



New England Fishery Management Council

50 WATER STREET | NEWBURYPORT, MASSACHUSETTS 01950 | PHONE 978 465 0492 | FAX 978 465 3116

John F. Quinn, J.D., Ph.D., *Chairman* | Thomas A. Nies, *Executive Director*

MEMORANDUM

DATE: November 15, 2019
TO: Groundfish PDT
FROM: Scallop PDT
SUBJECT: **Scallop Fishery Catch Projections for FY 2020**

This memo is intended to provide the Groundfish PDT with projected scallop fishery catch estimates for the four flatfish stocks for which the scallop fishery has sub-ACLs: GB yellowtail flounder, SNE/MA yellowtail flounder, GOM/GB windowpane flounder, and SNE/MA windowpane flounder. The Scallop PDT met via conference call on November 12th, 2019 and November 15th, 2019, and reviewed bycatch projections of these four stocks through correspondence. A description of how scallop fishery sub-ACLs were developed and how they are calculated is contained in Table 1.

Table 1 - Details around the development of scallop fishery sub-ACLs.

Stock	Action	Approach	Percentage or recurring estimate?	Details
SNE/MA Windowpane	FW48	Catch history (10 year period)	<u>Fixed</u> percentage at 36%	90 th percentile of estimated catch from 2001-2010
GB Yellowtail	FW48	Catch history (10 year period)	<u>Fixed</u> percentage at 16%	Council considered a range (8%-16%) based on catch from 2002-2011
SNE/MA Yellowtail	Multiple (FW44, FW55)	Percentage of estimated catch (90% - 100% in past actions)	<u>Recurring estimate of catch.</u>	Estimated catch calculated by Scallop PDT
GOM/GB Windowpane Flounder	FW56	Catch history (10 year period)	<u>Fixed</u> percentage at 21%	90 th percentile of estimated catch from 2005-2014

Framework 32 Overview:

Framework 32 to the Scallop FMP (FW32) is considering a range of fishery allocations for FY2020 and FY2021 (default). All specification alternatives under consideration in this action would allocate access area trips to the following areas: one trip (18,000 pounds) in Closed Area II Access Area (CAII AA), two trips (18,000 pounds each) in the Mid-Atlantic Access Area (MAAA), one trip (18,000 pounds) in the Nantucket Lightship South Deep (NLS-S-Deep), ½ Flex trip (9,000 pounds) to Closed Area I Access Area (CAI AA), and ½ trip (9,000 pounds) in the Nantucket Lightship North (NLS-North). Partial trips allocated to Closed Area I and the NLS-North may be tradeable, allowing individual vessels to land up to 18,000 pounds in one of these rotational areas. Closed Area I is designated as a “flex” allocation, which can be fished in either Closed Area I or the MAAA. Closed Area I has been available to the fishery since fishing year 2018 and the Mid-Atlantic Access Area has supported rotational harvest at some level for over 7 years. Closed Area II Access Area and the NLS-North have not been fished since FY2017. The Nantucket Lightship South Deep area has not been fished for scallops since prior to the implementation of the Georges Bank groundfish closures in 1999. FW32 measures under development are also considering modifications to spatial management on Eastern Georges Bank to protect a large year class of small scallops observed in CAII AA and surrounding open area in the 2019 surveys. In addition to scallop conservation, the closure boundary alternatives under consideration are also expected to proactively mitigate impacts to Georges Bank yellowtail flounder.

Methods:

Since bycatch sub-ACLs were first allocated to the scallop fishery in 2010, the Scallop PDT has calculated a projection of flatfish bycatch for specification alternatives being considered by the Council to inform the decision-making process and evaluate potential impacts of the scallop fishery. Bycatch estimation methods have evolved over time but in general follow these steps:

