owners are defined as either the “registered owner/lessee” of the permit or as “Ownership Entities” as defined in Section 3.3.2 above.

Component 1) The number of permits that may be controlled by an owner is limited as specified by the chosen option. Provisions for owners that controlled more than the limit prior to approval of this alternative are found in Components 4 and 5.

Option A. No more than five permits may be controlled by an owner.

Option B. No more than 10 permits may be controlled by an owner.

Option C. No more than 15 permits may be controlled by an owner.

Option D. No more than 25 permits may be controlled by an owner.

Component 2) Definition of control with respect to the permit accumulation limit.

Option A. The permit is deemed to be controlled by the registered owner/lessee of the permit. The lessor is not considered an owner with respect to this measure.

Option B. The permit is deemed to be controlled by all reported ownership entities associated with the permit. Ownership entities are defined in Section 3.3.2.

Option C. The permit is deemed to be controlled by the ownership entity that has the largest ownership interest in the permit. If more than one ownership entity has the “largest” ownership interest, then all are considered to control the permit.

Option D. The permit is deemed to be controlled by any ownership entity that has an ownership interest equal to or greater than the amount chosen from the sub-options below.

Sub-option a. 5 percent or more.

Sub-option b. 10 percent or more.

Sub-option c. 25 percent or more.

Sub-option d. 35 percent or more.

Component 3) NMFS responsibility with respect to permit accumulation limits.

NMFS must review all permit transfer requests. NMFS will disallow the transfer if the transferee will exceed the permit limit with the additional PSC. Prior to the beginning of the fishing year NMFS will send a notice to all owners with their determination of permit ownership and control. Owners may appeal the findings.

Option A. In addition to the above, NMFS must make available to the public prior to the beginning of each fishing year, a list of all permit owners and lessees, and the number of permits they control. (While this option may appear to be a violation of confidentiality restrictions, it is possible that the Secretary of Commerce can determine that the information should be made available to the public.)

Option B. NMFS need not publish a list of all owners and the number of permit they control.

Component 4) Grandfather Rights for owners in excess of the limit.

Option A. Owners that are in excess of the limit are not “grandfathered in” and must divest their ownership interests in the permits such that they no longer control permits in excess of the limit. Divestiture may be through the transfer of permits or through changes in ownership interests.

Sub-option a. Permits must be divested using a last-in, first-out methodology (i.e., the most recently acquired permit must be the first divested).

Sub-option b. Permits may be divested without regard to the date of acquisition.

Option B. Owners that were excess of the limit prior to the control date for this measure are “grandfathered in” and need not divest of permits acquired before the control date. Owners that acquired a controlling interest in one or more excess permit after the control date must divest permits. Divestiture may be through the transfer of permits or through changes in ownership interests.

Sub-option a. Specific permits acquired after the control date must be divested.

Sub-option b. Permits may be divested without regard to the date of acquisition.

Component 5) The Control Date for permit accumulation limits.

Option A. The Control Date of this measure is the April 7, 2011 control date as published by NMFS in the Federal Register on February 21, 2012.

Option B. The Control Date of this measure is an as yet unspecified date that may be chosen by the NEFMC during its deliberations regarding this alternative. The NEFMC must notify the public using standard protocols that they have set this control date.

Option C. The Control Date of this measure is the date the final rule is approved by the Secretary of Commerce.

Option D. No Control Date is necessary for this measure. (Choose this option if grandfather rights under Component 4 are not conferred.)

Component 6) How will compliance with the measure be monitored and enforced?

Option A. Each sector shall have the responsibility to ensure that the limit on the accumulation of permits is not exceeded by its members. Prior to the start of each fishing year, the sector shall submit a Pre-season Permit Limitation Plan to NMFS as part of its sector operations plan. The Permit Limitation Plan would document the number of permits that may be controlled by an owner in the sector (depending on the option chosen under Component 1). At the end of the fishing year, the sector shall submit a Final Permit Report (to be included as part of its annual report to NMFS and the Council) that documents the number of permits that were controlled by each owner in the sector.

Option B. The NMFS Regional Administrator would have the authority to issue sanctions against a sector if at the end of the fishing year the sector is in violation of the limit on the accumulation of permits.

2.1.3 Approaches that Limit Accumulation of PSC

The following two approaches place limits on amount of PSC that may be controlled by owners. Approach 2 limits the amount of PSC of individual stocks that may be controlled, while Approach 3 limits the amount of PSC over all stocks combined. It is conceivable that either or both approaches may be used to limit accumulation of PSC.

Accumulation Limit Approach 2:

Limit the amount of PSC of individual stocks that may controlled by Permit Owners.

Accumulation Limits will be applied to PSC individual stocks as specified in the options below.

Component 1) is a matrix that can be used with Components 1 – 3.

Option A. Limits are applied to all stocks individually.

Option B. Limits are applied to particular stocks as selected by the NEFMC and NMFS.

Table 1. Matrix for Assigning PSC Limits to Groundfish Stocks

Stock Name	PSC Limit Imposed (Yes/No)	PSC Limit (percent)
Georges Bank Cod East		
Georges Bank Cod		
Gulf of Maine Cod		
Georges Bank Haddock East		
Georges Bank Haddock		
Gulf of Maine Haddock		
Georges Bank Yellowtail Flounder		
Southern NE/Mass. Yellowtail Flounder		
Cape Cod/Gulf of Maine Yellowtail Flounder		
Plaice		
Witch Flounder		
Georges Bank Winter Flounder		

Stock Name	PSC Limit Imposed (Yes/No)	PSC Limit (percent)
Gulf of Maine Winter Flounder		
Southern NE Winter Flounder		
Redfish		
White Hake		
Pollock		

Component 2) Shall the PSC accumulation limit be set the same for all included stocks?

Option A. The PSC accumulation limit is set at the same level for all included stocks.

Option B. The PSC accumulation limit may vary across individual stocks.

Component 3) What is the size of the PSC ownership limit? Provisions for “grandfather rights” are found in Components 7 and 8.

Option A. 0.5 percent of the PSC issued.

Option B. 1.0 percent of the PSC issued.

Option C. 2.5 percent of the PSC issued.

Option D. 5.0 percent of the PSC issued.

Option E. 10.0 percent of the PSC issued.

Component 4) Definition of control with respect to PSC accumulation limits.

Under this component it is presumed that PSC are additive across permits.

Option A. PSC are deemed to be controlled by the registered owner of the permit.

Option B. PSC are deemed to be controlled by all ownership entities (as defined in Section 3.3.2 above) associated with the permit.

Option C. PSC are deemed to be controlled by the ownership entity that has the largest ownership interest in the permit. If two or more ownership entities have the “largest” ownership interest, then all are considered to control the permit.

Option D. The permit is deemed to be controlled by any ownership entity that has an ownership interest equal to or greater than the amount chosen from the sub-options below.

Sub-option a. 5 percent or more.

Sub-option b. 10 percent or more.

Sub-option c. 25 percent or more.

Sub-option d. 35 percent or more.

Component 5) What constraints does the PSC limit impose?

Option A. Owners that meet or exceed the PSC limit for a particular stock may not acquire control of any additional PSC for **that stock**.

Option B. Owners that meet or exceed the PSC limit for a particular stock may not acquire control of any additional PSC for **any stock**.

Component 6) NMFS responsibility with respect to PSC accumulation limits.

NMFS must review all permit and PSC transfer requests. NMFS will disallow the transfer if the transferee will exceed a PSC limit with the additional PSC. Prior to the beginning of the fishing

year, NMFS will send a notice to all owners with NMFS determination of permit and PSC ownership and control. Owners may appeal the findings.

Option A. In addition to the above, NMFS must make available to the public, a list of all owners and the PSC percentage for each stock they control, prior to the beginning of each fishing year. (While this option may appear to be a violation of confidentiality restrictions, it is possible that the Secretary of Commerce can determine that the information should be made available to the public.)

Option B. NMFS need not publish a list of all owners and the PSC percentage for each stock they control.

Component 7) Grandfather Rights for owners in excess of the limit.

Option A. Owners that are in excess of the limit are not grandfathered in and must divest their ownership interests in permits such that they no longer control PSC in excess of the limit. Divestiture may be through the transfer of permits or through changes in ownership interests below levels of control as defined in Component 4.

Sub-option a. Excess PSC and associated permits must be divested using a last-in, first-out methodology (i.e., the most recently acquired permit must be the first divested).

Sub-option b. Excess PSC and associated permits may be divested without regard to the date of acquisition.

Option B. Owners that were excess of the PSC limit prior to the control date for this measure are “grandfathered in” and need not divest of PSC associated with permits acquired before the control date. Owners that acquired a controlling interest in an excess amount of PSC after the control date must divest PSC and associated permits. Divestiture may be through the transfer of permits or through reductions in ownership interests below levels of control as defined in Component 4.

Sub-option a. Excess PSC and associated permits acquired after the control date must be divested using a last-in, first-out methodology (i.e., the most recently acquired permit must be the first divested).

Sub-option b. Excess PSC and associated permits after the control date may be divested without regard to the date of acquisition.

Component 8) The Control Date for PSC accumulation limits.

Option A. The Control Date of this measure is the April 7, 2011 control date as published by NMFS in the Federal Register on February 21, 2012.

Option B. The Control Date of this measure is an as yet unspecified date that may be chosen by the NEFMC during its deliberations regarding this alternative. The NEFMC must notify the public using standard protocols that they have set this control date.

Option C. The Control Date of this measure is the date the final rule is approved by the Secretary of Commerce.

Option D. No Control Date is necessary for this measure. (Choose this option if grandfather rights under Component 7 are not conferred.)

Component 9) How will compliance with the measure be monitored and enforced?

Option A. Each sector shall have the responsibility to ensure that the limit on the amount of PSC that may be controlled by permit owners is not exceeded by its members. Prior to the start of

each fishing year, the sector shall submit a Pre-season PSC Limitation Plan to NMFS as part of its sector operations plan. The PSC Limitation Plan would document the amount of PSC that may be controlled by permit owners (depending on the option chosen under Component 3). At the end of the fishing year, the sector shall submit a Final PSC Limitation Report (to be included as part of its annual report to NMFS and the Council) that documents the amount of PSC that was controlled by permit owners in the sector.

Option B. The NMFS Regional Administrator would have the authority to issue sanctions against a sector if at the end of the fishing year the sector is in violation of the limit on the amount of PSC that may be controlled by permit owners.

Accumulation Limit Approach 3:

Limit the aggregate amount of PSC over all stocks that may controlled by Permit Owners.

Component 1) Accumulation Limits will be applied to all PSC in aggregate, and all PSC will be assigned a weighting that will determine each owner's Aggregate PSC Percentage.

Option A. For purposes of the PSC accumulation limits, all stocks will be weighted equally. Since there are 17 stocks, the "PSC Denominator" will be set equal to 1,700. The sum of PSC controlled by the owner over all stocks divided by the PSC Denominator and multiplied by 100 shall be defined as the owner's Aggregate PSC Percentage.

Option B. For purposes of the PSC accumulation limits, PSC of all stocks will be weighted in terms of the aggregate value of the Annual Catch Limits (ACL) during Fishing Year (FY) 2010, assuming that 100% of each stock was harvested at the average ex-vessel price from that year. The PSC Denominator will be set equal to the sum over all stocks of the FY 2010 ACL of each stock multiplied by the average FY 2010 ex-vessel price for that stock. Similarly, the PSC of each stock controlled by an owner will be multiplied by the FY 2010 ACL and the FY 2010 ex-vessel price for that stock and summed over all stocks. This amount divided by the PSC Denominator and multiplied by 100 shall be defined as the owner's Aggregate PSC Percentage.

Option C. For purposes of the PSC accumulation limits, PSC of all stocks will be weighted in terms of the total value of the ACL during the previous year, assuming that 100 percent of each stock was harvested at the average ex-vessel price from that year. The PSC Denominator will be set equal to the sum over all stocks of the previous year's ACL of each stock multiplied by the previous year's average ex-vessel price for that stock. Similarly, the PSC of each stock controlled by an owner will be multiplied by the previous year's ACL and the previous year's ex-vessel price for that stock and summed over all stocks. This amount divided by the PSC Denominator and multiplied by 100 shall be defined as the owner's Aggregate PSC Percentage.

Option D. For purposes of the PSC accumulation limits, PSC of all stocks will be weighted in terms of the estimated total value of the ACL in the current fishing year, assuming that 100 percent of each stock will be harvested at the average ex-vessel price from the previous year. The calculation of the Aggregate PSC Percentage will be the same as in Option C, except that the ACLs for the current year will be used.

Notes: Options A and B above lead to accumulation limits with a fixed PSC Denominator that will not change over time. Under Options C and D, the PSC Denominator will change over time in response to changes in the fishery. If the PSC Denominator is variable, then it is possible an owner will find themselves in excess of the PSC Accumulation Limit through no action of their own. If, for example, the PSC Denominator uses the current ACL with the previous year's prices,

and the ACL of a particular stock increases significantly, then owners that had in previous years purchased PSC up to the limit would find themselves owning an amount in excess of the limit. Conversely, an argument can be made that the PSC Denominator should reflect current conditions in the fishery.

Component 2) What is the size of the PSC ownership limit?

- Option A.* 0.5 percent of the PSC Denominator.
- Option B.* 1.0 percent of the PSC Denominator.
- Option C.* 2.5 percent of the PSC Denominator.
- Option D.* 5.0 percent of the PSC Denominator.
- Option E.* 10.0 percent of the PSC Denominator.

Component 3) Definition of Control with respect to PSC accumulation limits.

- Option A.* PSC are deemed to be controlled by the registered owner of the permit.
- Option B.* PSC are deemed to be controlled by all ownership entities (as defined in Section 3.3.2) associated with the permit.
- Option C.* PSC are deemed to be controlled by the ownership entity that has the largest ownership interest in the permit. If two or more ownership entities have the “largest” ownership interest, then all are considered to control the permit.
- Option D.* PSC are deemed to be controlled by any ownership entity that has an ownership interest in the permit equal to or greater than the amount chosen from the sub-options below.
 - Sub-option a. 5 percent or more.
 - Sub-option b. 10 percent or more.
 - Sub-option c. 25 percent or more.
 - Sub-option d. 35 percent or more.

Component 4) NMFS responsibility with respect to aggregate PSC accumulation limits.

NMFS must review all permit and PSC transfer requests. NMFS will disallow the transfer if the transferee will exceed the aggregate PSC limit with the additional PSC. Prior to the beginning of the fishing year NMFS will send a notice to all owners with NMFS determination of permit and PSC ownership and control. Owners may appeal the findings.

Option A. In addition to the above, NMFS must make available to the public a list of all owners and the aggregate PSC percentage they control, prior to the beginning of each fishing year. (While this option may appear to be a violation of confidentiality restrictions, it is possible that the Secretary of Commerce can determine that the information should be made available to the public.)

Option B. NMFS need not publish a list of all owners and their aggregate PSC percentages.

Component 5) Grandfather Rights for owners in excess of the limit.

Option A. Owners that are in excess of the limit are not grandfathered in and must divest their ownership interests in permits such that they no longer control PSC in excess of the limit. Divestiture may be through the transfer of permits or through changes in ownership interests below levels of control as defined in Component 3.

Sub-option a. Excess PSC and associated permits must be divested using a last-in, first-out methodology (i.e., the most recently acquired permit must be the first divested).

Sub-option b. Excess PSC and associated permits may be divested without regard to the date of acquisition.

Option B. Owners that were in excess of the PSC limit prior to the control date for this measure are “grandfathered in” and need not divest of PSC associated with permits acquired before the control date. Owners that acquired a controlling interest in an excess amount of PSC after the control date must divest PSC and associated permits. Divestiture may be through the transfer of permits or through reductions in ownership interests below levels of control as defined in Component 3.

Sub-option a. Excess PSC and associated permits acquired after the control date must be divested using a last-in, first-out methodology (i.e., the most recently acquired permit must be the first divested).

Sub-option b. Excess PSC and associated permits after the control date may be divested without regard to the date of acquisition.

Component 6) The Control Date for permit accumulation limits.

Option A. The Control Date of this measure is the April 7, 2011 control date as published by NMFS in the Federal Register on February 21, 2012.

Option B. The Control Date of this measure is an as yet unspecified date that may be chosen by the NEFMC during its deliberations regarding this alternative. The NEFMC must notify the public using standard protocols that they have set this control date.

Option C. The Control Date of this measure is the date the final rule is approved by the Secretary of Commerce.

Option D. No Control Date is necessary for this measure. (Choose this option if grandfather rights under Component 5 are not conferred.)

Component 7) How will compliance with the measure be monitored and enforced?

Option A. Each sector shall have the responsibility to ensure that the limit on the amount of PSC that may be controlled by permit owners is not exceeded by its members. Prior to the start of each fishing year, the sector shall submit a Pre-season PSC Limitation Plan to NMFS as part of its sector operations plan. The PSC Limitation Plan would document the amount of PSC that may be controlled by permit owners (depending on the option chosen under Component 2). At the end of the fishing year, the sector shall submit a Final PSC Limitation Report (to be included as part of its annual report to NMFS and the Council) that documents the amount of PSC that was controlled by permit owners in the sector.

Option B. The NMFS Regional Administrator would have the authority to issue sanctions against a sector if at the end of the fishing year the sector is in violation of the limit on the amount of PSC that may be controlled by permit owners.

2.1.4 Approaches that Limit the Use of ACE on Vessels

The following two approaches place limits on the amount of ACE that may be used on any vessel. Approach 4 limits the amount of ACE of individual stocks that may be used, while Approach 5 limits the amount of ACE over all stocks combined. It is conceivable that either or both may be used to limit

the use of ACE. Under both approaches it is assumed that the “use of ACE” means groundfish caught (whether retained or discarded) by a vessel using a multispecies groundfish permit within a Sector.

