External Independent Peer Review by the Center for Independent Experts

Evaluation of the Study:

"Recommendations for Excessive Share Limits in the Northeast Multispecies Fishery"

SUMMARY REPORT

Background

The New England Fishery Management Council (NEFMC) is preparing Amendment 18 to the Northeast Multispecies Fishery Management Plan (FMP). Among other things under consideration, Amendment 18 would establish an excessive share threshold for the fishery consistent with National Standard 4 of the Magnuson Stevens Fishery Conservation and Management Act. To provide the needed expertise to establish an excessive share threshold the NEFMC contracted the economic consulting firm Compass Lexecon (see Annex 1 for Compass Lexecon's TORs) to conduct an empirical analysis to determine if excessive shares existed in the fishery today as well as the necessary constraints to prevent accumulation of excessive share in the future. Compass Lexecon completed its study and submitted its final report to the NEFMC on December 31, 2013.

At the request of the NEFMC a review panel has been convened to provide a peer review of Compass Lexecon's report (see Annex 2 for review panel TOR). The peer review panel was comprised of 3 experts provided through a contractual arrangement between NMFS Office of Science and Technology and the Center for Independent Experts (CIE) and one expert contracted by the NEFMC (see Annex 3 for panelist names and affiliations). The peer review panel was chaired by a member of the NEFMC's Science and Statistical Committee (SSC). Peer reviewers were provided with the Compass Lexecon final report, a multispecies fishery background document, the meeting announcement, and the TORs for the peer review. The review panel meeting took place in Salem, MA on June 12-13, 2014.

Meeting Summary

The panel review meeting consisted of a session on June 12th that was open to the public and a session on June 13th that was not. The June 12th session (see Annex 4 for the meeting agenda) began with a presentation provided by Council staff on the purpose and need for the excessive share study of the Northeast Multispecies fishery conducted by Compass Lexecon. This presentation was followed by an overview provided by Compass Lexecon's lead investigators of their methods, data, and findings. Throughout these two presentations the review panel sought clarification on both the operational aspects of the Northeast Multispecies Sector Allocation program and Compass Lexecon's procedures in the conduct of the excessive share study. During the afternoon of the 12th the review panel sought additional clarification on each of the panel's TOR for the peer review. Answers to the panelist's questions were provided by Compass Lexecon's lead investigators, Council staff, Greater Atlantic Regional Fisheries Office (GARFO) staff, and the Northeast Fisheries Science Center's (NEFMC) Social Sciences Branch (SSB) staff. These deliberations were informed by comments from members of the public in attendance.

On June 13th the review panel met to further discuss the peer review TORs where attendance was limited to the members of the peer review panel, the panel chair, and staff from the Council, GARFO, and the NEFSC's SSB. The peer review panel succeeded in addressing all of the TORs. The peer review panel's findings on each of the TORs are noted below.

TOR 1: Describe the method or process used by Compass Lexecon for determining the maximum possible allowable percentage share of the market for fishery access privileges and/or quota leasing that would prevent an entity from obtaining an excessive share of access privileges allocated in the Northeast Multispecies Fishery.

The review panel concurred that this term of reference was largely descriptive. The process used by Compass Lexecon included the following;

- A 7-step process was applied to determine an excessive share cap.
- Through unstructured voluntary interviews, qualitative data were collected on both product and ACE trading markets.
- The HHI was used to measure concentration using data provided by NMFS.
    - HHI was calculated at the Group-ID level for
        - Yearly harvest by species (Table 1)
        - Yearly ACE holdings by species (Table 6) and stock (Table 7)
    - HHI was calculated at the sector level for
        - Yearly ACE holdings by species (Table 3) and stock (Table 4)
- Horizontal Merger Guidelines were used to evaluate present levels of HHI.
    - 1500 was selected as a level consistent with competitive markets.

TOR 2: Evaluate the strengths and weaknesses of the proposed method or process developed by Compass Lexecon (e.g., whether defining excessive shares in terms of market power is appropriate and adequate). Evaluate whether the approach outlined by Compass Lexecon is reasonable for setting excessive share limits in fisheries managed through catch shares in general. As part of this TOR, comment on any constraints that may hinder application of the proposed approach.

The peer review panel concurred that defining market power in terms of excessive shares is appropriate. However, the review panel noted a number of concerns with the procedures used by Compass Lexecon in developing its recommendations.

Theory

- The underlying theory of market power in a regulated multiproduct fishery was not well developed. For the case of the Northeast fishery, the industry produces a multispecies product depending on vessel, gear type, time of year and location of catch. There is an upstream-downstream relationship between Permits/ACE market and the product market for landed fish. In

addition the underlying fishery resource is multispecies, and therefore, the production process is stochastic and multiproduct in nature. The presence of fishery access privileges that establish limits by species lends a Leontief (fixed coefficients) nature to the multiproduct production process. Taking these characteristics into consideration a single species deterministic static model is too simplistic. Catch limits are set based on biological criteria to maintain a sustainable fishery. Therefore, in addition to a microeconomic approach, a bioeconomic approach should be developed

Qualitative Data Collection

- The unit of observation for regulation was influenced by the qualitative information collected through webinars, interviews, and the survey. The peer review panel noted that insufficient information was provided to evaluate whether or not the qualitative information was representative of the population of individuals involved in the fishery. The panel was particularly concerned with the low response rate (12 of 800) to the survey. Neither the methods used to attempt to obtain a representative sample nor the survey questions were documented.

