

**Appendix A. Alternatives the Council considered but were eliminated from detailed study and a brief discussion of the reasons for their having been eliminated.**

This section describes alternatives to the proposed actions that the Council considered in developing this document, but decided not to pursue. The description of each alternative is followed by a summary statement of why it was eliminated from more detailed consideration.

**REJECTED ALTERNATIVES FOR THE PROPOSED ACTIONS 1 AND 2 -  
Amend the Bycatch Reduction Device (BRD) Framework to adjust Council authority in regard to modifications of the BRD testing protocol and Amend to adjust the criteria for certification**

**Rejected Alternative 1. Lower the bycatch reduction criteria from the current levels (40% reduction in the numbers of spanish mackerel and weakfish or 50% reduction of the bycatch component of fishing mortality for both species).**

Rationale for elimination: This could be perceived as being less restrictive on reducing bycatch.

**Rejected Alternative 2. Reduce the confidence interval but not lower than 50%.**

Rationale for elimination: This could be perceived as being less restrictive on reducing bycatch since there is a greater probability that devices that do not meet the criteria could be selected.

**Rejected Alternative 3. Withdraw the BRD protocol and request the Secretary of Commerce to implement a BRD protocol as a part of the Weakfish Plan under the Atlantic Coastal Act.**

Rationale for elimination: This would remove the Council from involvement in methods to reduce bycatch in the shrimp fishery.

**Rejected Alternative 4. Remove Target Species, emphasize university and industry participation for testing and the sampling protocol for BRDs certification, and testing should be carried out using nets without TEDs .**

Rationale for elimination: This was a recommendation from the Shrimp AP at the September 3, 2002 meeting. The Committee removed this alternative since it was combined with Action 1.

**Rejected Alternative 5. Increase the sample size to test new BRDs without changing the null hypothesis.**

Rationale for elimination: Testing BRDs is expensive and the sample size would have to be increased dramatically to render useful statistical comparisons. If the Council were to retain the currently approved statistical testing methodology, it would require an eight fold increase in sample size to get around the problem of the high probability of rejecting BRDs that are effective in meeting the Council's criteria. This could become prohibitively expensive for the agency and thus hinder the testing of new BRD designs.

**Rejected Alternative 6. Rely only on NOAA Fisheries testing of new BRDs.**

Rationale for elimination: Testing BRDs is expensive and the entire burden would be placed on NOAA Fisheries. In addition, this would not address the specific problems identified. The BRD and Shrimp Advisory Panels were strongly opposed to this alternative as it would not allow the industry to participate in the testing program.

**Rejected Alternative 7. For a new BRD to be certified, it must be statistically demonstrated that such a device can reduce the total weight of finfish by 50 percent.**

Rationale for elimination: Only one BRD currently certified in the southeast U.S. shrimp fishery meets a criterion of 50 percent. The Jones-Davis BRD, currently certified for use in the Gulf of Mexico has been demonstrated to reduce the total weight of finfish by greater than 50 percent (Table 3.1-6, page 52). All other BRDs certified for use in the Gulf of Mexico or South Atlantic have been shown to reduce finfish bycatch by 30 to 45 percent. Limited information from studies in North Carolina (see page 51) indicated the potential for large fisheyes and the Expanded Mesh BRDs to achieve approximately a 50 percent finfish reduction, but these values have not been repeated in other areas during other tests. The Jones-Davis BRD has not been tested in the South Atlantic; it has only been tested in the offshore Gulf of Mexico. The bycatch reduction results from the Gulf of Mexico may not be applicable to the more shallow-water fishery as prosecuted in the South Atlantic region.

The SAFMC's intent is to maintain flexibility in the BRDs certified for use in the South Atlantic EEZ to best achieve an ecosystem approach to fishery management. By maintaining the BRDs currently certified in the fishery, shrimp fishermen may choose a BRD type that may be best suited to particular fishing conditions, while maintaining a recognized reduction in finfish. Establishing a minimum criterion that does not appear to be achievable on a regular basis could stifle any efforts to develop innovative concepts that would improve BRD performance.

**Rejected Alternative 8. A suite of 10-15 commonly occurring species be used routinely for BRD testing. These would be fishes that occur in sizes that have some hope of escaping a typical BRD. If BRDs are designed that can release smaller fishes, then small species could be included in the design.**

Rationale for elimination: NOAA Fisheries does not agree that a suite of 10-15 species should be used as a BRD certification criterion. Action 2 in Amendment 6 is intended to allow a more flexible testing procedure. Section 4.2.2.1 notes the logistic constraints imposed by the current protocol, which requires concurrent data collection on 2 specific species. Increasing that requirement to 10-15 species (even if they are common species) would only exacerbate logistic issues associated with meeting the criteria for certifying new BRDs.