Accumulation Limit Approach 4:
Limit the amount of ACE of individual stocks that may used on a vessel

Component 1) Limits will be applied to the use of ACE of individual stocks as specified in the options below. Table 2 is a matrix that can be used with Components 1 – 3.

Option A. All stocks individually.

Option B. Stocks as selected by the NEFMC and NMFS.

Table 2. Matrix for Assigning PSC Limits to Groundfish Stocks

Stock Name	ACE Use Limit Imposed (Yes/No)	ACE Limit (percent)
Georges Bank Cod East		
Georges Bank Cod		
Gulf of Maine Cod		
Georges Bank Haddock East		
Georges Bank Haddock		
Gulf of Maine Haddock		
Georges Bank Yellowtail Flounder		
Southern NE/Mass. Yellowtail Flounder		
Cape Cod/Gulf of Maine Yellowtail Flounder		
Plaice		
Witch Flounder		
Georges Bank Winter Flounder		
Gulf of Maine Winter Flounder		
Southern NE Winter Flounder		
Redfish		
White Hake		
Pollock		

Component 2) Shall the ACE use limit be set the same for all included stocks?

Option A. The ACE use limit is set at the same level for all included stocks.

Option B. The ACE use limit may vary across individual stocks.

Component 3) What is the size of the ACE use limit?

Option A. 0.5 percent of the ACE issued to sectors.

Option B. 1.0 percent of the ACE issued to sectors.

Option C. 2.5 percent of the ACE issued to sectors.

Option D. 5.0 percent of the ACE issued to sectors.

Option E. 10.0 percent of the ACE issued to sectors.

Component 4) What constraints do the ACE use limits impose?

Option A. Any vessel that uses the ACE limit for a particular stock may not catch any additional amounts of that stock. One or both of the sub-options must also be selected.

Sub-option a. The vessel is not precluded from taking additional trips but may not fish:

- 1) in any area if use limits for plaice, witch flounder, redfish, white hake, or pollock have been reached.
- 2) in GOM East if a use limit for a GOM East stock has been reached.
- 3) in the GOM if a use limit for a GOM stock has been reached.
- 4) in the GB if a use limit for GB stock has been reached.
- 5) in the Cape Cod/GOM areas if the use limit for Cape Cod/GOM yellowtail flounder has been reached.
- 6) in the SNE/MA area if the use limit for SNE/MA yellowtail flounder has been reached.
- 7) in the SNE if the use limit for SNE winter flounder has been reached.

Sub-option b. If the vessel chooses to take additional trips under the groundfish permit, it must carry an observer, an at-sea monitor or use an electronic monitoring system certified by NMFS for use in "an ACE use limit attainment" situation.

Option B. Any vessel that uses the ACE limit for a particular stock may not take any additional trips under a multispecies groundfish permit.

Option C. Any vessel that uses the ACE limit for a particular stock may continue to fish, and must retain and land all catches of the limited stock. The ex-vessel value of the landings of this stock above the limit must be donated to a NMFS certified permit bank. Donated value will be calculated at the average ex-vessel price for that stock for the year. The vessel must also carry an observer, an at-sea monitor or use an electronic monitoring system certified by NMFS for use in "an ACE use limit attainment" situation.

Component 5) Grandfather Rights for ACE Use Limits

Option A. A vessel whose catch history of a stock during Amendment 16 "catch history years" exceeds the use limit for the stock relative to the total catch history of the stock during Amendment 16 "catch history years" has grandfather rights. The vessel may use up to its "earned catch history percentage" for the stock, but once that level is used it must follow the use limit constraints from Component 4.

Option B. A vessel that has used ACE for a particular stock in excess of the use limit during the fishing year prior to the control date has grandfather rights. The vessel may use ACE up to its highest use percentage in previous years or the use limit, whichever is higher. Once that "grandfathered in" level is used, the vessel must follow the use limit constraints from Component 4.

Sub-option a. The Control Date for use limits is the date chosen by the NEFMC during its deliberations regarding this alternative. The NEFMC must notify the public using standard protocols that they have set this control date.

Sub-option b. The Control Date of this measure is the date the final rule regarding ACE use limits is approved by the Secretary of Commerce.

Option C. No grandfather rights will be conferred with respect to ACE use limits.

Component 6) Ability of the RD to adjust ACE use limits.

Option A. The ACE use limits will be applied to all stocks during the entire FY. The RD may not make adjustments to the ACE use limits.

Option B. ACE use limits may be temporarily waived for a particular stock at the discretion of the NMFS Regional Administrator after the ninth month of the FY, if the Regional Administrator determines that the ACL of the stock (or of other stocks³) will not be harvested.

Option C. ACE use limits may be temporarily waived for a particular stock at the discretion of the Regional Administrator after the sixth month of the FY, if the Regional Administrator determines that the ACL of the stock (or of other stocks³) will not be harvested.

Option D. ACE use limits may be temporarily waived for a particular stock at the discretion of the Regional Administrator at the beginning of the FY, if the Regional Administrator determines that the ACL of the stock (or of other stocks³) will not be harvested.

Component 7) How will compliance with the measure be monitored and enforced?

Option A. Each sector shall have the responsibility to ensure that the limit on the amount of ACE that may be used on a vessel is not exceeded by its members. Prior to the start of each fishing year, the sector shall submit a Pre-season ACE Limitation Plan to NMFS as part of its sector operations plan. The ACE Limitation Plan would document the amount of ACE that may be used on a vessel in the sector (depending on the option chosen under Component 3). At the end of the fishing year, the sector shall submit a Final ACE Limitation Report (to be included as part of its annual report to NMFS and the Council) that documents the amount of ACE that was used by each vessel in the sector

Option B. The NMFS Regional Administrator would have the authority to issue sanctions against a sector if at the end of the fishing year the sector is in violation of the limit on the amount of ACE that may be used on a vessel

Accumulation Limit Approach 5: Limit the amount of overall amount of ACE that may be used on a vessel

Component 1) Limits will be applied to use of ACE in the aggregate on a vessel for each fishing year. ACE of each stock will be assigned a weighting that will determine the overall amount of ACE that can be used.

Option A. For purposes of ACE use limits, all stocks will be weighted equally. The “ACE Use Denominator” will be set equal to the total ACL available to sectors over all stocks. The sum of ACE over all stocks used on a vessel divided by ACE Use Denominator and multiplied by 100 shall be defined as the vessel’s Aggregate ACE Use Percentage.

Option B. For purposes of ACE use limits, all stocks will be weighted in terms of the estimated aggregate value of the Sector ACL in the current year. The ACE Use Denominator will be set equal to the sum over all stocks of the current year Sector ACL of each stock multiplied by the average ex-vessel price for that stock from the previous year. Similarly, the ACE of each stock used by a vessel will be multiplied by the average ex-vessel price for that stock from the previous year and summed over all stocks. This amount divided by the ACE Use Denominator and multiplied by 100 shall be defined as the vessel’s Aggregate ACE Use Percentage.

Component 2) What is the size of the Aggregate ACE Use Limit?

Option A. 0.5 percent of the ACE Use Denominator.

³ The clause “or of other stocks” has been added, because it is theoretically possible that the Vessel Size designations and use limitations on Stock A may adversely affect harvests of Stock B, particularly if Stock A is an unavoidable incidental catch species in the fishery for Stock B.

Option B. 1.0 percent of the ACE Use Denominator.

Option C. 2.5 percent of the ACE Use Denominator.

Option D. 5.0 percent of the ACE Use Denominator.

Option E. 10.0 percent of the ACE Use Denominator.

Component 3) What constraint does the Aggregate ACE Use Limit impose?

Option A. Any vessel that reaches the Aggregate ACE Use Limit may not take any additional trips under a multispecies groundfish permit.

Component 4) Grandfather Rights for Aggregate ACE Use Limits

Option A. A vessel that during any fishing year (from 2009 forward to the control date) used ACE in excess of what would have been the Aggregate ACE Use Limit for that year has grandfather rights. The vessel may use ACE up to its highest Aggregate ACE Use Percentage in previous years or the Aggregate ACE Use Limit, whichever is higher. Once that “grandfathered in” level is used, the vessel must comply with the constraint in Component 3.

Sub-option a. The Control Date for use limits is the date chosen by the NEFMC during its deliberations regarding this alternative. The NEFMC must notify the public using standard protocols that they have set this control date.

Sub-option b. The Control Date of this measure is the date the final rule regarding ACE use limits is approved by the Secretary of Commerce.

Option B. No grandfather rights will be conferred with respect to Aggregate ACE Use Limits.

Component 5) Ability of the RD to adjust Aggregate ACE use limits.

Option A. The Aggregate ACE use limit will be applied for the entire FY. The RD may not make adjustments to the Aggregate ACE use limits.

Option B. The Aggregate ACE use limit may be temporarily waived at the discretion of the NMFS Regional Administrator after the ninth month of the FY, if the Regional Administrator determines that the Aggregate ACE use limit will adversely affect harvest of ACLs of particular stocks.

Sub-option a. The RD may waive the Aggregate ACE use limits only if stock level ACE use limits remain in effect.

Sub-option b. The RD may waive the Aggregate ACE use limits without regard to stock-level ACE use limits.

Option C. The Aggregate ACE use limit may be temporarily waived at the discretion of the NMFS Regional Administrator after the sixth month of the FY, if the Regional Administrator determines that the Aggregate ACE use limit will adversely affect harvest of ACLs of particular stocks.

Sub-option a. The RD may waive the Aggregate ACE use limits only if stock level ACE use limits remain in effect.

Sub-option b. The RD may waive the Aggregate ACE use limits without regard to stock-level ACE use limits.

Option D. The Aggregate ACE use limit may be temporarily waived at the discretion of the NMFS Regional Administrator at the beginning of the FY, if the Regional Administrator determines that the Aggregate ACE use limit will adversely affect harvest of ACLs of particular stocks.

Sub-option a. The RD may waive the Aggregate ACE use limits only if stock level ACE use limits remain in effect.

Sub-option b. The RD may waive the Aggregate ACE use limits without regard to stock-level ACE use limits.

Component 6) How will compliance with the measure be monitored and enforced?

Option A. Each sector shall have the responsibility to ensure that the limit on the amount of ACE that may be used on a vessel is not exceeded by its members. Prior to the start of each fishing year, the sector shall submit a Pre-season ACE Limitation Plan to NMFS as part of its sector operations plan. The ACE Limitation Plan would document the amount of ACE that may be used on a vessel in the sector (depending on the option chosen under Component 2). At the end of the fishing year, the sector shall submit a Final ACE Limitation Report (to be included as part of its annual report to NMFS and the Council) that documents the amount of ACE that was used by each vessel in the sector.

Option B. The NMFS Regional Administrator would have the authority to issue sanctions against a sector if at the end of the fishing year the sector is in violation of the limit on the amount of ACE that may be used on a vessel. As under Option A, each sector shall have the responsibility to ensure that the vessel limit is not exceeded by its members. However, no plans or reports will be required to be submitted to NMFS. Each sector would have the authority to issue sanctions against a member who is in violation of the ACE limitation measure.

Appendix: Measures Used in Other Catch Share Programs to Prevent Excessive Consolidation, Protect Fleet Diversity, and Minimize Community Impacts

This appendix summarizes management measures that have been implemented in other catch share programs to prevent excessive consolidation of fishing privileges, maintain diversity of the fishing fleet, and minimize adverse impacts to fishing communities. There is clearly some degree of overlap and interdependence among these three issues and the measures proposed to address them. For example, accumulation limits have been considered the “go to” mechanism to address all three issues (Bradley 2011). However, it is instructive to categorize past measures according to the issue that appears to be the one that they were primarily designed to address.⁴ In this summary, therefore, measures will be differentiated as follows:

Consolidation Measures: Measures, such as accumulation limits or consolidation caps, that prohibit any individual or entity from acquiring excessive access to a fishery by placing an upper limit on the amount of quota or permits any one individual or entity may possess or use.

Fleet Diversity Measures: Measures that maintain a diverse fishery, including different gear types, vessel sizes, and levels of participation, by allocating quota or restricting the transfer of quota among vessels of different sizes and types, preserving the owner-operator nature of the fishery, limiting and discouraging corporate ownership of the fishery, or facilitating new entry to the fishery.

Community Protection Measures: Measures that protect the economic viability of fishing communities and the infrastructure they provide by maintaining a balance in the geographic distribution of harvests and landings in a fishery.

The catch share programs discussed in this chapter were chosen because they best demonstrate the wide array of measures that have been used to address the above issues. While the emphasis is on programs implemented in fisheries occurring in the U.S. exclusive economic zone (EEZ), Iceland’s Individual Transferable Quota (ITQ) system is also included because of its unique set of relevant measures.

Gulf of Alaska Pacific Halibut and Sablefish Longline Fisheries Individual Fishing Quota Program

The ITQ program for the Pacific halibut and sablefish longline fisheries off Alaska was implemented in 1995. The halibut and sablefish fisheries have historically supported a large number of small vessels (Fina 2011; NMFS 2009a), including catcher vessels that deliver their catch shoreside for processing and freezer vessels that process fish onboard as well as catch fish.

Under this catch share program and the other catch share programs discussed in this chapter, harvesting quota shares (QS) were created in the relevant fisheries and issued to harvesters. QS are a revocable privilege that allow the holder to harvest a specific percentage of the annual total allowable

⁴ Preventing excessive consolidation, maintaining fleet diversity, and minimizing adverse economic impacts to fishing communities are among the stated management goals and objectives of many catch share programs in U.S. fisheries (the first and third goals comply with national standards 4 and 8 of the Magnuson-Stevens Act, respectively—these two national standards and the eight others guide promulgation of all federal fishery management plans). However, these management goals and objectives are not always explicitly linked to specific management measures implemented in a given catch share program.

catch (TAC) in an ITQ fishery. Each year the percentage of catch represented by the QS is converted into poundage. These annual allocations are referred to by various terms, depending on the particular catch share program.⁵ For simplicity the following discussion will consistently refer to annual allocations as quota pounds (QP). The size of each annual QP allocation is based on the amount of QS held in relation to the QS pool in the ITQ fishery—a person holding one percent of the QS pool receives QP to harvest one percent of the annual TAC in the ITQ fishery.

Consolidation Measures

No single individual may own more than specified percentages the total existing QS nor may a single vessel harvest more than specified percentages of the QP. The caps vary by management area and species shown in the table below. In general, the sale of QP is prohibited without the underlying QS, although there are exceptions: for example, freezer vessel QP may be sold, subject to ownership cap restrictions.

Species	Southeast Alaska		Gulf of Alaska		Bering Sea & Aleutians		All Management Areas Combined	
	QS Cap	QP Cap	QS Cap	QP Cap	QS Cap	QP Cap	QS Cap	QP Cap
Halibut	1.0%	1.0%	0.5%	NA	1.5%	NA	NA	0.5%
Sablefish	1.0%	1.0%	NA	NA	NA	NA	1.0%	1.0%

Note: NA means there is no applicable cap for that area.

In addition, to ensure that the program does not substantially reduce the number of entities with an interest in the halibut and sablefish fisheries, any initial allocation of QS that would have entitled the owner to less than 20,000 lbs of harvests under the 1994 TAC is considered a "block." Any block must be transferred as a whole and cannot be consolidated with any other block for purpose of transfers. To prevent the consolidation of blocked QS and to ensure that smaller aggregate units would be available on the market, the ownership of more than two blocks, or more than one block and any amount of unblocked QS in any regulatory area, is prohibited.⁶

Fleet Diversity Measures

To maintain the distribution of the TAC among the vessel size classes and prevent QP issued to small vessels from being bought out by larger vessels, vessel classes were created for each fishery, and QP can be fished only by vessels of the same class as the vessel to which the QP was initially issued. For sablefish, three vessel classes were created based on vessel size and type: freezer vessels, catcher vessels less than 60 feet in length, and catcher vessels greater than 60 feet in length. Four vessel classes were created for halibut: freezer vessels, catcher vessels less than 35 feet in length, catcher vessels between 35 and 60 feet in length, and catcher vessels greater than 60 feet in length. An amendment to the program allowed most catcher vessel QP to be fished by catcher vessels of a smaller class.

⁵ Quota pounds is the term used in the Pacific Groundfish Trawl Rationalization Program. ITQ programs implemented in federally managed fisheries off Alaska refer to the annual allocation as individual fishing quota, while the ITQ system for Icelandic fisheries uses the term catch share.

⁶ The block requirement created a variety of block sizes that were available for transfer, including small blocks of QS that could be purchased at a relatively low cost by crew members and new entrants. As the experience of these fishermen increased and the size of their fishing operations grew, larger amounts of QS were needed to accommodate this growth. One method to accommodate this growth was a "sweep-up" provision, which allows very small blocks of QS to be permanently consolidated.

To limit and discourage corporate ownership of the fisheries, corporations or partnerships that did not receive initial QS allocations can only purchase QS that are designated as freezer vessel QS. QS designated as catcher vessel QS can be owned by a corporation or partnership only if the corporation or partnership was the original QS recipient. An amendment to the program required a corporation or partnership to own at least a 20 percent interest in any vessel that fishes its QP.

To preserve the owner-operator nature of the fishery, only catcher vessel QS holders who received an initial allocation are permitted to hire skippers to fish their QP. All other catcher vessel QS holders are required to be onboard the vessel fishing their QP. The owner-operator requirements do not apply to freezer vessel QS, which can be fished by hired skippers.

Eligibility to purchase catcher vessel QS is restricted to initial recipients of QS and bona fide crew members. Bona fide crew members are defined by regulations as those individuals who have been directly active in the harvest of fish in a U.S. commercial fishery for at least 150 days. With this provision, crew members who might otherwise lose their jobs can establish themselves in the fishery, and because the owner of the QS is required to be onboard when the QP are fished, these crew members can guarantee themselves a position.

