Verification Report on:
Gulf of Maine/Georges Bank White Hake (Urophycis tenuis)

☒ The fishery is managed by a competent authority and has a management plan in place that incorporates a science-based approach to ensure sustainability.
  ☒ White hake is managed by NMFS and NEFMC, and regulated by the Northeast Multispecies Fishery Management Plan, which utilizes the best available science to inform the management process, and to ultimately set biological reference points and harvest restrictions.

☒ If stock sizes are below management target levels, whether due to natural or man-made causes, management plans are established that enable rebuilding within a specified timeframe.
  ☒ Based on the most recent operational assessment, white hake is not overfished and overfishing is not occurring. The stock is at 69% of SSB_{MSY} and is in a rebuilding plan. While fishing mortality has been well below the target levels, the stock has not rebuilt as expected.

☑ Sufficient data exists to determine harvest levels.
  ☒ The Northeast Regional Stock Assessment Review Committee (SARC 56) (2013) and operational assessments in 2015 and 2017 utilized fisheries-dependent and –independent data to determine stock status and biological reference points for white hake, which are assessed through the NEFMC process. Ultimately, NEFMC sets the harvest levels based on this data, which incorporates uncertainty. White hake is not considered a data poor species.

☑ Monitoring and compliance measures are in place to ensure acceptable harvest levels.
  ☒ White hake catch is monitored through vessel trip reports (VTRs), observers, dealer reports, and, for sectors, additional at-sea monitoring. Compliance is assessed through consistency throughout these reports as well as enforcement in the field.

☑ Enforcement exists to ensure that harvesters follow regulations, and to prevent illegal practices and unreported harvest.
  ☒ U.S. Coast Guard, NMFS Office of Law Enforcement agents, and state marine patrol agents enforce the laws and regulations governing white hake harvest.
I. Definition of Gulf of Maine/Georges Bank White Hake

White hake (*Urophycis tenuis*) is a demersal gadid fish species distributed from Newfoundland to North Carolina and is most abundant in the Gulf of Maine. Based on genetics studies, there is evidence of mixing among stock units in Canadian waters, but no such research has provided this information in US waters. White hake is managed as a single stock in US waters (Figure 1). While the white hake stock unit extends into southern New England waters, this report focuses on the management and harvesting of white hake in the area outlined by Gulf of Maine Responsibly Harvested Standard\(^1\). The primary gear type used to catch white hake is the otter trawl (74% of landings), followed by sink gill nets (25% of landings), and line trawl (less than 1% of landings) (NEFSC 2008).

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\(^1\) This excludes white hake harvested in statistical area 536 and all other areas south or directly west of 525.
**CRITERION:** The fishery is managed by a competent authority and has a management plan in place that incorporates a science-based approach to ensure sustainability.

II. Description of the Management Authority and Regulatory Process

Responsibility of white hake management lies within the [National Marine Fisheries Service (NMFS)](https://www.nmfs.noaa.gov), which is a part of the [National Oceanic and Atmospheric Administration (NOAA)](https://www.noaa.gov). The [New England Fishery Management Council (NEFMC)](https://www.nefmc.org) facilitates the development of white hake regulations as part of a complex of 16 species that are managed together as the Northeast Multispecies Fishery. The NEFMC consists of 18 voting members, including the Regional Administrator for NMFS, the principal marine resource management official from each New England state, and governor appointees.

For Northeast multispecies fisheries management, a sub-set of NEFMC members form an Oversight Committee. This committee is responsible for the development of the fishery management plan and regulations that are consistent with the ten national standards outlined in the [Magnuson Stevens Act (MSA)](https://www.noaa.gov), which dictate that conservation and management measures shall:

1. Prevent overfishing while achieving optimum yield.
2. Be based upon the best scientific information available.
3. Manage individual stocks as a unit throughout their range, to the extent practicable; interrelated stocks shall be managed as a unit or in close coordination.
4. Not discriminate between residents of different states; any allocation of privileges must be fair and equitable.
5. Where practicable, promote efficiency, except that no such measure shall have economic allocation as its sole purpose.
6. Take into account and allow for variations among and contingencies in fisheries, fishery resources, and catches.
7. Minimize costs and avoid duplications, where practicable.
8. Take into account the importance of fishery resources to fishing communities to provide for the sustained participation of, and minimize adverse impacts to, such communities (consistent with conservation requirements).
9. Minimize bycatch or mortality from bycatch.

