

800 North State Street, Suite 201, Dover, DE 19901 Phone: 302-674-2331 | FAX: 302-674-5399 | www.mafmc.org Michael P. Luisi, Chairman | G. Warren Elliott, Vice Chairman Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: September 20, 2016

To: Council

From: Jason Didden M

Subject: Spiny Dogfish 2017 Specifications Review

On October 5, 2016, the Council will review the 2017 fishing year specifications for spiny dogfish. Multiyear specifications are currently in place for May 2016-April 2019.

After reviewing the information developed for and considered by the Spiny Dogfish Advisory Panel (AP), the Scientific and Statistical Committee (SSC), and the Spiny Dogfish Monitoring Committee, Council staff recommends that no changes be made to the 2017 fishing year specifications. Although all relevant parameters are within expected ranges, we note that the NEFSC survey and landings rate are both higher for 2016 compared to 2015.

The following supporting documents are included in this Tab: (a running page number has been added for reference)

- -Monitoring Committee Summary
- -SSC Report
- -Staff Memo on Acceptable Biological Catch (ABC)
- -AP Fishery Performance Report

The Data Update provided by NMFS and the Fishery Information Document used by the AP are also available at: http://www.mafmc.org/ssc-meetings/2016/september-14-2016.



800 North State Street, Suite 201, Dover, DE 19901 Phone: 302-674-2331 | FAX: 302-674-5399 | www.mafmc.org Michael P. Luisi, Chairman | G. Warren Elliott, Vice Chairman Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: September 20, 2016

To: Council

From: Jason Didden M

Subject: Spiny Dogfish 2017 Specifications Review, Monitoring Committee Summary

On October 5, 2016, the Council will review the 2017 fishing year specifications for spiny dogfish. Multiyear specifications are currently in place for May 2016-April 2019. This memo summarizes the results of the September 16, 2016 Spiny Dogfish Monitoring Committee (MC) meeting (webinar). The purpose of the meeting was to review management measures for the upcoming fishing years and make recommendations as appropriate. Monitoring Committee members in attendance included Jason Didden (MAFMC staff, Chair), Fiona Hogan (NEFMC staff), Willie Whitmore (NMFS-GARFO), Eric Schneider (RI-DEM), Dan McKiernan (MADMF), Angel Willey (MDDNR), Jack Musick (VIMS), Beth Egbert (NCDENR), and Kathy Sosebee (NMFS-NEFSC). Others in attendance included Greg DiDomenico, Katie Almeida, Rob O'Reilly, John Whiteside, and Max Appelman (ASMFC).

Jason Didden summarized the data update provided by the NMFS Northeast Fisheries Science Center, the Advisory Panel input, and the Scientific and Statistical Committee's decision to endorse the already-set multiyear spiny dogfish specifications (Table 1 next page). Based on a review of the available information, the Monitoring Committee saw no reason to recommend any changes to the 2017 specifications and management measures. The Monitoring Committee noted that the NEFSC survey and landings rate are both higher for 2016 compared to 2015 (Figures 1 and 2 next page). The relevant background materials may be accessed at http://www.mafmc.org/ssc-meetings/2016/september-14-2016.

Table 1. May 2016 to April 2019 Spiny Dogfish Specifications

Specifications	Basis	2016 (pounds)	2016 (mt)	2017 (pounds)	2017 (mt)	2018 (pounds)	2018 (mt)
OFL	Projected Catch at Fmsy	64,414,664	29,218	na	na	na	na
New ABCs	Council Risk Policy	52,066,572	23,617	50,805,528	23,045	49,901,633	22,635
Canadian Landings	= avg last 3 years (10,11,12)	143,300	65	143,300	65	143,300	65
Domestic ABC	= ABC – Canadian Landings	51,923,272	23,552	50,662,228	22,980	49,758,333	22,570
ACL	= Domestic ABC	51,923,272	23,552	50,662,228	22,980	49,758,333	22,570
Mgmt Uncert. Buffer	Ave pct overage since 2011	0	0	0	0	0	0
ACT	= ACL - mgmt uncertainty	51,923,272	23,552	50,662,228	22,980	49,758,333	22,570
U.S. Discards	=3 year average 12-13-14	11,494,167	5,214	11,494,167	5,214	11,494,167	5,214
TAL	ACT – Discards	40,429,105	18,338	39,168,060	17,766	38,264,165	17,356
U.S. Rec Landings	= 2014 estimate	68,343	31	68,343	31	68,343	31
Comm Quota	TAL – Rec Landings	40,360,761	18,307	39,099,717	17,735	38,195,822	17,325

