



New England Fishery Management Council

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MEMORANDUM

DATE: August 25, 2017
TO: Groundfish Committee
FROM: Groundfish Plan Development Team (PDT)
SUBJECT: **Gear modification project: large-mesh belly panel in the scup trawl fishery to reduce windowpane flounder bycatch**

The Groundfish Plan Development Team (PDT) met on June 1, 2017 in Boston, MA and discussed a gear modification project conducted by Cornell Cooperative Extension in partnership with the fishing industry to test the **large-mesh belly panel in the scup trawl fishery to reduce windowpane flounder bycatch**.

Information reviewed:

- Hasbrouck, E.C. 2016. Small mesh fishery bycatch reduction in the Southern New England/Mid-Atlantic windowpane stock area. A final report to The Northeast Consortium and the New England Fishery Management Council. Cornell University Cooperative Extension of Suffolk County Marine Program, November 15, 2016. pp. 50.
- Presentation to the Research Steering Committee: Small mesh fishery bycatch reduction in the Southern New England/Mid-Atlantic windowpane stock area. E. C. Hasbrouck, March 22, 2017.
- Northeast Consortium Technical Evaluation #2 of the large-mesh belly panel project.
- Research Steering Committee (RSC) meeting summary, March 23, 2017
- Memo from E. Hasbrouck, CCE Marine Program to the NEFMC Research Steering Committee re Addendum to the Final Report on “Small Mesh Fishery Bycatch Reduction In The Southern New England/Mid-Atlantic Windowpane Stock Area”, May 30, 2017.
- NEFMC. 2017. Operations Handbook: Practices and Policies. Revised February 2017. pp. 53.

Background

The Research Steering Committee (RSC) met on March 23, 2017 in Boston, MA to, among additional business, conduct a management review of several recently-completed research projects. One project reviewed was *Small mesh fishery bycatch reduction in the Southern New*

England/Mid-Atlantic windowpane stock area conducted by Mr. Emerson Hasbrouck (Cornell Cooperative Extension) with fishing industry and academic collaborators.

The RSC concluded in a consensus statement that:

The RSC recommends that the Council ask NMFS to consider approving the large mesh belly panel for use in the Southern Windowpane Flounder Accountability Measure Areas (as a reactive AM). During the approval process, the RSC recommends additional consideration of the impacts on other groundfish species and scup kept catch. This gear could also be considered for a proactive AM to avoid triggering the AM.

The Council received a report from the RSC at its April 2017 meeting. Following the Council meeting, the PDT held a meeting to discuss the gear modification project to 1) review the project with respect to Council policy, 2) conduct any additional analysis, and 3) make recommendations as appropriate.

Council Policy on New Gears

The Council has a policy in place on the approval of additional gear types for use in the Eastern U.S./Canada Haddock Special Access Program (SAP) or additional trawl gear in the Northeast multispecies Regular B DAS (Days-at-Sea) Program. The regulations allow the Council or its Executive Committee to request the Regional Administrator to authorize additional gear for use in both programs through a notice action if the proposed gear meets one of two standards in the regulations.

The standards require that new gear either reduce the catch of each regulated stock of species of concern or other non-groundfish stocks that are overfished or subject to overfishing, by at least 50% (by weight on a trip-by-trip basis); or that its catch of each regulated stock of species of concern, or other non-groundfish stocks that are overfished or subject to overfishing, be less than 5% of the total catch of regulated groundfish (also by weight on a trip-by-trip basis).

PDT Discussion on the Council Policy

The PDT review focused on the first part of the standards (the new gear reduces the catch by at least 50%) because regulated groundfish (i.e., Southern New England/Mid-Atlantic (SNE/MA) windowpane flounder, SNE/MA yellowtail founder and SNE/MA winter flounder) are bycatch in the scup trawl fishery. The second part of the standards (the new gear results in catches less than 5% of the total catch of regulated groundfish) would be more appropriate for review of a new gear for use in the targeted groundfish fishery (e.g., to reduce cod catches while fishing for pollock).

The primary bycatch stock (SNE/MA windowpane flounder) of interest in the large-mesh belly panel (LMBP) project is not a regulated stock of species of concern, as SNE/MA windowpane flounder is rebuilt. However, overages in recent years of this stock led to the triggering of accountability measures (AMs) - gear restrictions that reduce flatfish bycatch in certain times and areas. The SNE/MA windowpane flounder AMs are in place in FY 2017 for large-mesh non-groundfish fisheries - one fishery of which is the scup trawl fishery. Therefore, gear

modifications that minimize bycatch could reduce the likelihood of exceeding catch limits in the future or correct for any overages that occur.

