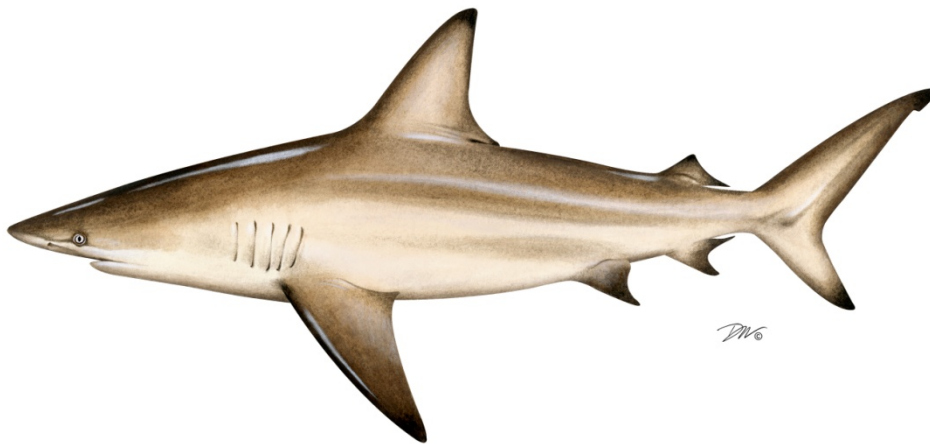


**2013 REVIEW OF THE
ATLANTIC STATES MARINE FISHERIES COMMISSION
FISHERY MANAGEMENT PLAN FOR**

COASTAL SHARKS

2012 FISHING YEAR



Coastal Sharks Plan Review Team

Bryan Frazier, South Carolina Department of Natural Resources
Dr. Gregory Skomal, Massachusetts Department of Marine Fisheries
Tina Moore, North Carolina Department of Environment and Natural Resources
Marin Hawk, Atlantic States Marine Fisheries Commission, Chair

January 2014

Table of Contents

- I. Status of the Fishery Management Plan
- II. Status of the Stock and Assessment Advice
- III. Status of the Fishery
- IV. Status of Research and Monitoring
- V. Status of Management Measures and Issues
- VI. Implementation of FMP Compliance Requirements for 2009
- VII. Recommendations of the Plan Review Team
- VIII. References

I. Status of the Fishery Management Plan

<u>Date of FMP Approval:</u>	August 2008
<u>Amendments</u>	None
<u>Addenda</u>	Addendum I (September 2009) Addendum II (May 2013) Addendum III (October 2013)
<u>Management Unit:</u>	Entire coastwide distribution of the resource from the estuaries eastward to the inshore boundary of the EEZ
<u>States With Declared Interest:</u>	Maine - Florida
<u>Active Boards/Committees:</u>	Spiny Dogfish and Coastal Shark Management Board, Advisory Panel, Technical Committee, and Plan Review Team

a) Goals and Objectives

The Interstate Fishery Management Plan for Coastal Sharks (FMP) established the following goals and objectives.

GOALS

The goal of the Interstate Fishery Management Plan for Coastal Sharks is “to promote stock rebuilding and management of the coastal shark fishery in a manner that is biologically, economically, socially, and ecologically sound.”

OBJECTIVES

In support of this goal, the following objectives proposed for the Interstate Shark FMP:

- 1. Reduce fishing mortality to rebuild stock biomass, prevent stock collapse, and support a sustainable fishery.*
- 2. Protect essential habitat areas such as nurseries and pupping grounds to protect sharks during particularly vulnerable stages in their life cycle.*
- 3. Coordinate management activities between state and federal waters to promote complementary regulations throughout the species’ range.*
- 4. Obtain biological and improved fishery related data to increase understanding of state water shark fisheries.*
- 5. Minimize endangered species bycatch in shark fisheries.*

b) Fisheries Management Plan Summary

The Atlantic States Marine Fisheries Commission (Commission) adopted its first fishery management plan (FMP) for coastal sharks in 2008. Coastal sharks are managed under this plan as six different complexes: prohibited, research, small coastal, non-sandbar large coastal, pelagic and smooth dogfish (Table 1). The Board does not actively set quotas for any shark species. The Commission follows NOAA Fisheries openings and closures for small coastal sharks, non-

sandbar large coastal shark and pelagic sharks. Species in the prohibited category may not be possessed or taken. Sandbar sharks may only be taken with a shark fishery research permit. All species must be landed with their fin attached to the carcass by natural means.

Addendum I (2009) modified the FMP to allow limited smooth dogfish processing at sea (removal of fins from the carcass), remove smooth dogfish recreational possession limits, and remove gillnet check requirements for smooth dogfish fishermen. The goal of Addendum I was to remove restrictive management intended for large coastal sharks from the smooth dogfish fishery, to allow fishermen to continue their operations while upholding the conservation measures of the FMP.

Addendum II (2013) modified the FMP to allow year round smooth dogfish processing at sea and allocated state-shares of the smooth dogfish federal quota. The goal of Addendum II was to implement an accurate fin-to-carcass ratio and prevent the quota of smooth dogfish being harvested in one state, while excluding the others.

