New England Fishery Management Council
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John F. Quinn, J.D., Ph.D., *Chairman* | Thomas A. Nies, *Executive Director*

**MEMORANDUM**

**DATE:** September 20, 2017

**CC:** Groundfish Committee

**FROM:** Groundfish Plan Development Team

**SUBJECT:** **Atlantic halibut accountability measures**

The Groundfish Plan Development Team (PDT) met on June 1, 2017 in Boston, MA, August 3, 2017 in Plymouth, MA, and August 31, 2017 via webinar and discussed **developing draft alternatives and reviewing analyses to modify Atlantic halibut accountability measures (AMs)**.

The Council indicated that changes would be considered within the range of alternatives in Framework Adjustment 57 (FW57).

The Groundfish PDT compiled information and analysis for the Committee to discuss when evaluating and potentially modifying Atlantic halibut AMs. The PDT documents its work in several attachments to this memorandum.

***Background***

At the June 2017 Council meeting, the Council unanimously passed the following motions:

1. *That the PDT develop a tiered AM system in Framework 57 for Atlantic halibut. For example the zero possession AM would go into effect for any overage up to 120% of the ACL and the area AMs and the zero possession AM would be in place for any overage greater than 120% of the ACL.*
2. *That the PDT develop a new AM area for Atlantic halibut in federal waters off of eastern Maine.*
3. *PDT should develop option that extends halibut reactive AM possession restrictions to all Federal permit holders.*

***PDT Analysis***

To address the Council's motion, the PDT completed the following analysis:

- Drafted an outline of the alternatives (Attachment 1); and
- Summarized spatial patterns of Atlantic halibut catches landed in Maine (Attachment 2).

***PDT Discussion***

- Past correspondence between the Council and GARFO suggests for Atlantic halibut that the 1 fish limit is biologically equivalent to no possession. Without an assessment for Atlantic halibut with some biological estimate of the stock size, the PDT was not able to develop a tiered AM system. The PDT could revisit this approach in the future following the development of an assessment method that would allow for a more precise estimate of stock status, which would enable the potential benefit to the stock of the tiered AM system to be measured with more certainty.

- For the 2017 fishing year, the state of Maine implement emergency rulemaking to clarify the targeting and possession of Atlantic Halibut in federal waters (http://www.maine.gov/dmr/laws-regulations/documents/Ch%2034EmergencyClosure4.30.17.pdf). Preliminary landings reports from the State of Maine indicate that both this emergency regulation and enforcement efforts have resulted in reduced landings during the 2017 fishing year.

- The preliminary PDT analysis (Attachment 2) suggests that if a reactive Eastern Maine AM area is developed that it could be in statistical area 511 and possibly statistical area 512. The PDT requests further guidance on what gears or permits the Committee would prefer to restrict in the proposed AM area, and if this AM area would be in addition to or instead of the existing halibut AM areas. This information could help the PDT refine the spatial and temporal extent of a reactive Eastern Maine AM area.

- Recent GARFO catch reports for Atlantic halibut in the "other sub-component" (i.e., halibut catch by other Federal permit holders) indicate catch estimates are low (2 mt or less) on an annual basis and there are currently no estimates for recreational halibut catch. Anecdotal reports suggest that there may be increased targeting of halibut in the recreational fishery, but precise catch and effort statistics are not presently available. A qualitative discussion with other sources of data (e.g., VTRs, observer data, and MRIP data) might be possible, although the PDT has not explored such information in detail to date.

- If the reactive no possession AM (or some other AM) were to apply to all federal permit holders, this would now impact Federally-permitted scallop vessels, lobster vessels, and party/charter vessels under a number of FMPs, in addition to groundfish permit holders who are currently affected by the reactive AM. If the AM is triggered and state waters sub-component catch contributes significantly to the overage, then the AM will limit catch by vessels whose only Federal permit is a lobster permit, which would otherwise contribute to this catch.

**Attachment #1: Draft Alternatives**

# DRAFT ALTERNATIVES UNDER CONSIDERATION

**Commercial Fishery Measures -Accountability Measures**

Atlantic halibut accountability measures for federal fisheries

**Option 1:** No Action

Atlantic Halibut Management- Federal

No Action would maintain the existing management measures currently in place for Atlantic halibut.

