New England Fishery Management Council
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MEMORANDUM

DATE: November 24, 2018

TO: Groundfish PDT

FROM: Scallop PDT

SUBJECT: **Scallop Fishery Catch Projections for FY 2019**

This memo is intended to provide the Groundfish PDT with projected scallop fishery catch estimates for the four flatfish stocks that the scallop fishery has sub-ACLs for: GB yellowtail flounder, SNE/MA yellowtail flounder, GOM/GB windowpane flounder, and SNE/MA windowpane flounder. The Scallop PDT met on November 16, 2018, 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)	Fixed percentage at 36%	90th percentile of estimated catch from 2001-2010
GB Yellowtail	FW48	Catch history	Fixed percentage at 16%	Council considered a range (8%-16%)
SNE/MA Yellowtail	Multiple (FW44, FW55)	Percentage of estimated catch (90% - 100% in past actions)	Recurring estimate of catch.	Estimated catch completed by Scallop PDT
GOM/GB Windowpane Flounder	FW56	Catch history (10 year period)	Fixed percentage at 21%	90th percentile of estimated catch from 2005-2014

Framework 30 Overview:
Framework 30 to the Scallop FMP is considering a range of fishery allocations for FY 2019. All specification alternatives under consideration in this action are "7 trip" access area options that allocate up to one trip in Closed Area I, three trips in the Nantucket Lightship West, and three

trips in the Mid-Atlantic Access Area. All but one of the specification alternatives allocates a "flex trip", which would allow vessels to fish some or all of the allocation associated with the flex trip in Closed Area I, the Mid-Atlantic Access Area, and(or) the Nantucket Lightship West. These three areas were allocated to in FW29 and have been fished throughout FY2018. It is worth noting that none of the alternatives being considered in FW30 direct effort to Closed Area II Access Area, meaning FY2019 will be the second year in a row that Closed Area II Access Area will not be available to the scallop fishery.

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 projection methods have evolved slightly over time but in general there are three steps:

First, a discard to kept ratio (D:K) is estimated from the most recent observer data available and applied to updated estimates of scallop and groundfish biomass. In general, 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. There are several updates to the stratification scheme on the current quota monitoring webpage (Figure 1): 1) within the Southern New England/Mid-Atlantic yellowtail and windowpane stocks, the Nantucket Lightship has been split into three strata: NLS (2017 designation), NLS-South, and NLS-West; 2) the Mid-Atlantic is now 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).

Second, the baseline D:K ratio was adjusted to calculate estimates for 2019 using the formula:

$$D{:}K_y = Baseline\ D{:}K\ (\frac{EBms_{19}}{EBms_y})$$

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

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

Bycatch estimates for each of the four flatfish stocks for FY 2019 were calculated for each run (Table 3). The Scallop PDT also calculated bycatch estimates for FY 2019 only. The Scallop PDT updates these bycatch estimates as part of the annual specifications process.

Figure 1 – Updated strata used to project scallop bycatch in FY2019 under the range of alternatives being considered in FW30.