OFL = Overfishing Level; ABC = Acceptable Biological Catch; ACL = Annual Catch Limit; ACT = Annual Catch

Target; TAL = Total Allowable Landings; Rec = Recreational; Comm = Commercial.

Figure 1. NEFSC Spring Survey Spiny Dogfish Index - 1991-2016

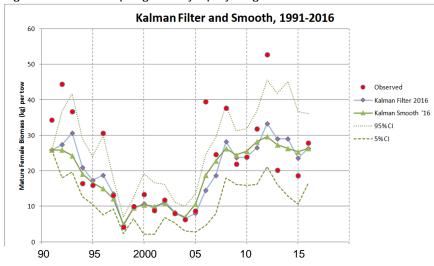
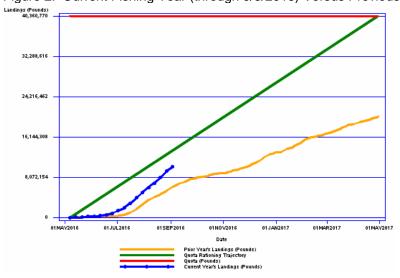


Figure 2. Current Fishing Year (through 9/3/2016) Versus Previous Year Spiny Dogfish Landings





800 North State Street, Suite 201, Dover, DE 19901 Phone: 302-674-2331 | Toll Free: 877-446-2362 | FAX: 302-674-5399 | www.mafmc.org Michael Luisi, Chairman | G. Warren Elliott, Vice Chairman Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

DATE: 21 September 2016

TO: Michael Luisi, MAFMC Chairman

FROM: John Boreman, Ph.D., Chair, MAFMC Scientific and Statistical Committee

SUBJECT: Report of the September 2016 SSC Meeting

The SSC met in Baltimore, MD, on 14 September 2016 for the main purpose of reviewing the 2017 and 2018 ABC recommendations for Spiny Dogfish to determine if they should be changed, continuing discussion of criteria for assigning coefficients of variation (CVs) for overfishing limits (OFLs), and reviewing a draft of the State of the Ecosystem Report being prepared by the Northeast Fisheries Science Center. The final meeting agenda is attached (Attachment 1).

A total of 16 SSC members were in attendance, which constituted a quorum (Attachment 2). Also in attendance, beside you, were MAFMC staff, staff from NMFS HQ, and a representative from the Pew Charitable Trust. Documents cited in this report can be accessed via the MAFMC SSC website: http://www.mafmc.org/sscmeetings/2016/september-14-2016.

Spiny Dogfish

Jason Didden presented the data update for Spiny Dogfish prepared by the Northeast Fisheries Science Center (NEFSC) and a summary of the Fishery Performance Report prepared by the Spiny Dogfish Advisory Panel. The stock is in the second year of a three-year specification period. Recent landings, discards, and trawl survey indices are all within the expected range, although the trawl survey was delayed. The NEFSC data update states that "estimated total catches in 2015 were less than half of the ABC, and the index of female spawning stock abundance increased in 2016. Hence, the primary metrics that underlie the assessment revealed no major causes for concern. Various indicators of stock status also suggest no causes for concern. Recent changes in average size of landed fish and an increase in the fraction of male

fish in landings should be monitored to determine if a change in fishery selectivity patterns is occurring." The NEFSC survey indicates that recruitment appears to be trending upward in recent years, an observation supported by information obtained from the NEAMAP survey.

