

FOR DISCUSSION ONLY

UPDATED WITH AREAS DISCUSSED ON SEPTEMBER 18, 2014 SCALLOP PDT CALL

2.1.1 Alternative 3 (Specifications based on basic run using fishing mortality target principles in the FMP with modifications to scallop access area boundaries)

Several different modifications to existing access areas are under consideration for various reasons. The primary reason is that 2014 survey results showed very large concentrations of small scallops in various parts of the resource area. Most scallops were two to three years old during the 2014 survey season (50-70mm), so they may be susceptible to scallop fishing gear in FY2015 (typically about 100mm). There were also even smaller scallops observed in the surveys this year (i.e. south of Long Island), but those scallops were under 30 mm (0-1 year old scallops); therefore, it is not as critical to consider new rotational closures in those areas until the scallops are larger.

Option 1, 2 and 3 are extensions of current access areas to include concentrations of small scallops that are near existing boundaries of current access areas. These options are limited in that they only extend into “open areas” to the scallop fishery; the options do not extend into any closed areas, and do not reduce the size of any current scallop access areas. The PDT may consider modifying these areas again in a future action; for example, if closed areas for EFH or groundfish are modified in another action. But this action is only considering extensions of current scallop access areas into adjacent open areas.

Options 4 and 5 are different in that they propose closed areas *within* current scallop access areas, or a temporary prohibition to fish in a subset of a current scallop access area. The two areas identified also contain large concentrations of small scallops, but they are included in this action for other purposes as well. Specifically, Option 4, modification of Elephant Trunk has two purposes: 1) to reduce incidental mortality on small scallops within the access area; and 2) increase overall yield production from the access area by concentrating effort in deeper waters first. Scallops grow faster in shallow waters and the overall growth potential is lower for scallops in deeper waters. Therefore, concentrating effort in deeper waters first will take advantage of the differential growth patterns for scallops by depth and is expected to increase overall yield from the area compared to opening the entire area at once. Previous openings have shown that vessels tend to fish in areas with highest concentrations first, but shallow areas are generally targeted first since they are closer to shore and scallops grow faster in more shallow waters. And in some areas, relatively large scallops are in some shallow areas, but they are younger than scallops farther offshore, and have more potential yield left compared to older scallops farther offshore.

Option 5, modification to Hudson Canyon also has two purposes, but they are slightly different. The first reason is the same, to reduce incidental mortality on small scallops within the access area. However, based on 2014 survey results the highest concentrations of small scallops in HC are not particularly concentrated in the northern part of the access area. There are definitely some small scallops in that area, but they are found in higher concentrations in other parts of the access area. The main driver of considering a closure in the northern part of HC would be to potentially provide higher levels of *future* recruitment, rather than to protect current recruitment in that area. Each time HC was closed in the past, there have been record levels of recruitment in ETA the year after. Preliminary analyses suggest that there could be a strong stock/recruitment relationship for this area; when biomass

is high in the northern part of HC and the area is closed, recruitment levels downstream the year after are above average (i.e. ETA). Closing the southern part of HC to further protect the smaller scallops in that area would be more problematic because there are also larger scallops in that area. This is an issue throughout all the MA access areas, but the degree of overlap of small and large scallops varies. The northern part of HC is currently not as concentrated with large scallops compared to the southern part of the access area.

More work is needed to statistically prove the potential stock-recruit relationships for this area, but the PDT recommends consideration of this closure for one year since there are currently relatively low levels of large scallops in the northern part of HC, thus the potential gains for future recruitment in ETA could be great compared to the potential costs of delaying access in the northern part of HC until 2016.

Finally Option 6 is a small subarea in the southwest corner of the HC access area that would be closed for FY2015 only. That area would be closed to increase yield potential of smaller scallops in that area that will grow faster in shallow waters. If effort is delayed until 2016 the yield per recruit could be much greater overall for the area.

The current thinking is that multiple options could be selected together. For example, the final specification Alternative 3 could include several modifications options for different areas. The PDT has not yet decided how to analyze this many options in terms of simulations and projections. It may be too complex and time consuming to run full projections for every combination of modification options. But the idea is that more than one option could be selected within this alternative. For example, the final Alternative 3 may include Option 1, Option 2, and Option 4 altogether; or Option 1 and Option 5 only, etc.

For Options 4-6 it will be important to clarify how the fishing mortality rate should be set in the remaining area. For example, if all of ETA was open in 2015 and an overall F of 0.4 was applied to the area maybe it would provide about 6 million pounds of catch. However, if Option 4 was selected and the northwest corner was closed in 2015, FW26 could either A) still apply 0.4 to the rest of ETA and allow for lower total catch from ETA, say 5 million pounds, or B) increase F in remaining parts of ETA not closed under Option 4 to something higher, say 0.5 to maintain catch from that area at 6 million pounds for 2015. Each approach would have different impacts on catch in 2015, and beyond.