However, other groundfish bycatch stocks –mainly flatfish - caught in the scup fishery are of concern (i.e., SNE/MA yellowtail flounder and SNE/MA winter flounder) (Table 1). Additionally, summer flounder is a non-groundfish stock subject to overfishing.

Table 1- List of species in the LMBP project for the scup trawl fishery to reduce windowpane flounder bycatch. Stock status based on most recent assessment.

<u>Species</u>	<u>Stock Status</u>		<u>Comment</u>
	<u>Overfishing?</u>	<u>Overfished?</u>	
Scup	No	No	
SNE/MA Windowpane Flounder	No	No	
SNE/MA Winter Flounder	No	Yes	
SNE/MA Yellowtail Flounder	Yes	Yes	
Summer Flounder	Yes	No	
Four-spot Flounder	?	?	
Butterfish	No	No	
Loligo Squid	Unknown	No	
Whiting	No	No	Southern Silver Hake
Ling	Unknown	No	Southern Red hake
Skates	No	No	Thorny is overfished
Smooth Dogfish	No	No	
Spiny Dogfish	No	No	
Monkfish	No	No	
Atlantic Sea Scallop	No	No	
Sea Robin	?	?	
Black Sea Bass	No	No	
Bluefish	No	No	
Striped Bass	No	No	
Weakfish	No	?	Depleted
Horseshoe Crab	Unknown	Unknown	
Rock Crab	?	?	
Torpedo Ray	?	?	
SNE American Lobster	No	?	Severely depleted
Triggerfish	?	?	
Bonito	?	?	

PDT Analysis

Based on stock status as overfished, overfishing or unknown (Table 1), the PDT narrowed the analysis of the Council standard for new gears to include: regulated groundfish (SNE/MA windowpane flounder, SNE/MA yellowtail flounder, and SNE/MA winter flounder) and non-groundfish (skates¹ and summer flounder). Southern red hake (ling), weakfish, horseshoe crab,

¹ Thorny skate is overfished and a portion of their distribution overlaps the SNE/MA windowpane flounder stock area. See: Sosebee K, Miller A, O'Brien L, McElroy D, Sherman S. 2016. Update of Thorny Skate (*Amblyraja radiata*) Commercial and Survey Data. US Dept Commer, Northeast Fish Sci Cent Ref Doc. 16-08; 145 p.

loligo squid, and American lobster were not examined due to low catches (Table 2). Species with no stock status indicated (“?”) were also omitted. Species catches are summarized in Table 2.

Table 2- Catch weight (lbs.) for all four LMBP project trips – for the control, experimental, and total.

Species Catch (lbs.)	Control	Experimental	Total
TOTAL	101,008.6	56,056.9	157,065.5
SKATE	50,595.8	17,371.9	67,967.7
DOGFISH (SPINY AND SMOOTH)	23,213.1	18,552.3	41,765.4
SCUP	9,483.4	7,004.4	16,487.8
BLACK SEA BASS	3,868.1	4,760.5	8,628.6
FLUKE	5,492.9	3,109.8	8,602.7
WINTER FLOUNDER	1,978.5	1,005.2	2,983.7
SCALLOP	1,462.3	789.0	2,251.3
WINDOWPANE	975.1	506.7	1,481.8
SEA ROBIN	806.5	538.8	1,345.3
LOLIGO SQUID	655.8	592.2	1,248.0
BUTTERFISH	595.9	588.5	1,184.4
BLUEFISH	642.0	480.2	1,122.2
WHITING	338.7	258.4	597.1
YELLOWTAIL FLOUNDER	356.3	192.1	548.4
MONKFISH	275.1	212.0	487.1
FOUR SPOT FLOUNDER	137.7	62.4	200.1
TORPEDO RAY	48.0	-	48.0
BONITO	22.9	19.4	42.3
HORSESHOE CRAB	13.3	7.3	20.6
STRIPED BASS	17.0	-	17.0
LING	8.4	4.4	12.8
LOBSTER	12.7	-	12.7
ROCK CRAB	6.3	-	6.3
WEAKFISH	2.8	-	2.8
TRIGGERFISH	-	1.4	1.4