Based on the information provided by the NEFSC and that contained in the Fishery Performance Report, the SSC saw no compelling reason to change its ABC recommendations for the 2017 and 2018 fishing years. Another data update from the NEFSC is expected next year, followed by an assessment update in 2018.

Although the SSC did not alter the ABC recommendations, committee members did note several areas of concern. The impact of the delay in the Spring 2016 bottom trawl survey does not appear to be significant, but should be examined further through simulation modeling. Also, the multispecies impact of Spiny Dogfish predation, especially on other important species such as Atlantic Mackerel, should be explored, perhaps in conjunction with the next benchmark assessment. The SSC also recommends in-depth studies of the factors affecting catchability of Spiny Dogfish and the proportion of the stock biomass that exists outside of the area sampled by the NEFSC, since the biological reference points in the assessment are based on estimates of the total stock biomass.

OFL CVs

The SSC discussed the latest report of the SSC's OFL CV Subcommittee, which includes suggested next steps for clarifying methods used to quantify scientific uncertainty in the overfishing limit (OFL) – a requirement to implement the MAFMC risk policy. The discussion and clarification are necessary because it has been difficult to justify differences in the OFL coefficients of variation (CVs) that have been applied for different assessments when they are other than the default value of 100%. Different OFL CV values have direct implications for the levels of acceptable biological catch (ABC) under the MAFMC risk policy. The MAFMC intends to review its risk policy this coming year, and clarifying methods for determining OFL CVs is a critical step in the process.

The SSC outlined objectives for methods used to address scientific uncertainty in establishing ABC. Any method should:

- 1. Result in an accurate estimate of the true scientific uncertainty;
- 2. Be responsive to improvements in data and assessments;
- 3. Avoid unproductive dynamics between the SSC and stock assessment teams;
- 4. Follow a transparent, logical process;
- 5. Be operational, in that it can be applied consistently across assessments; and
- 6. Result in consistent decisions across all assessment and data categories to ensure that the buffer between the OFL and ABC actually increases with increasing uncertainty.

The SSC recognized that these objectives are difficult to achieve and also potentially in conflict with each other, but will nevertheless use them to shape further development of OFL CV methods. For example, while the true uncertainty (#1) is unknown, the chosen method should

come as close as possible given the current state of knowledge. Methods emphasizing objective #1 are likely to be complex and therefore less transparent (#4); however, a logical process can still be outlined and communicated. Accurately estimating uncertainty requires addressing both potential biases in input data streams and variances from multiple sources. However, simple methods that are transparent and consistent (#4 and 5), such as applying a constant buffer, will likely not achieve objective #1. An advantage of a simple transparent buffer is that it would relieve assessment teams of attempting to estimate scientific uncertainty, and would therefore prevent differences between the assessment team's and the SSC's estimates of uncertainty (achieving objective #3). However, simple transparent buffers applied to all assessment categories may result in inappropriately smaller uncertainty buffers where uncertainties are actually higher (data-poor assessments), and do not respond to improvements in data quality or assessment methods, sacrificing objectives #2 and #6. Finally, using simple buffers may blur the line between determining scientific uncertainty (the charge of the SSC) and establishing policy on acceptable risk of overfishing (the purview of the MAFMC).

The SSC discussed potential methods that could achieve the six objectives listed above. One approach could use a hybrid of OFL CV estimation and fixed buffers by establishing criteria for applying 3-4 fixed OFL CVs depending on data sources and their quality, life history, and assessment methodology for a given species. Another approach could use past assessment projection performance relative to current assessment estimates (this assumes the current estimate is unbiased). Addressing bias separately from variance is desirable, especially with upcoming changes to recreational catch datasets that may impact multiple MAFMC assessments.

