

Alternatives under the second and third categories are discussed below.

The group of proposed measures for commercial minimum size and quotas was designed to minimize economic impacts incurred on fishermen while also, consistent with the Magnuson-Stevens Act and other domestic laws, enhancing equity among user groups, allowing healthy stocks to be managed at optimum yield, and allowing overfished stocks to rebuild. For example, eliminating the minimum size could increase profits for individual fishermen by reducing costs associated with the lengthening of trips (i.e., fuel, bait, and ice). Maintaining the minimum size could result in decreased profits due to the costs incurred taking longer trips and the time taken to sort through the catch. The proposed measure to aggregate LCS into one management group also simplifies compliance and reporting requirements under the proposed rule for small entities.

While NMFS considered other commercial quota-related alternatives that could, in combination with other alternatives, result in larger quotas and, therefore, fewer negative economic impacts or greater profits for individual fishermen. These alternatives included establishing the LCS quotas on a more species-specific basis, establishing the LCS and SCS quotas based on recent landings, maintaining the commercial minimum size, and not establishing regional quotas. These alternatives could also increase confusion for fishery participants by establishing several different closure dates and requiring greater skill at species identification. Additionally, these alternatives could result in delays in rebuilding LCS, contrary to the Magnuson-Stevens Act and the goals of the proposed rule.

NMFS is also proposing several management measures designed, consistent with the Magnuson-Stevens Act, to reduce, to the extent practicable, bycatch and bycatch mortality of HMS, protected species, and other fish in shark fisheries. Specifically, the alternative that prohibits drift gillnet gear and allows strikenet gear is likely to result in negative economic impacts for a limited number of small entities (i.e., three of the six vessels actively fishing in the shark gillnet fishery). Because of the one-time costs involved, switching to strikenet gear could put these fishermen out of business. However, NMFS knows that three of these vessels already use strikenet gear and strikenet gear has almost no bycatch while drift gillnet gear has interactions with many different species including sharks, fish, and sea turtles. Once the switch to strikenet is made, it is possible

that profits could increase due to less time taken to sort the catch. No other measure, other than banning gillnet gear altogether, would be as effective at minimizing bycatch in the gillnet fishery. The no action alternative would minimize the economic impacts on individual fishermen but would not address bycatch issues in this fishery and therefore would not be consistent with the Magnuson-Stevens Act.

NMFS is proposing a time/area closure for sandbar and dusky shark nursery and pupping areas off North Carolina during the winter fishery. This alternative is designed to reduce bycatch of neonate and juvenile sandbar and dusky sharks and is likely to have significant impacts on 34 permit holders by closing large sections of coastal waters to shark fishing. This amounts to a direct economic impact on 14 percent of the directed shark fleet.

During 2001, only 13 permit holders with home ports located in South Carolina, North Carolina, and Virginia reported shark landings. These vessels reported gross revenues totaling \$351,600 during that year. Economic analyses indicate that, if effort is not redistributed, the proposed time/area closure would result in a 4-percent reduction in total gross revenues for the fishery as a whole and in a 27-percent reduction of revenues for the small entities directly affected by the proposed closure. Fishermen would be directly impacted by a reduction in catch and income from areas that they have traditionally relied upon. Fishing practices and behavior of fishermen would also be affected by requiring fishermen to travel further offshore. Due to greater distances traveled, fishermen would spend more time at sea, and associated costs of food, fuel, and labor could increase and profits decrease. This could cause some fishermen to go out of business, move to new areas, or alter fishing patterns in other ways. This alternative could result in a change in the distribution of benefits and costs, with the financial costs of operating in the fishery increasing and benefits decreasing. However, the preferred alternative may result, once LCS rebuild, in slight benefits for fishery participants that are not directly affected by the closure and it minimizes the economic impacts compared to the other time/area closure alternatives considered. The no action alternative could also minimize the impacts but that alternative would not minimize bycatch and bycatch mortality, to the extent practicable, consistent with the Magnuson-Stevens Act, and would not protect juvenile sharks as recommended by the LCS stock assessment. Without

the protection of juvenile sharks, rebuilding of LCS could be delayed, contrary to the provision of the Magnuson-Stevens Act.

NMFS does not know of any performance standards or design specifications that would help reduce bycatch of sandbar, dusky, juvenile, or other sharks in this fishery. However, NMFS could issue EFPs to fishermen or scientists who want to conduct research on this issue, similar to what is being done in the Northeast Distant Statistical Area with the pelagic longline fishery.

NMFS is also proposing to require vessels that use strikenet gear during right whale calving season, consistent with the large whale take reduction plan, or bottom longline gear in the south- and mid-Atlantic regions during the time/area closure to install VMS units. This would result in increased costs in the short-term. However, in the long-term, VMS could result in increased revenues by preventing more burdensome regulations and allowing more fishing time. Additionally, under this alternative, bottom longline vessels would be able to traverse closed area and gillnet vessels might require less observer coverage. The VMS units for the HMS pelagic longline fleet have an initial average cost of approximately \$1,900–3,250 (\$1,600–2,500 per unit and \$300–750 installation fee), an average annual maintenance cost of approximately \$500/year, and approximately \$1.44/day for position reports.

An economic analyses of the impacts associated with VMS requirements indicate that only 6 percent of the fleet would be affected and that this would result in a 9-percent reduction in total gross revenues for fishery as a whole and a one time 31-percent reduction in total gross revenues for the vessels directly affected by this proposed requirement as a result of the purchase and installation of the units. To provide vessel owners with flexibility and help minimize costs, NMFS would type-approve several different VMS units and manufacturers for use, similar to the units approved for use in the pelagic longline fisheries. No VMS units have been type-approved yet specifically for use in the Atlantic shark fisheries as of this date. Based on the range of VMS units commercially available, NMFS expects any VMS unit type-approved for Atlantic shark fisheries to be similar or identical to those type-approved for the pelagic longline fisheries. Once the type-approval is complete, it is likely that this alternative will result in simplification of compliance and reporting requirements under the proposed rule for such small entities.