The North Pacific Loan Program, managed by the Fisheries Finance Program of NMFS and authorized under the Magnuson-Stevens Act, assists individual fishermen in financing the purchase of QS. The Program may finance up to 80 percent of the cost of purchasing QS by an entry-level fisherman or a fisherman who fishes from a small vessel.

Community Protection Measures

In the initial allocation of QS, all QS were allocated to the regulatory area from which the qualifying harvest was taken. To maintain the distribution of effort across the range of the halibut and sablefish fisheries, QP resulting from QS issued for one regulatory area cannot be used in other regulatory areas.

The Individual Fishing Quota (IFQ) Community Quota Program authorizes eligible communities to establish non-profit entities (referred to as Community quota entities [CQEs]) to purchase halibut and sablefish QS on the open market. Eligible communities have to apply to NMFS in order to be recognized as a CQE. To be eligible, communities must consist of fewer than 1,500 people, be located on the Gulf of Alaska, and have a history of fishing in the halibut or sablefish fishery. Multiple communities may be represented by one CQE, but one community may not be represented by more than one CQE. CQEs must provide proof of support from the community that it is seeking to represent. Each year, a CQE may transfer its QP to one or more permanent residents of the eligible community on whose behalf the QS are held. Each eligible community as represented by a CQE is subject to the same use limitations on QS and QP currently established for any QS holder, including accumulation limits. In addition, communities represented by CQEs cumulatively are limited to holding a maximum of three percent of the total halibut QS and three percent of the total sablefish QS in each regulatory area in the first year after implementation of this program. In each subsequent year, the percentage is increased by an additional 3 percent until, after seven years, a maximum of 21 percent of the total halibut QS, and 21 percent of the total sablefish QS could be held in each regulatory area in which CQEs are eligible to hold QS. Additional limits exist on the amount of halibut and sablefish QS blocks that can be held by a CQE. Further, the amount of QP that may be transferred annually to an eligible community resident is limited in order to ensure a broad distribution of QP among community residents and limit the amount of QP that may be transferred to those residents who already hold QS or acquire QP from another source.

Shortly after the implementation of the program, the Alaska State Legislature approved a loan program through the Commercial Fishing Revolving Loan Fund to help finance the purchase of QS by CQEs.⁷

Bering Sea and Aleutian Islands Crab Rationalization Program

The catch share program for the nine major Bering Sea and Aleutian Islands crab fisheries was implemented in 2005 (Fina 2011; NMFS 2009b). In addition to creating harvesting QS, the program created processing quota shares (PQS), which are allocated to shorebased processors and are analogous to the QS allocated to harvesters. Annual allocations to processors are referred to as individual processing quota (IPQ).

In each program fishery, crab harvested using 90 percent of the QP allocated to catcher vessels must be delivered to a shorebased processor holding unused IPQ. Crab harvested using the remaining 10 percent of the QP can be delivered to any processor regardless of whether the processor holds unused IPQ. The program allows harvesters to form voluntary fishery cooperatives associated with one or more processors holding PQS. Cooperatives receive the annual QP allocated to their members.

Consolidation Measures

Separate caps are imposed on the ownership of QS by any person and the use of QP on any vessel. "Individual use caps" limit the holdings of QS by any person. Different caps apply across the nine program fisheries because of different fleet characteristics and differences in historic dependency of participants on the different fisheries. In addition, different caps apply across types of QS.⁸ All of a person's direct QS holdings are credited toward the cap. Moreover, a person's indirect QS holdings are also credited toward the cap in proportion to the person's ownership interest. For example, if a person owns a 20 percent interest in a company that holds 100 shares, that person is credited with holding 20 shares for purposes of determining compliance with the cap. A grandfather provision exempted persons who received an initial allocation of QS in excess of the cap.

"Vessel use caps" limit the amount of QP that may be harvested by a single vessel. QS holders can choose to harvest their QP individually, or as part of a fishery cooperative. Vessel use caps do not apply to cooperatives, thereby providing an incentive for cooperative participation. Further, the sale of owner QP (see footnote 8) is prohibited, except by cooperatives, after the first five years of the program.

Processors may not hold more than 30 percent of the total PQS for each program fishery. An exception to these caps is custom processing in certain fisheries and regions.

⁷ The Division of Investments of the Alaska Department of Commerce, Community and Economic Development (ADCCED) provides loan applications and assistance in understanding the application requirements to obtain financing for halibut and sablefish QS. The ADCCED Division of Banking, Securities, and Corporations assists communities in setting up a non-profit corporation. The ADCCED Division of Community Advocacy assists communities regarding sample by-laws and provides a non-profit corporation handbook with ideas regarding how to setup a non-profit corporation.

⁸ Approximately 97 percent of the QS (referred to as "owner QS") in each program fishery were allocated to limited access license holders based on their catch histories in the program fisheries. The remaining 3 percent of the QS (referred to as "crew/captain QS") were allocated to captains.

Fleet Diversity Measures

The Fisheries Finance Program of NMFS can finance up to 80 percent of the cost of purchasing QS by captains or crew members of crab fishing vessels. To ensure that the harvest sector does not evolve into a fishery owned by persons with no fishing background, a person or entity is required to have at least 150 days of sea time in U.S. commercial fisheries in a harvest capacity to be eligible to purchase QS or QP.

Community Protection Measures

To provide a period of general stability for processors and communities to adjust to the program, a two-year “cooling off period” was established during which IPQ could not be relocated from the community where the historical processing occurred that led to the allocation (the community of origin).⁹ Moreover, to continue to maintain the historic regional distribution of landings, harvest and processing shares are regionally designated under the program based on the historic location of the landings and processing that gave rise to the allocation. Delivery-restricted QP must be delivered to a processor in the designated region.¹⁰ In most of the nine program fisheries, regionalized shares are either North or South, with North shares designated for delivery in areas on the Bering Sea north of 56° 20′ north latitude and South shares designated for any other areas, including Kodiak and other areas on the Gulf of Alaska. In the Western Aleutian Islands (Adak) golden king crab fishery, the designation is based on an east/west line to accommodate a different distribution of activity in that fishery. Small communities in the Pribilof Islands are the prime beneficiaries of these regional restrictions on where crab can be landed and processed.

In addition, NMFS-approved non-profit organizations are authorized to represent Eligible Crab Communities (ECCs) to exercise special privileges. These privileges include the right to acquire Bering Sea and Aleutian Islands king and Tanner crab QS for transfer of the resulting QP to permanent residents of the ECC on whose behalf the QS are held. In addition, ECCs are granted the right of first refusal on sale of PQS and use of IPQ. Before NMFS issues any PQS/IPQ, an ECC may establish a contract with that PQS/IPQ holder which guarantees the ECC first rights to any PQS/IPQ proposed for sale for use outside that community.

The governing body of the ECC, such as a local government, must designate the non-profit organization. Caps limit the amount of QS that can be held on behalf of each ECC and the amount of QP used by each resident. The Fisheries Finance Program of NMFS can make loans to ECC non-profit organizations to purchase QS.

Lastly, the program includes harvesting “sideboards” that limit the activity of crab vessels in Gulf of Alaska groundfish fisheries in order to protect participants in those fisheries from a possible influx of activity that could arise from vessels that exit the program fisheries or are able to time activities in the program fisheries to increase participation in other fisheries. In other words, a sideboard is a collective limit for all vessels subject to the sideboard designed to restrict the ability of those vessels to target non-program fisheries at the expense of other industry and community investments. Sideboard limits are typically calculated based on historic aggregate harvest levels. In the case of the Bering Sea and Aleutian Islands Crab Rationalization Program, NMFS manages the sideboard limits by setting a single

⁹ The “cooling off” limitation applied to most IPQ, but shares allocated based on processing history in communities with minor amounts of crab were not subject to the provision. In addition, each PQS holder was permitted to move small amounts of IPQ out of the community of origin during the cooling off period to allow for some coordination of landings and more complete use of QP and IPQ allocations.

¹⁰ Likewise, a processor with regionally designated IPQ is required to accept delivery of and process crab in the designated region.

sideboard limit for each Gulf of Alaska groundfish species. That amount is then available to all qualified vessels subject to the limit, on a seasonal basis. All targeted or incidental catch of sideboard species made by a vessel subject to the limits is deducted from the sideboard limit. NMFS closes directed fisheries to vessels subject to the limit when it deems that sideboard amounts are inadequate to support directed fishing and projected incidental catch in other directed fisheries. The program provides sideboard exemptions to crab vessels with strong historic dependence on non-crab fisheries in order to relieve them from the limitations of the sideboards.

Pacific Groundfish Trawl Rationalization Program

The Pacific groundfish fishery includes over 90 different species, such as sablefish, Pacific whiting, and many flatfish and rockfish species. Implemented in 2011, the Pacific Groundfish Trawl Rationalization Program consists of: 1) an ITQ program for the shorebased trawl fleet, which includes a whiting sector and “non-whiting” (i.e., all other groundfish) sector; and 2) two cooperative programs for the at-sea trawl fleet, which consists of whiting catcher processor vessels and whiting motherships (and associated catcher vessels) (NMFS 2011). A catcher processor is a vessel that is used for catching fish and processing that fish, while a mothership is a vessel that receives and processes fish from other vessels.

Consolidation Measures

The ITQ program for the shorebased trawl fleet includes two sets of accumulation limits: limits that apply to ownership of QS, and vessel limits that restrict the amount of QP that can be registered to a vessel at any one time and cumulative over the year.

Both individual species and aggregate QS ownership limits are in place. To determine how much aggregate non-whiting QS a person holds, NMFS multiplies each person’s QS for each species by the shorebased trawl allocation for that species. The person’s pounds for all non-whiting species is then summed and divided by the shorebased trawl allocation of all non-whiting species to calculate the person’s share of the aggregate non-whiting trawl quota. The QS that count toward a person’s accumulation limit include the QS owned by that person, and a portion of the QS owned by an entity in which that person has an interest, where the person’s share of interest in that entity determines the portion of that entity’s QS that counts toward the person’s limit. The aggregate cap of 2.7 percent for the shorebased non-whiting sector was designed to allow one fisherman or business entity to operate two fulltime groundfish trawl vessels. The shorebased whiting sector has an aggregate cap of 10 percent.

Any person who qualified for an initial allocation of QS in excess of the accumulation limits was allowed to receive that allocation, but they must divest themselves of the excess QS during years three and four of the program. At the end of year four of the program, any QS held by a person (including any person who has ownership interest in the owner named on the limited entry trawl permit) in excess of the accumulation limits will be revoked and redistributed to the remainder of the QS owners in proportion to the QS holdings in year five. No compensation will be due for any revoked shares.

The amount of QP registered to a vessel may not exceed the QP vessel limit in any year, and, for species covered by unused QP vessel limits, may not exceed the unused QP vessel limit at any time. The QP vessel limit is calculated as unused available QP plus used QP (landings and discards) plus any pending outgoing transfer of QP. The unused QP vessel limit is calculated as unused available QP plus any pending outgoing transfer of QP. The shorebased non-whiting sector has a QP vessel limit of 10 percent of the total QP, while the shorebased whiting sector has a QP vessel limit of 15 percent.

A mothership catcher vessel may catch no more than 30 percent of the whiting allocation to the mothership sector, and mothership processors may process no more than 45 percent of the whiting allocation to the mothership sector. The catcher processor trawl fleet is not subject to accumulation limits.

Community Protection Measures

During the first two years of the program, a moratorium was imposed on the transfer of QS to ease the adjustment period and allow for adaptive response. In particular, the moratorium is intended to slow the movement of QS holdings out of communities during a time when the trailing action for Community Fishing Associations (CFAs) can be developed by the Pacific Fishery Management Council and implemented in a considered fashion. A CFA is type of cooperative arrangement which may confer a number of potential benefits on participants, including ensuring access to the fishery resource in a particular area or community to benefit the local fishing economy; enabling the formation of risk pools and sharing monitoring and other costs; ensuring that fish delivered to a local area will benefit local processors and businesses; providing a local source of QS for new entrants and others wanting to increase their participation in the fishery; increasing local accountability and responsibility for the resource; and benefiting other providers and users of local fishery infrastructure. Participants in a CFA must comply with the QS accumulation limits.

An adaptive management program sets aside 10 percent of the non-whiting QS for the shorebased trawl fleet each year to address unforeseen effects and achieve a variety of objectives, such as creating incentives for bycatch reduction and use of habitat-friendly gear, mitigating adverse impacts to processors and fishing communities, and helping second generation fishermen/new entrants. The Pacific Fishery Management Council discussed, but did not adopt, criteria for deciding when and how to allocate these reserve shares, and stated that QS not used for adaptive management would be proportionally distributed to QS holders.

Bering Sea and Aleutian Islands American Fisheries Act Pollock Cooperatives

The Bering Sea and Aleutian Islands pollock fishery is a high-volume industrial fishery, with large-scale shorebased and at-sea processing sectors. In 1998, the U.S. Congress adopted a cooperative management program for the fishery (Fina 2011; NMFS 2009c).

The program divides the TAC in the directed pollock fishery in the Bering Sea and Aleutian Islands Management Area among three sectors: inshore sector (catcher vessels that deliver their harvests to shoreside processing plants; catcher processor sector (including catcher vessels that deliver to catcher processors); and mothership sector (floating processors that receive deliveries from catcher vessels at sea). Inshore catcher vessels that participate in a fishery cooperative created under the American Fisheries Act can access exclusive annual allocations.

Consolidation Measures

No entity (individual, corporation, or entities affiliated with each other above a minimum common ownership or control standard) can harvest more than 17.5 percent, or process more than 30 percent of the pollock directed fishery allocation. The harvesting and processing share limits are applied using a "10 percent ownership rule," which states that any entity in which 10 percent or more of the interest is owned or controlled by another individual or entity is considered to be the same entity as the other individual or entity. Thus, whenever there is 10 percent or more ownership or control by an entity, all of the pollock harvested or processed by its subsidiary or affiliate is added to the total

amount of pollock harvested or processed by the entity for the purposes of determining if the harvesting or processing limit has been exceeded. The rule thereby casts the net most widely as to what counts as a entity: any entity that is linked to any pollock harvesting or processing operation through any number of ownership linkages has limits placed on it, even if those ownership linkages are indirect and never amount to more than a 10 percent stake in the company or facility (Mansfield 2004).

Community Protection Measures

Provisions in the American Fisheries Act benefit the communities in which certain shoreside processors are located by establishing a stable long-term supply of pollock to the processing plants. Inshore catcher vessels eligible under the Act to participate in the directed pollock fishery may deliver their catch only to shoreside processors that met minimum pollock delivery thresholds in 1996 and 1997 (i.e., processors that historically received pollock harvests). In addition, inshore catcher vessels that participate in a fishery cooperative must deliver at least 90 percent of their catch to the shoreside processor that they delivered a majority of their catch to in the year prior to the year in which the cooperative was formed.

The program also recognizes potential spillover effects on other fisheries that could arise if pollock vessels consolidate harvests or time harvests to allow for greater participation in other fisheries. To prevent encroachment of pollock vessels in other fisheries, the program implemented a series of sideboard measures that dictate maximum levels, by species, of non-pollock catches for each sector of the pollock fleet.

Bering Sea and Aleutian Islands Non-Pollock Cooperatives

This program, which was established in 2008, allocates QS to trawl catcher processors participating in non-pollock groundfish fisheries in the Bering Sea and Aleutian Islands Management Area (Fina 2011; NMFS 2009d). The trawl catcher processors governed by the program participate in a variety of multispecies groundfish fisheries. Vessels that participate in a fishery cooperative created under the program can access exclusive annual allocations.

Consolidation Measures

No single person can hold more than 30 percent of the total QS. The cap is applied on an aggregate basis to all species allocated to the non-pollock groundfish fishery sector. In addition, no single vessel may catch more than 20 percent of the initial TAC allocated to the trawl catcher processor sector in a year. Any person initially issued QS in excess of the 30 percent ownership cap is allowed to continue to hold QS at that initial level, and any vessel owner that is initially allocated a percentage of the sector allocation that is greater than the 20 percent vessel use cap is grandfathered at their initial allocation level. Vessels that participate in a cooperative can transfer QS within the cooperatives but cannot transfer QS to non-cooperative members.

QS for six non-pollock groundfish species were allocated to trawl catcher processors based on their catch history. Two underutilized non-pollock groundfish species historically harvested by a few trawl catcher processors were excluded from the program so that a wider array of vessels would be able to harvest these species should their market value increase in the future.

Community Protection Measures

To limit the ability of trawl catcher processors participating in non-pollock groundfish fisheries to expand their harvest capacity in other fisheries not allocated under the program, the fleet is constrained by sector-wide harvest limits in the Gulf of Alaska that limit the catch of pollock, Pacific cod, and other species based on harvest patterns during 1998 through 2004.

Icelandic Fisheries Individual Transferable Quota System

The Fisheries Management Act of 1990 established the present ITQ system, which includes all major fisheries inside Iceland's EEZ.¹¹ As of 2012, 25 different fisheries were controlled under this system, representing about 98 percent of the value of the country's commercial catch (Matthíasson 2012).

No one may pursue commercial fishing in Icelandic waters without having a general fishing permit. General fishing permits are of two types: a general fishing permit with a catch quota and a general fishing permit with a hook-and-line catch quota. The two license groups operate under separate ITQ systems, typically referred to as the general or common system and the *krókaafllamarkerfi* or hook-quota system, respectively. A vessel may only hold one type of fishing permit and operate in one system each fishing year. The hook-quota system is only open to boats that are smaller than 15 GRT and fish with hook-and-line gear (handlines or longlines).¹² Each ITQ system is allocated a portion of the TAC for Atlantic cod and other groundfish species.