First, a discard to kept ratio (D:K) is estimated from the most recent observer data available. For in-season bycatch estimation, D:K ratios are calculated according to Area (i.e. Open, Access Area)/Gear (i.e. Dredge, Trawl)/Fleet (i.e. Limited Access, General Category) strata. For FY2020 projection estimates, D:K ratios were calculated by SAMS area. Several updates were made to the stratification scheme for FY2019 that will be applicable for FY2020 (Figure 1), including: 1) within the Southern New England/Mid-Atlantic yellowtail and windowpane stocks, the Nantucket Lightship has been split into three strata: NLS-North, NLS-South, and NLS-West (for Status Quo option only); 2) the Mid-Atlantic is split into Open/Access Areas (note that the designation between Southern New England Open (areas < SRA 614 in the stock area) and Mid-Atlantic Open (areas ≥ SRA 614 in the stock area) remains unchanged); 3) a rolling 12-month time period was used to generate D:K ratios for all strata; 4) only audited observer trips were used; 5) for strata where there were < 5 trips in-season, and no trips in the previous 12 months, the most closely related strata D:K was used (e.g. NLS-South, General Category). For areas that haven't been open to the fishery recently, such as the NLS-North and CAII AA, the most recent 12 months of data available were used to generate D:K ratios—data from FY2017 was used for the NLS-North and CAII AA because this is the last time the fishery had access to these areas.

Second, the baseline D:K ratio was adjusted to calculate estimates for 2020 using the formula:

$$D:K_y = \text{Baseline } D:K \left(\frac{\text{Scallop } EBmS_{\text{when data was collected}}}{\text{Scallop } EBmS_y} \right)$$

where y is the year of the estimate. Third, bycatch was calculated in each area using the formula:

$$\text{Projected Catch} * (D:K_y)$$

Bycatch estimates for each of the four flatfish stocks for FY2020 were calculated for each specifications run prepared for the Scallop Committee (Table 2). The Scallop PDT calculated bycatch estimates for FY2020 only, and notes that these bycatch estimates will be updated annually as part of the specifications process.

Figure 1 – Updated strata used to monitor in-season scallop bycatch in FY2020 under the range of alternatives being considered in FW32.

