Corrected typos in text and figures 1 and 3. 8/17/2016

New England Fishery Management Council
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MEMORANDUM

DATE: August 5, 2016

TO: Scientific and Statistical Committee (SSC)

FROM: Groundfish Plan Development Team (PDT)

CC: Groundfish Committee (Committee)

SUBJECT: **Georges Bank yellowtail flounder Acceptable Biological Catch for fishing years 2017 and 2018**

The Groundfish Plan Development Team (PDT) discussed **Georges Bank (GB) yellowtail flounder catch advice in support of developing Acceptable Biological Catch (ABCs).**

Information reviewed included TRAC documents and PDT memos to the SSC:

- TRAC. 2016. Georges Bank Yellowtail Flounder. TRAC Status Report 2016/03.
- TRAC. 2015. Georges Bank Yellowtail Flounder. TRAC Status Report 2015/03.
- TRAC. 2014. Georges Bank Yellowtail Flounder. TRAC Status Report 2014/03.
- TRAC. 2016. DRAFT Stock Assessment of Georges Bank Yellowtail Flounder for 2016.
- PDT to SSC re GB yellowtail flounder ABCs, dated August 25, 2015
- PDT to SSC re GB yellowtail flounder and GOM haddock ABCs/OFLs, dated August 14, 2014
- PDT to SSC re Groundfish ABCs and Rebuilding Plans, dated August 9, 2013

2016 TRAC Assessment

The Transboundary Resource Assessment Committee (TRAC) met July 12-14, 2016 in Woods Hole, MA to conduct assessments for Eastern Georges Bank (EGB) cod, EGB haddock, and GB yellowtail flounder.

Briefly, TRAC results indicate that the GB yellowtail flounder stock biomass is low and productivity is poor (i.e., recent recruitment has been generally below average and age structure includes fewer young fish and fewer old fish). The Total Allowable Catch (TAC) has been reduced substantially in recent years due to declining stock conditions, and recent catch is low relative to the low quotas. Combined Canada and US catches in 2015 were 118 mt, which is the

lowest value in the time series beginning in 1935. The survey biomass from two bottom trawl surveys (Northeast Fisheries Science Center, NEFSC, fall and NEFSC spring) decreased relative to the previous assessment, while the third (Division of Fisheries and Oceans, DFO, winter) increased. Overall, the declining trend in survey biomass to low levels for the past three years remains, despite reductions in catch to historical low amounts. Recent catch is low relative to the quota and biomass estimated by the surveys, while catch curve analyses indicated high total mortality rates (Z>1).

To generate catch advice, the 2016 TRAC applied the empirical approach based on survey catches developed during the 2014 Georges Bank Yellowtail Flounder Diagnostic and Empirical Approach Benchmark. A range of exploitation rates of 2% to 16% was recommended by the 2014 TRAC as an appropriate scientific basis for calculating the catch advice.

TRAC Catch Advice

At the 2014 and 2015 meetings, the TRAC recommended both the empirical and constant quota approaches for catch advice in 2015 and 2016, respectively. Both approaches resulted in similar catch advice in those years. Further at the 2014 meeting, the TRAC recommended implementing a single approach – constant quota or constant empirical – for 3 years to see if the stock responds.

At the 2016 meeting, the TRAC recommended application of the 2014 Diagnostic and Empirical Benchmark formulation of the empirical approach for catch advice for 2017, rather than an empirical approach and constant quota approach as in 2014 and 2015. Assuming whole-net survey catchability for all three surveys is 0.37 and applying an exploitation rate of 2% to 16%, the TRAC recommended a range for the catch advice of 31 mt to 245 mt. The TRAC based its recommendation on further declines in the survey biomass since last year.

The TRAC noted that a constant quota approach would result in quota of 354 mt and an exploitation rate of 23% which is above the 16% upper bound using the empirical/exploitation rate approach to determining catch advice.

PDT Analysis and Discussion

The PDT recognizes that the stock condition of GB yellowtail flounder is poor. The average trend in the surveys biomass indices continued to decline and recruitment (age 1 and age 2) is at new record lows. The PDT notes several sources of uncertainty in the TRAC assessment:

- Timing of the 2016 spring survey was 4 weeks later than usual and the potential for that delay to bias the results high or low is unknown at present.
- The TRAC working paper on GB yellowtail flounder notes that “uncertainty in the US catch of Georges Bank Yellowtail Flounder has increased this year due to allegations of catch misreporting currently under litigation.”
- An experimental estimate of the catchability of the Bigelow survey trawl was not available for the 2014 benchmark assessment. In lieu of this information, a literature review was conducted to develop a value for survey catchability. Whole-net catchability estimates from two other studies (Harden Jones, 1977; Somerton et al, 2007) were

averaged to generate a catchability value of 0.37. These whole-net efficiency estimates were based on field research done in different regions (Gulf of Alaska and North Sea), for different survey trawls, and for species other than yellowtail flounder. Catchability studies in this region could provide a better understanding on q (catchability coefficient). The 2016 TRAC was presented with information to suggest a q of less than 0.37, but the TRAC indicated that more thorough analyses would still be needed to determine a new value for q.

- The exploitation rate approach provides a technical basis for catch setting, because it is tied directly to the NEFSC and DFO surveys. However, this approach means that the quota could vary annually based on survey biomass estimates, which could result in wide swings in catch advice from year to year.
- The GB yellowtail flounder stock does not appear to have responded to low catches. Further, it is unclear if or what environmental driver(s) may be negatively impacting stock productivity.

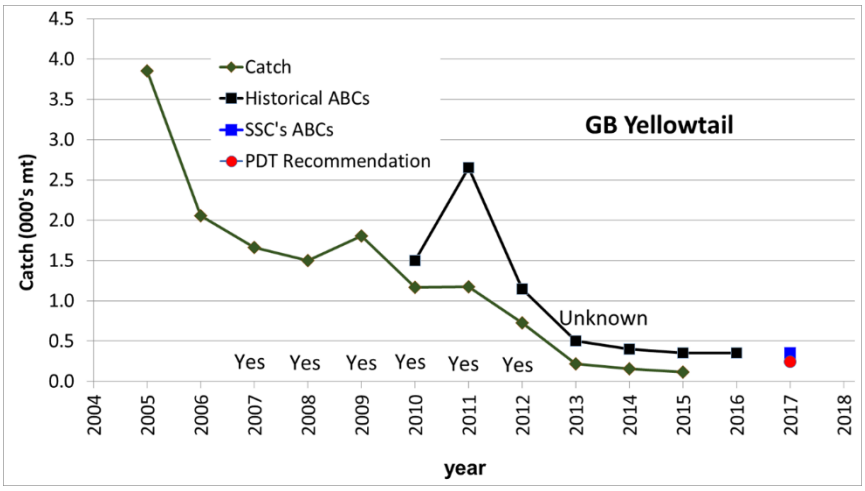
The PDT recognizes that catches might not be indicative of biomass, and changes in catch may not accurately track changes in biomass well for this stock. The PDT discussed that low catches may be due to a combination of factors including, but not limited to, the loss of market for GB yellowtail flounder due to low quotas, poor stock condition, spatial shifts in stock distribution, avoidance of the stock through use of separator gear, and difficulty finding GB yellowtail flounder. The PDT also discussed that recent low catches of GB yellowtail flounder by the U.S. groundfish fishery may be influenced by other management. For example, the large Northern Windowpane Flounder Accountability Measure (AM) has been in place in FY 2014 and FY 2015 due to overages of Northern windowpane flounder catch limits. The AM requires the use of approved gear (i.e., haddock separator trawl, rope separator trawl or Rhule trawl) while fishing in the gear restricted area to reduce impact on flatfish. The area is located west and southwest of Closed Area II, which has historically been an important fishing ground for yellowtail flounder. In addition, the Canadian fleet does not direct fishing on GB yellowtail flounder and vessels may only use haddock separator gear in the US/CA management area.

Further, recent low quotas for GB yellowtail flounder have not appeared to constrain the U.S. groundfish fishery in its access to other abundant stocks like GB haddock. Otherwise, GB yellowtail flounder would be expected to be caught at a higher rate. Total fishery catches were 218 mt in 2013, 159 mt in 2014, and 118 mt in 2015. Quotas lower than recent catches may constrain access to other species (i.e., haddock, scallops).

