

and aggregating the LCS complex) will implement commercial quota levels of 1,017 mt dw for the LCS aggregate and 454 mt dw for the SCS aggregate, resulting in a 21-percent reduction in LCS quota and a 10-percent increase in SCS quota, respectively, from the baseline quotas outlined in Amendment 1. While combinations of other alternatives could result in increased quotas for LCS, those combinations were rejected because they are likely to result in rebuilding delays for the LCS stock, which is inconsistent with the Magnuson-Stevens Act. Moreover, economic impacts could be incurred in the fishery over the long-term should LCS stocks continue to decline.

NMFS considered six commercial minimum size alternatives: a 4.5 ft FL for ridgeback LCS (no action), no minimum size (final action), and four other alternatives with varying minimum size requirements. This final rule eliminates the current commercial minimum size, thus relieving a restriction that would impose negative economic impacts on the commercial shark fishery. The other alternatives would have imposed varying minimum sizes and were rejected because they would have had greater economic impacts and because other alternatives that protect juvenile sharks, as recommended in the stock assessment, are being implemented in this rule. Given that the current minimum size for commercial fishery has never been implemented due to litigation, NMFS does not anticipate any significant changes in economic benefits or costs from this final action.

Similar to the final actions for commercial quotas, the final action alternatives for recreational retention (*i.e.*, existing limits plus one bonnethead) and minimum size limits (*i.e.*, existing size limits plus no minimum size for bonnethead) were designed to minimize the economic impacts on recreational fishermen, while simultaneously allowing healthy stocks to be managed at optimum yield and overfished stocks to rebuild. NMFS considered seven recreational retention limits including: (1) One shark per vessel per trip plus one Atlantic sharpnose shark per person (no action); (2) one shark per vessel per trip plus one Atlantic sharpnose and one bonnethead shark per person per trip (final action); (3) no limit; (4) catch and release only; and (5) other retention limits. Since the final retention allows the additional retention of bonnethead sharks, this alternative may increase revenues to charter/headboats and other small entities above the no action and catch and release only alternatives. Even

though other alternatives were considered, such as no retention limit, that might further minimize economic impacts, they were rejected because they do not meet fishery management plan goals and objectives including rebuilding overfished LCS and preventing overfishing of Atlantic sharks.

NMFS considered six size limit alternatives including: (1) 4.5 ft FL for all sharks and no size limit for Atlantic sharpnose sharks (no action); (2) 4.5 ft FL for all sharks and no size limit for Atlantic sharpnose and bonnethead sharks (final action); and (3) various other size limits ranging from no size limit to different size limits depending on the species and the area fished. The final size limit alternative takes into account the fact that bonnethead sharks do not reach the minimum size currently in place and simplifies compliance for small entities with the final retention limits for bonnethead sharks. The final size limit alternative is anticipated to increase the willingness to pay, angler consumer surplus, and current revenues to charter/headboat captains and other small entities who rely on the recreational shark fishery for income. Other recreational size limit alternatives were rejected because of economic and stock status concerns.

The final action regarding recreational authorized gear limits fishermen in the recreational fishery to handline and rod and reel and addresses the need for NMFS to clarify which gear types are authorized specifically for recreational fishing activities. Most recreational HMS fishermen already use handline as well as rod and reel in the fishery. As such, there are no anticipated economic costs or benefits associated with implementation of the final action. The no action alternative would have no economic costs but was rejected because it is not consistent with other HMS fisheries and because other, more commercial gears, have higher post-release mortality rates, which could delay rebuilding of LCS. No other alternatives were considered because handline and rod and reel are the only gears typically used for recreational fishing for sharks.

The final action to remove the deepwater and other sharks from the management unit seeks to simplify compliance and reporting requirements under the final rule for small entities. No economic costs are anticipated with from this alternative or from the no action alternative.

The final action that retains the current 19 prohibited species and establishes a criteria for the addition/removal of other species to/from the

prohibited species group, also simplifies compliance and reporting requirements. Given the possibility that recreationally or commercially valuable species may either be added/removed from the prohibited species group, it is possible that economic impacts/benefits would be experienced by small entities. While removing or adding sharks to the prohibited list could have economic impacts, maintaining the status quo while establishing a process to add or remove, should not have economic impacts on a substantial numbers of small entities. Some of the other alternatives considered (returning to five prohibited species, adding finetooth sharks, or removing dusky sharks) could have varying positive or negative economic impacts. These alternatives were rejected because they could delay rebuilding of LCS, inconsistent with Magnuson-Stevens Act, and could result in long-term negative economic impacts if stocks decline further. The other alternative considered (adding deepwater and other sharks) was rejected for similar reasons to those that resulted in removing the group from the management unit.

NMFS considered nine alternatives for bycatch reduction including a no action alternative, modifying authorized gears, limiting gears or soak times, and not allowing any discards. The final actions for bycatch reduction (*i.e.*, install and activate VMS, obtain and use release equipment, use non-stainless steel corrodible hooks, and move 1 nmi after an interaction with a protected species) were designed to minimize the economic impacts on fishermen, while simultaneously promoting bycatch reduction of protected species in shark fisheries. Installation of VMS units could result in economic impacts to small entities in the short-term. However, in the long-term, this alternative could result in increased revenues by preventing more burdensome regulations and allowing more fishing time. Additionally, bottom longline vessels would be able to traverse the closed area, while gillnet vessels may require less observer coverage. No other alternatives are available at this time that are as effective at enforcing closed areas.

Under the VMS requirement approximately five gillnet shark fishing vessels and approximately eight directed category bottom longline shark fishing vessels will need to install VMS units. Requiring VMS for only a portion of the shark fishing fleet, minimizes the economic impact on the remainder of the fleet. Economic analyses of the impacts associated with VMS requirements on small entities indicate