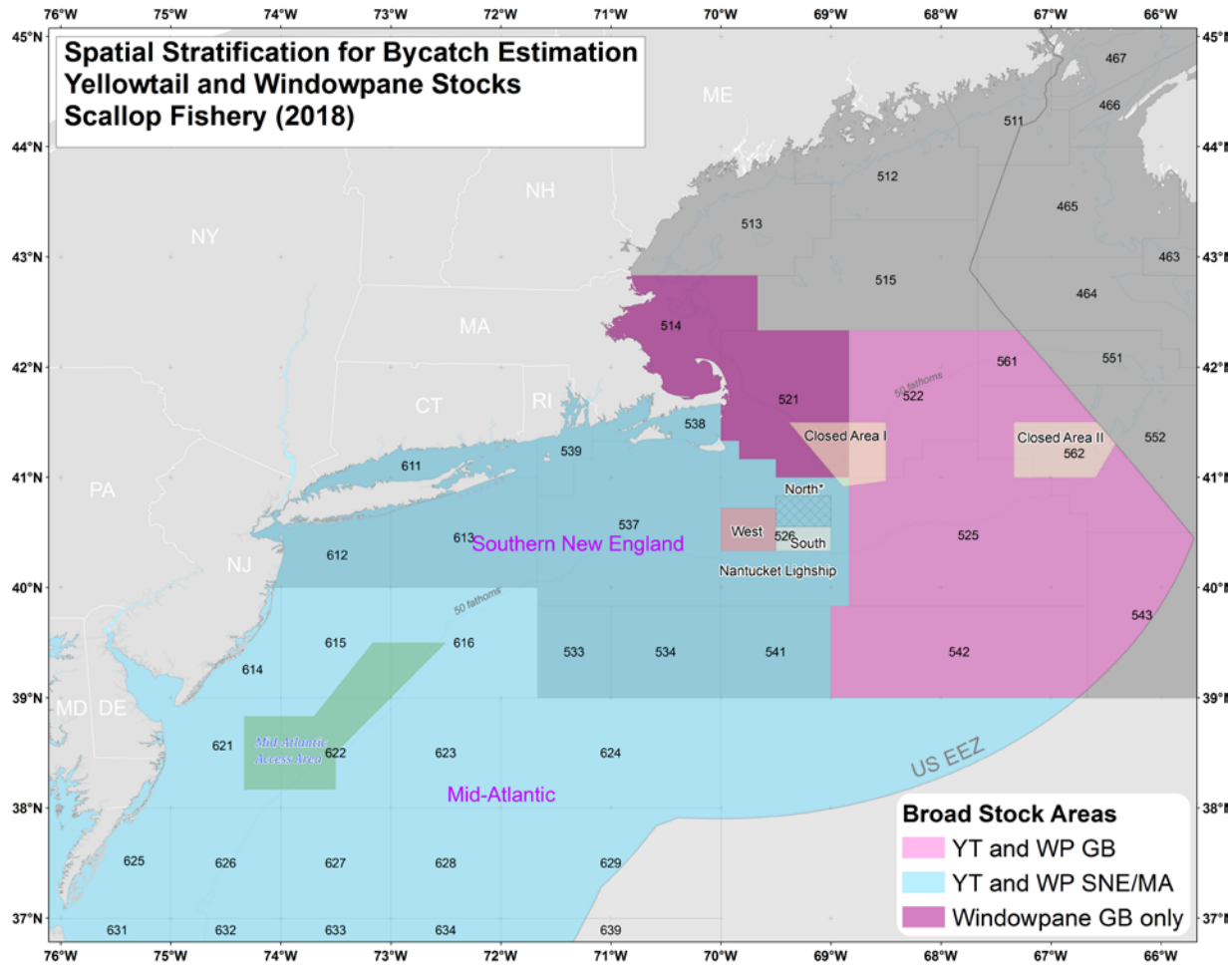

Table 2 - Overview of FY 2019 projected scallop fishery bycatch estimates for each specification run under consideration in FW 30, including the anticipated FY2019 scallop sub-ACL for each stock.

Alternative	Scenario	NWP	SWP	SNEYT	GBYT
Anticipated 2019 sub-ACL		*18 mt*	*158 mt*	*15 mt*	*17 mt*
4.3.1	No Action 1 MAAA: 18k DAS: 18	5.69 mt	36.88 mt	1.43 mt	9.39 mt
4.3.2	1 CAI: 15k 3 MAAA 15k 3 NLS-W 15k DAS: 26	8.77 mt	63.38 mt	2.86 mt	13.15 mt
4.3.3.1	1 CAI: 18k Flex 3 MAAA 18k 3 NLS-W 18k DAS: 26	8.55 mt	67.5 mt	3.05 mt	13.01 mt
4.3.3.2	1 CAI: 18k Flex 3 MAAA 18k 3 NLS-W 18k DAS: 24	8.02 mt	64.03 mt	2.9 mt	12.14 mt
4.3.4	1 CAI: 15k Flex 3 MAAA 18k 3 NLS-W 18k DAS: 24	7.87 mt	64.03 mt	2.9 mt	12.04 mt
4.3.5	Status Quo 1 CAI: 18k plus carryover 2 MAAA 18k 2 NLS-W 18k 1 NLS-S 18k DAS: 24	10.3 mt	108.35 mt	4.79 mt	15.1 mt
Note: The sub-ACLs for NWP, SNE YT, SWP were set through FW57. Groundfish Framework 58 is considering an updated GBYT sub-ACL based on the new TRAC assessment and US/Canada agreement.					

