



New England Fishery Management Council

50 WATER STREET | NEWBURYPORT, MASSACHUSETTS 01950 | PHONE 978 465 0492 | FAX 978 465 3116
E.F. "Terry" Stockwell III, *Chairman* | Thomas A. Nies, *Executive Director*

DATE: September 14, 2018
TO: Council
FROM: Skate Plan Development Team
SUBJECT: Northeast Skate Complex 2018 (for FY2017) Annual Monitoring Report

Background

The regulations implementing the management measures for the Northeast Skate Complex Fisheries state that the Skate PDT shall meet at least annually to review the status of the species in the skate complex. At a minimum, this review shall include annual updates to survey indices, fishery landings and discards; a re-evaluation of stock status based on the updated survey indices and the FMP's overfishing definitions; and a determination of whether any of the accountability measures (AMs) specified under §648.323 were triggered. The review shall also include an analysis of changes to other FMPs (e.g., Northeast Multispecies, Monkfish, Atlantic Scallops, etc.) that may impact skate stocks, and describe the anticipated impacts of those changes on the skate fishery.

1. Annual updates to survey indices and a re-evaluation of stock status based on the updated survey indices and the FMP's overfishing definitions

The information in Attachment 1 summarizes skate stock status through spring 2018 (Memo from NEFSC Re: 2017 NE Skate Stock Status Update, August 2018). One skate species remains overfished (thorny) and overfishing is not occurring for five of the seven skate species. Stock status for clearnose and rosette skate could not be updated because of missing fall 2017 survey indices. For thorny skate, the 3-year average (2015-2017) survey catch/tow (0.175 kg/tow) was less than the $B_{\text{threshold}}$ (2.06 kg/tow).

Survey Indices

Indices of relative abundance for all seven skate species are derived from the Northeast Fisheries Science Center bottom trawl survey. In recent years, the survey has experienced delays and incomplete coverage of the survey area. Attachment 1 discusses the potential impacts of these issues on the survey indices. These issues, particularly the missing 2017 clearnose and rosette survey indices, may impact the specifications setting process (because specs are set using a 3 year moving average of the survey indices and catch estimates by species) the PDT is scheduled to work on in 2019.

Rebuilding Stocks

For **thorny skate**, the 3-year average (2015-2017) survey biomass (0.175 kg/tow) decreased slightly from the previous 3-year average, and is only 4.2% of the B_{MSY} target (4.13 kg/tow). The rebuilding deadline for this stock is 2028 (25 years from implementation of the Skate FMP), yet

15 years into the rebuilding period, the survey biomass has continued to decline with no significant signs of rebuilding.

Thorny skate is a Species of Concern and was previously petitioned for listing under the Endangered Species Act (ESA) in 2011. NOAA Fisheries determined that a status review was not warranted at that time (76 FR 78891). However, a new ESA petition was submitted by Defenders of Wildlife and Animal Welfare Institute in May 2015. An extinction risk workshop was held in May 2016 and the final report is available (see https://www.greateratlantic.fisheries.noaa.gov/protected/pcp/soc/thorny_skate_status_review_feb_2017_final.pdf). The extinction risk workshop participants determined there were no distinct population segments of thorny skate. The workshop concluded that thorny skate was not currently in danger of extinction throughout all, or a significant portion, of its range. Despite this conclusion, thorny skate biomass remains low throughout the U.S. management area, according to the survey.

The skate regulations at §648.320(a)(3) require the Council to take management action when an overfished species declines in biomass to ensure that it will achieve target levels. The Council should consider management measures, beyond the continuing possession prohibition, that will foster rebuilding. The Council should include the population dynamics of this species on its list of research priorities, which may provide insights into the cause of its ongoing biomass declines.