**REJECTED ALTERNATIVES FOR PROPOSED ACTION 3 – Establish a method to monitor and assess bycatch in the South Atlantic rock shrimp and penaeid shrimp fisheries**

**Rejected Alternative 9. Require shrimp permits and bycatch reporting logbook.**

Rationale for elimination: This alternative would place the reporting burden on the fishermen without the benefit of observer coverage. It would not be reasonable to ask shrimp fishermen to weigh and record all bycatch since the volume of bycatch is large and this task would significantly add to the overall time and monetary cost of the fishing operation. Overall bycatch can comprise more than 50% of the total catch by weight.

**Rejected Alternative 10: Utilize fishery independent data to monitor and assess bycatch.**

Rationale for elimination: An example of this data collection initiative could include research vessel surveys of the shrimp fishing grounds at periodic intervals. The frequency of these surveys would depend on the cost, available resources for this purpose and the level of coverage needed to provide statistically valid estimates of bycatch in the shrimp fisheries.

Data from research trawls could then be utilized with existing information to estimate the total bycatch in the shrimp trawl fishery. Also, samples taken would allow for identification of the species composition, length/weight distribution, and bycatch to shrimp ratios. One issue is whether these research trawl efforts would be representative of the catches in the shrimp industry that may operate under different conditions.

**Rejected Alternative 11: Observer coverage should be in the range of 20-50% of all trips.**

Rationale for elimination: The estimated cost of observer coverage on 20-50% of trips would be between \$7.2 and \$18.0 million per year. Observer coverage of this range is probably not possible, as the current annual of funding of observer coverage for the south Atlantic is approximately \$160,000 annually.

**Rejected Alternative 12: In this and future amendments set caps on bycatch of recreationally and commercially targeted species, endangered species and other species. Stop fishing when these caps are met.**

Rationale for elimination: This action is not ready for implementation. In order to set caps on bycatch on recreationally and commercially target, endangered, and other species, the Council and the NOAA Fisheries would first need a relatively reliable estimation of bycatch in this fishery. The last comprehensive study was in 1997 (Nance et al. 1997). Action 3, in establishing a method to monitor and assess bycatch in the South Atlantic rock shrimp and penaeid shrimp fisheries, would presumably provide these estimates. Once this bycatch estimation program is established, the Council could be in a position to consider bycatch quotas.

**Rejected Alternative 13: Amend alternative 1 to include real time reporting of bycatch and the use of VMS.**

Rationale for elimination: This action is not ready for implementation. The Council believes that pilot programs must first be conducted before the full-scale implementation of VMS and electronic bycatch reporting in the South Atlantic shrimp fishery to determine if the use of either is cost effective.

The use of VMS is currently being investigated in the rock shrimp fishery as a way to ensure compliance with no trawling in the *Oculina* Habitat Area of Particular Concern (HAPC).

The application of real-time harvest reporting for the snapper grouper fishery is under investigation in the south Atlantic. A pilot program using electronic logbooks to collect catch and bycatch information was conducted from May through November of 2002. Two commercial snapper grouper vessels participated in the pilot study.

In 2003, a follow-up study proposed by a government contract agency, in cooperation with a commercial fisherman, was funded with cooperative research funds through the National Marine Fisheries Service. This study, still in progress, will expand upon the work done in the pilot study by employing more and a greater diversity (gear, length, type of vessel) of fishing vessels from the snapper grouper fishery. A final report on the feasibility of using electronic reporting in the snapper grouper fishery should be available

in late 2005. Early problems that have been identified have included electronic unit's costs, finding units that handle saltwater, time involvement, overcoming the lack of technological experience of some fishermen and involvement of the federal government. The Council would be in a position to evaluate VMS and real-time bycatch reporting for the penaeid fishery once the rock shrimp VMS program and the real-time reporting of catch in the snapper grouper fishery are evaluated.

