

Atlantic States Marine Fisheries Commission

Coastal Sharks Technical Committee

Review of SEDAR 21 Dusky, Sandbar, and Blacknose Assessment

January 11, 2012

Present: Greg Skomal (MA DMF, Chair) Carolyn Belcher (GA CRD, VC), Julie Neer (SAFMC), Holly White (NC DMF), Bryan Frazier (SC DNR), Brent Winner (FWC), Angel Willey (MD DNR), Eric Schneider (RI DFW), Matt Gates (CT DEP), Karyl Brewser-Geisz (NMFS HMS), Scott Newlin (DE DFW), and C. Vonderweidt (ASMFC Staff).

The Coastal Sharks Technical Committee (TC) met to review the 21st Southeast Data and Review Workshop (SEDAR 21) assessment of dusky, sandbar, and blacknose shark stocks and make management recommendations to the Spiny Dogfish & Coastal Sharks Management Board (Board) based on the assessment results. The meeting began with a review of current ASMFC and federal regulations that apply to these species followed by presentations of each assessment. The TC discussed the results and technical merits of each assessment before moving to management recommendations. Following the assessment review, NMFS Division of Highly Migratory Species (HMS) staff presented the TC with details of federal implementation of the SEDAR 21 results. The TC's discussions and recommendations are as follows.

Regulations That Apply to Dusky, Sandbar, and Blacknose Shark in State¹ and Federal² Waters:

Dusky Shark

State Recreational

- Recreational anglers are prohibited from possessing dusky sharks because they are prohibited in federal waters.

State Commercial

- Included in Prohibited Species Group.
- Commercial fishermen are prohibited from possessing sharks in Prohibited Species Group and, therefore, cannot possess dusky sharks.
- State display or research permit holders may harvest dusky sharks depending on the conditions of their permit. Permit holders must report shark weight, location caught, and gear type. Aquariums holding dusky sharks must report annually to state for the life of each shark. States must report all sharks taken by display or research permit holders in annual compliance reports.

Federal Commercial and Recreational:

Fishermen cannot retain dusky sharks in federal waters. Dusky sharks have been “prohibited” in federal waters since 2000.

¹ The following lists only include regulations that are required by the ASMFC. It does not include more-restrictive regulations that some states may have voluntarily implemented.

² The following lists only give a general overview of federal waters regulations. For greater detail see http://www.nmfs.noaa.gov/sfa/hms/Compliance_Guide/index.htm

Sandbar Shark

State Recreational

- Recreational anglers are prohibited from possessing sandbar sharks because they are prohibited in federal waters.

State Commercial

- Included in Research-Only Species Group.
- Commercial fishermen are prohibited from possessing sharks in Research-Only Species Group and, therefore, cannot possess sandbar sharks.
- State display or research permit holders may harvest sandbar sharks depending on the conditions of their permit. Permit holders must report shark weight, location caught, and gear type. Aquariums holding sandbar sharks must report annually to state for the life of each shark. States must report all sharks taken by display or research permit holders in annual compliance reports.

Federal Recreational

- Recreational anglers must release sandbar sharks.

Federal Commercial

- Commercial fishermen cannot retain sandbar sharks unless they apply and are selected to participate in the shark research fishery.
- The shark research fishery had a sandbar shark quota of 87.9 mt in 2011.

Blacknose Shark

State Recreational

- Anglers may catch sharks species that are not prohibited in the federal regulations. Blacknose are not prohibited in the federal regulations and can be landed by recreational fishermen.
- Fins must be attached naturally through landing.
- No minimum size limit.
- Rod & reel and handline are only permitted recreational gear types.
- One blacknose per vessel.
- One blacknose per shore angler.

State Commercial

- Included in Small Coastal Sharks Commercial Species Group (SCS) in FMP.
- Fishery for any species in SCS automatically opens and closes with federal waters fishery.
- Board can set possession limit annually, but has never set a SCS possession limit.
- State commercial license or permit is required.
- Federal dealer permit is required.
- Permitted commercial gear includes rod & reel, handlines, gillnets, trawl nets, shortlines, pound nets/fish traps, and weirs. Circle hooks and ID workshop attendance is mandatory for those using shortlines.
- Fins must remain attached.
- Exemption from all requirements with state display or research permit. Permit holders must report shark weight, location caught, and gear type. Aquariums holding blacknose sharks must report annually to state for the life of shark. States must report all sharks taken by display or research permit holders in annual compliance reports.

Blacknose Shark cont.

Federal Recreational

- One shark per vessel, can be a blacknose shark.
- 4.5' minimum fork length.
- Fin and head must remain naturally attached through landing.