Candidate Modifications are provided in Figures 1-5 at the end of this document

Figure 6 is an analysis of projected growth rates by ten minute square and exploitable biomass estimates for FY2015. In general, the larger area proposed for ETA, Option 4 with seven ten minute squares included, contains approximately 10% of the exploitable biomass that is within all three MA access areas, and 15% of the exploitable biomass in EAT only. The Option that only includes six ten minute squares contains less, ??? and ??? respectively. For HC options, the HN north as well as the small triangle on the western boundary contain about 7% of the total exploitable biomass for all three MA areas combined, and 34% of exploitable biomass in HC. If the two areas are combined, about 17% of all MA AA exploitable biomass are within the boundaries. If the areas were closed and the same catch was desired from access areas, F in the remaining portions would need to be increased about 20%.

- 2.1.1.1 Option 1 – Modification to access area in Closed Area II – modified area would be closed in FY2015 Only**
(2 options considered)
- 2.1.1.2 Option 2 – Modification to access area in Nantucket Lightship (small) – modified area would be closed in FY2015 AND FY2016**
- 2.1.1.3 Option 3 – Modification to access area in Nantucket Lightship (large) – modified area would be closed in FY2015 AND FY2016**
- 2.1.1.4 Option 4 – Modification to Elephant Trunk (prohibit access in northwest corner)**
(2 options considered)
- 2.1.1.5 Option 5 – Modification to Hudson Canyon (prohibit access in northern part of access area)**
- 2.1.1.6 Option 6 – Modification to Hudson Canyon (prohibit access in northern part of access area)**

Figure 1 – Potential alternatives for GB access area modification – Closed Area II (2 options)