Overall, communicating that improving estimates of uncertainty may not necessarily lead to lower OFL CVs will also be important; increased knowledge of our uncertainty (due to environmental interactions that are explicitly modeled or other assessment improvements) will still provide a benefit to the MAFMC. The SSC OFL CV Subcommittee will continue to update the MAFMC ABC document based on this discussion.

State of the Ecosystem Report

Sarah Gaichas walked the SSC through the latest draft State of the Ecosystem report (SOE) provided by the Northeast Fisheries Science Center. The objective of this SSC review was to provide feedback to NEFSC on the report's format and content to improve its use as contextual information for MAFMC fishery management.

Overall, the SSC appreciated that so much information was summarized and distilled in one place, and found the aggregate indicators of biological and economic performance useful, especially where they are separated by MAFMC jurisdiction or region. The SSC was supportive of reviewing this contextual information annually in support of the MAFMC's Ecosystems Approach to Fisheries Management (EAFM) initiative, especially considering that this information is not redundant with current assessments. A potential schedule would be to have the SSC review the State of the Ecosystem report at its annual March meeting, with MAFMC review at its annual April meeting.

The SSC had the following major suggestions for improving the SOE before March 2017:

- Overall, each section should include a clear "SO WHAT?" why should managers care? What should they do with this information? Is a short-term increase or decrease in an index bad or good? More guidance is needed on how to interpret the information.
- Include more forecasts where possible what can we expect for a particular index or issue in the near term?
- Include links between sections in the narrative (e.g., temperature and Gulf Stream north wall indicators, similar to the link between copepods and right whales) for a more cohesive and integrated presentation.
- Link to information sources (data, documents, and/or contact information for lead scientists).
- A section on habitat issues/indicators (anthropogenic influence on habitat, trends in amount of area protected/reserved, etc.) and harmful algal blooms would be useful for the MAFMC.
- Include seabirds and marine mammals from the Mid-Atlantic region.
- Include a brief overview of Integrated Ecosystem Assessment (IEA) or other tools to implement ecosystem approaches to management, and where the MAFMC currently stands with implementation.
- A mix of indicators that are tracked annually and indicators that may rotate with others on an annual basis may be very useful; clearly delineate which are annual and which are "hot topics" or for a single year only.
- Using the same time interval for recent status and trends has merit, but investigate whether five
 years is an appropriate timeframe, and consider robust slope estimators to determine direction of
 the trends.

Additional, more detailed suggestions regarding particular indices were passed along to the NEFSC.

Ocean Quahog Assessment TORs

The Northeast Region Coordinating Council (NRCC) has requested the MAFMC to review the terms of reference (TORs) for the upcoming Ocean Quahog benchmark assessment. The SSC briefly discussed the TORs and suggested that potential impacts of ecosystem effects, such as climate change, on stock dynamics and distribution be included. SSC members were asked to provide the SSC chair with any additional suggestions by 23 September; the SSC chair will then forward the suggestions to the Chris Moore for inclusion in the MAFMC's response to the NRCC.

Upcoming Assessments and 2017 SSC Schedule

Rich Seagraves reviewed the tentative work assignment for the SSC in 2017. The Black Sea Bass benchmark assessment is supposed to be reviewed and in the SSC's hands by the end of 2016 and the MAFMC and ASMFC need to act on the results at the February 2017 MAFMC meeting. Therefore, a special meeting of the SSC will be scheduled for either the third or fourth week in January to re-visit the 2017 ABC recommendation in light of the new assessment results.

An SSC meeting will be scheduled in March 2017 primarily to review the 2018 ABC recommendations for Golden Tilefish and Blueline Tilefish. The SSC is expecting an assessment

update for Golden Tilefish and a data update for Blueline Tilefish from the NEFSC prior to the March meeting.