The PDT compiled additional information and analysis for the SSC to consider when developing catch advice in the follow sections. In addition, an overview of Special Access Programs on Georges Bank is provided in Attachment #1 and the Scallop PDT provides additional information in Attachment #2.

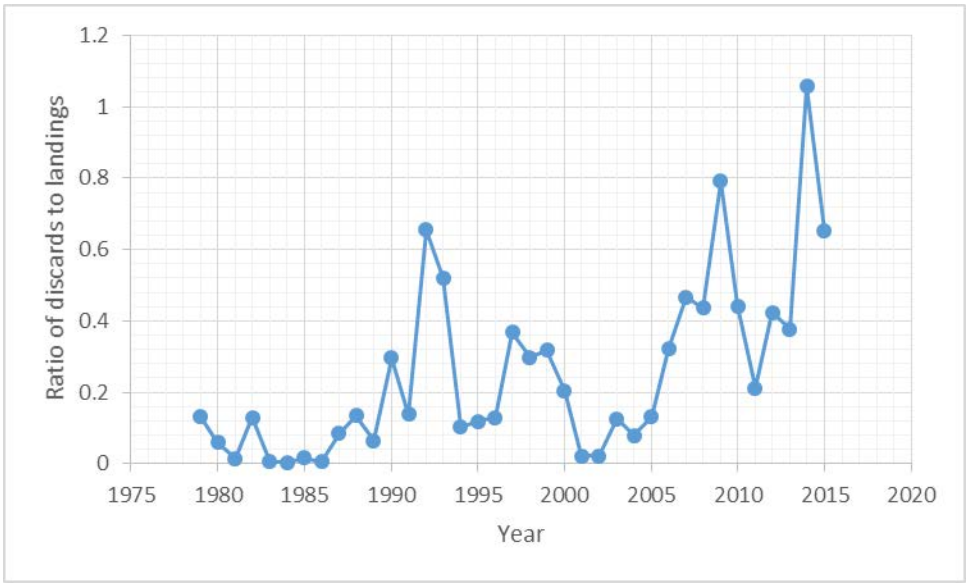
1. *Catch performance of GB yellowtail flounder*

Figure 1 - Catch performance for Georges Bank yellowtail flounder including: catches from CY 2005- CY 2015 and historical ABCs since FY 2010. Overfishing status in the terminal year of the assessment indicated on the x-axis (Yes = overfishing, No= not overfishing, and unknown = unknown overfishing status).



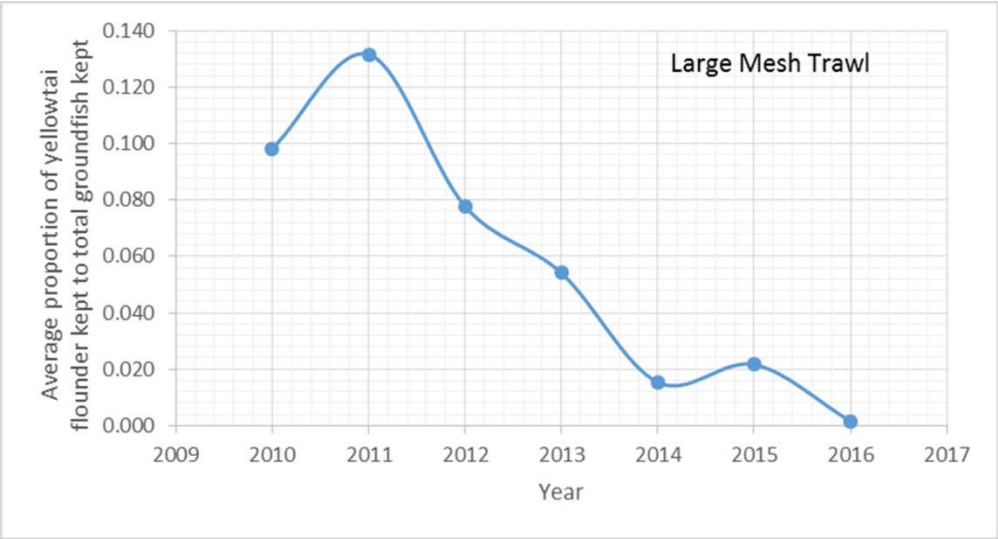
2. *Ratio of US discards to US landings of GB yellowtail flounder*

Figure 2 – Ratio of US discards to US landings of Georges Bank yellowtail flounder, 1979-2015. Source: 2016 stock assessment of Georges Bank yellowtail flounder, TRAC, Table 1, pp. 9.



3. *Catch composition from observer data*

Figure 3- Average proportion of yellowtail flounder kept to total groundfish kept. Source: 2010 – 2016 to date observed US large-mesh trawl fishing on Georges Bank.

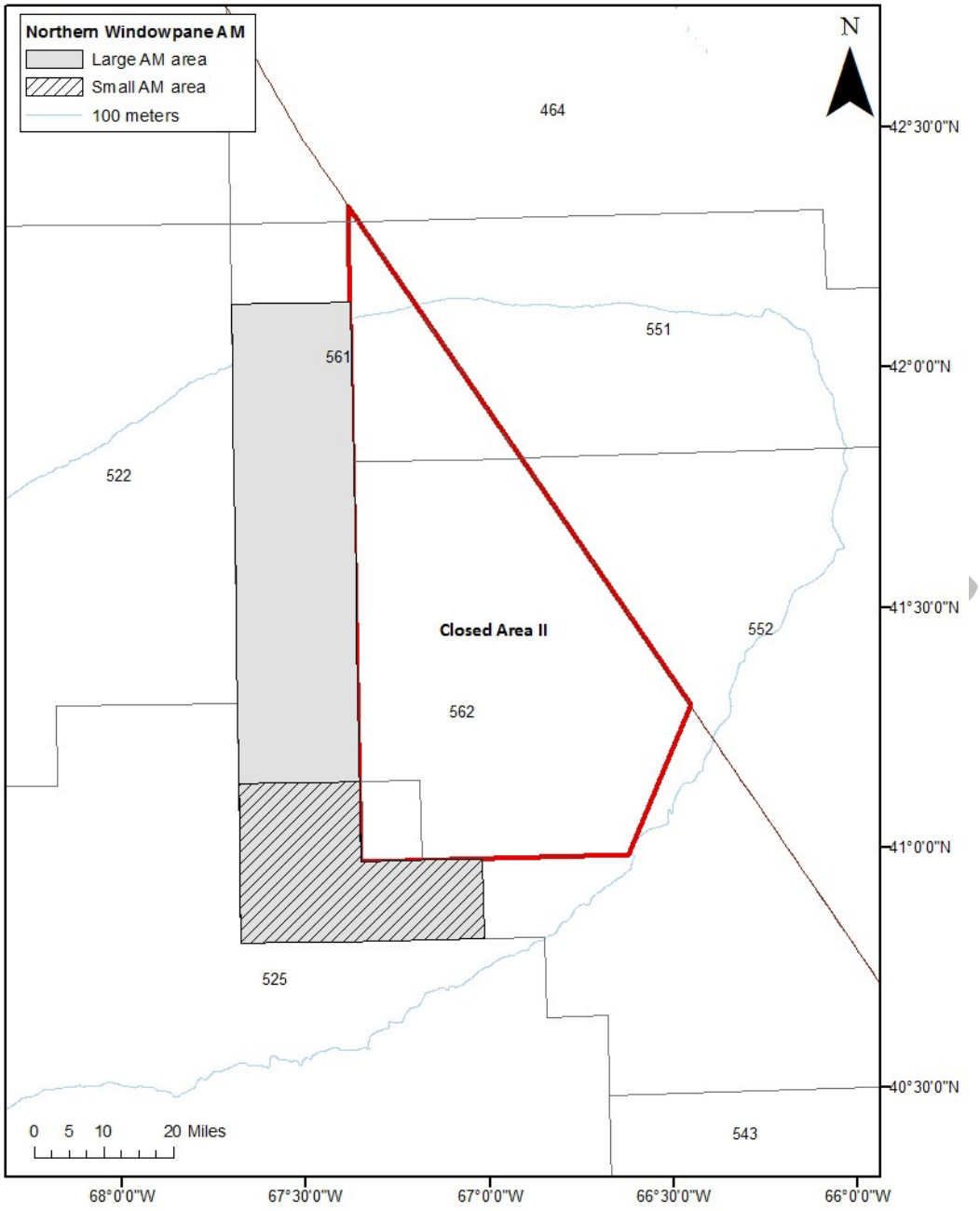


4. *Overview of Northern Windowpane Flounder Accountability Measure in FY 2014 and FY 2015*

Northern Windowpane Accountability Measure (AM) Areas (gear restricted areas, GRAs)- AMs are triggered for windowpane flounder when the catches exceed the ACL plus a management uncertainty buffer. The size of the AM is dependent upon the overage. Catches in excess of 20% of the ACL trigger a large AM, while when catches exceed 5% of the ACL but are less than 21% of the ACL the small AM is implemented. If an AM is triggered, bottom-trawl vessels are required to use selective large-mesh trawl gear that is designed to reduce the catch of windowpane (and subsequently other flatfish). Approved gears include haddock separator trawls or Rhule trawls.