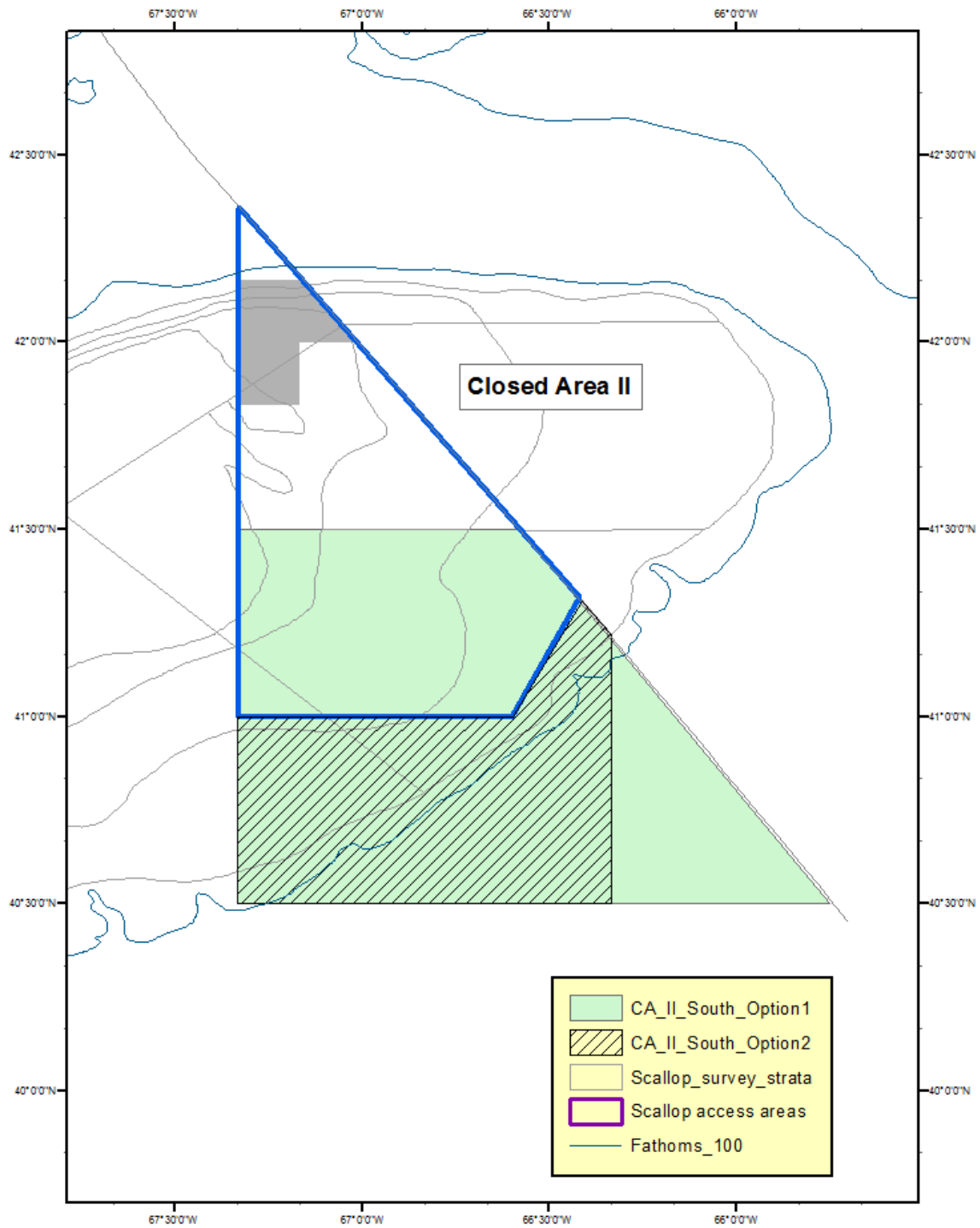


Figure 2 - Potential alternatives for GB access area modification – Nantucket Lightship (2 options)

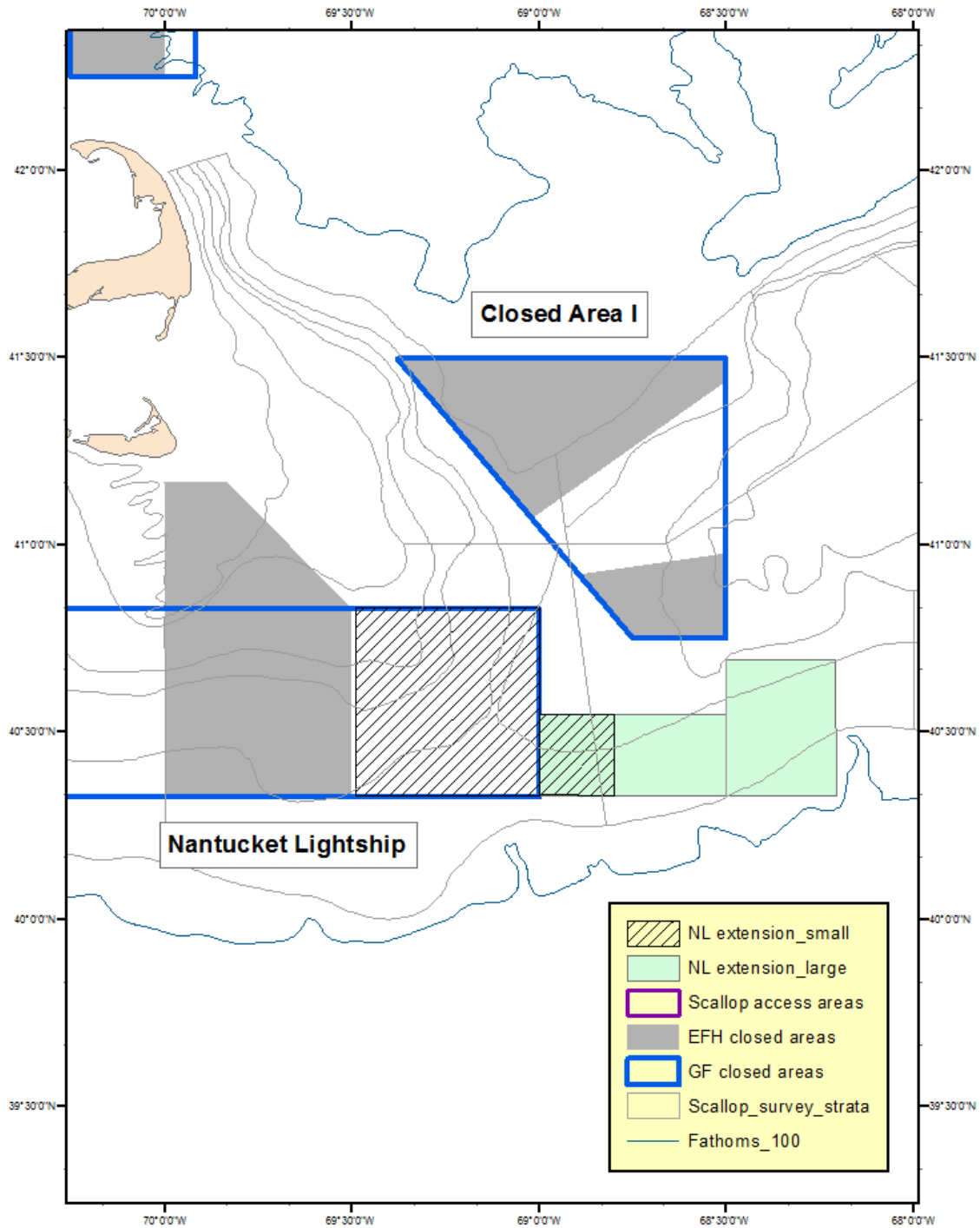


Figure 3 - Potential alternatives for MA access area modification – HC and ETA (4 options)