Consolidation Measures

In order to prevent undue consolidation, upper limits have been set for the holding of QS in major fishable stocks by a fishing company or a group of companies linked by ownership. In the common system, the upper limit is 12 percent of the total QS for cod, 20 percent for haddock, pollock, herring, capelin, Greenland halibut, and deepwater shrimp, and 35 percent for redfish. In the hook-quota system, the upper limit is 4 percent of the total QS for cod and 5 percent for haddock.

A further measure stipulates that the aggregate QS held by a firm in all the common system fisheries cannot exceed 12 percent of the total value of the combined TAC of those fisheries, while the aggregate QS of each firm in all the hook-quota system fisheries cannot exceed 5 percent of the total value of the combined TAC. These aggregate values are calculated in cod-equivalents, as the cod fishery is by far the most important fishery. Cod-equivalents for each fishing year are determined on the basis of the average unit value of the landings of each species the year before, and provide a measure of the relative value of individual species compared to cod.

Fleet Diversity Measures

As discussed above, a separate ITQ system is available for small boats fishing with hook-and-line. QS/QP can be freely transferred among vessels within this system, and QS/QP can be transferred from

¹¹ The ITQ system also applies to a number of fisheries that take place outside Iceland's 200-mile EEZ. These include the shrimp fishery on the Flemish Cap, the Barents sea cod fishery, the Atlanto-Scandian herring fishery and the blue whiting fishery. When an international agreement exists for the utilization of species outside the EEZ, Iceland's share is allocated under the ITQ system. Even in cases where no international agreement concerning the utilization of the shared stock exists, Iceland frequently elects to impose a TAC on its vessels and allocate this TAC as QS (Arnason 2005).

¹² The Ministry of Fisheries and Agriculture may, however, grant hook-and-line boats permission to fish for benthic species using such fishing gear as is required.

boats in the common system to boats in the hook-quota system. However, QS/QP cannot be transferred from boats in the hook-quota system to boats in the common system.

To further support the small boat fleet, hook-and-line vessels that use longline gear, make day trips (i.e., return to land their catch within 24 hours of sailing from the harbor where the line was loaded), and bait their lines on shore may land 15 or 20 percent in excess of their allocated QP for cod, haddock, and wolffish. The Ministry of Fisheries and Agriculture estimates the additional QP implied by this rule, and this estimated quantity is subtracted from the TAC before arriving at the allocated total QP to be shared out to eligible vessels.

In addition, to give people who do not hold a general fishing license or QS an opportunity fish for commercial purposes, an open access system called *strandveiði* (coastal fishing) was introduced in 2009. This system receives a separate allocation of the TACs for cod and other groundfish species, up to a maximum of 6,000 metric tons/year. The country is divided into four landing areas, and each area is assigned a share of the system's allocation. While the coastal fishing system is outside the ITQ system, participation is open to vessels that are in the ITQ system as well as vessels that are not. However, vessels in the coastal fishing system may only 1) fish with handlines, with a maximum of four mechanical handlines onboard; 2) catch a maximum of 800 kg of fish per trip, with a maximum trip length of 14 hrs; and 3) fish from June through August, and only on Sunday through Thursday during that period.

A number of measures also restrict QS holdings to bona fide fishermen and obstruct speculative QS holdings and trades: 1) for each fishing year, the amount of QP transferred from a vessel to another vessel of different ownership may not exceed 50 percent of its total QP measured in cod equivalents; 2) QS holders must catch at least 50 percent of their total QP, measured in cod equivalents, every second year or forfeit their QS; 3) the QS/QP of a vessel may be transferred wholly or in part to another vessel, provided that the transfer does not result in the QS/QP of the receiving vessel becoming obviously in excess of its fishing capacity; and 4) a general fishing permit is cancelled if a fishing vessel has not been fishing commercially for 12 months.

Community Protection Measures

Each fishing year the Ministry of Fisheries and Agriculture has available QP amounting to up to 12,000 metric tons of cod and other groundfish species, which may be used for a number of purposes, including regional support, in consultation with the Regional Development Institute, through allocations to 1) smaller communities that are facing difficulties due to downturns in fisheries and which are dependent upon groundfish fishing or processing; and 2) communities that have suffered substantial unemployment due to unexpected cutbacks in the total QP of fishing vessels operating from and landing their catch in the communities in question. QP as provided for in this provision may be allocated for up to three years at a time.

The Directorate of Fisheries handles the allocation to fishing vessels of QP received by individual communities. Each fishing vessel allocated this QP must land for processing within the community catch amounting to double the cod-equivalent of the QP allocated to them. QP allocated to a community cannot be transferred.

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Transboundary Resources Assessment Committee

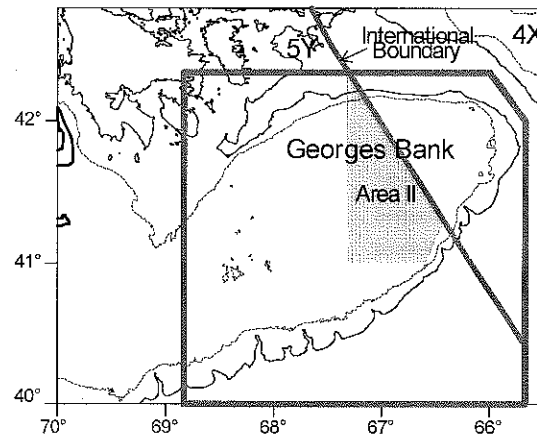
Status Report 2013/01

GEORGES BANK

YELLOWTAIL

FLOUNDER

[5Zhjmn;
522,525,551,552,561,562]



Summary

- Combined Canada and USA catches in 2012 were 722 mt. This is the first time since 1940 that catch has been less than 1,000 mt.
- The Split Series Virtual Population Analysis (VPA), which splits the survey indices between 1994 and 1995, was used for the stock assessment, but a retrospective adjustment (denoted rho adjustment) was applied to the terminal year estimates for both status determination and provision of catch advice. The TRAC acknowledges that the assumptions made about population dynamics in the model do not fully capture the trends in the data. However, the model's conclusion that stock conditions are poor is valid.
- Adult population biomass (age 3+) at the start of 2013 and spawning stock biomass in 2012 are both estimated to be the lowest values in the time series when the rho adjustment is applied.
- Recruitment of the three most recent cohorts is estimated to be the lowest in the time series.
- Fishing mortality for fully recruited ages 4+ is estimated to be above the reference point of $F_{ref} = 0.25$ for the entire assessment time series.
- To achieve a high probability that F in 2014 will be less than F_{ref} , a 2014 quota of less than 200 mt would be required. In order to achieve high probability that adult biomass will increase from 2014 to 2015, a 2014 quota of less than 500 mt would be required. Due to the assumption used for the 2012 year class in the projections, the increase in adult biomass will be optimistic if the 2012 year class is as poor as the recent year classes.



- Catches well below 500 mt are likely needed to achieve the harvest strategy.

Table 1. Catches, Biomass (thousands mt); Recruits (millions)

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Avg ¹	Min ¹	Max ¹
Canada ⁹	Quota	1.9	1.7	0.9	0.4	0.6	0.5	0.8 ⁸	1.2	0.6	0.3			
	Landed	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		0.5	<0.1	2.9
	Discard	0.4	0.2	0.5	0.1	0.1	0.1	0.2	<0.1	<0.1		0.5	<0.1	0.8
USA ⁹	Quota ²	6.0	4.3	2.1	0.9	1.9	1.6	1.2 ⁸	1.5	0.6	0.2			
	Catch ²	5.9	3.8	1.9	1.0	1.6	1.8	1.1	1.1	0.5				
	Landed	5.8	3.2	1.2	1.1	0.7	1.0	0.7	0.9	0.4		4.3	0.4	15.9
	Discard	0.5	0.4	0.4	0.5	0.4	0.7	0.3	0.2	0.2		0.6	<0.1	3.0
Total ⁹	Quota ³	7.9	6.0	3.0	1.3	2.5	2.1	2.0 ⁸	2.7	1.2	0.5			
	Catch ³	6.4	4.1	2.5	1.1	1.7	1.9	1.3	1.1	0.6				
	Catch ⁴	6.8	3.9	2.1	1.7	1.5	1.8	1.2	1.2	0.7		5.8	0.7	17.2
Split Series VPA (no rho adjustment applied)														
	Adult Biomass ⁵	8.5	4.0	2.4	2.4	3.1	3.3	2.9	3.1	2.6	2.5	6.6 ⁶	2.0 ⁶	26.2 ⁶
	SSB	5.4	3.2	2.3	2.7	3.2	3.2	3.0	3.0	2.6		6.5	2.2	22.2
	Age 1 Recruits	6.8	8.5	10.1	6.2	5.4	5.7	2.9	2.3	2.3		18.9	2.3	70.6
	Fishing mortality ⁷	1.94	1.39	1.54	1.05	0.57	0.83	0.73	0.60	0.32		1.02	0.32	1.94
	Exploitation Rate ⁷	80%	70%	73%	60%	40%	52%	47%	42%	25%		59%	25%	80%

¹1973 – 2012

²for fishing year May 1 – April 30

³for Canadian calendar year and USA fishing year May 1 – April 30

⁴sum of Canadian Landed, Canadian Discard, and USA Catch (includes discards)

⁵Jan-1 age 3+

⁶1973 - 2013

⁷age 4+

⁸quotas not jointly determined; established individually by each country

⁹unless otherwise noted, all values reported are for calendar year

Fishery

Total catches of Georges Bank yellowtail flounder peaked at about 21,000 mt in both 1969 and 1970 (Figure 1). The combined Canada/USA catch increased from 1995 through 2001, averaged 6,300 mt during 2002-2004, but declined to 722 mt in 2012 due to restrictive management measures (Table 1). The 2012 catch was the first time since 1940 that catch has been less than 1,000 mt.

The 2012 **Canadian catch** of 91 mt was well below the Canadian quota of 586 mt, with landings of only 46 mt and estimated discards of 45 mt. The majority of landings were from a total of nine directed yellowtail trips. Discards were due to the sea scallop dredge fishery.

USA catches in 2012 were 631 mt, with landings of 443 mt and discards of 188 mt. The USA landings in 2012 were predominantly from the trawl fishery while discards came from both the trawl and sea scallop dredge fisheries. Preliminary estimates of the USA catches for fishing year 2012 were 94% of the 564 mt quota.

Ages 3-5 accounted for most of the **combined Canada/USA fishery** catch in 2012. Both the Canadian and the USA fisheries were well sampled to determine length composition of the catch.

Harvest Strategy and Reference Points

The Transboundary Management Guidance Committee has adopted a strategy to maintain a low to neutral risk of exceeding the fishing mortality limit reference, $F_{\text{ref}} = 0.25$ (established during the 2005 TRAC benchmark). When stock conditions are poor, fishing mortality rates should be further reduced to promote rebuilding.

State of Resource

Evaluation of the state of the resource was based on results from an age structured analytical assessment (Virtual Population Analysis, VPA) that used fishery catch statistics and sampling for size and age composition of the catch for 1973 to 2012. The VPA was calibrated to trends in abundance from three bottom trawl survey series (NMFS spring, NMFS fall and DFO) and a recruitment index from the NMFS summer sea scallop survey (for the years that it covered the whole bank). The VPA formulation down-weights the DFO surveys in 2008 and 2009 to account for the higher uncertainty in these years due to large tows, as recommended by the TRAC previously. Retrospective analyses were conducted to detect any tendency to consistently overestimate or underestimate fishing mortality, biomass, and recruitment relative to the terminal year estimates.

The Split Series VPA, which splits the survey indices between 1994 and 1995, was used for the stock assessment. The Split Series stock assessment exhibits strong retrospective bias in SSB and F which results in decreases in SSB and increases in F compared to the results of previous assessments. A retrospective adjustment (denoted rho adjustment) based on the observed retrospective bias was applied to the terminal year estimates for both status determination and provision of catch advice.

Adult population biomass (age 3+) at the start of 2013 and spawning stock biomass in 2012 are both estimated to be the lowest values in their time series when the rho adjustment is applied (Table 2, Figure 2).

Recruitment of the three most recent cohorts is estimated to be the lowest in the time series (Figure 3).

Fishing mortality for fully recruited ages 4+ is estimated to be above the reference point of $F_{\text{ref}} = 0.25$ for the entire assessment time series (Table 2, Figure 4).

Table 2. Estimated and rho adjusted values for the Split Series VPA. Note the SSB rho value was used to adjust the adult biomass estimate.

	estimate	rho adjusted
2012 F	0.32	0.78
2012 R	2278	1168
2012 SSB	2593	869
2013 Adult B	2467	826

Productivity

Age structure, spatial distribution, and fish growth typically reflect changes in the productive potential. In both absolute numbers and percent composition, the **population age structure** estimated by the VPA displays a truncated pattern with few old fish and poor recent recruitment. **Spatial distribution patterns** from the three groundfish surveys generally follow historical averages. **Growth** has recently been variable without trend and condition (weight at length) has improved from last year, although still below the long term average. Truncated age structure and low recent recruitment indicate current resource productivity is lower than historical levels.

Outlook

This outlook is provided in terms of consequences with respect to the harvest reference points for alternative catch quotas in 2014. Uncertainty about current biomass generates uncertainty in forecast results, which is expressed here as the probability of exceeding $F_{ref} = 0.25$ and change in adult biomass from 2014 to 2015. The risk calculations assist in evaluating the consequences of alternative catch quotas by providing a general measure of the uncertainties. However, the risk calculations are dependent on the data and model assumptions and do not include uncertainty due to variations in weight at age, partial recruitment to the fishery, natural mortality, systematic errors in data reporting, the possibility that the model may not reflect stock dynamics closely enough, and/or retrospective bias.

Projections were made using 2010-2012 average fishery partial recruitment and average weights at age from the Split Series VPA as inputs. The abundance of the 2012 year class (age 1 in 2013) was set as the geometric mean of the previous ten years. The three most recent recruitments have been well below this value.

For the past ten years, catches have generally been below the quotas set with the intent to increase the population abundance but survey trends do not indicate that this has occurred. Total mortality rates estimated from the surveys have remained high despite large reductions in quotas and catches. If the 2014 catch quota is set based on model results as done in the past, this pattern of failing to achieve management objectives seems likely to continue given the model's increasing retrospective pattern. TRAC recommends considering the 2014 catch advice provided below as an upper bound instead of a target. In order to meet management objectives ($F < F_{ref}$ and reduce F when stock condition is poor to promote rebuilding) the 2014 quota should be a reduction from the 2013 quota of 500 mt to as low a level as possible. Fishing at F_{ref} results in a 2014 quota of 123 mt from the rho adjusted Split Series model (see Special Considerations).

Under the projections based on rho adjusted Split Series VPA, to achieve high probability that F in 2014 will be less than F_{ref} , a 2014 quota of less than 200 mt would be required (Table 3). In order to achieve high probability that adult biomass will increase from 2014 to 2015, a 2014 quota of less than 500 mt would be required. Due to the assumption used for the 2012 year class in the projections, the increase in adult biomass will be optimistic if the 2012 year class is as poor as the recent year classes.

Table 3. Implications of five 2014 quotas (100-500 mt): $P(F > F_{ref})$ = probability fishing mortality rate in 2014 will exceed F_{ref} , F_{2014} = median 2014 F , delta B = relative change in median biomass from 2014 to 2015, $P(B \text{ inc})$ = probability median adult Jan-1 biomass will increase or $P(B \text{ inc } 10\%)$ = increase by at least 10%.

	2014 Quota (mt)				
	100	200	300	400	500
Split Series rho adjusted					
$P(F > F_{ref})$	0.26	0.97	1.00	1.00	1.00
F_{2014}	0.20	0.43	0.71	1.05	1.48
delta B	60%	44%	27%	11%	-4%
$P(B \text{ inc})$	1.00	1.00	1.00	1.00	0.21
$P(B \text{ inc } 10\%)$	1.00	1.00	1.00	0.66	0.02

In the USA, there is a requirement to provide rebuilding projections when stocks are overfished. The current rebuilding scenario for Georges Bank yellowtail flounder requires solving for a value of F (F_{reb50}) that, when applied in years 2014 onwards, results in a 50% probability that SSB is greater than SSB_{msy} (43,200 mt) in year 2032. This is so far into the future that no rebuilding projections were considered.

Special Considerations

The TRAC acknowledges that the assumptions made about population dynamics in the model do not fully capture the trends in the data. However, the model's conclusion that stock conditions are poor is valid. This is supported by the fact that survey indices continued to decline when catches decreased from 1,800 mt to 722 mt during 2008 to 2012 due to reduced quotas. When the Split Series VPA is projected without a rho adjustment, fishing at F_{ref} results in 562 mt. This catch quota is certainly too high based on past performance of the Split Series model projections. There is some evidence from the two most recent assessments that the rho adjusted projections perform better than the unadjusted values. Thus, Table 3 results, which include the rho adjustment, are reasonable to consider for guidance on catch advice. Catches well below 500 mt are likely needed to achieve the harvest strategy.

There is a continued need to conduct research to limit the possible causes for the retrospective bias exhibited in this assessment.

In July 2013 there will be a reduction in minimum size from 13 inches to 12 inches for the U.S. fishery which is expected to result in reduced discards and a possible change in partial recruitment for the youngest ages.

Source Documents

Clark, K.J., and L. O'Brien, editors. 2013. Proceedings of the Transboundary Resources Assessment Committee (TRAC): Eastern Georges Bank Cod and Haddock, and Georges Bank Yellowtail Flounder: Report of Meeting held 25-27 June 2013. TRAC Proceedings 2013/02.

Legault, C.M., L. Alade, W.E. Gross, and H.H. Stone. 2013. Stock Assessment of Georges Bank Yellowtail Flounder for 2013. TRAC Reference Document 2013/01.