The large AM area was triggered in FY2014 following catch overages in FY2012 and FY2013. The large AM area remained in place for FY2015 after it was determined that windowpane catches had exceeded the ACL by over 20% in FY2014. This GRA overlaps with the U.S./Canada management area, and is located to the west of Closed Area II in statistical reporting areas 561, 562, and 525 (Figure 4).

Figure 4- Northern windowpane flounder accountability measure areas (large and small).



5. *Usage of separator gear on Georges Bank by the US groundfish fishery*

Figure 5- Proportion of sector groundfish trips into offshore Georges Bank by trawl gear type (Rhule trawl, Haddock Separator, and Bottom-Otter Trawl) with trip counts, FY2011-May FY2016. Source: GARFO/DMIS.

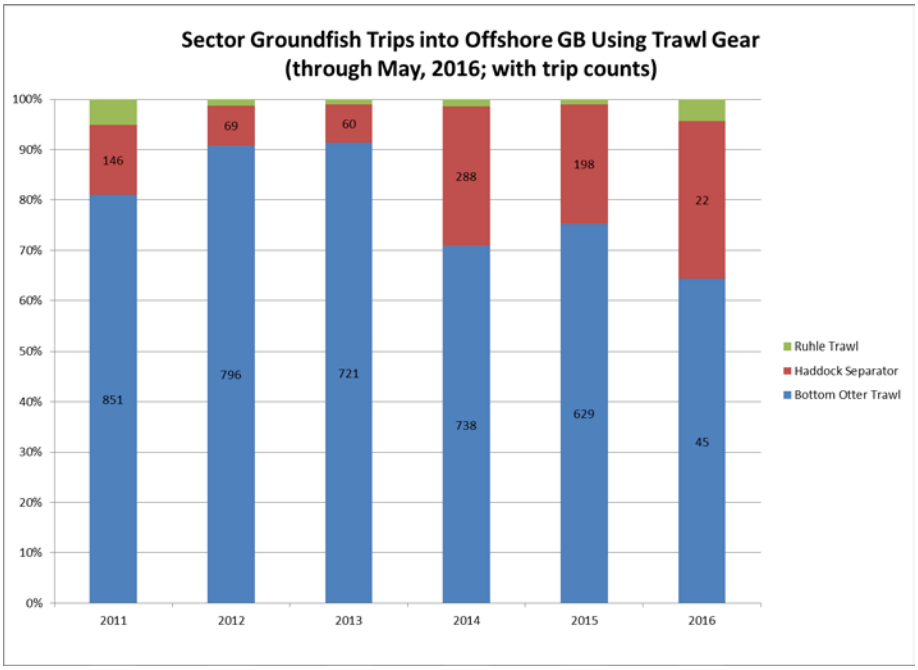


Figure 6- Proportion of vessels taking sector groundfish trips into offshore Georges Bank by trawl gear type (Rhule trawl, Haddock Separator, and Bottom-Otter Trawl) with vessel counts, FY2011-May FY2016. Source: GARFO/DMIS.

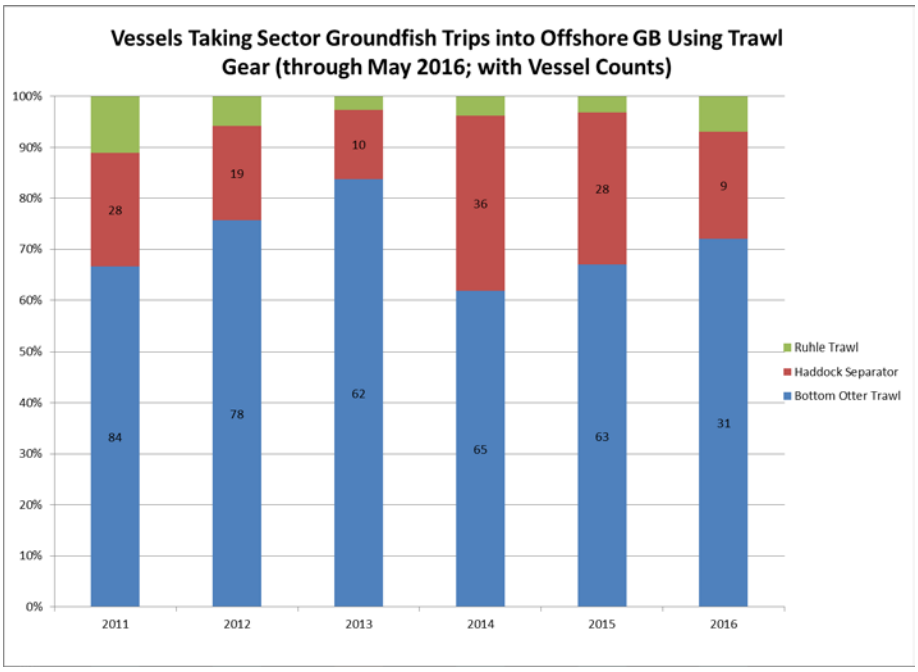
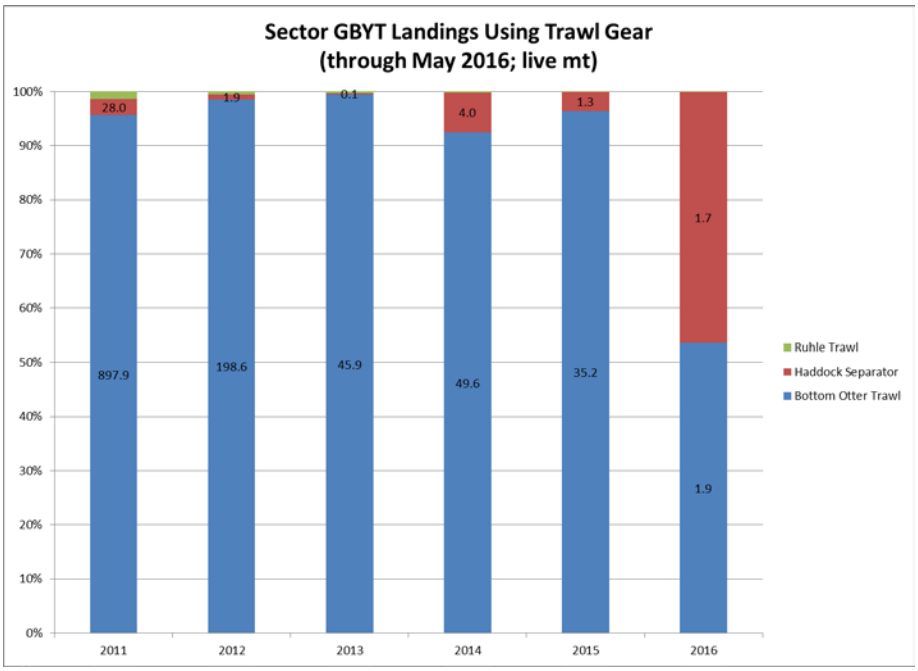


Figure 7- Proportion of sector Georges Bank yellowtail flounder landing by trawl gear type (Rhule trawl, Haddock Separator, and Bottom-Otter Trawl) with landings totals, FY2011-May FY2016. Source: GARFO/DMIS.