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 2019 are less than the scallop fishery sub-ACLs for all four flatfish stocks (Table 3). Alternatives under consideration in Framework 30 would allocate access area trips to rotational areas with high densities of scallops. The majority of scallop landings in FY 2019 are anticipated to come from access area fishing.

3. All alternatives under consideration are anticipated to reduce impacts on Georges Bank yellowtail flounder and Northern windowpane flounder stocks because they direct fishing effort out of Closed Area II, where the fishery interacts with these stocks at a typically higher rate than elsewhere in the resource. Instead, the fishery would work on high densities of scallops in the NLS-West and the MAAA where bycatch of SNE/MA yellowtail is anticipated to be very low. In some specification scenarios, the PDT projects that 7 access area trips (~35 to ~42 million lbs of scallop meats) in the SNE/MA yellowtail stock area would result in less than 4 mt of bycatch of that stock.
4. 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 could be considered periodic and is reflected by intermittently high catches of GB yellowtail, Northern windowpane, and scallops in the stock area. In years when CAII AA is not fished, bycatch of GB yellowtail and Northern windowpane decreases considerably, and scallops are caught elsewhere. This seesaw effect of opening and closing access areas is exemplified by projected bycatch estimates for FY2019, in that expected catch of GB yellowtail and Northern windowpane is lower than if the fishery were to gain access to Closed Area II Access Area (Table 3). For example, if a 15,000 lb full-time LA access area trip were to be allocated to Closed Area II in FY2019, the projected bycatch of GB yellowtail would be 10.42 mt, while the Northern windowpane bycatch in this area would be 63.05 mt. Combined with bycatch from other parts of the GB yellowtail stock area (i.e. as projected for Alternative 3), the scallop fishery would have been projected to reach and exceed its sub-ACL of GB YT and Northern windowpane. The Scallop Committee, AP, and PDT noted during the development of FW30 that the Closed Area II Access Area could likely support an access area trip in FY 2019 or FY 2020.
5. 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. FW30, like FW28 and FW29, contains measures that prohibit RSA compensation fishing in Closed Area II AA to reduce potential impacts on Northern windowpane flounder and GB yellowtail flounder.

Table 3 - Sensitivity analysis: FY 2019 Closed Area II Access Area Bycatch Estimates of Northern Windowpane and Georges Bank Yellowtail Flounder if a 15,000 lb FT LA trip were allocated to this area.

	NWP bycatch	GBYT bycatch	Scallop catch (mt)
One FT LA trip, trip limit at 15,000 lbs	63.05 mt	10.42 mt	2207 mt

Table 4 - Scallop Fishery Specifications under consideration in FW30.

Alternative	Section	DAS	Scenario	Total Landing	APL	LA Share (94.5%)	IFQ-only (5%)	LA with IFQ (0.5%)
a	b	c	d	e	f	f x 0.945	f x 0.05	f x 0.005
Alternative 1 - No Action	4.3.1	18 DAS (F=0.18)	One MAAA at 18k	22,925,871	20,369,236	19,248,928	1,018,462	101,846
Alternative 2	4.3.2	26 DAS (F=0.25)	7 trips at 15k	57,569,310	55,012,675	51,986,978	2,750,634	275,063
Alternative 3	4.3.3.1	26 DAS (F=0.25)	1 CAI FLEX trip, 7 trips at 18k	64,194,201	61,637,566	58,247,500	3,081,878	308,188
	4.3.3.2	24 DAS (F=0.23)	1 CAI FLEX trip, 7 trips at 18k	62,542,939	59,986,304	56,687,057	2,999,315	299,932
Alternative 4	4.3.4	24 DAS (F=0.23)	1 CAI FLEX trip at 15k, 6 trips at 18k	61,486,925	58,930,290	55,689,124	2,946,514	294,651
Alternative 5 – Status Quo	4.3.5	F=0.295 (30 DAS)	For Comparison Only	63,045,593	60,488,958	57,162,065	3,024,448	302,445
FW29 Pref. (2018)		FW29: 24 DAS	For Comparison Only	60,062,739	57,506,104	54,343,268	2,875,305	287,531

Figure 2 - Spatial management configuration under Alternative 1 (4.3.1)—No Action (Default Measures from FW29).