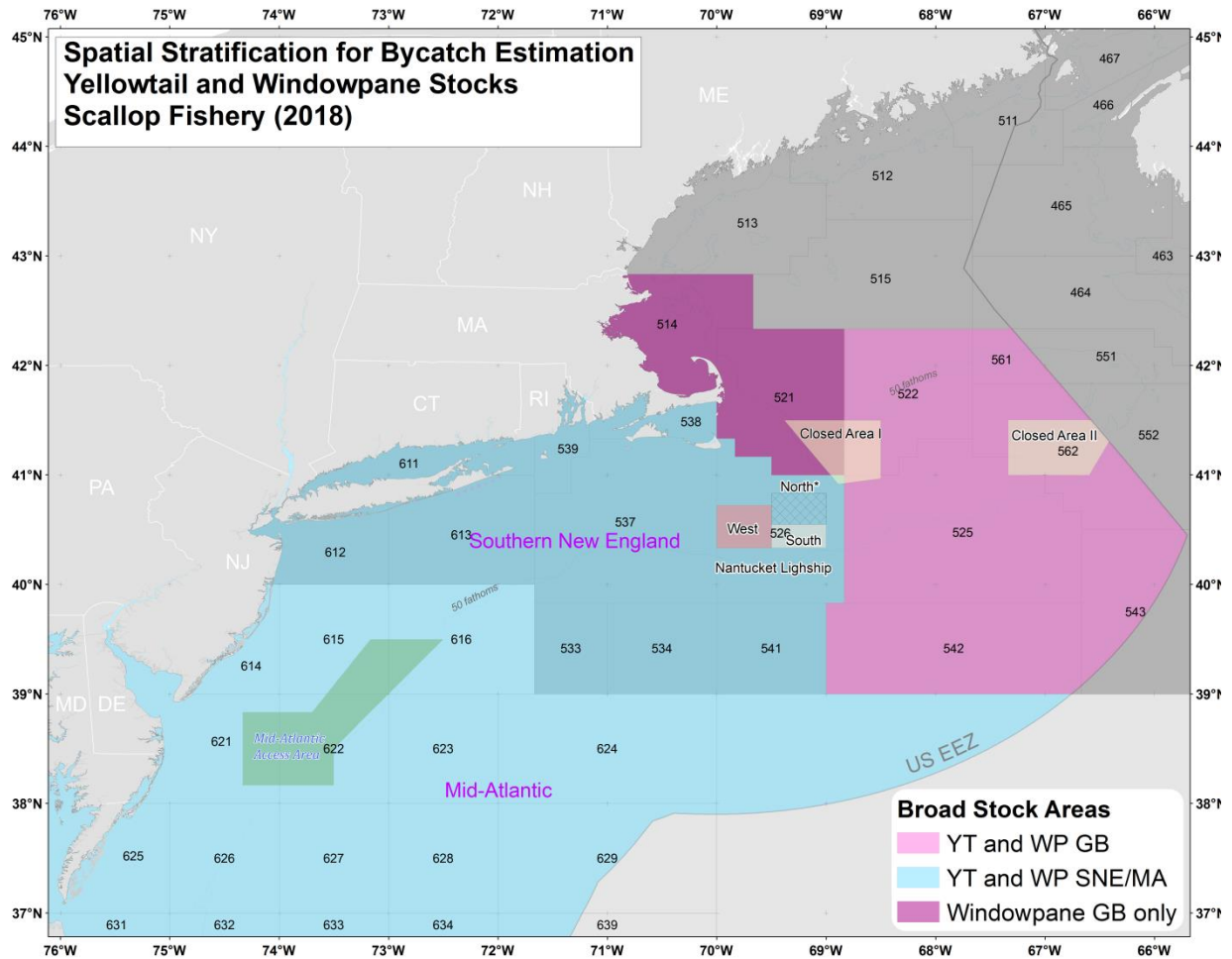


Table 2 - Overview of FY2020 projected scallop fishery bycatch estimates for each specification run under consideration in FW32, including the anticipated FY2020 scallop sub-ACL for each stock.

Alternative	Scenario		GB YT	SNE/MA YT	GOM/GB WP	SNE/MA WP
<i>Anticipated 2020 sub-ACL</i>		GB Closure	<i>~19 mt</i>	<i>~2 mt</i>	<i>~12 mt</i>	<i>~143 mt</i>
4.3.1	No Action 1 MAAA: 18k 1 NLS-W: 18k DAS: 18	CAII AA closed	0.76	1.45	8.35	77.06
4.3.2	2 MAAA: 18k 1 CAII East: 18k 1 NLS-S-Deep: 18k ½ CAI: 9k ½ NLS-N: 9k DAS: 20, 22, 24	CAII- West closed (area = 324 nmi ²)	23.37- 27.51	1.89-2.11	30.04-31.58	130.02-136.87
4.3.3	2 MAAA: 18k 1 CAII East: 18k 1 NLS-S-Deep: 18k ½ CAI: 9k ½ NLS-N: 9k DAS: 20, 22, 24	CAII- Southwest closed (area = 1,525 nmi ²)	23.2 – 23.3	2.06-2.3	31.2-32.91	135.17-142.92
4.3.4	2 MAAA: 18k 1 CAII East: 18k 1 NLS-S-Deep: 18k ½ CAI: 9k ½ NLS-N: 9k DAS: 20, 22, 24	Southeast Part closed (area = 2,231 nmi ²)	23.04- 23.12	2.31-2.59	32.96-34.92	143.23-152.23
4.3.5	Status Quo 1 CAI: 18k Flex 3 MAAA 18k 3 NLS-W 18k DAS: 24	CAII AA closed	4.01	1.42	23.21	87.95
<p><i>Note:</i> The sub-ACLs for GOM/GB WP, SNE/MA YT, SNE/MA WP were set through FW58. Groundfish Framework 59 is considering an updated GBYT sub-ACL based on the new TRAC assessment and US/Canada agreement.</p>						

Scallop PDT Discussion:

1. The flatfish bycatch projections are forecasts (with error) and should not be interpreted as precise estimates. In general, the PDT feels that estimates represent a reasonable approximation of catch that may occur. Review of past estimates has shown the projections have both over-estimated and under-estimated realized catches. It is important to note that the methods and underlying assumptions used for in-season catch accounting may vary from the methods used by the Scallop PDT to project catch.
2. Bycatch projections for FY2020 are very close to the projected scallop fishery sub-ACL for SNE/MA yellowtail, and less than the anticipated sub-ACL for SNE/MA windowpane

in all specifications options except for two (Alternative 4 with 22 DAS and Alternative 4 with 24 DAS). Bycatch projections exceed the anticipated FY2020 sub-ACL for GB yellowtail by roughly 4 mt in all alternatives except for No Action and Status Quo. Bycatch projections for GOM/GB windowpane are also greater than the anticipated FY2020 sub-ACL for this stock (Table 2). Alternatives under consideration in Framework 32 would allocate access area trips to rotational areas with high densities of scallops. The majority of scallop landings in FY2020 are anticipated to come from access area fishing.

