

## **Appendix 4 Consideration of the Scope of VMS Requirements in the Atlantic HMS Bottom Longline Fishery**

### **A4.1 Introduction**

As described in Chapters 2 and 4, NOAA Fisheries will be requiring the use of VMS on vessels that have been issued a directed shark limited access permit (LAP) and have bottom longline gear on board in order to aid in enforcing a time/area closure off the coasts of North Carolina. The analysis described below were undertaken in order to determine if all shark bottom longline vessels, including those in the Gulf of Mexico and off the coast of Florida, need to install and maintain a working VMS unit or if the area could be enforced if only a subset of the fleet installs and maintains a VMS unit on board.

### **A4.2 Materials and Methods**

On September 25, 2000, the U.S. District Court for the District of Columbia instructed NOAA Fisheries to undertake further consideration of the scope of VMS requirements for the Atlantic HMS pelagic longline fleet (BlueWater Fisherman's Association v. Mineta, 122 F. Supp. 2d 150 (D.D.C. 2000)). In response, NOAA Fisheries conducted an analysis that compared the homeport listed on the permit application of a vessel and the areas fished by that vessel. The court upheld the VMS requirement for the pelagic longline fleet. NOAA Fisheries used the same methods described in the document provided to the court<sup>1</sup> for this analysis. This document contains only a summary of those methods.

#### *Data*

For the purpose of this analysis, NOAA Fisheries compared fishermen who held a shark LAP in October 2003 to self-reported data in the pelagic longline logbook and the snapper-grouper, king mackerel, Spanish mackerel and shark logbook in 2000 and 2001. These logbooks are maintained by the Southeast Fisheries Science Center and are the two primary logbooks that shark fishermen use to report their landings. A few fishermen may also report landings in the northeast multispecies logbook but those fishermen generally do not use bottom longline gear.

There were over 580 vessels that held a shark LAP in October 2003. Of these, 91 vessels reported landing sharks with bottom longline gear in 2001 and 84 vessels reported landing sharks with bottom longline gear in 2000. Vessels that both reported landings in either 2000 or 2001 and that have a current permit are considered “active” vessels for the purposes of this analysis.

NOAA Fisheries analyzed several subsets of vessels using “homeport” and vessel length

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<sup>1</sup> NOAA Fisheries. 2001. Reconsideration of the scope of vessel monitoring system requirements in the Atlantic pelagic longline fishery. DOC. NOAA. HMS Management Division, Silver Spring, MD. 44p.

information on the shark permit application/renewal forms submitted by fishermen to the permit office in the Southeast Regional Office. A homeport is defined as the city and state where the vessel is customarily kept. NOAA Fisheries assumes that vessels that are not mobile fish in areas near their homeport state. Additionally, NOAA Fisheries assumes that larger vessels could travel long distances easier and potentially, in a safer manner, than smaller vessels, with greater potential to fish near several closed areas in a year.

To analyze each alternative, NOAA Fisheries divided the Atlantic Ocean and Gulf of Mexico into five fishing areas based roughly on the common statistical areas used by Cramer and Adams (2001) but modified so that the boundaries of the fishing areas coincide with the latitude/longitude of a nearby state boundary line. The fishing areas are: Gulf of Mexico, Florida east and west coast, South Atlantic Bight, Mid-Atlantic Bight and New England, and the area beyond these four areas off the main coast of the United States. The fishing areas where the vessels reported landings were categorized in the appropriate fishing areas. Additionally, the homeport state was categorized in the appropriate fishing area. No vessels reported fishing in the area off the coast of the United States; therefore, that area is not considered further in the analysis.

Using these area designations, it was possible to determine the mobility of the vessels by comparing the vessel's homeport fishing area/state to where the vessel's fishing trips occurred. This allowed an analysis of whether a vessel fished exclusively "near" its state of homeport (i.e., fishing only in its homeport fishing area) or whether it also ventured beyond its homeport fishing area. This method gives a good general indication of a vessel's mobility and in some cases the degree of mobility. As to degree, this method works better in some cases than in others. It appears to work well for states such as Louisiana, which is in the middle of the fishing area zone. However, it is a less accurate indicator of degree of mobility in the case of a vessel homeported near the border of two states, such as Florida and Georgia. In that case, a vessel may be just as likely to fish in the area next to its homeport fishing area as in the area designated as its homeport fishing area. Thus, it is important to consider not only if the vessel fished in its homeport fishing area, but also where the vessel fished in relation to its homeport fishing area. Accordingly, for each alternative NOAA Fisheries examined the number of trips that occurred in each fishing area and the homeport state of the vessels fishing those trips.

#### *Subsets Examined*

NOAA Fisheries examined several different subsets of the fleet in order to determine if VMS would be needed on only a subset of the fleet or on the entire fleet. The subsets examined include:

- All active vessels in 2000 and 2001;
- All active vessels greater than 45 feet in length;
- All active vessels with homeports in the South Atlantic Bight and the Mid-Atlantic Bight (the closed area is encompassed within both of these areas);

- All active vessels that fished exclusively in the selected closed area and time; and,
- All active vessels that fished in both the selected closed area and in what would be the remaining open areas.

### **A4.3 Results**

The results of this analysis can be found in Table A1. A summary of the results for each subset is below.

#### *Active vessels in 2000 and 2001*

NOAA Fisheries found that no active vessel fished in more than two areas in either 2000 or 2001 and that 82 and 89 percent in 2000 and 2001, respectively, reported fishing in only one area. Over 80 percent of all trips were taken in the same area as the listed homeport for a vessel and the rest of the trips were in the area next to the homeport. In both years, over 60 percent of all trips were taken off the coast of Florida and over 20 percent were taken in the South Atlantic Bight.