PDT Recommendation

Based on the PDT's discussion, the PDT viewed 245 mt as an upper limit on the GB yellowtail flounder catch advice for FY 2017. Any FY 2018 catch advice would be a placeholder until the TRAC assessment in 2017. 245 mt would be approximately a 100 mt reduction from the FY 2016 ABC of 354 mt. The PDT recognizes, while considering the information in the TRAC assessment, that it is unclear if catches are driving the dynamics of the GB yellowtail flounder stock. Further, a quota lower than 245 mt might not lead to a positive response in the GB yellowtail flounder stock, given that recent low quotas and low catches have not appeared to generate a biological response to date.

Attachment #1

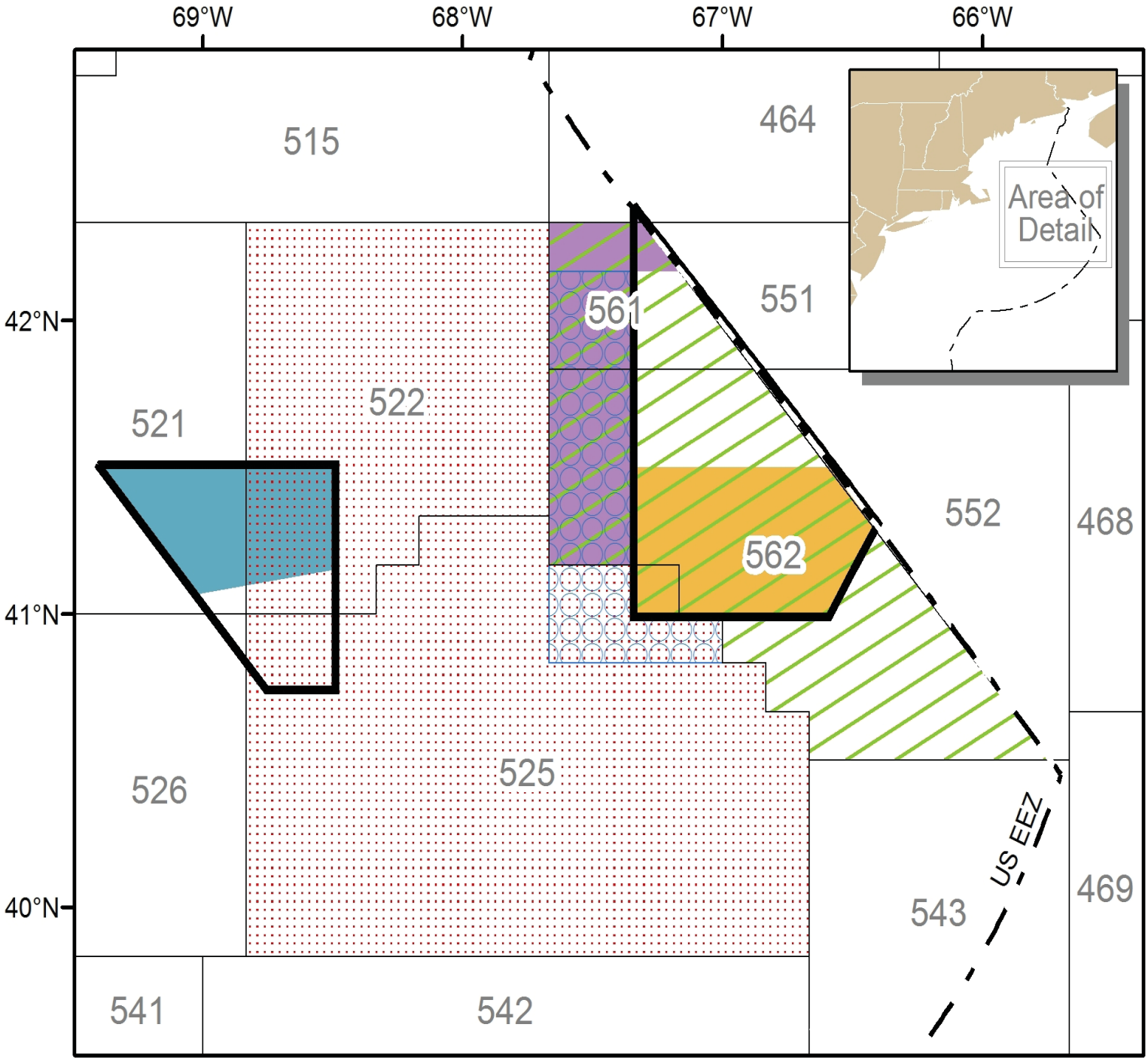
U.S./Canada Management and Special Access Programs for Sector Vessels

NOAA FISHERIES
Sustainable Fisheries

This summary provides a broad overview of restrictions and requirements; the regulations summarized here may be found at 50 CFR part 648. Please contact the Sustainable Fisheries Division at (978) 281-9315 for more information. Updated May 21, 2015

Within the U.S./Canada Management Area, Georges Bank (GB) cod, GB haddock, and GB yellowtail flounder are managed under Total Allowable Catches (TACs), which are developed with Canada. The U.S./Canada Management Area is divided into the Western Area and the Eastern Area. The Eastern Area encompasses the U.S. portion of the U.S./Canada shared stock of GB cod and GB haddock, as well as a portion of GB yellowtail flounder stock. The Western Area encompasses the remaining area of the U.S./Canada GB yellowtail flounder stock. Within the Eastern Area, there are two special access programs (SAPs), and a third SAP that sits partially within the Western Area.

In fishing year (FY) 2015, sectors have been granted several exemptions that can be used in the U.S./Canada Management Area, including an exemption from trawl gear restrictions. However, be aware that accountability measure (AMs) are effective May 1, 2015, for the entire FY 2015 groundfish fishery, due to northern windowpane flounder catch limits being exceeded in FY 2014. The AM for this overage is a restricted gear area; the northern windowpane flounder AM lies within the U.S./Canada Management Area and supersedes any gears exemptions given to sectors. You should review each section of information to determine how it applies to your vessel.



Statistical Area (with ID#)

Groundfish Closed Area

Eastern U.S./Canada Area

Western U.S./Canada Area

Northern Windowpane Flounder Large Accountability Measure Area

Special Access Program (SAP) Areas

Closed Area I Hook Gear Haddock SAP

Closed Area II Yellowtail Flounder-Haddock SAP

Eastern US/Canada Haddock SAP

General Requirements of the U.S./Canada Management Area

What are the coordinates of the areas?

The Western and Eastern U.S./Canada Managment Areas are defined by lines connecting the following points:

Western U.S./Canada Area		
Point	N. Lat.	W. Long.
USCA 1	42°20'	68°50'
USCA 2	39°50'	68°50'
USCA 3	39°50'	66°40'
USCA 4	40°40'	66°40'
USCA 5	40°40'	66°50'
USCA 6	40°50'	66°50'
USCA 7	40°50'	67°00'
USCA 8	41°00'	67°00'
USCA 9	41°00'	67°20
USCA 10	41°10'	67°20'
USCA 11	41°10'	67°40'
USCA 12	42°20'	67°40'
USCA 1	42°20'	68°50'

Eastern U.S./Canada Area		
Point	N. Lat.	W. Long.
USCA 12	42°20'	67°40'
USCA 11	41°10'	67°40'
USCA 10	41°10'	67°20'
USCA 9	41°00'	67°20'
USCA 8	41°00'	67°00'
USCA 7	40°50'	67°00'
USCA 6	40°50'	66°50'
USCA 5	40°40'	66°50'
USCA 4	40°40'	66°40'
USCA 15	40°30'	66°40'
USCA 14	40°30'	65°44.3'
USCA 13	42°20'	67°18.4'
USCA 12	42°20'	67°40'

What is the FY 2015 season?

The portions of the Western and Eastern U.S./Canada Areas that are outside of Closed Areas I and II, are open year-round.

How do I declare a U.S./Canada trip?