*Minimum Fish Size*
The minimum size for Atlantic halibut is 41 inches (104.1 cm.), total length for all groundfish vessels (commercial, recreational - private, party, and charter). The minimum size matches the median length at maturity for female halibut in the Gulf of Maine. A18 explained that the increase in minimum size would slightly increase opportunities for additional halibut to spawn prior to capture.

*Possession Limit*
Commercial vessels with a Northeast multispecies permit are permitted to land one legal sized Atlantic halibut per trip. Recreational vessels are permitted to land one legal sized Atlantic halibut per trip.

*Reactive Accountability Measures*
The federal groundfish fishery (sectors and common pool vessels) are the components of the fishery held accountable for an overage of the catch limits. The accountability measures (AMs) for Atlantic halibut do not apply to state only permitted vessels and other subcomponents of the Atlantic halibut fishery.

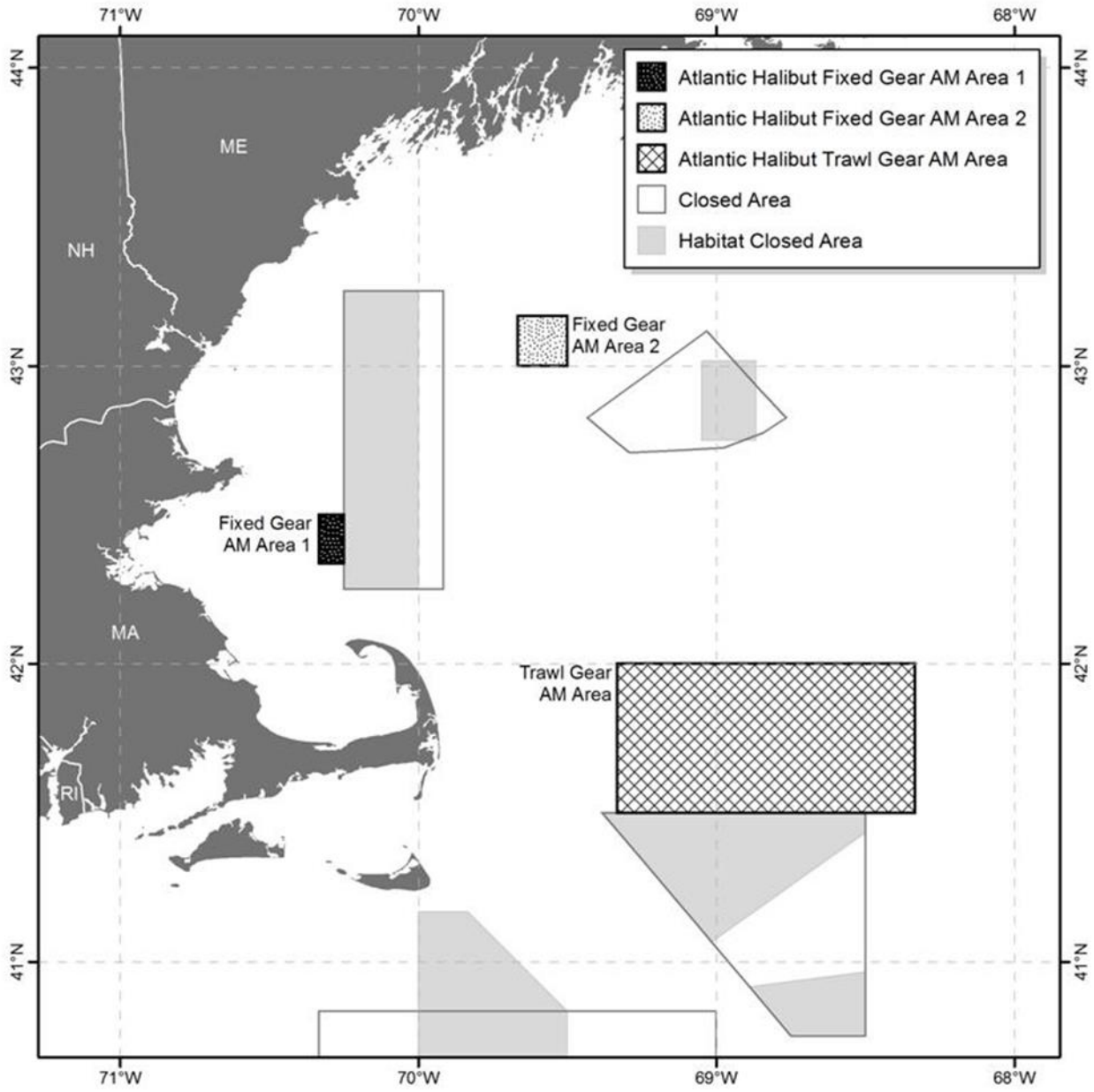
As modified by Framework Adjustment (FW) 47 and 48, the AMs for Atlantic halibut are triggered when there is an overage in the overall annual catch limit (ACL) that is greater than the uncertainty buffer in any fishing year (i.e., exceeding the acceptable biological catch, ABC). If the AM is triggered, vessels possessing a Northeast multispecies permit or vessels operating under a Category C or D limited access monkfish permit would not be allowed to retain Atlantic halibut. In addition, gear restricted areas would be triggered. Trawl vessels possessing a northeast multispecies permit must use selective gear approved by the Regional Administrator (e.g., haddock separator trawl, Ruhle trawl, rope separator trawl) that reduces catch of flounders in the Atlantic Halibut Trawl Gear AM Area (Figure 1). Gillnet and longline vessels possessing a Northeast multispecies permit may not fish within the Atlantic Halibut Fixed Gear AM Areas (Figure 1).