Addendum III (2013) modified the species groups to ensure consistency with NOAA Fisheries. The addendum also increased the recreational size limit for all hammerhead sharks species to 78” fork length.

Table 1: List of species and species groups within the Interstate FMP.

Species Group	Species within Group
Prohibited	Sand tiger, bigeye sand tiger, whale, basking, white dusky, bignose, Galapagos, night, reef, narrowtooth, Caribbean sharpnoes, smalltail, Atlantic angel, longfin mako, bigeye thresher, sharpnoes sevengill, bluntnose sixgill and bigeye sixgill sharks
Research	Sandbar sharks
Small coastal	Atlantic sharpnose, finetooth, and bonnethead sharks
Blacknose	Blacknose sharks
Aggregated large coastal	Silky, tiger, blacktip, spinner, bull, lemon, and nurse
Hammerhead	scalloped hammerhead, great hammerhead and smooth hammerhead
Pelagic	Shortfin mako, porbeagle, common thresher, oceanic whitetip and blue sharks
Smoothhound	Smooth dogfish and Florida smoothhound sharks

II. Status of the Stock and Assessment Advice

Stock status is assessed by species complex for most coastal shark species and by species group for species with enough data for an individual assessment (Table 2). A 2011 benchmark assessment of dusky (*Carcharhinus obscurus*), sandbar (*Carcharhinus plumbeus*), and blacknose (*Carcharhinus acronotus*) sharks indicates that both sandbar and dusky sharks continue to be overfished with overfishing occurring for dusky sharks. Blacknose sharks, part of the SCS

complex, are overfished with overfishing occurring. The Board approved the assessment for management use in February 2012, and NOAA Fisheries' Highly Migratory Species Division (HMS) is incorporated the results of the assessment as part of Amendment 5a to its FMP.

Porbeagle sharks were assessed by the ICCAT Standing Committee on Research and Statistics in 2009. The assessment found that while the Northwest Atlantic stock is increasing in biomass, the stock is considered to be overfished with overfishing not occurring. The 2007 Southeast Data Assessment Review (SEDAR 13) assessed the SCS complex, finetooth, Atlantic sharpnose, and bonnethead sharks. The SEDAR 13 peer reviewers considered the data to be the 'best available at the time' and determined the status of the SCS complex to be 'adequate.' Finetooth, Atlantic sharpnose and bonnethead were all considered to be not overfished and not experiencing overfishing. Atlantic sharpnose and bonnethead were more recently assessed by SEDAR 34, and are still considered not overfished or undergoing overfishing.

SEDAR 11 (2006) assessed the LCS complex and blacktip sharks. The LCS assessment suggested that it is inappropriate to assess the LCS complex as a whole due to the variation in life history parameters, different intrinsic rates of increase, and different catch and abundance data for all species included in the LCS complex. Based on these results, NMFS changed the status of the LCS complex from overfished to unknown. As part of SEDAR 11, blacktip sharks were assessed for the first time as two separate populations: Gulf of Mexico and Atlantic. The results indicated that the Gulf of Mexico stock is not overfished and overfishing is not occurring, while the current status of blacktip sharks in the Atlantic region is unknown.

There is no assessment for smooth dogfish on the Atlantic coast. The Commission's Coastal Sharks Technical Committee has identified a smooth dogfish assessment as a top research priority.

Table 2: Stock Status of Atlantic Coastal Shark Species and Species Groups

Species or Complex Name	Stock Status		References/Comments
	Overfished	Overfishing occurring	
Porbeagle	Y	N	Porbeagle Stock Assessment, ICCAT Standing Committee on Research and Statistics Report (2009)
Dusky	Y	Y	SEDAR 21 (2011) 'Prohibited' species
Aggregated Large Coastal Sharks	Unknown	Unknown	SEDAR 11 (2006) Difficult to assess as a species complex due to various life history characteristics/lack of available data
Blacktip	Unknown	Unknown	SEDAR 11 (2006)
Sandbar	Y	N	SEDAR 21 (2011)
Non-blacknose Small Coastal Sharks	N	N	SEDAR 13 (2007)
Blacknose	Y	Y	SEDAR 21 (2011)
Atlantic sharpnose	N	N	SEDAR 34 (2013)
Bonnethead	N	N	SEDAR 34 (2013)
Finetooth	N	N	SEDAR 13 (2007)
Smooth dogfish	Unknown	Unknown	No assessment

Smoothhound sharks (also known as smooth dogfish) and finetooth sharks will undergo assessments in 2014. A smoothhound shark assessment is a high priority since no assessment on the species has been conducted to date.

III. Status of the Fishery

Specifications

All non-prohibited coastal shark complexes opened on January 24, 2012, with the exception of the porbeagle sharks, which opened on July 15, 2011 (Table 3). These openings followed NOAA Fisheries openings of the species complexes. NOAA Fisheries closes the shark complexes when 80% of their quota is reached. When the fishery closes in federal waters, the Interstate FMP dictates that the fishery also closes in state waters.