To help the Oversight Committee meet these requirements, an Advisory Panel made up of representatives from the fishing industry, scientists, and conservation organizations provides input to management measures. The chairs of the Oversight Committee provide detailed guidance (terms of reference) to a Plan Development Team (PDT), which consists of scientists, managers and other experts on biology and/or management of white hake. Then the PDT provides reports to the Oversight Committee in response to the terms of reference. The PDT...
meets regularly to provide analysis of species-related information and to develop issue papers, alternatives, and other documents as appropriate. The NEFMC is also assisted by the members of the Scientific and Statistical Committee (SSC), who review and participate in stock assessment updates, and develop acceptable biological catch (ABC) recommendations that inform management decisions. Figure 2 provides a visual of the entire process.

III. Northeast Multispecies Fisheries Management Plan

The Northeast Multispecies Fishery Management Plan (FMP) was implemented in 1986 to reduce fishing mortality of heavily fished groundfish stocks and to promote rebuilding to sustainable biomass levels. Sixteen species are managed under Amendment 16 to the Northeast Multispecies FMP. Thirteen large-mesh species are managed together based on fish size and type of gear used to harvest the fish: Atlantic cod, haddock, pollock, yellowtail flounder, witch flounder, winter flounder, windowpane flounder, American plaice, Atlantic halibut, redfish, ocean pout, white hake, and wolffish. Because several large-mesh species are managed as two or more separate stocks (e.g., Gulf of Maine haddock and Georges Bank haddock), there are a total of 20 separate stocks of groundfish managed under the FMP. The other three species (silver hake
[or whiting], red hake, and offshore hake) are managed under a separate small-mesh multispecies program pursuant to Amendment 12 of the Northeast Multispecies FMP.

Groundfish have been managed by seasonal and year-round area closures (i.e., no fishing in certain areas), gear restrictions (i.e., specified mesh size, number of nets/hooks, etc.), minimum fish size limits, trip limits (i.e., limiting fishermen to a certain poundage of fish per trip), limited access (i.e., limiting the number of participants in the fishery), and restrictions on the number of days a vessel is allowed to fish for groundfish each year (i.e., days-at-sea) (NEFMC 2009). In May 2004, Amendment 13 to the FMP implemented formal rebuilding plans for groundfish stocks, including Gulf of Maine white hake, based on revised biomass and fishing mortality targets derived by the Working Group on Re-evaluation of Biological Reference Points for New England Groundfish. The overall goal of these actions was to reduce fishing mortality to rebuild depleted groundfish stocks to target biomass levels.

In May 2010, Amendment 16 authorized the formation of individual fishing organizations, which shifted the management regime from the DAS system to an output-controlled system, referred to as sectors. In addition to general regulations for the fishery, Amendment 16 also implemented species- and stock-specific regulations for vessels in the common pool and in sectors. Beginning in 2010, commercial harvesters of Gulf of Maine white hake became managed in two self-selecting categories: Common Pool and Sectors. The vast majority of the Northeast groundfish fishery has been enrolled in sectors since 2010.

The current regulations setting the catch levels for each of the 20 groundfish stocks, which were implemented by Framework Adjustment (FW) 48 to Amendment 16 in 2013, and revised in FW 50 in 2013, implement new requirements under the Magnuson-Stevens Reauthorization Act (MSRA) of 2006. The MSRA requires the NEFMC to determine Annual Catch Limits (ACLs) and Accountability Measures (AMs) for all managed stocks. This action implements a process for calculating an ACL in addition to the Overfishing Level (OFL) and Acceptable Biological Catch (ABC) for each stock. Recommendations for these figures are developed by the PDT. The Scientific and Statistical Committee (SSC) recommends ABC levels, and the NEFMC approves final ACLs, but cannot exceed the SSC’s recommended levels. ACLs may be broken into subcomponents for different segments of the fishery, including state waters, commercial, recreational, sectors, and the common pool. Accountability measures can be implemented in-season as management actions to prevent reaching or exceeding the ACL, or they can be corrective post-season management actions that address overages of an ACL. Although the following stocks have ACLs, possession is prohibited: windowpane flounder, ocean pout, and wolffish. In addition, halibut catch is limited to one fish per trip. Northeast Multispecies permit holders are eligible to receive an allocation for the remaining groundfish stocks.
Common Pool

Members in the common pool are managed by an effort control system that regulates the number of days a harvester may fish. In addition to a limited number of days a harvester may fish, controls include 24-hour days-at-sea (DAS) counting, trip limits on other groundfish stocks, gear restrictions, minimum mesh size restrictions, gillnet restrictions, hook limits, seasonal and year-round closures, minimum fish size restrictions, and special access programs. Specific effort control measures are described in the final rule for Amendment 16 (NMFS 2013). NOAA’s Greater Atlantic Regional Fisheries Office implemented a 1,500-lb trip limit for GOM white hake beginning in FY 2016 for common pool vessels (NMFS 2016).