A benchmark assessment for Surfclams has recently been peer reviewed and the SSC is waiting for the final report. Additionally, a benchmark assessment for Ocean Quahogs will be peer reviewed in February 2017, so the May 2017 SSC meeting will be developing new ABC recommendations for these species. That meeting will also develop new ABC recommendations for Atlantic Mackerel, based on an expected assessment update provided by the NEFSC, and review its 2018 ABC recommendations for Butterfish and the squids, based on expected data updates also provided by the NEFSC.

The July 2017 SSC meeting will involve review of the 2018 ABC recommendation for Summer Flounder, based on an expected updated assessment from the NEFSC, and review of the 2018 ABC recommendations for Bluefish and Scup, based on expected data updates from the NEFSC. The September 2018 SSC meeting will involve review of the 2018 ABC recommendation for Spiny Dogfish, based on an expected data update from the NEFSC.

Species Lead Assignments

Turnover in SSC membership during the past year have left several species lead assignments vacant, especially the species leads for social sciences. The SSC chair reviewed the current assignment list and will work with SSC members over the next few months on species leads re-assignments and new assignments.

c: SSC Members, Warren Elliott, Chris Moore, Rich Seagraves, Jason Didden, Kathy Sosebee

Mid-Atlantic Fishery Management Council Scientific and Statistical Committee Meeting September 2016

Final Agenda

Wednesday 14 September 2016

10:00 a.m.	Review fishery performance report and multi-year ABC for Spiny Dogfish
12:00 p.m.	Lunch
1:30 p.m.	Report of OFL CV Subcommittee
3:00 p.m.	NEFSC Ecosystem Status Report
4:00 p.m.	Review/comment on Ocean Quahog Draft Assessment ToRs
4:30 p.m.	2017 SSC Schedule, Upcoming Assessments, Species Lead Assignments, etc.
5:00 p.m.	Adjourn

MAFMC Scientific and Statistical Committee 14 September 2016 Meeting Baltimore, MD

<u>Name</u> <u>Affiliation</u>

SSC Members in Attendance:

John Boreman (SSC Chairman) NC State University

Tom Miller (SSC Vice-Chair)

University of Maryland - CBL

David Tomberlin NMFS Office of Science and Technology Mark Holliday NMFS (Retired)

Doug Lipton NMFS Headquarters
Sarah Gaichas NMFS Northeast Fisheries Science Center

Sarah Gaichas NMFS Northeast Fisheries Science Ed Houde University of Maryland – CBL

Wendy Gabriel NMFS Northeast Fisheries Science Center

Olaf Jensen Rutgers University

Lee Anderson University of Delaware (Retired)

Yan Jaio VA Tech

Brian Rothschild UMass Dartmouth (Retired)
Cynthia Jones Old Dominion University
Mike Wilberg University of Maryland – CBL

Rob Latour VIMS

Dave Secor University of Maryland - CBL

Others in attendance:

Mike LuisiMAFMC chairRich SeagravesMAFMC staffJason DiddenMAFMC staffJessica CoakleyMAFMC staff

Erin Schnettler NMFS Office of Sustainable Fisheries
Karen Greene NMFS Office of Sustainable Fisheries

Purcie Bennett-Nickerson Pew Charitable Trust



800 North State Street, Suite 201, Dover, DE 19901 Phone: 302-674-2331 | FAX: 302-674-5399 | www.mafmc.org Michael P. Luisi, Chairman | G. Warren Elliott, Vice Chairman Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: September 6, 2016

To: Chris Moore, Executive Director

From: Jason Didden, Staff

Subject: Dogfish Specifications Review for 2017 Fishing Year

Dogfish is in multi-year specifications for 2016-2018. The Council's Scientific and Statistical Committee (SSC) is scheduled to review the 2017 dogfish ABCs during its September 2016 meeting.

A data update from NMFS' Northeast Fisheries Science Center (NEFSC), a fishery information document that supported the Advisory Panel's meeting, and the Advisory Panel's Fishery Performance Report have been posted to http://www.mafmc.org/ssc-meetings/2016/september-14-2016.