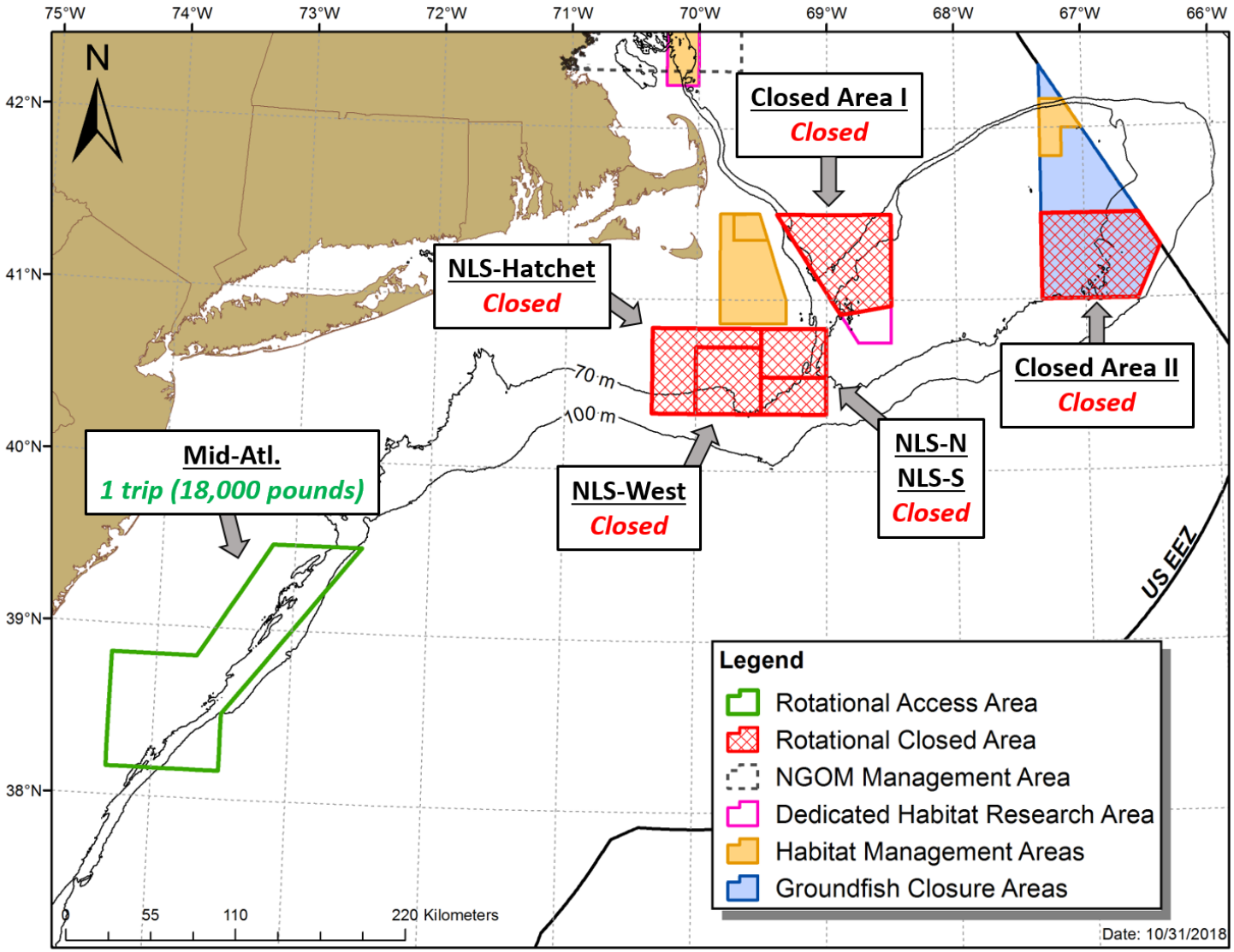

Figure 3 - Spatial management configuration under Alternative 2 (4.3.2) – Seven trip option with 15,000 lb trip limit.