The AMs would be in place for a full fishing year, starting on May 1. The AM for an Atlantic halibut catch overage could apply in the next fishing year following an overage, or in the second fishing year following an overage depending on the availability of information. For example, If NMFS made a determination that an overage occurred in FY 2016 before the FY 2017 began, then the AM could apply in FY 2017. However, if NMFS made the determination that an overage occurred during the FY2016, and reliable information was not available until after FY

2017 began, then the AM would apply to in FY 2018. If updated catch information becomes available subsequent to the implementation of an AM that indicates that an ACL was not exceeded, the AM will be rescinded. For FY 2016, it is currently unknown whether there has been an overage to trigger an AM in a subsequent fishing year.

The AMs were designed to correct for an overage of up to 20 percent. FW 48 explains that the Council would review the AMs in a future action if an overage greater than 20% occurred.

**Figure 1- Map of Atlantic Halibut Accountability Measure Areas**



**Option 2:** Revised Atlantic halibut accountability measures for federal fisheries

**(Sub-Options 2A, 2B, and 2C can be selected)**

**Sub-Option 2A:** Reactive AM of no possession would apply to all federal permit holders

**Sub-Option 2B:** Tiered AM system for commercial groundfish fisheries

**Sub-Option 2C:** Modified gear restricted area off the eastern Maine coast for commercial groundfish fisheries

## Attachment #2: Preliminary PDT Analysis of spatial patterns of Atlantic halibut catches landed in Maine

The Groundfish PDT received harvester-reported halibut catch data from the Maine Department of Marine Resources. The dataset was limited to trips where halibut were caught, and included both kept and discarded halibut from 2003-2016. The data were reviewed and any questionable records were omitted from the database prior to the analysis. The dataset used was from the Maine Department of Marine Resources harvester reporting system, and included vessels with both state-only and federal permits.

The analysis was limited to halibut that were captured in the longline fishery, which accounted for the vast majority of records in the Maine Harvester database. Of the 16,749 halibut that were present in the database, 16,589 were captured using longline gear, while the remaining halibut were caught using hooks (n=130), "pot & trap crab/other" (n=4), otter trawl (n=8), or "other gear" (n=18).

Only longline catch locations with an associated geographic position (in decimal degrees) were included in the analysis. Catch locations were not available for over 1,000 halibut in the database. In addition, for some of the trips, the position was provided in LORAN bearings, but not in decimal degree coordinates, and these records were also excluded from the analysis.

Before the data were plotted in ArcGIS, some records were filtered out of the database because the reported catch locations seemed implausible. For example, 16 records were omitted for halibut that were reported south of 41 $^{o}$ Latitude. Similarly, 15 records were deleted because the halibut were reported to have been caught east of 65$^{o}$ Longitude. In addition, 15 records with sample weights > 300lbs were omitted from the analysis, because it was suspected that the sample weights were reported incorrectly for those fish.

After the data were filtered, the dataset contained of 7,558 trip level records with at least one halibut present in the catch, and 15,407 reported halibut. For the majority of trips, the vessel reported catching between one and five halibut. However, on a small subset of trips the vessel reported catching ten or more halibut.