Starting in 2012, a trimester hard TAC (total allowable catch) has been used as a primary accountability measure, and the fishery is suspended once 90% of the trimester TAC is reached (NMFS 2014).

Sectors

Nineteen sectors have been authorized in the New England region. Sectors are self-selecting and largely self-regulating groups of fishermen who collaboratively manage an allocation of fish. Sectors must draft and submit formation proposals, operations plans, and sector monitoring plans, revised enforcement provisions, and clarification of the interaction of sectors with Special Management Programs, such as U.S./Canada management areas. NMFS prepares an environmental assessment (EA) annually to assess the impacts of the individual and cumulative sector operations as proposed in their operations plans.

In exchange for fishing under an ACL for each allocated species in the management plan, sectors are exempt from most common pool effort control measures, such as limited number of days at sea and trip limits. These are referred to as universal exemptions. A sector’s allocation of an ACL for a particular stock is called the Annual Catch Entitlement, or ACE, and is a sub-ACL of the overall fishery ACL. At-sea catch monitoring ensures that sector ACEs are not exceeded. For each permit that is eligible to join a sector, the permit’s potential sector contribution (PSC) is calculated based on the permit’s catch history. The ACE that is allocated to a sector is based on the sum of the PSCs for the permits that join the sector. Sector participants are not allowed to discard legal sized fish, and all fish caught count toward their sector allocations.

If the ACL is not reached in a given year, sectors can carry over a maximum of 10% of the unused ACL into the following year. This maximum of 10% can be reduced if the carry over, in addition to the ACL of the upcoming year, exceeds the total ABC (NMFS 2016).
Regulations Shared by Common Pool and Sector Vessels

- All commercial vessels participating in the Northeast Multispecies Fishery are required to use a Vessel Monitoring System (VMS) to report fishing activities, as well as a vessel trip report (VTR).
- No minimum size for white hake in FY 2018.
- Sector vessels participating in Special Access Programs must only use gear approved under those programs.

**CRITERION:** If stock sizes are below management target levels, whether due to natural or man-made causes, management plans are established that enable rebuilding within a specified timeframe.

**CRITERION:** Sufficient data exist to determine harvest levels.

IV. White Hake Data

Stock Status

**Data:** The most recent benchmark assessment for white hake was the 2013 56th Northeast Regional Stock Assessment Review Committee (SARC 56) and Stock Assessment Workshop (SAW 56). This assessment utilized a wide range of data including state and federal surveys and commercial landings per unit effort (LPUE). More specifically, the 2013 assessment model incorporated data from spring and autumn bottom trawl Northeast Fisheries Science Center (NEFSC) surveys, Maine-New Hampshire Inshore Groundfish Trawl Surveys, vessel trip reports, dealer landings records, and on-board fishery observers (NEFSC 2013). The accepted model, the Age Structured Assessment Program model (ASAP), used in the 2013 assessment includes catch, survey, and biological data from 1963 through 2012. The SAW 56 assessment also used certain data analyses that differed from the previous Groundfish Assessment Review Meeting III Statistical Catch at Age (GARM III SCAA) assessment, thus revising biological reference points (BRPs) utilizing the most up to date understanding of the fishery data (NEFSC 2013a,b,c).

The SAW 56 assessment received an operational assessment update in 2015 and again in 2017. These two assessments updated commercial fishery catch data, research survey indices of abundance, the ASAP assessment model, and reference points through 2016. Stock projections through 2020 were also updated in the recent 2017 assessment.

**Modeling:** Landings and survey data are used in determining the biological reference points (BRPs) for white hake. SARC 56 utilized the accepted statistical catch-at-age model (ASAP) that included actual commercial landings, estimates for recreational landings, commercial discards, research survey abundance indices, and analytical models. This model assumed asymptomatic
selectivity at age for the catch at age 6, which is more consistent with catch data than the domed F pattern used in an earlier assessment. The SARC 56 assessment also made use of revised catch streams, pooled (as opposed to annual) age-length keys (ALKs), and a revised fishing selectivity estimate (NEFSC 2013c).