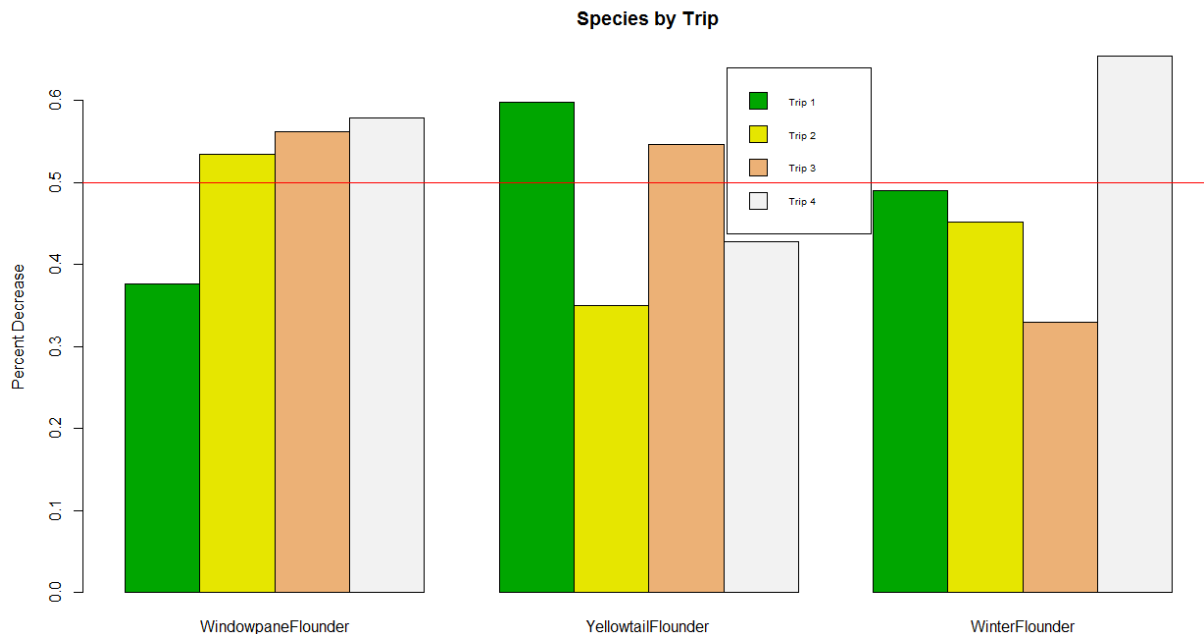
Regulated Groundfish

When compared to the standard scup trawl gear (control), the LMBP (experimental) resulted in reduced bycatch of windowpane flounder, yellowtail flounder, and winter flounder (Table 3 and Figure 1). The Council standard of a 50% reduction by weight was met for windowpane flounder in three out of four trips (> 50% reduction) and on average across all trips (51% reduction). The Council standard of a 50% reduction by weight was met for yellowtail flounder in two out of four trips (> 50% reduction) and just under for the average across all trips (48% reduction). The Council standard of a 50% reduction by weight was met for winter flounder in one out of four trips (> 50% reduction) and just under for the average across all trips (48% reduction).

Table 3- Percent decrease by weight on a trip-by-trip basis between the control and experimental, by groundfish species

Trip Number	<u>Percent Decrease by Groundfish Species</u>		
	Windowpane Flounder	Yellowtail Flounder	Winter Flounder
1	38%	60%	49%
2	53%	35%	45%
3	56%	55%	33%
4	58%	43%	65%
Mean	51%	48%	48%
Median	55%	49%	47%

Figure 1- Percent decrease by weight on a trip-by-trip basis between the control and experimental, by groundfish species. Line indicates the Council new gear standard.