3. The fishery interacts with GB yellowtail and GOM/GB windowpane at a higher rate when fishing in CAII relative to other parts of the resource. All FW32 specifications options allocate access to CAII-East, but the series of spatial closures being considered are anticipated to mitigate impacts to the GB yellowtail flounder stock. For example, the area of closure options in and around Closed Area II range between 324 nmi² and 2,231 nmi², with the level of projected bycatch of GB yellowtail decreasing as the closure area increases (Table 2). Bycatch of GOM/GB windowpane appears to increase slightly as the closure area on eastern GB increases—this is likely because open area effort that would have occurred within the closure options is assumed to be redistributed to other parts of the GOM/GB windowpane stock area with high bycatch (i.e. Great South Channel).
4. Aside from fishery access to CAII Access Area, the majority of access area effort will be directed to the MAAA, where scallops are found in high densities, with the remainder of rotational harvest coming from the NLS-North, NLS-South-Deep and CAI. Bycatch of SNE/MA yellowtail is anticipated to be very low in the MAAA, NLS-North, and NLS-S-Deep. CAI bisects the GB and CC/GOM yellowtail stock areas; however, yellowtail bycatch is anticipated to be low in CAI overall.
5. The PDT acknowledges that there is some additional uncertainty around the SNE/MA windowpane projections due to anticipated access to high densities of scallops in the NLS-S-Deep. This area has not been targeted in the past by the scallop fishery, meaning observer data are limited and the associated bycatch rates are uncertain (i.e. projections for the NLS-S-Deep use the NLS-North d/K considering these areas are adjacent to each other). Realized SNE/MA windowpane bycatch could swing upwards or downwards from the range presented in Table 2 depending on fishing practices in the NLS-S-Deep. For example, should vessels fish in the extraordinarily high-density part of the NLS-S-Deep, overall bycatch could be expected to decrease relative to the values provided in Table 2 if scallop catch rates are higher than projected. Conversely, should vessels target the lower density “edges” of the concentrated scallop aggregation, scallop catch rates could be lower, thereby increasing bycatch above the values presented in Table 2. Overall, the PDT notes that the range of SNE/MA windowpane bycatch projections in Table 2 are a realistic representation of a mix of these fishing practices (i.e. some vessels fishing high densities, others fishing lower densities).
6. The PDT also discussed the principles of rotational management, such as closing areas for multiple years to improve yield-per-recruit. In practice, F is reduced to zero in the years prior to an opening of an area. On the temporal scale of fishing years, effort in Closed Area II Access Area is periodic and is reflected by intermittently high catches of GB yellowtail, GOM/GB windowpane, and scallops in the stock area. In years when CAII AA is not fished, bycatch of GB yellowtail and GOM/GB windowpane decreases considerably, and scallops are caught elsewhere. This seesaw effect of opening and closing access areas is evident when comparing projected bycatch estimates for FY2020 with FY2019 (i.e. FY019 projection was ~12 mt). The expected catch of GB yellowtail

and GOM/GB windowpane is greater than the previous year because the fishery will likely be operating in Closed Area II Access Area.

7. Bycatch projections are based on the most recent available observer records for a strata (i.e. in this case, SAMS area). This means that bycatch projections for CAII are based on observer records from FY2017, the last time the scallop fishery was fishing in this access area. Projecting future bycatch based on time-lagged data increases the uncertainty of the estimates, and the PDT notes that FY2020 projections may be over- or under-estimated.
8. The Council has taken several steps in recent years to reduce/eliminate incentives for the scallop fishery to catch yellowtail, including the prohibition of possession/landing yellowtail. In addition to the use of a 10” twine top and maximum 7-row dredge apron, there is a seasonal closure of Closed Area II AA from Aug. 15 – Nov. 15 to reduce yellowtail bycatch. FW32, like FW30, FW29 and FW28, contains measures that prohibit RSA compensation fishing in Closed Area II AA to reduce potential impacts on GB yellowtail flounder and GOM/GB windowpane flounder.