Quotas

NOAA Fisheries sets quotas for coastal sharks through their 2006 Consolidated Highly Migratory Species Fishery Management Plan. As indicated above, the states follow NOAA Fisheries openings and closings, which are based on those quotas. The quotas for each species or species grouping for the 2012 fishing season are in Table 3.

Table 3: Commercial quotas and opening dates for 2011 shark fishing season.

Species Group	2011 Annual Quota (mt)	Season Opening Dates	Closing Date (if any)
Non-sandbar Large Coastal Sharks	182.3	July 15, 2013	
Non-sandbar LCS Research Quota	37.5	January 24, 2012	
Sandbar Research Quota	87.9	January 24, 2012	
Non-blacknose Small Coastal Sharks	332.4	January 24, 2012	
Blacknose Sharks	19.9	January 24, 2012	
Blue Sharks	273.0	January 24, 2012	
Porbeagle Sharks	0.7	January 24, 2012	May 30, 2012
Pelagic Sharks other than Porbeagle or Blue	488.0	January 24, 2012	

Landings

Commercial landings of Atlantic large coastal sharks species in 2012 were 425,612 lbs dw, a slight decrease from the 2011 total (Table 4). Commercial landings of small coastal shark species in 2012 were 419,990 lbs dw. This is an increase of approximately 60,000 lbs dw from 2011 (Table 5). Total US landings of Atlantic pelagic species of sharks were 314,084 lbs dw 2012, similar to recent years (Table 6).

Table 4: Commercial landings of authorized Atlantic large coastal sharks by species (pounds dw), 2008-2012. Source: HMS SAFE Report, 2013.

	2008	2009	2010	2011	2012
Blacktip	258,035	229,267	246,617	176,136	215,403
Bull	43,200	61,396	56,901	49,927	24,504
Dusky	0	0	0	14	172
Great hammerhead	0	0	0	0.0	371
Scalloped hammerhead	0	0	0	0.0	15,800
Smooth hammerhead		4,025	7,802	110	3,967
Unclassified hammerhead	21,631	62,825	43,345	35,618	9,617
Lemon	22,530	30,909	25,316	45,448	21,563
Nurse	10	0	71	0	81
Sandbar	63,035	54,141	84,339	94,295	46,446
Silky	306	1,386	1,049	992	29
Spinner	1,265	20,022	13,544	4,113	10,643
Tiger	14,119	15,172	43,145	36,425	23,245
Unclassified assigned to LCS	187,670	70,894	2,229	50,711	53,705
Total	611,918	550,037	524,376	493,809	425,612

Table 5: Commercial landings of authorized Atlantic small coastal sharks by species (lbs dw), 2003-2011. Source: HMS SAFE Report, 2013.

	2008	2009	2010	2011	2012
Blacknose	117,197	90,023	30,287	28,373	37,873
Bonnethead	61,549	53,912	9,069	28,284	19,907
Finetooth	28,872	63,359	76,438	52,318	15,922
Atlantic sharpnose	261,788	262,508	211,190	214,382	345,625
Unclassified assigned to SCS	23,077	34,429	851	36,639	492
Total	490,574	504,231	327,931	360,007	419,990

Table 6: Commercial landings of authorized pelagic sharks by species off the Atlantic coast of the United States (lb dw), 2008-2012. Source: HMS SAFE Report, 2013.

	2008	2009	2010	2011	2012
Blue shark	3,229	4,793	9,135	13,370	17,200
Shortfin mako	120,255	141,456	220,400	207,630	198,841
Porbeagle	5,259	3,609	4,097	5,933	4,250
Total	234,546	225,421	312,195	314,314	314,084