Under the groundfish sector declaration screen on your vessel monitoring system (VMS) unit, you must declare one or more of the defined sub-areas (Eastern Area, Western Area, or SAPs) of the U.S./Canada Management Area in Step 4, and one or more broad stock areas (BSAs) in Step 5, prior to leaving the dock. If necessary, call our VMS team at 978-281-9213 for assistance with your VMS declaration.

Can I flex at-sea into any areas?

Yes, a flex is allowed once per trip by adding areas to the initial declaration while you're out fishing and away from the dock. Meaning, your new declaration must include the initial program area(s) and BSA(s) you declared from the dock, in addition to the other information (e.g., gear, DAS type) that was in your initial declaration. Most areas are available to flex into with a few exceptions.

1) You're not allowed to flex into the Eastern Area (outside of the SAPs) if your initial declaration didn't include the CA-2 Yellowtail/Haddock SAP or the Eastern U.S./Canada Haddock SAP. Meaning, if your initial declaration is only an Open Area, or an Open Area + Western Area, you can't flex into the Eastern Area. However, you can start in an Open Area and/or the Western Area and flex into any of the three SAPs.

2) The same exception applies to the Western Area. You're not allowed to flex into the Western Area if your initial declaration didn't include any of the three SAPs or the Eastern Area. Meaning, if your initial declaration is only an Open Area, you can't flex into the Western Area. However, you can start in an Open Area and flex into any of the three SAPs.

What are my VMS reporting requirements after I declare into the Eastern Area?

If you're declared into the Eastern Area, including the CA-2 Yellowtail/Haddock SAP or the Eastern U.S./Canada Haddock SAP, you must submit a **daily catch report** via VMS. The report must be submitted by 9 AM the following day and include all fields. You must enter each chart area fished under Step 4 on the form, and report all groundfish and non-groundfish kept.

If you do not declare the Eastern Area from the dock, and instead use the sector exemption to declare the CA-2 Yellowtail/Haddock SAP or the Eastern U.S./Canada Haddock SAP while at sea (known as flexing), you're required to submit a report indicating all of your catch from that trip up until the time you declared into the SAPs. Once you've declared into either of these SAPs, you must submit **daily reports for the remainder of the trip.**

Beginning FY 2015, vessels that declare their intent to fish within and outside of the Gulf of Maine Broad Stock Area on the same trip must submit daily VMS catch reports for the duration of the trip.

What are my VMS reporting requirements if I do not declare into the Eastern Area?

If you're declared into the Western Area only and do not flex at sea into either of the Eastern Area SAPs, you must submit a trip level report via VMS. If you only fish in a single broad stock area, only fill out Steps 1 and 2. If you fish in more than one broad stock area, you must fill out all fields, including Step 4 for each chart area fished.

What are my vessel trip report (VTR) requirements?

You must submit a VTR for each gear type, mesh/ring size, or chart area fished. In the event that tows or placement of fixed gear (gillnets, long lines, etc.) crosses chart area boundaries, you must fill out a VTR for each area and apportion your catch based upon a good faith estimate.

EXAMPLE: If you're a trawler and your tow goes across areas 515 and 521, with 80% of your time spent in area 515, you would allocate 80% of your total catch for the tows to chart area 515 and the remaining 20% to area 521. The same basic method applies to fixed gear. If your

gillnet string or long line straddles a chart area boundary, you must apportion the total catch based upon what percentage of the string was in each chart area. Please contact the VTR Support Team at 978-281-9246 if you require clarification of this requirement.

How are my VTRs and VMS catch reports used for catch attribution?

We use the chart areas reported on VMS catch reports and VTRs to apportion catch to specific stock allocations. For example, cod caught in area 562 is attributed to Eastern Area cod, while cod caught from area 515 is attributed to Gulf of Maine cod.

Do I have groundfish landing limits?

You remain exempt from trip limits for most groundfish species, however, you are allowed one halibut per trip, and may not possess Atlantic wolffish, ocean pout, or windowpane flounder.

What are my gear restrictions this year?

Because of a sector exemption, you may use all approved gear types that are allowed in the GB Regulated Mesh Area (RMA) in areas that do not overlap with the northern windowpane flounder AM. When fishing in the northern windowpane flounder AM area, you are required to use one of the following selective trawl gears: 1) Haddock separator trawl; 2) Ruhle trawl; or a 3) rope separator trawl. If you are using a haddock separator trawl or Ruhle trawl, you are allowed to use a cod end as small as 6-inches, otherwise, you must use a cod end of at least 6.5-inches. The chart on the first page depicts the northern windowpane flounder AM area; the coordinates are below.

N. Windowpane Flounder AM Area		
Point	**N. Lat.**	W. Long.
1	42°10’	67°40’
2	42°10’	67°20’
3	41°00’	67°20’
4	41°00’	67°00’
5	40°50’	67°00’
6	40°50’	67°40’
1	42°10’	67°40’

Do I get a DAS credit for fishing only in the Eastern Area?

Yes, if you declare and fish exclusively in the Eastern Area, your DAS are charged only for the time inside the area. If you fish inside and outside of the Eastern Area on the same trip, DAS are charged normal.

Eastern U.S./Canada Haddock SAP

What are the coordinates of the areas?

The Eastern U.S./Canada Haddock SAP Area is defined by lines connecting the following points, in order:

Point	N. Lat.	W. Long.
1	42°22’	67°20’
2	42°20’	67°20’
3	42°20’	67°40’
4	41°10’	67°40’
5	41°10’	67°20’
6	42°10’	67°20’
7	42°10’	67°10’
1	42°22’	67°20’

What is the FY 2015 season?

The Eastern U.S./Canada Haddock SAP is open May 1 through December 31.

What are my gear restrictions this year?

You may use all approved gear types that are allowed in the GB RMA in areas that do not overlap with the northern windowpane flounder restricted gear area AM. When fishing in the northern windowpane flounder AM area, you are required to use one of the following selective trawl gears: 1) Haddock separator trawl; 2) Ruhle trawl; or a 3) rope separator trawl. If you are using a haddock separator trawl or Ruhle trawl, you are allowed to use a 6-inch cod end, otherwise, you must use 6.5-inch cod end.

Closed Area II Yellowtail Flounder/Haddock SAP

What are the coordinates of the areas?

The CA II Yellowtail Flounder/Haddock SAP is defined by lines connecting the following points in the order listed:

Point	N. Lat.	W. Long.
1	41°30’	67°20’
2	41°30’	66°34.8’
3	41°18.6’	66°24.8’
4	41°00’	66°35.8’
5	41°00’	67°20’
1	41°30’	67°20’

What is the FY 2015 season?

The CA II Yellowtail Flounder/Haddock SAP is open May 1 through January 31.

What are my gear restrictions this year?

With the exception of a flounder trawl, you may use all approved gear types that are allowed in the GB RMA in areas that do not overlap with the northern windowpane flounder restricted gear area AM. When fishing in the northern windowpane flounder AM area, you are required to use one of the following selective trawl gears: 1) Haddock separator trawl; 2) Ruhle trawl; or a 3) rope separator trawl. If you are using a haddock separator trawl or Ruhle trawl, you are allowed to use a 6-inch cod end, otherwise, you must use 6.5-inch cod end.

Closed Area I Hook Gear Haddock SAP

What are the coordinates of the area?

The CA I HGH Access Area is defined by lines connecting the following points:

Point	N. Lat.	W. Long.
1	41°09’	68°30’
2	41°30’	68°30’
3	41°30’	69°23’
4	41°04’	69°01’

What is the FY 2015 season?

The CA I Hook Gear Haddock SAP is open May 1 through January 31.

What are my gear restrictions this year?

If you are declared into and fishing in this SAP, you may only possess on board and fish with demersal longline gear or tub trawl gear.

What is the overall haddock TAC?

For FY 2015, there is a shared Sector and common pool haddock TAC of 5,396,916 lb for this SAP. Once this TAC is caught, the SAP shall be closed to all NE multispecies vessels.

What are my VMS reporting requirements?

You must submit a daily catch report for each day fished in the CA I HGH SAP Area in 24-hr intervals, measured from 0000 hr to 2400 hr. If your sector does not have an exemption from the daily reporting requirement, then the report must be sent to your sector manager. If your sector has an exemption from this requirement, you must submit your daily catch report to us.