Staff recommends no changes to 2017 dogfish ABCs because recent landings, discards, and trawl indices have fluctuated within expected ranges. We expect another data update in 2017 followed by an assessment update in 2018.

2016 Spiny Dogfish <u>A</u>dvisory <u>P</u>anel (AP) Fishery Performance Report (FPR)

The Spiny Dogfish Advisory Panel (AP) (http://www.mafmc.org/advisory-panels/) met September 6, 2016 to develop the Fishery Performance Report (FPR) below. The meeting was conducted via internet webinar and facilitated by Jason Didden, the Mid-Atlantic Fishery Management Council's Dogfish Fishery Management Plan (FMP) coordinator. The advisors who participated were:

Bonnie Brady James Fletcher
James Sulikowski Douglas Feeney
Jan McDowell Claire Fitz-Gerald
Greg DiDomenico Chris Hickman
Sonja Fordham Scott MacDonald

Additional participants included:

Max Appleman

Rob O'Reilly William Whitmore
John Whiteside John Boreman
Wendy Gabriel Ray Kane

Fiona Hogan

The fishery performance report's primary purpose is to contextualize catch histories for the Scientific and Statistical Committee (SSC) because of the potential importance of this and related information for determining Acceptable Biological Catches (ABCs). The goal is to allow comparing and contrasting of the most recent year's conditions and fishery characteristics with previous years. First an overview of recent fishery data was provided by Jason Didden, and then trigger questions were posed to the AP to generate discussion. The trigger questions were:

- *What factors have influenced recent catch?
- Markets/economy? Environment?
- Fishery regulations? Other factors?
- *Are the current fishery regulations appropriate? How could they be improved?
- -Gear regulations and exemptions? -Trip Limits? -Others?
- *Where should the Council and Commission focus their research priorities?
- *What else is important for the Council and Commission to know?
- *Are there any recent major changes in this fishery?

The input from the AP begins on the following page. The information in this FPR does not represent a consensus, but rather a summary of the perspectives and ideas that were raised at the meeting.

General

- Quality is critical for maintaining price and the existing market. Large trips may have trouble maintaining product quality.
- The regional differences in the fishery mean that any changes (e.g. trip limits) have the potential to differentially impact different areas.
- Flooding processors with lots of spiny dogfish will harm the market. The fishery appears stable. See what happens with new rules (higher trip limits and rules allowing dualtargeting of monkfish and dogfish).
 - A contrary, minority perspective was also voiced: Developing new markets (Asia/Africa) will require lower, not higher prices, and manipulating price (by limiting catch) to address small boat concerns hinders the possibility of greater overseas markets.

Factors Influencing Catch

- Markets are crucial to getting prices high enough to stimulate fishing activity. Low catches relative to the quota in recent years are due to low prices/effort. Some European markets constraints have been mitigated, others persist.
- There may be some spiny dogfish landings in Europe in the near future related to retention rules, which may impact demand for imports.
- Abundance does not currently drive catches; boats have no problem obtaining their trip limits.
- There are relatively few boats willing to go out for dogfish at current prices, but a small price increase could change that (see Cape Cod info below)
- European markets are shifting away from sharks, limiting US dogfish exports to Europe.
 - The Shark Alliance did not promote European boycotts of US spiny dogfish/other legally caught sharks (though other entities seek/have sought to do this).
 - Europe seems to have the U.S. figured out in terms of pricing, while traditional European demand may be declining due to changing tastes.
- General sentiment about sharks and shark fins have hurt the market and created barriers to shipping (about 19 container lines have adopted internal policies to not carry any shark products and there are bans in several states). There is interest in purchasing spiny dogfish internationally but ENGO opposition as well, despite MSC certification and the sustainability of the U.S. East Coast spiny dogfish fishery.
- Market & regulatory issues discourage new processors. The one New York processor closed after Hurricane Sandy market issues discouraged their re-entry.
- The web of federal, state, and international rules (on fishing and sales) discourage entry into the processing sector generally. The Council processes, and favoring of small boats and a few processors, have exacerbated and perpetuate these issues.
- Virginia had mild winter and boats fished through the winter (including Jan & Feb), improving early 2016 landings.
- On Cape Cod:
 - In 2013, the price for dogfish was extremely low (~10 cents/lb) and processors instituted forced days off.