**Stock Status:** The BRPs from SAW 56 were a Spawning Stock Biomass at maximum sustainable yield (SSB$_{MSY}$) of 32,400 mt, a fishing mortality (F)$_{MSY}$ proxy (F$_{40\%}$) of 0.20, a mean recruitment of 5.5 million, and a Maximum Sustainable Yield (MSY) of 5,639 mt (NEFSC 2013a). Stock assessment estimates indicate that stock size has been consistently below the management target of SSB$_{MSY}$ since 1980, although it is nearing the target threshold for SSB$_{MSY}$ (Figure 3).

![Figure 3. Trend in Spawning Stock Biomass of Gulf of Maine white hake, showing the 2017 operational assessment (solid line) compared to the previous assessment (dashed line), with horizontal lines showing the SSB$_{Target}$ (dotted) and the SSB$_{Threshold}$ (dashed). The retrospective adjustment is shown in red, and 90% confidence intervals are shown in gray (NEFSC 2017).](image)

The 2017 operational assessment updated BRP estimates, with a retrospective adjustment. The SSB is estimated at 21,276 mt, which is 69% of the target level (SSB$_{MSY}$ proxy = 30,948 mt). The fishing mortality (F) is estimated at 0.066, which is 36% of the revised F$_{MSY}$ proxy (0.18) (Figure 4).
Figure 4. Trend in fishing mortality of Gulf of Maine white hake under the 2017 operational assessment (solid line) and the previous assessment (dashed line). \( F_{MSY} \) proxy is represented by the horizontal dashed line and 90% confidence intervals are shown in gray (NEFSC 2017).

As biomass (B) levels are greater than half the B_{MSY}, and F is less than F_{MSY}, white hake is not overfished and overfishing is not occurring in accordance with the NOAA definitions (NEFSC 2017). The stock is in a rebuilding plan – the rebuilding deadline was 2014, but the stock is not yet rebuilt even with a very low fishing mortality. Annual commercial landings have remained below annual catch limits (ACLs) since the transition to the quota-based sector management system in 2010 (Figure 5) (NOAA 2018a).
Figure 5. Trend in commercial catch plotted against catch targets and ACLs from 2004-2016 (NOAA 2018a). The dashed line represents when the current sector management system (using Annual Catch Limits) was implemented in 2010. Prior to 2010, the groundfish fishery was primarily regulated by effort control (i.e. days at sea, trip limits) and there were catch targets, referred to as Total Allowable Catch, used by the management system in determining regulations.

Sources of Uncertainty

A source of uncertainty noted in all the recent assessments (SAW 56; 2015 update; 2017 update) is that catch-at-age information is not precisely characterized due to possible misidentification of species in commercial and at-sea sampling data, particularly in early years that include sparse discard data, or in years of low commercial landings. Since the catch is aged with survey age/length keys (ALK), augmentation is required, primarily for ages 5+. In addition, a pooled ALK from 1963-1981 was used to fill in gaps in age composition, which can blur recruitment estimates. (NEFSC 2013a). The presence of a significant retrospective pattern, a feature that has appeared in the operational updates for many Northeast species in the last few years, is a significant source of uncertainty.

The 2015 and 2017 assessments also recognized that white hake may move in and out of the defined stock area. Additionally, it was noted that in June 2014, a market category was added for “extra-large” fish that were previously categorized as “large” fish. This may bias the age composition of the landings. For example, in 2014, 2,000 of the 5,000 large fish caught were actually considered extra-large fish after the length distinction was determined (NEFSC 2015).
In the 2017 assessment, the 2014 catches at age were re-estimated for landings, discards, and both surveys. The annual spring and fall ALKs were completed and used to estimate the catches at age.

The panel recommended augmenting the survey keys by examining the age structures collected by the observer program and the Atlantic States Marine Fisheries Commission shrimp survey. The panel also recommended that otoliths currently being collected from the market category for heads should also be aged.