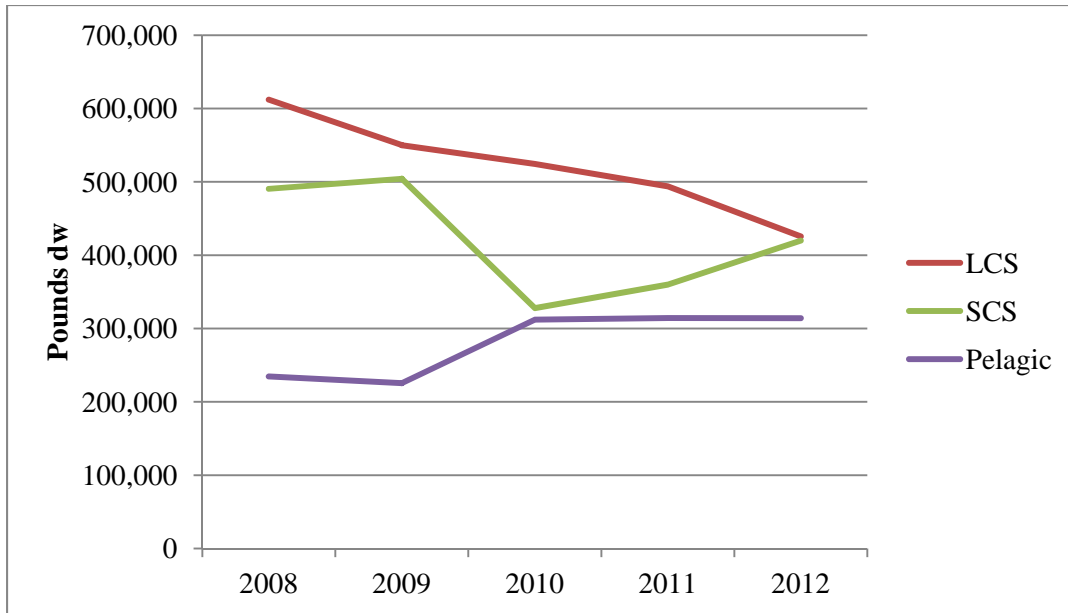


Figure 1: Commercial landings of coastal sharks off the east coast of the United States by species complex, 2008-2012. Source: HMS SAFE Report, 2013.

Approximately 44,007 fish were harvested during the 2012 recreational fishing season, compared to 46,862 fish in the 2011 season, and 64,302 fish in the 2010 fishing season. The small coastal shark group had the most landings, comprising approximately 75% of the harvest in 2012. Large coastal sharks came next with approximately 23% of the harvest, and pelagic species comprised 2% of the total harvest.

Table 7: Recreational harvest of all Atlantic shark species by species group in numbers of fish, 2008-2012. Source: HMS SAFE Report, 2013.

	2008	2009	2010	2011	2012
LCS	23,157	19,077	7,750	8,723	10,299
Pelagic*	1,972	8,693	5,023	716	703
SCS	47,063	42,524	51,529	37,423	33,005
Total	72,192	70,294	64,302	46,862	44,007

*Pelagic sharks include Gulf of Mexico landings.

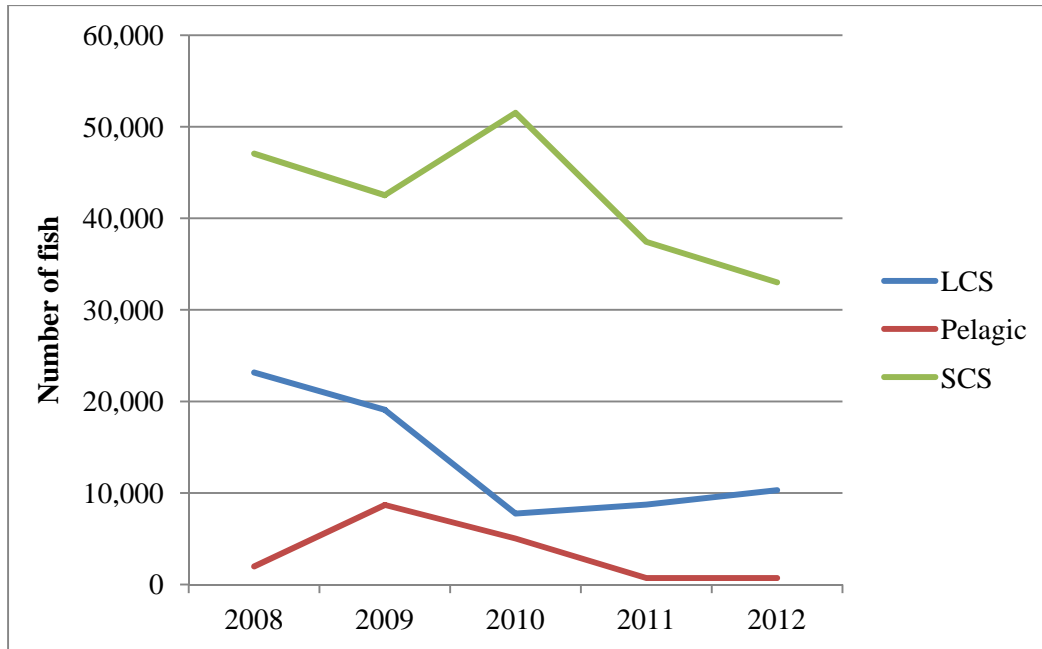


Figure 2: Recreational harvest of all Atlantic coast species by species group, in numbers of fish, 2008-2012. Source: HMS SAFE Report, 2013.

IV. Status of Research and Monitoring

Under the Interstate Fishery Management for Coastal Sharks, the states are not required to conduct any fishery dependent or independent studies. States are encouraged to submit any information collected while surveying for other species. Research and monitoring information from state reports follows. States that did not include research/monitoring information in their reports are not listed below. Please see individual reports for more information.

Rhode Island

Fishery independent monitoring is limited to coastal shark species taken in the RI Division of Fish & Wildlife, Marine Fisheries Section monthly and seasonal trawl survey. During the 2012 calendar year the only coastal shark species captured in the trawl survey was smooth dogfish (*Mustelus canis*). A summary of fishery independent monitoring for coastal sharks is summarized in Table B-1 below.