The filtered trip level data from the longline fishery were plotted in GIS (Figure 1). Some of the reported trip locations were implausible (e.g., on land, in Canadian waters), and those locations were omitted from the analysis. The revised dataset included 7,370 trips and 14,917 halibut (Figure 2). Fishing locations that were in close proximity to the US/Canada EEZ line were retained in the preliminary dataset. The majority of harvester reported trips occurred in statistical areas 511 and 512. The fishing locations reported in the Maine harvester database indicate that the current Accountability Measure areas for halibut would not be effective at limiting halibut harvests by this segment of the fishery.

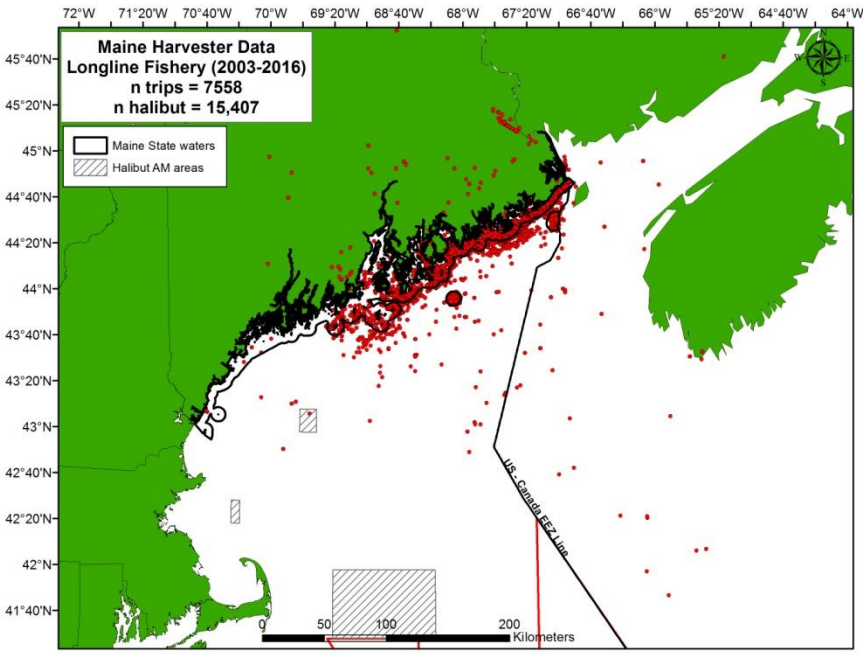



**Figure 1. Harvester reported longline fishing locations with at least one halibut present in the catch from 2003-2016. Maine state waters are delineated using a solid black line. The current halibut Accountability Measure areas are shown in the grey dashed boxes.**

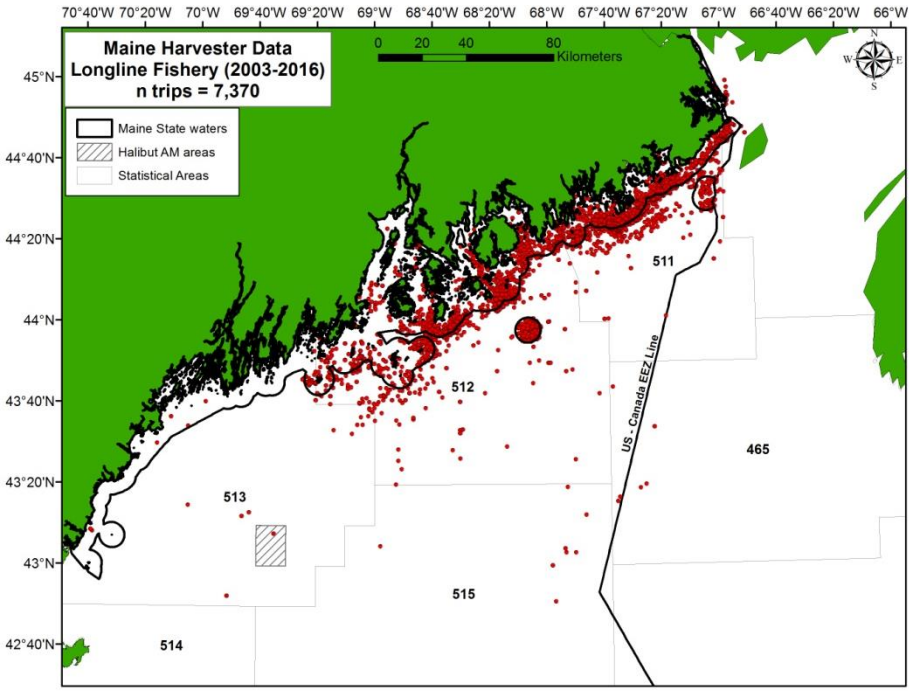



**Figure 2. Harvester reported longline fishing locations with at least one halibut present in the catch from 2003-2016. The data were filtered to exclude any trips with a location that was suspected to be an error. The current halibut Accountability Measure areas are shown in the grey dashed boxes.**