Stock History

Historic landings of white hake reached as high as 22,000 mt, reported in 1898. Since the modern fishery was established in 1964, U.S. landings have varied from a low of 1,147 mt in 1967 to over 9,500 mt in 1992, and have fluctuated between 2000 mt and 3000 mt in recent years (Figure 6). Discards have been gradually decreasing since 1999, reaching an all-time low of 20.5 mt in FY 2015 (NOAA 2018a). The decrease in fishing effort and discards is representative of management changes within the white hake fishery to support stock sustainability. Recruitment has been shown to be stable as long as catches do not significantly fluctuate, which helps to ensure the future of the stock (NEFMC 2013a).

![Figure 6. Trend in landings and discards of Gulf of Maine white hake (NEFSC 2015)](image-url)
Harvest Levels

Sufficient data exist to determine acceptable harvest levels for current and coming fishing years. The annual catch limits (ACLs) for this stock in fishing years (FY) 2016-18 were identified in Framework Adjustment 55, which incorporated findings from the 2015 assessment (NMFS 2014). Based on recommendations by the Scientific and Statistical Committee (SSC), the NEFMC set Overfishing Levels (OFL) and Acceptable Biological Catch (ABC), which are set to inhibit overfishing. The approved OFLs, ABCs, and ACLs for FYs 2016-2018 under Framework Adjustment 55 are outlined in the table below (Table 1) (NMFS 2016).

<table>
<thead>
<tr>
<th>Fishing Year</th>
<th>Overfishing Limit (OFL)</th>
<th>Acceptable Biological Catch (ABC)</th>
<th>Total Annual Catch Limit (ACL)</th>
<th>Sector ACL</th>
<th>Common Pool ACL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>4,985 mt</td>
<td>3,816 mt</td>
<td>3,572 mt</td>
<td>3,434 mt</td>
<td>25 mt</td>
</tr>
<tr>
<td>2017</td>
<td>4,816 mt</td>
<td>3,624 mt</td>
<td>3,448 mt</td>
<td>3,315 mt</td>
<td>24 mt</td>
</tr>
<tr>
<td>2018</td>
<td>4,733 mt</td>
<td>3,560 mt</td>
<td>3,387 mt</td>
<td>3,257 mt</td>
<td>24 mt</td>
</tr>
</tbody>
</table>

Projections: In the 2017 assessment, projections for FY 2018-2020 were updated based on a cumulative distribution function of ASAP recruitment estimates from 1995-2014. SSB in the most recent projections is lower than the estimate from the previous assessments in 2013 and 2015, and is estimated to be 24,720 mt in 2018, 23,936 mt in 2019, and 22,963 mt in 2020. These population projections are not well determined, and the new estimates show that the biomass projection from the 2015 assessment was outside the estimated confidence bounds of the 2017 assessment, due to a retrospective pattern (NEFSC 2017).

CRITERION: Monitoring and compliance measures are in place to ensure acceptable harvest levels.

V. Monitoring

2 A Framework Adjustment is an abbreviated rule-making process for actions within the scope of the existing goals and objectives of the respective fishery management plan (Amendment 16 in this case), and with no significant impacts on the human or physical environment.
The monitoring programs in place for the Northeast multispecies fishery provide information to scientists and managers about when, where, and how fish are caught. In addition to information about fish that are landed, the monitoring programs can provide information about species that are not landed. For example, in support of the Marine Mammal Protection Act (MMPA) and the Endangered Species Act (ESA), observers record interactions with protected and endangered species.

Monitoring of the common pool is carried out through several different programs. When fishing in certain areas, such as the Eastern U.S./Canada Area, vessels are required to submit daily vessel trip reports (VTRs), which provide details on type of gear fished, area fished, species caught and discarded, dealer information, and port of landing information, in addition to other details. The Northeast Fisheries Observer Program (NEFOP) employs at-sea observer coverage and biological sampling for the groundfish fleet. Separate from NEFOP, there are also shore-side port samplers who take biological samples from landed catch to help inform stock assessments and other fisheries research.

The final rule for Standardized Bycatch Reporting Methodology (SBRM) states that the Regional Administrator and the Science and Research Director will allocate at-sea observer coverage to the applicable fisheries of the Northeast Region sufficient to achieve a level of precision (measured as the coefficient of variation [CV]) no greater than 30% for each fishery (73 FR 4736; January 28, 2008). The Pre-Trip Notification System (PTNS) ensures fair and adequate coverage of vessels across the multispecies fishery. Vessels enter information into PTNS prior to a trip, and an algorithm randomly selects trips for coverage in order to achieve the targeted observer and at-sea monitor coverage across sectors, areas, and gear types. In addition, vessels fishing in Special Access Programs (SAPs) are required to contact NEFOP prior to their trip to determine if they will have observer coverage.