Beginning FY 2015, vessels that declare their intent to fish within and outside of the Gulf of Maine Broad Stock Area on the same trip must submit daily VMS catch reports for the duration of the trip.

What are my sector's reporting requirements?

The sector manager must submit daily reports to us summarizing the sector's: Total pounds of haddock, cod, yellowtail flounder, winter flounder, witch flounder, American plaice, and white hake kept; total pounds of haddock, cod, yellowtail flounder, winter flounder, witch flounder, American plaice, and white hake discarded; date fish were caught; and VTR serial numbers of each trip. Some sectors have an exemption from this requirement, so refer to your operation's plan.

Gear Definitions

Haddock separator trawl:

A haddock separator trawl is defined as a groundfish trawl modified to a vertically oriented trouser trawl configuration, with two extensions arranged one over the other, where a codend is attached only to the upper extension, and the bottom extension is left open and does not have a codend attached. A horizontal large-mesh separating panel constructed with a minimum of 6.0-inch diamond mesh must be installed between the selvedges joining the upper and lower panels, extending forward from the front of the trouser junction to the aft edge of the first belly behind the fishing circle. Either a two-seam or a four-seam bottom trawl net may be used, provided they meet the requirements below.

-Two-seam bottom trawl nets: For two-seam nets, the separator panel must be constructed such that the width of the forward edge of the panel is 80-85 percent of the width of the after edge of the first belly of the net where the panel is attached. For example, if the belly is 200 meshes wide (from selvedge to selvedge), the separator panel must be no wider than 160-170 meshes wide.

-Four-seam bottom trawl nets: For four-seam nets, the separator panel must be constructed such that the width of the forward edge of the panel is 90-95 percent of the width of the after edge of the first belly of the net where the panel is attached. For example, if the belly is 200 meshes wide (from selvedge to selvedge), the separator panel must be no wider than 180-190 meshes. The separator panel must be attached to both of the side panels of the net along the midpoint of the side panels. For example, if the side panel is 100 meshes tall, the separator panel must be attached at the 50th mesh.

Ruhle trawl:

A Ruhle trawl is defined as a four-seam bottom groundfish trawl with large meshes in the forward panels, reducing in size toward the trawl's codend. All meshes in the forward panels, except for the square and square side panels, must measure at least 7.9 ft. The square and square side panel meshes, and those panel meshes immediately aft of the fishing circle, must measure at least 31.5 inches. The first bottom belly must contain meshes measuring at least 7.9 ft. The second bottom belly meshes must measure at least 31.5 inches. All remaining panels must contain meshes measuring at least 7.9-inches. For complete construction parameters, including fishing circle, sweep, and kite requirements, please see § 648.85(b)(6)(iv)(J)(3).

Flounder trawl:

A flounder trawl net is defined as bottom trawl gear meeting one of the following two net descriptions:

-A two-seam, low-rise net constructed with 6-inch diamond mesh or 6.5-inch square mesh, where the maximum footrope length is not greater than 105 ft and the headrope is at least 30 percent longer than the footrope. The footrope and headrope lengths shall be measured from the forward wing end. The codend must be either 6.5-inch diamond or 6.5-inch square mesh.

-A two-seam, low-rise net constructed with 6-inch diamond mesh or 6.5-inch square mesh, with the exception that the top panel of the net contains a section of mesh at least 10 ft long and stretching from selvedge to selvedge, composed of at least 12–inch mesh that is inserted no farther than 4.5 meshes behind the headrope. The codend must be either 6.5-inch diamond or 6.5-inch square mesh.

New England Fishery Management Council
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E.F. "Terry" Stockwell III, *Chairman* | Thomas A. Nies, *Executive Director*

MEMORANDUM

DATE: August 1, 2016

TO: Groundfish PDT

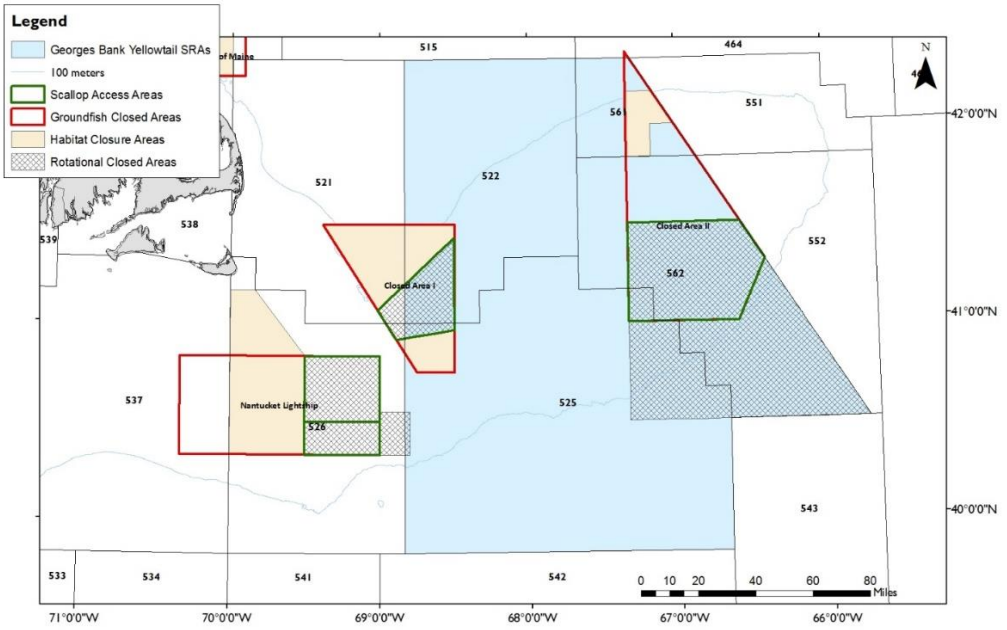
FROM: Scallop PDT

SUBJECT: **Scallop Fishery Catch of Georges Bank Yellowtail Flounder**

On July 21, 2016 the Scallop PDT reviewed recent management measures within the Georges Bank yellowtail flounder (GB YT) stock area (statistical reporting areas 522, 525, 561, 562), catch estimates of GB YT, and scallop fishing effort within the GB YT stock boundary. In recent years, several management measures have been included in the Scallop FMP for the purpose of reducing GB YT bycatch. The PDT's discussion focused on the following five topics:

1. Scallop Fishery Allocations and Catch of GB YT
2. Rotational and Seasonal Closures within the GB YT Stock Area
3. Gear Modifications to Reduce Flatfish Catch
4. Bycatch Avoidance Efforts
5. Scallop fishery effort in the GB YT stock area

Figure 1 - FY2016 Management Areas and Rotational Closures with Georges Bank Yellowtail Flounder statistical reporting areas (SRAs) shown in blue.



1. Scallop Fishery Allocations and Catch of GB YT

The scallop fishery is currently allocated 16% (based on historic catch) of the GB YT US acceptable biological catch (see Groundfish FW48). The fishery's annual catch limit (ACL) reflects a reduction for management uncertainty. Provisions in both the groundfish and scallop fishery management plans require that NMFS estimate scallop fishery catch of GB YT annually in January to determine if the sub-ACL is likely to be exceeded. In years when NMFS projects that less than 90% of the scallop GB YT sub-ACL will be caught, the agency may initiate an allocation transfer from the scallop fishery to the groundfish fishery. In FY2015, NMFS transferred 7.9 mt of the GB YT from the scallop fishery to the groundfish fishery (~21% of the FY 2015 scallop GB YT sub-ACL).

Regulations governing the scallop fishery's retention of GB YT have varied in recent years. Landings of GB YT became prohibited for the scallop fishery in FY 2014 to remove any incentive to target yellowtail (Table 2). Prior to this, catch estimates were comprised of both landings and discards. In some years, there has been a requirement that vessels land any catch of yellowtail.

