

These analyses found that the data and models used for blacktip sharks were particularly sensitive to a number of factors and that changing some of the factors could lead to results that indicated the stock was either rebuilt or was well below sustainable levels. The sensitivity of the results (to computational issues) was largely attributed to the CPUE series within the analyses, which showed contradictory trends. As a result of these sensitivity analyses, before the actual 2002 stock assessment was conducted, scientists and other stakeholders examined each time series and model available and determined which ones were the most appropriate for use. Given these decisions on data inputs and modeling approaches, the condition of blacktip sharks was determined to be rebuilt. The peer review of the 2002 LCS stock assessment found that the models and data used were appropriate.

*Comment 3:* Given the short period of shark management and the long time required for sandbars to attain maturity, the assertion that sandbar sharks are restored is something of a scientific miracle. Sandbar sharks used to be so common in the mid-Atlantic that they could be counted upon to save almost every summer shark trip. After a few years of intense commercial shark fishing, that species was practically wiped out. We still do not see them.

*Response:* The latest LCS stock assessment constitutes the best scientific information available. It was conducted by some of the most respected shark and stock assessment scientists in the United States and, as is attested by the results of the peer review, used state-of-the-art models. Additionally, the data and models used in the stock assessment were examined and debated by scientists, environmentalists, and fishermen in a stock evaluation workshop before the stock assessment itself. The assessment found that sandbar sharks are no longer overfished but are experiencing overfishing. It is important to note that a change in status from overfished to rebuilt does not mean that the population is restored to levels of an unexploited or lightly exploited population. In general, a fish population that is capable of producing MSY on a continuous level (*i.e.*, a population that is not overfished) is roughly half that of an unexploited population. Thus, NMFS would not expect sandbar shark catch rates to return to the catch rates that occurred at the start-up phases of either the recreational or commercial fisheries.

*Comment 4:* How can a species have overfishing occurring but not be overfished?

*Response:* Overfishing relates to the rate of fishing mortality and indicates that the standing stock is being reduced because removals exceed the capacity of the stock to replace itself. Fishing pressure or fishing mortality needs to be reduced on a species that is experiencing overfishing or the species will become overfished. A species is overfished if the biomass or the number of fish in the population is too low to produce the desired level of harvest on a continuing basis. In the case of an overfished species, fishing mortality must be reduced in order to keep more individuals in the population and contributing to reproduction. An overfished population cannot rebuild unless overfishing is stopped.

*Comment 5:* NMFS received several comments regarding the accuracy of species identification and its impact on data quality and the accuracy of stock assessments. Comments included: NMFS needs to improve species identification and reporting by shark dealers. The data you are using is wrong because fishermen have normally listed everything as a "sandbar shark." NMFS should work within the Atlantic Coastal Cooperative Statistics Program (ACCSP) to better standardize fishery-dependent survey data collection and address the tendency of dealers to simply categorize shark landings as "sharks."

*Response:* Since 1993, species-specific reporting has been required. However, some fishermen and dealers still report sharks as "shark" or as "large coastal." Both the small and large coastal shark stock assessments use a variety of data including fishery-dependent (*e.g.*, self-reported data such as logbooks) and fishery-independent data (*e.g.*, research cruises with a set sampling scheme). While some fishermen or dealers may report the incorrect species on logbooks, other fishermen and dealers do report the correct species, as is required by the regulations, and observers or scientists trained in species-identification report the correct species level data. Both stock assessments conducted numerous sensitivity analyses to examine what happens to the results of the models if only relative abundance data reported by fishermen or only data reported by scientists are used. The overall results of the stock assessments consider these sensitivity analyses and constitute the best scientific information available at this time. Recognizing that the accuracy of stock assessments and management can be improved with correct species-identification, NMFS will be releasing a species-identification guide shortly and will be examining, in a future rulemaking, methods of requiring

mandatory workshops for both commercial and recreational fishermen in order to improve, among other things, species-identification. NMFS continues to work within the ACCSP and other relevant forums to improve the reporting process of shark data.

*Comment 6:* How independent were the peer reviews?

*Response:* For the 1998 and 2002 LCS stock assessments, Natural Resources Consultants, Inc. (NRC) hired several non-NMFS scientists to conduct the peer review. These non-NMFS scientists provided information to show they had no conflict of interest. NMFS provided NRC with all the supporting documentation the scientists required such as copies of the stock assessment and the related documents. However, pursuant to a court-approved settlement agreement, NRC did not disclose the identities of the peer reviewers to fisheries management staff at NMFS until after the reviews were complete.

*Comment 7:* All shark fishing should be stopped. The PEW Report and other reports by independent, unbiased scientists indicate that overfishing is occurring. NMFS is not accurate when it says "sandbar sharks are no longer overfished."

*Response:* As explained above, the current LCS stock assessment underwent an independent peer review and is the best available science on the status of the stocks.

*Comment 8:* NMFS received a range of comments regarding the menhaden fishery and shark bycatch. These comments included: The menhaden fishery catches a lot of sharks. Does NMFS incorporate bycatch information from the menhaden fishery in the stock assessment? NMFS should monitor and control the bycatch in the menhaden fishery.

*Response:* The Gulf of Mexico menhaden purse seine fishery does have some bycatch of sharks. It is estimated that approximately 75 percent of the sharks encountered in the fishery die, and 97 percent of the sharks encountered are LCS while 3 percent are SCS. The 2002 LCS stock assessment included these discard estimates for LCS, blacktip, and sandbar in the Gulf of Mexico menhaden purse seine fishery from 1981 to 2001. Additionally, different sensitivity analyses were conducted to determine how much the results would change if data extended back to 1964. Results from those sensitivity analyses indicated that extending the series of menhaden discard estimates back in time had almost no effect. NMFS will continue to work with the Gulf States Marine Fisheries Commission and the Gulf of