Sector vessels have additional monitoring requirements. Sector operations plans specify how a sector will monitor its catch to assure that sector catch does not exceed the sector allocation. Industry funding of at-sea monitoring (ASM) was introduced in March 2016, beginning the transition from the federal government covering the costs of ASM to the industry covering the costs. NOAA reimbursed the industry 85% of its expenses in FY 2016 and 60% in FY 2017 through a grant from the Atlantic States Marine Fisheries Commission (ASMFC). During FY 2018, ASM will be fully funded by NOAA because Congress appropriated additional funding. For FY 2018, total target coverage is 15% for ASM based on an average of ASM data from FY 2014-2016. The Northeast Fishery Observer Program (NEFOP) covers 8% of the target coverage, while the remaining 7% must be covered by industry ASM.

Previously, sector required at-sea monitoring coverage was typically between 17% and 22%. In 2016, additional factors were accounted for in determining the target so as to ensure compliance with the 30% CV requirement, including: removing ASM coverage for a subset of sector trips, using more years of discard data to predict coverage levels, and basing the target on predictions.
for stocks that are at a higher risk for error in the discard estimate (NMFS 2016). All sector vessels are still required to submit weekly VTRs in accordance with Amendment 16 to the Northeast Multispecies FMP.

Shore-side, there is 100% electronic dealer reporting on a weekly basis, which includes, but is not limited to, unique trip identifier, quantity of species landed, price per unit by species, and port and state landed.

Based on the data collected through monitoring, the Northeast multispecies complex is routinely evaluated and necessary changes to management measures are made through biennial Framework Adjustments.

**CRITERION:** Enforcement exists to ensure that harvesters follow regulations, and to prevent illegal practices and unreported harvest.

**VI. Enforcement**

In general, enforcement of the Northeast Multispecies FMP is coordinated through NOAA’s Office of Law Enforcement (OLE). OLE Special Agents and Enforcement conduct complex criminal and civil investigations, board vessels fishing at sea, inspect fish processing plants, and conduct patrols on land, in the air and at sea. In addition to this enforcement work, the OLE administers the Cooperative Enforcement Program (CEP), which authorizes certain coastal state and territorial marine conservation law enforcement agencies to enforce federal laws and regulations in the Exclusive Economic Zone (EEZ). OLE also partners with the U.S. Coast Guard (USCG) and various other federal agencies, fishery management councils, and non-governmental organizations.

In the common pool, enforcement is focused on compliance with days-at-sea (DAS), seasonal closures, closed areas, gear restrictions, and trip limits, to name a few measures. Enforcement for sector vessels primarily relies on monitoring harvest levels through sector reporting and VTRs (in addition to some of the measures described above for which sectors are not universally exempt); however individual sectors are also responsible for self-enforcement. Dealer reporting is a requirement of dealers who receive the fish.

It is the responsibility of each sector to enforce any provisions adopted through procedures established in the operations plan and agreed to through the sector contract. Sectors may be held jointly liable for violations of the following sector operations plan requirements: ACE overages, discarding of legal-sized fish, and misreporting of catch (landings or discards).

NOAA's Office of General Counsel reports on any enforcement actions taken, by region, on a semi-annual basis, and also outlines regional enforcement priorities on an annual basis. White
hake is not identified as a species of concern under OLE’s enforcement priorities. Data available on enforcement actions between March 2010 – February 2018 shows that in the Northeast, there were no specific violations involving white hake (NOAA 2018b). Of the general enforcement actions reported that could have pertained to fishermen in the Northeast Multispecies fishery (although not specified in these more general violations), the most predominant problems were related to fishing in closed areas, reporting violations, gear violations, and possession or overage violations. In total, there were less than 25 of these possible NE Multispecies fishery violations between March 2010 – February 2018 (NOAA 2018b). Many of the recent cases involved noncompliance with possession limits, particularly for cod.
VII. References


National Oceanic and Atmospheric Administration (NOAA). 2017. Subpart F—Management Measures for the NE Multispecies and Monkfish Fisheries; Fisheries of the Northeast United States. 50 CFR Part 648.83 Available: https://www.ecfr.gov/cgi-bin/retrieveECFR?gp=&SID=9f5bb83d0dd1bf6af01d7baf383b29c0&r=SUBPART&n=50y12.0.1.1.5.6#se50.12.648_183


