

*Comment 4:* NMFS should consider time/area closures to protect adult dusky sharks as well as juveniles.

*Response:* The time/area closure is based on information relating to all life stages of dusky sharks, including adults. The time/area closure is expected to reduce the catch of all dusky sharks by approximately 79 percent and adult dusky sharks by 65 percent.

*Comment 5:* Any closure that is considered should be imposed on all commercial and recreational shark gear.

*Response:* Recreational gears have the capability to release sharks alive, whereas many sharks, and dusky sharks in particular, have low survival rates when caught with commercial gear. This is due in part to the longer soak times required in the commercial fishery. Dusky sharks, for example, have an at-vessel mortality rate of 82 percent. If data in the future indicate adverse impacts from other gears, NMFS will consider closures for other gear types, including recreational.

*Comment 6:* The Environmental Protection Agency (EPA) recommends marine protected areas (MPAs) for overfished stocks; marine protected areas for sharks that exhibit territorial behavior in breeding would likely benefit.

*Response:* NMFS has selected an alternative that implements a targeted time/area closure to protect prohibited dusky sharks and juvenile sandbar sharks which are currently experiencing overfishing. This time/area closure is a type of MPA and is also an effective means to reduce fishing mortality and help rebuild stocks. Based on the best available scientific data, NMFS has taken steps to identify and protect EFH and Habitat Areas of Particular Concern (HAPCs) for both dusky and sandbar sharks. The time/area closure will prevent the catch of both pregnant females and neonates during the critical pupping stage.

*Comment 7:* Any regulations imposing a closure should have a clear scientific exit strategy to reduce and/or eliminate the closure when scientifically justified.

*Response:* NMFS agrees that closed areas should be re-opened when scientifically justified and will thus be reviewing the status of both dusky and sandbar sharks, the two species most affected by the time/area closure, in the near future. Based on the status of those stock assessments and other information regarding the effectiveness of the closure, NMFS may consider revising the size and scope of the closure, the duration of the closure, and potentially elimination of the closure.

*Comment 8:* NMFS received several comments specific to the proposed time/area closure. These comments included: Closing nursery areas has always been seen as one of the most beneficial management measures possible for sharks and has been recommended by nearly every shark stock assessment group assembled; thus we support the proposed time/area closure and NMFS efforts to work with the two Fishery Management Councils to protect important state nursery waters. NMFS should close the proposed mid-Atlantic region to bottom longline fishing from January through July to protect nursery and pupping areas.

*Response:* Time/area closures are an important tool in reducing mortality of prohibited species and juvenile life stages of sharks, and the current time/area closure will help to protect dusky sharks and rebuild sandbars sharks.

*Comment 9:* NMFS should look at the fish being sold; this will show that the fishermen are not selling small sharks. NMFS should look at the average carcass weight, not length.

*Response:* One of the principal reasons for the time/area closure was to protect prohibited dusky sharks, which are illegal to sell. Additionally, because dusky sharks do not mature until approximately 10 ft (3 m) fork length (FL), even large dusky sharks are considered juveniles. For years, the shark observer program and many other researchers have been collecting length data for sharks because many sharks are released without being landed and weights would be difficult if not impossible to collect. The length-to-weight relationship is used by scientists to determine the life stage and sexual maturity of most fish species, including sharks. Shark bottom longline observer data show high rates of neonate and juvenile sandbar sharks less than 137 cm FL being caught and landed in the winter fishery off of North Carolina. The 137 cm FL corresponds to the recreational minimum size limit for sharks which is 4.5 feet FL. It also corresponds to the female smallest size at maturity. For instance, one data series for the winter fishery off North Carolina in 2001 shows approximately 83 percent of 1,188 sandbar sharks observed caught were less than 137 cm FL, with an average length of approximately 120 cm FL. Sandbar shark pups are born from March to early August and measure about 60 cm FL at birth.

*Comment 10:* The information used to support the time/area closure is flawed because shark observers are mis-identifying dusky sharks.

*Response:* The commercial shark bottom longline fishery observers are trained to identify all species of sharks, including dusky sharks. NMFS acknowledges that some misidentification of sharks may occur, however, the preponderance of the data, including fishery independent data collected by researchers and trained biologists who participate in tagging efforts indicates that the area off North Carolina is a pupping and nursery area for dusky as well as sandbar sharks. NMFS did not rely solely on information from the shark observer program to make its determination for a time/area closure, but relies on many other data sources as well.

*Comment 11:* Dusky shark catches before 1999 should not be considered because we could not land them then; since 1999, our catch of dusky sharks has decreased.

*Response:* Since dusky sharks were prohibited in June 2000, the data from that point forward has been analyzed separately from earlier data in the final Amendment. However, it is also important to examine data prior to 2000 because it helps to establish the high rate of historical bycatch and the importance of the area as a pupping and nursery ground for both dusky and sandbar sharks. In analyzing the shorter time period, NMFS found that the number of dusky sharks being caught off North Carolina and elsewhere has declined since June 2000, but that a much higher percentage of dusky shark are observed caught in the time/area closure than in other areas, particularly when the relatively small size of the time/area closure is compared to all other open areas of the Atlantic and Gulf of Mexico.

*Comment 12:* We do not support the time/area closure at this time because of the significant economic and social impacts that would result in the affected fishing communities and the fact that the document does not sufficiently analyze the closure or enforcement of the closure. If done properly, a time/area closure can benefit all concerned; however, the proposed time/area closure is not reasonable. The decision to close the area seems to be driving the science.

*Response:* The original time/area closure proposed in the draft Amendment would have closed a large area (31,487 square nautical miles) and may have had severe economic and social impacts. Based on public comments, NMFS re-analyzed the data and proposed a revised time/area closure of 4,490 square nautical miles in part to mitigate social and economic impacts on fishing communities in