Correct Citation

TRAC. 2013. Georges Bank Yellowtail Flounder. TRAC Status Report 2013/01.

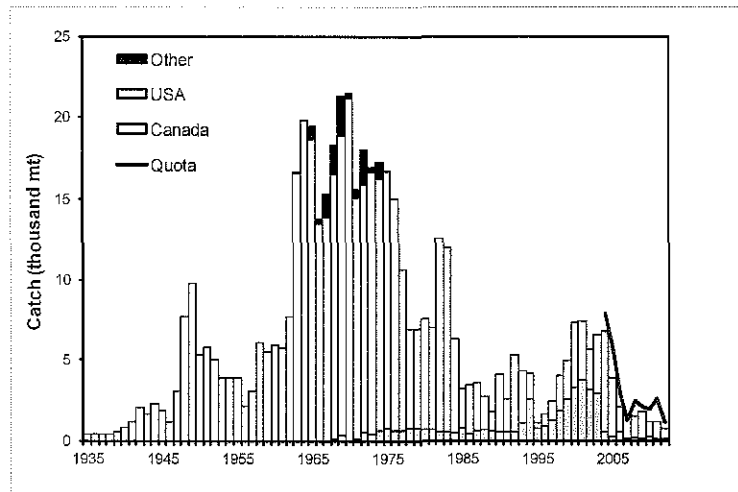


Figure 1. Catches and TMGC quotas.

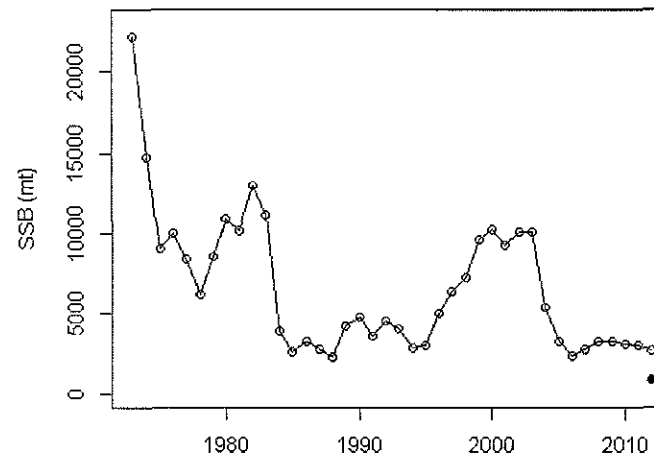


Figure 2. Spawning stock biomasses (with rho adjusted point).

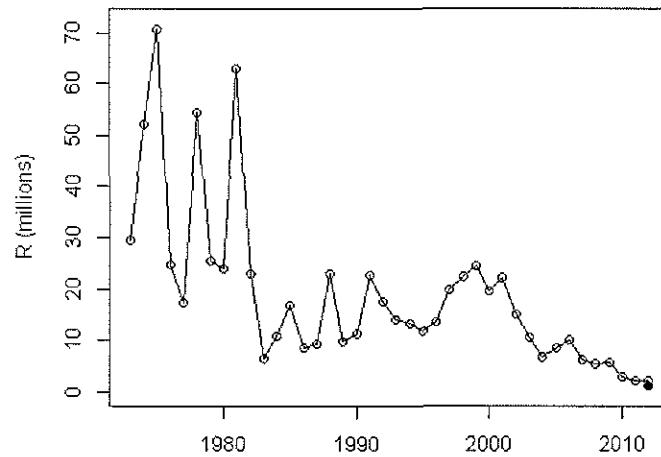


Figure 3. Recruitments (with rho adjusted point).

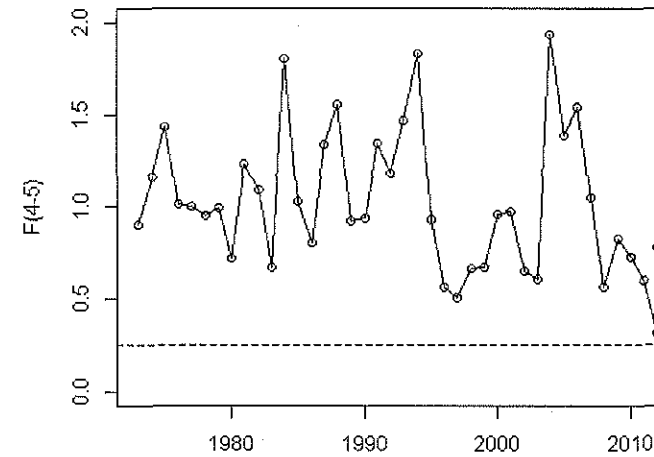


Figure 4: Fishing mortality rates (with rho adjusted point and F_{ref} line).

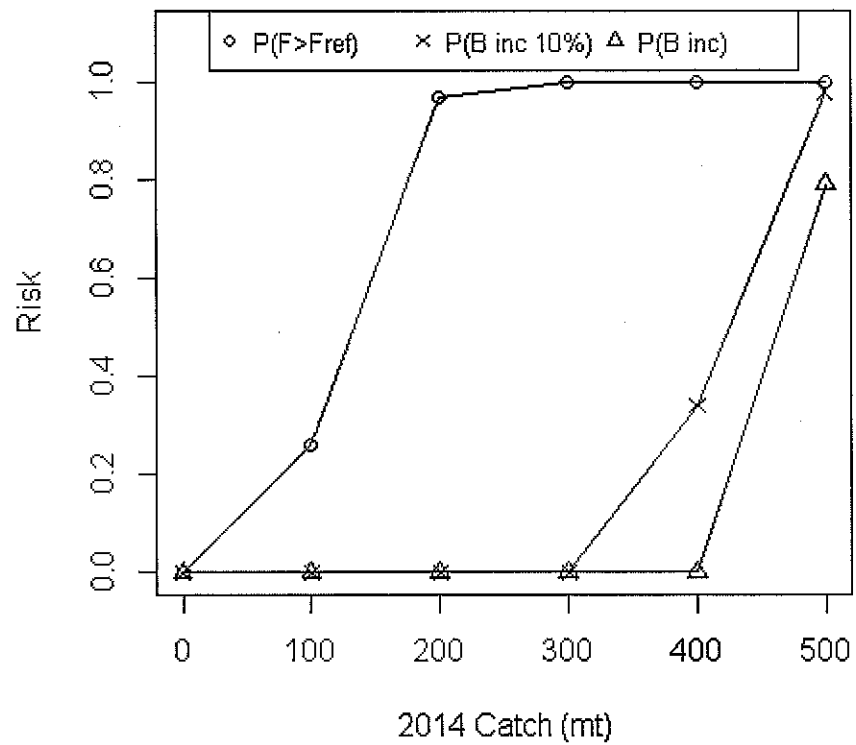


Figure 5. Risk of overfishing, $P(F > F_{ref})$, biomass will not increase 10%, $P(B \text{ inc } 10\%)$, or biomass will not increase, $P(B \text{ inc})$.



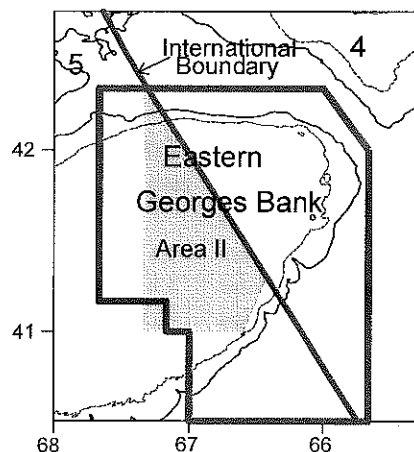
Transboundary Resources Assessment Committee

Status Report 2013/02

**EASTERN
GEORGES BANK**

COD

[5Zjm; 551,552,561,562]



Summary

- Combined Canada/USA catches were 614 mt, including 128 mt of discards in the 2012 calendar year.
- The Virtual Population Analysis (VPA) “M 0.8” model from the 2013 benchmark was used to provide status determination and catch advice. Natural mortality (M) was fixed at 0.2 for all the ages in all years except for at 0.8 for ages 6+ in years after 1994.
- Since 1995, adult population biomass (ages 3+) has fluctuated between 5,800 mt and 19,600 mt. The estimated adult population biomass at the beginning of 2013 from the VPA “M 0.8” model was 11,160 mt.
- Recruitment at age 1 has been low in recent years. The 2003 year class is estimated to be the highest recruitment since 2000 (excluding 2010). The initial estimate of the 2010 year class is stronger than the 2003 year class based on the 2013 assessment.
- Fishing mortality was high prior to 1994 and declined in 1995 to $F=0.11$ due to restrictive management measures. F in 2012 was estimated to be 0.07.
- Average weight at length, used to reflect condition, has been stable in the past, but has started to decline in recent years. Lower weights at age in the population in recent years and poor recruitment have contributed to the lack of rebuilding.
- A 50% probability of not exceeding $F=0.11$ implies catches less than 1,225 mt. However, given the extremely low Spawning Stock Biomass (SSB), TRAC advises that management should try to realize the growth potential from the 2010 year class to rebuild the spawning



EGB Cod

stock biomass. In order to not exceed $F=0.11$, and to achieve a 10% increase in biomass, catches must not exceed 600 mt.

- A consequence analysis to understand the risks associated with assumptions of the VPA “M 0.8” and ASAP “M 0.2” models (reviewed at the 2013 benchmark) was examined.

Catches and Biomass (thousands mt); Recruits (millions)

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Avg ¹	Min ¹	Max ¹
Canada ²	Quota	1	0.7	1.3	1.4	1.6	1.2	1	0.9	0.5	0.5			
	Catch	1.3	0.9	1.4	1.2	1.5	1.2	0.8	0.7	0.5		5.8	0.7	17.9
	Landed	1.1	0.6	1.1	1.1	1.4	1	0.7	0.7	0.4		5.8	0.6	17.8
	Discard	0.1	0.2	0.3	0.1	0.1	0.2	0.1	<0.1	<0.1		0.1	<0.1	0.5
USA ³	Quota ²	0.3	0.3	0.4	0.5	0.7	0.5	0.3	0.2	0.2	0.1			
	Catch ²	0.2	0.2	0.3	0.3	0.5	0.5	0.3	0.2	<0.1				
	Landed	1	0.2	0.1	0.2	0.2	0.4	0.4	0.3	0.1		3.5	0.1	10.6
	Discard	0.1	0.3	0.1	0.4	<0.1	0.2	0.1	<0.1	<0.1		<0.1	<0.1	0.3
Total ⁴	Quota	1.3	1	1.7	1.9	2.3	1.7	1.3	1.1	0.7	0.6			
	Catch	2.3	1.3	1.7	1.8	1.8	1.9	1.3	1	0.6		9.5	1	26
	Catch ^{3,4}	1.5	1.1	1.7	1.5	2	1.7	1.1	0.9	0.5				
From "M 0.8" model														
	Adult Biomass ⁵	10	5.83	7.19	7.48	8.31	10	9.12	7.55	7.7	11.2	26.5	6	59.7
	Age 1 Recruits	4.1	1.3	2.7	2.2	1.4	1.2	2.0	6.4	1.7		6.0	0.6	24.1
	Fishing mortality ⁶	0.37	0.23	0.36	0.28	0.22	0.18	0.16	0.14	0.07		0.36	0.07	0.66
	Exploitation Rate ⁷	30%	18%	27%	22%	15%	10%	14%	16%	7%		26%	7%	44%
	Exploitation Rate ⁸	23%	18%	21%	22%	21%	23%	15%	6%	3%		24%	3%	43%

¹1978 – 2012

²for fishing year from May 1 – April 30

³for Canadian calendar year and USA fishing year May 1-April 30

⁴sum of Canadian landed, Canadian Discard, and USA Catch (includes discards)

⁵Jan 1 ages 3+

⁶ages 4-9

⁷ages 4-5

⁸ages 6-9

⁹ unless otherwise noted, all values reported are for calendar year

Fishery

Combined Canada/USA catches averaged 17,198 mt between 1978 and 1993, peaking at 26,463 mt in 1982. Catches declined to 1,683 mt in 1995, then fluctuated at about 3,000 mt until 2004 and have subsequently declined. Catches in 2012 were 614 mt, including 128 mt of discards (Figure 1).

Canadian catches decreased from 743 mt in 2011 to 468 mt in 2012. Since 1995, cod quotas have been reduced, leading to less directed fishing for cod and changes in fishing gear and practices. Discards were estimated at 31 mt from the mobile gear fleet and at 0 mt from the fixed gear fleet. Since 1996, the Canadian scallop fishery has not been permitted to land cod. Estimated discards of cod by the Canadian scallop fishery were 42 mt in 2012.

USA catches decreased from 287 mt in 2011 to 146 mt in 2012. Since December 1994, a year-round closure of Area II has been in effect, with the exception of groundfish Special Access Programs in 2004 and since 2010. With the implementation of a catch share system in 2010, all

groundfish fleets are now managed by quotas. Estimated discards of cod for 2012 were 55 mt, almost entirely from the otter trawl groundfish fishery.

The combined Canada/USA 2012 **fishery age composition** (landings + discards) was dominated by the 2009 year class at age 3, followed by the 2010 year class at age 2 and the 2008 year class at age 5. The 2003 year class, one of the largest in recent years, made less contribution than expected at age 9 to the 2012 catch (0.3% by number, 0.7% by weight). The contribution to the catch of fish older than age 7 continued to be small in recent years: 3% by number and 6% by weight in 2012. Both the Canadian and the USA fisheries were adequately sampled to determine length composition of the catch.

Harvest Strategy and Reference Points

The Transboundary Management Guidance Committee (TMGC) has adopted a strategy to maintain a low to neutral risk of exceeding the fishing mortality limit reference. At the 2013 benchmark meeting, it was agreed that the current $F_{ref}=0.18$ is not consistent with the Virtual Population Analysis (VPA) “M 0.8” model, and a lower value for F_{ref} would be more appropriate. When stock conditions are poor, fishing mortality rates should be further reduced to promote rebuilding.

State of Resource

Evaluation of the state of the resource was based on results from an age structured analytical assessment ((VPA), which used fishery catch statistics and sampling for size and age composition of the catch for 1978 to 2012 (including discards). The VPA was calibrated to trends in abundance from three bottom trawl survey series: NMFS spring, NMFS fall, and DFO.

The consensus during the benchmark assessment review in 2013 was to provide advice based on a VPA “M 0.8” model (Claytor and O’Brien, 2013). Natural mortality (M) was fixed at 0.2 for all the ages in all years except for at 0.8 for ages 6+ in years after 1994. In the assessment with catch data through 2012, the 2003 year class was estimated to be substantially smaller than the estimate from the 2013 benchmark model formulation with one less year of data. In the benchmark model with catch data through 2011, there was no retrospective pattern in terms of SSB, F and recruitment. The prevalence of age 9 fish in the commercial catch in 2012 was expected to be high based on the abundance of the 2003 cohort in each of the previous age categories. However, a proportionately low value of age 9 catch [2003 year class] in 2012 led to a much lower estimate of this cohort, causing a retrospective bias.

There is a strong retrospective bias in SSB and F from the 2013 assessment (VPA “M 0.8”) which is caused by the substantial reduction in the estimated size of the 2003 year class. Sensitivity analyses suggest that this low estimate of the 2003 year class may be an outlier. However, the estimation of the 2003 year class had little impact on the estimation of other year classes in the terminal year. The adult biomass, recruitment, and fishing mortality estimates presented below were from the VPA “M 0.8” model.

Since 1995, **adult population biomass** (ages 3+) has fluctuated between 5,800 mt and 19,600 mt (Figure 2). The estimated adult population biomass at the beginning of 2013 from the VPA

EGB Cod

“M 0.8” model was 11,160 mt, which was about 20% of the adult biomass in 1978 (Figure 2). The increase since 2005 was largely due to recruitment and growth of the 2003 year class.

Recruitment at age 1 has been low in recent years (Figure 2). The 2003 year class is estimated to be the highest recruitment since 2000 (excluding 2010). The initial estimate of the 2010 year class is stronger than the 2003 year class based on the 2013 assessment. The bottom trawl surveys caught no fish from the 2012 year class.

Fishing mortality (population weighted average of ages 4-9) was high prior to 1994 and declined in 1995 to $F=0.11$ due to restrictive management measures. F in 2012 was estimated to be 0.07 from the VPA “M 0.8” model (Figure 1).

Productivity

Recruitment, age structure, fish growth, and spatial distribution typically reflect changes in the productive potential. The current biomass is well below 25,000 mt; when biomass is above this threshold, there is a better chance for higher recruitment (Figure 3). In absolute numbers, the **population age structure** displays a low proportion of ages 7+ compared to the 1980s. Average weight at length, used to reflect condition, has been stable in the past, but has started to decline in recent years. Lower weights at age in the population in recent years and poor recruitment have contributed to the lack of rebuilding. **Size at age** in the 2012 fishery remained at low levels. The research survey **spatial distribution** patterns of adult (3+) cod have not changed over the past decade.

Outlook

This outlook is provided in terms of consequences with respect to the harvest reference points for alternative catch quotas in 2014. At the 2013 cod benchmark meeting, it was agreed that the current $F_{ref}=0.18$ was inconsistent with the VPA “M 0.8” model given that it was derived based on models with an $M=0.2$. Although no consensus was reached as to what an appropriate F_{ref} would be for the VPA “M 0.8” model, it was agreed that it should be lower. The TRAC agreed that projections would be run at the current F_{ref} of 0.18 and at a value less than the F_{ref} . The sensitivity value of $F=0.11$ was used for the second projection analysis.

Uncertainty about current biomass generates uncertainty in forecast results, which is expressed here as the probability of exceeding $F_{ref}=0.18$ or $F=0.11$ and change in adult biomass from 2014 to 2015. The risk calculations assist in evaluating the consequences of alternative catch quotas by providing a general measure of the uncertainties. However, risk calculations are dependent on the data and model assumptions and do not include uncertainty due to variations in weight at age, partial recruitment to the fishery, natural mortality, systematic errors in data reporting, the possibility that the model may not reflect stock dynamics closely enough, and retrospective bias.