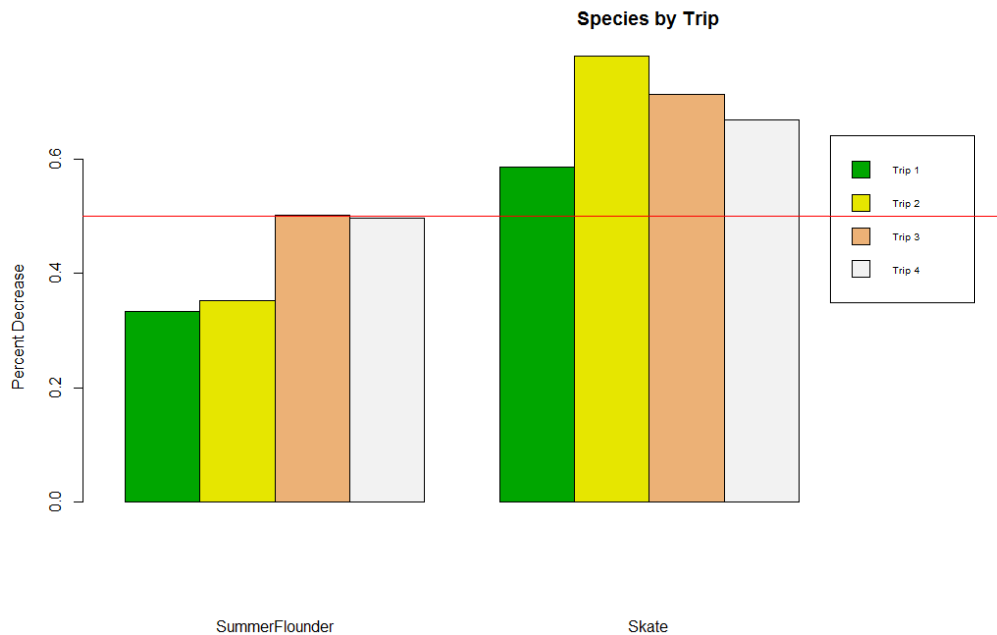
Non-Groundfish

When compared to the standard scup trawl gear (control), the LMBP (experimental) resulted in reduced bycatch of summer flounder and skates (Table 4 and Figure 2). The Council standard of a 50% reduction by weight was met for summer flounder in two out of four trips (> 50% reduction) and under the standard for the average across all trips (42% reduction). The Council standard of a 50% reduction by weight was met for skates in all four trips (> 50% reduction) and the average across all trips (69% reduction).

Table 4- Percent decrease by weight on a trip-by-trip basis between the control and experimental, by other species.

Trip Number	<u>Percent Decrease by Other Species</u>	
	Summer Flounder	Skates
1	33%	59%
2	35%	78%
3	50%	71%
4	50%	67%
Mean	42%	69%
Median	42%	69%

Figure 2- Percent decrease by weight on a trip-by-trip basis between the control and experimental, by non-groundfish species. Line indicates the Council new gear standard.



PDT Discussion and Recommendation

The PDT reviewed the project materials and data provided by Cornell Cooperative Extension and conducted additional analysis. In particular the project focused on the targeted scup trawl fishery, the results indicate the LMPB reduces catches of flatfish and undersized scup. Several of the flatfish, notably yellowtail flounder, winter flounder, windowpane flounder, and summer flounder are overfished or subject to overfishing or subject to AMs in recent years. Further, the LMBP appears to reduce bycatch of other non-target species such as skates and dogfish, and also undersized scup. The LMBP meets (i.e., windowpane flounder and skates) or nearly meets (i.e., winter flounder and yellowtail flounder) the Council's Policy on new gear standards. Therefore, the PDT recommends the large-mesh belly panel be considered for the Regional Administrator's approved list of gears for use in flatfish accountability measures (AMs) areas – for at least the AM areas for southern windowpane flounder for the large-mesh non-groundfish fisheries.

One possible outcome is that the realized benefits of the LMBP (reduced bycatch of non-target species) are less than the experiment suggests. This may occur if scup trawl fishing effort while using the LMBP increases to compensate for reduced scup catches. The experiment suggests that the LMBP should shift selectivity to larger scup while reducing undersized scup discards with some reduction in the overall scup CPUE. However, the scup fishery has catch limits and other management measures in place - which should constrain any potential increase in effort as a result of the scup trawl fishery using the LMBP.

The PDT did not review other similar studies by Cornell Cooperative Extension on the LMBP, but does recognize that similar results occurred from these studies – reduced catches of flatfish. Therefore, the PDT suggests that the LMBP be considered more broadly for approved use in flatfish AM areas. If this new gear type is approved by the Regional Administrator, a VTR-NEFOP gear code should be developed in order to have the ability to account for any fishery changes (e.g., potential shifts in selectivity and discard rates).