For **smooth skate**, the 3-year average (2015-2017) survey biomass (0.285 kg/tow) was 112% above the overfished threshold (0.13 kg/tow), and 6% above the B_{MSY} target (0.27 kg/tow), an increase from the previous average. The rebuilding deadline for this species was 2020 (10 years from the implementation of Amendment 3), and it is now rebuilt based on the updated survey indices. Smooth skate (along with thorny, winter, and barndoor skate) was petitioned for listing under the ESA in 2011, but NOAA Fisheries determined that a status review was not warranted at that time (76 FR 78898).

2. Fishery landings and discards and determination of whether any of the accountability measures specified under §648.323 were triggered

Based upon the information detailed below, it appears that no ACL or TAL overages occurred in fishing year 2017, therefore, no reactive AMs were triggered. An in-season adjustment was made to the skate wing possession limit. Management specifications as well as landings and discards for fishing year 2017 are shown in Table 1 below. The ABC/ACL specifications for the 2017 fishing year were set using the specification process established by Amendment 3 to the Skate FMP, which became effective in July 2010. To set the ACT, the ABC/ACL was reduced by 25% to account for scientific and management uncertainty. The TALs were calculated by reducing the ACT by the estimated discard rate in 2012-2014 and by the state landings estimate of 2.6%, and allocating the remainder to allowable landings which were split 66.5/33.5% between the skate wing and bait fisheries, respectively. Table 2 provides estimates of FY2017 skate complex revenue and landings for the wing and bait fisheries.

Based on observer data, the Northeast Fisheries Science Center has estimated total skate discards throughout the region to have been 25,365 mt for calendar year 2017. This estimate represents a decrease in total discards of 24% from the 2016 estimate of 33,270 mt. Dead discard estimates for fishing year 2017 were estimated to be 8,523 mt by the Greater Atlantic Regional Fisheries Office. Using fishing year discards and landings, estimated total skate catch for fishing year 2017 was 25,294 mt (104% of the ACT,

81.4% of the ACL). Therefore, it appears that the ACL was not exceeded. Total fishing year 2017 skate wing landings were 8,465 mt (101.1% of the Wing TAL), and bait landings were 3,978 mt (94.3% of the Bait TAL). Therefore, the fishery-level TAL was not exceeded. AMs are only triggered when the individual TALs are exceeded by more than 5%. As a result, no reactive AMs should be triggered as a result of catch levels for this fishing year. However, the 500 lb incidental possession limit was implemented on December 27, 2017 for the wing fishery until it was lifted on April 9th, 2018. Framework 4, effective March 15, 2018, reduced the bait possession limit in season 3 (November 1 through April 30) to 12,000 lb (from 25,000 lb). This reduction in season 3 bait possession limit likely did not have a large impact on FY2017 given the short amount of time between the effective date and end of the fishing year.

Table 1 - FY 2017 Catch and Landings of Skates Compared to Management Specifications

| Management Specification | Specification Amount | Catch/Landings (mt) | Percent Landed or Caught |
|-------------------------------------|----------------------|---------------------|--------------------------|
| ABC/ACL | 31,081 | 25,294 | 81.4% |
| ACT (75% of ABC) | 23,311 | 25,294 | 104% |
| Estimated Discards + State Landings | 10,721 | 9,318 | NA |
| TAL Bait | 4,218 | 3,978 | 94.3% |
| TAL Wings | 8,372 | 8,465 | 101.1% |

Table 2 - FY2017 Skate complex price and landings by disposition

| Disposition | Live weight (pounds) | Revenue | Average price per lb |
|--------------------------------------|----------------------|-------------|----------------------|
| Wing | 20,069,842 | \$4,719,092 | \$ 0.24 |
| Bait | 12,380,053 | \$1,707,835 | \$ 0.14 |
| Unknown | 88,584 | \$43,444 | \$ 0.49 |
| Personal Use/No market/packing, only | 252 | - | - |

3. Analysis of changes to other FMPs (i.e., Northeast Multispecies, Monkfish, Atlantic Scallops, Habitat) that may impact skate stocks, and description of the anticipated impacts of those changes on the skate fishery

Northeast Multispecies FMP

Amendment 16 to the NE multispecies FMP, which took effect on May 1, 2010, greatly expanded the sector management program and set groundfish specifications for the 2010 and 2011 fishing years. It is important to note that overall effort in the NE multispecies fishery has decreased in recent years (<https://www.greateratlantic.fisheries.noaa.gov/aps/monitoring/nemultispecies.html>). This is evident by the decrease in number of active vessels and the number of groundfish trips that have decreased between FY2011 and FY2015.