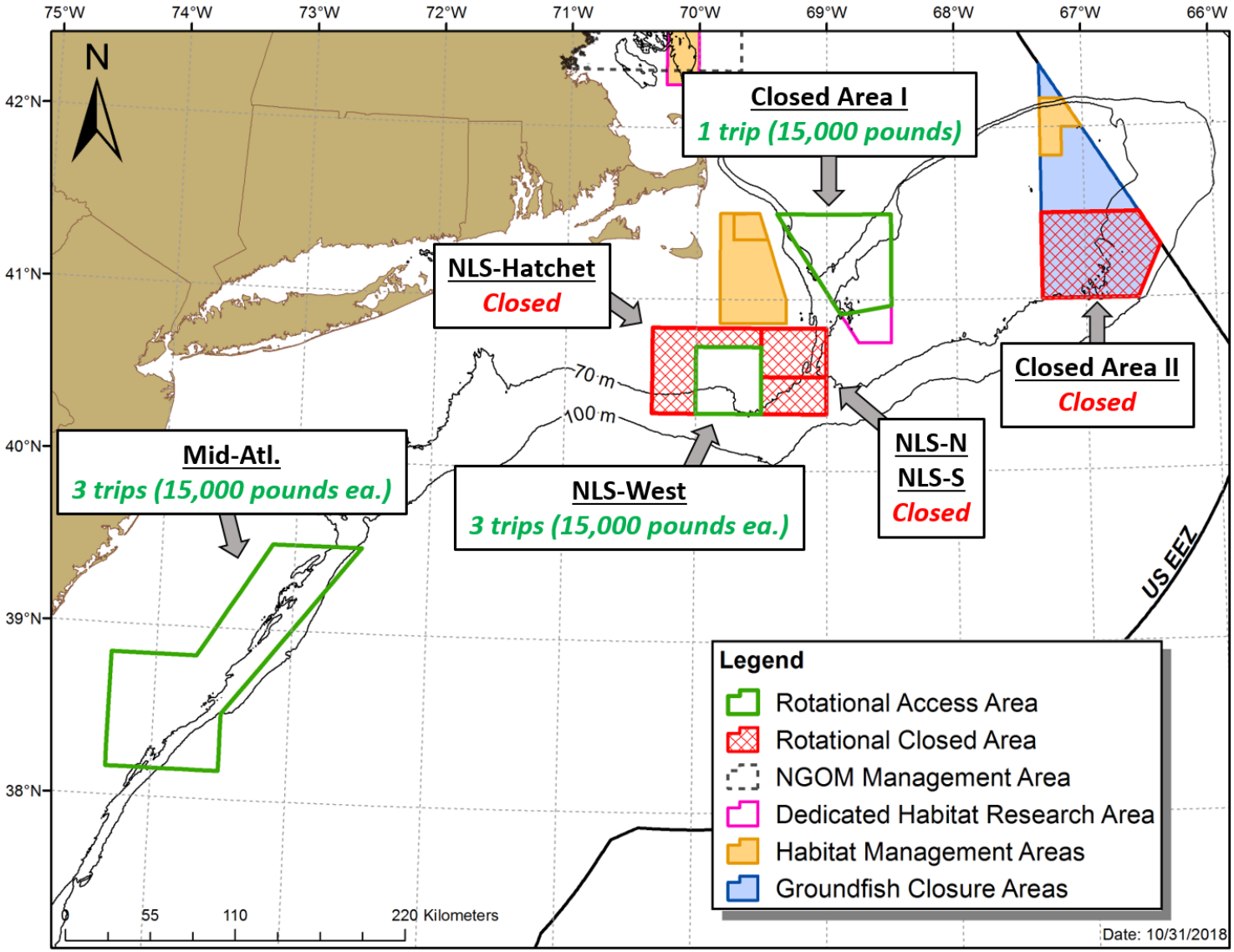

Figure 4 – Spatial management configuration under Alternative 3, Sub-Options 1 and 2 – Seven trips at 18,000 lbs each with a Closed Area I Flex trip option.