The trip locations reported in the filtered dataset were aggregated by 10 minute squares to examine where the longline fishery effort for halibut is occurring. From 2003 to 2016, the longline fishery primarily caught halibut in waters north of 43°40N, and between 69°20 and 67°W (Figure 3). The geographic distribution of longline fishing effort from 2011 to 2016 was

also examined (Figure 4), to investigate whether spatial patterns of fishing effort have shifted over time.

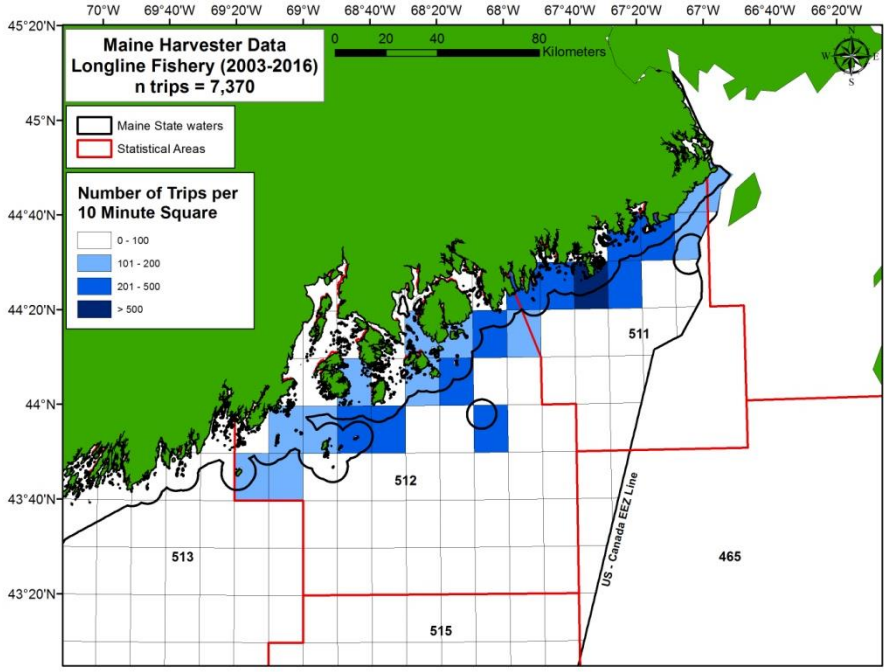



**Figure 3. Number of longline trips with a halibut catch reported in each 10 minute square between 2003 and 2016.**

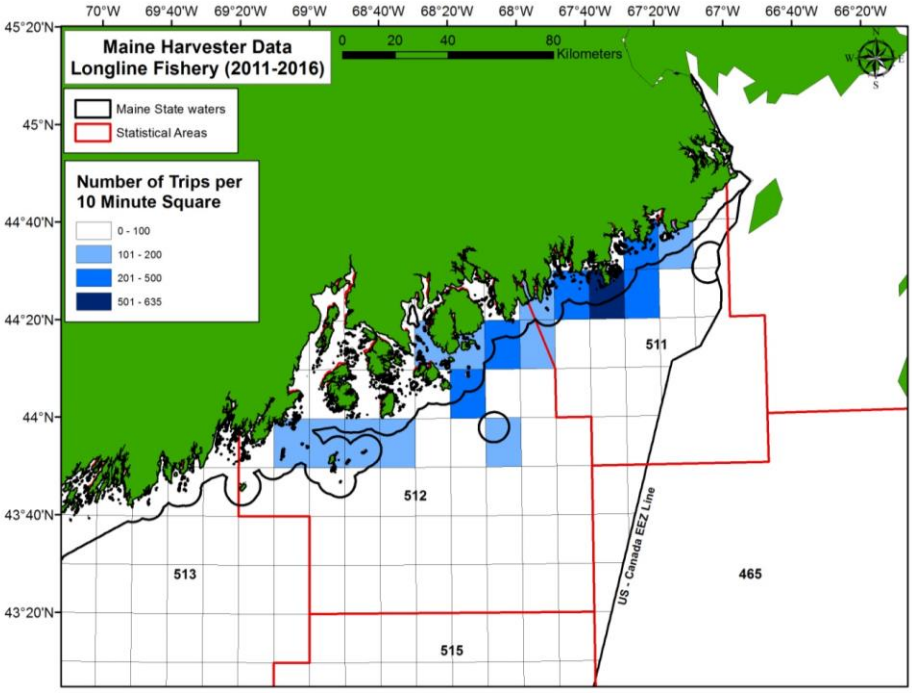