For **projections**, the average of the most recent three years of fishery and survey weight data were used for fishery and beginning year population weights for 2014 and 2015. The 2013 and 2014 partial recruitment pattern was based on the most recent five years of estimated partial recruitment. The 2008-2012 geometric mean of recruitment at age 1 was used for 2013-2015

EGB Cod

projections. The initial indication of the 2012 year class is very weak; the projection could be optimistic. Catch in 2013 was assumed to be equal to the 600 mt quota, and $F=0.18$ or $F=0.11$ in 2014.

Although the VPA “M 0.8” model results are not reliable for population trends, comparison with the sensitivity analyses that adjusted for the 2003 year class indicates similar catch advice.

2014 Catch (mt)

Probability of exceeding target F in 2014	0.25	0.5	0.75
“M 0.8”(F =0.11)	1,075 mt	1,225 mt	1,425mt
“M 0.8”(F _{ref} =0.18)	1,800 mt	2,100 mt	2,400 mt

Neutral risk (50%) that biomass will not increase by:	0%	10%
“M 0.8”	2,075 mt	600 mt

Considering $F_{\text{ref}}=0.18$ is not consistent with the assessment VPA “M 0.8” model, it is inappropriate for the catch advice (shown in grey font in the text table above). TRAC recommends basing catch advice on F lower than F_{ref} .

A 50% probability of not exceeding $F=0.11$ implies catches less than 1,225 mt (Figure 4). However, given the extremely low SSB, TRAC advises that management should try to realize the growth potential from the 2010 year class to rebuild the spawning stock biomass. In order to not exceed $F=0.11$, and to achieve a 10% increase in biomass, catches must not exceed 600 mt (see text tables above and Table 1). No fishing in 2014 implies an increase in adult biomass from 2014 to 2015 of about 15%.

While management measures have resulted in a decreased exploitation rate since 1995, total mortality has remained high and adult biomass has fluctuated at a low level. The continuing poor recruitment since the early 1990s and the assumed high natural mortality on ages 6+ since 1995 are important factors for this lower productivity. The initial estimate of the 2010 year class is higher than adjacent year classes, but is still well below the average of 1978-1990, when the productivity is considered to have been higher. Rebuilding will not occur without improved recruitment.

A consequence analysis to understand the risks associated with assumptions of the VPA “M 0.8” and ASAP “M 0.2” models (reviewed at the 2013 benchmark) was examined. This consequence analysis estimated the projected catch at F_{ref} and $F=0.11$ as if each model represented the true state of the resource and examined the consequences to expected biomass under alternative model assumptions. It showed that under both sets of model assumptions, a projected catch of about 600 mt in 2014 would not exceed $F_{\text{ref}}=0.18$ while achieving a 10% increase in SSB between 2014 and 2015.

Considering $F_{\text{ref}}=0.18$ is not consistent with the assessment VPA “M 0.8” model, it is inappropriate for the catch advice (shown in top left dark grey shaded box font in the consequence table below).

EGB Cod

		VPA 0.8	ASAP
Catch 2012		613 mt	613 mt
quota 2013		600 mt	600 mt
2012 biomass (3+)		7700 mt	2091 mt
2013 biomass (3+)		11160 mt	
Projected Catch			
2028 mt (VPA F=0.18)	2014 F	0.18	0.75
	2015 Biomass	13314	3328
	% inc B from 2014	0.4%	-20.2%
1225 mt (VPA F=0.11)	2014 F	0.11	0.40
	2015 Biomass	14018	4153
	% inc B from 2014	6%	-0.42%
601 mt (ASAP F=0.18)	2014 F	0.05	0.18
	2015 Biomass	14646	4794
	% inc B from 2014	10.0%	15.0%
378 mt (ASAP F=0.11)	2014 F	0.03	0.11
	2015 Biomass	14858	5029
	% inc B from 2014	12%	20.6%
	F<=Fref and a 10% biomass increase in 2015		
	F<=Fref and biomass increase less than 10% in 2015		
	F>Fref and biomass increase less than 10% in 2015		
	not feasible projection		

Special Considerations

The consequence analysis reflects the uncertainties in the assessment model assumptions. Despite these uncertainties, all assessment results indicate that low catches are needed to promote rebuilding.

In July 2013, there will be a reduction in the minimum size for the USA fishery from 22 inches to 19 inches. This is expected to result in reduced discards and a possible change in PR for the youngest ages.

The TRAC agreed that projections would be run at the current F_{ref} of 0.18 and at a value less than 0.18. A value of $F=0.11$ was used to provide catch advice for 2014. A consequence analysis was used to determine risks under alternative model assumptions. Further investigation will be required to determine an appropriate recommendation for an exploitation rate for the benchmark model.

Source Documents

Clark, K.J., and L. O'Brien, editors. 2013. Proceedings of the Transboundary Resources Assessment Committee (TRAC): Eastern Georges Bank Cod and Haddock, and Georges Bank Yellowtail Flounder. Report of Meeting held 25-27 June 2013. TRAC Proceedings 2013/02.

Clayton R., and L. O'Brien, editors. 2013. Proceedings of the Transboundary Resources Assessment Committee (TRAC): Transboundary Resources Assessment Committee Eastern Georges Bank Cod Benchmark Assessment. TRAC Proceedings 2013/01.

Wang, Y., and L. O'Brien. 2013. Assessment of Eastern Georges Bank Atlantic Cod for 2013. TRAC Reference Document 2013/02.

Correct Citation

TRAC. 2013. Eastern Georges Bank Cod. TRAC Status Report 2013/02.

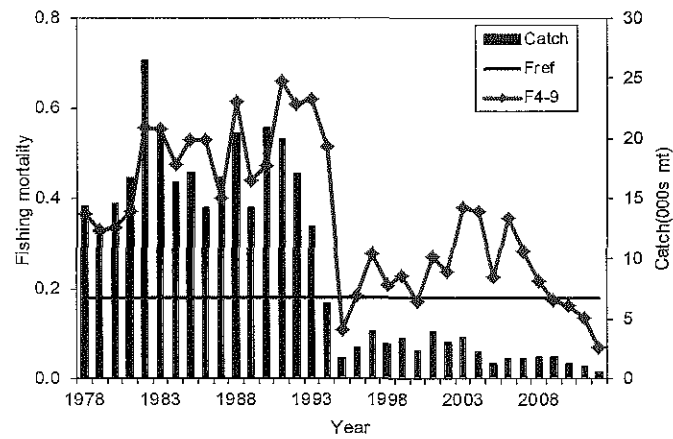


Figure 1. Catches and fishing mortality (F).

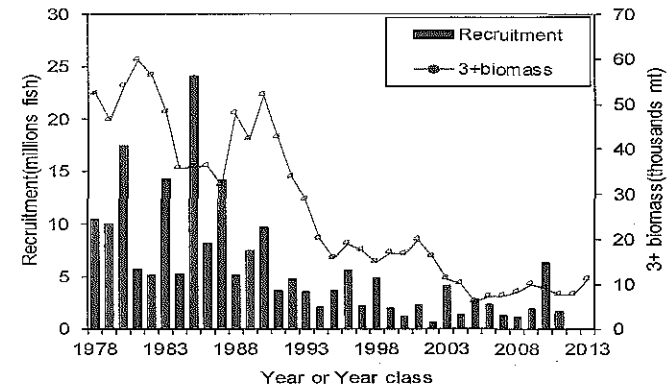


Figure 2. Biomass and recruitment.

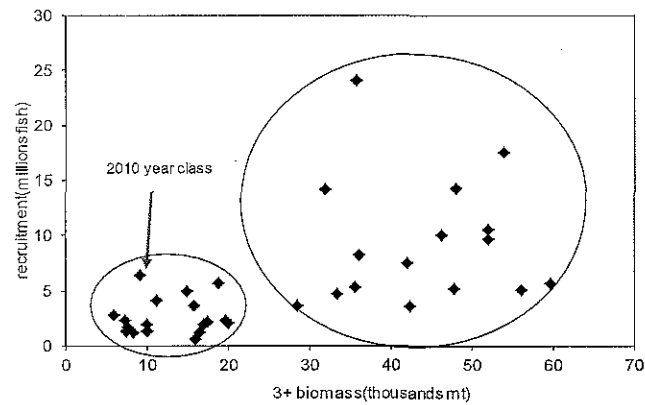


Figure 3. Stock recruitment patterns. Red arrow indicates 2010 year class at age 1.

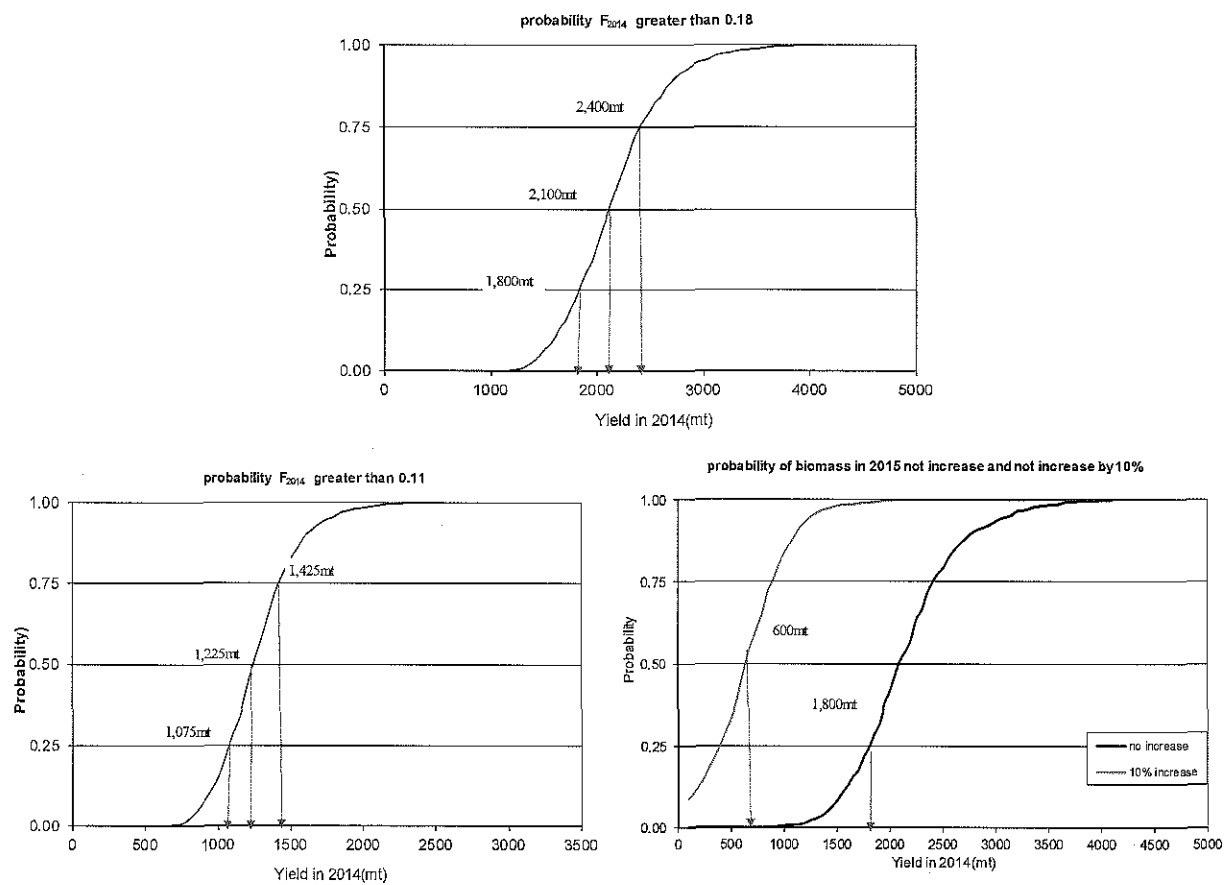


Figure 4. Projections and risks.

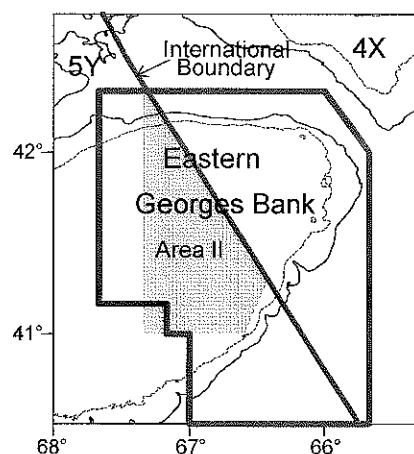


Transboundary Resources Assessment Committee

Status Report 2013/03

**EASTERN
GEORGES BANK
Haddock**

[5Zjm; 551,552,561,562]



Summary

- Combined Canada and USA catches in 2012 were 5,631 mt.
- At the beginning of 2013, the adult biomass increased to 183,600 mt. The 2014 3+ biomass is projected to be the largest in the time series at 245,500 mt, due to the contribution from the outstanding 2010 and strong 2011 year classes.
- The current estimate for the 2010 year class is 474 million age 1 fish, which would make it the largest cohort in the assessment time series. The preliminary estimate for the 2012 year class is 15 million age 1 fish. Except for the strong 2000 and 2011 year classes and the exceptionally large 2003 and 2010 year classes, recruitment has fluctuated between 2.1 and 28.8 million since 1990.
- Fishing mortality was below $F_{ref} = 0.26$ during 1995 to 2003, above or near F_{ref} in 2004 to 2006, but has subsequently been below F_{ref} and was 0.16 in 2012.
- This stock exhibits positive features such as an expanding age structure, broad spatial distribution, and has produced two exceptionally strong and two strong year classes in the last 13 years. Fish condition has generally been below the time series average since 2000.
- Assuming a 2013 catch equal to the 10,400 mt total quota, a combined Canada/USA catch of 31,500 mt in 2014 results in a neutral risk (50%) that the 2014 fishing mortality rate would exceed $F_{ref} = 0.26$. The probability that the 2015 biomass will not increase is greater than 75% at the F_{ref} catch level and there is almost no chance that it will increase by 10% at any of the catch scenarios considered. Biomass at the beginning of 2015 is projected to be 240,000 mt fishing at F_{ref} .



Catches and Biomass (thousands mt); Recruits (millions)

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Avg ¹	Min ¹	Max ¹
Canada⁸	Quota	9.9	15.4	14.5	12.7	15.0	18.9	17.6	12.5	9.1	6.4			
	Landed	9.7	14.5	12.0	11.9	14.8	17.6	16.6	11.2	5.0		5.6	0.5	17.6
	Discard	0.1	<0.0	0.1	0.1	<0.0	0.1	<0.0	<0.0	<0.0		0.1	<0.0	0.2
USA⁸	Quota²	5.1	7.6	7.5	6.3	8.1	11.1	12.0	9.5	6.9	4.0			
	Catch²	1.1	0.6	0.7	0.3	1.6	1.6	1.8	1.1	0.4				
	Landed	1.8	0.6	0.3	0.3	1.1	2.2	2.2	1.3	0.4		2.0	<0.0	9.1
	Discard	0.2	0.1	0.3	0.3	0.1	0.1	0.0	0.1	0.1		0.6	0.0	7.6
Total⁸	Quota³	15.0	23.0	22.0	19.0	23.0	30.0	29.6	22.0	16.0	10.4			
	Catch^{3,4}	10.9	15.1	12.7	12.3	17.1	17.6	18.4	12.3	5.1				
	Catch	11.9	15.3	12.6	12.5	16.0	19.9	18.8	12.7	5.6		8.2	2.1	23.3
	Adult Biomass⁵	79.0	59.9	123.3	150.9	151.3	159.9	124.9	89.1	62.7	183.6	51.2 ⁶	4.9 ⁶	183.6 ⁶
	Age 1 Recruits	306.7	7.1	16.2	5.4	6.4	3.5	4.7	474.3	73.9	15.3	33.4 ⁶	0.2 ⁶	474.3 ⁶
	Fishing mortality⁷	0.28	0.26	0.26	0.14	0.09	0.13	0.17	0.15	0.16		0.29	0.09	0.57
	Exploitation Rate⁷	22%	21%	21%	12%	8%	11%	14%	13%	13%		22%	8%	40%

¹1969 – 2012²for fishing year from May 1st – April 30th³for Canadian calendar year and USA fishing year May 1st – April 30th⁴sum of Canadian Landed, Canadian Discard, and USA Catch (includes discards)⁵January 1st ages 3+⁶1931 – 1955, 1969 – 2013⁷ages 4-8 for 1969 – 2002; ages 5-8 for 2003 – 2012⁸unless otherwise noted, all values reported are for calendar year***Fishery***

Under restrictive management measures, **combined Canada/USA catches** declined from 6,504 mt in 1991 to a low of 2,150 mt in 1995, varied between about 3,000 mt and 4,000 mt until 1999, and increased to 15,256 mt in 2005 (Figure 1). Combined catches then decreased to 12,508 mt in 2007 but increased to 19,856 in 2009 and decreased the following two years and were 5,631 mt in 2012.

The **Canadian catch** in 2012 decreased to 5,062 mt from 11,247 mt in 2011. The weight of all Canadian landings was monitored at dockside. Discards in the groundfish fishery are considered to be negligible. Discards of haddock by the Canadian sea scallop fishery ranged between 29 mt and 186 mt since 1969 and were 28 mt in 2012.

USA catches decreased from 1,409 mt in 2011 to 569 mt in 2012. Landings were 443 mt and discards were estimated to be 126 mt, primarily from the large mesh otter trawl fishery. Landings are reported by dealers and discards are estimated from at-sea observer data.