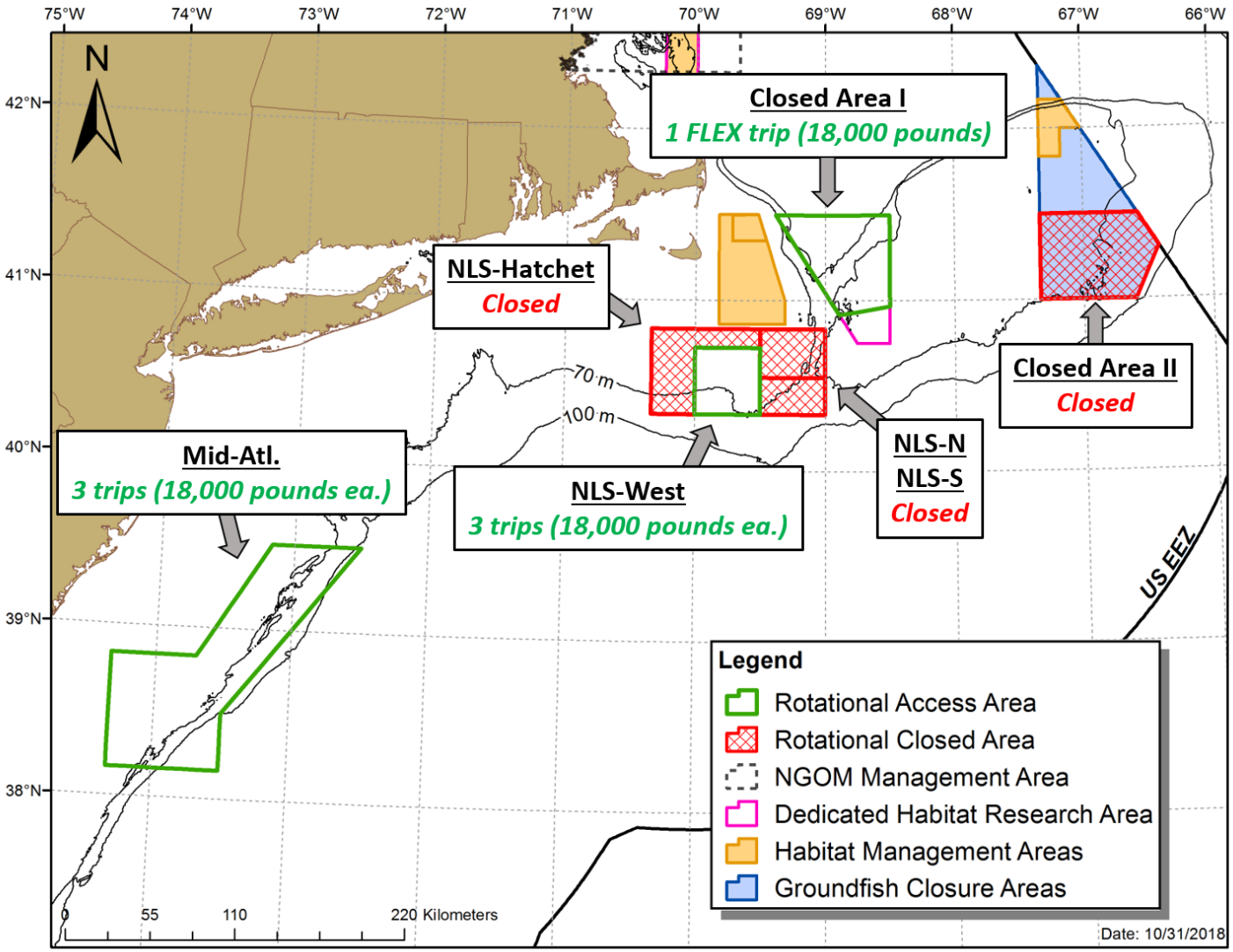

Figure 5 - Spatial management configuration under Alternative 4 – Seven trip option with three trips to the MAAA (18,000 lbs each), three trips to the NLS-W (18,000 lbs each), and one Closed Area I Flex trip (15,000 lbs).