**Figure 4. Number of longline trips with a halibut catch reported in each 10 minute square between 2011 and 2016.**

The total harvester reported catch of halibut (kept and discard) were aggregated by 10 minute squares (catch weight in each 10 minute square/total halibut catch) to investigate that spatial distribution of halibut catches in the longline fishery between 2003 and 2016 (Figure 5), and between 2011 and 2016 (Figure 6). It should be noted that the catch weights were not

standardized with respect to fishing effort (e.g., number of hooks fished, soak time, etc…) or with respect to the weight type (e.g., ungraded, "meat", whole weight) that was recorded in the database.

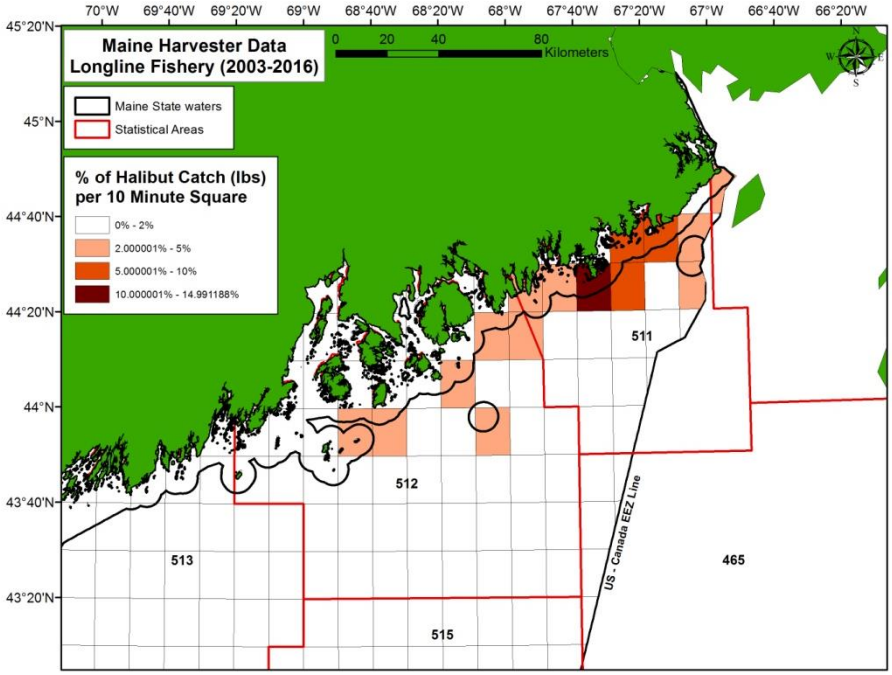



**Figure 5. Proportion of longline halibut catch (catch weight in each 10 minute square/total halibut catch weight) reported in each 10 minute square between 2003 and 2016.**