The **combined Canada/USA fishery catch** (landings + discards) in 2012 was dominated by the 2003 year class (age 9) by numbers and weight. Both the Canadian and the USA fisheries were adequately sampled to determine length composition of the catch.

Harvest Strategy and Reference Points

The Transboundary Management Guidance Committee (TMGC) has adopted a strategy to maintain a low to neutral risk of exceeding the fishing mortality reference, $F_{ref} = 0.26$

(established in 2002 by the TMGC). When stock conditions are poor, fishing mortality rates should be further reduced to promote rebuilding.

State of Resource

Evaluation of the state of the resource was based on results from an age structured analytical assessment (Virtual Population Analysis, VPA) that used fishery catch statistics and sampling for size and age composition of the catch for 1969 to 2012 (including discards). The VPA was calibrated to trends in abundance from three bottom trawl survey series: NMFS spring, NMFS fall and DFO. Retrospective analyses were conducted to detect any tendency to consistently overestimate or underestimate fishing mortality, biomass and recruitment relative to the terminal year estimates. The current stock assessment does not display a retrospective bias.

Improved **recruitment** since 1990, lower exploitation, and reduced capture of small fish in the fisheries allowed the **adult population biomass** (ages 3+) to increase from near a historical low of 10,300 mt in 1993 to 83,900 mt in 2003 (Figure 2). Adult biomass decreased to 59,900 mt in 2005 and subsequently increased to 159,900 mt in 2009, higher than the 1931-1955 maximum biomass of about 90,000 mt. At the beginning of 2013, the adult biomass increased to 183,600 mt (80% confidence interval: 146,700 mt – 249,300 mt). The tripling of the adult biomass after 2005 was due to the exceptionally strong 2003 year class, currently estimated at 307 million age 1 fish. The current estimate for the 2010 year class is 474 million age 1 fish, which would make it the largest cohort in the assessment time series: 1931-1955 and 1969-2012. The preliminary estimate for the 2012 year class is 15 million age 1 fish. Except for the strong 2000 and 2011 year classes and the exceptionally strong 2003 and 2010 year classes, recruitment has fluctuated between 2.1 and 28.8 million since 1990.

Fishing mortality (population weighted for ages 4-8) fluctuated between 0.26 and 0.47 during the 1980s, and increased in 1992 and 1993 to about 0.5, the highest observed. After 2002, the age at full recruitment to the fishery has been age 5 (rather than age 4 previously) due to a decline in size at age of haddock. Fishing mortality (population weighted for ages 4-8 prior to 2003 and ages 5-8 for 2003-2012) was below $F_{ref} = 0.26$ during 1995 to 2003, above or near F_{ref} in 2004 to 2006, but has subsequently been below F_{ref} and was 0.16 in 2012 (80% confidence interval: 0.14 – 0.20, Figure 1).

Productivity

Recruitment, as well as age structure, spatial distribution and fish growth reflect changes in the productive potential. Recruitment, while highly variable, has generally been higher when adult biomass has been above 40,000 mt, which has been the case since 2001 (Figure 3). The **population age structure** displays a broad representation of age groups, reflecting improving recruitment and lower exploitation since 1995. The **spatial distribution** patterns observed during the most recent bottom trawl surveys were similar to the average patterns over the previous ten years. There has been a general decline in weights at age since the late 1990s. The 2003 year class appears to have reached its maximum growth potential. Fish condition as measured by Fulton's K derived from the DFO survey and the NMFS fall survey has generally been below the time series average since 2000.

Outlook

This outlook is provided in terms of consequences with respect to the harvest reference points for alternative catch quotas in 2014. Uncertainty about current biomass generates uncertainty in forecast results, which is expressed here as the probability of exceeding $F_{ref}=0.26$ and change in adult biomass from 2014 to 2015. The risk calculations assist in evaluating the consequences of alternative catch quotas by providing a general measure of the uncertainties. However, the risk calculations are dependent on the data and model assumptions and do not include uncertainty due to variations in weight at age, partial recruitment to the fishery, natural mortality, systematic errors in data reporting, the possibility that the model may not reflect stock dynamics closely enough and retrospective bias.

For projections, the most recent 3-year survey and fishery average weights at age were used as inputs. Fishery partial recruitment (PR) was based on the 2003 to 2012 population weighted average. The PR on the age 9+ group was 0.3 which is consistent with the model. No growth was assumed for the 2003 year class from ages 10 to 12. The 2003 year class values were used for the 2010 year class for weights and partial recruitment due to similarity in growth.

Assuming a 2013 catch equal to the 10,400 mt total quota, a combined Canada/USA catch of 31,500 mt in 2014 results in a neutral risk (50%) that the 2014 fishing mortality rate would exceed $F_{ref} = 0.26$ (Figure 4). The 2014 3+ biomass is projected to be the largest in the time series at 245,500 mt, due to the contribution from the outstanding 2010 and strong 2011 year classes. The 9+ age group (9%), of which the 2003 year class is the main component, and the 2010 year class (83%) are expected to constitute the majority of the 2014 catch biomass. A catch of 27,000 mt in 2014 results in a low risk (25%) that the 2014 fishing mortality rate will exceed F_{ref} . A catch of 37,500 mt in 2014 results in a high risk (75%) that the 2014 fishing mortality rate will exceed F_{ref} . The probability that the 2015 biomass will not increase is greater than 75% at the F_{ref} catch level and there is almost no chance that it will increase by 10% at any of the catch scenarios considered. Biomass at the beginning of 2015 is projected to be 240,000 mt fishing at F_{ref} . Biomass increase is expected to be offset by fishery catch and natural mortality.

Probability of exceeding F_{ref}	25%	50%	75%
2014 catch	27,000 mt	31,500 mt	37,500 mt

Special Considerations

Although the fishing mortality reference is based on a PR of 1 for older ages, the benchmark model indicates a PR of 0.3 for the 9+ age group. Several corroborating factors influenced the decision to use the lower PR produced by the model, e.g. the predicted versus observed 2011 catch at age supports the use of the lower PR.

Although currently the 2013 haddock quota is projected to be above F_{ref} , it is unlikely that the 2013 quota will be caught due to restrictive quotas on other species.

In July 2013 there will be a reduction in minimum size from 18 inches to 16 inches for the US fishery which is expected to result in reduced discards and a possible change in PR for the youngest ages.

Source Documents

Clark, K.J., and L. O'Brien, editors. 2013. Proceedings of the Transboundary Resources Assessment Committee (TRAC): Eastern Georges Bank Cod and Haddock, and Georges Bank Yellowtail Flounder: Report of Meeting held 25-27 June 2013. TRAC Proceedings 2013/02.

Van Eeckhaute, L. and E.N. Brooks. 2013. Assessment of Haddock on Eastern Georges Bank for 2013. TRAC Reference Document 2013/03.

Correct Citation

TRAC. 2013. Eastern Georges Bank Haddock. TRAC Status Report 2013/03.

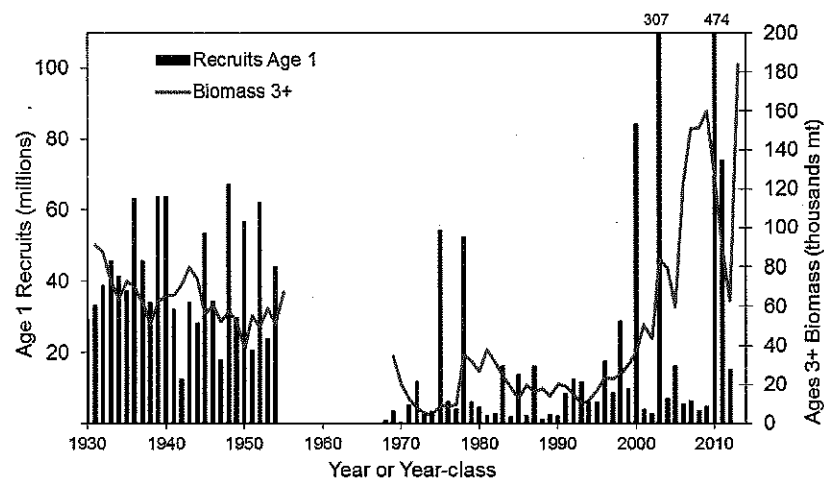


Figure 2. Biomass (line) and recruitment (bars).

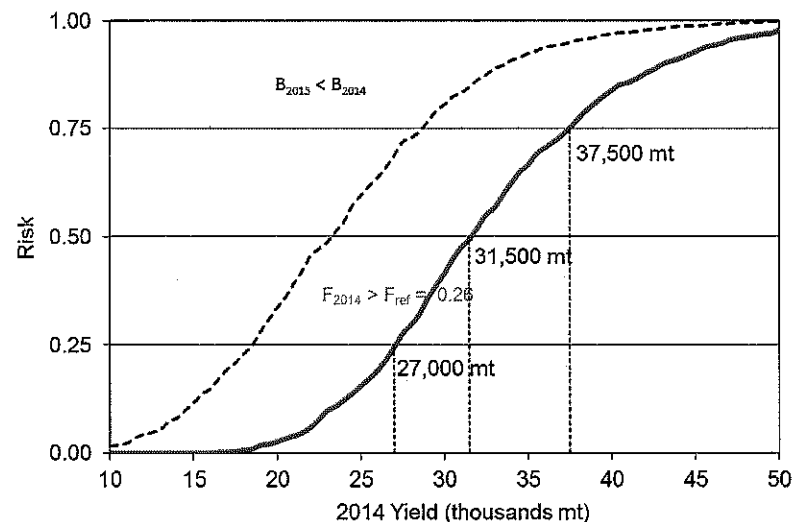


Figure 4. Projection risks.

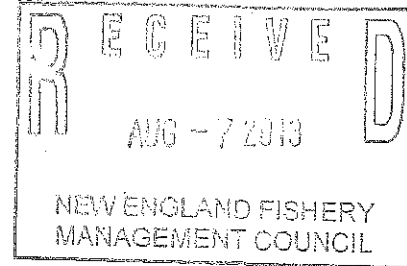


UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northeast Fisheries Science Center
166 Water Street
Woods Hole, MA 02543-1026

August 6, 2013

3

Mr. Thomas A. Nies
Executive Director
New England Fishery Management Council
50 Water Street
Newburyport, MA 01950



Dear Tom:

I am writing to follow up on your letter of May 24, 2013, and subsequent discussions relating to the consideration of ecosystem issues in our stock assessment process. In your letter, you refer to two actions taken by the New England Fishery Management Council at its April 2013 meeting. As you note, these motions are similar in nature to other motions passed by the Council at recent meetings.

In my letter of April 4, 2013, I responded to the earlier Council actions and described work we are carrying out at the Center to develop a process for including ecosystem and climate interactions in the assessment process and evaluating the effect of climate and ecosystem on biological reference points and stock forecasts. I mentioned that I have established a high-level working group to develop a strategy for advancing our assessment capabilities and guide the implementation of the strategy. This group has been meeting regularly since the spring, and I expect to be able to report on their work to the Council at the September or November meeting.

The Council has taken several actions during the last year that signal its interest in moving forward to address the challenges of ecosystem-based fisheries management (EBFM). The Northeast Fisheries Science has a long history of research on the fisheries and marine ecosystems of New England, and we are committed to working with the Council as this process unfolds.

Sincerely,

William A. Karp, Ph.D.
Science and Research Director

cc: C. Moore, MAFMC
J. Bullard, NER



cc: Council, PMF, JC, RF, FH (8/18)



3

New England Fishery Management Council

50 WATER STREET | NEWBURYPORT, MASSACHUSETTS 01950 | PHONE 978 465 0492 | FAX 978 465 3116
C. M. "Rip" Cunningham, Jr., *Chairman* | Thomas A. Nies, *Executive Director*

May 24, 2013

Dr. William Karp
Science and Research Director
Northeast Fisheries Science Center
166 Water Street
Woods Hole, MA 02543-1026

Dear Bill:

I am writing to convey two requests from the New England Council.

On April 24, 2013, the Council passed the following motion:

"{To} request that the Council send a letter to NEFSC to: 1. establish a research track to map changes to spawning sites and general distribution of all groundfish and explore what these changes mean to long term yield from the fishery; and 2. that ecosystem reference points be a term of reference in all future groundfish assessments."

The motion **carried** unanimously.

The Council also passed a related motion:

"{The Council} request{s} that the appropriate group (SSC or NEFSC) initiate calculations for a new set of groundfish reference points for the current regime. Once these calculations are complete, have the SSC calculate new ABCs and ACLs as the new reference points become available."

The motion **carried** on a show of hands (15/1/1).

These two new motions are similar in nature to other motions approved at previous Council meetings. For example, in January the Council asked for new reference points for several groundfish stocks in light of changes to predator/prey relationships and changing environmental conditions, a request you responded to on April 4, 2013. The consistent theme in these motions is a sense that a broader consideration of ecosystem issues is needed in our assessment and management system. Clearly you are sensitive to this concern and I look forward to working with you to incorporate it into our process.

The Council appreciates that the NEFSC has been tasked with several other Council requests, such as cod stock structure, investigation of mixing rates between haddock stocks and a scallop survey peer review. Please let me know if I can help prioritize your responses to these requests.

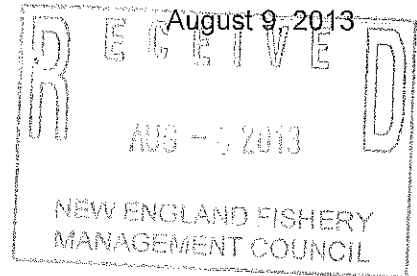
Sincerely,

A handwritten signature in black ink, reading "Thomas A. Nies". The signature is written in a cursive style with a prominent loop at the end of the last name.

Thomas A. Nies
Executive Director

cc: Mr. John Bullard, Regional Administrator, Northeast Region
Dr. Jake Kritzer, SSC Chair

Terry Stockwell
Chairman, Multispecies Oversight Committee
New England Fishery Management Council
50 Water Street Mill 2
Newburyport, MA 01950



Re: Development of Alternatives in Framework 51

Dear Mr. Stockwell:

Oceana writes to urge the Multispecies Committee to take action at its August 14 meeting to include catch monitoring alternatives in the scope of work for Framework 51 which was initiated in June 2013. These alternatives are necessary to address the chronic weaknesses in the sector catch monitoring program that undermine the success of the Fishery Management Plan(FMP) in meeting its goals and objectives.

Specifically, Oceana suggests that the Council include a range of alternatives to implement full retention requirements in all or part of the Multispecies fishery. With careful development full retention may provide accurate and precise catch data to support the management of this important fishery.

This should be a priority issue for development and consideration in FW51.

Need for Accurate and Precise Catch Monitoring

The primary Accountability Measure (AM) for the sector fishery is a system of sector-specific sub-quotas for each allocated stock under the Multispecies FMP known as Annual Catch Entitlements (ACEs). The administration of ACE allocations to control catch relies on the ability of fishery managers and sector managers to control catch (landings + discards) in each sector and ensure that sector ACEs are not exceeded. This approach requires accurate and precise and timely data streams from shoreside and at-sea monitoring to inform catch monitoring and control. In the initial years of the sector program, catch monitoring reporting was provided by NMFS with the expectation that industry-funded monitoring would be in place for the 2012 fishing year. Because of special circumstances agency funding was extended to 2012 and 2013 by ad-hoc annual agency support.

However, there are two inherent weaknesses in this approach that should be addressed in FW51. First the NMFS-supported catch monitoring program does not and has not yet provided accurate or precise catch information to support the administration of ACE allocations. In fact a large number of ACE allocations have not been monitored with precision and there is a general bias in the data that has been collected in the initial years of the sector program. This lack of monitoring leads to ineffective management and undermines the FMP.

Second, given the uncertainty that is associated with agency funding the Council should not rely on ongoing agency support for these costs. The council should look at more sustainable options to support the sector program for the future.

Terry Stockwell
NEFMC Multispecies Committee
August 9, 2013

A robust full retention program may address both of these weaknesses in the status quo monitoring of the sector fishery.

Full Retention-


In FW48 the Council began development of a full retention alternative that would require all catch of allocated groundfish to be retained and accounted for by more cost-effective shoreside catch accounting methods¹. While full retention approach showed promise, it had considerable weaknesses that were not addressed in the development of FW48 prior to Council action. In response to this under-developed yet promising approach to catch monitoring the Council deferred action on a full retention alternative and voted unanimously on December 20, 2012 to "adopt or discuss the full retention program in the *next appropriate groundfish action*."²

Oceana agrees that the options developed in FW48 were incomplete in would have been ineffective in providing the catch monitoring needs of the fishery. Oceana looks to the Multispecies committee to continue development of a full retention option in FW51 to provide a long-term sustainable monitoring program for the sector program. This proposal should include direction to the Multispecies Plan Development Team (PDT) to fully address the weaknesses in the FW48 alternative that were discussed in December 2012 and develop safeguards to guard against cheating or violations of the retention regulations.

A well-developed full retention program may be a viable alternative or compliment to robust at-sea monitoring. This alternative approach should receive the attention of the Council in FW51 as a long term solution to support the catch monitoring needs of the NE Multispecies catch share program.

We thank you for your consideration of this important issues and look forward to working with the committee and the PDT to fully develop this alternative.

Sincerely,



Gib Brogan
Oceana
Wayland, MA

¹ See FW48 Section 4.2.3.3 (attached)

² New England Fishery Management Council Motions, December 20, 2012. Motion # 21, carried 15/0/0.