FW56 became effective August 1, 2017. FW56 set quotas for three shared U.S./ Canada stocks (Eastern Georges Bank (GB) cod, Eastern GB haddock, and GB yellowtail flounder), set catch limits for FYs 2017–2019 for witch flounder, established an allocation of northern windowpane flounder for the scallop fishery, revised the trigger for the scallop fishery’s accountability measures for GB yellowtail flounder and northern windowpane flounder; and increased the GB haddock allocation for the midwater trawl fishery. FW56 was also used to implement a number of other measures that were not part of Framework 56, but that were considered under Regional Administrator authority included in the Northeast Multispecies FMP. The

additional measures implemented included management measures necessary to implement sector operations plans, revised annual catch entitlements for 19 sectors for fishing year 2017 based on the catch limits in Framework 56 and final fishing year 2017 sector rosters, adjusted the fishing year 2017 trip limits for witch flounder and American plaice for the common pool fishery, and announced accountability measures (AMs) for northern and southern windowpane flounder that are triggered due to overages of fishing year 2015 catch limits for both stocks.

FW57 became effective May 1, 2018. FW57 set fishing year 2018 shared U.S./Canada quotas Georges Bank (GB) yellowtail flounder and eastern GB cod and haddock, set 2018-2020 catch limits for 20 groundfish stocks, revised the common pool trimester total allowable catch (TAC) allocations for several stocks, revised AMs for Atlantic halibut for vessels issued any Federal permit, revised the AMs for southern windowpane flounder for non-groundfish trawl vessels, revised the trigger for the scallop fishery's AM for southern New England/Mid-Atlantic yellowtail flounder, and granted the Regional Administrator the authority to adjust recreational measures for GB cod. The cumulative impacts assessment concludes that "...the combined impacts of past federal fishery management actions have decreased fishing effort and improved habitat protection for non-target species. Current management measures, including those implemented through Amendment 16 to the FMP, are expected to continue to control effort, and decrease bycatch and discards. The action proposed by FW57 is expected to continue this trend. The primary mechanism is through the reduced ABCs/ACLs (reduced from recent years). Many of the ABCs/ACLs will increase (GB cod, GOM cod, GOM haddock, GB yellowtail flounder, CC/GOM yellowtail flounder, American plaice, witch flounder, GB winter flounder, redfish, pollock, Atlantic halibut (see section 7.1.1.1.2), and Atlantic wolfish) which may increase impacts on non-target species if these result in an increase in groundfish fishing effort. However, any increase in fishing effort may be partially countered by the fact that several stocks are predicted to be constraining stocks (GOM cod, CC/GOM yellowtail flounder, SNE/MA yellowtail flounder, SNE/MA winter flounder, and American plaice). The modifications in management measures are expected to affect non-target species depending on fishing behavior. The past and present impacts, combined with the Preferred Alternative and future actions which are expected to continue rebuilding and strive to maintain sustainable stocks, should yield positive non-significant impacts to non-target species."

FW58 is currently in development and would likely update status determination criteria, rebuilding plans, and annual catch limits, and provide guidance on sector overages.