Table 8. Summary of fishery independent monitoring for coastal sharks captured in the RI Division of Fish & Wildlife, Marine Fisheries Section monthly and seasonal trawl survey during 2012. Note that the only species captured was smooth dogfish (*Mustelus canis*).

Year	Month	Tows conducted	Total weight (kg)	Total number	Number per tow	kg per tow
Monthly Coastal Trawl Survey						
2012	JAN	13	0	0	0.00	0.00
2012	FEB	13	0	0	0.00	0.00
2012	MAR	12	0	0	0.00	0.00
2012	APR	13	0	0	0.00	0.00
2012	MAY	13	12.9	4	0.31	0.99
2012	JUN	9	20.4	14	1.56	2.27
2012	JUL	13	15.53	19	1.46	1.19
2012	AUG	13	6	6	0.46	0.46
2012	SEP	13	0	0	0.00	0.00
2012	OCT	9	55.24	28	3.11	6.14
2012	NOV	13	0	0	0.00	0.00
2012	DEC	13	0	0	0.00	0.00
Seasonal Coastal Trawl Survey						
2012	Spring	44	0	0	0	0
2012	Fall	44	77.76	49	1.11	1.77

Delaware

Delaware conducts a 30' adult trawl survey and a 16' juvenile trawl survey in the Delaware Bay. In the adult trawl survey, the species most commonly caught were sand tigers, sandbar shark and smooth dogfish. Thresher, Atlantic angel, Atlantic sharpnose and dusky sharks have been caught in the past, but rarely. Sand tiger shark catch per nautical mile in 2012 remains high for the time series and sandbar shark catch per nautical miles continues to increase. Smooth dogfish catch per nautical mile continues to increase from a low in 2005. In the juvenile trawl, the species caught were sand tigers, sandbar sharks and smooth .

Delaware also conducts a 16' juvenile trawl survey in the Inland bays. The only species caught in this survey was smooth dogfish.

North Carolina

NCDMF has an independent red drum longline project established in 2007, which allows for capture and tagging of Atlantic coastal sharks. The independent red drum longline project in the Pamlico Sound resulted in a catch of four coastal sharks in 2012. Three species of shark were captured, 2 blacktip (*Carcharhinus limbatus*) with only one total length recorded at 1570 mm, one Atlantic sharpnose (*Rhizoprionodon terraenovae*) with a total length of 551 mm, and one bull (*Carcharhinus leucas*) with a total length of 1676 mm. Only two of the sharks, blacktip and bull, captured were tagged by NCDMF with federal tags.

A fisheries independent gill net survey was initiated in North Carolina in 2001. The objective of this project is to provide annual independent relative indices of abundance for key estuarine species in sounds and rivers that can be incorporated into stock assessments and used to improve

bycatch estimates, evaluate management measures, and evaluate habitat usage. Results from this project are used by the NCDMF and other Atlantic coast fishery management agencies to evaluate the effectiveness of current management measures and to identify additional measures that may be necessary to conserve marine and estuarine stocks. Developing fishery independent indices of abundance for target species allows the NCDMF to assess the status of these stocks without relying solely on commercial and recreational fishery dependent data. Sampling is a stratified random sampling design in Pamlico Sound, utilizing multiple mesh gill nets (3.0-6.5 inch, ½ inch increments). In 2012, a total of 193 individual coastal sharks were captured in the Pamlico Sound independent gill net survey. Coastal sharks from the 2012 Pamlico Sound independent gill net survey catch included: two angel (*Squatina dumeril*), total length of 844 mm and 880 mm, 65 Atlantic sharpnose (*Rhizoprionodon terraenovae*), total length range of 250-970 mm (mean = 355.7 mm TL), 35 blacktip (*Carcharhinus limbatus*) total length range of 365-1010 mm (mean = 501.1 mm TL), 22 bonnethead (*Sphyrna tiburo*) total length range of 352-913 mm (mean = 743.5 mm TL), 28 bull (*Carcharhinus leucas*) total length range of 375-925 mm TL (mean = 734.9 mm TL), one scalloped hammerhead (*Sphyrna lewini*), total length of 860 mm, and 40 smooth hound (*Mustelus canis*) total length range of 472-1210 mm TL (mean = 555.1 mm TL).