Relevant Product Market

- The general principles involved in determining the relevant market were noted in the Compass Lexecon report. However, no documentation was provided to establish whether and how the relevant market for groundfish in the Northeast was determined. The report indicates that import data were obtained, but the manner in which these data were used to ascertain the size of the relevant market was not documented.

ACE trading

- The peer review panel noted that Compass Lexecon's recommendations were based on existing conditions and not sufficiently forward-looking to what the fishery may look like in the future. That is, sectors are institutions that exist to achieve coordination among sector members. There is concern that the potential for collusion by any one sector or among sectors has been dismissed primarily based on interviews. The unit of regulation should be any level that allows for institutions to coordinate; there is no scientific basis for ruling out the possibility that sector level coordination would not occur.

TOR 3: Evaluate application of the proposed methods or process to the Northeast Multispecies Fishery. Are Compass Lexecon's conclusions regarding market power in both the final product (seafood) and production (quota) market valid and based on appropriate economic principles? If there is disagreement with what Compass Lexecon recommended, clearly state that and your reason why.

> ***The consensus of the review panel was that the scientific basis to validate Compass Lexecon's findings was insufficient. Based on the panel's expertise, and the additional data presented during the meeting, some panelists concluded that market power was not being exerted in either product or ACE trading markets, while other panelists felt that the available information was not adequate to verify or support any particular conclusion.***

Evidence in Product Market

- The description of product markets was insufficient even in general terms. Broader consideration of the aggregate market, the role of imports, and substitutes should have been evaluated. While a formal statistical analysis of market demand may not have been possible, a review of the relevant literature would have been informative, and would have bolstered the case for a competitive product market.

- The peer review panel noted that it may have been possible to directly test for market power in the product market using established econometric methods. These methods could have been applied by Compass Lexecon, or the reasons why such testing could not be done for this fishery should be noted.

ACE Trading Market

- In the Northeast Multispecies sector allocation program there are two markets; one for PSC (permanent share) and one for ACE. However, the share limit would apply to PSC and not to ACE. Compass Lexecon notes that the demand for ACE is downward sloping, but provides no information on the price elasticity of demand for individual fish species. Absent ACE trading data, there is no underlying scientific basis for finding that ACE trading markets are competitive or otherwise.

- The peer review panel noted that the conditions under which the ability to exert market power in a multiproduct ACE market has not yet been established in the economic literature. This has implications for whether there is any theoretical or empirical basis for setting any specific excessive share limit.

TOR 4: Review and comment on the data requirements necessary for applying the proposed methods or process.

The review panel identified the following data requirements needed to apply the proposed methods.

- The analysis conducted by Compass Lexecon was based on groupids. The NEFMC is considering adopting a share limit at the individual level. This approach would require information on ownership stake. Absent a new data collection requirement, equal share among all affiliated persons may be used as a default. The peer review panel noted that setting limits at the individual level would complicate the use of the HHI as a means for setting a share limit or monitoring the performance of the fishery.

- In addition to the information needed to set and monitor share limits the peer review panel recommended;

    - Creation of an ownership registry to include transactions and prices.
    - Cost and earnings studies at the vessel and sector level
    - Monitoring of quota prices (if quota prices are near zero and the ACL is not exceeded then a competitive market may be evident, whereas if the ACL is not exceeded and quota prices increase there may be reason for concern).

TOR 5: Provide any recommendations for further improvement.

The review panel made the following recommendations for further improvement.

Use of HHI and Horizontal Merger Guidelines

- Compass Lexecon backed 15.5% out of an HHI of 1500 from the DOJ Horizontal Merger Guidelines as an upper limit. The peer review panel noted that the DOJ still considers and allows mergers at higher levels.

- The peer review panel noted that setting a percentage share at 15.5% does not take into account the possibility that any scale efficiencies may be lost based on current or future technology and cost structure.

- An alternative approach to setting an individual ownership cap at 15.5% would be to establish 1500 as the threshold value above which trades that result in further increases in the HHI would not be allowed. Doing so, would provide greater flexibility to allow entities to grow while maintaining the HHI at a level that is considered to be competitive.

Cost Efficiencies

- As previously noted, the peer review panel emphasized the need to consider tradeoffs between economies of scale (economic efficiencies) and ownership caps. Doing so requires consideration of production function or cost relationships at the vessel-level and/or enterprise level.

Additionally, there may be sector level economies of scale in terms of sector transactions costs or through the ability to bargain for lower input prices or engage in marketing.