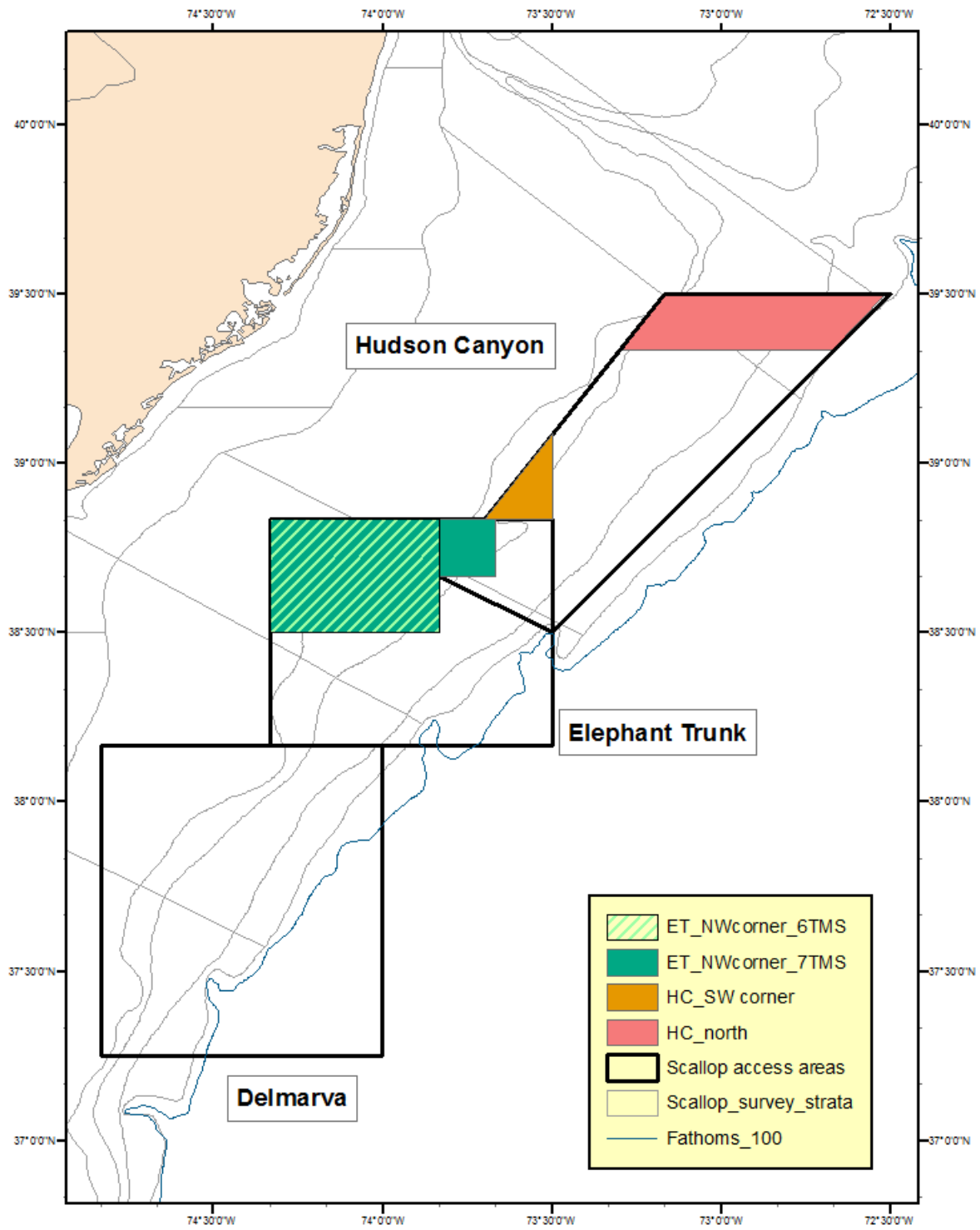


Figure 4 - Potential alternatives for MA access area modification with 2014 survey data (VIMS)