Since FY 2011, scallop fishery catch of GB YT has ranged from a high of 164 mt (FY 2012) to a low of 29.7 mt. The limited access component accounts for nearly all GB YT catch (i.e. very little LAGC IFQ catch). The PDT notes that the fishery has historically encountered yellowtail within the Closed Area II Access Area (CA II AA) and along the southern flank of Georges Bank in SRA 562 and 525 (Figure 1). Lower catches of yellowtail can be expected during closures of these areas (seasonal or year round).

Table 1 – Recent Georges Bank Yellowtail TACs and scallop fishery sub-ACLs and catches. Values shown in metric tons (mt).

	Total Shared TAC – US & CA (mt)	US % Share	US TAC (mt)	% US TAC Caught	Scallop sub-ACL (mt)	Scallop catch (mt)	% Scallop ACL Caught
FY2011	2,650	55%	1,458	76%	200.8	83.9	41.8%
FY2012	1,150	49%	564	68%	156.9	164	104.5%
FY2013	500	43%	215	43%	41.5	37.5	90.4%
FY2014*	400	82%	328	37%	50.9	59	115.9%
FY2015*	354	70%	248	***	38	29.7	78.1%
FY2016*	354	76%	269	***	42	3.3**	7.8%
FY2017*		69%					

* Indicates that retention of GB YT was prohibited for scallop fishery
**FY2016 GB YT scallop catch estimate as of June 2, 2016
***Indicates that final catch data is not yet available

2. Rotational and Seasonal Closures within the GB YT Stock Area

Rotational area management is the cornerstone of scallop fisheries management. There are four types of areas in this system: 1) "open areas" where scallop fishing can occur using DAS or IFQ; 2) areas completely closed to scallop fishing year-round to reduce impacts on EFH and/or groundfish mortality; 3) areas temporarily closed to scallop vessels to protect small scallops until a future date; and 4) areas open to very restricted levels of scallop fishing called "access areas." When scallop vessels are fishing in these areas they are limited in terms of total removal and sometimes season. All four types of management areas have been employed within the GB YT stock area (Figure 1).

The PDT focused its discussions on management measures since FY 2011 because this was the first year that a sub-ACL was allocated to the scallop fishery. Table 2 describes limited access DAS and access area trip allocations since FY 2011, along with details about the management of the CA II AA and management within the GB YT statistical reporting area (SRA).

The CA II AA is situated within the GB YT SRA. After a series of openings, the CA II AA was closed in FY2015 and FY2016. In FY2016, the area to the south of CA II was designated as a rotational closure (Figure 1). In FY2013 and FY 2014, seasonal closures from August 15 – November 15 were employed within the CAII AA to help reduce the catch of GB YT by the fishery.

Table 2 - Limited Access scallop fishery allocations by FY and recent schedule of CAII access

FY	Action	LA DAS (Full Time)	AA trips	CA II AA	Notes re: CA II AA and other management
2011	FW22	32	4 (2 MA)	0.5 trips (157 vessels; 18K lbs/trip)	10% access area bycatch cap; GB stock-wide monitoring of YT sub-ACL; Bycatch Avoidance Program CAI and CAII
2012	FW22	34	4	1 trip (313 vessels; 18K lbs/trip)	GB stock-wide monitoring of YT sub-ACL; Bycatch Avoidance Program CAI and CAII
2013	FW24	33	2	182 trips (13K lbs/trip)	Seasonal closure of CAII Aug 15 – Nov 15; GB stock-wide monitoring of YT sub-ACL; Bycatch Avoidance Program CAII
2014	FW25	31	2	197 trips (12K lbs/trip)	16% GB YT sub-ACL; YT landings prohibited; Seasonal closure of CAII Aug 15 – Nov 15; GB stock-wide monitoring of YT sub-ACL; Bycatch Avoidance Program CAII
2015	FW26	30.86	51K lbs to MAAA	Closed	In-season transfer to groundfish fishery (7.9 mt).
2016	FW27	34.55	3 (51K lbs to MAAA)	Closed	'CAII Extension' closure of open areas to protect small scallops

3. Gear Modifications to Reduce Flatfish Catch

Through scallop Framework 26, the Council approved measures that restrict the maximum number of rows in the dredge apron to 7 in all areas as shorter aprons have been shown to reduce flatfish bycatch and improve fish escapement (see Scallop FW 24, Appendix IV). Part of the rationale for this 7 row restriction was to reduce flatfish bycatch and prevent sub-ACLs from being exceeded and triggering reactive accountability measures. The restriction was implemented for in FY2015. The PDT also notes that the fishery-wide requirement to use of a 10" twine top (Amendment 10, 2004) improved the escapement of yellowtail flounder.

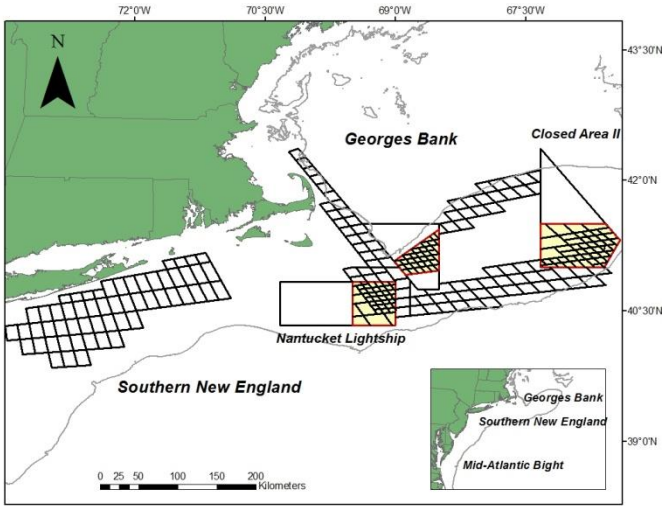
4. Bycatch Avoidance Efforts

The SMAST Yellowtail Flounder Bycatch Avoidance System is a voluntary program to exchange real-time, spatially-specific information on yellowtail flounder bycatch in the rotational and open areas of Georges Bank and southern New England. The system uses fishery-dependent data to provide advice on bycatch hotspots. Vessels can use the near real-time advice to change fishing behavior and avoid regions with high bycatch rates. The system was implemented in 2010, and has continued each year with additional participating vessels and areas of bycatch reporting and avoidance (Table 3; Figure 2).

Table 3 - SMAST Bycatch Avoidance Program areas 2010-2016. Numbers in parentheses represent the number of participating vessels in each year. Closed Area II row is shown in gray.

	2010 (122)	2011 (214)	2012 (244)	2013 (252)	2014 (253)	2015 (258)	2016 (258)
NLCA	x		x				
NLCA Extended				x	x		
CAI		x	x	x			
CAII		x	x	x	x		
North GB Open				x	x	x	x
South GB Open				x	x	x	x
SNE Open					x	x	x
Channel Open						x	X

Figure 2 - Map of all reporting grids used for the SMAST Bycatch Avoidance Program.



5. Scallop Fishery Effort in GB YT stock area

The Scallop PDT summarized fishing effort using limited access vessel trip report data, focusing on FY2011 – FY2014. Fishing effort is shown by 10-minute squares throughout the range of the fishery. Maps were developed using VTR effort data from all trips (open area and access area) of limited access vessels from 2011 – 2014 (Figures 3 and 4). Note that the scales of effort vary by year. The bathymetry lines follow the 60m and 120m contours, which translates to ~30 and ~60 fathoms respectively. In Figure 4, scallop access areas are shown in green when open, and red when they are closed in a particular fishing year. The PDT noted that while VTR locations are considered less accurate than VMS since they generally only have one self-reported location per trip, this approach sufficiently captures annual effort within the GB YT stock area.

The scallop fishery primarily operates between the 30 and 60 fathom curves along the southern flank and northern flanks of Georges Bank, and within the Closed Area II access area. The majority of trips on Georges Bank from 2010 – 2014 (Figure 3) are concentrated within the CA II access area, though effort varies annually (Figure 4). Effort on the northern edge of the bank has been concentrated to the west of the habitat closure area within CA II (see Figure 1). The PDT noted that the highest discard to kept ratios (d:k) of yellowtail to scallop meats in the GB YT stock area have been observed in Closed Area II and areas to the south. Less yellowtail catch has been observed along the northern portion of the bank.

Figure 3 - Number of LA VTR trips over five year period from 2010 – 2014 by ten minute squares.

