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## **5.0 MITIGATION AND UNAVOIDABLE IMPACTS**

### **5.1 Mitigation Measures**

The alternatives were specifically selected to mitigate potential adverse impacts on the environment. As a result, mitigation was explicitly addressed in the analyses conducted for selecting the preferred alternatives in other sections of this FEIS including Chapters 4, 6, 7, 8, and 9. At this time, NMFS has not identified other mitigation measures to offset adverse impacts. NMFS would monitor the impacts of the management measures in the preferred alternatives and would consider other mitigation measures in the future as necessary. NMFS chose to develop alternatives that avoided, minimized, and mitigated adverse ecological, social and economic impacts from the outset, thus avoiding to the greatest extent practicable residual or unavoidable adverse impacts. That approach is reflected in changes to the preferred alternatives between the DEIS and FEIS based on the comments of public and private stakeholders and additional agency analysis and is explained in earlier chapters. While the FEIS identifies NMFS preferred alternatives, the Agency retains discretion to choose any reasonable alternative evaluated in this FEIS.

As stated above, mitigation measures were explicitly addressed in the analyses conducted for selecting the management measures in the preferred alternatives. For example, in analyzing possible quotas and retention limits for SCS and blacknose sharks, the preferred alternative was identified because it balances the need to end overfishing based on recent assessments, while allowing for the non-blacknose SCS and limited blacknose shark fisheries to continue. For pelagic sharks, the preferred alternatives were identified to address mortality of shortfin mako sharks, which were determined to be experiencing overfishing. NMFS would address overfishing at the international level and promote the release of shortfin mako sharks that are brought to the vessels alive. This would address the majority of shortfin mako mortality that occurs outside of the United States. To mitigate some of the potential impacts as a result of the preferred alternatives, gillnet gear would, under the preferred alternative for commercial gear, continue to be an authorized gear type for the Atlantic shark fisheries. In addition, directed and incidental permit holders would still be authorized to land non-sandbar LCS, sandbar sharks (in the shark research fishery), non-blacknose SCS, blacknose sharks and pelagic sharks, as established in this amendment and Amendment 2 to the Consolidated HMS FMP. The quotas and retention limits in the preferred alternatives comply with the mandate to end overfishing, while still providing a reasonable opportunity to target sharks and harvest the allocated quota.

The NMFS Southeast Regional Office Protected Resources Division (SERO PRD) has initially determined that management of smooth dogfish may adversely affect ESA-listed species. Based on this determination, NMFS initiated formal Section 7 consultation in accordance with the ESA, paragraph 7(a)(2), and provided SERO PRD with the information required by 50 CFR 402.14(c). SERO PRD is in the process of preparing a BiOp, which will not likely be issued prior to the Agency signing a Record of Decision for the final Amendment 3 to the 2006 Consolidated HMS FMP and implementing regulations. Use of gillnets in the shark fishery were considered in the 2008 BiOp for Amendment 2 to the 2006 Consolidated HMS FMP, and while there are likely direct, minor adverse effects in the short-term, the gear type, location and effort

are not likely to result in jeopardy of the listed species in the long-term. Under the No Action alternative for smooth dogfish (F1), these interactions and minor adverse effects would continue to occur because the fishery is currently operating in federal waters. Moreover, the ability for NMFS to minimize the take associated with gillnets for smooth dogfish would be limited in the absence of the preferred management measures, which would require data collection, permitting, and observer coverage. These effects are being explored in more detail with SERO PRD, who will issue a BiOp addressing the effects of the smooth dogfish fishery. NMFS does not anticipate that the smooth dogfish BiOp will reveal new or significant information regarding effects on listed species beyond those considered in the 2008 BiOp for Amendment 2 to the 2006 Consolidated HMS FMP.

Under the No Action Alternative for smooth dogfish, based on the 2008 BiOp for Amendment 2 to the 2006 Consolidated HMS FMP, the use of shark gillnets, including those used to fish for SCS, may result in interactions with species protected under the ESA, such as the northern right whale, smalltooth sawfish, and several species of sea turtles. Since the primary gear type associated with the smooth dogfish fishery is gillnets, it is anticipated that interactions with protected species, and the resultant potential adverse effects, will continue to occur. The effects of fishing with shark gillnets was fully evaluated in the 2008 BiOp for Amendment 2 to the 2006 Consolidated HMS FMP, which recognized that gillnet shark fishing for SCS occurs primarily from FL north to Cape Hatteras, NC, although the gear type is banned by legislation in state waters of FL, SC and GA, which may force gillnet shark fishing into federal waters where the gear type is less effective. Moreover, the 2008 BiOp for Amendment 2 to the 2006 Consolidated HMS FMP recognized that the shark gillnet fishery in both the Southeast and mid-Atlantic are subject to the restrictions imposed by the ALWTRP, and concluded that based on the ALWTRP, adverse effects to humpback and North Atlantic right whales were extremely unlikely, and thus discountable. The ALWTRP will continue to apply to shark gillnet fisheries, including smooth dogfish, in state and federal waters, throughout the action area.