Scallop FMP

FW29 was partially implemented on April 1, 2018 and fully implemented on April 19, 2018. FW29 set specifications, including DAS allocations, for the scallop fishery for fishing year 2018; set new management measures in the Northern Gulf of Maine (NGOM) scallop management area for the 2018 and 2019 fishing years including prohibiting the limited access fleet from accessing the NGOM while participating in the DAS program; the annual NGOM total allowable catch was divided between the limited access fleet while on research set-aside trips and limited access general category fleets for the 2018 and 2019 (default) fishing year; revised the limited access allocations and trip possession limits for scallop access areas; modified limited access vessels' one-for-one area access allocation exchanges; and adjusted flatfish accountability measures. The cumulative impacts assessment concludes that "Actions taken by the Council in the Scallop FMP in the past and present are mostly positive on non-target species. Specific gear and area restrictions have reduced bycatch of various nontarget species. Effort controls and increased efficiency of the fleet have also likely reduced impacts on non-target species. However, some non-target species are still overfished (see Table 74). Future actions are anticipated to continue rebuilding and maintaining sustainable stocks. There are several stocks that have been allocated a sub-ACL as bycatch in the scallop fishery (GB YT, SNE/MA YT, GOM/GB windowpane flounder, and SNE/MA windowpane flounder). Having a sub-ACL and AMs likely reduces overall bycatch of these stocks in the scallop fishery.

Therefore, the cumulative impacts of past, present and reasonably foreseeable future actions should yield low-positive impacts for non-target species in the long-term.”

Monkfish FMP

Monkfish Framework 9 was implemented on August 26, 2016. It removed the monkfish possession limit in the NFMA when fishing on Category C and D permitted vessels, when fishing on a NE Multispecies DAS and a monkfish DAS and modified the minimum mesh requirements for standup gillnets on a monkfish DAS in the Southern Fishery Management Area (SFMA). The cumulative effects states “While the increased opportunity to target monkfish would allow for effort to shift from other fisheries, particularly the groundfish fishery, as intended, there may be increased incidental catch of some species, particularly skates and dogfish. However, such an increase would likely be negligible and controlled by management measures in those fisheries that are designed to prevent overfishing and rebuild overfished stocks consistent with the requirements of the Magnuson-Stevens Act. Thus, the cumulative effect of this action would likely result in negligible changes to the sustainable management of those fisheries, with no anticipated significant impacts.”

FW10 established specifications for fishing years 2017 – 2019; modified trip limits in both management areas; and increased DAS allocations in the SFMA. The cumulative effects states “Effort control measures implemented under the Monkfish FMP over the past decade have reduced overall fishing effort with its associated incidental catch of non-target species, particularly skates and dogfish. This trend is likely to continue under the preferred alternatives, notwithstanding the potential for the preferred alternatives to increase monkfish landings. While the increased opportunity to target monkfish would allow for effort to shift from other fisheries, particularly the groundfish fishery, as intended, there may be increased incidental catch of some species, particularly skates and dogfish. However, such an increase would likely be negligible and controlled by management measures in those fisheries that are designed to prevent overfishing and rebuild overfished stocks consistent with the requirements of the Magnuson-Stevens Act. Thus, the cumulative effect of this action would likely result in negligible changes to the sustainable management of those fisheries, with no anticipated significant impacts.”

Herring FMP

The 2019-2021 herring specifications are expected to be significantly reduced based on the results of SAW/SARC 65. The lobster fishery uses a variety of bait including herring. It is not possible to predict how a limited supply of herring bait might affect the skate bait fishery but could result in increased demand of skate bait.

Habitat Management Plan

The Omnibus Habitat Amendment 2 (OHA2) was implemented on April 9, 2018. It reviewed and updated EFH designations, identified HAPCs, as well as updated the status of current knowledge of gear impacts. It also implemented new management measures for minimizing the adverse impact of fishing on EFH that affect all species managed by the NEFMC. Specifically, it established the Eastern Maine habitat management area (HMA) that is closed to mobile bottom-tending gear, it maintained Cashes Ledge closure area and its existing restrictions and exemptions, modified the Cashes Ledge habitat closure area that is closed to mobile-bottom tending gear, modified the Jeffreys Ledge habitat closure area that is closed to mobile bottom tending gear, established the Fippennies Ledge HMA that is closed to mobile bottom-tending gear, maintained the western Gulf of Maine groundfish closure area that is closed to mobile bottom-tending gear and aligned it with the western Gulf of Maine habitat closure area, exempted shrimp trawling from the designated portion of the northwest corner of the western Gulf of Maine closure area,