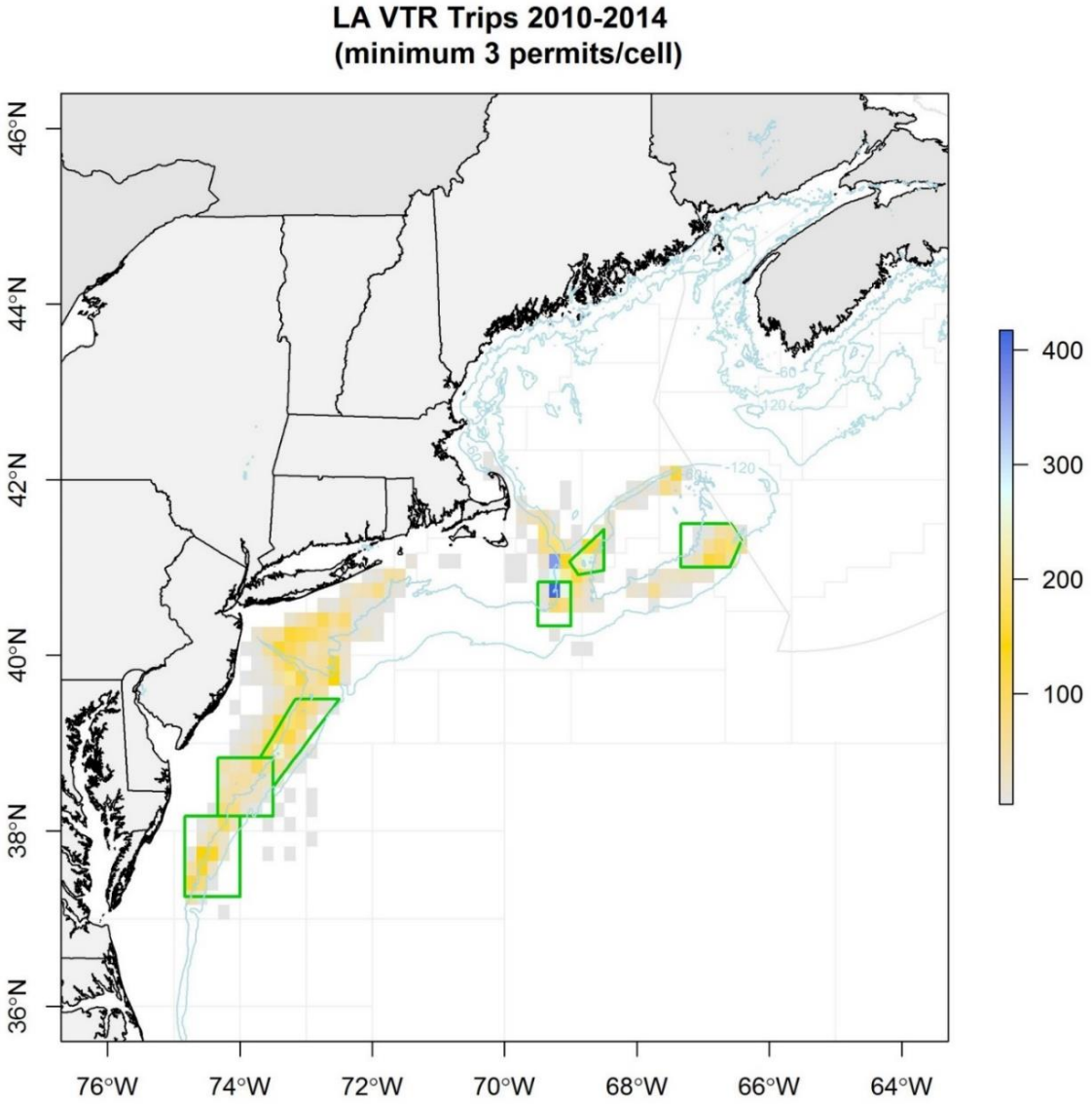
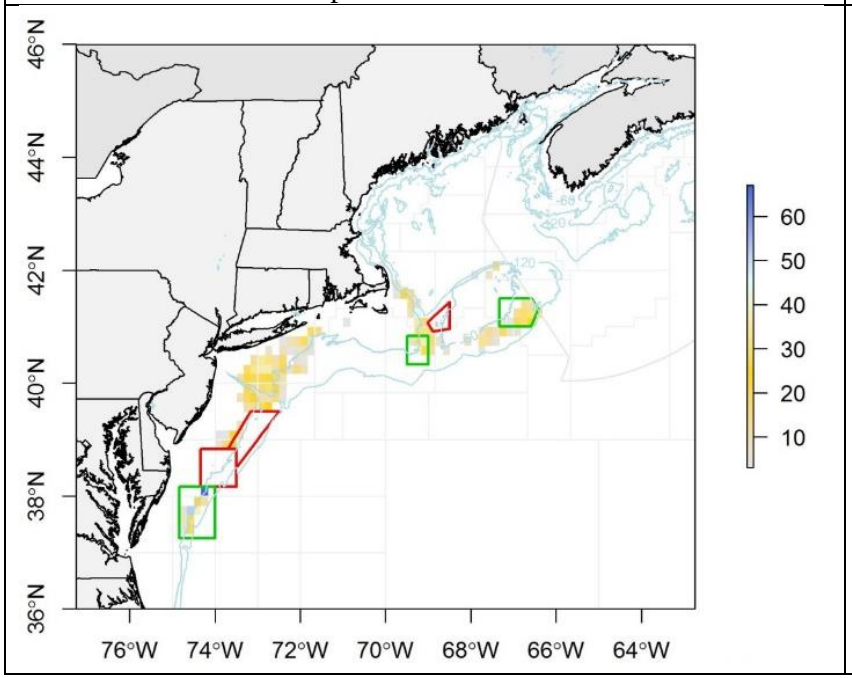
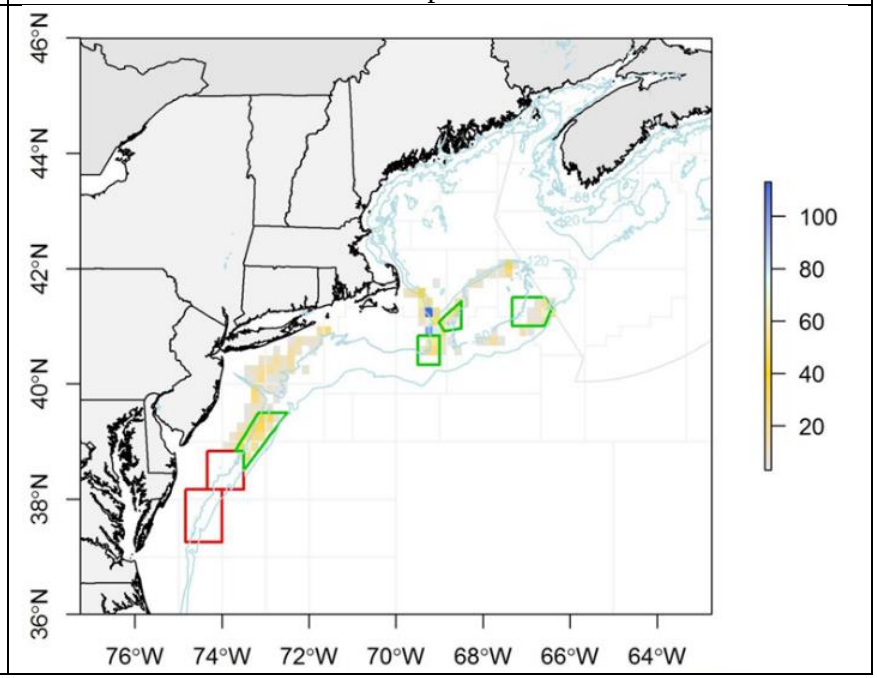


Figure 4 - Annual spatial distribution of VTR trips by ten-minute squares (FY 2011 – FY2014). Access areas green when open and red when closed.

2014 - # of LA VTR Trips	2013 – Number of LA VTR Trips
	

2012 - # of LA VTR Trips	2011 - # of LA VTR Trips