Figure 2 - Spatial management configuration under Alternative 1—No Action (default measures from FW30).

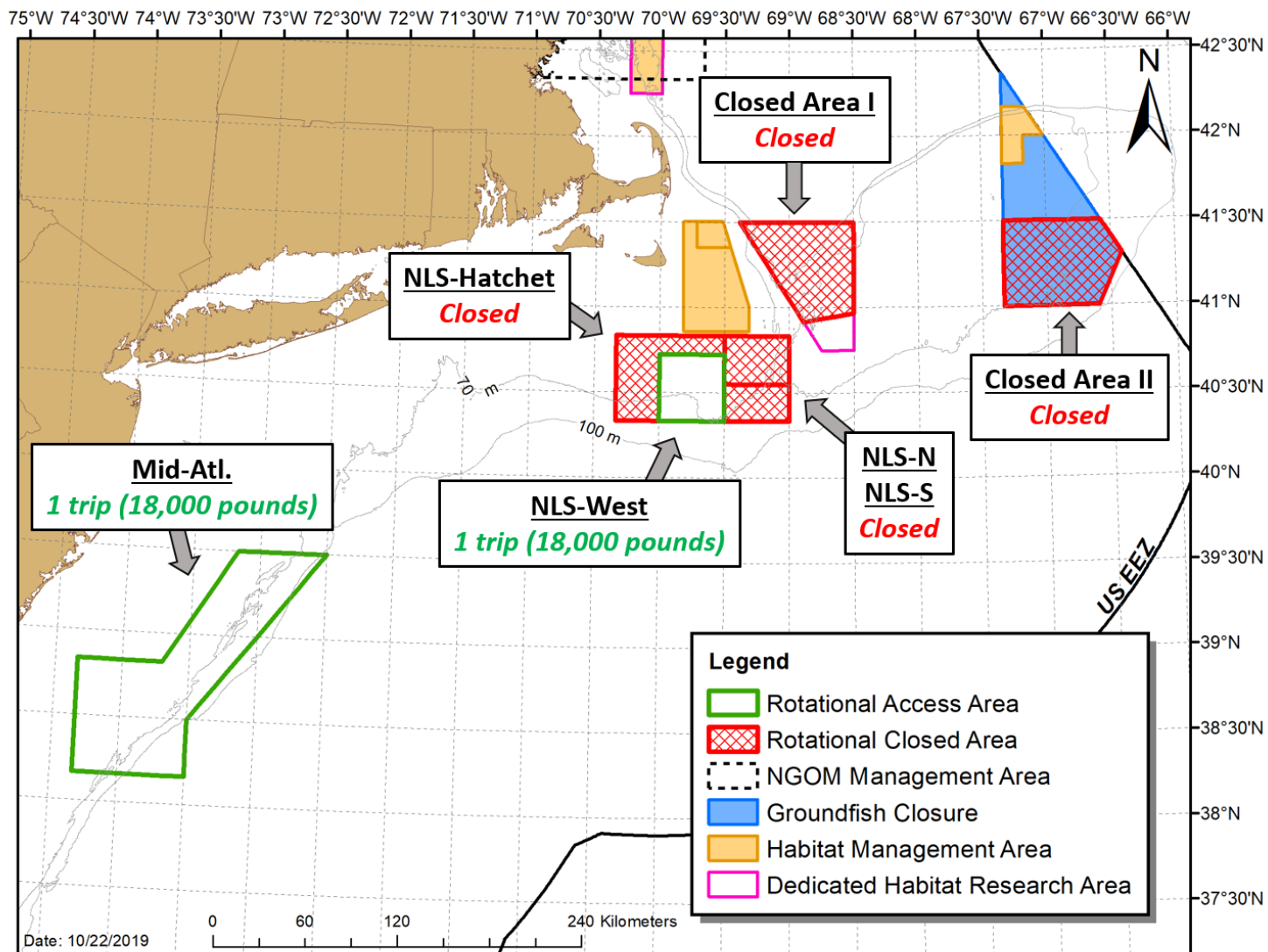


Figure 3 - Spatial management configuration under Alternative 2 – six trip option with an 18,000 pound trip limit and closure in part of CAII AA.

