

returns, and the Advisory Panel's recommendation that 1 and 7/8 inches (4.76 cm) is the optimal mesh size for this fishery, the mesh size specified by the final rule is superior to the alternatives considered.

The requirement for an operating VMS would impose a one-time cost to owners who obtain limited access endorsements that would not exceed \$1,200. This capital cost is expected to be amortized over the average life-span of the equipment, presently estimated at 7 years. Thus, the annual cost per vessel is approximately \$171. In addition, there would be some level of recurring operating/repair/maintenance costs, and no more than \$800 in annual communication costs. Therefore, the requirement for an operating VMS would decrease a vessel's annual profitability by approximately \$971. Given the previously noted annual gross revenue estimates, the expected annual explicit cost of the VMS requirement alone could represent between 0.8 percent and 3 percent of these vessels' annual gross revenues from the rock shrimp fishery.

Additionally, time burdens would be imposed as a result of the VMS requirement. Specifically, the time to install the VMS is estimated to be 4 hours; the time to complete and submit a statement certifying compliance with the installation and activation checklist is estimated to be 15 minutes; annual maintenance is estimated to be 2 hours each year; and the time to transmit position reports is estimated to be 14 minutes per day at sea. Current information suggests that the average, annual number of days at sea is approximately 200 for qualifying vessels active in this fishery. As such, this particular time burden is estimated at 2800 minutes or 46.67 hours per vessel. Therefore, the total time burden associated with VMS is approximately 53 hours per vessel in the first year, the monetary value of which is approximately \$883 per vessel. In the years thereafter, only the time burdens associated with annual maintenance and the time to transmit position reports would be incurred. Thus, the time burden per vessel in later years would be 48.67 hours, the monetary value of which is approximately \$813 annually per vessel. By combining the explicit and implicit costs, the total annual cost of this action is \$1854 per vessel in the first year, and \$1784 per vessel in later years, or \$311,472 and \$299,712 annually for all qualifying vessels.

The final rule will likely result in higher costs than rejected option 3, under which only vessels with a past fishery violation would be required to

use VMS, as opposed to all vessels. The use of an approved vessel monitoring system is necessary to protect essential fish habitat and essential fish habitat areas of particular concern. Illegal use of rock shrimp trawls within the Oculina Bank can result in damage to bottom habitat, as emphasized in a recent report presented to the Council on this topic. This latest report indicates that only 20 acres of Oculina coral remain intact, not only in this area, but in the world. Requiring rock shrimp vessels to carry an approved VMS unit will improve compliance and allow the rock shrimp fishermen to demonstrate that they are not fishing in any closed areas. Currently, the probability of detecting fishing in the Oculina Bank HAPC is low, given the distance from shore and the frequency of Coast Guard patrols in this area. VMS technology will significantly improve the detection of fishery violations in this closed area. Thus, the final rule is superior to the no action option and rejected option 3. Rejected option 3 would only provide coverage for some vessels in the industry and would not be as effective as the preferred alternative in improving compliance. In comparison to rejected option 2, the VMS system requirements should be specified in order to ensure that the utilized system will ensure sufficient surveillance of vessel activities. In this respect, the final rule is preferable to rejected option 2. Also, the final rule establishes a cap on the cost per vessel for purchase of the VMS unit and annual communications. Based on these facts, the final rule is superior to the alternatives considered.

The requirement for operator permits in the South Atlantic rock shrimp fishery will increase costs to owners who operate their own vessels and to individual non-owning operators. The cost of a permit is expected to be not more than \$50 and would generally be incurred once every 3 years, for an approximate cost per year of \$16.67. Thus, the total explicit cost imposed on all qualifiers combined in the first year would be approximately \$8400. The time burden of applying for this permit is estimated to be 60 minutes. In monetary terms, this time burden equates to \$8.36 per vessel operator, or \$2.79 per year. As a result of this action, the annual total cost per qualifying vessel is \$19.46, or \$3270 for all qualifying vessels.

This burden would also be imposed on vessel operators in the open access component of the fishery (i.e., the Carolinas), which could consist of as many as 24 additional vessels. If the single, large entity eventually chose to participate in the open access

component of the fishery, it would also have to incur these expenses. Since the cost is constant on a per-vessel basis, disproportional impacts would not occur. In any case, for participants in the open access component of the fishery, these costs are unlikely to substantially reduce profitability.

The final rule will result in higher costs than the no action option (rejected option 1) since it would require an operator's permit, estimated to cost \$50 per operator, that would be valid for 3 years. The Council's Rock Shrimp Advisory Panel recommended operator permits to assist in reducing the cost of penalties to the industry from federal fishery management violations. It is expected that an operator's permit requirement will improve compliance with fisheries management regulations. Even though rejected option 2, which only requires an operator's permit for captains who do not own the vessel they operate, would result in a lower cost to the industry, it would not eliminate the possibility that a vessel owner who had a vessel permit sanction for a federal fishery violation could obtain an operator's permit and work onboard another rock shrimp vessel. Thus, the final rule is preferable to the rejected alternatives.

Overall, the total costs of these actions on active, non-qualifying vessels could be as high or higher than \$1450 per vessel, or \$160,950 in the aggregate, in the short-term. Depending on circumstances, these vessels may or may not mitigate these losses by participating in other fisheries.

For the vessel owners who qualify for a limited access permit, the total annual costs of these actions could be as high as \$2238 per vessel in the first year, and \$1831 thereafter. Given that active vessels expected to qualify for a limited access permit earned between \$31,902 and \$127,319 in gross revenues per year from the rock shrimp fishery, such costs could represent between 1.8 percent and 7.0 percent of these revenues in the first year, and between 1.4 percent and 5.7 percent in years thereafter. Depending on the profit margins associated with activity in this fishery, these losses could be considered substantial, at least for some of the affected small entities. However, it is expected that future gains in the fishery would offset the short-term costs to these small entities. The Council's industry representatives (Rock Shrimp Advisory Panel) recommended that the Council consider a limited access program to avoid a situation where the current overcapacity problem, the primary source of which is the large number of latent permits, is exacerbated and thus increases the risk that firms