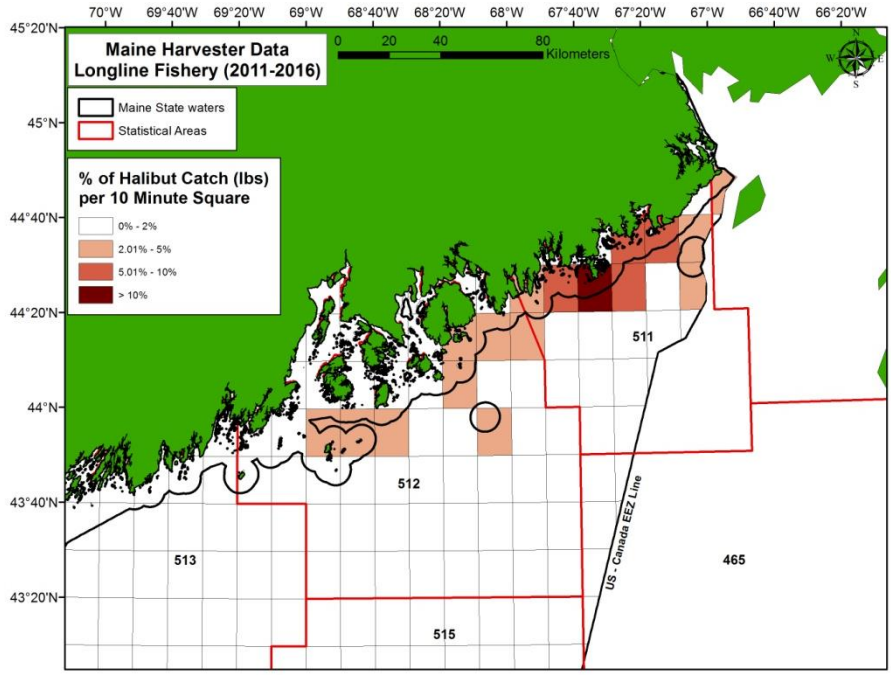



**Figure 6. Proportion of longline halibut catch (catch weight in each 10 minute square/total halibut catch weight) reported in each 10 minute square between 2011 and 2016.**

There were 2,572 reported halibut discards in the filtered dataset between 2011 and 2016. The proportion of discarded halibut (number of discards in a 10 minute square/total discards) within each 10 minute square was calculated to examine the geographic distribution of halibut discards halibut in the longline fishery (Figure 7).

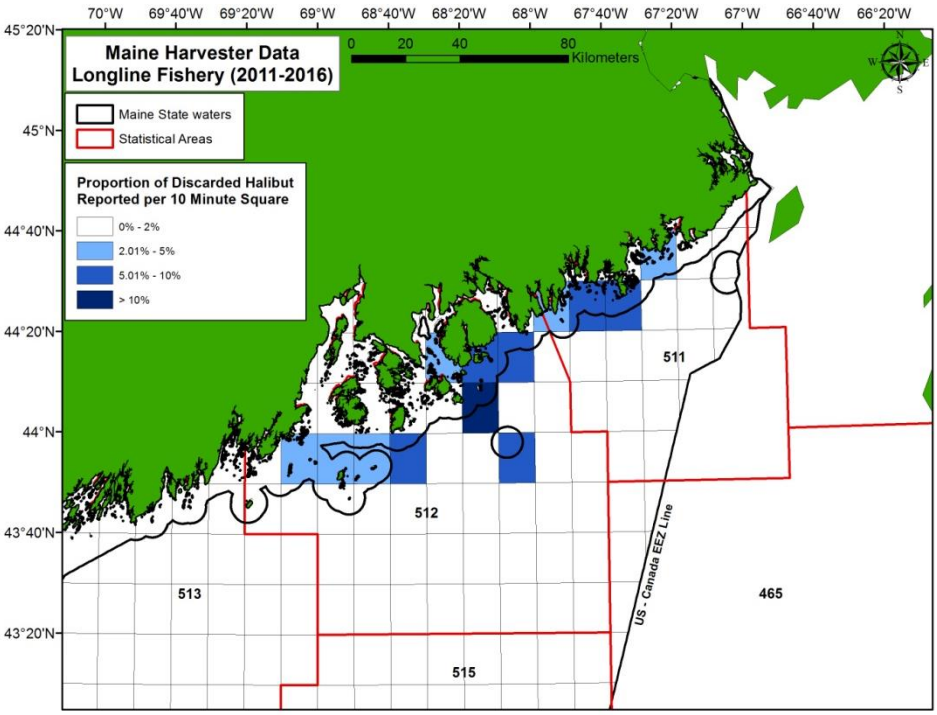



**Figure 7. The proportion of discarded halibut (number of discards in a 10 minute square/total discards) within each 10 minute square for the longline fishery between 2011 and 2016.**

The proportion of kept halibut (number of kept halibut in a 10 minute square/total number of kept halibut) reported within each 10 minute square was calculated to examine the geographic distribution of halibut that were landed by the fishery from 2011-2016 (Figure 8) and 2015-2016 (Figure 9).