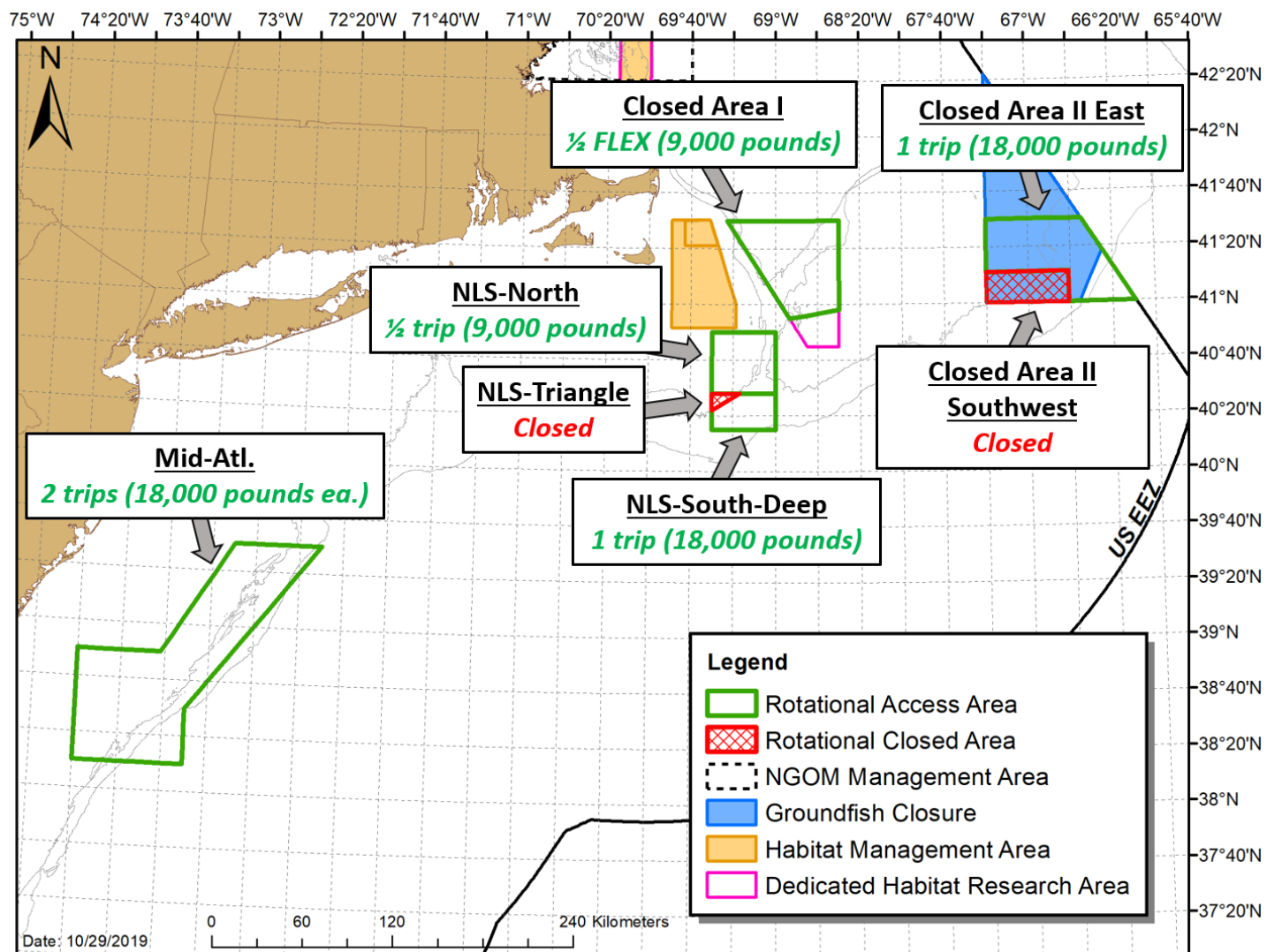


Figure 4 – Spatial management configuration under Alternative 3– six trip option with 18,000 pound trip limit, with a closure in part of CAII AA and south of CAII AA.