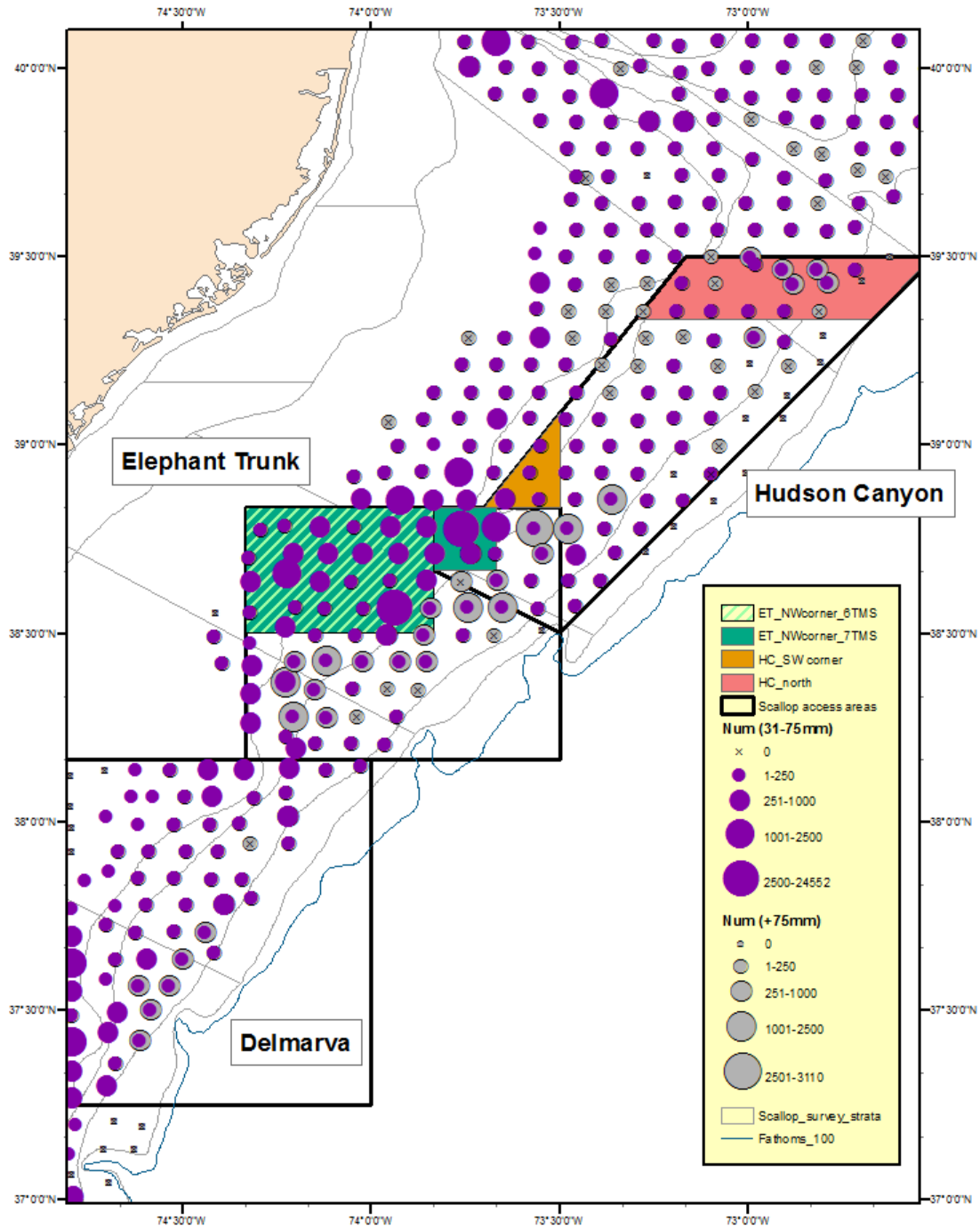


Figure 5 - Potential alternatives for MA access area modification with 2014 VIMS survey data for scallops 31-75mm (left) and scallops +75mm (right)