- Full consideration of scale efficiencies would require cost data to evaluate the structure of the industry and the potential to realize lower costs through consolidation or expansion

The Relevant Unit of Regulation

- The peer review panel expressed concern over whether individuals are the sole relevant unit of regulation. As previously noted, sectors exist as institutions to achieve a certain level of coordination among their members. Under present conditions, this coordination is limited to facilitating reporting requirements to the NMFS and executing inter-sector trades. However, this does not rule out the possibility that coordination in ACE trading or product markets may occur at the sector level in the future.

Other Comments

- The Compass Lexecon's TOR included the possibility that metrics other than the HHI may be appropriate to evaluate market power. The peer review noted that the 4-firm concentration ratio may be such an alternative.

- The peer review panel noted that further consideration should be given to the role that permit banks, non-profit permit banks and lease-only sectors may play in leasing markets and product markets.

- The peer review panel noted that it may not be necessary to have a share limit for all stocks.

Annex 1: Compass Lexecon Terms of Reference

1. Describe a theoretically sound method to specify the maximum possible allowable percentage share of the market for the fishery access privileges (permits, PSC) and/or the quota leasing (ACE trading) that would prevent an entity from obtaining an excessive share of the access privileges allocated under the Northeast Multispecies Fishery. Use the Herfindahl-Hirschman Index prescribed within the "US Department of Justice Horizontal Merger Guidelines" or other accepted rule as appropriate.

2. Apply the process or rule developed under Number 1 to determine if excessive shares already exist in this fishery. If excessive shares do not exist today, describe potential constraints that could prevent excessive shares from existing in the future. Alternatively, if excessive shares do exist, describe a process or rule that will allow for a theoretically sound procedure to prevent future increase.

3. If the rule cannot be applied because of incomplete data, provide suggestions of how to apply the rule in the best way possible that is consistent with the theoretical underpinnings of the rule. Also, identify data that would be necessary to apply the rule.

4. Identify conditions where entities, could exert "inordinate control" of quota as outlined in the National Standard 4 Guidelines. Such entities could include business entities holding permits, sectors, or organizations of sectors.

5. Alternate approaches to achieving the Amendment 18 goals (other than accumulation caps) may be proposed.

Annex 2: Terms of Reference for the Peer Review

The peer review shall be conducted based on the following Terms of Reference (TORs):

1. Describe the method or process used by Compass Lexecon for determining the maximum possible allowable percentage share of the market for fishery access privileges and/or quota leasing that would prevent an entity from obtaining an excessive share of access privileges allocated in the Northeast Multispecies Fishery.

2. Evaluate the strengths and weaknesses of the proposed method or process developed by Compass Lexecon (e.g., whether defining excessive shares in terms of market power is appropriate and adequate). Evaluate whether the approach outlined by Compass Lexecon is reasonable for setting excessive share limits in fisheries managed through catch shares in general. As part of this TOR, comment on any constraints that may hinder application of the proposed approach.

3. Evaluate application of the proposed methods or process to the Northeast Multispecies Fishery. Are Compass Lexecon's conclusions regarding market power in both the final product (seafood) and production (quota) market valid and based on appropriate economic principles? If there is disagreement with what Compass Lexecon recommended, clearly state that and your reason why.

4. Review and comment on the data requirements necessary for applying the proposed methods or process.

5. Provide any recommendations for further improvement.

Annex 3: List of Panelists

Review Panel Chair

Dr. Eric Thunberg
(NEFMC Science and Statistical Committee
NOAA HQ Office of Science & Technology

Review Panelists

Dr. Trond Bjorndal
SNF Centre for the Applied Research at NHH
Bergen, Norway

Dr. Jamie Brown Kruse
Director, Center for Natural Hazards Research,
East Carolina University
Greeneville, NC USA

Dr. Andrew Schmitz
Department of Food and Resource Economics
University of Florida
Gainesville, FL USA

Dr. Quinn Weninger
Department of Economics
Iowa State University
Ames, Iowa USA

Annex 4: Review Panel Meeting Agenda

Location: Hawthorne Hotel, 18 Washington Square West, Salem, MA 01970

Date: June 12-13, 2014

Day 1: Thursday June 12

9:00 Opening, Panel Chair (Eric Thunberg, Panel Chair)

- Welcome
- Introduction
- Agenda overview
- Conduct of meeting

9:15 Background and Need for Compass Lexecon Report and Introduction of Compass Lexecon (Rachel Feeney, NEFMC Staff; Chad Demarest, NEFSC))

9:35 Report of Compass Lexecon (Steve Peterson and/or Glenn Mitchell)

10:10 Break

10:25 Review of Terms of Reference – CIE Panel

10:45 Public Comment

11:00 CIE Panel Discussion – ToR #1

12:00 Lunch

1:00 CIE Panel Discussion – ToR #2

1:45 CIE Panel Discussion - ToR #3

3:00 Break

3:15 CIE Panel Discussion - ToR #4

3:45 CIE Panel Discussion – ToR #5

4:15 Public Comment

4:30 CIE Panel Discussion – Outstanding Issues

5:00 Adjourn

Day 2: Friday June 13

8:00 – 2:30 CIE Report Writing – (Only Panel Members, NEFMC and NEFSC staff are admitted)