The Fisheries Independent Assessment Program Ocean Gillnet (FIAPOG) began in February, 2008, funded by the Coastal Recreational Fishing License receipts. The program utilizes the same sampling framework as the fisheries independent gill net survey. This program is designed to gather data on fishes utilizing the nearshore ocean (<3 miles) from New River Inlet south to the SC/NC state line and the Cape Fear and New Rivers. The goals of the program are to provide CPUE data for coastal fishes, to supplement age, growth, and reproduction studies, to evaluate catch rates and species distribution for use in management plans, and to characterize habitat use. In 2012, 405 sharks were captured in the near shore ocean waters from New River Inlet south to the SC/NC state line and the Cape Fear and New Rivers. Coastal sharks from the 2012 FIAPOG survey catch included: 269 Atlantic sharpnose (*Rhizoprionodon terraenovae*), total length range of 227-851 mm (mean = 483.6 mm TL), 52 blacknose (*Carcharhinus acronotus*) total length range of 722-1140 mm (mean = 935.9 mm TL), 10 blacktip (*Carcharhinus limbatus*) total length range of 828-1275 mm (mean = 952.0 mm TL), 42 bonnethead (*Sphyrna tiburo*) total length range of 602-935 mm (mean = 801.6 mm TL), 13 finetooth (*Carcharhinus isodon*) total length range of 898-1310 mm (mean = 1050.5 mm TL), 13 scalloped hammerhead (*Sphyrna lewini*) total length range of 538-695 mm (mean = 589.8 mm TL), and 6 smooth dogfish (*Mustelus canis*) total length range of 431-482 mm (mean = 456.2 mm TL).

South Carolina

The COASTSPAN survey was created in 1998 as a cooperative survey between the NMFS Apex predators program and the SCDNR. The estuaries and sounds from Bulls Bay to St. Helena Sound are sampled with hand-deployed longlines and gillnets. The hand deployed longline is more effective for targeting large coastal species, primarily sandbar and blacktip sharks, while gillnets are more effective for small coastal sharks, Atlantic sharpnose, finetooth and bonnethead sharks. All stations in this survey are index stations. Species captured are measured, sexed, tagged and released, and physical and water quality parameters are recorded. All collected data are shared with the apex predators program.

Catches of LCS on the hand deployed longline have been relatively steady and have remained above the long term average since 2005, with a slight decline occurring from 2006 to 2009. Catches of LCS in 2012 remained above the long term average, and were slightly higher than 2011. Catches of SCS continued to decline from a 10 year high in 2010 and 2012 CPUE of SCS were lower than the long term average.

The gillnet is a more effective gear for small coastal shark species, and is the only available long term survey data set for bonnethead and finetooth sharks in the Southeast. Trends in the data from the gillnet survey are typically more stable than the hand deployed longline data, with both populations remaining around their long term averages. However, catches of both LCS and SCS were both well above their mean CPUE in 2012 with SCS having the second highest CPUE on record since the survey began. Large coastal sharks also dramatically increased with 2012 being the highest CPUE recorded since the survey began.

The Adult Red Drum and Coastal Sharks Bottom Longline Survey is used to estimate the abundance and distribution of adult red drum and coastal sharks in SC coastal waters. This program utilized a 1,609 meter hydraulic longline to sample index stations from 1994 to 2007. Beginning in 2007 the survey design was changed to a random stratified survey using two 536 meter longlines. The spatial coverage of this survey also changed in 2007 and now covers the majority of the state and the four largest bays and sounds, Port Royal Sound, St. Helena Sound, Charleston Harbor, and Winyah Bay. All other survey protocols remained unchanged. This shift in design and spatial coverage should yield excellent data on the species of shark utilizing South Carolina's coastal waters in the future. The primary species captured by this survey are: Atlantic sharpnose, sandbar, finetooth, blacknose, blacktip, scalloped hammerhead, bonnethead, and spinner sharks. Other species encountered include: tiger, lemon, bull, nurse, great hammerhead and seasonally smooth and spiny dogfish.

The presence of SCS in the longline data set has been variable. Increases in abundance starting in 2005 are associated with the spatial changes the program underwent (Figure 10). Sampling was expanded in 2005, and again in 2007 causing shifts in catches of both SCS and LCS. Regional differences in CPUE are evident with the areas added (Winyah Bay, St. Helena Sound, and Port Royal Sound) having higher diversity and abundance of coastal sharks than the Charleston Harbor. Future research will investigate these differences. The random stratified survey has shown an increase in catches of both SCS and LCS when compared to the index station survey. Large coastal shark catches have decreased every year since the survey protocol was changed. Catches of SCS continued to increase from a low in 2010 and were slightly above the long term average.

Georgia

Georgia's Adult Red Drum Survey (SEAMAP) occurs in inshore and nearshore waters of southeast Georgia and in offshore waters of northeast Florida. Sampling occurs from mid-April through the end of December. Sampling gear consists of a bottom set 926m, 600lb test monofilament mainline configured with 60, 0.5 m gangions made of 200lb test monofilament. Each gangion consists of a longline snap and either a 12/0 or 15/0 circle hook. Thirty hooks of each size are deployed during each set. All hooks are baited with squid. Soak time for each set is 30 minutes. During 2012, CRD staff deployed 214 sets consisting of 12,838 total hooks and

107 hours of total soak time. A total of 740 sharks, representing 9 species were captured during the 2012 season.