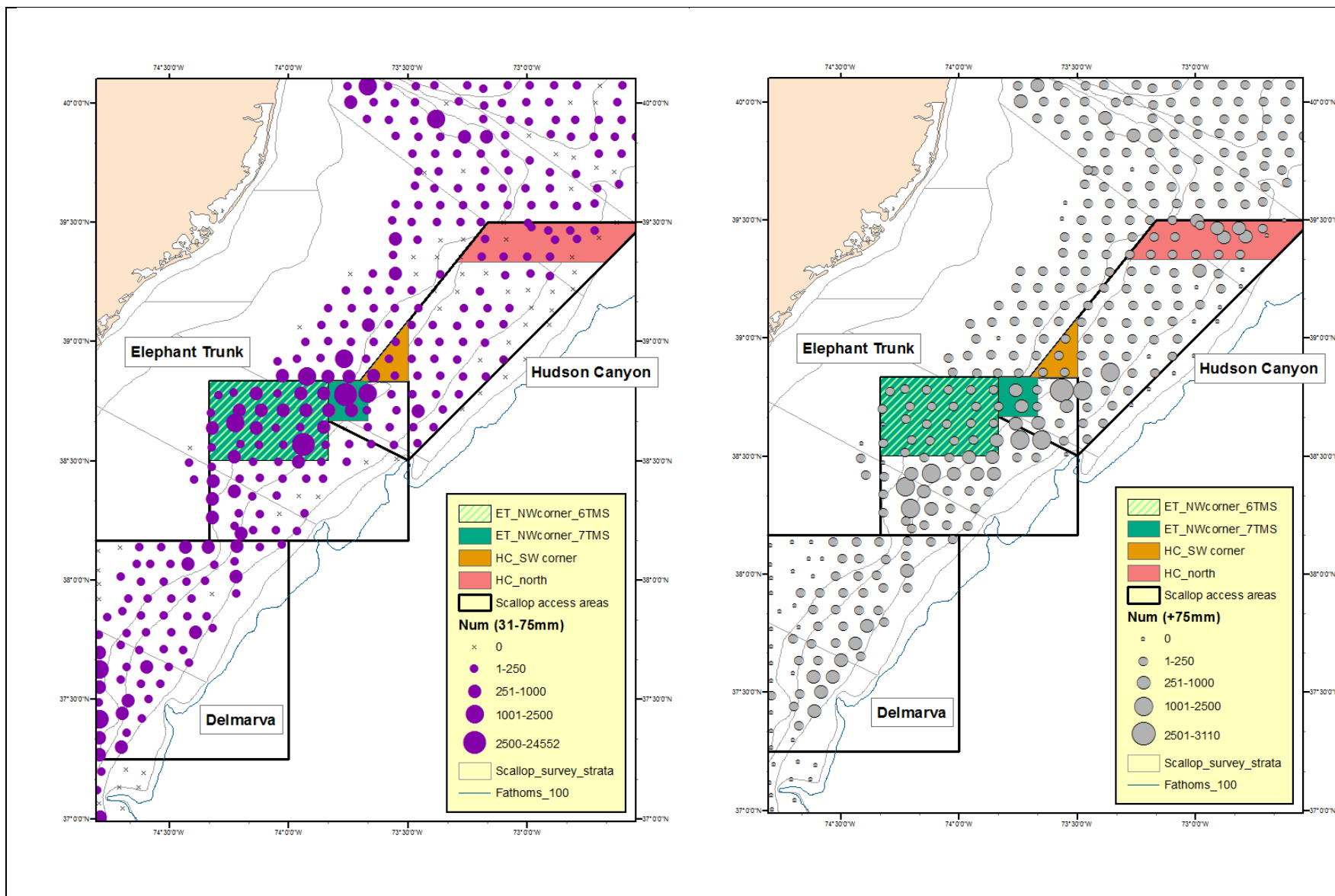


Figure 6 – Projected growth rates and exploitable biomass per ten minute square using 2014 VIMS data (Areas that are included in Options 4-6 are identified by dashed green lines)