**REJECTED ALTERNATIVES FOR PROPOSED ACTION 4 – Minimize bycatch in the rock shrimp fishery to the extent practicable**

**Rejected Alternative 14. Require approved BRDs in the rock shrimp fishery and a closed season(s).**

Rationale for elimination: In addition to the requirement for BRDs, this alternative proposes the addition of seasonal closures. At their March 2004 meeting, the Council decided not include this alternative for detailed analysis as the effects on the industry from the combination of BRDs and closed seasons would be expected to be severe.

**Rejected Alternative 15. Implement a seasonal closure and require BRDs in the rock shrimp fishery to allow for a more valuable crop of larger shrimp to be harvested in the fall. In combination with the *Oculina* closure and the reduction in the number of rock shrimp vessels will lead to a sustainable fishery.**

Rationale for elimination: At this time the seasonal closures were considered in an attempt to reduce the total bycatch in this fishery. The data does not exist to make a determination on whether a seasonal closure in the summer will increase yield of rock shrimp in the fall.

**Rejected Alternative 16. Implement time/area closures and require BRDs in the rock shrimp fishery if the fishery is overfished or there is habitat damage.**

Rationale for elimination: Seasonal closures and BRDs are currently two alternatives to Action 4. However, the Council eliminated area closures from further consideration because it is believed that sensitive habitat areas are currently closed to shrimp trawling through HAPC designations to the extent practicable. Further, the addition of mandatory VMS usage on all rock shrimp trips through Shrimp FMP Amendment 5 has increased compliance to the closed area restrictions.

**REJECTED ALTERNATIVES FOR PROPOSED ACTION 5 – Consider the requirement for a federal penaeid shrimp permit in order to fish for or possess penaeid shrimp in the South Atlantic Economic Exclusive Zone (EEZ)**

**Rejected Alternative 17. Require a Federal penaeid Shrimp Permit in order to fish for penaeid shrimp in the South Atlantic EEZ. Require that permits be issued to create a limited access fishery in the South Atlantic EEZ.**

Rationale for elimination: The guidance under Section 303(b)(6) of the Magnuson-Stevens Fishery Conservation and Management Act that: “Any fishery management plan which is prepared by any Council, or by the Secretary, with respect to any fishery, may -- establish a limited access system for the fishery in order to achieve optimum yield if, in developing such system, the Council and the Secretary take into account--

- (A) present participation in the fishery,
- (B) historical fishing practices in, and dependence on, the fishery,
- (C) the economics of the fishery,
- (D) the capability of fishing vessels used in the fishery to engage in other fisheries,
- (E) the cultural and social framework relevant to the fishery and any affected fishing communities, and
- (F) any other relevant considerations;”

At their March 2004 meeting, the Council decided not to pursue a limited access further at this time. The Council believes that there are specific determinations that must preclude detailed consideration of a limited access system in the southeastern shrimp fishery. The detailed information includes the current effects of 1) the trade actions (anti-dumping petition) and 2) expected inflow of the shrimpers currently trawling in the Gulf of Mexico as a result of the recent establishment of a permit requirement in the area. In addition, consideration of a limited access program would need involvement of managers from the four southeastern states in determining the level of capacity reduction necessary in their particular states. At the March meeting, the Council also discussed the continuing hardships placed on the shrimping industry that most likely is/has been causing a reduction in the numbers of vessels constituting the shrimp fleet.

**Rejected Alternative 18. Implement a limited access program for the shrimp fishery using historical data for the period 1971-1974 as qualifying criteria (any level of landings). Also, these historical captains should qualify for a Gulf of Mexico shrimp permit and a rock shrimp limited access endorsement. In addition, deny permits to repeat violators of state and federal regulations.**

Rationale for elimination: This alternative does not satisfy the purpose and need of the amendment. Effort reduction, though a possible future consideration as evident by the implementation of the December 10, 2003 control date, is not under consideration in this amendment.

**REJECTED ALTERNATIVES FOR ACTION 6 AND ACTION 7 – Revise, establish, and/or retain status determination criteria for penaeid shrimp stocks and establish or revise stock status determination criteria for rock shrimp**

**Rejected Alternative 19. MSY is equal to 30%-40% static SPR (Council to specify).**

Rationale for elimination: Because shrimp are annual crops that fluctuate considerably from year to year depending primarily on environmental factors, MSY is not a particularly useful concept (Shrimp FMP (1993), pages 16-17). However, NOAA Fisheries has indicated this is a reasonable proxy for MSY for a number of species. It is important that the relationship between the MSY level and the overfished level be clearly specified. The Council has rejected this alternative as SPR is not appropriate for shrimp and because the current MSY is based upon the best available data. Also, SPR will not meet the new SFA criteria which should be biomass based estimates.