Federal Commercial

- Combined blacknose quota for Atlantic and Gulf of Mexico (GOM) waters. Set at 19.9 mt (43,873 lb) in 2011 and was not exceeded based on preliminary data.
- Both the blacknose and small coastal shark fisheries close when landings reach or are projected to reach 80 percent of either quota.
- No trip limit.

SEDAR 21 Assessment Results and TC Review³

The TC recommends the Board accept the results of the SEDAR 21 assessment for management use.

Dusky Shark

The dusky shark was assessed as one stock (GOM and Atlantic) with an age-structured catch free model (ASCFM) in the absence of accurate knowledge of the magnitude of total catches and discards. The ASCFM re-scales the model population dynamics as proportional to virgin (unexploited) conditions. See the Dusky Shark Assessment Summary report or full assessment for more details.

The dusky shark stock is overfished (SSB_{2009}/SSB_{MSY} of 0.41 to 0.50) and the stock was experiencing overfishing (F_{2009}/F_{MSY} of 1.39 to 4.35) in 2009; $F_{MSY} = 0.035$ and F was 0.055 in 2009. Projections indicate that reducing F to 0.027 results in a 50% probability of rebuilding to SSB_{MSY} by 2108 (the rebuilding goal) and reducing F to 0.023 results in a 70% probability of rebuilding to SSB_{MSY} by 2108.

The TC agrees with the stock status findings and recommends the Board accept the results for management use. The majority of sensitivity analyses, including additional runs requested by the review panel, estimate that the dusky shark stock is overfished with overfishing occurring, thereby giving members confidence in the results. TC members offered the following comments:

- The stock is highly depleted and will not rebuild in 50 years even at $F = 0.0$.
- Longline post-release mortality may be as high as 80 to 90% for dusky. This would not show up in the catch free model but could slow rebuilding.
- When the next assessment is run, the assessment team should test the sensitivity of the results to different virgin biomass reference years.
- The high F rate is alarming on a prohibited species.
- The TC is unclear which sectors are responsible for the mortality.

Sandbar Shark

The sandbar shark was assessed as one stock (GOM and Atlantic) with a state-space, age structured production model (SPASM) that incorporates many of the important biological (mortality, growth, reproduction, etc) and fishery (selectivity, effort, etc) parameters with observed catches and catch per unit effort (CPUE) indices. See Sandbar Shark Assessment Summary report or full assessment for more details.

³ Stock status for coastal sharks is based on the ratio of SSB/SSB_{MSY} and F/F_{MSY} . A value < 1 for SSB/SSB_{MSY} indicates that a stock is overfished and a value greater than 1 for F/F_{MSY} indicates that overfishing is occurring.

The sandbar shark stock is overfished⁴ (SSF_{2009}/SSF_{MSST} of 0.76) and the stock was not experiencing overfishing in 2009 (F_{2009}/F_{MSY} of 0.62). Projections (under all realistic scenarios) estimate that the stock will be rebuilt between 2047 and 2083.

The TC is comfortable with the results of the sandbar assessment that the stock is overfished and overfishing is not occurring and recommends that the Board accept the results for management use. Members of the TC commented that the reduction in F coincides with 2009 management measures that established a research only quota for sandbar sharks and prohibited their retention for all non-research sectors.

Atlantic Blacknose Shark

The blacknose shark was assessed as two distinct stock units: GOM and Atlantic. The TC did not review the GOM stock assessment because the ASMFC does not manage those waters. The Atlantic blacknose shark assessment used a SPASM model similar to that used for sandbar. See Atlantic Blacknose Shark Assessment Summary report or full assessment for more details.

The Atlantic blacknose shark stock is overfished (SSF_{2009}/SSF_{MSY} of 0.43 – 0.64) and the stock was experiencing overfishing in 2009 ($F_{2009}/F_{MSY} = 3.26 – 22.53$). Projections estimate that the stock will rebuild between 2033 (high productivity scenario) and 2086 (low productivity scenario) and has a 0% probability of recovering by 2027 (the rebuilding goal).

The TC agrees with the results that the stock is overfished and overfishing is occurring and recommends the Board accept the results for management use. Members commented that bycatch estimation in the current model was a function of GOM shrimp trawl removals, which may not accurately reflect bycatch levels on the Atlantic coast and may not adequately reflect bycatch mortality (giving an optimistic estimation of F). The GOM shrimp trawl fishery has significantly reduced capacity (largely as a result of hurricane Katrina and the Gulf oil spill) in the past decade. Additionally, this fishery has also begun using bycatch reduction technologies such as TED's and Bycatch Reduction Devices (BRDs), which reduce blacknose shark bycatch.