#### *Active vessels over 45 feet in length*

Active vessel lengths ranged from 24 to 70 feet and averaged 44 feet and vessel length from all permit holders ranged from 14 to 126 feet and averaged 48 feet. NOAA Fisheries decided to use 45 feet for this analysis because it approximates the average length of the vessel in the shark fishery. NOAA Fisheries found that of the 39 and 42 active vessels over 45 feet in length in 2000 and 2001, respectively, 89 percent fished in one area and 85 percent of the trips were fished in their homeport area. In other words, longer vessels do not appear to be any more mobile than the rest of the fleet.

#### *Active vessels with homeports in the South Atlantic Bight and the Mid-Atlantic Bight*

Of the 21 and 22 vessels with homeports near the revised closed area in 2000 and 2001, respectively, 79 percent fished in one area and 65 percent of all fishing trips were in their homeport area. Thirty five percent of the trips were fished one area away from their homeport area. Ninety one percent of the trips were fished either in the South Atlantic Bight or in the Mid-Atlantic Bight/New England areas. None of the vessels fished in the Gulf of Mexico.

#### *Active vessels that fished exclusively in the selected closed area and time*

Only three vessels fished exclusively in the revised closed area and time. Because there are so few vessels, for confidentiality concerns, NOAA Fisheries cannot release the estimated number of vessels fishing in any particular area. However, results do indicate that the majority of these vessels and trips did occur in the homeport area.

#### *Active vessels that fished in both the revised closed area and time and other areas*

Of the 15 and 17 vessels that fished in both the revised closed area and other areas in both 2000 and 2001, respectively, 84 percent fished in one area and 16 percent fished in two areas. Seventy nine percent of the trips occurred in the vessel's homeport area. Two percent of the trips occurred in the Gulf of Mexico, 75 percent occurred in the Florida region, and 23 percent occurred in the South Atlantic Bight. No trips occurred in the Mid-Atlantic bight/New England regions.

#### **A4.4 Conclusions**

This analysis shows that most bottom longline vessels that have been issued a shark LAP stay near the homeport reported to the permit office and are not particularly mobile. NOAA Fisheries feels that the vessels who reported fishing in two different regions were probably fishing on the edge of the two regions and were not fishing across large distances. While the analysis centered on the homeport reported to the permit office, NOAA Fisheries does not want to make homeport a basis for the requirement of VMS because permit holders could easily change their designated homeport to avoid buying a VMS unit. Thus, based on this analysis, NOAA Fisheries feels that VMS for the bottom longline fleet can be restricted to the vessels that are fishing and/or landing fish in or near the region of the closed area.

NOAA Fisheries found that 14 and 13 active vessels in 2000 and 2001, respectively, fished in the revised closed area and a surrounding area (i.e., between 33° N. lat and 37° N. lat). Of these vessels, 8 and 6 active vessels in 2000 and 2001, respectively, also hold a swordfish directed or incidental LAP and therefore would likely already have VMS installed due to a requirement for pelagic longline vessels to have VMS. Thus, NOAA Fisheries estimates that approximately 14 bottom longline vessels would be directly affected by this requirement and that approximately 7 of those vessels would need to obtain VMS under this requirement.

**Table A4.1 Results of analysis to determine the scope of the VMS requirements for the Atlantic shark bottom longline fishery.**

Description	Number of Vessels	Percent	Number of Vessels	Percent
	<i>All active vessels in 2000</i>		<i>All active vessels in 2001</i>	
Number of vessels	84		91	
Vessels that fished in 1 area	69	82	81	89
Vessels that fished in 2 areas	15	18	10	11
Number of trips	888		847	
Number of trips in homeport area	730	82	724	85
Number of trips 1 area away from homeport area	157	18	123	15
Number of trips more than 1 area away from homeport area	0	0	0	0
Number of trips in Gulf of Mexico area	48	5	45	5
Number of trips in Florida area	547	62	587	69
Number of trips in South Atlantic Bight area	190	21	179	21
Number of trips in Mid-Atlantic/New England area	102	11	36	4
	<i>Active vessels greater than 45 feet</i>		<i>Active vessels with homeport near closed area</i>	
Number of vessels - combined both years	81		43	
Vessels that fished in 1 area	72	89	34	79
Vessels that fished in 2 areas	9	11	9	21
Number of trips	797		456	
Number of trips in homeport area	679	85	298	65
Number of trips 1 area away from homeport area	118	15	158	35
Number of trips more than 1 area away from homeport area	0	0	0	0
Number of trips in Gulf of Mexico area	82	10	0	0
Number of trips in Florida area	469	59	42	9
Number of trips in South Atlantic Bight area	174	22	276	61
Number of trips in Mid-Atlantic/New England area	72	9	138	30
	<i>Active vessels fishing in both open and selected closed areas</i>		<i>Active vessels that fished exclusively in closed area</i>	
Number of vessels	32		Protected for confidentiality	
Vessels that fished in 1 area	27	84		
Vessels that fished in 2 areas	5	16		

Description	Number of Vessels	Percent	Number of Vessels	Percent
Number of trips	248			
Number of trips in homeport area	195	79		
Number of trips 1 area away from homeport area	53	21		
Number of trips more than 1 area away from homeport area	0	0		
Number of trips in Gulf of Mexico area	4	2		
Number of trips in Florida area	187	75		
Number of trips in South Atlantic Bight area	57	23		
Number of trips in Mid-Atlantic/New England area	0	0		