**Rejected Alternative 20. Set MSY at the level equal to 20% increase over the highest level of recorded landings.**

Rationale for elimination: This was one of the recommendations from the Shrimp AP. The Council rejected this alternative because there was little scientific justification provided by the AP for suggesting this alternative.

**Rejected Alternative 21. The South Atlantic Council's target level or Optimum Yield (OY) is 30% to 100% static SPR (Council to specify).**

Rationale for elimination: The Council rejected this alternative because SPR is not appropriate for shrimp and because the current OY is based upon the best available data. Also, OY needs to be a biomass based estimate.

**Rejected Alternative 22. Modify the overfishing definitions to include fishing mortality rates. Note: Under this alternative, one would have to develop the rationale for any such modification.**

Rationale for elimination: The Council rejected this alternative because there are no estimates of fishing mortality rates for the penaeid shrimp and rock shrimp fisheries.

**Rejected Alternative 23. For a Level V framework, as previously discussed, ABC ranges from 0.5MSY-proxy to 0.75MSY-proxy are implied, depending on the interpretation about the most recent catch history.**

<b>Rock Shrimp ABC</b>	<b>= (.5 x 6.8) to (.75 x 6.8) million pounds</b> <b>= 3.4 to 5.1 million pounds</b>
<b>White Shrimp ABC</b>	<b>= (.5 x 14.5) to (.75 x 14.5) million pounds</b> <b>= 7.3 to 10.9 million pounds</b>
<b>Brown Shrimp ABC</b>	<b>= (.5 x 9.2) to (.75 x 9.2) million pounds</b> <b>= 4.6 to 6.9 million pounds</b>
<b>Pink Shrimp ABC</b>	<b>= (.5 x 1.8) to (.75 x 1.8) million pounds</b> <b>= 0.9 to 1.4 million pounds</b>

**The Council would need to set a Total Allowable Catch (TAC) within this range and NOAA Fisheries would then track landings and close the fishery when the TAC was taken or projected to be taken.**

Rationale for elimination:

The Shrimp AP did not favor this alternative. In their opinion the Council should not set a TAC for shrimp since that would add to the enforcement burden (resources are inadequate to enforce current regulations) without gains in future yield from the fishery. More importantly, shrimp are annual crops and as stated previously there are other measures in place such as closures to protect these stocks from depletion (*Oculina* closed area, emergency closure for overwintering white shrimp, limited access in the rock shrimp fishery). Furthermore, using an ABC range for management could result in a closure for one species while another species is healthy. These types of management measures are more appropriate for longer lived species. The Council concurred with the AP's justification for rejecting this alternative.

**Rejected Alternative 24. Limit effort to the degree that the capacity to harvest in excess of the productivity of the resource during low abundance periods is removed. This would equate to the TAC as specified above.**

Rationale for elimination: The rock shrimp ABC range of 3.4 to 5.1 million pounds could be harvested by about 102 vessels based on landings in 1995 (Table 9 in Shrimp Amendment 5). The Council's preferred alternative under Shrimp Amendment 5 would allow at least 168 vessels to qualify for a limited access permit (Table 21 in Shrimp Amendment 5). This alternative would reduce that number by an additional 66 vessels.

Effort controls, such as limiting access to the degree that the capacity to harvest in excess of the productivity of the resource during low abundance periods is removed, could be applied. The limited access program in the Amendment 5 is a step in that direction for the rock shrimp fishery.



**Rejected Alternative 25. Instead of using SEAMAP data, annual abundance could be examined using existing state sampling programs. These programs take replicate samples through much of the shrimp's life cycle, and should be a much better indicator of stock abundance within a given year.**

Rationale for elimination: NOAA Fisheries agrees that state sampling programs could be used as a method to monitor shrimp stocks. The current overfished criterion for white shrimp is based on state sampling efforts, and the Council would prefer that definition be maintained, even under the proposed SEAMAP monitoring. The preferred alternative for Action 6 (SSDC for penaeid shrimp species) supports the use of data from both SEAMAP and the current state programs. SEAMAP may be more appropriate for brown and pink shrimp given that the parent stocks of these two species do not overwinter in bays and estuaries or in nearshore state waters. In contrast, white shrimp parent stocks overwinter in inshore areas, and these would be sampled by state sampling programs.