added the Gulf of Maine roller gear restriction as a habitat protection measure, removed the Closed area I habitat and groundfish closure area designations, removed the Nantucket Lightship habitat and groundfish closure area designations, and established the Great South Channel HMA that is closed to mobile bottom-tending gear throughout and clam dredge gear in the defined northeast section. OHA2 also implemented two DHRA designations: Stellwagen Bank and Georges Bank. It implemented groundfish spawning protection measures within the Gulf of Maine and Georges Bank. The cumulative effects states “Fisheries management actions are typically focused on improving the conditions of managed resources. While these actions are not uniformly successful in this regard, the overall trend amongst the managed resources evaluated in this amendment is towards improved status. Given guiding requirements in the Magnuson Stevens Act to improve stock conditions when resources are depleted, it is assumed that fishery management actions will keep most or all managed resources on a positive trajectory over the next ten years. Fishery management measures beyond those contemplated in this action will likely have the largest influence on fishery resource conditions over the next ten years. These measures set annual and trip-based catch limits, and allocate resources amongst fishery participants and across management sub-areas.”

The Clam Dredge Framework Adjustment to the habitat plan is currently under development. The purpose and need for this action states “the Council is developing this framework to evaluate and possibly designate areas where hydraulic clam dredging might continue in the Great South Channel Habitat Management Area (GSC HMA). The purpose of the HMA is to minimize, to the extent practicable, the effects of regional fisheries on essential fish habitat (EFH). The purpose of this action is to identify areas where fishing for surfclams with hydraulic dredges would have only minimal and temporary impacts on the habitats in the HMA. This action is needed to comply with the Magnuson-Stevens Fishery Conservation and Management Act requirement to minimize the effects of fishing on EFH to the extent practicable.” The framework has identified the Great South Channel as skate EFH and skate fisheries may be affected by the action.

Skate Research

Skates continue to be the focus of active research.

Knotek et al. (2018) used satellite tags to estimate discard mortality of thorny skate. They estimated an overall discard mortality rate for thorny skate in the Gulf of Maine to be 24.5% in trawl gear. Thorny skate spatial and temporal hotspots were also identified for the scallop fishery (March – May), groundfish fishery (May-July), and the monkfish fishery (November – January) within the Gulf of Maine. Another tagging study on thorny skates, funded by the Saltonstall-Kennedy Grant Program, is focused on movement and stock structure. Preliminary results based on 21 fishery-dependent recaptures (out of 1,130 deployed conventional tags) indicate limited movement of thorny skate from release point.

Satellite tags were attached to barndoor skate to estimate discard mortality in non-directed gillnet fisheries. This work is ongoing; estimates of post-release mortality are not available at this time.

Impacts of climate change on thorny skate are being investigated by the NEFSC (as presented at the 2018 AFS SNEC meeting) using the NOAA bottom trawl survey and a two-stage GAM. The NEFSC is also investigating using convolutional neural networks to detect skates in the sea scallop HabCam surveys. This may allow absolute abundance of skates to be estimated. Another research group at the NEFSC is looking at the impacts of mis-ageing on a stock assessment; this study is focused on little and winter skates.

Previous genetic research supported no distinct population segments for thorny skate, i.e. one large genetically homogeneous population exists. New research is being proposed (by the University of Florida) that will confirm previous results or will determine whether spatially distinct thorny skate sub-populations do exist in our region using genetic data from both mitochondrial and nuclear genomes.

References

Knotek, Ryan, Jeff Kneebone, John Mandelman, James Sulikowski, and Tobey Curtis. 2018. BREP Final Report “Identifying bottom trawl bycatch hotspots and capture-and-handling practices to reduce the discard mortality of an overfished Species of Concern – the thorny skate – in the Gulf of Maine.” 74 pp.