The Shark Nursery Survey (COASTSPAN) occurs in the inshore waters of St. Simons and St. Andrew sounds. Sampling occurs from mid-April through the end of September. Sampling gear consists of a 305 m braided rope mainline configured with 50, 1 m gangions made of 200lb test monofilament. Each gangion is configured with a longline snap and a 12/0 circle hook. All hooks are baited with squid. Soak time for each set is 30 minutes. During 2012, CRD staff fished 115 longline stations consisting of 5,747 hooks and a total of 57.5 hours of soak time. A total of 432 sharks, representing 8 species were captured during 2012.

The Ecological Monitoring Survey uses a 40-foot flat otter trawl with neither a turtle excluder device nor bycatch reduction device which is deployed at 42 stations across six estuaries. At each station, a standard 15 minute tow is made. During this report period, 494 tows/observations were conducted, totaling 123.5 hours of tow time. A total of 181 sharks, representing 6 species were captured during 2012.

The MSPHS is a multi-faceted ongoing survey used to collect information on the biology and population dynamics of recreationally important finfish. Currently two Georgia estuaries are sampled on a seasonal basis using entanglement gear. During the June to August period, young-of-the-year red drum in the Altamaha/Hampton River and Wassaw estuaries are collected using gillnets to gather data on relative abundance and location of occurrence. During the September to November period, fish populations in the Altamaha/Hampton River and Wassaw estuaries are monitored using monofilament trammel nets to gather data on relative abundance and size composition. In 2012, a total of 216 gillnet and 158 trammel net sets were made, resulting in the capture of 259 individuals representing five species of coastal sharks.

V. Status of Management Measures and Issues

Fishery Management Plan

Coastal Sharks are managed under the Interstate FMP for Coastal Sharks, which was implemented in August 2008, Addendum I (2009), Addendum II (2013) and Addendum III (2013). The FMP addresses the management of 40 species and establishes a suite of management measures for recreational and commercial shark fisheries in state waters (0 – 3 miles from shore). Prior to this plan, shark management in state waters consisted of disjointed state-specific regulations. The plan allows for consistency across jurisdictions. For the small coastal, pelagic and non-sandbar large coastal complexes, the Commission's Board does not set active quotas, but instead follows NOAA Fisheries closures and openings. Smooth hounds are not actively managed by the National Marine Fisheries Service. Because fishery quotas are set at a harvest level that is estimated to be sustainable based on the stock assessment, the Board is unable to set quotas in the absence of an assessment. When a stock assessment has been done, the Board may set quotas for smooth hounds. Addendum I was added to allow commercial fishermen limited processing of smooth hounds at sea and remove recreational possession limits for smooth hounds, as well as the 2 hour net check requirement for commercial fishermen using large mesh gillnets. Addendum II modified smooth dogfish processing at sea regulation and allocated state-shares of the smooth dogfish federal quota. Addendum III changed the species groupings and

increased the size limit for hammerhead sharks. Addendum III was initiated in response to changes in the federal plan and will be implemented in March of 2014 to ensure consistency between the two management plans.

VI. Implementation of FMP Compliance Requirements for 2013

Mandatory compliance elements for 2013 were provided by the FMP.

Regulatory Requirements

The management program includes regulatory requirements for non *de minimis* states as follows:

- Recreational anglers are prohibited from possessing silky, tiger, blacktip, spinner, bull, lemon, nurse, scalloped hammerhead, great hammerhead, and smooth hammerhead in the state waters of Virginia, Maryland, Delaware and New Jersey from May 15 through July 15—regardless of where the shark was caught. Fishermen who catch any of these species in federal waters may not transport them through the state waters of VA, MD, DE, and NJ during the seasonal closure.
- Recreational prohibition of species that are illegal to land by recreational anglers in federal waters.
- All sharks caught by recreational fishermen must have head, tail, and fins attached to carcass through landing. Smooth dogfish may be processed at sea so long as the total wet weight of the shark fins may not exceed 12 percent of the total dressed weight of smoothhound shark carcasses landed or found on board a vessel.
- Sharks caught in the recreational fishery must have a fork length of at least 4.5 feet with the exception of Atlantic sharpnose, blacknose, finetooth, bonnethead, and smooth dogfish. Hammerhead species must have a fork length of 6.5 feet.
- Recreational anglers may only use handlines and rod & reel.
- Recreational and commercial possession limits as specified in Table 3.
- All commercial fishermen are prohibited from possessing silky, tiger, blacktip, spinner, bull, lemon, nurse, scalloped hammerhead, great hammerhead, and smooth hammerhead in the state waters of Virginia, Maryland, Delaware and New Jersey from May 15 through July 15.
- Quota specifications as specified by NOAA Fisheries.
- Ability to allocate quotas seasonally as specified if deemed necessary.
- Commercial permit requirement.
- Display and research permit requirements.
- Federal Commercial Shark Dealer Permit requirement.
- Prohibition of use of any gear type except:
 - **Rod & reel**
 - **Handlines.** Handlines are defined as a mainline to which no more than two gangions or hooks are attached. A handline is retrieved by hand, not by mechanical means, and must be attached to, or in contact with, a vessel.
 - **Small Mesh Gillnets.** Defined as having a stretch mesh size smaller than 5 inches.
 - **Large Mesh Gillnets.** Defined as having a stretch mesh size equal to or greater than 5 inches.
 - **Trawl nets.**

- **Shortlines.** Shortlines are defined as fishing lines containing 50 or fewer hooks and measuring less than 500 yards in length. A maximum of 2 shortlines are allowed per vessel.
- **Pounds nets/fish traps.**
- **Weirs.**
- Any vessel using a shortline must use corrodible circle hooks¹. All shortline vessels must practice the protocols and possess the recently updated federally required release equipment for pelagic and bottom longlines for the safe handling, release, and disentanglement of sea turtles and other non-target species; all captains and vessel owners must be certified in using handling and release equipment.