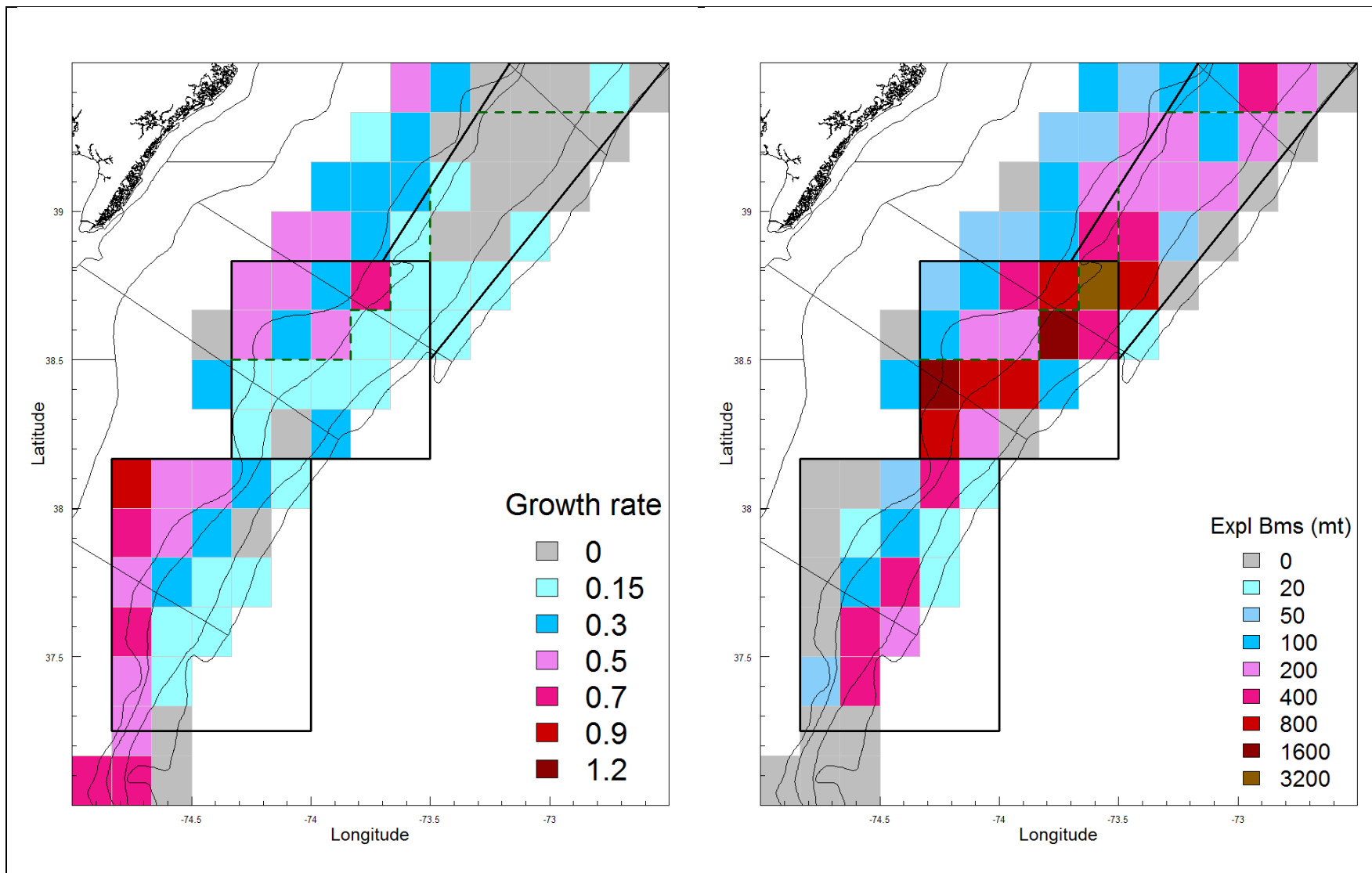


Figure 7 – Potential modifications to scallop access areas around NL with age 2 cohorts (31-75mm)(LEFT) and age 3 cohorts (+75mm) (RIGHT) using data from 2014 Habcam surveys

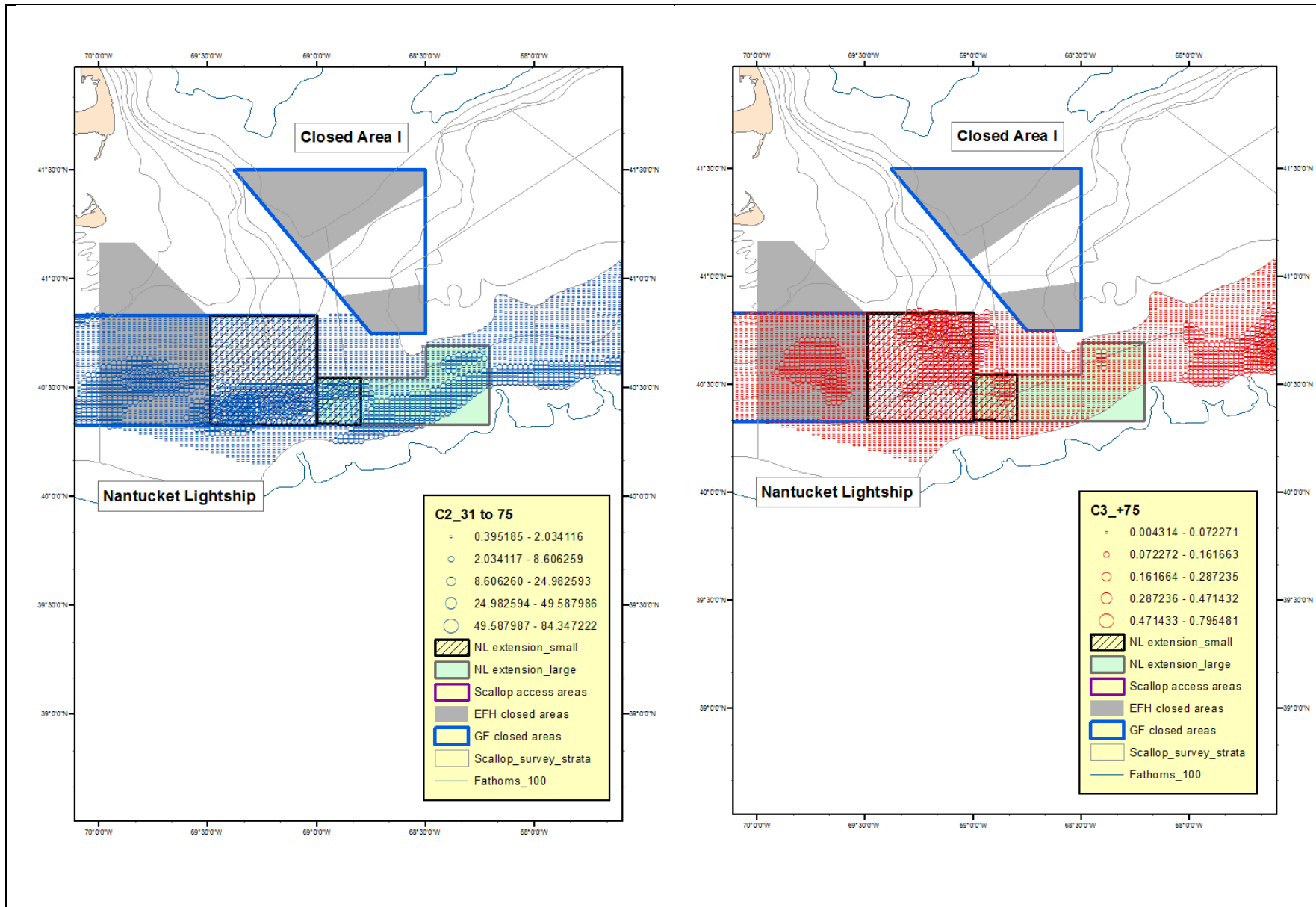


Figure 8 – Potential modifications to scallop access areas around CA2 with age 2 cohorts (31-75mm)(LEFT) and age 3 cohorts (+75mm) (RIGHT) using data from 2014 Habcam surveys