NOAA Fisheries does not agree that SEAMAP data are inappropriate, or that SEAMAP sampling may not be sufficient to adequately assess the stock of each species. As noted, on a day-to-day basis or on a week-to-week basis, the sampling may not be reflective of actual stock abundance, but the data are of value on an annual basis. These annual values are relatively stable across years. They may or may not accurately reflect true shrimp abundance for a specific year, but they still provide a stable, fishery independent index of relative abundance by which to judge yields against parent stock size.

As a result, the Council rejected this alternative.

#### **REJECTED ALTERNATIVES FOR THE PROPOSED ACTION TO REDUCE TURTLE MORTALITY IN THE SOUTH ATLANTIC EEZ AS A RESULT OF SHRIMP TRAWLING**

**Rejected Alternative 26. Prohibit night time (between one hour after sunset and one hour before sunrise) trawling for shrimp during the period April through August within federal waters off of Georgia.**

**Rejected Alternative 27. Prohibit night time (between one hour after sunset and one hour before sunrise) trawling for shrimp during the period April through August in all federal waters within the South Atlantic Council's area of jurisdiction.**

**Rejected Alternative 28. Prohibit trawling for shrimp at night and early morning during the period April through August within federal waters off of Georgia.**

**Rejected Alternative 29. Prohibit trawling at night and early morning for shrimp during the period April through August in all federal waters within the South Atlantic Council's area of jurisdiction.**

**Rejected Alternative 30. Implement seasonal night closure (April, May and June) off of Georgia and South Carolina out to 4 miles in federal waters.**

**Rejected Alternative 31. Implement weekend closures in the south Atlantic EEZ.**

**Rejected Alternative 32. Restrict the foot rope length of the trawl to 220 feet maximum length.**

**Rejected Alternative 33. Restrict the head rope length of the trawl to 220 feet maximum length.**

**Rejected Alternative 34. Explore the use of part time day/part time night closure**

**Rejected Alternative 35. Prohibit trawling for shrimp at night year round (between one hour after sunset and one hour before sunrise) in federal waters off the coast of Georgia.**

**Rejected Alternative 36. Prohibit trawling for shrimp at night (between one hour after sunset and one hour before sunrise) in all federal waters within the South Atlantic Council's area of jurisdiction.**

**Rejected Alternative 37. Extend the State of Georgia's jurisdiction out to the scallop line.**

**Rejected Alternative 38. Set up a provision for the Council to implement emergency rules to protect sea turtles.**

Rationale for elimination: The Council decided to defer any action(s) to address incidental turtle mortality to Amendment 7 of the South Atlantic Shrimp Fishery Management Plan. Deferral of this measure would allow for the effect of the new TED rule to be evaluated. Also, due to current market forces where imports are having a significant negative effect on domestic prices, there may be a significant reduction in shrimp trawling effort in the South Atlantic. In addition, the Council will broaden the purpose and need for night time closures when this action is reconsidered. The intent is to broaden the purpose and need of this action and examine how night time closures, via a reduction in effort, would affect not only sea turtle mortality but also shrimp conservation, bycatch, and also by making Federal regulations concurrent with State regulations facilitate law enforcement.

## **REJECTED ALTERNATIVES NOT AFFILIATED WITH A PROPOSED ACTION**

**Rejected Alternative 39.** Prohibit fishing for shrimp within 1 mile of the coast.

Rationale for elimination: Since the commenter did not provide the rationale for the suggestion, the Council was not able to fully address the comment. However, this measure does not satisfy the current purpose and need for actions in this amendment. Also, there are also administrative concerns as the states regulate the fisheries within 3 miles of the south Atlantic coast.

**Rejected Alternative 38.** All current quotas should be reduced by 50% and by 10% annually afterwards.

Rationale for elimination: This is not relevant for shrimp because there are no quotas in place. Also, quota restrictions are implemented when there is overfishing or the respective fishery is overfished.

**Rejected Alternative 39.** States should implement a regional shrimp license.

Rationale for elimination: The administrative process does not allow the Council to direct the South Atlantic states to implement a regional license for the shrimp fishery of the south Atlantic. In addition, the proposed federal permit will help fulfill some of the data requirements that are federally mandated (i.e. National Standard 9 of the Magnuson-Stevens Fishery Conservation and Management Act, the Regulatory Flexibility Act).

**Rejected Alternative 40.** Minimum size limit on shrimp.

Rationale for elimination: This measure does not fit in with the current purpose and need for actions in this amendment (refer to Section 1).