Table 8: Possession limits for shark species in state waters for 2012 fishing season.

Recreational	<i>Shore-angler</i>	1 permitted spp/day (excluding smooth dogfish), +1 bonnethead, 1 Atlantic sharpnose, and 1 smooth dogfish /day
	<i>Vessel-fishing</i>	1 permitted spp/boat/day (excluding smooth dogfish), +1 bonnethead, 1 Atlantic sharpnose, and 1 smooth dogfish /boat/day
Commercial	<i>Directed permit</i>	33 fish possession limit for spp in LCS group, No limit for SCS
	<i>Incidental permit</i>	3 non-sandbar LCS/vessel/trip, 16 pelagic or SCS combined/trip

VII. PRT Recommendations

State Compliance

All states with a declared interest in the management of sharks have submitted reports and have regulations in place that meet or exceed the requirements of the Interstate Fisheries Management Plan for Coastal Sharks.

De Minimis Status

This FMP does not establish specific *de minimis* guidelines that would exempt a state from regulatory requirements contained in this plan. *De minimis* shall be determined on a case-by case basis. *De minimis* often exempts states from monitoring requirements in other fisheries but this plan does not contain any monitoring requirements.

De minimis guidelines are established in other fisheries when implementation and enforcement of a regulation is deemed unnecessary for attainment of the fishery management plan's objectives and conservation of the resource. Due to the unique characteristics of the coastal

shark fishery, namely the large size of sharks compared to relatively small quotas, the taking of a single shark could contribute to overfishing of a shark species or group. Therefore, exempting a state from any of the regulatory requirements contained in this plan could threaten attainment of this plan's goals and objectives.

States that have been granted *de minimis* status are Maine, New Hampshire and Massachusetts. Maine and New Hampshire are exempt from the Interstate Coastal Shark FMP, due to their low landings and the low presence of sharks in their waters. Both states implement the following rules that uphold the goals and objectives of the FMP:

- Require federal dealer permits for all dealers purchasing Coastal Sharks
- Prohibit the take or landings of prohibited species in the plan
- Close the fishery for porbeagle sharks when the NMFS quota has been harvested
- Prohibit the commercial harvest of porbeagle sharks in State waters
- Require that head, fins and tails remain attached to the carcass of all shark species, except smooth dogfish, through landing

Massachusetts, also a state that does not land large quantities of sharks and does not have many of the shark species in its waters, has been granted an exemption from the possession limit for non-sandbar large coastal sharks and closures of the non-sandbar large coastal shark fisheries. These states will continue to have *de minimis* status until their landings patterns change or they request a discontinuation.

Research Priorities

Species-Specific Priorities

- Investigate the appropriateness of using vertebrae for ageing adult sandbar sharks. If appropriate, implement a systematic sampling program that gathers vertebral samples from entire size range for annual ageing to allow tracking the age distribution of the catch as well as updating of age-length keys.¹
- Re-evaluate finetooth life history in the Atlantic Ocean in order to validate fecundity and reproductive periodicity.
- Develop and conduct tagging studies on dusky and blacknose stock structure with increased international collaboration (e.g., Mexico) to ensure wider distribution and returns of tags. Expand research efforts directed towards tagging of individuals in south Florida and Texas/Mexico border to get better data discerning potential stock mixing.

General Priorities

- Generally update age and growth and reproductive studies for all species currently assessed

¹ Recent bomb radiocarbon research has indicated that past age estimates based on tagging data for sandbar sharks may be correct and that vertebral ageing may not be the most reliable method for mature individuals. See Andrews *et al.* 2011.

- Examine female sharks during the pupping periods to determine the proportion of reproductive females.
- Expand or develop monitoring programs to collect appropriate length and age samples from the catches in the commercial sector by gear type, from catches in the recreational sector, and from catches taken in research surveys to provide reliable length and age compositions for stock assessment
- Evaluate to what extent the different CPUE indices track population abundance (e.g., through power analysis)
- Explore modeling approaches that do not require an assumption that the population is at virgin level at some point in time.

References

Stock Assessment and Fishery Evaluation (SAFE) Report for Atlantic Highly Migratory Species. 2013. NOAA Fisheries, January 8, 2013.
< http://www.nmfs.noaa.gov/sfa/hms/hmsdocument_files/SAFEreports.htm>