NMFS is currently engaged in formal consultation under the ESA with SERO PRD to determine the potential level of incremental effect that may arise as a result of the preferred management measures for smooth dogfish in the FEIS. SERO PRD has not yet issued a final BiOp for the smooth dogfish fishery. NMFS will review that BiOp once it is issued and supplement the analysis in this FEIS if the consultation reveals any new or significant effects with respect to the interaction between gillnet fishing for smooth dogfish and protected species that were not considered in the 2008 BiOp for Amendment 2 to the 2006 Consolidated HMS FMP. This FEIS incorporates by reference the 2008 BiOp for Amendment 2 to the 2006 Consolidated HMS FMP. A detailed discussion of the effects of such management relevant to the shark fishery is included in that document. NMFS does not anticipate any substantial change in impact to protected species since the measures proposed for smooth dogfish management are largely administrative, and thus unlikely to affect the manner and extent of fishing for smooth dogfish or redistribution of effort into other fisheries. NMFS assumes there is a correlation between fishing effort and protected species interactions. Since smooth dogfish management measures would establish a quota and permit requirement, fishing effort for smooth dogfish would be capped or slightly reduced with a corresponding diminishment of the possibility of increased protected resource interactions. In addition, increased observer in the smooth dogfish

fishery as a result of a federal permit requirement would better characterize protected resources interactions with the smooth dogfish fishery.

Under the preferred alternative (F2), the implementation of the management measures would be delayed until the beginning of the smooth dogfish fishing season in 2012 to allow time to consider and evaluate the information and requirements included in the final smooth dogfish BiOp. If the assessment of effects in that BiOp provides new and meaningful information not considered in this FEIS, NMFS will supplement the FEIS, as appropriate, before implementing any management measures proposed in F2. In the interim, NMFS will not impose any management authority or related conservation and management measures on the smooth dogfish fishery, and thus will not cause any effect on protected species related to such management. In other words, preferred alternative F2 would maintain the status quo with respect to the smooth dogfish fishery as it relates to protected species prior to receiving a final BiOp. While NMFS would finalize the rulemaking with measures for blacknose shark and shortfin mako sharks becoming effective 30 days after publication of the final rule in the Federal Register, the measures, if any, selected for management of smooth dogfish would be deferred to allow NMFS, in consultation with SERO PRD, to develop reasonable and prudent alternatives (RPAs) that could be implemented while avoiding adverse impacts to listed species, as necessary.

While NMFS prefers alternative F2 at this time, it retains discretion to select any reasonable alternative considered in this FEIS, including the alternative to take no action. If, after consideration of the information gathered through outreach to stakeholders, the smooth dogfish BiOp, and this FEIS, NMFS chooses to proceed with a different alternative than what was evaluated in this FEIS, re-initiation of formal consultation could be necessary if the alternative deviated from information, analyses, conclusions and authorizations in the final smooth dogfish BiOp for the preferred alternative. Moreover, NMFS would, if appropriate, amend the final rule and FMP amendment and supplement this FEIS before implementation of such management measures could occur.

In summary, while many of the actions taken in this amendment impose additional restrictions on the shark fishery, NMFS specifically developed and identified preferred alternatives that minimize economic impacts while accomplishing the mandate to end overfishing and implement a rebuilding plan for overfished shark stocks. As a result, in addition to the requirements of the 2008 BiOp for Amendment 2 to the 2006 Consolidated HMS FMP, NMFS has not identified any additional reasonable and practicable mitigation measures which might be considered for implementation.

## **5.2 Unavoidable Adverse Impacts**

### **5.2.1 Unavoidable Adverse Socioeconomic Impacts**

Other than the No Action Alternative, there would be unavoidable adverse socioeconomic impacts resulting from implementation of any action alternative including, the preferred SCS quota alternative and corresponding SCS management measures. NMFS must administer and operate under the National Standards of the Magnuson-Stevens Act, which includes a mandate to prevent overfishing and rebuild overfished stocks. In trying to rebuild shark stocks and meet the Magnuson-Stevens Act mandate of ending overfishing, NMFS would

reduce fishing mortality and effort under the preferred SCS quota alternative. This might result in directed and incidental shark permit holders and dealers redirecting to other fisheries due to lowered quotas. However, NMFS has changed the preferred SCS quota alternative, due to public comment and additional data analysis, to allow for greater opportunities for fishermen to fish for the non-blacknose SCS while still keeping blacknose shark mortality below levels recommended by the stock assessment to rebuild this overfished stock. In addition, NMFS has changed the commercial gear restriction preferred alternative to the No Action alternative (alternative B1), which would maintain the status quo and would not prohibit gillnet gear from South Carolina south, as proposed in the DEIS. These preferred alternatives would be mitigating factors for the reduced quotas, as gillnet gear would continue to be an authorized gear and those fishermen who solely fish with this gear can continue to operate in the shark fishery. In the analyses for selecting the preferred alternatives, NMFS determined that the management measures are necessary in order to comply with the Magnuson-Stevens Act mandate to end overfishing of blacknose sharks. In addition, the preferred alternatives have been determined to be the most feasible alternatives to rebuild shark stocks according to the most recent assessments.

### **5.2.2 Unavoidable Adverse Ecological Impacts**

As described above, the preferred alternatives for blacknose and shortfin mako sharks and the corresponding management measures are expected to have positive or neutral conservation benefits for shark and bycatch species. This is because the preferred alternatives were specifically selected to mitigate any potential adverse impacts. However, this action may result in unavoidable adverse effects in the form of incidental take of listed species up to the level of authorized take in the incidental take statements of the 2008 BiOp for Amendment 2 to the 2006 Consolidated HMS FMP. In addition, there may be incidental take of marine mammals with the continued use of gillnets under the preferred alternatives of the FEIS.

### **5.3 Irreversible and Irrecoverable Commitment of Resources**

The management measures in the FEIS would not result in any irreversible and irretrievable commitment of resources. Beneficial ecological impacts are expected due to reduction of quotas, and current retention limits and commercial gear restrictions for the Atlantic shark fishery. Because of this, the Agency expects that fishing effort and bycatch of non-target species and protected resources may decrease.