

assessment. Most bonnethead sharks caught do not reach the current size limit. Because bonnethead sharks are not experiencing overfishing, are not overfished, and are easily identified, NMFS does not believe that the removing the size limit for bonnethead sharks would cause them to be overfished or would impede the rebuilding of LCS.

As described above, NMFS believes that if compliance with the retention limit and the size limit increases, that these two management measures would meet the recreational fishing mortality reductions needed to rebuild LCS within the proposed timeframe. If compliance is not increased, NMFS may need to consider other alternatives.

Other alternatives considered for this proposed rule include: increasing the size limit to 5 ft (152.4 cm) fl; establishing different size limits for ridgeback LCS and non-ridgeback LCS and other species; establishing regional size limits for ridgeback and non-ridgeback LCS; and no size limit. These alternatives were not preferred due to concerns regarding misidentification of sharks.

#### C. Authorized Gears

The current regulations state that sharks can only be possessed if they were caught with handgear, longline, or gillnet. The regulations, however, do not specify which gears types are considered recreational and which gear types are commercial. This rule proposes to limit the allowable gears in the recreational shark fishery to rod and reel and handline, which are typically used for recreational fishing in HMS fisheries.

This change would make the allowable gears for the shark recreational fishery consistent with allowable gears for the Atlantic tunas and billfish fisheries and could aid in compliance with the retention and size limits. This limitation is not expected to have any ecological or economic impacts because the majority of, if not all, recreational fishermen already use these gears to fish for sharks. Additionally, these gear types are thought to have lower post-release mortality rates than some of the commercial gears. Thus, any sharks caught above the retention limit or under the minimum size would have a greater chance of surviving after release. Vessels that have been issued an HMS Charter/Headboat permit and a shark LAP, would be able to use commercial gear types as long as the vessel is not engaged in a for-hire recreational trip.

#### 4. Proposed Bycatch Reduction Management Measures

The measures analyzed in this category include the following issues: gear restrictions and time/area closures. The alternatives for these issues are described below.

##### A. Gear Restrictions

Currently, NMFS has several management measures designed to reduce bycatch and bycatch mortality of sea turtles and marine mammals including net checks and a time/area closure in the gillnet fishery and posting handling and release guidelines in the bottom longline fishery. NMFS is proposing several additional gear restrictions in order to further reduce bycatch and bycatch mortality in shark fisheries.

##### i. Strikenet only

NMFS proposes to allow only strikenetting and prohibit drift gillnetting, in the shark gillnet fishery. While drift gillnets have been observed to catch several different species of sea turtles and marine mammals, strikenets have not. Additionally, over 90 percent of the catch of observed strikenets have been of the target shark species and only three teleost and ray species have been observed caught.

While switching to strikenet is expensive and may be cost-prohibitive for some vessels, NMFS knows that three of the six vessels that are currently in the shark gillnet fishery have used strikenet. Additionally, once a vessel is using strikenet, because it is so efficient at catching just the target species, compared to drift gillnet, reductions in sorting time and time spent fishing may reduce the overall cost of fishing.

Many shark gillnet fishermen participate in non-HMS drift gillnet fisheries during a LCS closure. Additionally, many gillnet fishermen in non-HMS drift gillnet fisheries catch sharks. In order to reduce any regulatory discards of incidental takes of sharks in non-HMS fisheries that result from the prohibition of drift gillnet, this proposed management measure would allow vessels issued a shark LAP to land a limited number of sharks (5 LCS and 16 SCS and pelagic sharks combined, per trip), consistent with the quota and closure regulations, if they are using drift gillnet in a non-HMS fishery.

##### ii. VMS

NMFS is also proposing a VMS requirement for vessels with gillnet and bottom longline gear on board. Under this management measure, owners with strikenet gear on board their vessel and a directed LAP for sharks would,

consistent with the large whale take reduction plan, need to have a working VMS unit installed whenever the vessel is away from port from November 15 through March 31 (right whale calving season). Owners with bottom longline gear on board and a directed LAP for sharks would need to have a working VMS unit installed whenever the vessel is operating between 32° N. lat and 38° N. lat from January 1 through July 31 for bottom longline vessels (see proposed time/area closure discussion below).

To determine whether the entire HMS bottom longline fleet needed VMS installed, NMFS analyzed the fishing reports of current permit holders and found that approximately 80 percent of permit holders fished in an area near to the homeport provided on the application for their permits. The result was the same regardless of the vessel size. Thus, because bottom longline fishermen do not appear to fish in many different areas, NMFS concludes that only fishermen operating in an area and time around the proposed closed area would need VMS installed on their vessel. If additional closed areas are implemented or if the mobility of the fleet increases, NMFS may require VMS on more vessels.

VMS would aid NMFS in enforcing the regulations for time/area closures while allowing vessels to transit closed areas to reach homeports and could provide vessels some safety benefits. In the case of strikenet vessels, VMS may reduce the amount of observer coverage required in the fishery during that time period. In the case of bottom longline vessels, VMS could allow vessels with sharks on board to transit the closed area.

However, installing and maintaining VMS can be expensive. Based on the cost of VMS for pelagic longline fishermen, the initial installation of VMS could be approximately \$1,900 to \$3,250 and each unit could have an average maintenance cost of \$500 per year. To mitigate these costs, NMFS hopes to develop a range of possible units and service providers similar to what was done for the pelagic longline fleet. If NMFS does not implement a time/area closure for bottom longline fishermen, bottom longline fishermen would not be required to have VMS on board their vessel.

##### iii. Other gear requirements

NMFS is also proposing several requirements for bottom longline fishermen that are similar to the requirements for pelagic longline fishermen. These include requiring the use of non-stainless steel corrodible hooks, the possession of release