NMFS Implementation of SEDAR 21 Results (Amendment 5)

Recognizing that the ASMFC Coastal Sharks FMP was designed to complement federal waters shark management, the TC requested NMFS HMS present their plan to implement the results of SEDAR 21. Karyl Brewster-Geisz presented the TC with details of the process, timeline, and current steps for implementation of the SEDAR 21 results. NMFS HMS will implement management measures based on the results of SEDAR 21 as part of Amendment 5 to the Consolidated HMS FMP. The comment period for scoping closed on December 31, 2011. HMS intends to prepare a pre-Draft in early 2012 with a Draft Environmental Impact Statement (DEIS) and proposed rule to be released around mid-2012. Final implementation of Amendment 5 is slated for early 2013.

NMFS HMS has accepted the SEDAR 21 results (dusky shark overfished with overfishing, sandbar shark overfished with no overfishing, and Atlantic blacknose shark overfished with overfishing), but has not drafted specific Amendment 5 management measures. The following list was presented to the TC regarding management challenges and options.

⁴ SSF is spawning stock fecundity (sum of number at age times pup production at age) and $MSST$ is minimum spawning stock size threshold.

Dusky Shark

General Challenges

- Prohibited from recreational and commercial retention, yet F needs to be reduced by 2/3 to meet rebuilding goals.
- High at-vessel mortality rates in the commercial bottom longline and gillnet fisheries
- Reported landings in recreational fisheries

Management Options

- Explore management options that minimize dusky shark interactions with fishing gear
- Soak time, longline length, number of hooks restrictions
- Gear tending requirements for bottom longline
- Time/Area closures
- Education/outreach to recreational fishery participants
- Employ gear technology to reduce mortality (electropositive metals, weak hooks)

Sandbar Shark

General Challenges

- Stock is still overfished, but the rebuilding timeframe has improved from the previous assessment
- Overfishing is no longer occurring, and the current TAC (220 mt) should allow for rebuilding to continue

Management Options

- Stock rebuilding should continue with the status quo TAC, so are additional management measures necessary?

Blacknose Shark (GOM and Atlantic)

General Challenges

- Previous stock assessment addressed one stock of blacknose shark. Most recent stock assessment split the population into two stocks; Atlantic and Gulf of Mexico
- Atlantic: Overfished with overfishing occurring. TAC rebuilding estimate of 7,300 sharks
- Gulf of Mexico: Assessment rejected due to lack of model fit with some data; therefore, the stock status remains unknown; no TAC estimate for Gulf of Mexico

Management Options

- Will need to set TACs and ACLs for both blacknose shark stocks
- How should quotas be set for each region with only a recommendation for the Atlantic?
 - Previous TAC (19,200) - Atlantic recommendation (7,300) = Gulf of Mexico TAC? (11,900)
 - Gulf of Mexico percentage of previous TAC (51%) = Gulf of Mexico TAC? (~9,800)
 - Should blacknose shark quota continue to be linked with the small coastal shark quota?

ASMFC Management Recommendations:

The TC agrees that additional ASMFC management measures are probably necessary to stop overfishing on Atlantic blacknose and dusky sharks. However, the TC does not recommend the Board initiate any measures until specific Amendment 5 measures are available. Once available, members of the TC agreed to review Amendment 5 and make management recommendations to the Board at that time.

Given that the ASMFC FMP is modeled after the federal FMP and a main objective is to promote coordinated regulations between state and federal waters, initiating management measures would be premature at this time. Waiting until the Amendment 5 management measures are known allows the ASMFC to decide if federal measures will be sufficient or if additional ASMFC measures are necessary.

Potential species-specific management measures are discussed below. The TC does not anticipate additional measures being necessary for sandbar shark.

Atlantic Blacknose

The F rate on Atlantic blacknose sharks should be reduced to stop overfishing and rebuild the stock. A quota reduction could achieve a sufficient F reduction without additional ASMFC management measures (state waters open and close with the federal fishery).

Dusky Shark

Dusky sharks are currently prohibited in state and federal waters and the overfishing appears to be the result of bycatch mortality and recreational harvest by anglers (who are unfamiliar with regulations and/or correct species ID). Bycatch reduction measures may be necessary to reduce F and rebuild the stock, but the source of bycatch mortality is unclear. Recreational angler education could help reduce F if recreational anglers understood the prohibited status of dusky sharks, the need to release these sharks unharmed, and proper species identification. TC members commented that states could conduct their own education and outreach as an interim measure while Amendment 5 is developed.