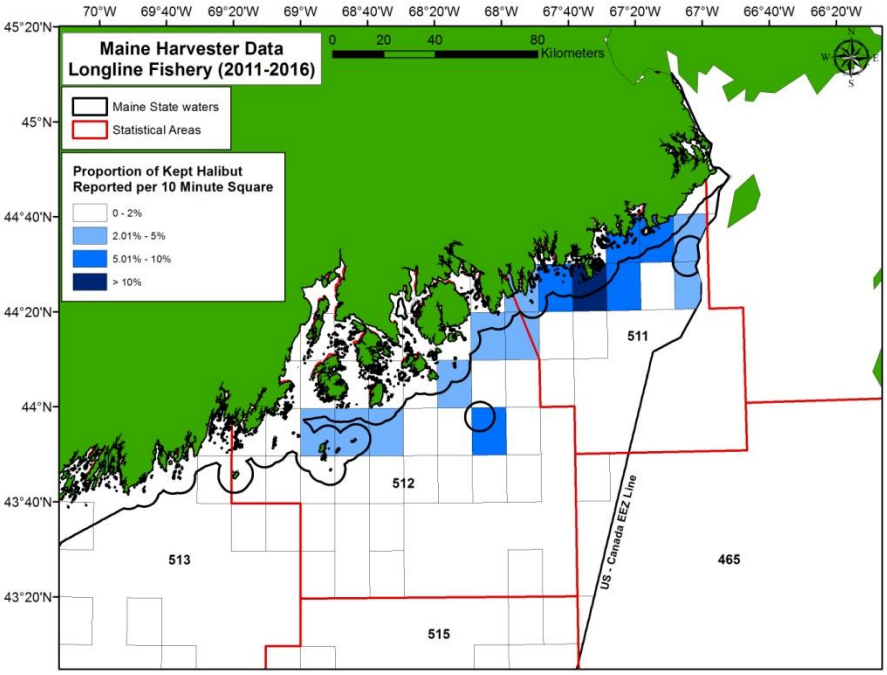



**Figure 8. The proportion of kept halibut (number of kept halibut in a 10 minute square/total number of kept halibut) reported within each 10 minute square for the longline fishery between 2011 and 2016.**

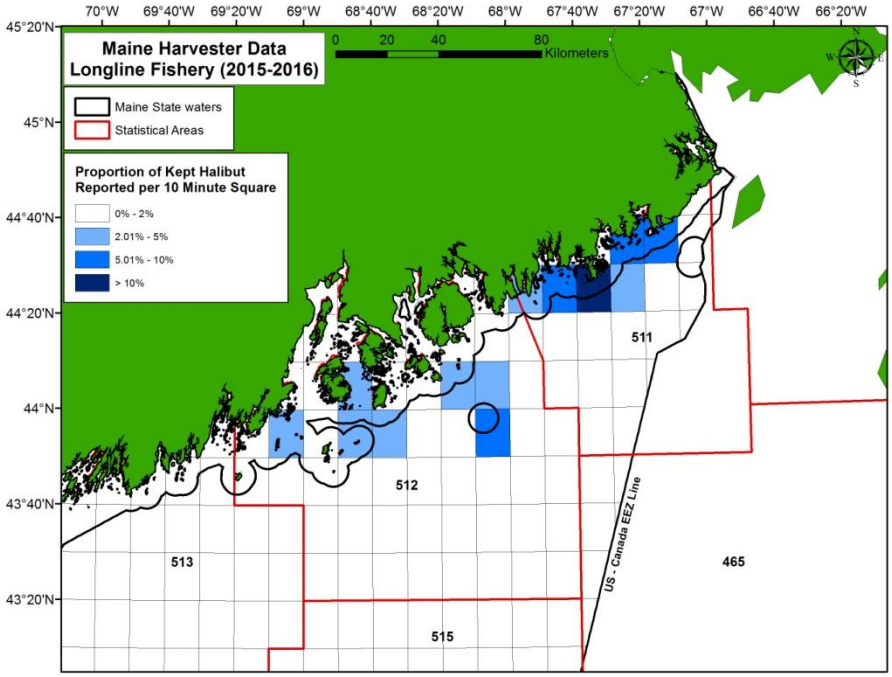



**Figure 9. The proportion of kept halibut (number of kept halibut in a 10 minute square/total number of kept halibut) reported within each 10 minute square for the longline fishery in 2015 and 2016.**