

5.0 PROBLEMS IN THE FISHERY

5.1 OVERFISHING

Sharks are particularly vulnerable to overfishing, despite being the top predators in the oceans. Unlike most fish, which may produce millions of eggs, sharks have few young (generally 2 to 25 pups every second year). They have low reproductive capability, are slow to reach sexual maturity, and have long reproductive cycles. For example, sandbar sharks, which comprise about 80 percent of the landings of the large coastal species group, grow very slowly and reach maturity about 20 years old. Bull sharks, a species that is sometimes a significant component of landings, particularly in the Gulf of Mexico, have similar characteristics. Blacktip sharks, the second most important species in the large coastal species group, reach maturity at age seven. On average a female sandbar gives birth to nine pups biannually, while a female blacktip gives birth to four pups biannually. Thus, sharks are especially vulnerable to stock depletion. A collapse of the shark complex or individual species could result from continued overfishing.

Parrack (1990) conducted a stock assessment for three separate shark species groups: large coastal, small coastal, and pelagic and calculated MSYs for each group. His analysis indicated that the large coastal shark species group is overfished (catch exceeds production), and a stock rebuilding program is required to achieve MSY. The species group, comprised of small coastal sharks, is fully exploited. Parrack was unable to carry out a quantitative assessment of the pelagic species group due to data limitations and concluded that there was no evidence available to suggest that the MSY is being exceeded but the group likely was fully exploited. The proposed FMP incorporated this assessment and a management regime to rebuild the large coastal species group that appeared to be overfished and to maintain the small coastal and pelagic stocks at the current levels.

During the public comment periods held on the proposed FMP and on the proposed rule, significant new fishery information was received from fishermen, fish dealers/processors, and several state fishery management agencies. This new information included: (1) data showing higher fishery removals in recent years than those used as a basis for determining MSY and stock conditions in the NMFS 1990 shark stock assessment; (2) records on the size and frequency of shark species caught in commercial fisheries; and (3) information on the commercial fishing fleet. NMFS reviewed this new information and determined that it could result in significantly revised conclusions about the abundance, productivity, and condition of the managed shark species from those in the proposed FMP that were based on the NMFS 1990 stock assessment for Atlantic coast sharks (see Parrack, M.L., A Study

of Shark Exploitation in U.S. Atlantic Coastal Waters during 1986-1989, 1990).

To ensure that all final FMP management measures are based upon the best scientific information available, NMFS undertook and completed a revised assessment of the condition of the large coastal shark species group using the above new/corrected information provided by the states and fishermen. The revised assessment was subjected to a peer review by a Review Committee consisting of both outside scientific experts and other NMFS stock assessment biologists; the Committee issued its final report on November 23, 1992 (see Appendix II, Report of the Atlantic Coastal Shark Fishery Analysis Review, November 23, 1992).

The Committee Report concludes, among several things, that the large coastal group is overfished (overfishing occurred in all years from 1986 through 1992 except for 1987 and 1990) and that calendar year 1993 landings for the large coastal should be reduced below the calendar year 1991 landings level of 4,319 mt dressed weight (see Appendix II). The Committee Report sets forth three options for establishing calendar year 1993 fishery landings (recreational and commercial combined) for the large coastal group that are all below the 1991 landings level; each option provides varying degrees of conservation benefits (see Appendix II).

5.2 LACK OF MANAGEMENT

At present, sharks are not managed throughout their range by international agreements or conventions, nor within U.S. waters (Federal or state waters). Several states have implemented regulations that establish recreational bag limits or commercial trip quotas and finning prohibitions (North Carolina, Virginia and Texas.) Several other states have imposed regulations that indirectly impact shark fishing activities, such as gear restrictions and data collection. Given the migratory patterns of most sharks, i.e., between Federal and state waters, between states, and between Federal and international waters, it is critical that sharks be managed comprehensively. Ideally, sharks need to be addressed on a species-by-species basis or other logical shark complex basis. The Gulf of Mexico Fishery Management Council prepared a draft shark FMP in 1979. An advance review by NMFS concluded the management measures were unenforceable. In turn, the plan was never finalized or officially submitted for processing. In January 1989 the Mid-Atlantic Fishery Management Council, in cooperation with the five Councils, developed a shark data collection program under the provisions of the Magnuson Act. The proposal was denied because of the exhaustive nature of needs that were not necessarily required to begin the management plan process, and the extent of funding requested to undertake the program. In June 1989 the

five east coast councils, concerned that the increased landings of sharks attributed to the growing foreign demand for shark fins and domestic demand for shark meat, requested the Secretary to develop the Shark FMP.

5.3 FINNING

There is growing demand in Asia for shark fins, the main ingredient of shark fin soup. The demand has increased due to recent easing of import restrictions into China. This market has spurred the practice of finning (removing only the fins and discarding the remainder of the shark to the sea). Dried fins currently bring U.S. fishermen as much as \$22 per kilogram in Florida. The U.S. public has decried this practice, perceiving it as wasteful and cruel. The extent of finning is unknown.

5.4 BYCATCH MORTALITY AND WASTE

Shark mortality of adults and juveniles occurs in both recreational and commercial fisheries, especially as incidental catch in the commercial swordfish, tuna, and shrimp fisheries. Over the period 1979-1988, U.S. shark landings averaged over 6,000 mt annually, while total yearly discards averaged almost 16,000 mt (NOAA, 1989b). Much more can be done to conserve shark resources, despite a considerable amount of bycatch. The required TEDs in the shrimp trawl fishery, and restrictions in other nondirected fisheries, will help.

5.5 INADEQUATE INFORMATION BASE

The Mid-Atlantic Fishery Management Council convened two workshops for shark experts (1986 and 1988) to identify management information needs. The five Councils, NMFS, and academia participated and concluded that the shark information base was inadequate to develop a species-specific FMP; i.e., separate management measures for each species. Data on landings, catch and effort, discard rates, and mortality were lacking. Cited were needs for management information on stock structure, stock recruitment relationships, and yield per recruit; biological information on pupping and nursery grounds, age and growth, and reproductive capabilities; and socioeconomic information on the users of sharks.

5.6 LIMITED PUBLIC EDUCATION

Sharks are generally feared. The impression exists that "the only good shark is a dead shark." Popular movies have exploited and increased the negative image of sharks. The public needs to learn that sharks are a valuable natural resource, play an important role in the ecosystem, and must be conserved.

5.7 HABITAT LOSS AND DEGRADATION

Habitat loss and degradation continue in the U.S. despite efforts to reverse this trend. Unsuitable habitat conditions, especially in nursery areas, undoubtedly affect sharks, but quantitative relationships between habitat and shark production have not been determined. It is certain, however, that the continuing degradation of habitat will adversely affect shark resources.

5.8 MERCURY ADVISORY

On May 13, 1991 the Department of Health and Rehabilitative Services (HRS) State of Florida, issued a health advisory urging limited consumption of sharks. Samples of sharks revealed average mercury concentrations in excess of current U.S. Food and Drug Administration and state standards. Because the samples were taken at the retail level, it is not known whether the high mercury content is limited to certain types or sizes of sharks or specific waters. Methyl-mercury from food is readily absorbed by the human digestive system and chronic consumption of excessive amounts produces toxicity of the central nervous system. Additional testing of samples will be made at Federal and state laboratories before regulatory action, if any, is taken. Thus, until additional information is acquired, the situation is not considered to be within the scope of this FMP.