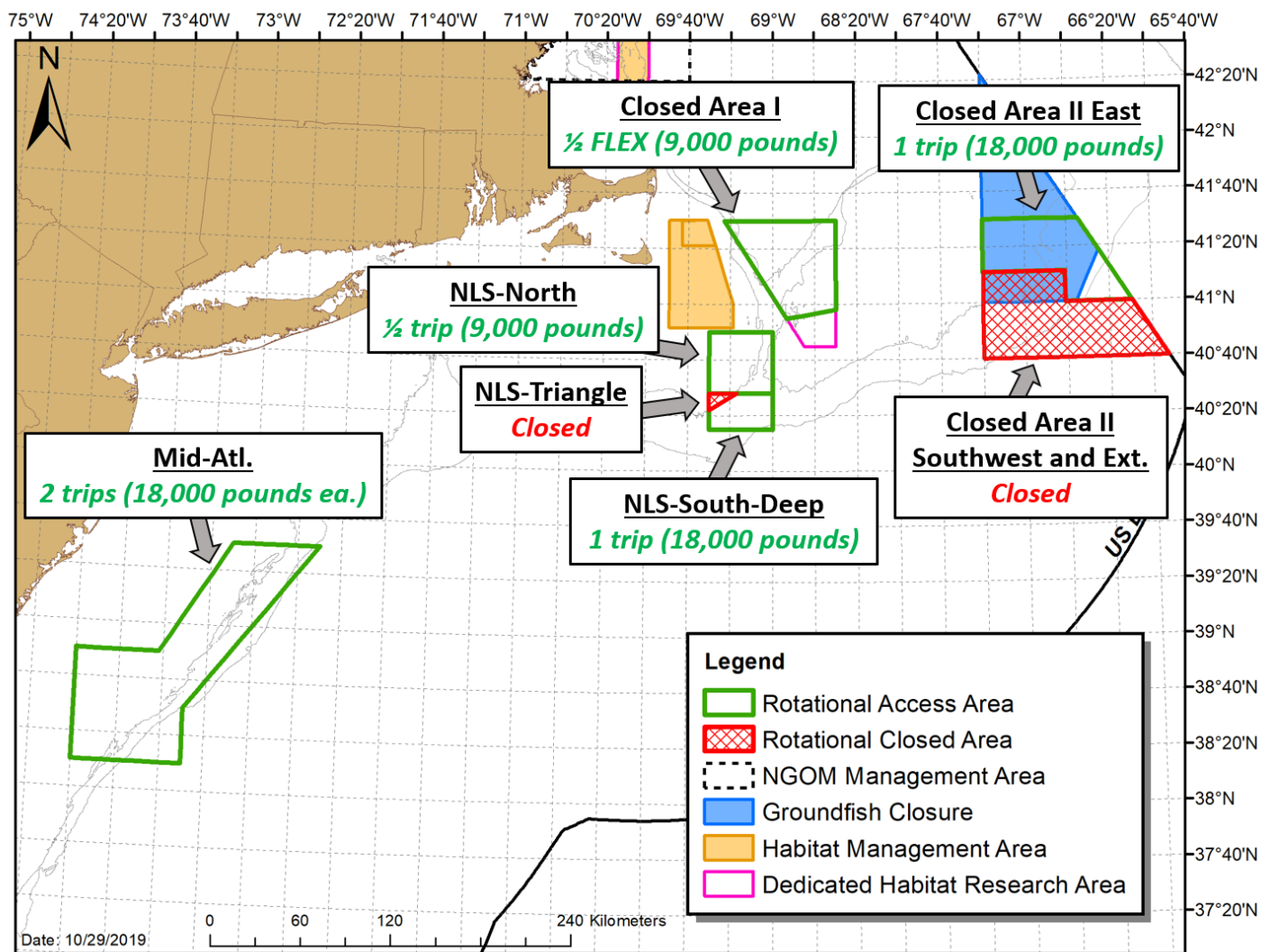


Figure 5 - Spatial management configuration under Alternative 4 – six trip option with 18,000 pound trip limit and a closure in part of CAII AA as well as directly south and west of CAII AA.