- In 2014, the price was much better (upper 20s cents/lb) and there were no days off.
- o 2015: 18-22 cents per pound; 2016: 20-24 cents, 30-34 cents if trucked to New Bedford. They have seen more vessels participating.
- It is not clear what exactly is driving these price changes, but they have a big impact on fishing/total catches.

Input on Regulations

- Some advisors would like to see a slow and steady approach that does not create large changes in catches and/or prices.
- Raising trip limits may collapse prices if additional markets are not developed.
- An occasional trip limit for trawlers (once or twice a month) around 30,000 pounds could help provide fish to any markets that develop.
 - o A double limit once a week was raised as an alternative possibility
 - Regarding different kinds of trip limits, enforcement/monitoring needs to be ensured.
 - Some in Massachusetts are interested in a seasonal (October through December) trip limit increase that would not hurt smaller boats in the summer or crash the market. Discussions are considered preliminary, but may be in the 7,500 10,000 pound trip limit range.
 - There was concern that such adjustments could hurt more southern ports, and more details would be needed to evaluate.
- At least one advisor is interested in allowances to harvest male dogfish in excess of the typical trip limit and possibly a separate quota (which is currently made up of mostly female dogfish). A male only fishery would need an Amendment and/or benchmark assessment but recent research suggests it may be feasible. An advisor noted that males can be targeted currently.
- It would be useful to have a NE permit covering smooth dogfish to reduce regulatory burdens.

Research Priority Ideas

- Domestic and/or non-European markets.
 - Lack of southern processor(s) is an issue restricting southern landings.
- Separation of spiny and smooth dogfish in NOAA trade database (buyers in particular may want to know) and ground-truthing of this database by NOAA Fisheries/Council, etc. NOAA cannot separate spiny and smooth dogfish this is a code by another international trade agency a petition could be made but may not be successful given the relatively low value of dogfish.
- Longer term tracking of export trends. https://www.st.nmfs.noaa.gov/commercial-fisheries/foreign-trade/applications/trade-by-product

- Better tracking of dogfish used/sold as fertilizer.
- Investigate ways to increase the quality of meat (i.e. how can it be processed on deck, etc.), which in turn would increase the price of the product. There is no shortage of dogfish and if we can get the price higher I think this would have a snow ball effect on the market.
- New benchmark assessment needed including:
 - Exploration of how spiny dogfish recovered so much faster than predicted (Could be useful for managing multiple other shark fisheries).
 - o Increased engagement with fishermen as part of scientific research.
 - Better estimate of the population of male dogfish and availability of dogfish to the relevant surveys generally.
 - Obtain reproductive and other biological information across the range of the species before the next assessment.
 - o Prioritize the biological information that needs updating before the next assessment.

Other Issues Raised

- There needs to be a clear division of male and female dogfish in terms of the assessment versus catch limits versus monitoring.
- Consider having NAFO manage the fishery outside the EEZ to facilitate the creation of a male-only fishery.
- There was a concern voiced over the process used to change the trip limit on the ASMFC side of things in terms of public notice this was passed along to ASMFC staff.
- A name change for spiny dogfish ("chipfish" has been suggested in addition to "cape shark") could help the market, and could allow access to a prison protein market (http://www.wsj.com/articles/SB122290720439096481).
 - o Massachusetts advisers noted that "Cape Shark" is an approved market name (http://www.accessdata.fda.gov/scripts/fdcc/?set=seafoodlist&id=Squalus_acanthias&sort=SLSN &order=ASC&startrow=1&type=basic&search=dogfish)