Framework 48 Section 4.2.3.3 Option 3: Full Retention

If this action is adopted all allocated currently regulated groundfish of all sizes, including cod, haddock, white hake, pollock, Acadian redfish, yellowtail flounder, Georges Bank and Gulf of Maine winter flounder, witch flounder, and American plaice, must be retained by sector vessels, i.e. no discarding of non-prohibited fish. Discarding of non-allocated groundfish species, including those that require no-retention as part of a rebuilding program will continue. Allocated regulated groundfish that are physically damaged, e.g. by predation, must be retained. This action would not alter regulated mesh areas or restrictions on gear and methods of fishing. This measure would not change possession requirements for other species that are regulated by other Fishery Management Plans. It should be noted that this change would be made to reduce regulatory discards, not to facilitate targeting of smaller fish. As a result, while sectors would not be prohibited from requesting exemptions from minimum mesh requirements, the expectation is that before such a request would be approved a sector would have to explain why such an exemption would not lead to increased targeting of juvenile groundfish. For example, an exemption request to allow use of square mesh less than 6.5 inches to target GB haddock, or smaller mesh to target redfish, might be approved under certain circumstances because these meshes might not increase catches of small fish. But a request to use a smaller diamond mesh to target haddock might not be approved because, depending on mesh size, it might be expected to increase catches of sub-legal fish.

Rationale: Full retention may help reduce monitoring costs by facilitating the adoption of electronic monitoring, as there would be less of a need to estimate the weight of groundfish discards. The amount of data collected by at-sea monitors required for total discard estimation and composition would also be reduced. Discarding is considered to be a wasteful practice. A portion of discarded fish is thrown back dead resulting in economic loss to fishermen and the needless loss of fish to the population.

From: Maggie Raymond [mailto:maggieraymond@comcast.net]

Sent: Monday, August 12, 2013 2:01 PM

To: Jamie M. Cournane

Subject: FW: age of fleet report - with correct attachment

Jamie

Can you please make sure a copy of attached Coast Guard report is in meeting materials of groundfish committee members on Wed?

Thanks

Maggie



First Coast Guard District Report to the NEFMC

September 28th, 2010

Captain Pete DeCola



Enforcement

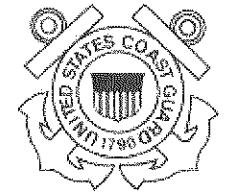
June 1st to September 25th



- **Fishing Vessel Boardings: 518**
- **Fishery Violations Issued: 14**
- **Observed Compliance Rate: 97.3%**
- **Last Reported Compliance Rate: 96.3%**
- **FY10 to date Compliance Rate: 98.2%**



Safety



☐ June 1st to September 25th

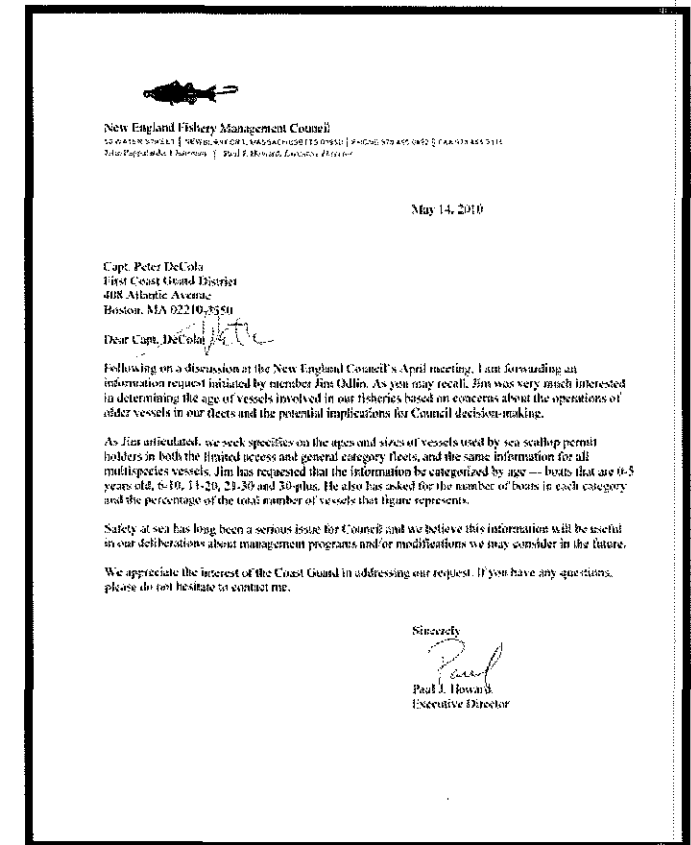
- **Fishing Vessel Boardings – 518**
- **Safety Violations Issued – 71**
- **Observed Compliance Rate: 86.3%**
- **Last Reported Compliance Rate: 79.9 %**



Follow up to Request From the Council

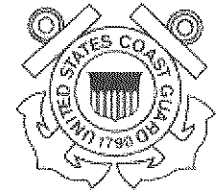


- “ages and sizes of vessels used by sea scallop permit holders in both the limited access and general category fleets, and the same information for all multispecies vessels.”





Casualty Data Comparisons



- Sea Scallop and Multispecies Fleets
- Limited to Reported Casualties
- Casualties include the following types of accidents:
 - Disabled
 - Flooding
 - Aground
 - Man overboard
 - Allision
 - MEDEVAC
 - Collision
 - Injury
 - Capsize
 - Fire
 - Sinking
- Conclusions are general in Scope



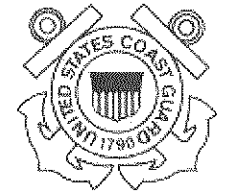
Conclusions From June Report



- General correlation between vessel size and age with respect to reported casualties in the sea scallop fleet
- Multispecies vessels built between 1970-1979 appear to have a disproportionate amount of reported casualties
- Multispecies vessels between 70-79 feet have a disproportionate amount of reported casualties.
- This is a potential starting point for further study.
- Loss of stability and man overboard continue to be the leading causes for fatalities.



Additional Data



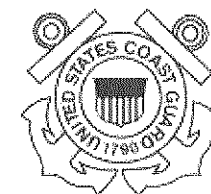
- NOAA VMS Database
 - Hours spent fishing January 1st, 2008 thru June 1st, 2010
 - Compare casualties to how much fishing was being done.
 - Normalize the casualties (casualties per 100,000 hours fishing)
 - Casualty rate vice percentage
 - Apples to apples comparison of age, size and across FMP's



Scallop Fleet Age

Year Built	Hours Fishing	% of Fleet Size	% of effort	# of Reported Casualties	% of Reported Casualties	Reported Casualty Rate (per 100 K hrs)
2000-2010	332,080 Hrs	14%	17%	11	11%	3.3
1990-1999	205,470 Hrs	10%	11%	6	6%	2.9
1980-1989	649,832 Hrs	37%	34%	35	36%	5.4
1970-1979	609,658 Hrs	29%	32%	41	42%	6.7
1900-1969	102,961 Hrs	8%	5%	4	5%	3.9

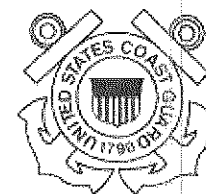
January 1st, 2008 to June 1st, 2010



Scallop Fleet Size

Vessel Size	Hours Fishing	% of Fleet Size	% of effort	# of Reported Casualties	% of Reported Casualties	Reported Casualty Rate (per 100 K hrs)
0-19	0	3%	0%	0	0%	0
20-29	0	0%	0 %	0	0%	0
30-39	12,382 Hrs	5%	1%	15	15%	121.1
40-49	143,340 Hrs	19%	8%	17	17%	11.9
50-59	87,163 Hrs	8%	5%	4	4%	4.6
60-69	200,842 Hrs	11%	11%	16	16%	8.0
70-79	606,824 Hrs	25%	32%	17	17%	2.8
80-89	582,116 Hrs	19%	31%	22	22%	3.8
90+	267,333 Hrs	10%	14%	7	7%	2.6

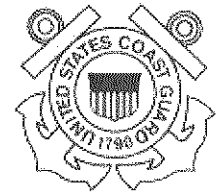
January 1st, 2008 to June 1st, 2010



Multispecies Fleet Age

Year Built	Hours Fishing	% of Fleet	% of Effort	# of Reported Casualties	% of Reported Casualties	Reported Casualty Rate (per 100 K hrs)
2000-2010	83,504 Hrs	18%	8%	8	6%	9.6
1990-1999	129,948 Hrs	15%	12%	10	11%	7.7
1980-1989	455,221 Hrs	33%	43%	45	38%	9.9
1970-1979	334,896 Hrs	23%	32%	49	45%	14.6
1900-1969	57,224 Hrs	8%	5%	10	10%	17.5

January 1st, 2008 to June 1st, 2010



Multispecies Fleet Size

Vessel Size	Hours Fishing	% of Fleet Size	% of Effort	# of Reported Casualties	% of Reported Casualties	Reported Casualty Rate (per 100 K hrs)
0-19	0	9%	0.0 %	0	0%	0
20-29	955 Hrs	14%	0.1 %	0	0%	0
30-39	116,670 Hrs	28%	11.0 %	12	8%	10.3
40-49	228,682 Hrs	19%	21.6 %	24	19%	10.5
50-59	103,098 Hrs	6%	9.7 %	13	10%	12.6
60-69	138,328 Hrs	6%	13.1 %	13	10%	9.4
70-79	253,764 Hrs	9%	23.9 %	42	33%	16.5
80-89	197,675 Hrs	6%	18.6 %	19	15%	9.6
90+	21,621 Hrs	3%	2.0 %	5	4%	8.1

January 1st, 2008 to June 1st, 2010



Revised Conclusions

- General increase in casualty rate with respect to age in the multispecies and sea scallop fleets
- Significantly increased casualty rate with scallop vessels 30 to 39 feet in length.
- Multispecies vessels between 70-79 feet have an elevated casualty rate.
- Multispecies fleet casualty rates are generally higher than those of the scallop fleet.
- Need to incorporate VMS data into a systematic analysis
- Loss of stability and man overboard continue to be the leading causes for fatalities.

91 FAIRVIEW AVE
PORSTMOUTH NH 03801

**NORTHEAST HOOK
FISHERMAN'S ASSOCIATION**

August 13, 2013

New England Fishery Management Council

50 WATER STREET | NEWBURYPORT, MASSACHUSETTS 01950 | PHONE 978 465 0492 | FAX 978 465 3116

C.M. "Rip" Cunningham, *Chairman* | Thomas A. Nies, *Executive Director*



Dear Groundfish Committee:

We represent a small group of Commercial Fishermen with the Limited Access Handgear HA Permits, employing the use rod and reel, handlines or tub trawls to catch Cod, Haddock and Pollock along with small quantities of other regulated and non-regulated marine fish. Historically and currently our fishermen account for a small percentage of the groundfish landed in New England. However, the monetary gains obtained by the participants in this fishery are very important to us.

The purpose of this letter is to address some of the PDT issues that were raised with our plan for A18. The issues are addressed below in the order of the PDT Memo of 8/8/2013:

1. The PDT is correct where we wish to be managed more in line with the Recreational fishery. The commercial Handgear fishery is the same as the recreational fishery where typically a Rod and Reel is used to catch groundfish with the same lures (jigs) or bait. Although we can use a tub trawl (old style method baited up to 250 hook long line), this is rarely used due to the high numbers of dogfish. In some ways the recreational fishery is allowed to use more liberal gear such as electric assisted reels. Recreational fishermen are also able to fish in several areas (Jefferies ledge, rolling closures, etc.) that commercial fishermen cannot. Since we are limited to essentially the same gear and want the same type of management measures, (Trip limits & Size limits), our plan for A18 makes the Handgear fishery as similar as possible. In addition to the limits of our gear, we have the same de minimis effect on the habitat. Since we are managed by quotas there are no needs for the effort controls (area closures such as Jefferies) of the past that no longer make sense for the Handgear fishery. The rolling closures (especially for cod) have been replaced with spawning closures. We do not catch many of the fish (flounders, hakes, monkfish, ect.) that rolling closures were also set up to protect.

2. The PDT is correct where the Handgear HA permit holders would not be given any one individual permit holder and our plan is not intended to be a LAPP. All HA permit holders would share the same sub-ACL just as the Recreational fishermen share the same quotas of cod and haddock.

3. **The Handgear fishermen are not interested in Sectors.** As the PDT stated Sectors is way too complicated for a simple fishery as ours and the costs are prohibitive. In addition this fishery needs to be simple enough so a 17 year old kid can go buy a skiff, some tackle and start fishing. The only way to keep this fishery simple and accessible to anyone is to not have the fishery become a sector. Asking for the numerous exemptions in addition to the administrative issues is not a viable future to restoring this fishery or even maintaining the current fishery. About 100 Handgear permits exist and only 1 HA permit holder has joined a sector. 99 have had the chance and have not unless they are just leasing their quota to other boats in the sectors (draggers, gill netters or long lines). In addition we do not have to continue to watch out for any broad brush administrative actions that would apply to "all sector vessels" that may sneak out of a fishery plan that would harm our method of fishing. The only way to preserve this fishery is to make it distinct and treated differently. It should be noted that just about all the New England state groundfish regulations for using hook gear are just as simple as what we are asking for when we cross the 3 miles line into federal waters.

4. *Would the Committee prefer to develop fishery regulations for the HA permit holders that are distinct from those governing the common pool and sectors?*

The NEHFA is asking the Committee to accept our plan so we can finally be managed as a Handgear fishery as simply as possible. We are asking the Committee to answer **Yes** to this question.

Would the Committee prefer to modify the common pool regulations, under which most of the HA permits are fished?

We are asking the Committee to answer **No** to this question. Very our fishery will cease to exist under the current regulations. We cannot continue to compete for the same fish as draggers and gill netters in the common pool. Also, eventually HA permits with history (PSC) will be sold off to other gear types under the current system. To preserve and restore this fishery the Handgear fishery must be separated as the recreational fishery was for cod and haddock in A16 where they were given their own allocation for the very same reasons.

Are there specific ideas in the NHFA proposal that the Committee would like to develop further at this time?

We are asking the Committee to answer **all** to this question with the addition of a small historical allocation of Haddock and possibly Pollock to cover the majority of the species caught. The NEHFA plan was developed over 3 years ago with discussion between many active Handgear fishermen, State fishery representatives and NMFS NERO staff. It is a well thought out plan that keeps the fishery simple and easily managed. This plan may end up being one of the more successful fishery management plans if implemented and it is exactly in line with goals of A18. Doesn't fleet diversity include small Handgear fishermen and their vessels? We would like to work directly with the PDT to resolve any issues in our plan that the PDT has raised if the committee requests.

5. The following comments are in response to the specific issues raised by the PDT when the PDT examined the NEHFA plan:

#12 *Allocate the Handgear HA permit category cod history (PSC) from 1996-2006 as a sub-ACL for use by HA fishermen.*

Response to PDT comments: Not sure how our plan takes quota away since we are asking that Handgear history be separated. **It is Handgear history.** We want to be independent fisherman not attached to sector plans and yes we can wait until A18 does what we are requesting. What we are requesting preserves this fishery for future generations of fishermen.

#13 *Specify Handgear cod sub-ACL can only be used by HA fishermen, using Handgear, if fishing in a sector.*

Response to PDT comments: Way to preserve this fishery from Handgear ACE being used by other gear types and lost forever.

#14 *Remove March 1-20 Handgear fishing closure.*

Response to PDT comments: Same enforcement as Recreational fishermen is all that is needed. In fact the current VTR reporting in addition to Dealer Reporting is much more conservative than the recreational fishery where the data is not real time and many months out before being processed. Not an issue due to the small percentage of the fishery the Handgear catch.

#15 *Access to fish in all permanent and rolling closures except the cod spawning closures.*

Response to PDT comments: Same access requested as the Recreational fishery. Same gear and methods. Yes we are requesting a small allocation of haddock. There are no closed area issues with the recreational fishery so this would not be a concern.

#16 Do not require LOA to fish on a commercial groundfish trip or a charter/party trip.

Response to PDT comments: We concur with the PDT comments. This provides more flexibility for the Handgear fishermen.

#17 Up to 20% unused Handgear HA cod ACL may be transferred to the following fishing year.

Response to PDT comments: We would accept a 10% if that is consistent.

#18 Eliminate trimester AMs for HA permit holders developed in A16.

Response to PDT comments: Concur with PDT. We should have a sub-ACL for all stocks we catch if possible.

#19 Automatic triggers to not exceed Handgear cod sub-ACL.

Response to PDT comments: Trip and size limits should work. Maybe 3 year average like the recreational fishery can be used for the Handgear fishery?

#20 Do not require IVR call-in unless 85% of the cod Handgear sub-ACL is harvested. Call in modified to streamline what is needed for this fishery.

Response to PDT comments: Is IVR really necessary with Dealer reporting and VTRs? The catch rates are slow enough and IVR was not required for until recently. Would future Web based VTRs submitted within 48 hrs. suffice instead of IVR?

#21 One HA permit per fisherman. One-time sell provision for existing HA permit holders.

Response to PDT comments: NEHFA will consider putting this in abeyance for future fishery actions. This may be too complicated for this fishery amendment.

#22 Removal of requirement for HA fishermen to carry a tote.

Response to PDT comments: Not needed and only Handgear fishermen were ever required to carry a tote. Totes not used takes up deck space that is precious on small boats. Handgear Fish are kept in cooler. When offloaded they are transferred into totes.

#23 Changes to Handgear input controls.

Response to PDT comments: Concur: The method (rod and reel or tub trawl) would remain the same. With quotas the input controls can be relaxed.

There are very few active Handgear fishermen left. The handgear jig fishery was the first in New England and if nothing is done it will be the first to be eliminated.

Respectfully,
Marc Stettner /s/

NEHFA MEMBERS: Marc Stettner, Hilary Dombrowski, Paul Hoffman, Christopher DiPilato, Ed Snell, Scott Rice, Roger Bryson, Brian McDevitt, Anthony Gross, Doug Amorello

If you are a holder of a groundfish HA permit and wish to join the NEHFA, please contact the NEHFA at the address above.