Note: Scales of scallop distribution for this map much lower than density in previous NL maps

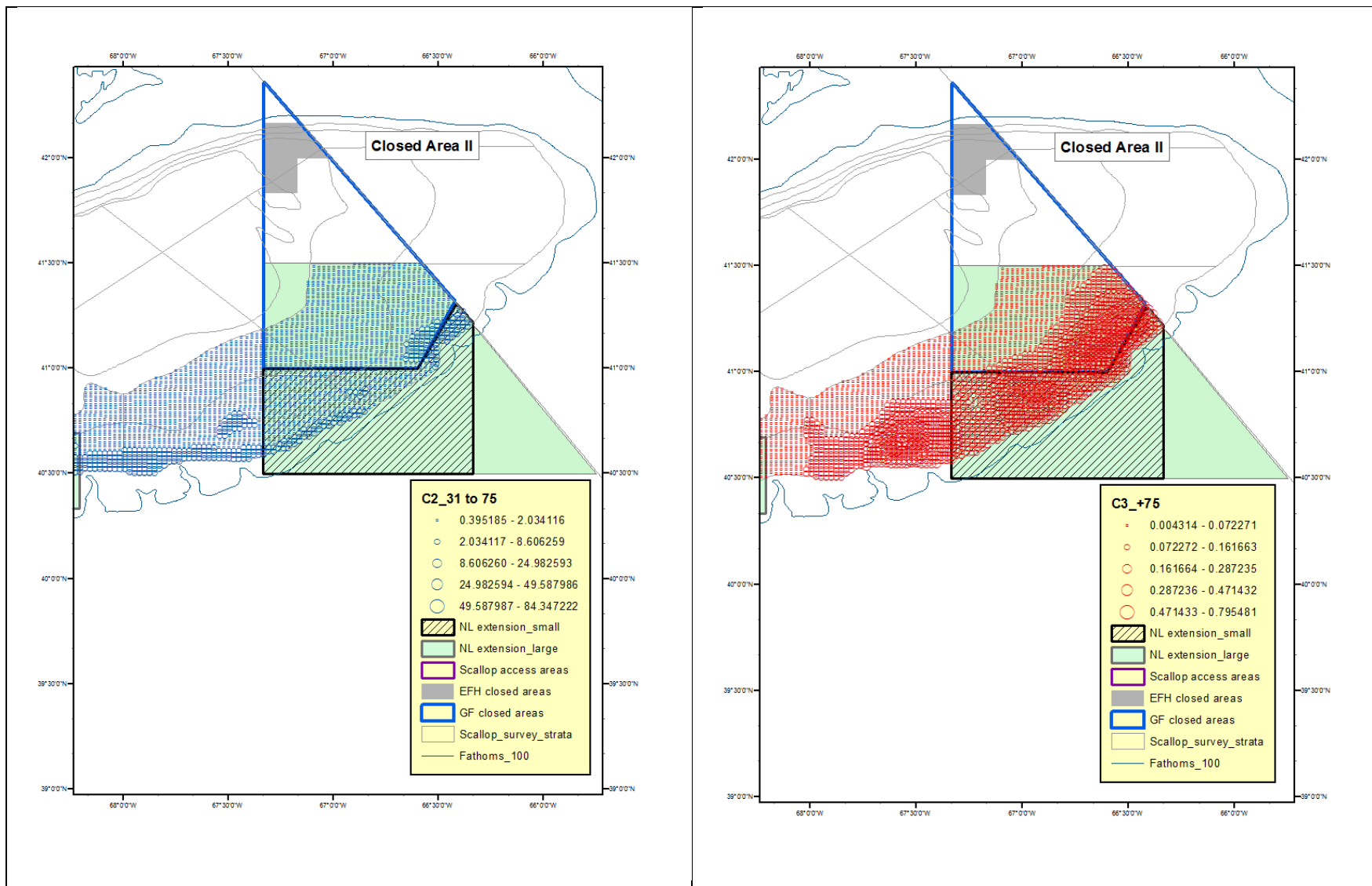


Figure 9 – Potential modifications to scallop access areas around NL and CA2 with VMS pings summarized from all years through 2013

